REFERENCE MANUAL OF TRAINING PROGRAMME ON BLENDED LEARNING TECHNIQUES FOR QUALITY HIGHER EDUCATION

Mode: Online through NARES-Blended Learning Platform

19-26 December, 2023

Course Coordinators :
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गुणवत्तापूर्ण उच्च शिक्षा के लिए मिश्रित शिक्षण तकनीकें

Blended Learning Techniques for Quality Higher Education

Under the aegis of
HRM Unit, ICAR

19 – 26 December 2023

Reference Manual

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प्रस्तावना

भा॰कृ॰अनु॰प॰–भारतीय कृषि सांख्यिकी अनुसंधान संस्थान (भा॰कृ॰सां॰अ॰सं॰), सांख्यिकीय विज्ञान (सांख्यिकी, संगणक अनुप्रयोग और जैव सूचना विज्ञान) में प्रासंगिकता और कृषि अनुसंधान की गुणवत्ता को समृद्ध करने और सूचित नीति निर्णय लेने के लिए कृषि विज्ञान में उनके विवेकपूर्ण संलयन का एक प्रमुख संस्थान है। संस्थान ने कृषि अनुसंधान के लिए उपयोगी विभिन्न सॉफ्टवेयर, वेब एप्लिकेशन, मोबाइल ऐप और अब आर्टिफिशियल इंटेलिजेंस (एआई) आधारित टूल, तकनीक और कार्यप्रणाली विकसित करने में अग्रणी भूमिका निभाई है।

मिश्रित शिक्षण तकनीकें पारंपरिक कक्षा शिक्षण को ऑनलाइन संसाधनों और इंटरैक्टिव शिक्षण उपकरणों के साथ संयोजित करने का एक अनूठा अवसर प्रदान करती हैं। इसके साथ, हमने भा॰कृ॰अनु॰प॰ – भा॰कृ॰सां॰अ॰सं॰, में विकसित गुणवत्तापूर्ण उच्च शिक्षा के लिए मिश्रित शिक्षा, आधुनिक शिक्षण पद्धतियों और विभिन्न डिजिटल पहलों की गतिशीलता का पता लगाया है। कार्यक्रम सहभागियों को एनएआरईएस-मिश्रित शिक्षण मंच से परिचित कराने, ई-सामग्री विकास में सैद्धांतिक समझ और व्यावहारिक दक्षता को बढ़ावा देने पर केंद्रित था। इसने एनएआरईएस -ब्लेंडेड लर्निंग प्लेटफॉर्म के सैद्धांतिक और व्यावहारिक अनुभव के साथ सहभागियों के कौशल को मजबूत किया है और व्यावहारिक सत्रों में ई-सामग्री विकसित की है।

हमने एनएआरईएस - ब्लेंडेड लर्निंग प्लेटफॉर्म पर सिद्धांत और व्यावहारिक दोनों कक्षाओं की पेशकश करने के लिए इस प्रशिक्षण कार्यक्रम को डिजाइन किया है। इस पाठ्यक्रम के अंतर्गत शामिल विषय शिक्षाशास्त्र की अवधारणाएं, एनएआरईएस - ब्लेंडेड लर्निंग प्लेटफॉर्म का परिचय और अवलोकन, एनएआरईएस -ब्लेंडेड लर्निंग प्लेटफॉर्म के तहत व्यवस्थापक, संकाय और छात्रों के मॉड्यूल के लिए व्यावहारिक सत्र, संवर्धित वास्तविकता/आभासी वास्तविकता (एआर/वीआर) मॉड्यूल, वर्चुअल क्लासरूम, एएमएस (अकादमिक प्रबंधन प्रणाली), एग्रीदीक्षा पोर्टल, पैनोप्टो के माध्यम से वीडियो संपादन, ई-लर्निंग और ई-सामग्री मॉड्यूल विकास आदि।

हम इस अवसर पर संस्थान के संकाय को धन्यवाद देना चाहते हैं जिन्होंने इस पाठ्यक्रम को सफल बनाने में अपना बहुमूल्य समय दिया। उनके सहयोग के बिना इस मैनुअल को समय पर पूरा करना संभव नहीं होता। हम इस प्रशिक्षण कार्यक्रम में अपने कर्मचारियों को तैनात करने के लिए विभिन्न आईसीएआर संस्थानों के भी आभारी हैं। हम डॉ. राजेंद्र प्रसाद, निदेशक, भा॰कृ॰अनु॰प॰ – भा॰कृ॰सां॰अ॰सं॰ और डॉ. सुदीप मारवाह, प्रमुख, संगणक अनुप्रयोग प्रभाग के उनके बहुमूल्य मार्गदर्शन और पाठ्यक्रम के सुचारू संचालन के लिए सभी आवश्यक सुविधाएं उपलब्ध कराने के लिए आभारी हैं। हम उन सभी के आभारी हैं जिन्होंने इस प्रशिक्षण मैनुअल को तैयार करने के लिए प्रत्यक्ष या अप्रत्यक्ष रूप से हमारा समर्थन किया है।

(डॉ. एस. एन. इस्लाम)	(डॉ सपना निगम)	(डॉ मधु)
पाठ्यक्रम समन्वयक	पाठ्यक्रम समन्वयक	पाठ्यक्रम समन्वयक

PREFACE

ICAR- Indian Agricultural Statistics Research Institute (ICAR-IASRI) is a premier Institute of relevance in Statistical Sciences (Statistics, Computer Applications and Bioinformatics) and their judicious fusion in agricultural sciences for enriching quality of agricultural research and informed policy decision making. The Institute has taken a lead in developing various Software, Web Applications, Mobile apps and now Artificial Intelligence (AI) based tools, techniques, and methodologies useful for Agricultural Research.

Blended Learning techniques offers a unique opportunity to combine traditional classroom teaching with online resources and interactive learning tools. With this, we have explored the dynamics of blended learning, modern teaching methodologies, and various digital initiatives for quality higher education developed at ICAR-IASRI. The program focused on familiarizing participants with the NARES-Blended Learning Platform, fostering theoretical understanding and practical proficiency in e-content development. It has strengthened the skillset of participants with theoretical and practical exposure to the NARES-Blended Learning Platform and developed the e-content in hands-on sessions.

We have designed this training program to offer both theory and practical classes on developing AI applications. The topics covered under this course Introduction & overview of NARES- Blended Learning Platform, Technical session of NARES-BLP Practical session for Admin, Faculty & Students module under NARES-BLP, Pedagogy Concepts, Augmented Reality/Virtual Reality (AR/VR) Modules, Virtual Classroom, AMS (Academic Management System), AgriDiksha Portal, Video Editing through Panopto, E-Learning & E-Content Modules Development of E-Contents by the participants etc.

We would like to take this opportunity to thank the faculty of the institute who have spared their valuable time in making this course successful. Without their cooperation timely completion of this manual would not have been possible. We are also thankful to the various ICAR Institutes for deputing their employees in this training programme. We are grateful to Dr Rajender Parsad, Director, ICAR-IASRI and Dr. Sudeep Marwaha, Head, Division of Computer Applications for their valuable guidance and making all necessary facilities available for smooth conduct of the course. We are thankful to everyone who has supported us directly or indirectly for preparing this training manual.

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Course Coordinator

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Content

Lecture Schedule for Training Program
on
Blended Learning Techniques for Quality Higher Education (Online Mode)
(December 19-26, 2023)
Division of Computer Applications, ICAR-IASRI, New Delhi

Date	09:30-10:30	10:30-11:15	11:30-1:00		2:15-3:30	3:45-5:30
(19/12/2024) Tuesday	Inaugural Session	Introduction to IT Initiatives in Agriculture under NAHEP *(Dr. Sudeep Marwaha)*	Introduction & Overview of NARES- Blended Learning Platform *(Dr. S. N. Islam)*		Dashboard & Calendar in Faculty Module of NARES-BLP *(Dr. Sapna Nigam)*	Project Work *(Dr. Madhu)*
	09:15-10:30	**10:30-11:45**	**12:00-1:15**		**2:15-3:30**	**3:45-5:30**
(20/12/2024) Wednesday	Development of Courses in Faculty module of NARES-BLP *(Dr. Sanchita Naha)*	Innovative Teaching Methods *(Guest Lecture)*			Agri-Diksha Virtual Classroom *(Dr. Anshu Bharadwaj)*	Classroom & Assessment in Faculty Module of NARES-BLP *(Dr. Madhu)*
(21/12/2024) Thursday	Overview Session of E-Learning & E-content modules *(Dr. Shashi Dahiya)*	Video Editing Through Panopto *(Dr. Anshu Bharadwaj)*	Courses and Assessment in Student module of NARES-BLP *(Dr. Alka Arora)*		Classroom, Announcement & Reports in Student Module of NARES-BLP *(Dr. Soumen Pal)*	Project Work *(Dr. S.N. Islam)*
(22/12/2024) Friday	Overview Session of Academic Management System (AMS) *(Dr. Sudeep Marwaha)*	Linkage of NARES-BLP and AMS *(Dr. Sudeep Marwaha)*	Practical Session of Assessment and Announcement Modules of NARES-BLP *(Dr. Akshay Dheeraj)*		Practical Session of Learning Paths, Reports & Social Walls Modules of NARES-BLP *(Dr. Chandan Kumar Deb)*	Project Work *(Dr. Madhu)*
HOLIDAY (SATURDAY)						
HOLIDAY (SUNDAY)						
HOLIDAY (GAZETTED HOLIDAY)						
(26/12/2024) Tuesday	Augmented Reality/Virtual Reality *(Dr. Samarth Godara)*	Project Presentations by the Participants and Feedback Session *(Dr. Sapna Nigam)/ (Dr. Madhu)*			Soft Skills *(Guest Lecture)*	Valedictory Session

LUNCH BREAK

Transforming Agricultural Education through Digital Initiatives

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The National Agricultural Research and Education and Extension System (NAREES) of India is one of the largest agricultural education systems with 4 Deemed-to-be Universities, 3 Central Agricultural Universities, 4 Central Universities with Agricultural Faculties, 65 State Agricultural Universities (SAUs), 114 institutions (including Agricultural Technology Application Research Institute- ATARI) and 731 Krishi Vigyan Kendra (KVK) under the aegis of Indian Council of Agricultural Research. These universities and institutions offer a wide range of courses, including UG, PG, and Doctoral programs in agriculture, horticulture, animal husbandry, fisheries, and other related fields and also conduct research in agricultural sciences, provide extension services to farmers and other stakeholders.

The Indian Council of Agricultural Research (ICAR), established in 1929, is the apex body responsible for coordinating and promoting agricultural education and research in India. ICAR plays a pivotal role in formulating policies, setting standards, and developing curricula to enhance agricultural education across the country. ICAR's mission is to "promote agricultural research, education, and extension for sustainable development." It coordinates with various agricultural universities and institutions to ensure the dissemination of quality education to aspiring agricultural professionals.

The Changing World of Education and the Need for New Initiatives in Agricultural Education

Education, as a whole, has undergone a significant transformation in recent years. The integration of technology, interactive learning platforms, and real-world experiences are enhancing the effectiveness of education, promoting critical thinking, problem-solving skills, and innovation.

The evolution of digital education has been a remarkable journey. From its humble beginnings as a mere concept, it has rapidly transformed into a global phenomenon that has revolutionized the way knowledge is imparted and acquired.

Recognizing the pressing need for transformation, agricultural education has embraced the digital revolution fascinatingly.

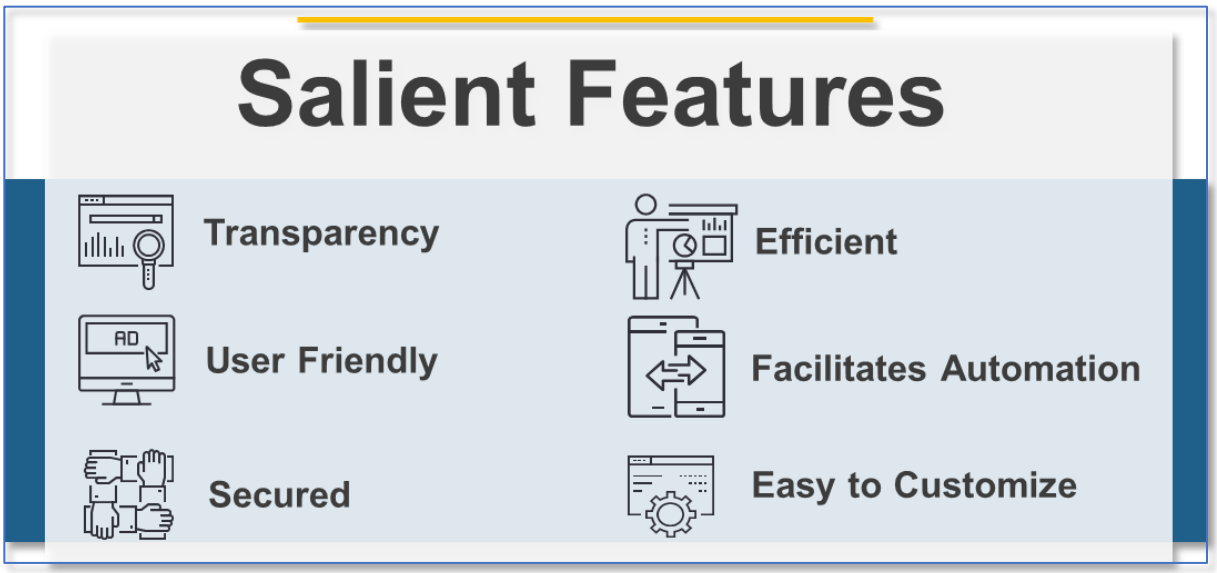
Embracing Change: ICAR's Commitment to Innovation

Recognizing the potential of strategic interventions in revolutionizing agricultural education, ICAR has embraced the digital revolution in education. This commitment stemmed from the understanding that strategic interventions aided by technology can bridge gaps, foster inclusive education, and enable the efficient dissemination of knowledge existing in agricultural education. By leveraging digital tools and platforms, ICAR aims to ensure that agricultural education remains relevant, dynamic, and resilient on the face of adversities. To keep the system dynamic and resilient, ICAR launched RAES (Resilient Agricultural Education System) under NAHEP (National Agricultural Higher Education Project) which is a robust three-tiered digital framework that has been put in place to strengthen digital infrastructure, enhance digital capacity and create robust, relevant digital content for system wide consumption. Through this initiative, ICAR is paving the way for a more inclusive and transformative learning experience for students and educators.

Digital Infrastructure

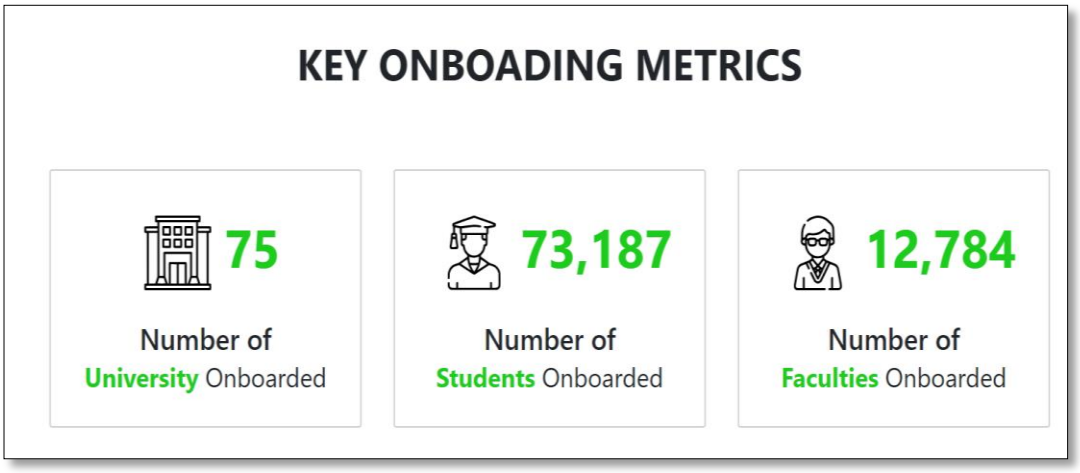
Digital infrastructure is revolutionizing the education system in the field of agricultural education by providing a platform for transformative learning experiences. Digital infrastructure is the key enabler and foundation of Resilient Agriculture Education System (RAES) to achieve the end goal of providing an exceptional learning experience to various stakeholders through enabling a robust digital eco-system. Under digital infrastructure, ICAR has launched various initiative:

Academic Management System (AMS): The Academic Management System is an integrated digital platform that streamlines administrative processes, student management, and facilitates effective communication between universities, colleges, and ICAR. Agricultural Universities and Institutions have not only welcomed this initiative but have also successfully completed their day-to-day tasks with it. A total of 63 universities are using the AMS system for their regular day to day administrative tasks. This also includes the 417 Registered Institutes/Colleges, 62,784 registered students, 7911 Registered faculty members under the universities.



Krishi Megh: The Krishi Megh was launched to meet the growing IT needs of the NARES system with the employment of applications such as e-Office, ICAR-ERP, Education Alumni Portal, e-Courses etc. More than 80 applications and websites are hosted on the Krishi Megh, which acts as a digital backbone for digital infrastructure.

Blended Learning Platform (BLP): The Blended Learning Platform facilitates a hybrid learning approach. It combines traditional classroom instruction with online modules and resources, allowing students to learn at their own pace, access quality content, and engage in interactive learning experiences. The platform is being implemented in all agricultural universities to equip students with the necessary knowledge and competencies to excel in the agricultural sector while promoting innovation and preparing them for the challenges of the digital age.



Agricultural Education Portal: The Agricultural Education Portal provides students, educators, and researchers with access to a wide range of resources, including information about agricultural universities, institutes, schemes, digital initiatives, e-learning modules and collaborative tools related to agricultural education.

ICAR has taken a holistic approach in developing educational initiatives that encompass various aspects. These initiatives include organizing hackathons through the Kritagya Hackathon Portal, establishing a network for alumni engagement known as KVC ALNET, and implementing AI-based disease identification in crops through AI-DISC. Alongside these efforts, ICAR's digital infrastructure initiatives are focused on providing stakeholders with the finest digital facilities available through effective utilization of digital resources. This approach ensures that the goal of delivering top-notch digital services to users of the portal is successfully achieved. It covers 3 Central AUs, 4 ICAR deemed universities, 63 State AUs, 4 Central University with Agriculture Faculty, 2,48,443 Unique Student ID generated.

Digital Content

ICAR has taken the lead in introducing numerous pioneering initiatives aimed at elevating agricultural education and establishing an enriching learning atmosphere for students. These ICAR initiatives, falling under the umbrella of digital content, are strategically designed to harness the power of technology, foster collaborative partnerships, and grant access to state-of-the-art resources.

Some of the key initiatives under Digital Content by ICAR include:

E-Learning Portal: The E-Learning Portal provides students and faculty with access to a diverse range of online courses aligned with the agricultural curriculum. The dynamic system of the portal ensures high quality content creation by the renowned faculty of SAUs and deemed universities. The platform is becoming popular amongst students as they are accessing content online. The institution offers 74 postgraduate courses that have been downloaded 33,923 times, and 163 undergraduate courses that have been downloaded 41,432 times.

Agri-DIKSHA*:* The Agri-DIKSHA is an online repository of agricultural educational resources. Under Agri-Diksha, Lectures are delivered across multiple disciplines through video recordings, video repositories, interactive and personalized adaptive learning, online assessments etc. The platform showcases input from 74 contributing universities, consisting of 2,575 resources in the public library section. Additionally, a total of 7,108 videos have been created, amounting to a total duration of 5,067 hours.

E-Krishi Shiksha: The e-Krishi Shiksha portal, is a digital platform dedicated to agricultural education. It provides online courses, video lectures, e-books, and interactive learning resources to students and educators. The portal has successfully facilitated access to quality agricultural education, reaching a wide audience across the country and abroad.

Virtual Reality Experience Labs: ICAR has established Virtual Reality Experience Labs to provide immersive learning experiences. VR Labs are the integration of immersive technology with research and education. A total of 74 Virtual Reality Experience Labs have been established in the country by ICAR with about 2066 students have used it since its launch.

Blended Learning: An ingress for New Era of Learning

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Background

While computers became part of everyday life for most in the early 2000s, education was slower to integrate computer technology. When it did, technology use was often limited to supplementing the usual teach-by-telling approach. As computers and the Internet demonstrated opportunities for connecting people in multiple locations as well as for more interaction, more visuals and greater access to information, innovation increased but in fragmented, uneven ways.

Soon, Internet connectivity and browser development allowed broader and more user-friendly resources for anyone wanting to learn. Web-based learning replaced CD-ROM materials. "Rather than having to distribute CD-ROMs to learners, organizations could simply upload material, e Learning assessments, and assignments via the web, and learners could access them with a click of a mouse button".

Today, computers, tablets and smartphones are available to the majority of the world's population, and technology-enabled learning has become more varied and accessible. More and more institutions and teachers are adding web-based learning to their delivery methods, and learners have access to many applications to support their learning. The mantra "anytime, anywhere" has been taken up to describe the new wave of education. However, this notion is being challenged by education practitioners and researchers, who know that learning competence is not universal, student skills are very different from skills needed to participate in social media, and access to broadband Internet is not evenly distributed.

Introduction

Blended learning, also known as hybrid learning, is an approach to education that combines online educational materials and opportunities for interaction online with traditional place-based classroom methods.

The simplest definition of the term *blended learning* is the use of traditional classroom teaching methods together with the use of online learning for the same students studying the same content in the same course. It is a "thoughtful fusion

of face-to-face and online learning experiences. There are also *blended programmes*, in which students study some courses in face-to-face classrooms and other courses are delivered fully online.

Blended learning is sometimes called hybrid or mixed-mode learning. These systems of instructional design use many types of teaching and learning experiences and vary in design and implementation across teachers, programmes and schools. The potential variations of mixed-mode learning are virtually endless; a good way to get a sense of the range of possibilities is to consider some examples:

In one school, a few teachers create mixed-mode delivery in their individual classrooms. In another, a whole programme chooses to make blended learning its choice of delivery for all students; all teachers work together to learn how to teach in a blended delivery system.

Video recorded lectures, live video and other digitally enabled learning opportunities can be a student's primary instructional interactions with other students and the teacher. In some cases, students may work independently on online lessons, projects and assignments at home or else- where, only periodically meeting with teachers to review their learning progress, discuss their work, ask questions or receive assistance with difficult concepts. In other cases, students may spend their entire day in a traditional school building, but they will spend more time working online and independently than they do receiving instruction from a teacher.

In other words, blended learning is a term applied to the practice of providing instruction and learning experiences through some combination of both face-to-face and technology-mediated learning. During the technology-mediated components of these learning experiences, students are not required to be physically together in one place but may be connected digitally through online communities. For example, one blended learning course could involve students attending a class taught by a teacher in a traditional classroom setting while also completing online components of the course independently, outside of the classroom, on an online learning platform.

Teachers are still a key part of blended learning — teachers who have subject-matter expertise and basic technology skills, along with the new pedagogies that go with technology, such as constructivism and collaboration. Blended learning expertise provides both.

Types of blended learning models

1. Flipped model

In the flipped model, traditional classroom instruction is inverted. Learners first encounter the instructional content outside of class, typically through video lectures, readings, or online modules. Then, in-class time is dedicated to active learning activities, discussions, group projects, and exercises that reinforce and apply the pre-learned material.

The flipped model allows for more personalized and interactive learning during face-to-face sessions and provides students with the flexibility to learn at their own pace.

2. Face-to-face driver model

The face-to-face driver blended learning model is the closest to traditional classroom training, as most of the training takes place in a classroom setting under the guidance of an instructor. This approach offers individual, personalized support to learners who are struggling to grab the new concepts or are falling behind the training curriculum.

3. Rotational model

In the rotational model, learners rotate between different learning modalities, such as face-to-face instruction, online activities, small-group discussions, and independent study. These rotations can be on a fixed schedule (e.g., daily or weekly) or based on learners' progress. It offers flexibility and caters to various learning styles, allowing employees to work in the modality that best suits their needs at a particular time.

4. Flex model

The flex model provides learners with significant autonomy and control over their learning path. It combines online learning with in-person support as needed. Using an adaptive learning platform, learners have the flexibility to choose when and where they access online content and resources, making it suitable for self-paced learning. Instructors are available to assist learners when required, helping them navigate through the material and address any challenges.

5. Enriched virtual model

The enriched virtual model is primarily an online learning experience with periodic face-to-face sessions. Most of the learning occurs in a virtual environment, but learners attend physical classes, or workshops at designated times for hands-on activities, assessments, or collaborative projects.

This model combines the flexibility of online learning with the benefits of in-person interaction, ensuring learners receive both individualized instruction and opportunities for group engagement.

Benefits of Blended Learning and Virtual Learning

While there are many student and learner benefits of implementing a blended learning model, here are seven of the most impactful benefits.

1. Combination of Offline and Online

A mixture of both offline and online training approaches give you the best of both strategies. Blended learning is quite flexible and adaptable as compared to a single-method approach. It takes every type of learner into account, whether they prefer the traditional classroom, online sessions, or a mixture of both, meaning no student is left behind.

The right blended learning model helps you break the monotony of corporate training, and achieve higher employee engagement levels through a plethora of training modes including multimedia, presentations, instructor-led training, classroom workshops, real-life projects, etc.

2. Cuts costs and improves ROI

Blended learning helps you reduce your training costs as fewer trainers for less time, means fewer expenses for travel and accommodation. Furthermore, it helps to reduce the number of man-hours spent on traveling, resulting in a significant increase in productivity.

Of course, online training is not free of charge as it requires multiple resources and skilled training facilitators to develop high-quality remote training content. However, you can keep its cost at low levels by opting for many free educational technologies available today.

All in all, the blended learning approach can significantly increase your corporate training's ROI by reducing traditional training costs and improving employee productivity.

3. Facilitates corporate training feedback

Feedback from employees is used as an indication of their performance levels. But the traditional training methods make it challenging for organizations to collect employee feedback regularly. The self-reporting surveys are unreliable most of the time, which might affect the quality of employees' performance within an organization.

An effective blended learning platform lets employees track their performance via periodic online quizzes and tests and saves you valuable time spent in collecting training feedback in a physical environment. Online blended learning

platforms can help track the time taken by an employee to complete a task, the number of times they take a lesson, and the efficacy of blended learning.

Furthermore, the collaboration of multiple learning modules makes it easier for organizations to monitor and measure the effectiveness of their blended training program. The division in modules will help you collect employee feedback in small chunks that are frictionless and not intrusive.

4. Allows employees to learn at their own pace

A successful training plan is one that can work with every individual's schedule. The training program should be available whenever an employee is ready to learn.

An effective blended learning platform leaves no employee behind as it allows every employee to move through the online portion of the program at their own pace and ask queries in person during live meetings. It's a win-win for balancing busy schedules, employee preferences, and pace of learning.

Training via a blended learning approach makes your employees more active and helps them develop critical thinking because of face-to-face and technology-enhanced approaches.

5. Blended learning can be customized

Combining instructor-led training with online courses offers a unique opportunity to customize training to meet employees exactly where they are in terms of skills and knowledge.

Blended learning allows organizations to set up multiple channels that cater to every employee's learning style and demands. Information in customized training programs can be presented in different formats, based on an employee's learning preferences and goals.

The tailor-made learning program enables employees to find information through online resources, webinars, ebooks, etc. With such an approach, learners can experience the advantages of a traditional classroom, along with the flexibility of eLearning.

6. Provides ultimate flexibility

Is the online lecture moving too fast? Hit pause. Having trouble understanding a particular concept? Discuss in the face-to-face session. Whatever your employees' needs are, blended learning is flexible enough to meet them.

As discussed in the previous point, blended learning gives learners the freedom to learn at their own pace, in the comfort of their own space offering them great flexibility in learning. Also, blended learning adds the much-needed warmth of human interaction that enables learners to interact with a subject expert to clarify their doubts before they could affect their progress.

7. Increased knowledge retention

A blended learning approach helps ensure that you reach all of your employees, whether they are visual, auditory, or kinesthetic learners. It only makes sense that reinforcing training by activating more senses helps retain information longer than in a traditional approach.

Conclusion

Blended learning for corporate training is not only cost-effective but also a more natural way to learn. If you need just one word to describe using blended learning for corporate training, it is “flexibility”. However, it is being effectively implemented in Agricultural Education across universities.

To boost the effectiveness of your blended learning programs, implement digital adoption platforms such as What fix, that provide a centralized and user-friendly environment for learners to access and interact with various digital tools and resources. They help streamline the integration of online components within a blended learning program, offering a cohesive experience.

Development of Dashboard and Calendar under Faculty Module of NARES-Blended Learning Platform

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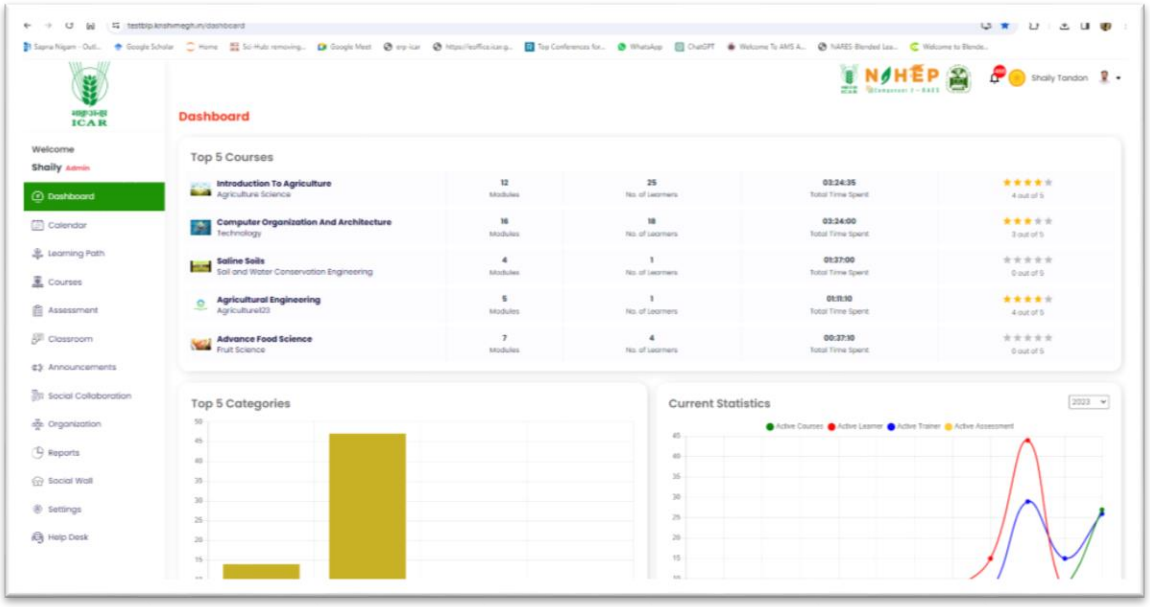
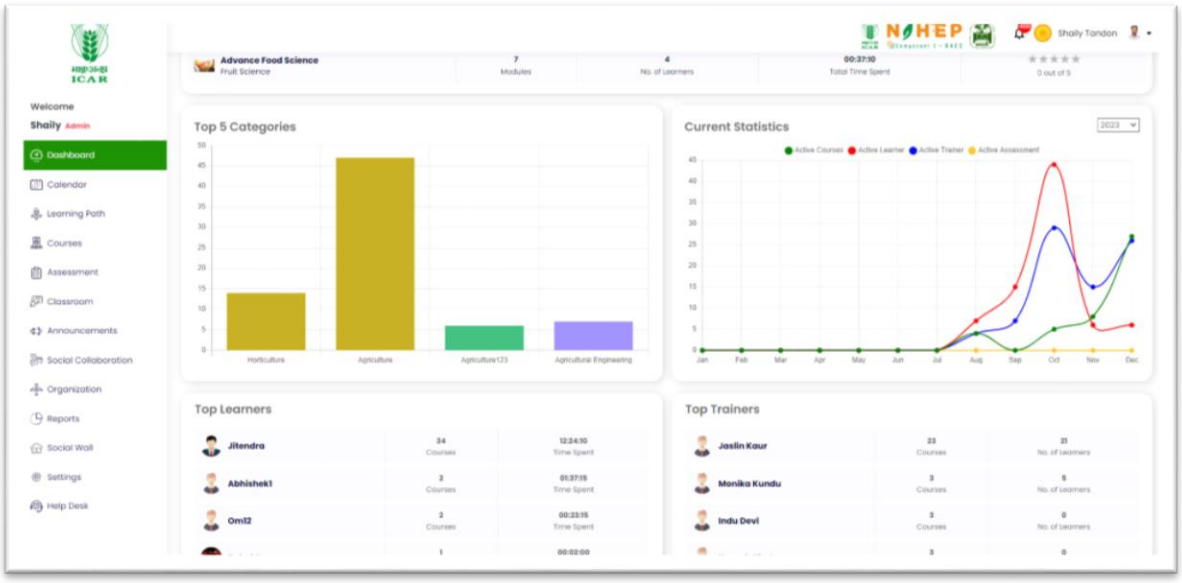
After successful login as an admin, the first screen shows the Dashboard of BLP.

Step 1: Firstly, User can view their Top 5 courses along with a number of modules, learners, total time spent, and rating for each course respectively.

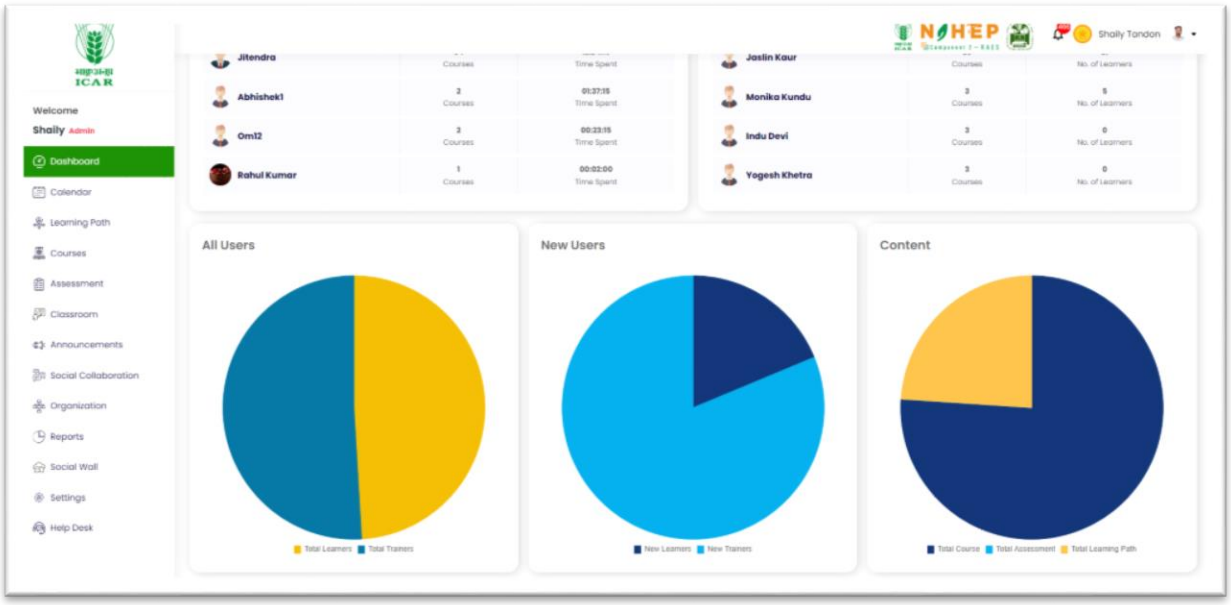


Step 2: The user can also view the Top 5 categories in which the course module has been developed and current statistics for active courses, learners, trainers, and assessments.



Step 3: The Top 5 learners/students and trainers/faculties can also be seen on the dashboard screen.

Step 4: On scrolling down the screen, the graphical representation of all users, new users, and content in BLP can be visualized by the users.



2. Calendar Module

The calendar module is the functionality that enables faculties to create events and meetings to conduct webinars, seminars, and video conferencing.

Faculties can create an event, add a schedule to the event, add an event title, assign invitees, and add a description of the event.

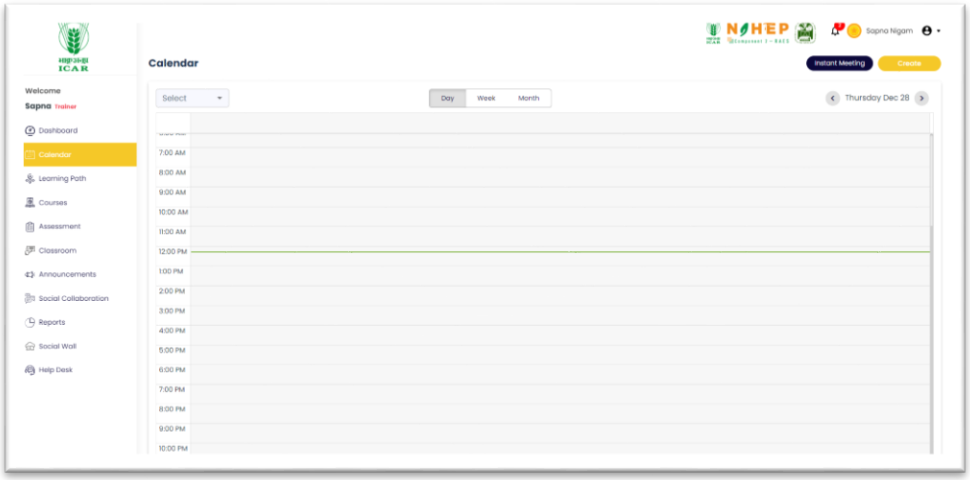
A special feature of “Instant meeting” is provided by our BLP. Users can conduct sessions/events on this integrated platform.

2.1 Calendar View

Users can select the view of the calendar as preferred. There is a table from where the users can select the view of the calendar (Day wise, week-wise & month-wise).

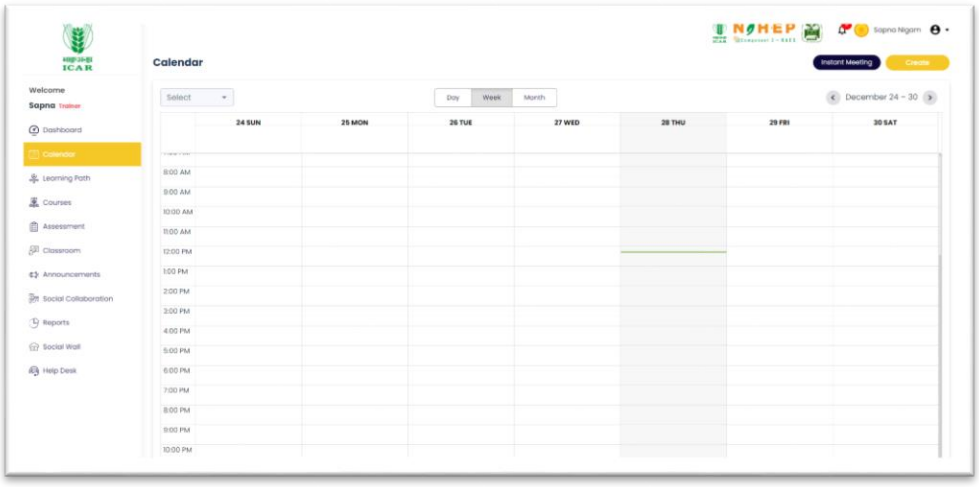
2.2 Day-wise calendar view

Select Day from the tab to view the calendar day-wise.



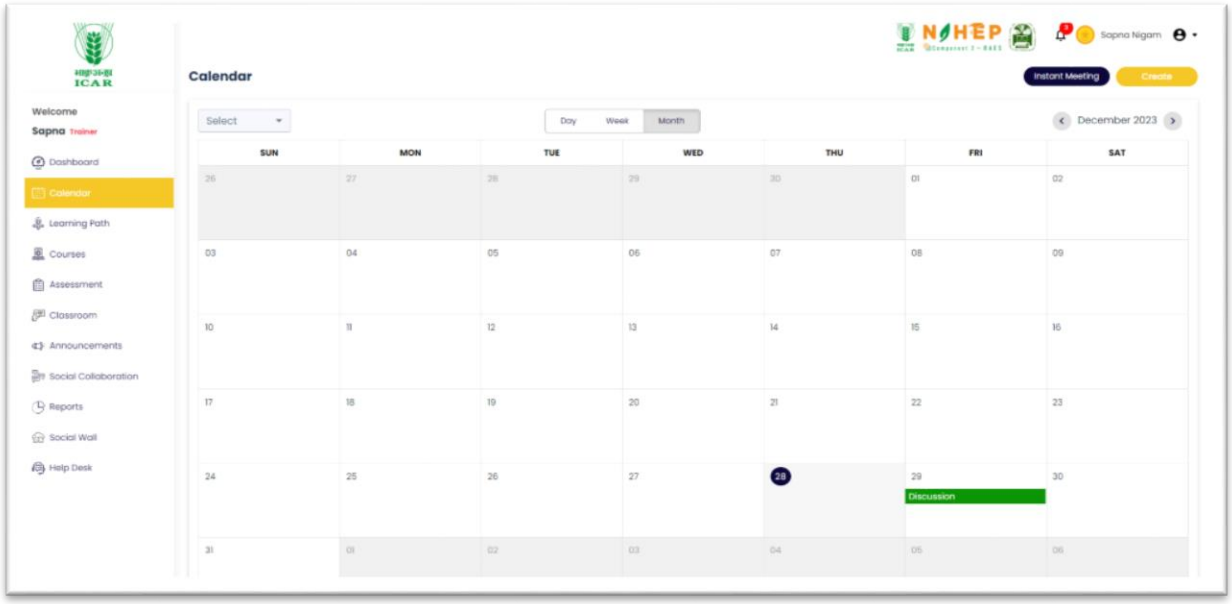
2.3 Week-wise calendar view

Select Week from the tab to view the calendar Week-wise

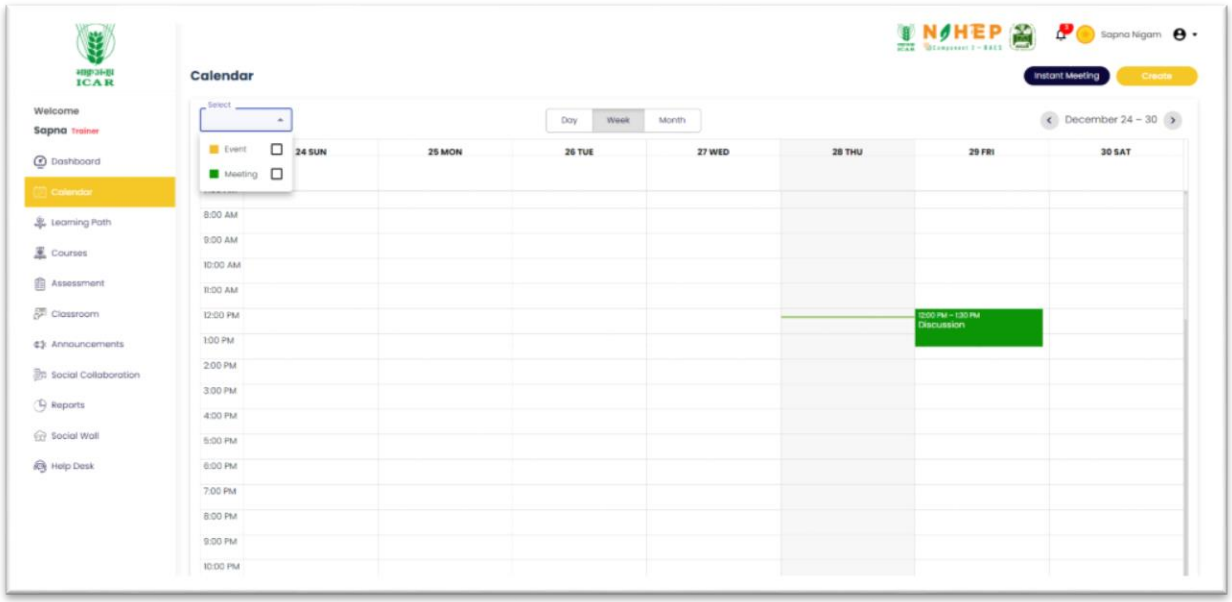


2.4 Month-wise calendar view

Select month from the tab to view the calendar month-wise.



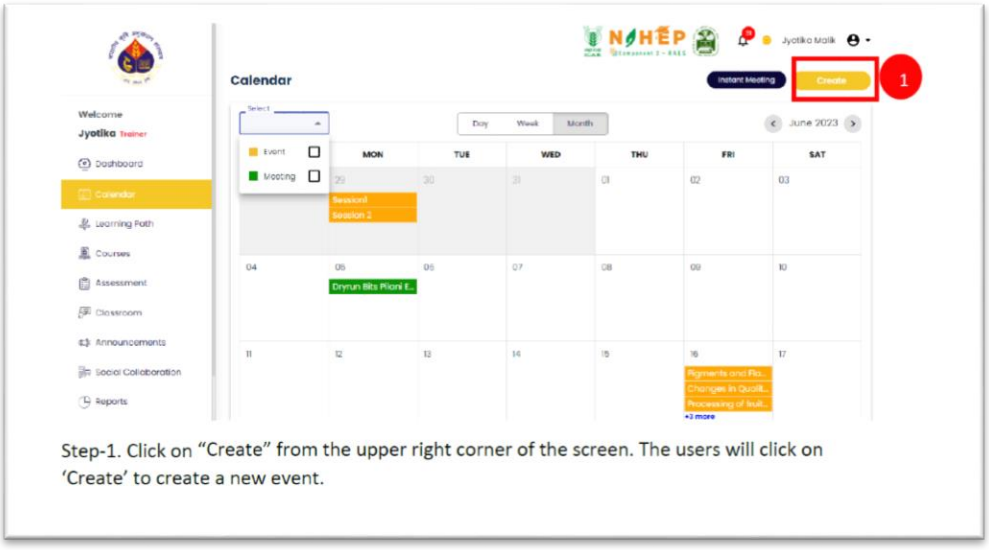
2.5 View meetings/events on the calendar



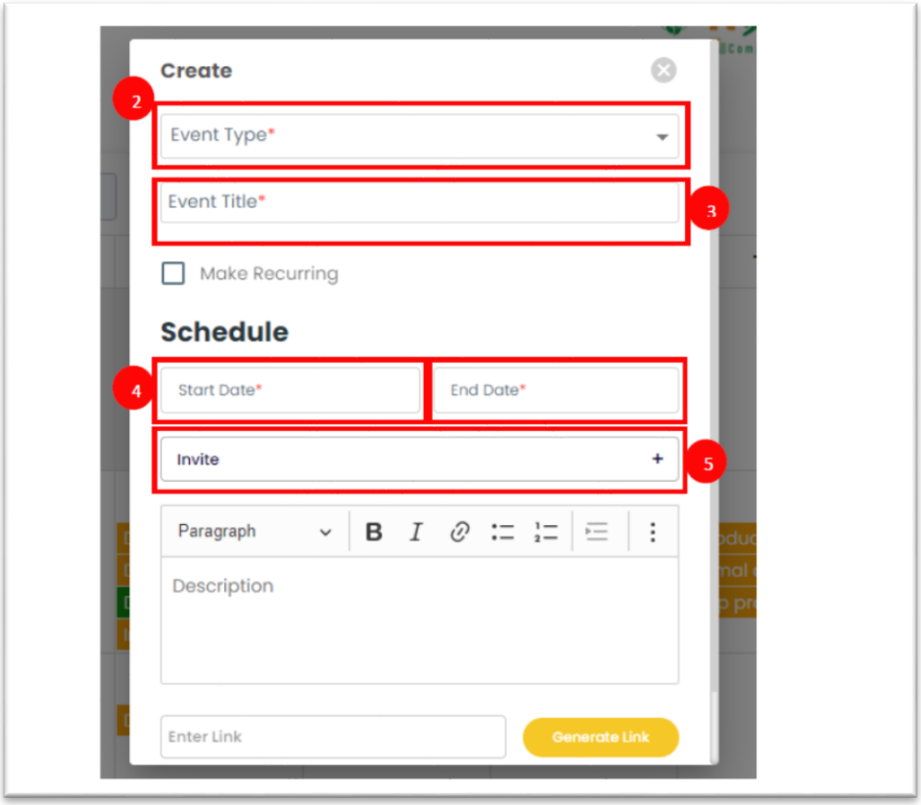
A drop-down in the upper right of the calendar gives the option to select an event or meeting. If the user selects an event from the drop-down, the user will be able to view all the scheduled events on the calendar. If the user selects meeting from the drop-down, the user will be able to view all the scheduled meetings on the calendar.

2.6 How to create an Event/Meeting?

Step-1. Click on “Create” from the upper right corner of the screen. The users will click on ‘Create’ to create a new event.



Once the user will click on create, they will be able to see a pop-up.

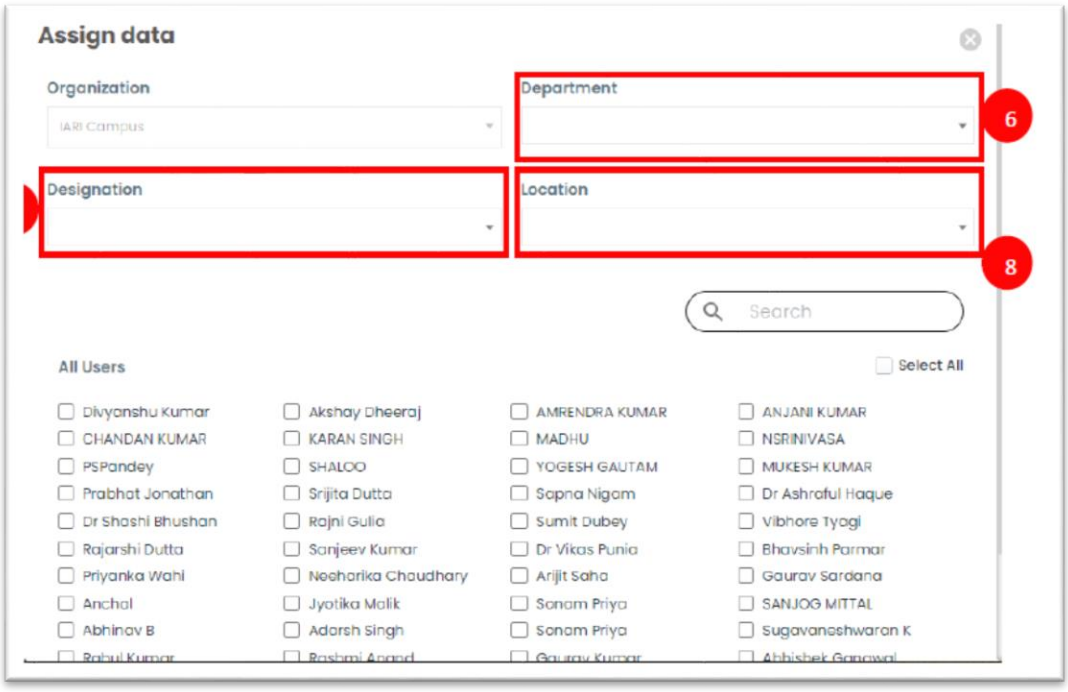


Step-2. Select “Event Type” from the drop-down menu. There will be two options i.e. event and meeting.

Step-3. Enter “Event title”.

Step-4. Select “Start date” and “End date”.

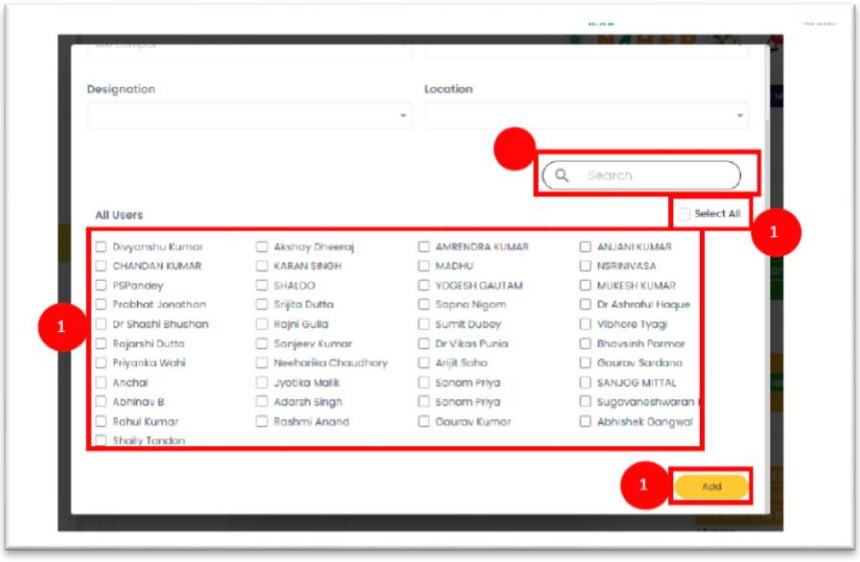
Step-5. Clicking on “+ “in the invite section. A pop-up will appear to assign students.



Step-6. Select “Department” from the drop-down menu.

Step-7. Select “Designation” from the drop-down menu.

Step-8. Select “Location” from the drop-down menu

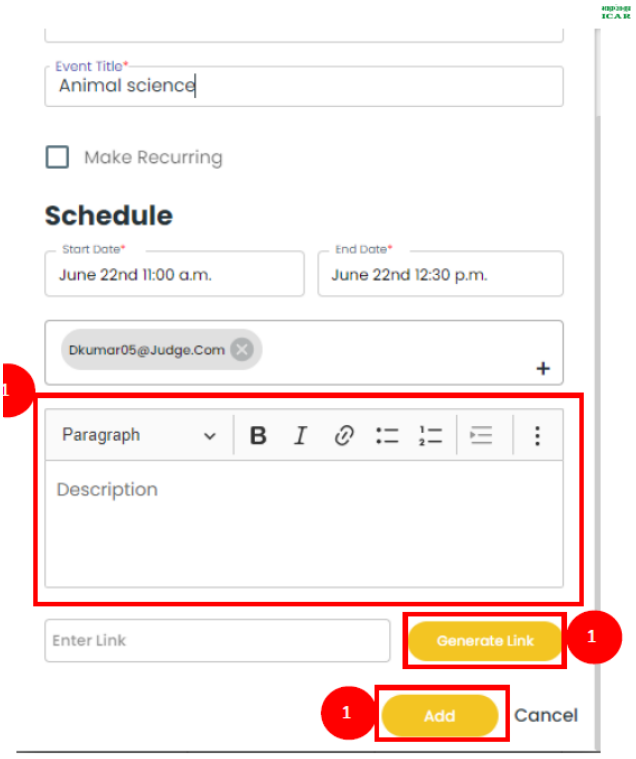


Step-9. Search the name of the student from the local search.

Step-10. Click on the “Select All” check box to select all the students.

Step-11. Click on the check box associated with the name of the student/students.

Step-12. Click on “Add”.

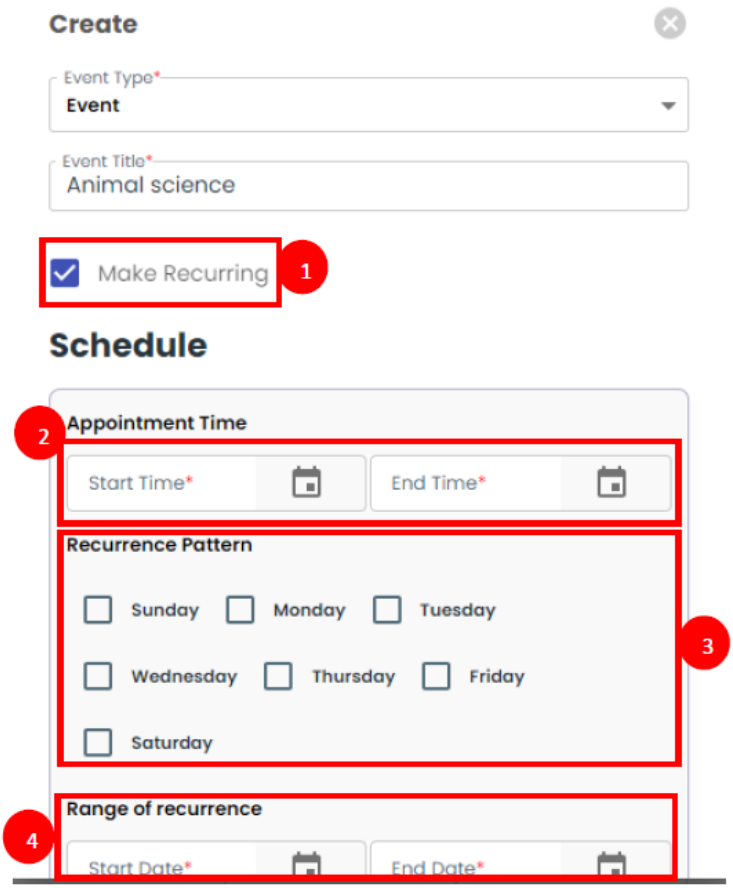


Step-13. Enter “Description”.

Step-14. Click on “Generate Link”

Step-15. Click on “Add”.

2.7 How to make Meetings recurring?



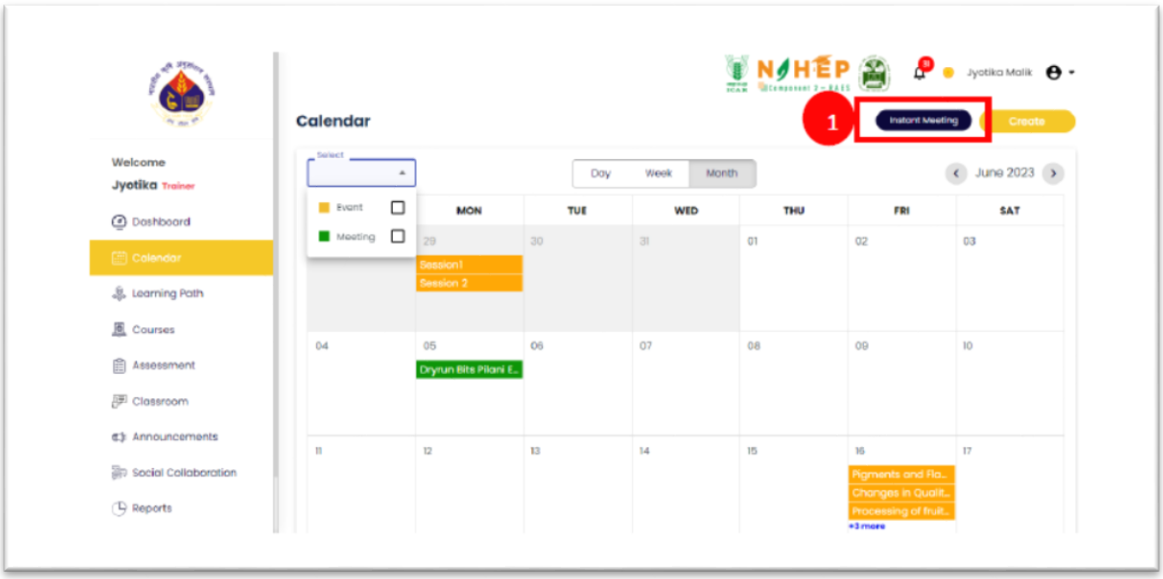
Step-1. Click on the check box “Make Recurring”.

Step-2. Select “Start Time” and “End Time” under Appointment Time.

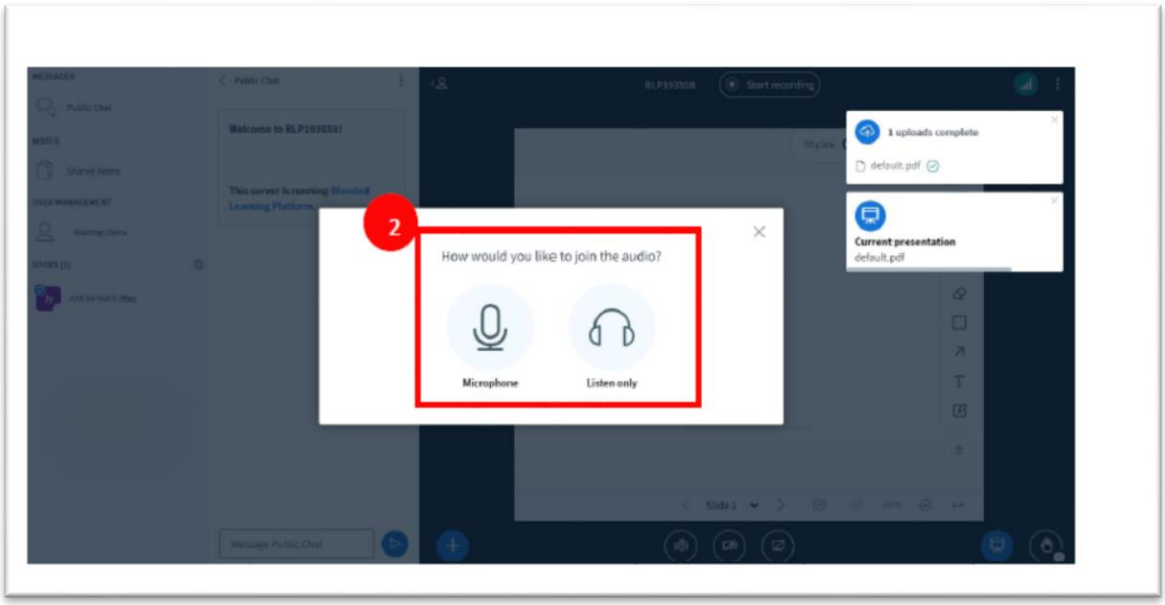
Step-3. Click on the checkboxes to select the days under the Recurrence Pattern.

Step-4. Select “Start Date” and “End Date” under Range of Recurrence.

2.8 Start an instant meeting



Step-1. Click on “Instant Meeting”.



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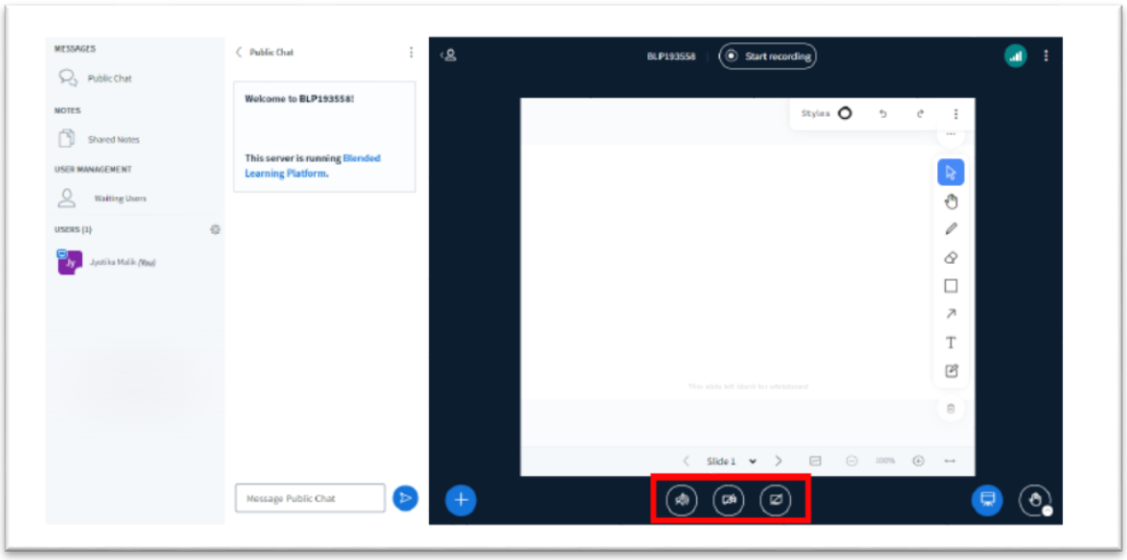
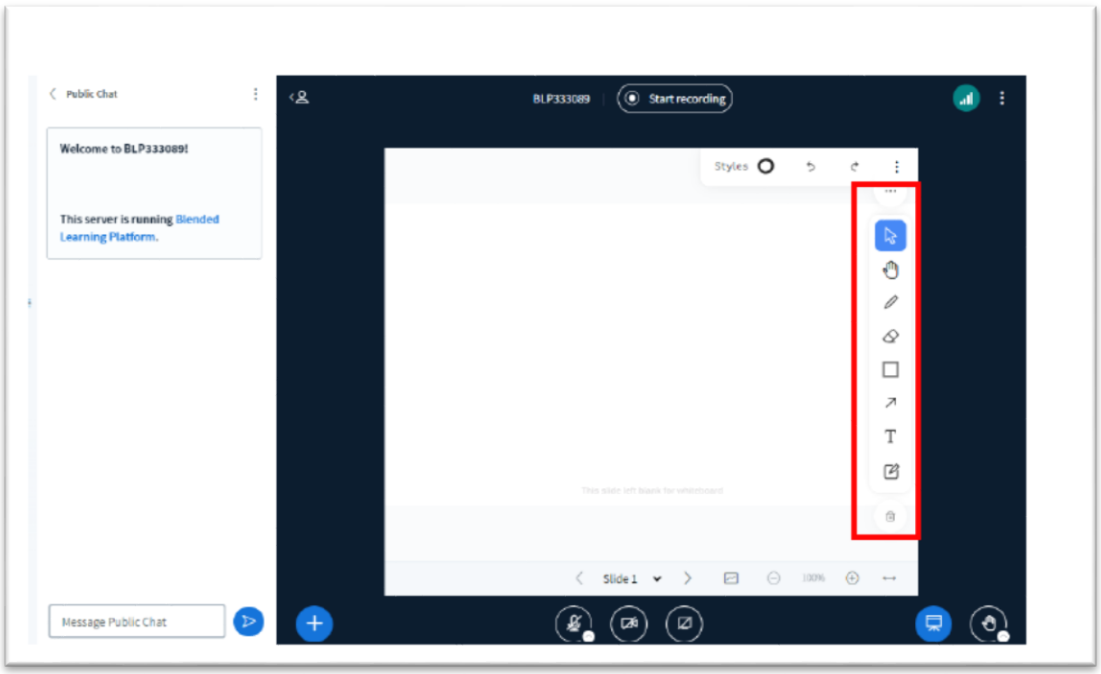
The screen will display a pop-up stating, “How would you like to join the audio?” with two options: Microphone and Listen only.

Step-2. Select Microphone or Listen only.



- Users can Mute/Unmute by clicking on the microphone icon.
- Users can On/Off video by clicking on the Camera icon.
- Users can share/unshare screen by clicking on the screen icon.

2.9 Open Whiteboard



Users have multiple features associated with a whiteboard. The features of the whiteboard are listed below:

• Select object – The users can select an object by clicking on select.

• Move object – The users can select Pan to move the board.

• Pen- The users can select a pen to draw on the board.

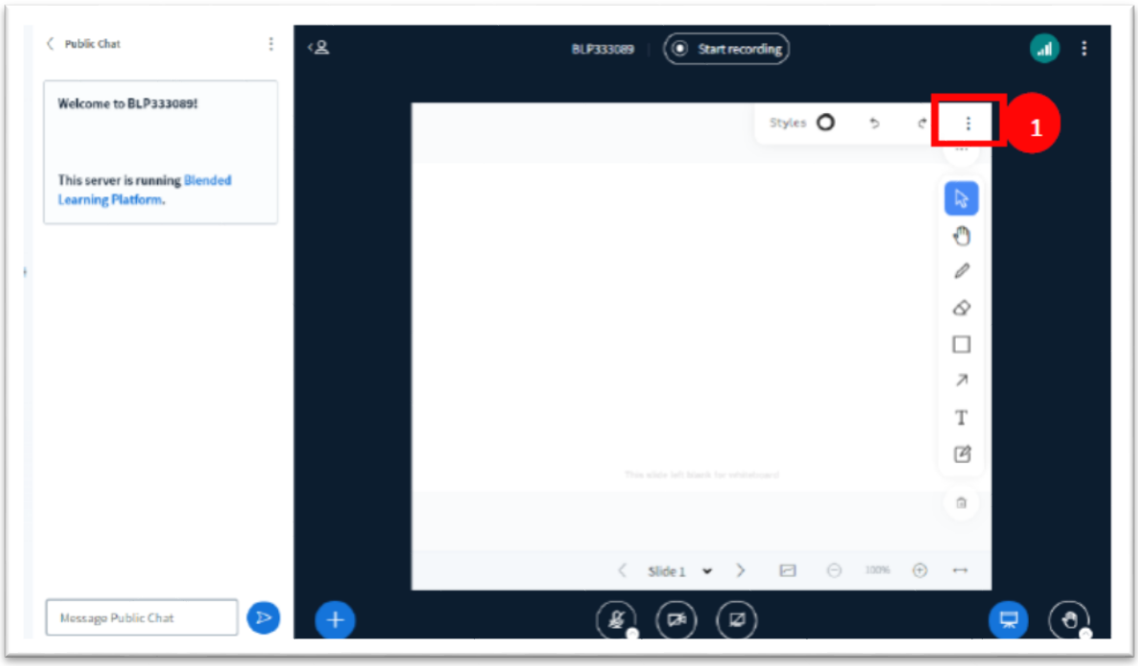
• Eraser- The users can select an eraser to erase.

• Text- The users can add text.

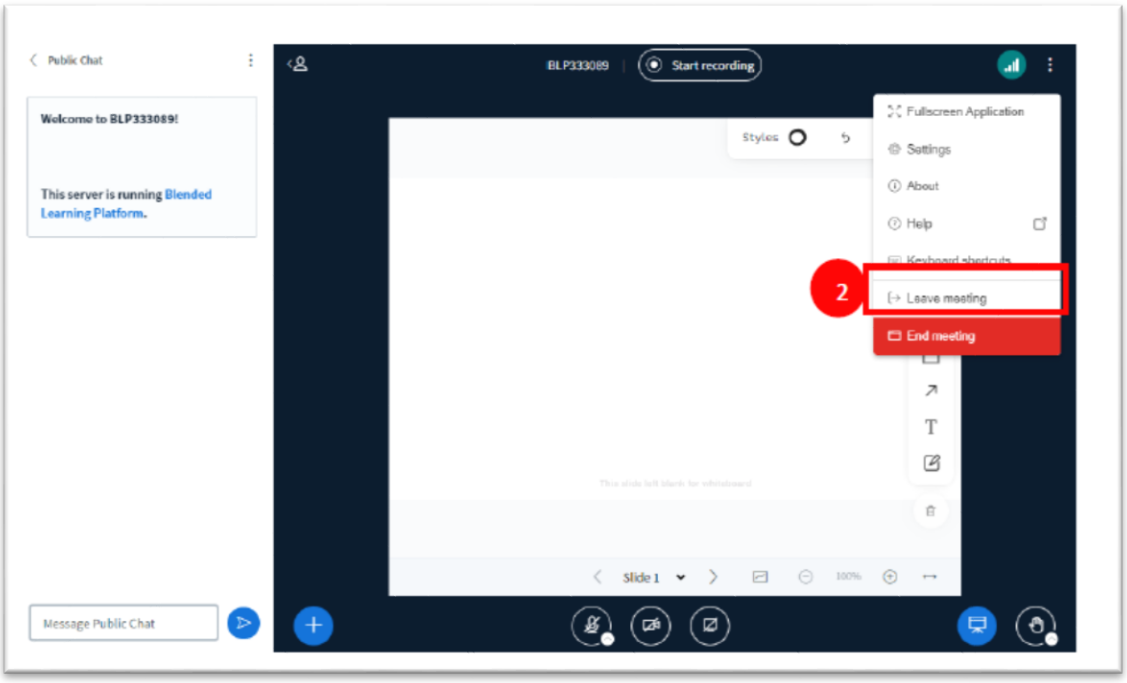
• Sticky- The users can add sticky notes.

• Delete- The users can click on delete-to-delete text.

2.10 Leave the meeting

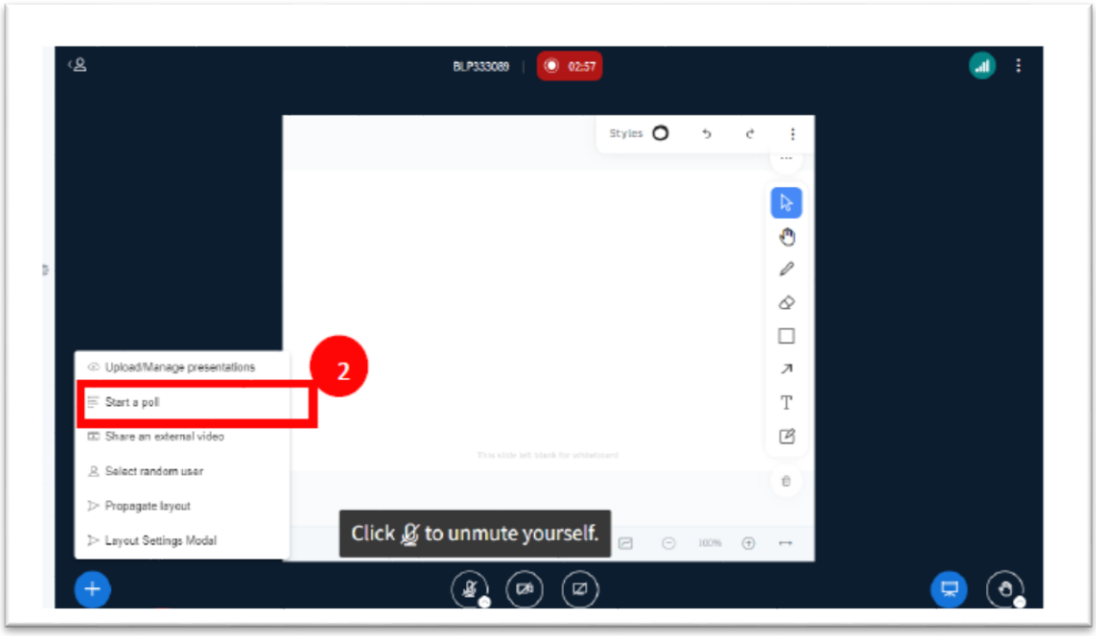


Step-1. Click on the “three dots”



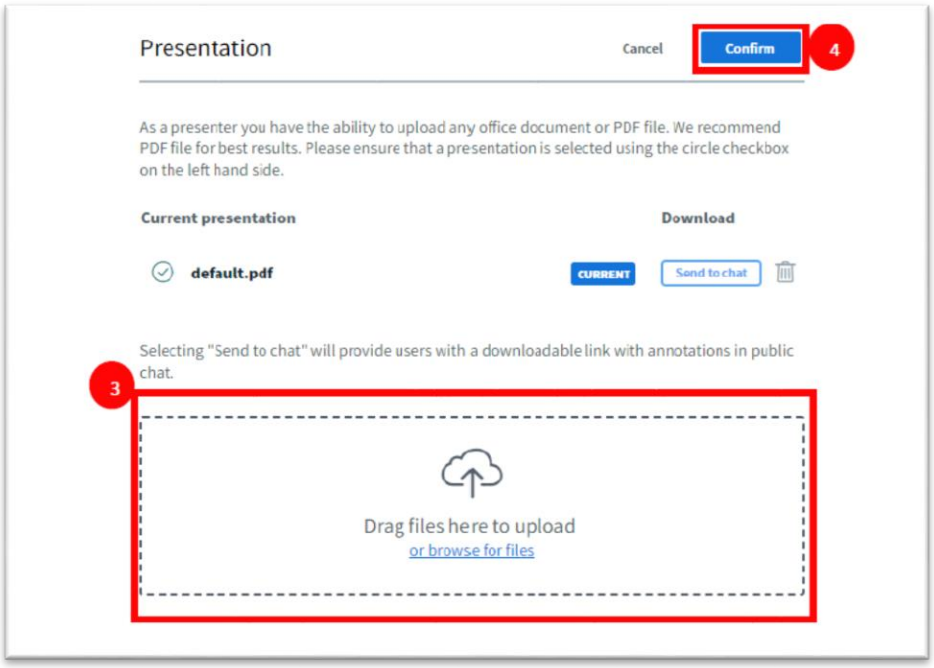
Step-2. Select ”Leave meeting”.

2.11 Upload a presentation.



Step-1. Click “+” in blue.

Step-2. Select Upload/Manage presentations.



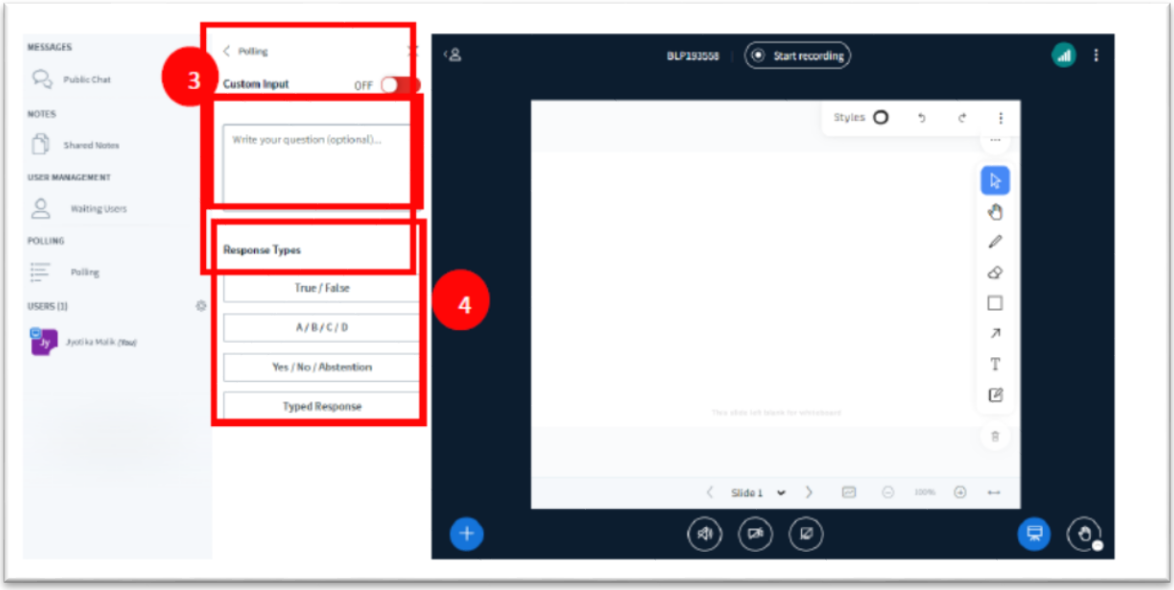
Step-3. Click on “or browse for files” or drag and drop the file in the given space.

Step-4. Click on “Confirm”.

4.12 How to start a poll?

Step-2. Select “Start a poll”.

Step-3. Type a question under “Write your question”.



Step-4. Select “Response types”.

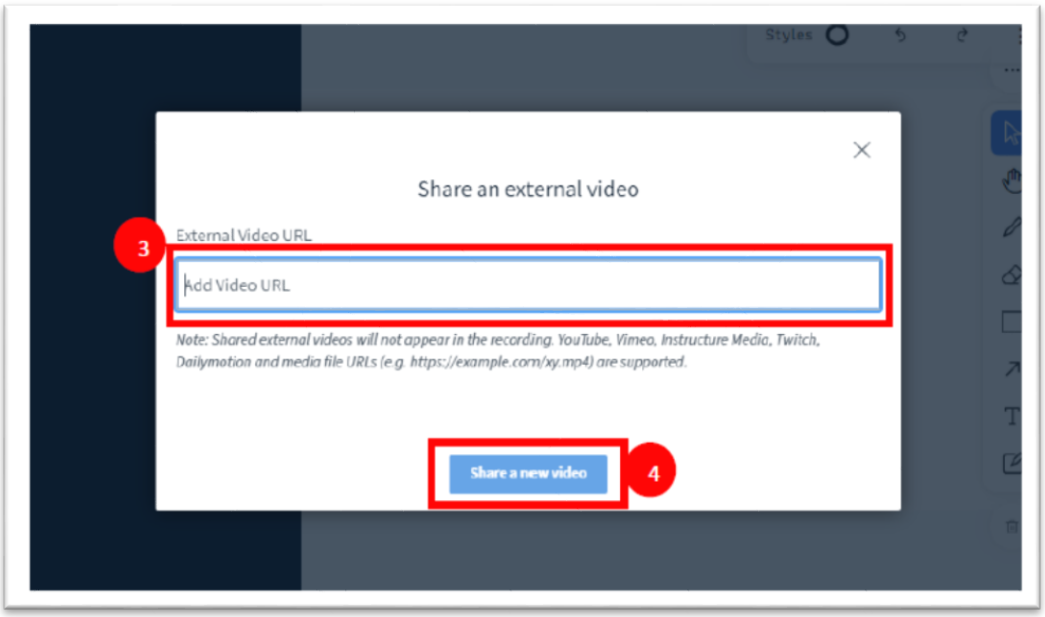
Step-5. Enter answers.

Step-6. Click on “Start Poll”.

4.13 Share an external video

Step-1. Click “+” in blue.

Step-2. Select “Share an external video”.



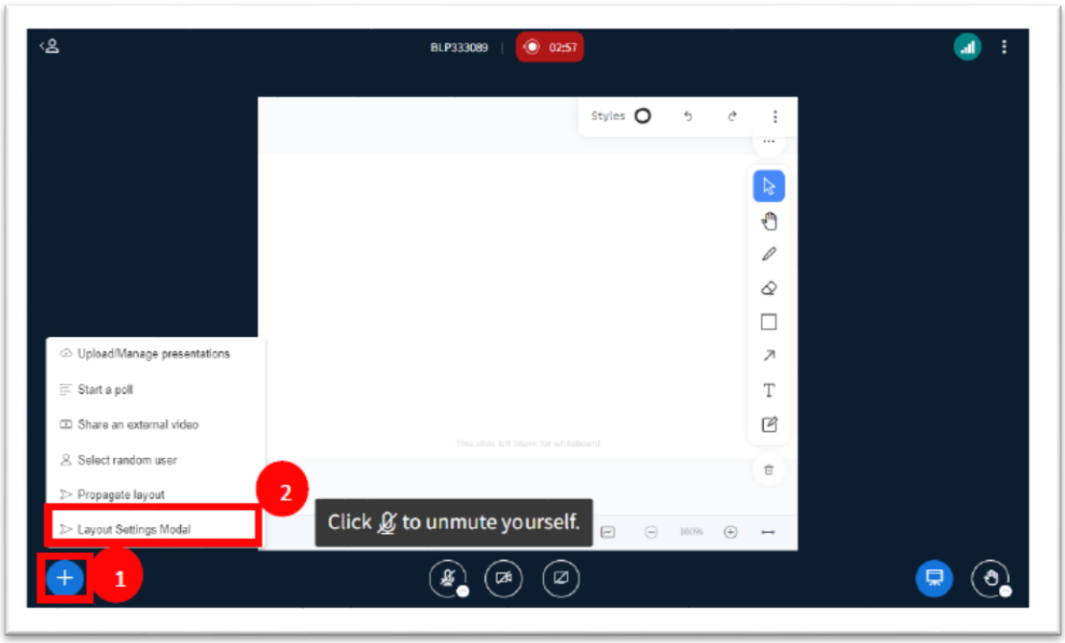
Step-3. Enter the URL, under Add Video URL.

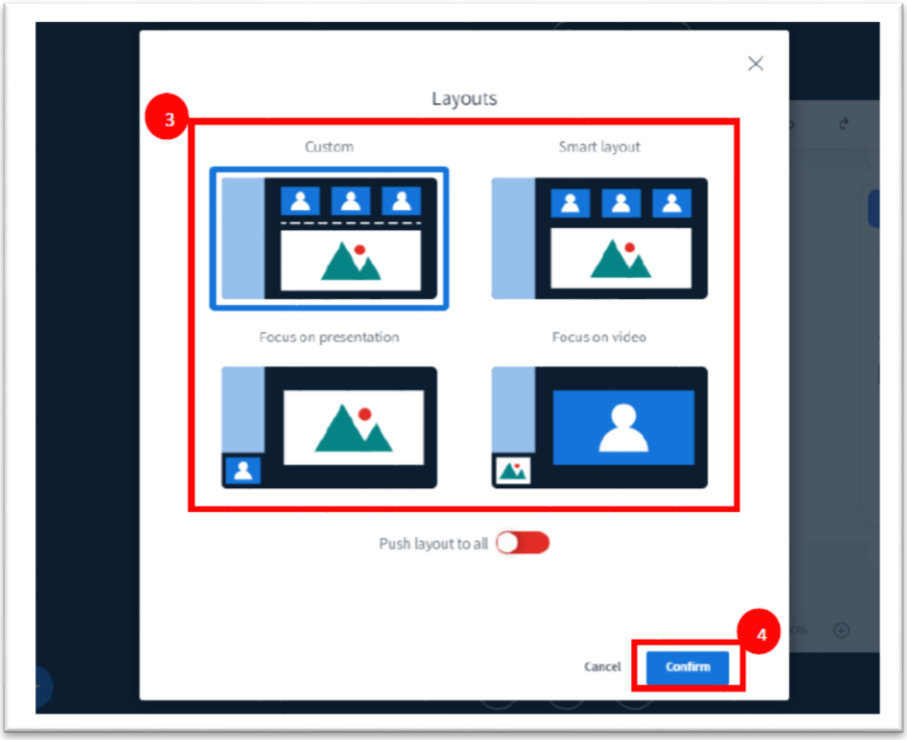
Step-4. Click on “Share a new video”

4.14 Layout Settings

Step-1. Click “+” in blue.

Step-2. Select “Layout Settings Modal”.





Step-3. Select the layout.

Step-4. Click on “Confirm”.

Development of Courses in Faculty Module of NARES-Blended Learning Platform

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Course module is visible from both faculty and student's profile. This module is to facilitate development of courses for the faculties and students can only see the courses developed by faculties but cannot create them. Course module is divided into three different segments: Category, Course Library and Course Topic.

If you are logged in as a faculty/ trainer in the BLP software, then the following functionalities can be created from your profile:

a) Create courses with additional resources (i.e. syllabus, documents, videos)

b) Can set enrolments cancellation deadline for individual courses.

c) Students can be assigned teaching materials in the form of videos for individual courses.

d) Can create courses with specific goals and milestones.

e) Create question bank comprising different questions.

Individual courses/ set of courses come under a set of categories. Universities are required to define their own set of categories according to their requirements. These categories will be defined from the admin account designated for respective universities. The categories menu is shown as following from the trainer's account:

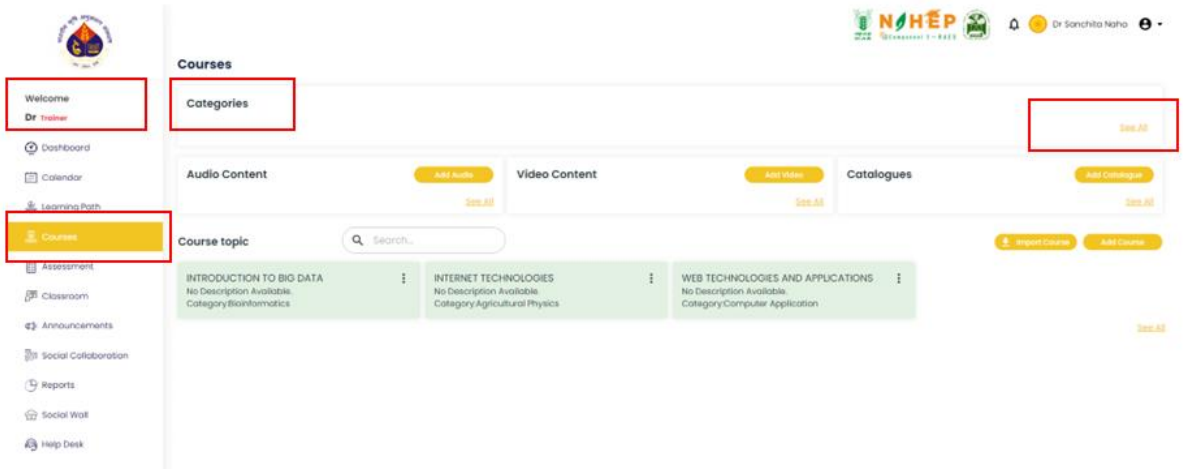


Figure 1: Screenshot of categories option under 'Courses' from faculty's account

If any faculty has already assigned courses in different categories, then by clicking on the ‘See All’ option in the right hand side of the screen one can see those categories, courses under each category and students enrolled in each courses as shown in the Figure 2.

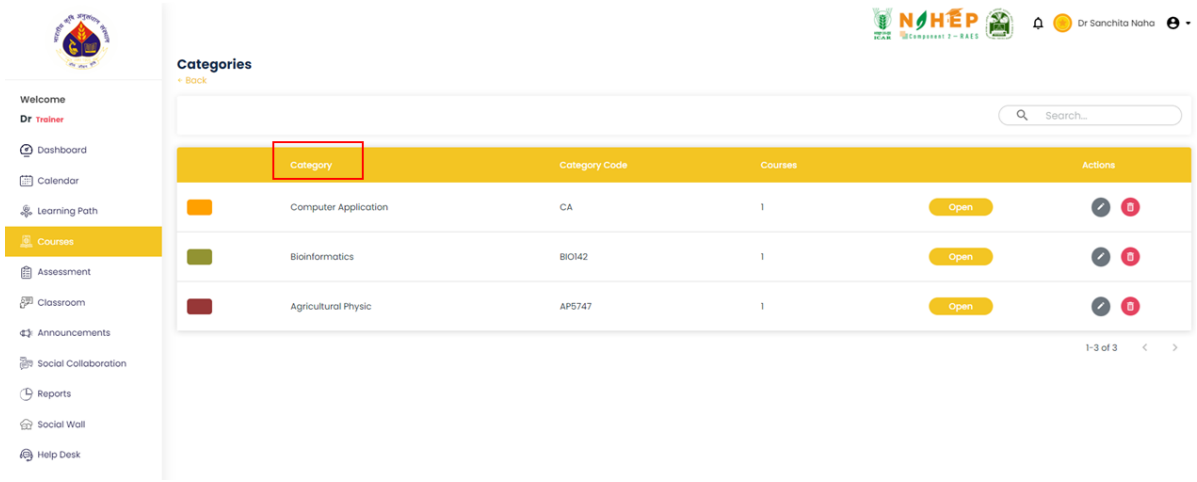
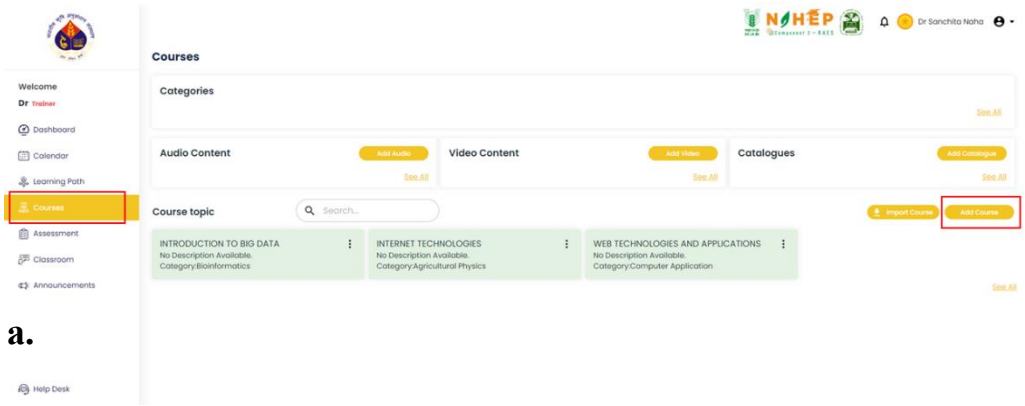


Figure 2: Screenshot of assigned list of courses under different categories

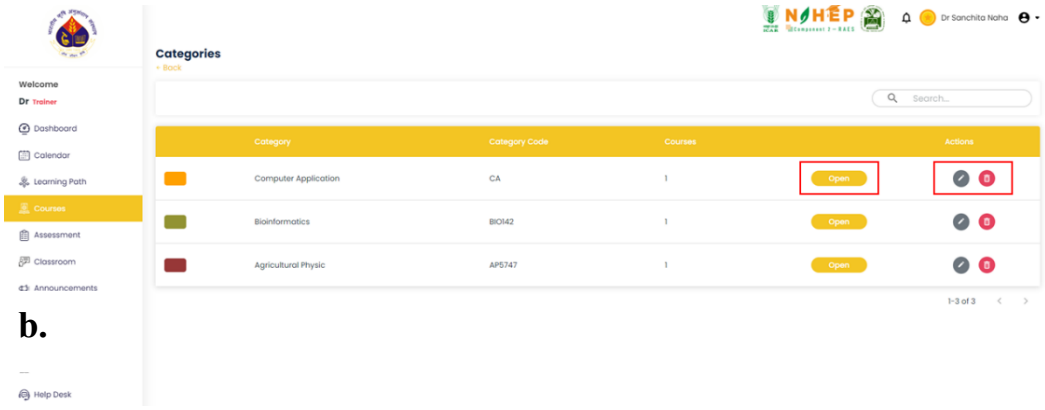
To start with adding a new course or edit any of the courses from the list shown as above under ‘categories’ option there are three options as shown below:

Option 1: Under ‘Courses’ menu click on ‘Add Course’



a.

Option 2: Click on ‘Open’ or ‘Edit’ option under ‘categories’ menu



Option 3: Under the 'Course Topic' option click on 'Edit Course'

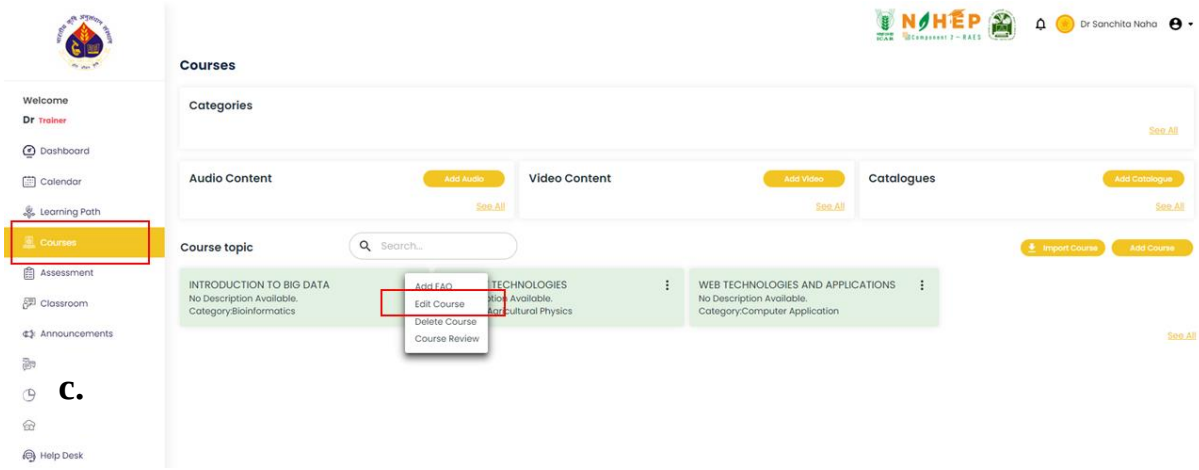


Figure3: Screenshots of options to create new courses or edit existing courses: a. Screenshot of 'Add Course' from 'Courses' menu; b. Screenshot of 'Open' or 'Edit' option under 'categories' menu; c. Screenshot of 'Edit Course' under 'Course Topic' menu

By following any one of the above 3 options, following screenshot will appear to add/ edit individual courses:

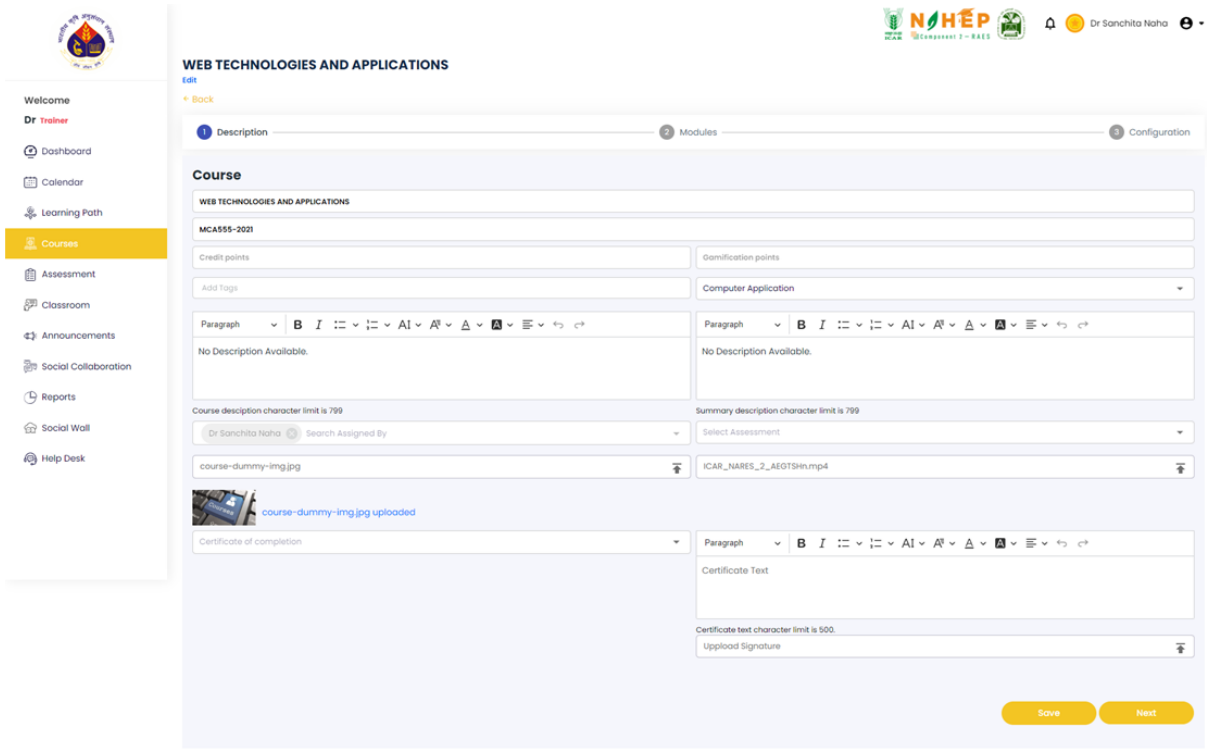


Figure 4: Screenshot to Create new course or edit existing courses

Fill the form with following relevant information:

a) Enter Course Name

b) Enter Course Code

c) Enter Credit Points for the corresponding course

d) Add relevant tags for the course

e) Add gamification points if it applies to the

f) Find the category from the drop down

g) Add description of the course

h) Add summary of the course

i) Add trainer

j) Select assessment, for which the trainer must create an assessment earlier

k) Upload any thumbnail image which will be shown next to the course

l) Upload a short introductory video

m) Add certificate

n) Add certificate text

o) Upload signature

Then click ‘save’ to save the content of the form which will let you stay on the same page, then click on ‘Save & Next’ option which will redirect you to the next page i.e. ‘Module page’.

After creating the course description, you need to add modules in the course. Step 1 – Click on ‘Add Module’ button as shown in below image.

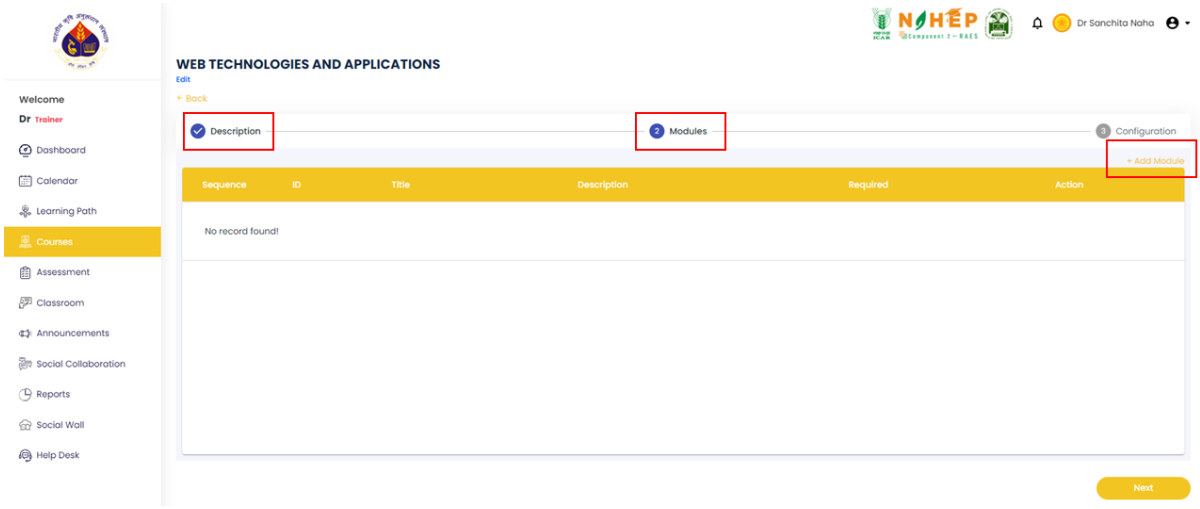


Figure 5: Screenshot to Create new module by clicking on ‘Add Module’

This will open a module description page which has to be filled in with the following information:

a) Write Module name.

b) Add Module description.

c) Enter Assessment URL.

d) Upload files.

e) Click on checkbox to make the module required

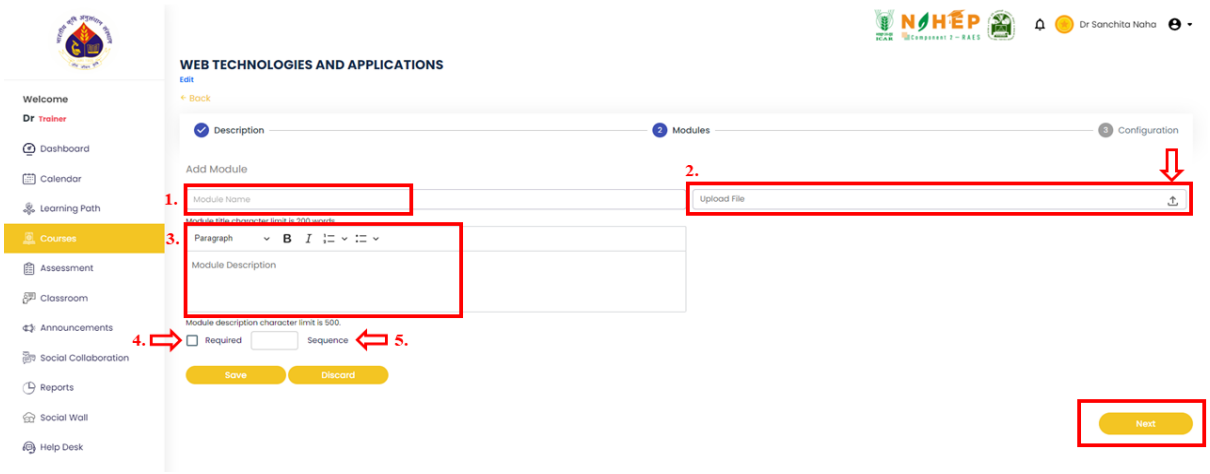


Figure 6: Screenshot to fill Module Description page from 'Add Module' option

Once you click on Upload file, below screen will appear where you upload files of different types e.g. Quiz, SCORM, Videos, Audios, Docs, PPTX, PDF, Survey.

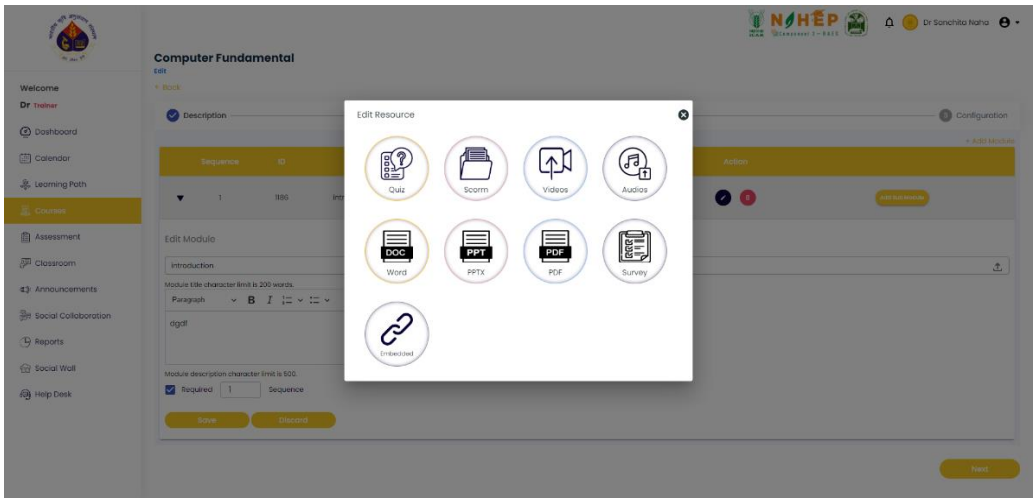


Figure 7: Screenshot to select file format from Upload File option in Add Module page

For example, if you want to upload a PDF file, select the PDF option. The following screen will appear.

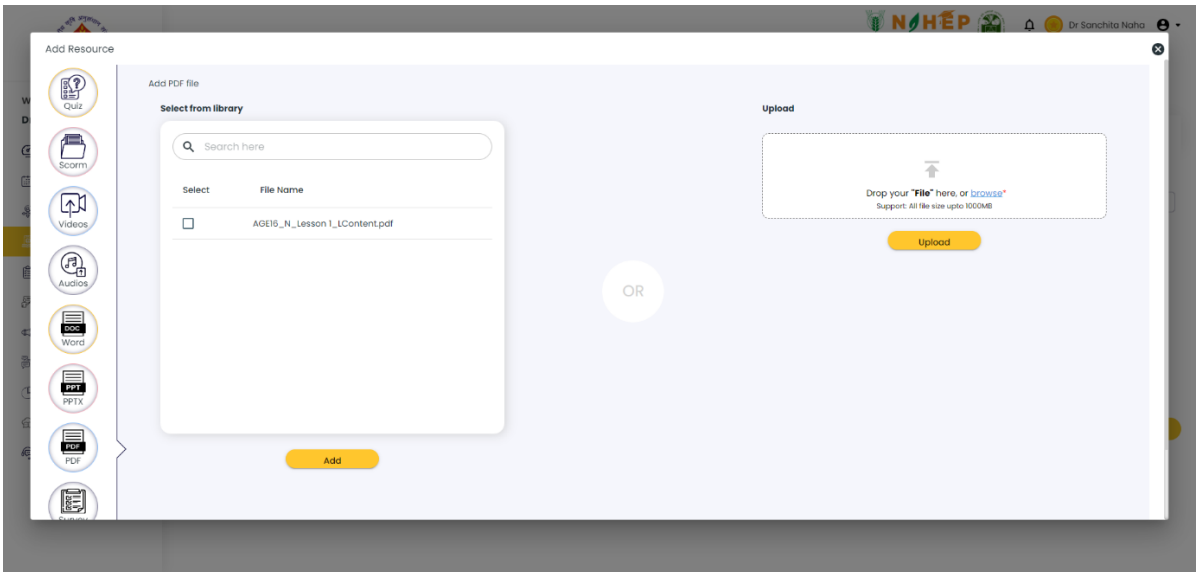


Figure 8: Screenshot to upload file from 'Add Module' page

One Module will be added as shown below. Repeat the process to add more modules. Repeat the same process to add more modules.

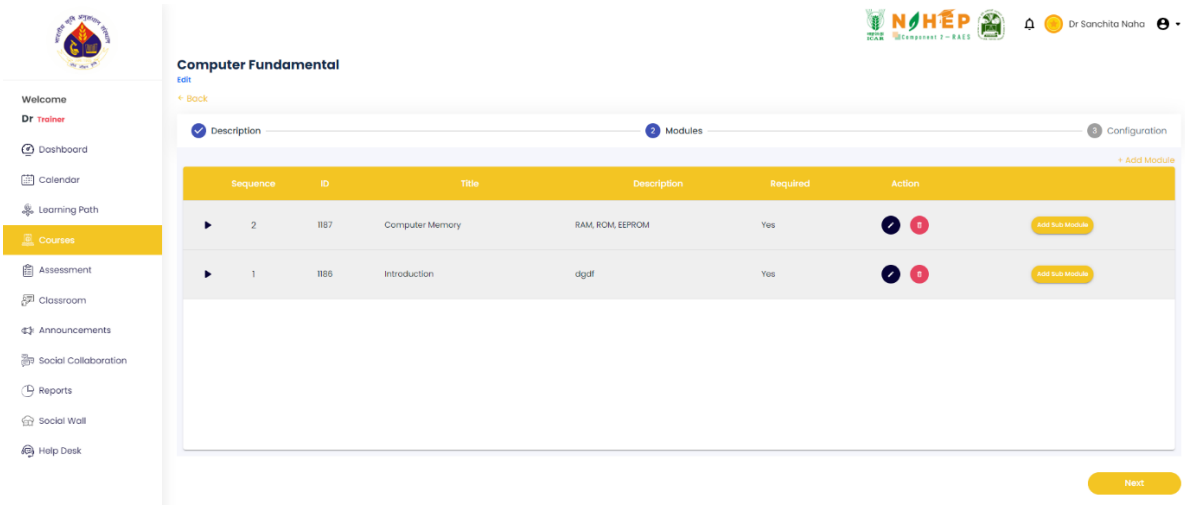


Figure 9: Screenshot of various modules under one Course

Click on the 'Next' button to go to the next page/screen which is '+Assign' to assign students. Click on 'Back' button to go to the previous page, 'Edit' icon to edit the Module, click on 'Delete' icon to delete the Module.

To assign students click on the '+Assign' button and a popup will appear to Select Organization, Department, Designation, Location and select based on the selection students name will appear. Click on the check boxes associated

with the names of the students to select single or multiple learners. If you wish to select all students click on check box associated with ‘Select All’ option.

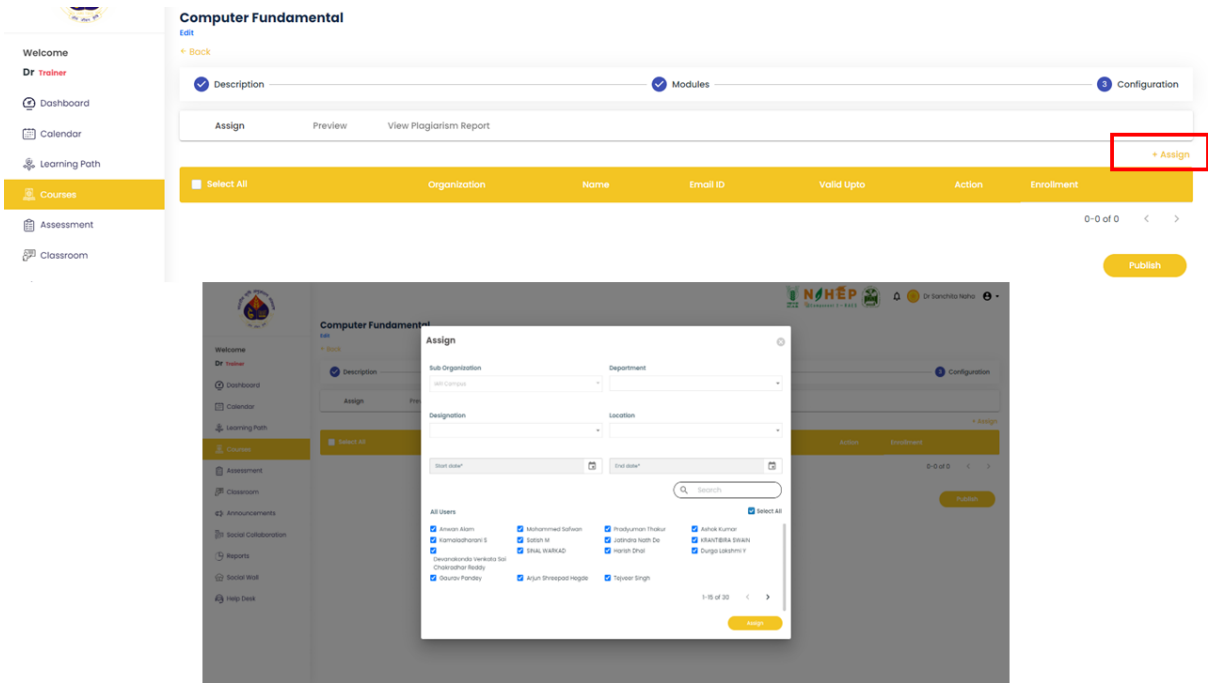


Figure 10: Screenshot to assign students by selecting Organization and Departments from ‘+Assign’ option

Successful assignment of students to modules of the courses will look like the following:

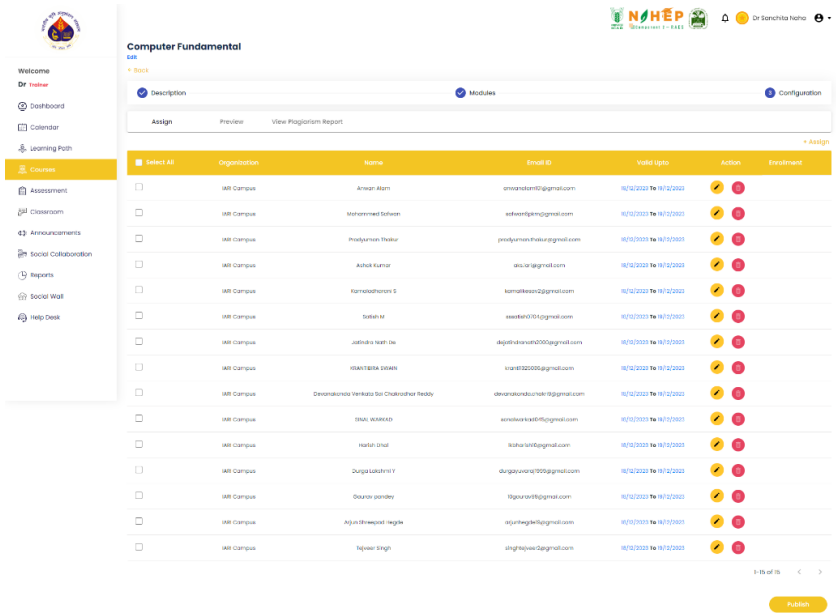


Figure 11: Screenshot of list of students assigned to modules of a course

To edit the list of students or dates click on edit icon. Follow these instructions as per requirement:

a) Click on ‘Edit’ icon to edit dates for students.

b) Click on ‘Delete’ icon to delete the details of the students

c) Click on ‘Back’ button to go back to the previous page.

d) Click on ‘Publish’ button to publish the course.

If you click on the ‘Publish’ button, it will prompt you to confirm as following:

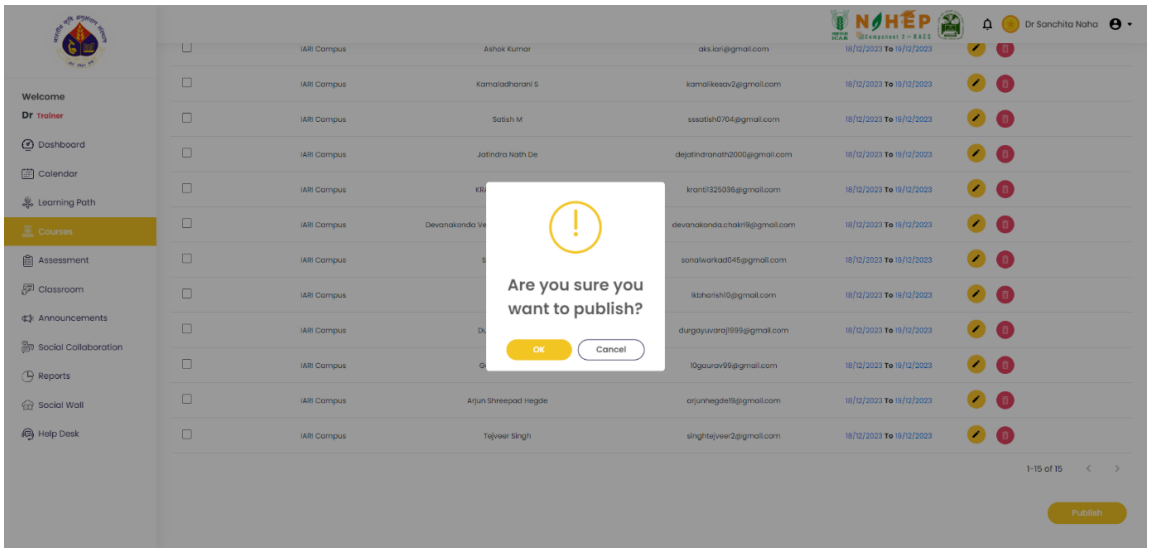


Figure 12: Screenshot to confirm before publishing any course or modules of a course

Click ‘Ok’ to publish the course and a success message will appear as shown below.

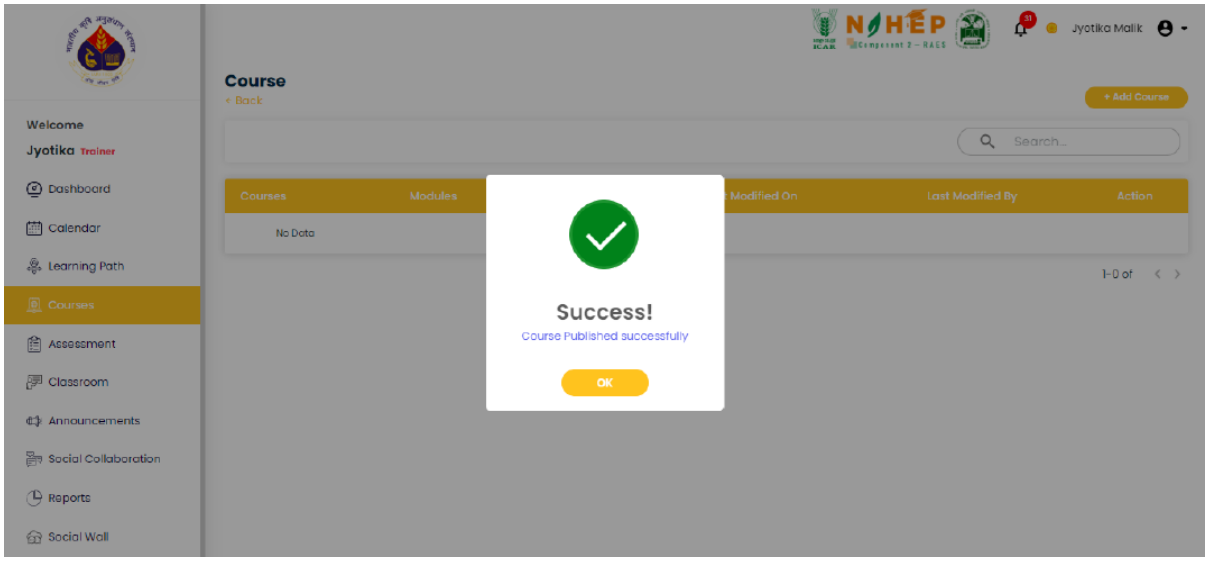


Figure 13: Screenshot to show successful publishing of one course

After you successfully publish a course Click on ‘Preview’ option under the ‘Courses’ menu to see the course preview. Scroll down a below and you will be able to see course description, Content and FAQs are available.

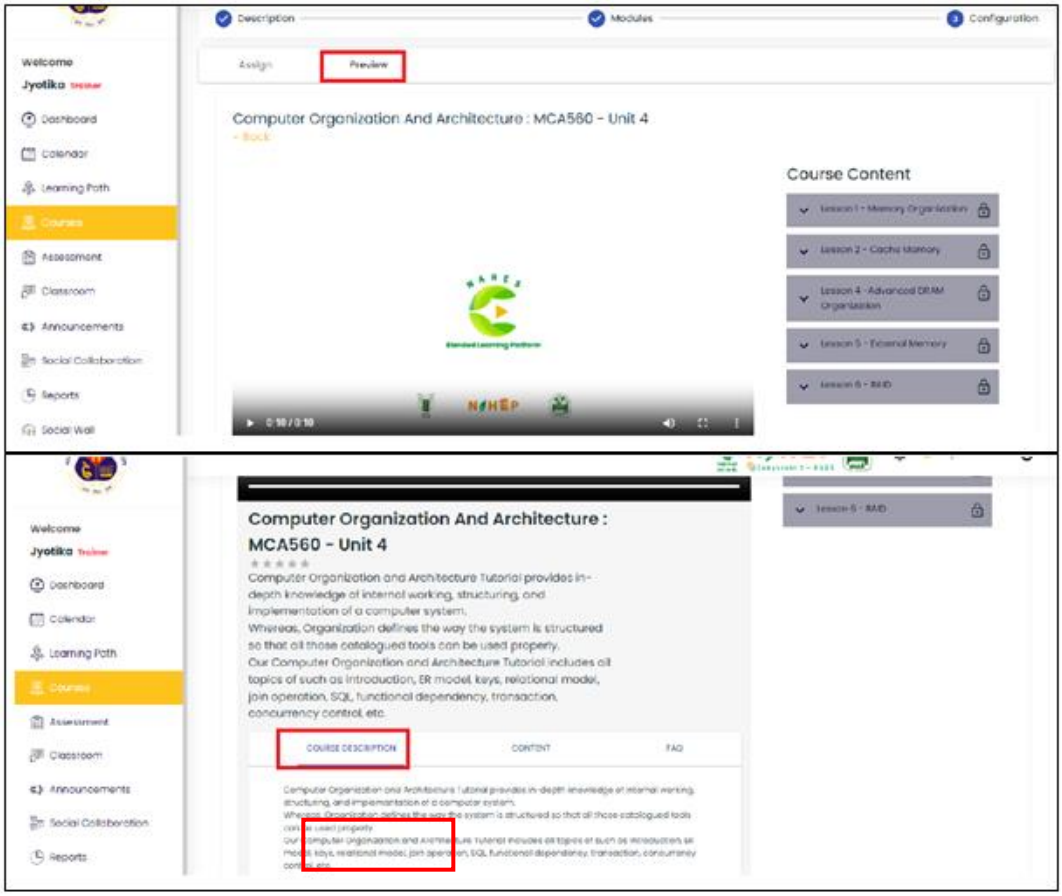


Figure 14: Screenshot of 'Preview' option under 'Course' menu

Click on 'Course Description' to see the description of the course as shown in below image. Click on 'Content' to see the course content as shown in below image. Click on 'FAQ' button to see the Frequently Asked Questions as shown in below image. Apart from creating and publishing a course, you can add Audio, Video and Catalogues. Click on Add Audio/ Add Video/ Add catalogues from the below screen. Click on Upload button (shown in Figure 15), the audio will get uploaded. To see all audio files, click on see all. Follow the same steps for video and catalogues with 'Add Video' and 'Add Catalogues' option given next to audio menu.

To edit and delete audio/ video or catalogues follow the same icons and steps as previously mentioned for adding/ editing modules. After making changes to any item, the system will prompt for confirmation, once you click 'Ok', changes will be reflected on the list of items shown.

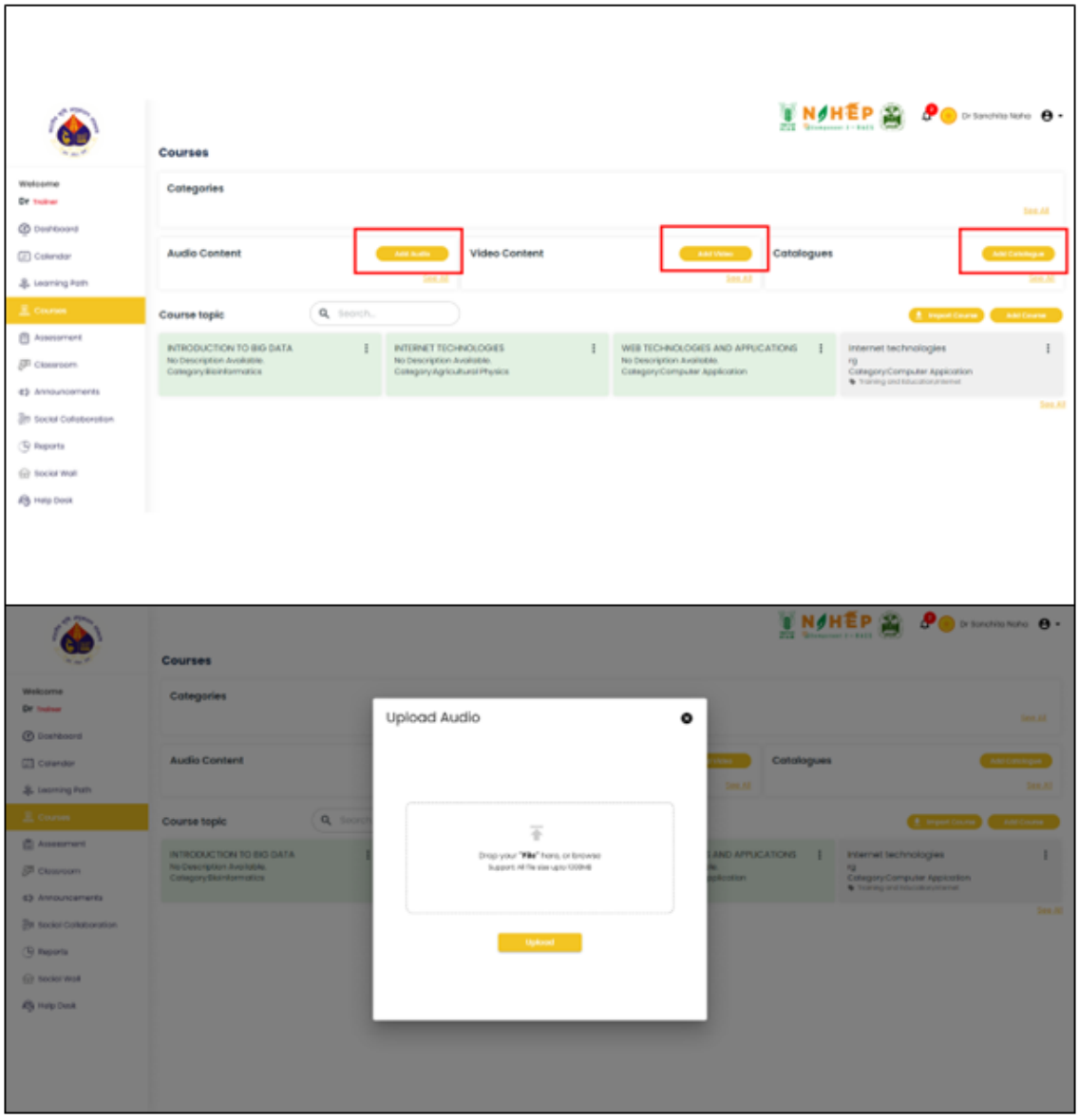
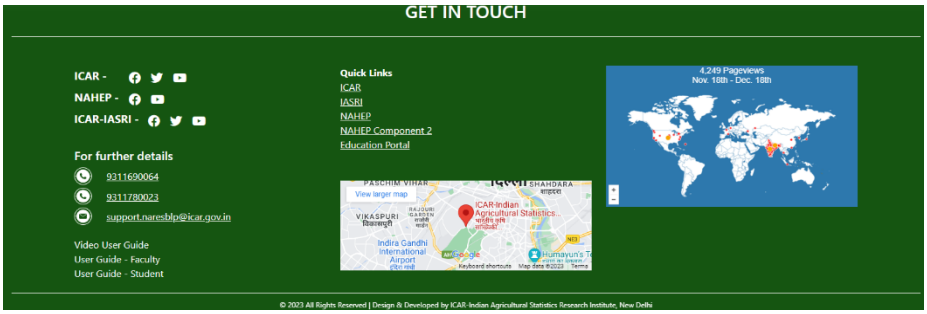


Figure 15: Screenshot to add audio, video, and catalogues

For more assistance, you can refer the instruction manuals given in the BLP website (https://naresblp.krishimegh.in/), at the bottom of the page as User Guide – faculty and User Guide – Student as shown below:



Virtual Classroom and Agri-Diksha

Agri Web Education Channel: The future of digital learning in Agriculture Education

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Introduction

Digital learning is the future of learning in India-home to one-sixth of the world's population. India is going to have the largest number of global youth population by 2030, which necessitates the need to harness the demographic dividend by use and infusion of digital education solutions in higher educational institutions to improve their skills and knowledge. The National Education Policy (NEP), 2020 acknowledges the importance of leveraging technology in education to meet the current and future challenges in ensuring accessible and high and quality education for all. The policy pushes for acceleration in the development of smart classrooms for using digital pedagogy and thereby enriching the teaching-learning process with online resources and collaborations.

Agricultural higher education is undergoing a digital transformation across India. Both offline and online education modes have grown in leaps and bounds in the past few years. The COVID 19 pandemic has further accelerated the transition to a more fluid, student centric teaching learning methodology. The use of new technology platforms and technology-aided learning tools is transforming the traditional teacher-class based teaching to digital learning in agricultural universities.

One such digital learning initiative aligned with ICAR's vision of "Strengthening and Development of Higher Agricultural Education in India and Improving Quality of Agricultural Education" under National Agricultural Higher Education Project's (NAHEP) Component II, is the setup of **"Virtual Classrooms",** to enhance the teaching-learning experience in agricultural universities.

ICAR – IASRI also strives to make best use of the modern technology and take them to the faculties and students. In this effort Virtual Classroom was conceptualized, hardware for effective usage of Virtual classroom has been installed in all the Agricultural Universities across the country.

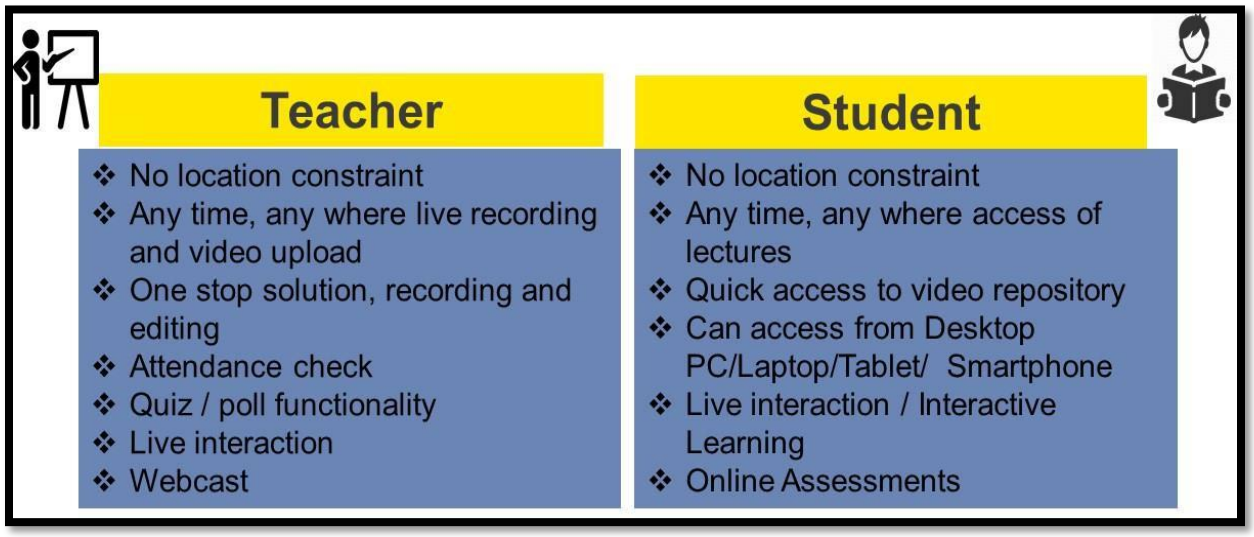
Virtual Classroom and Agri-Diksha

Virtual Classroom is a system that provides the same opportunities for teaching and learning process, beyond the physical limits of the traditional classroom's walls. This facility has been established in 75 agricultural

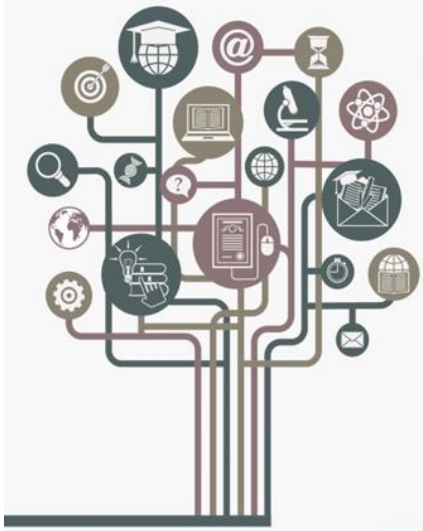
institutions across India under National Agricultural Higher Education Project (NAHEP) – Component 2 and Resilient Agricultural Education Project (RAES). Virtual Classrooms are bundled with Agri-DIKSHA Portal which is an interactive portal for facilitating teachers to leverage digital application for improved learning outcomes through developing high-quality, easy-to-understand teaching material for students.

A virtual classroom includes the infrastructure that provides same opportunities of teaching and learning process for faculties and students, beyond the physical limits of the traditional classroom's walls. It goes above and beyond the usual pedagogical tools and provide learners with a plethora of digital tools to enhance and strengthen the overall learning process. Virtual classrooms integrated with a learning management system is the road ahead in making the agriculture education system more relevant and resilient.

Few benefits of virtual classroom for both students and teachers has been illustrated below:



NATIONAL EDUCATION POLICY 2020 PUSHES FOR DEVELOPEMENT OF DIGITAL E-RESOURCES



01 The National Education Policy (NEP), 2020, has paved the path towards revolutionizing the outlook of the education landscape in the country in general, and that of agricultural higher education.

02 The NEP 2020 recognizes the importance of leveraging technology in education to meet the current and future challenges of access and quality education for all. The policy pushes for acceleration in the **"development of smart classrooms for using digital pedagogy and thereby enriching the teaching-learning process with online resources and collaborations".**

WHAT IS VIRTUAL CLASSROOM?

A virtual classroom is an online space that simulates a live classroom. Through virtual classrooms, students stand to benefit from lectures delivered through video capture; quick access to video repository; any time access of lectures; live interaction / interactive learning; online assessments; personalized, inclusive learning experiences; etc.

WHY VIRTUAL CLASSROOM?

Establishment of Virtual Classroom in Agricultural Universities is done to improve the quality of education and widen the access of education for students as well as up-skilling of teachers across the country. It is also in-line with NEP 2020, to recognize the importance of leveraging technology in agriculture education to meet the current and future challenges of access and quality education for all.

Virtual Classroom Components

Virtual Classroom is equipped with sophisticated, state-of-the-art physical infrastructure with various hardware equipment

01 DIGITAL PODIUM FOR LECTURER

One stop control centre for all the connected equipment viz. Interactive Panel / Touch Monitor with motorized angle adjustment for user convenience and a Visualizer to showcase documents, books and objects.

02 VISUALIZER

Visualizer with optical zoom feature, showcases documents, books and objects kept under the visual presenter and is projected on the big screen.

03 INTERACTIVE PANEL

Modern-day teaching tool connected to the PC with a pen which gives the faculty options to write digitally.

04 TRACKING CAMERA

Specialized camera with inbuild artificial intelligence technology to track the movement of the lecturer on the podium and Captures the audience / students sitting in front of the podium.

05 INTERACTIVE FLAT PANEL

Interactive flap panel with an 86" screen featuring 4K Ultra HD resolution and an advanced, next-generation touchscreen, enables faculties to write on the board with the specialized pen.

06 AUDIO SYSTEMS

Audio systems in the virtual classroom encompasses four speakers at various corner of the room comes with features viz. gooseneck, collar cordless and handheld cordless microphone.

Agri-DIKSHA

The virtual classroom facility is bundled with Agri-DIKSHA web channel which is an interactive portal for facilitating teachers to develop and broadcast virtual learning modules.

Virtual classrooms will be part of the **'blended learning'** method that combines on-line and in-person teaching/learning wherein quizzes, video lectures and other learning material can be embedded in virtual learning modules. It combines entrepreneurial pedagogy, collaborative teaching and the latest technological teaching tools to create a modern and effective education service environment in education setting.

Features of Agri-DIKSHA

- ✔ High quality virtual learning modules
- ✔ Quick access to video repository
- ✔ Geographic, temporal and platform independence
- ✔ Online assessments
- ✔ Easy and seamless integration capabilities
- ✔ Security and data privacy
- ✔ Lectures delivered through video capture
- ✔ Any time access of lectures
- ✔ Live interaction / interactive learning experience
- ✔ Quizzes and polls functionality
- ✔ Personalized, inclusive learning experiences
- ✔ Intelligent search mechanism

Faculty benefits

- Anywhere and anytime video recording
- Attendance monitoring and reporting
- Intelligent content search
- Live interaction with students during lectures
- Automated online assessment mechanism
- Magnification and showcasing of specimen/slides/-textbooks/journals using the visualizer
- Digital white board which allows the faculty to interact with the content during teaching
- Video editing for e-course creation embedded with additional content such as youtube videos and presentation

Student benefits

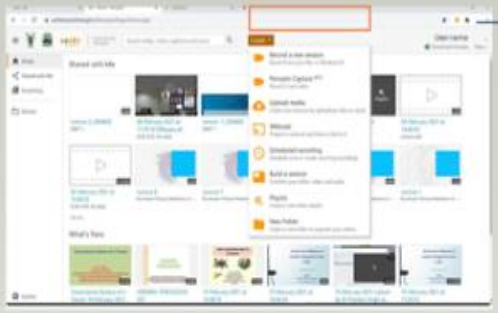
- Anywhere and anytime access to course modules
- Interactive learning and online assessments
- Easy accessibility on all devices
- Flexible and self-paced learning
- Live interaction with faculties during lectures
- Exposure to multiple disciplines

Agri-DIKSHA Portal Login setup

A.

- Agri-DIKSHA – Portal Login

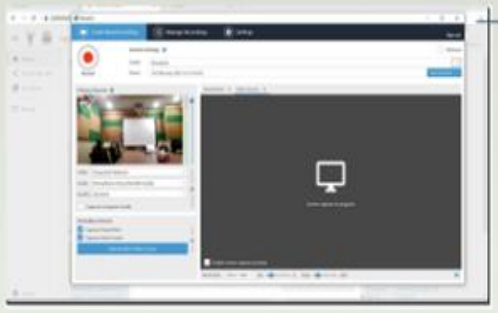
- All registered user of Agri-DIKSHA portal shall be receiving the credentials for logging-in their respective email id.
- The user needs to enter the received credential in the log-in page.



B.

- Exploring the portal options

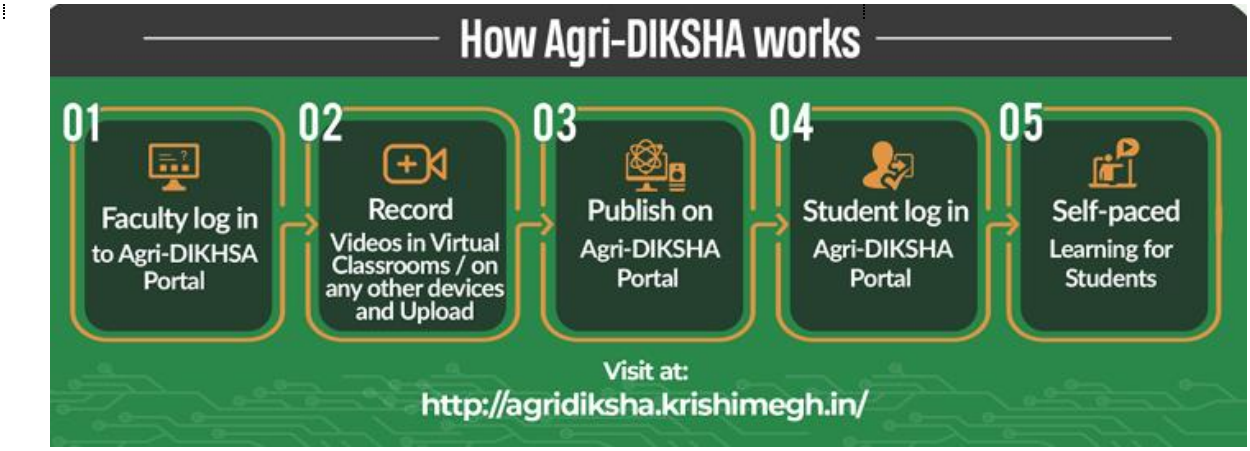
- Creating Video Lectures.
- Intelligent Search.
- Video content repository.



C.

- Recording Live Lectures

- Capabilities to embed quizzes, youtube videos, presentations etc with in the lecture.
- Seamless Integration of networking and LMS platforms.



Conclusion

In the ever-evolving landscape of education, virtual classrooms have emerged as a transformative force, offering a multitude of advantages over traditional distance and online learning methods. As the educational paradigm continues to shift, it's essential to recognize and embrace the numerous benefits that virtual classrooms bring to the table.

Virtual classrooms offer a host of benefits that extend beyond conventional learning approaches. These advantages encompass flexibility, accessibility, collaboration, personalization, and enhanced learning outcomes. While virtual classrooms may not entirely replace in-person learning, they pave the way for dynamic and effective educational experiences.

In summation, virtual classrooms herald a transformative era in education. Their versatile benefits pave the way for personalized learning, collaborative growth, and technological fluency. By embracing the advantages of virtual classrooms, we foster a dynamic learning ecosystem that empowers learners and educators to excel in an ever-evolving world.

Development of Classrooms in Faculty Module of NARES-Blended Learning Platform

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The classroom module is the functionality that enables Super Admin, Administrator, and Faculty to conduct classes, topics, and sessions. The class organizer (Super Admin/Administrator/Faculty) can also edit or delete the class. The class organizer can add credits and gamification to the topics created.

On the dashboard, every user can see a calendar with the event cards of the class or event assigned to the user. Users can also see all the classes, total topics and their scheduled sessions. On the dashboard all the on-going sessions is visible to the users. Users will have the privilege to conduct online classes through our inbuilt video conferencing feature. Also, users can conduct offline classes through this functionality.

The classroom module supports quizzes and surveys aligned with every module in a course. These surveys are conducted as feedback on the session and delivery of the session. Classroom modules also support assessment with continuous online procuring and easy question navigation for students.

View Class from the Dashboard

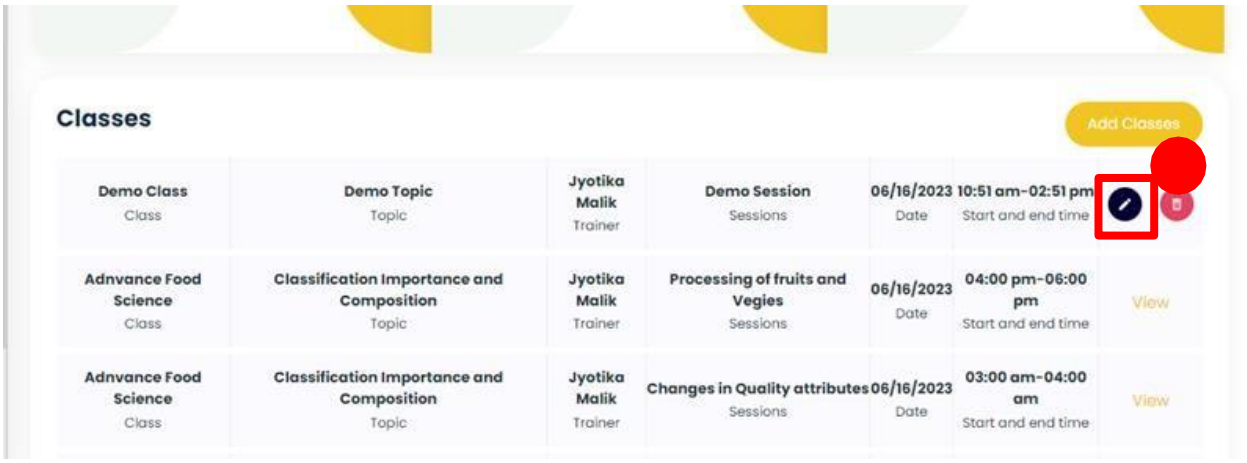
Users can view a listing of all the classes on the dashboard with details like Class, Topic, Trainer, Session, Session Date, Start Time, and End Time.

Step-1. Click on “View”.

If the session has occurred in the past, the Administrator user can view the class.

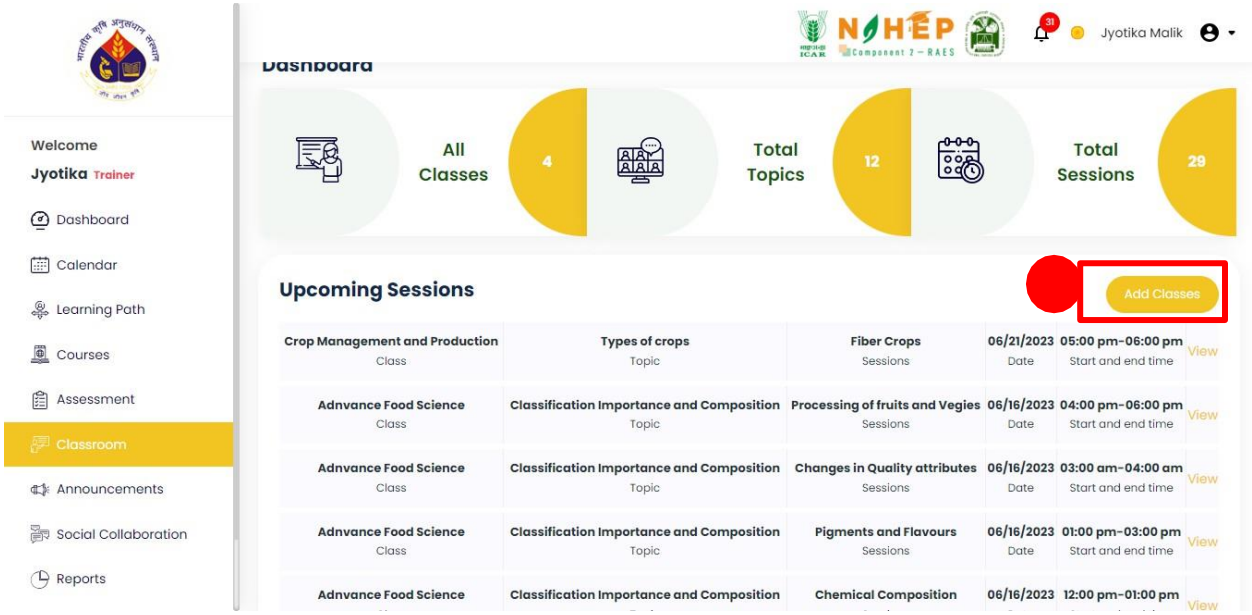
Edit class from the dashboard

Users can edit upcoming sessions.

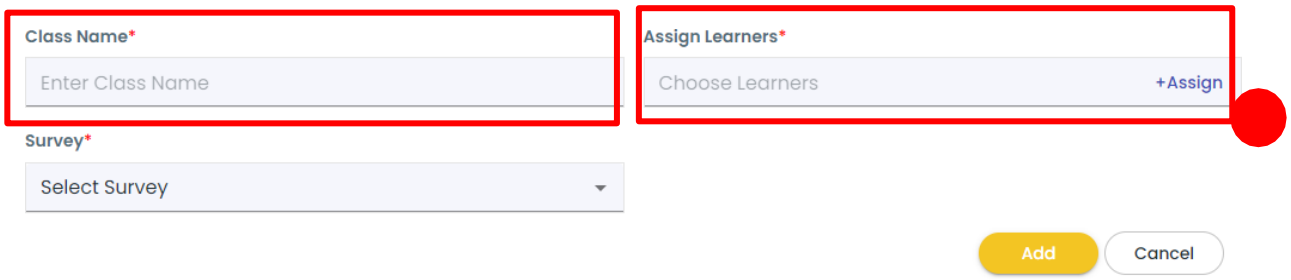


Step-1. Click on the “Edit Icon” associated with the class.

How to create a class?

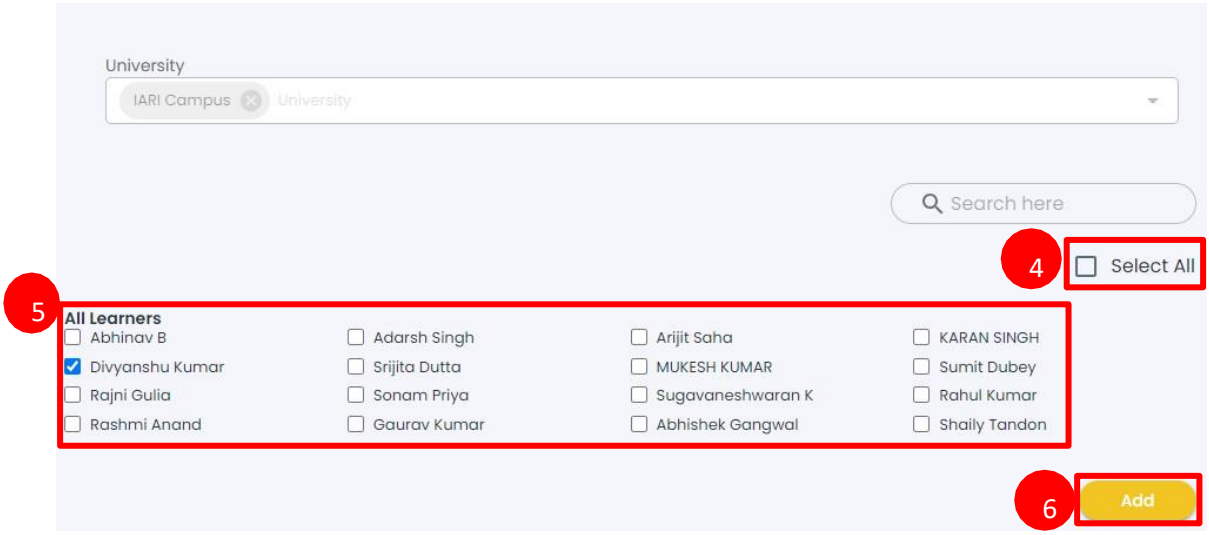


Step-1. Click on “Add Classes”.



Step-2. Add “Class Name”.

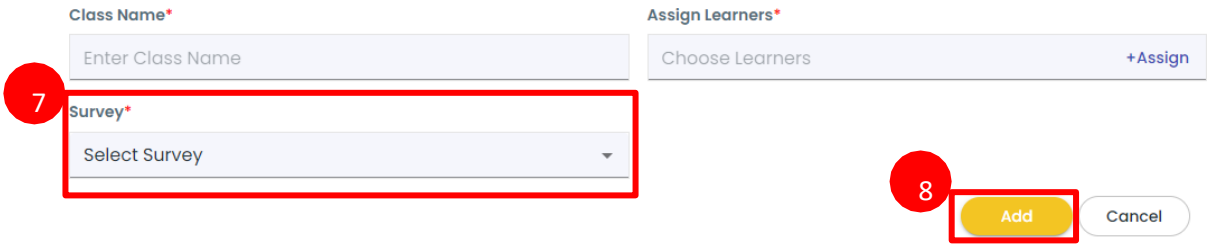
Step-3. Click on “+Assign” to assign users.



Step-4. Click on “Select All”.

Step-5. Click on the check box associated with the student’s name to select a student.

Step-6. Click on “Add”.

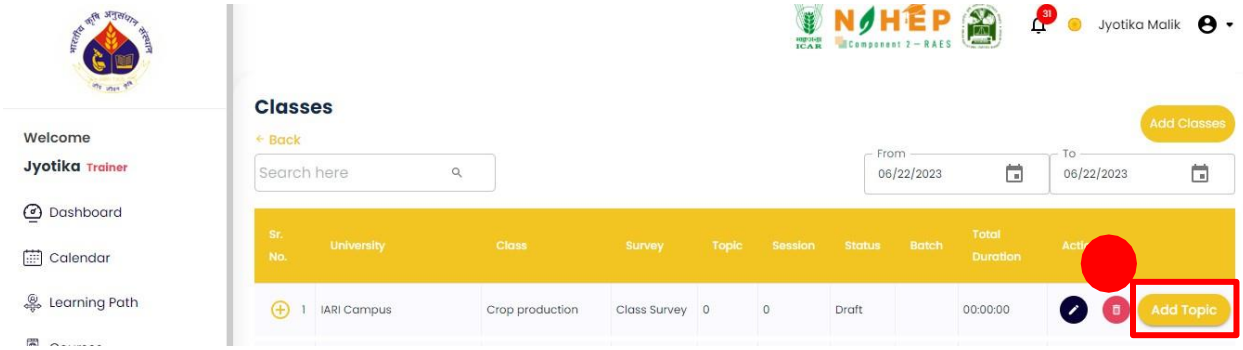


Step-7. Select “Survey” from the drop-down menu.

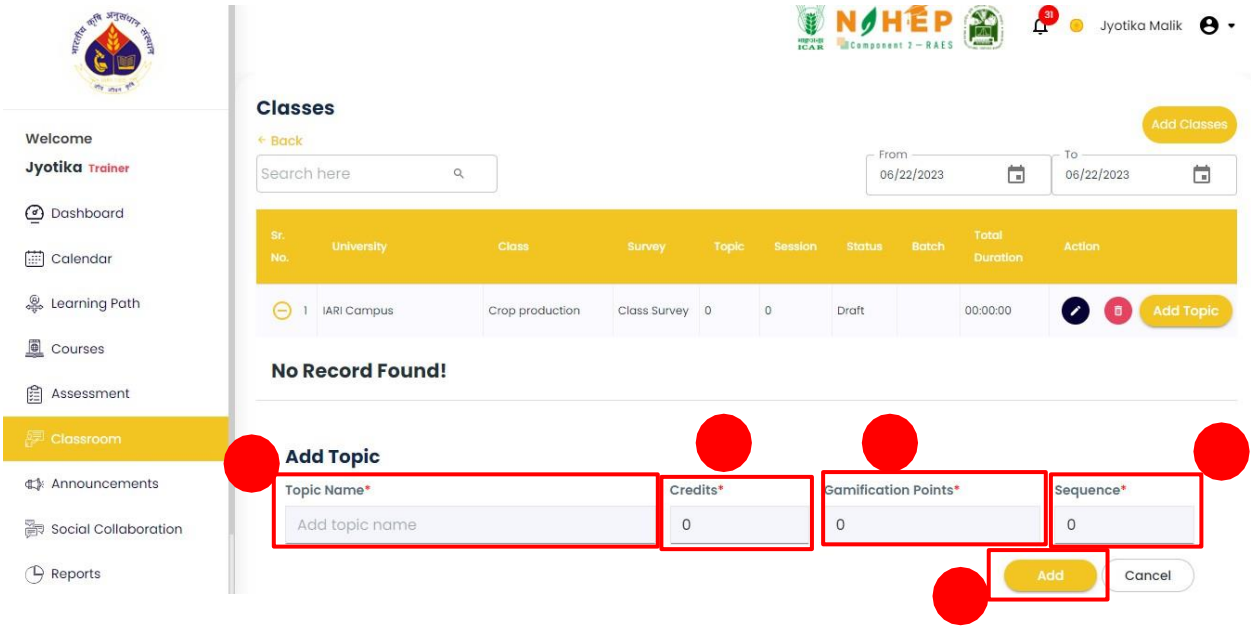
Step-8. Click on “Add”.

How to create a topic underclass?

Once the class is created Faculty can create a topic under the class. Faculty user will be able to see the screen with the complete listing of classes with the details like university name, class name, faculty name, survey name, no. of topics, no of sessions, the status of the class, learners, total duration, action (Edit/delete).



Step-1. Click on “Add topic”.



Step-2. Enter “Topic Name”.

Step-3. Add “Credits”.

Step-4. Add “Gamification Points”.

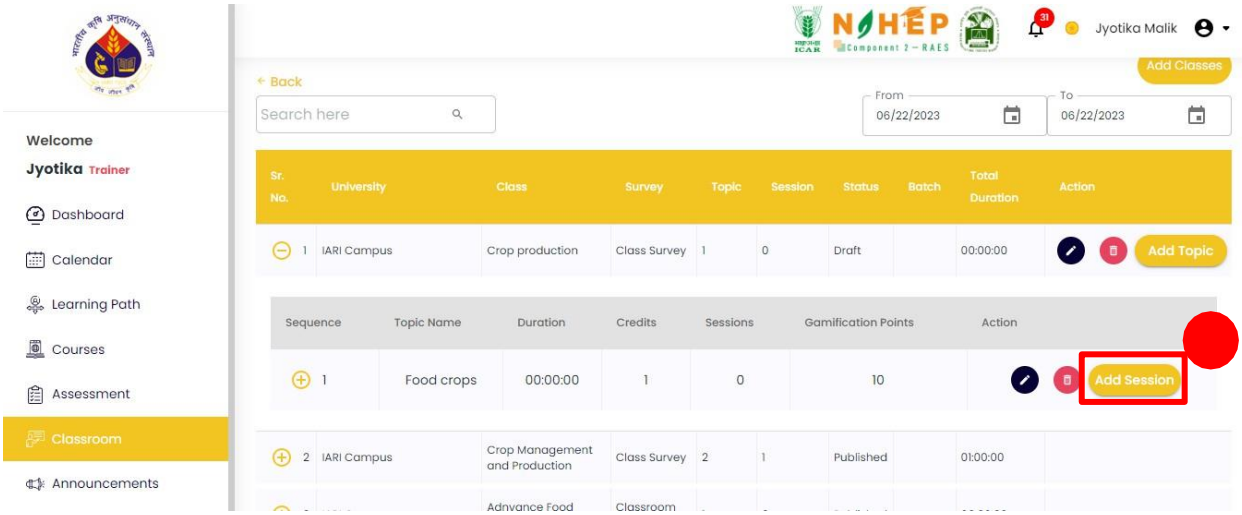
Step-5. Add “Sequence”.

Step-6. Click on “Add”.

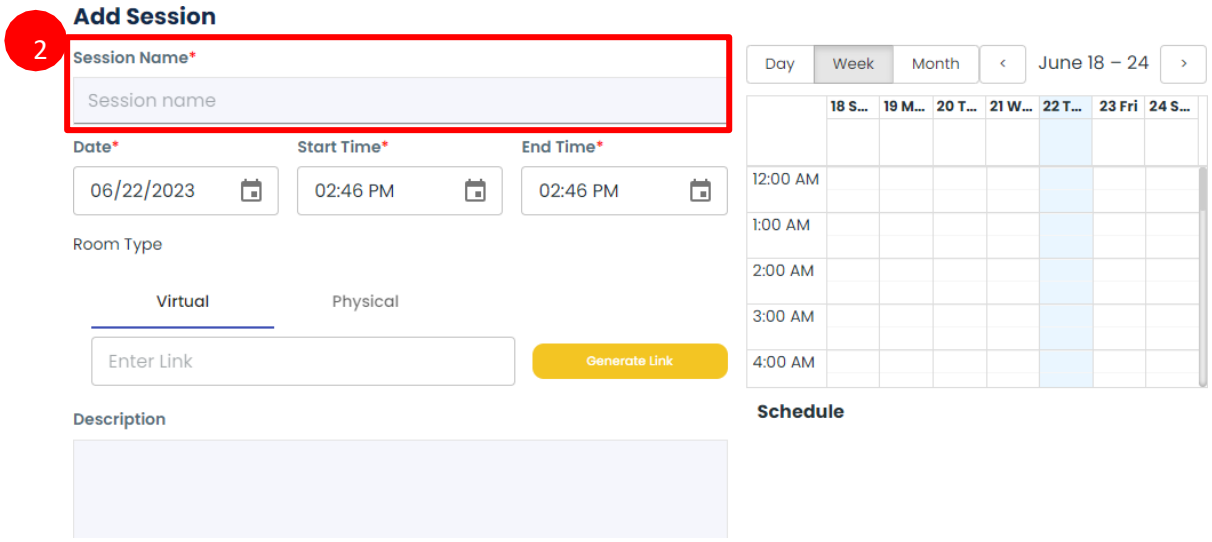
A success message will appear, “Topic created successfully”.

How to create a session under the topic?

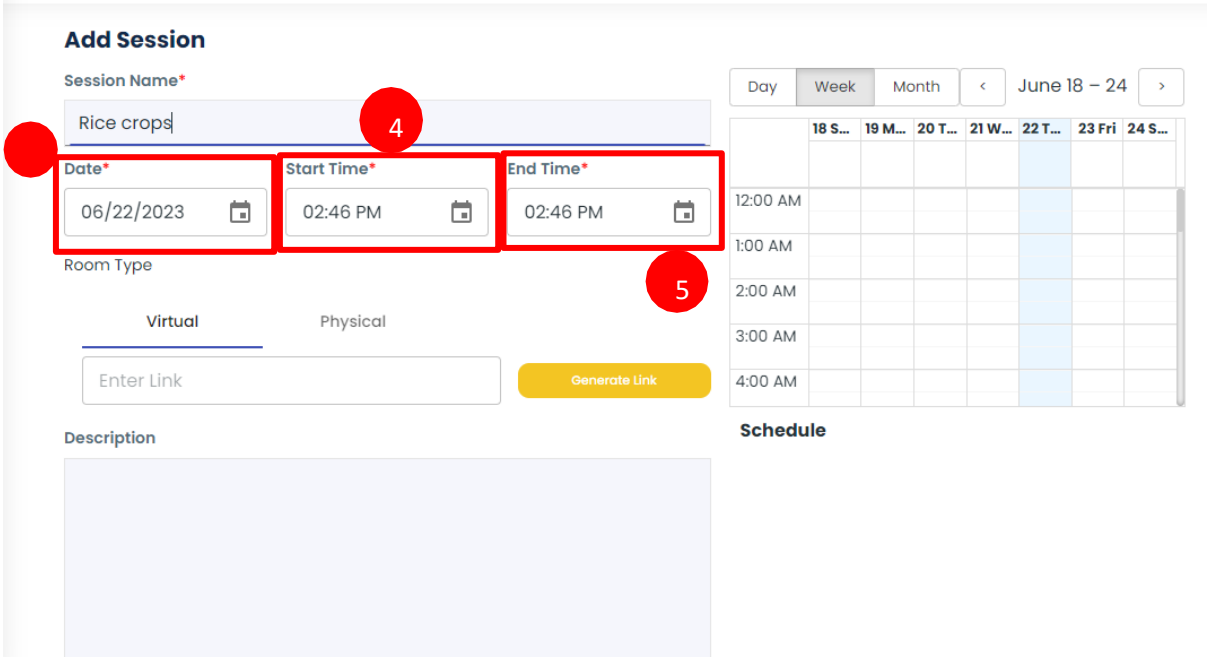
Once the topic is created, you can see the list of topics underclass.



Step-1. Click on “Add Session”.



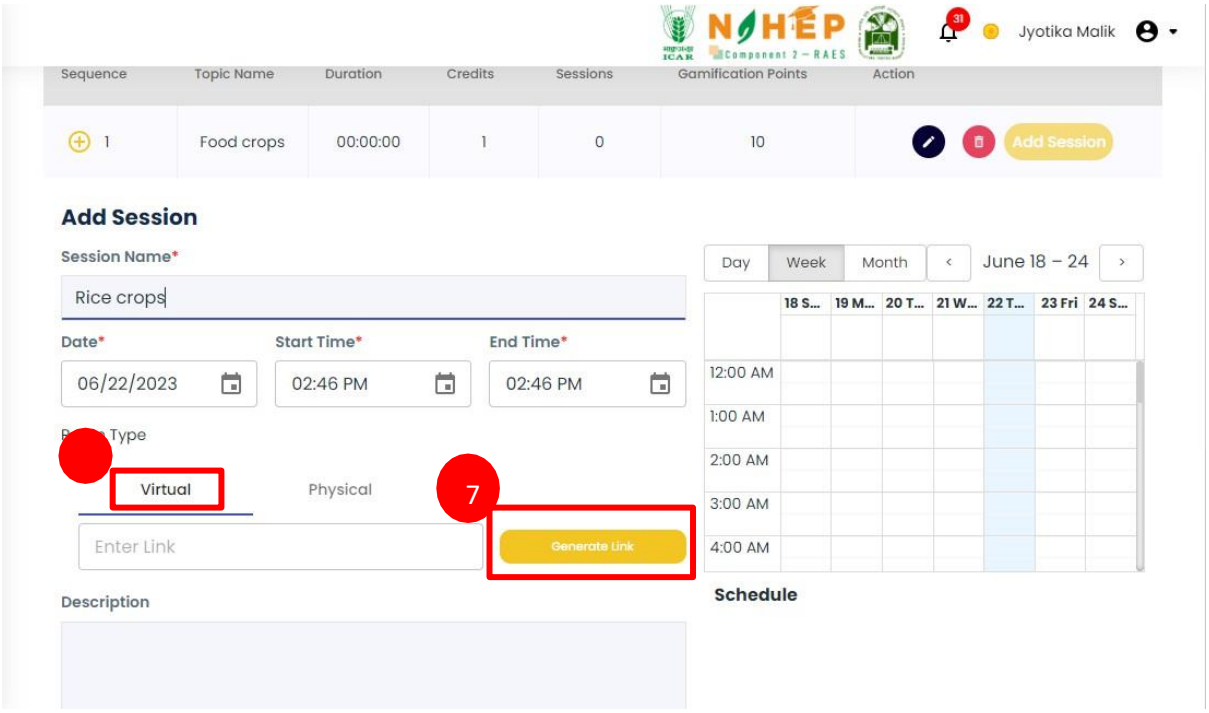
Step-2. Add Session Name



Step-3. Select “Date”.

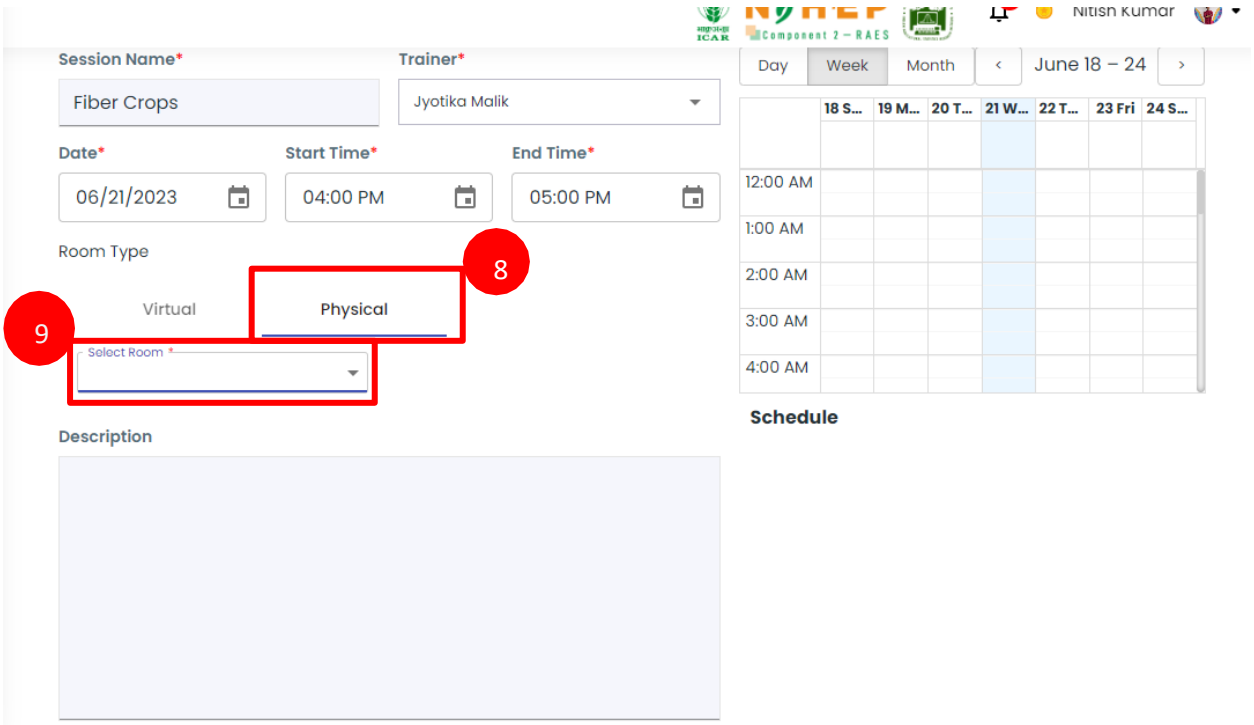
Step-4. Select “Start Time”.

Step-5. Select “End time”.



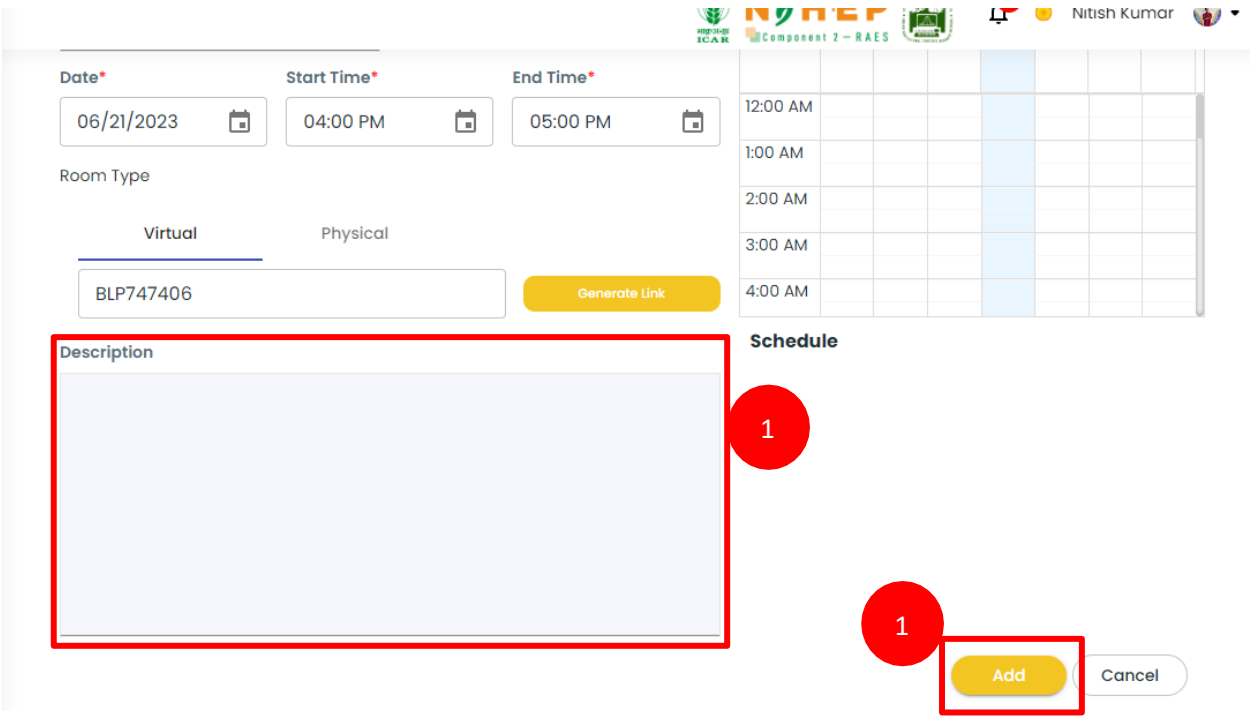
Step-6. Click on “Virtual” to create a virtual session.

Step-7. Click on “Generate Link”.



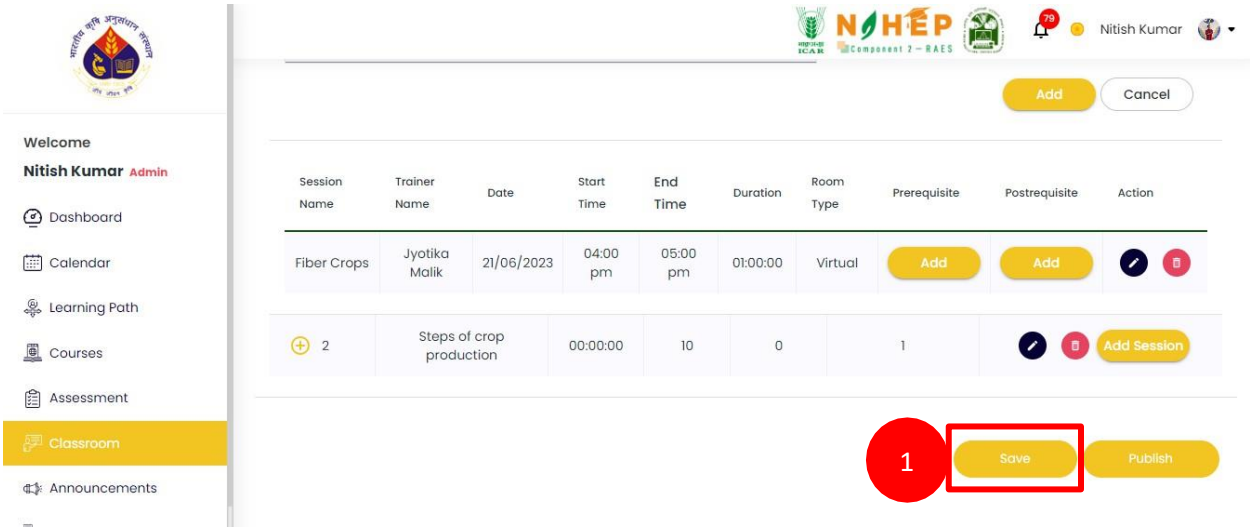
Step-8. Click on “Physical” to create a physical session.

Step-9. Select Room from the drop-down menu.



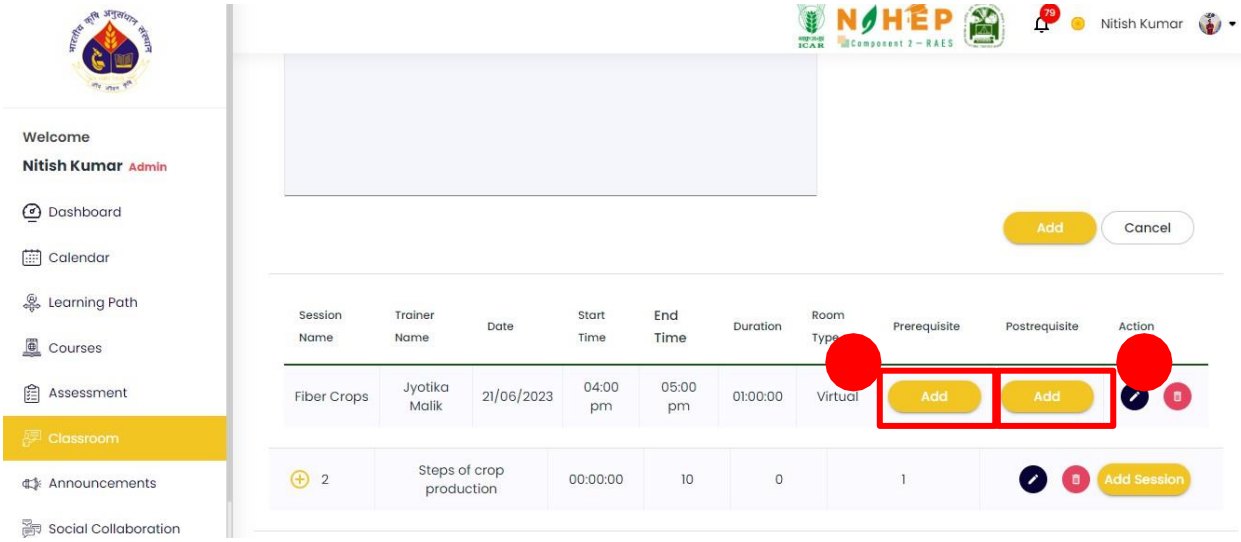
Step-10. Add “Description”.

Step-11. Click on “Add”.



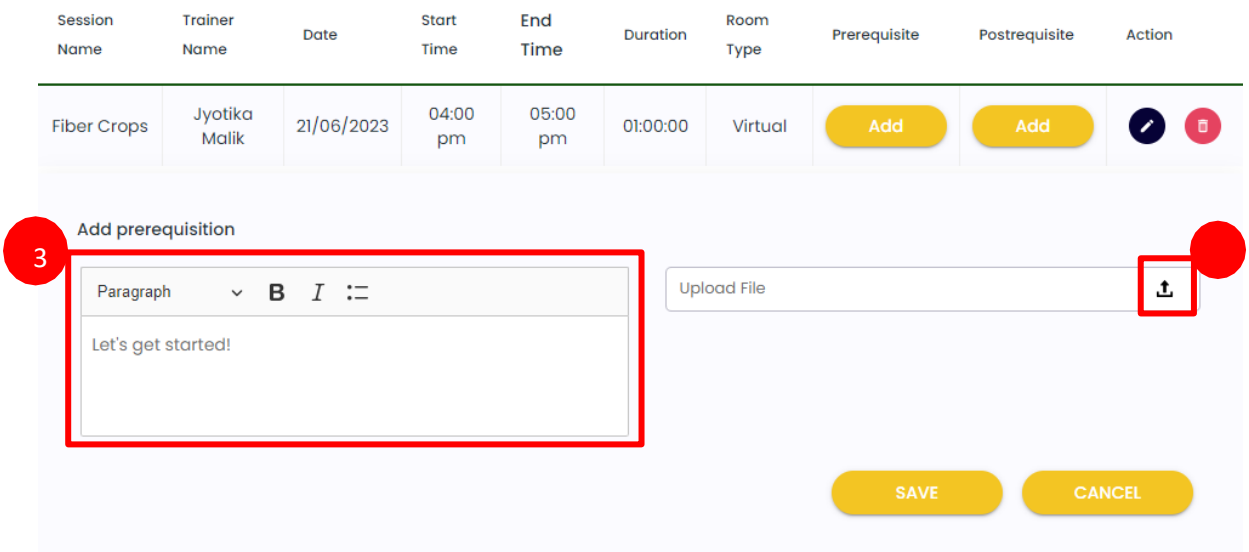
Step-12. Click on “Save”.

How to add pre-requisites and post-requisites?



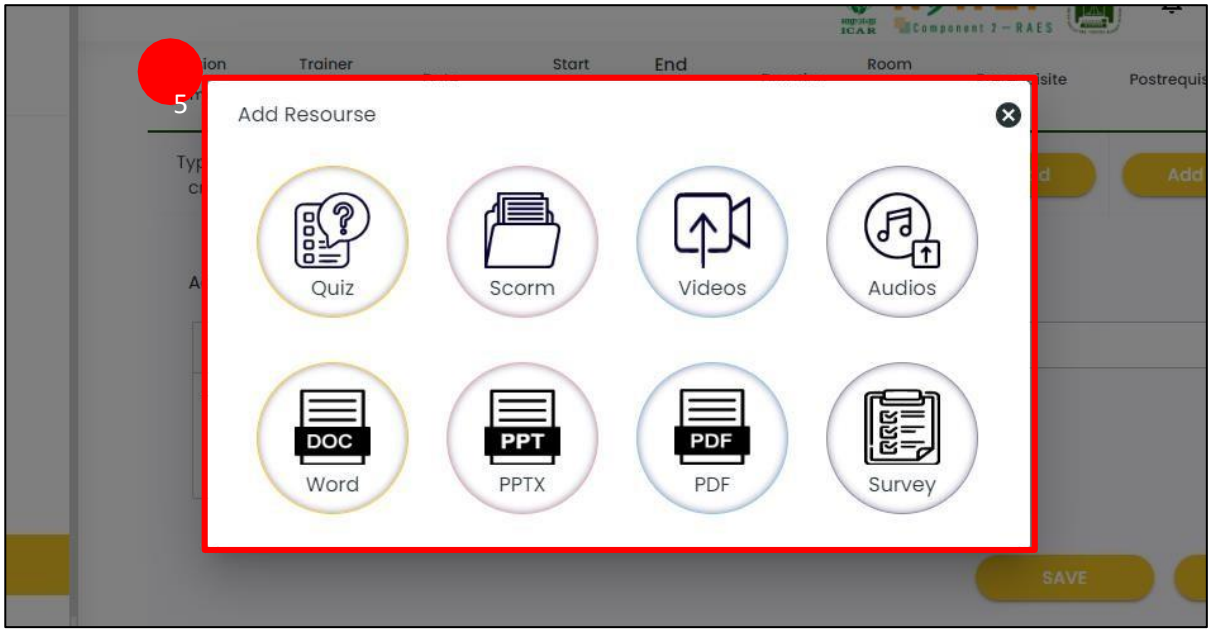
Step-1. Click on “Add” under Prerequisite.

Step-2. Click on “Add” under Post requisite.



Step-3. Add Text under “Paragraph”.

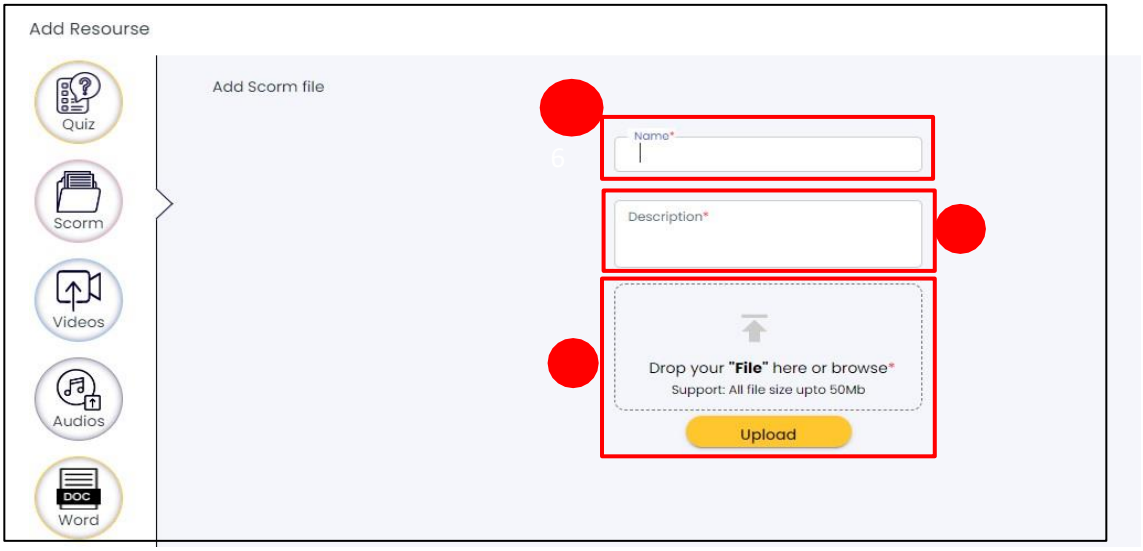
Step-4. Click on “Upload Icon”.



Step-5. Select the file type. This feature supports files like:

- Quiz
- SCROM

- Videos
- Audios
- Word
- PPTX
- PDF
- Survey

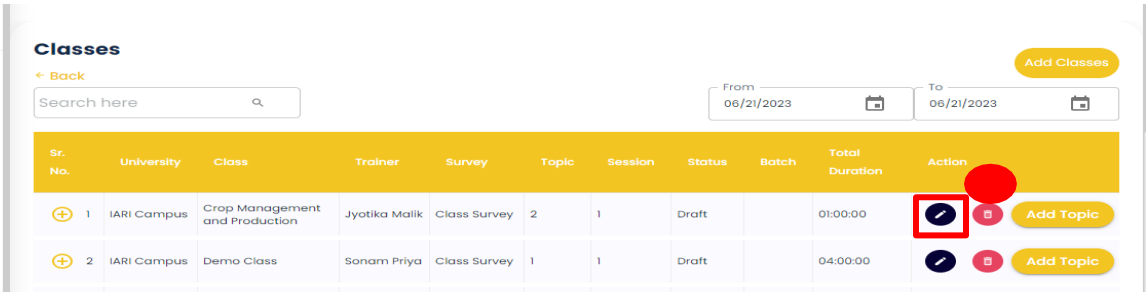


Step-6. Enter the “Name” of the file.

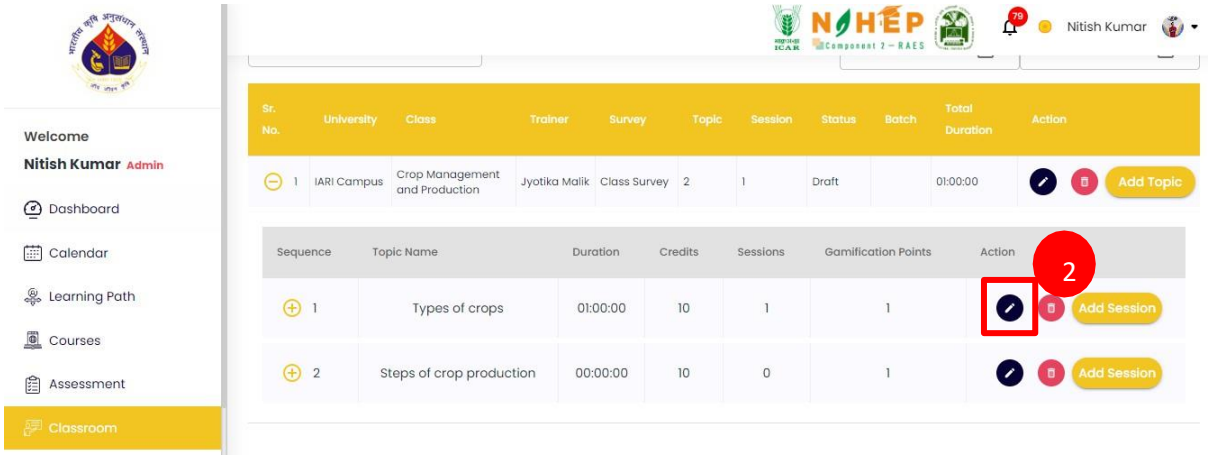
Step-7. Add “Description” to the file.

Step-8. Select the file and click on “Upload”.

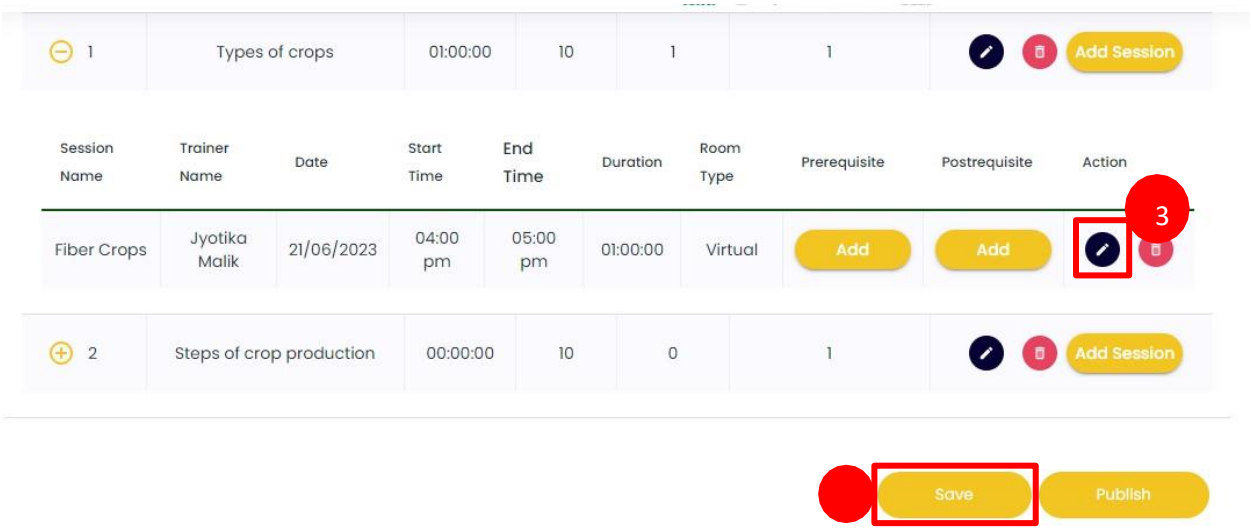
How to Edit a class, topic, or session?



Step-1. Click on the “Edit Icon” associated with the class.



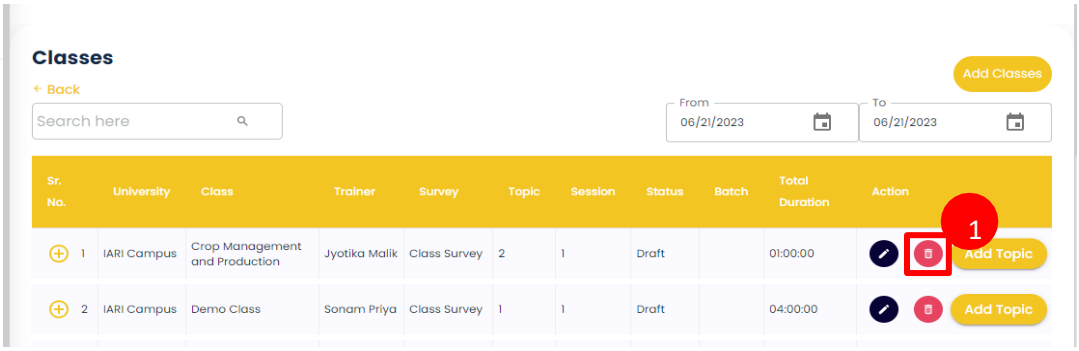
Step-2. Click on the “Edit Icon” associated with the Topic.



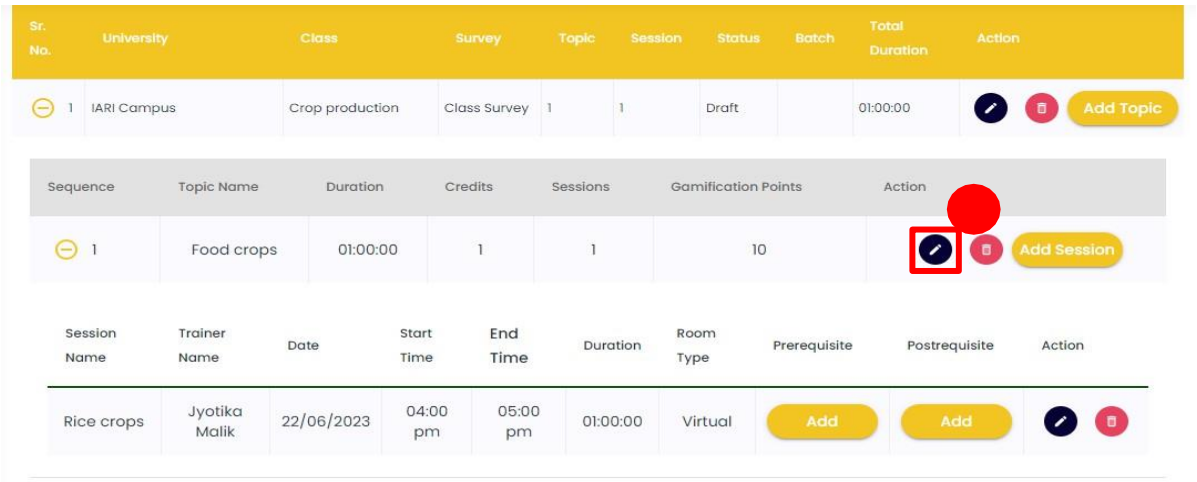
Step-3. Click on the “Edit Icon” associated with the Session.

Step-4. Click on “Save”

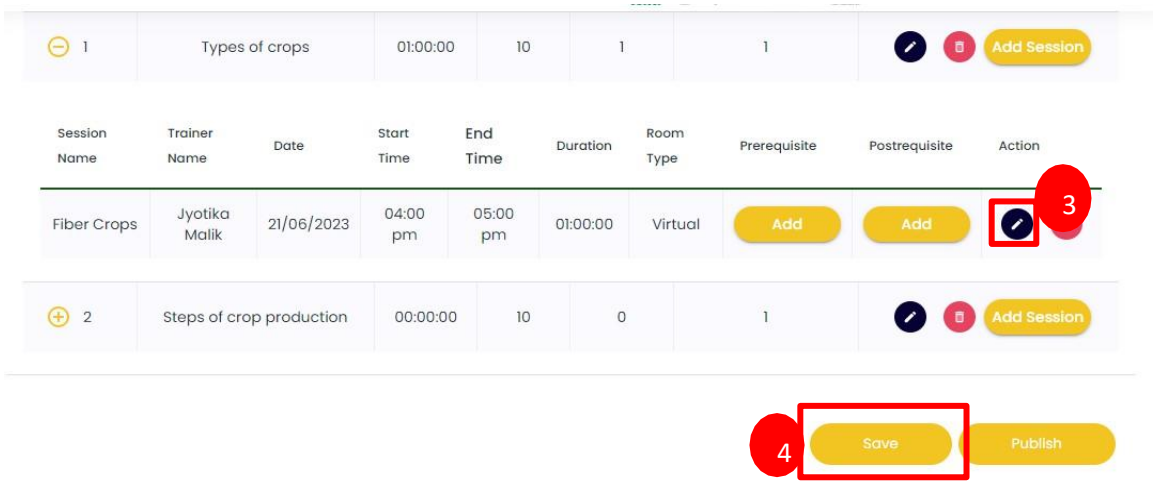
How to Delete a class, topic, or session?



Step-1. Click on the “Delete Icon” associated with the class.



Step-2. Click on the “Delete Icon” associated with the Topic.

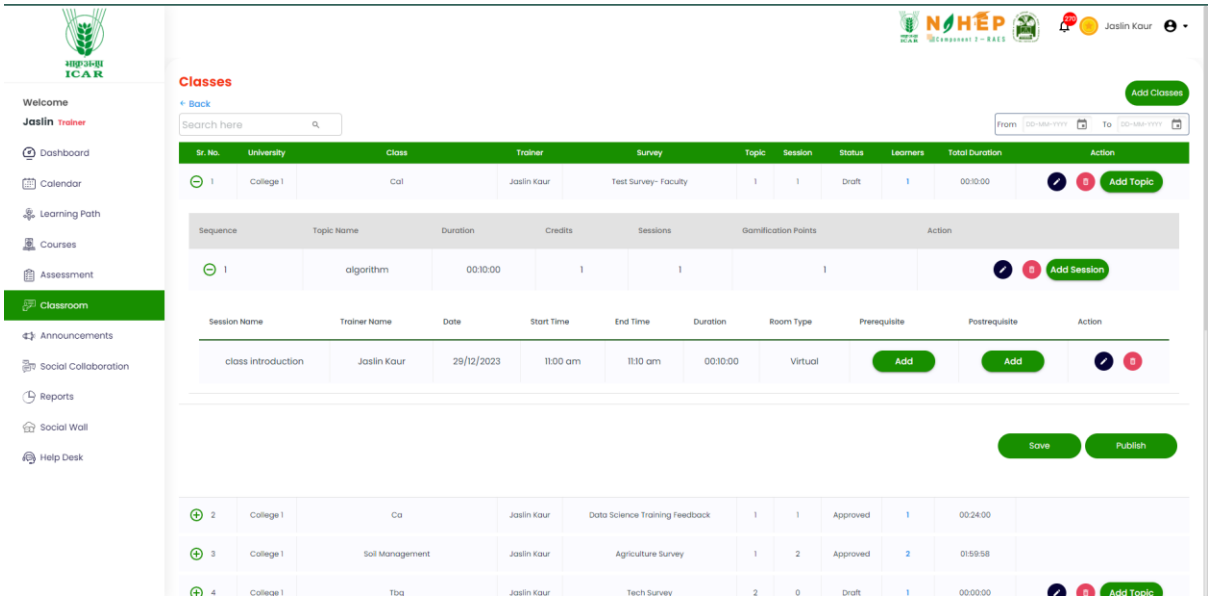


Step-3. Click on the “Delete Icon” associated with the Session.

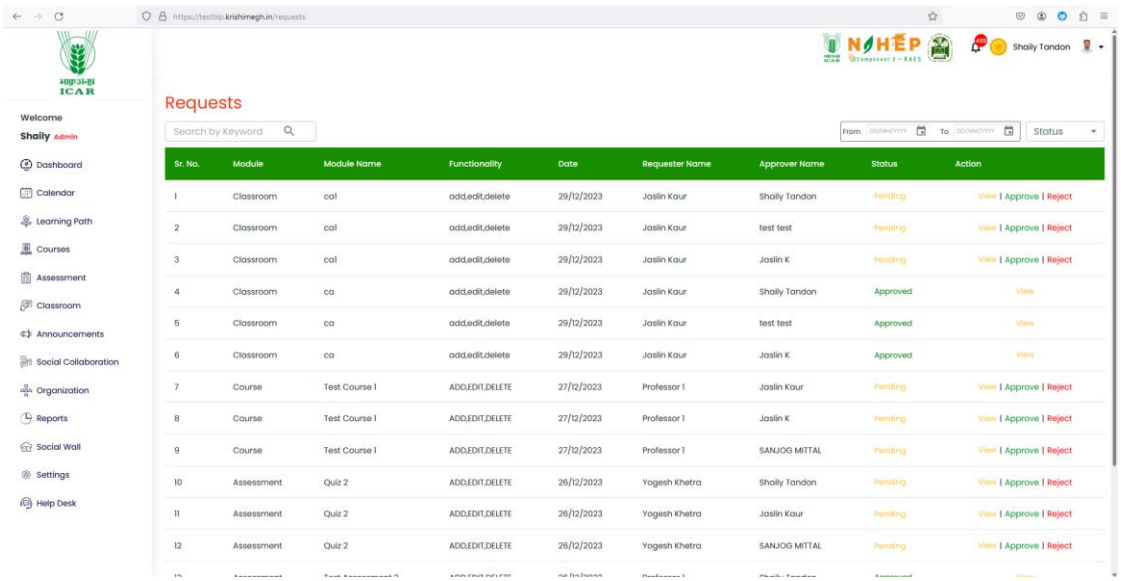
Step-4. Click on “Save”.

How to Publish a SESSION?

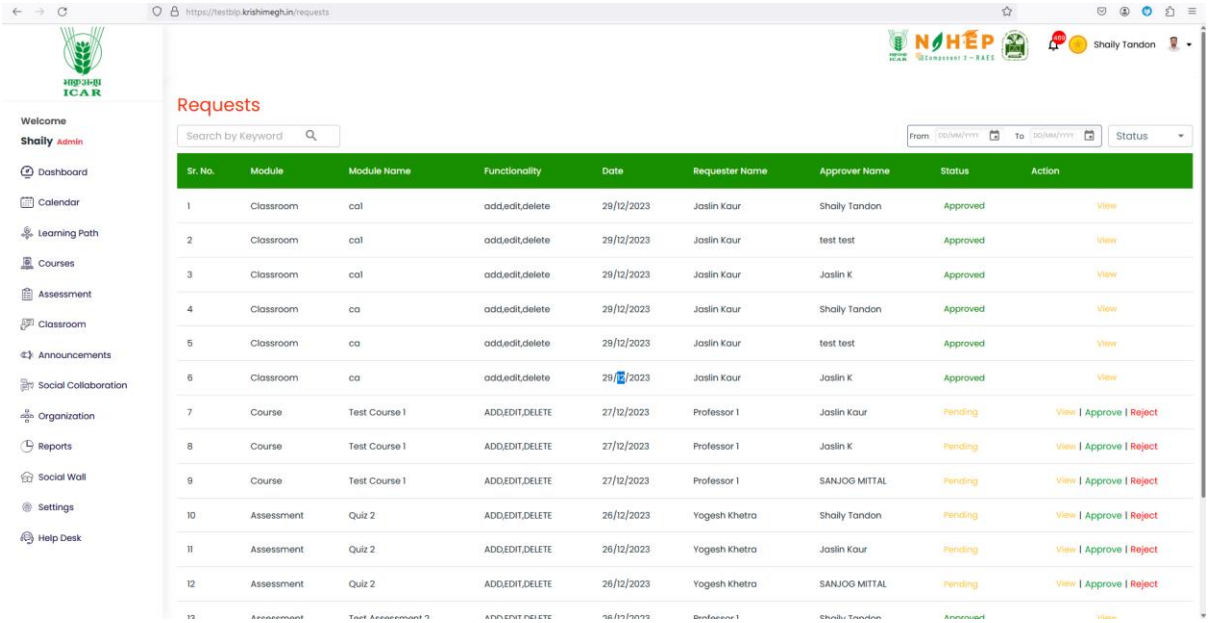
After Creating class, we have to add topic and then add session. After adding all the sessions, we have to publish the class. After publishing you have not permitted to change the class schedule. Before publish add all the topics and sessions to it. Then publish the class by clicking on “Publish icon”.



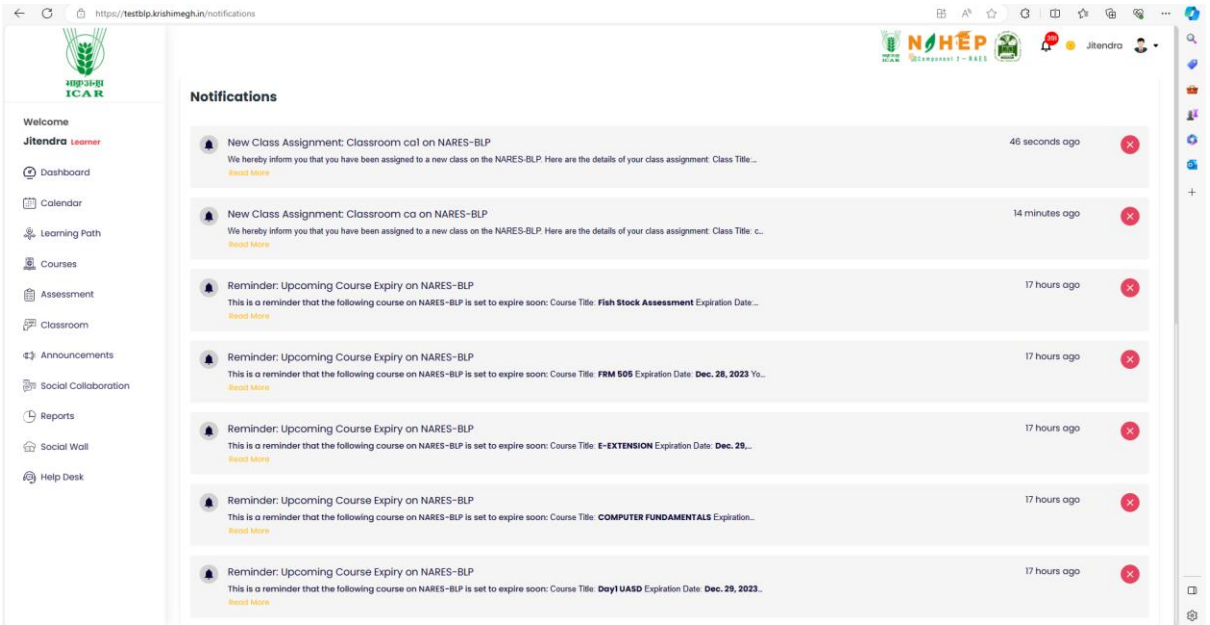
Then on the admin portal under requests Admin get the request for class approval.



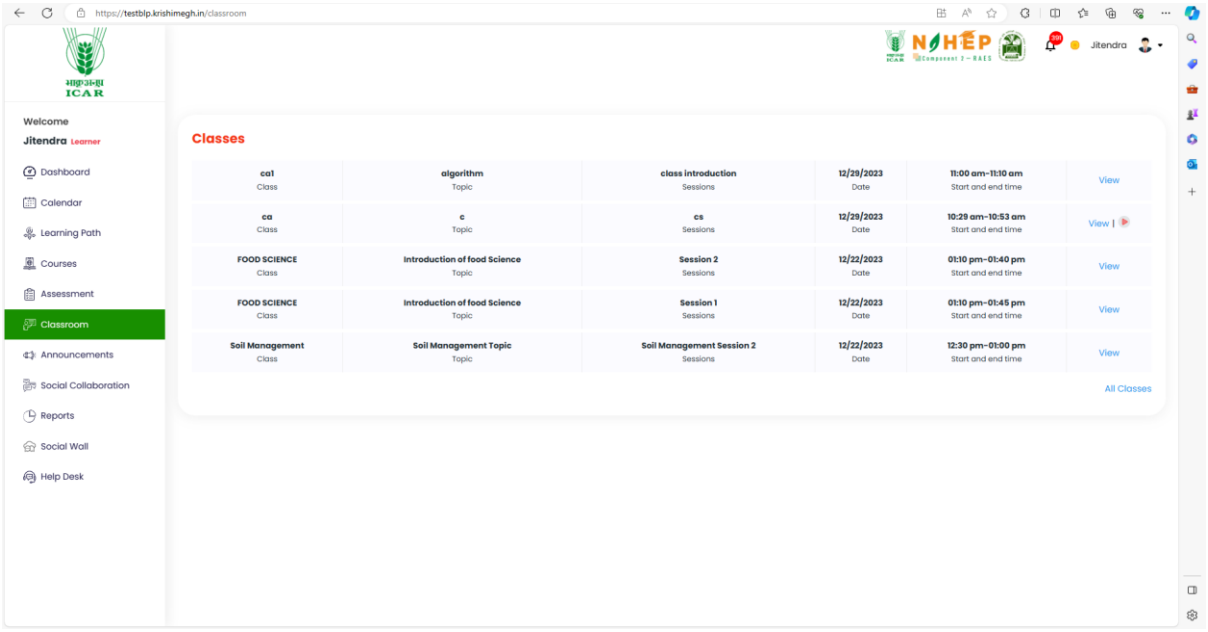
There are three level of Admin approval. A class is approved only after getting approval from all the three admin.



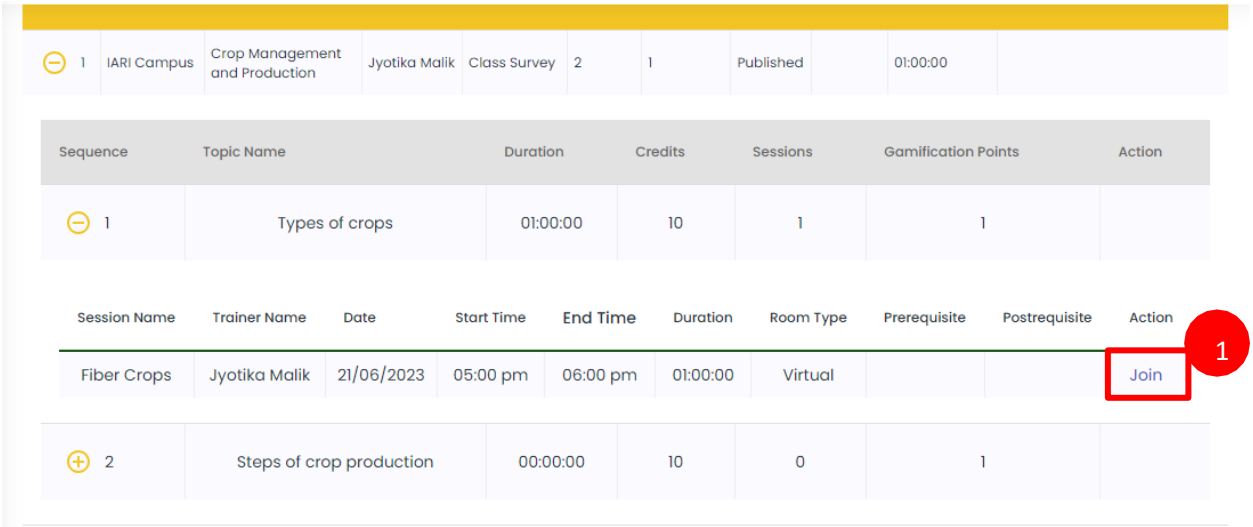
After getting approval from all the admins students get classroom notification that he/she added into that class under notification tab in their portal.



Student also get notification for new classroom on the Dashboard of classroom module.

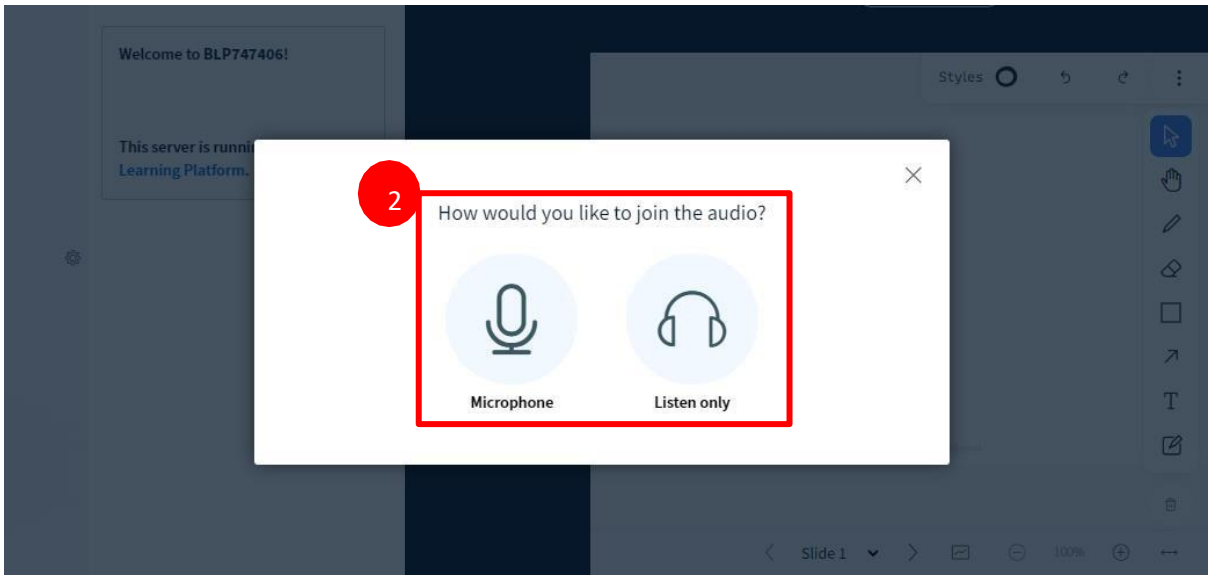


How to start a session?

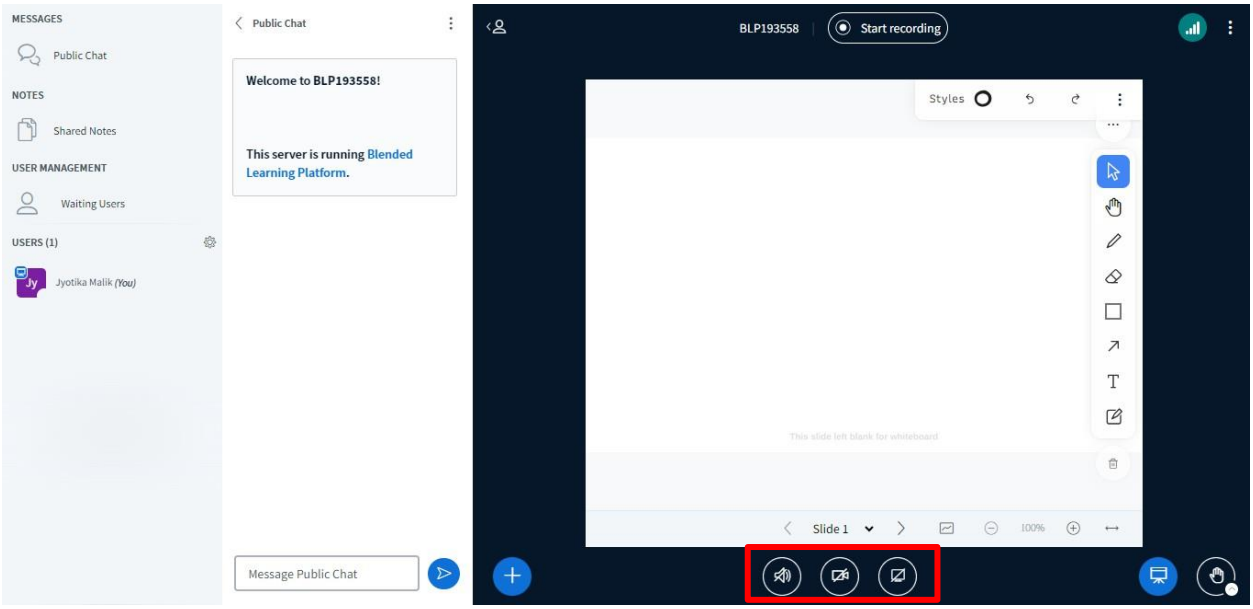


Step-1. Click on “Join”.

The screen will display a pop-up stating, “How would you like to join the audio?” with two options: Microphone and listen only.

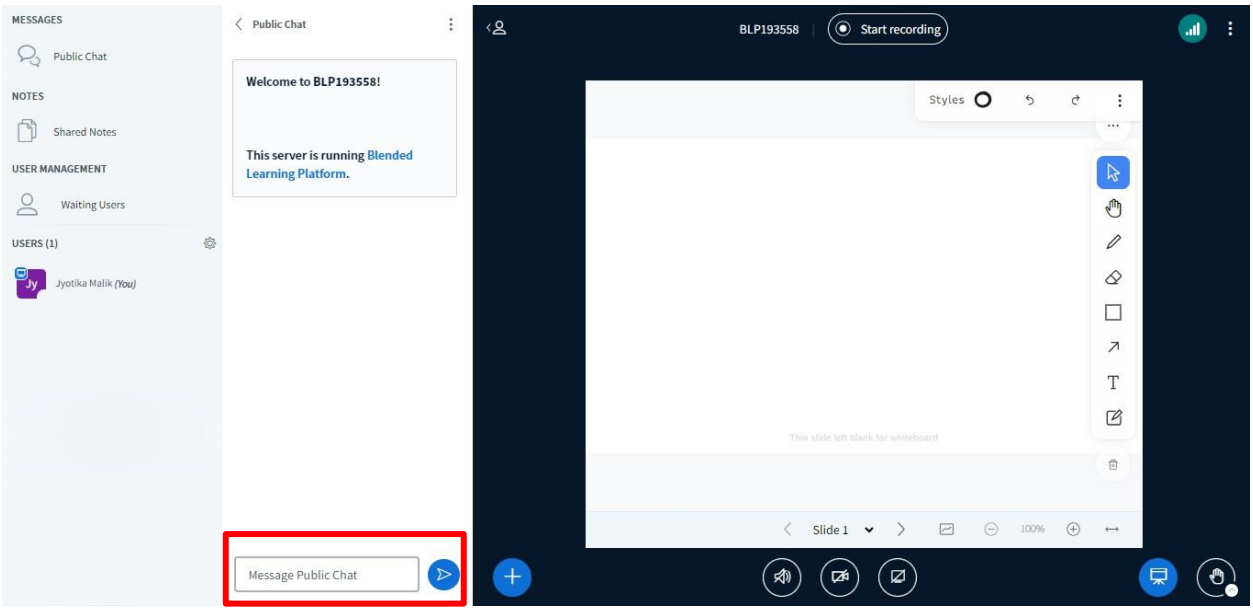


Step-2. Click on “Microphone” or “Listen only”.



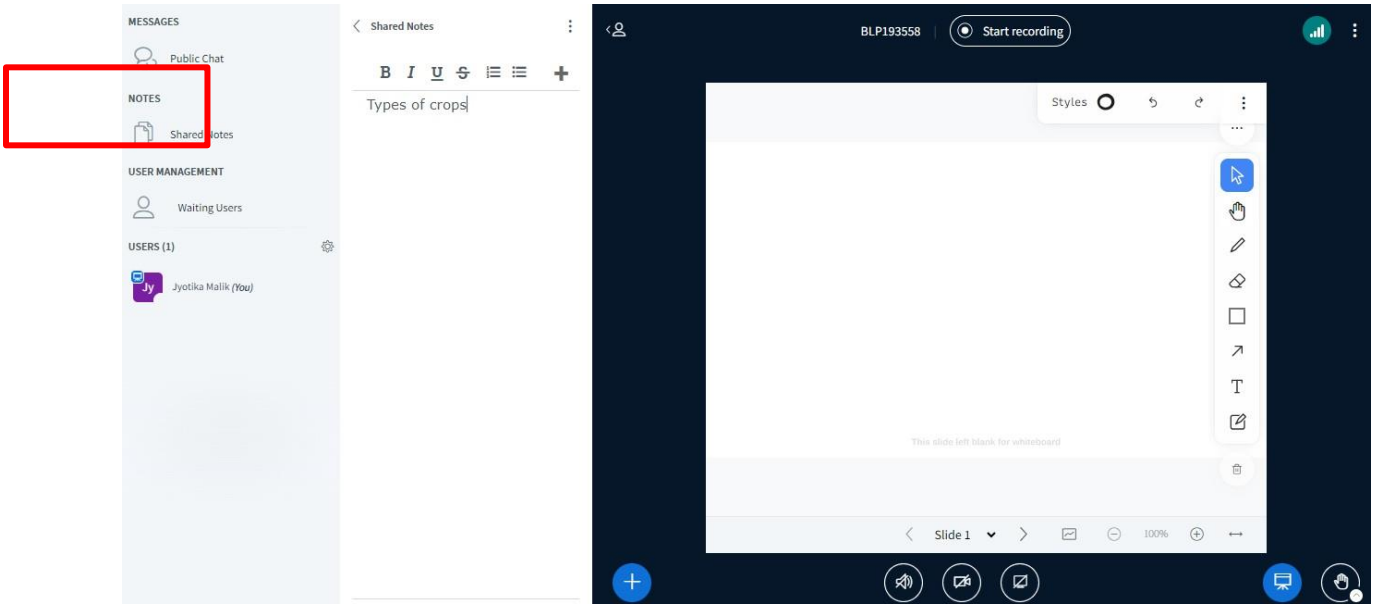
- Users can Mute/Unmute by clicking on the microphone icon.
- Users can On/Off video by clicking on the Camera icon.
- Users can share/unshare screen by clicking on the screen icon.

Public chat



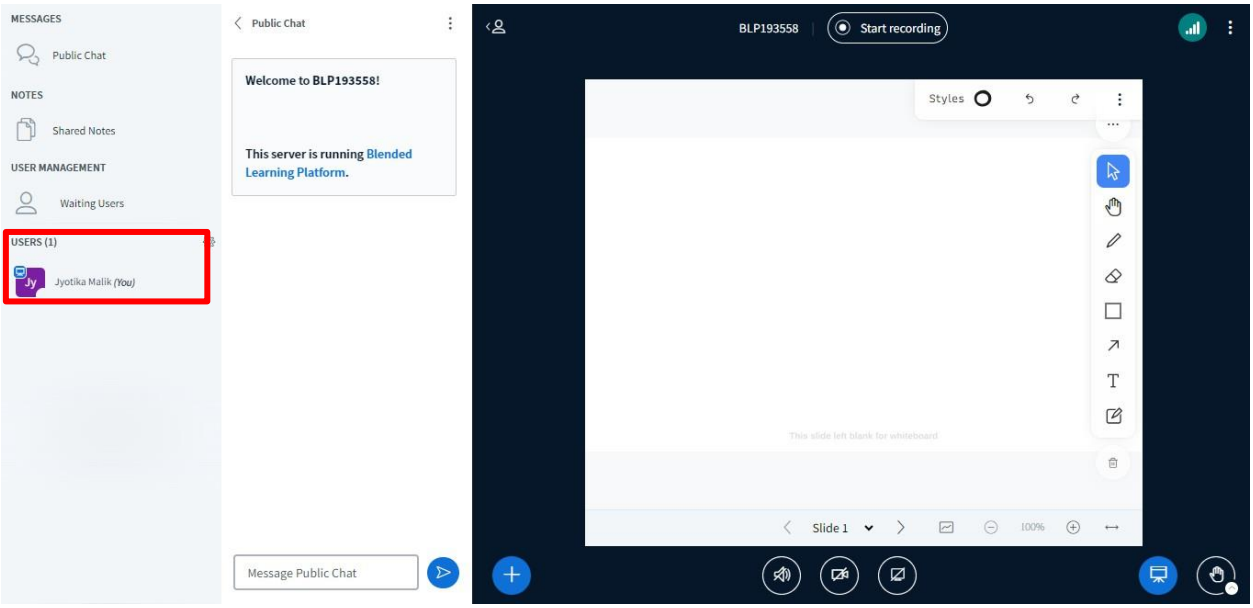
Users can also write messages in public chat, and all the other users can view the message.

Shared note



Users can write notes by clicking on shared notes. All the users will be able to view shared notes.

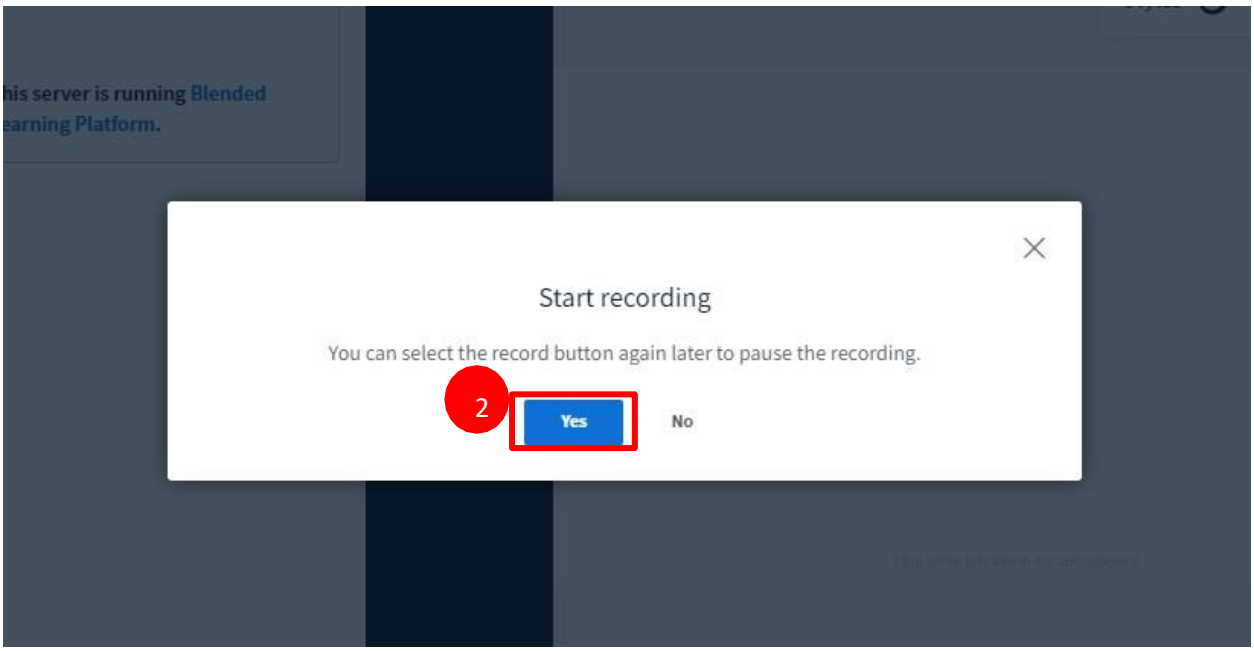
Users and Waiting Users



The list of participants and the list of waiting participants can be seen under “USER MANAGEMENT”.

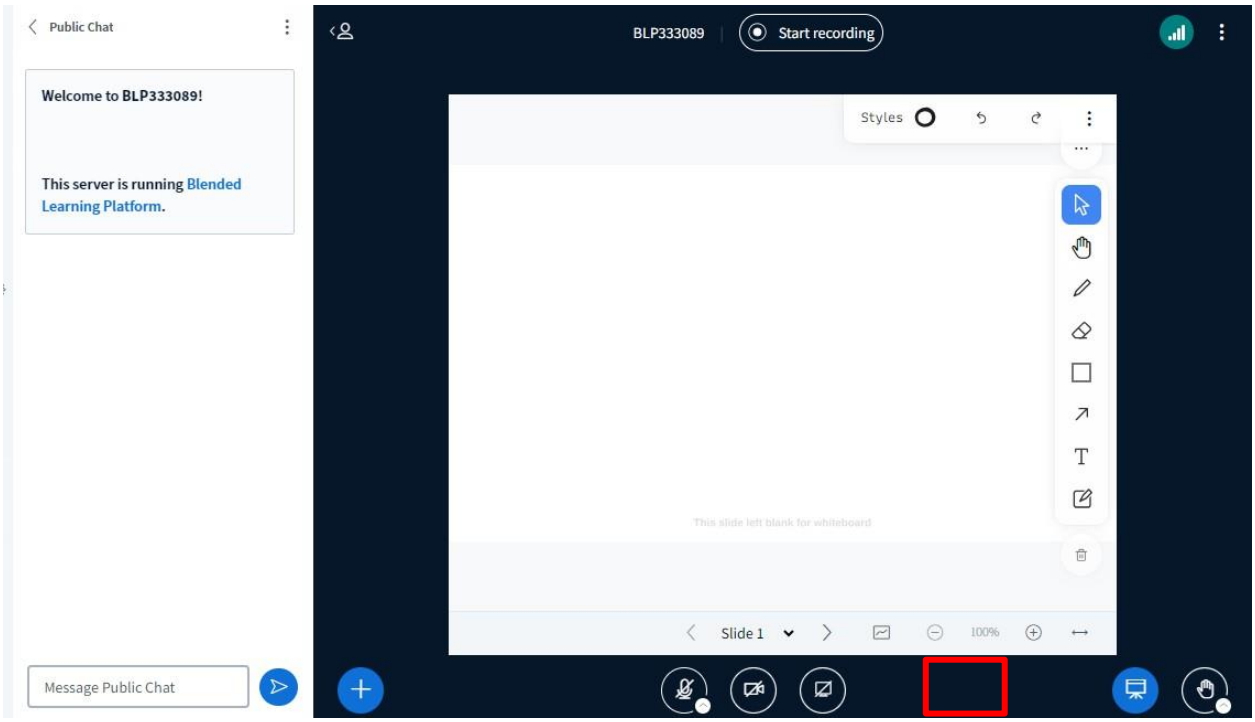
Recording

Step-1. Click on the “Start recording” button.



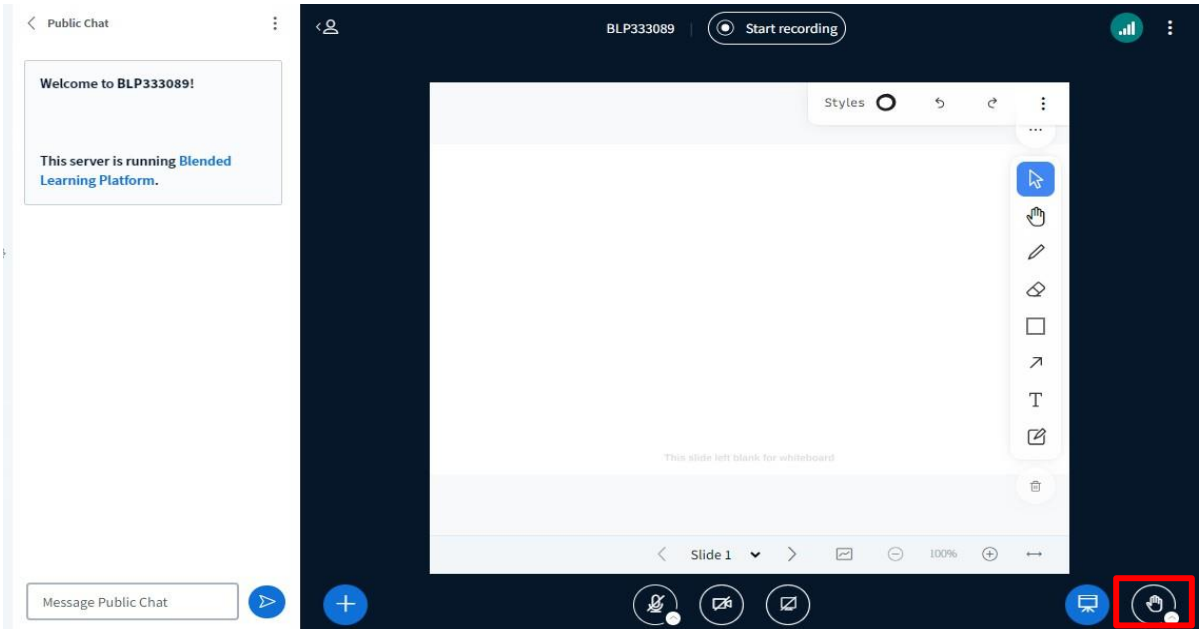
Step-2. Click on the” Yes” button.

Minimise presentation



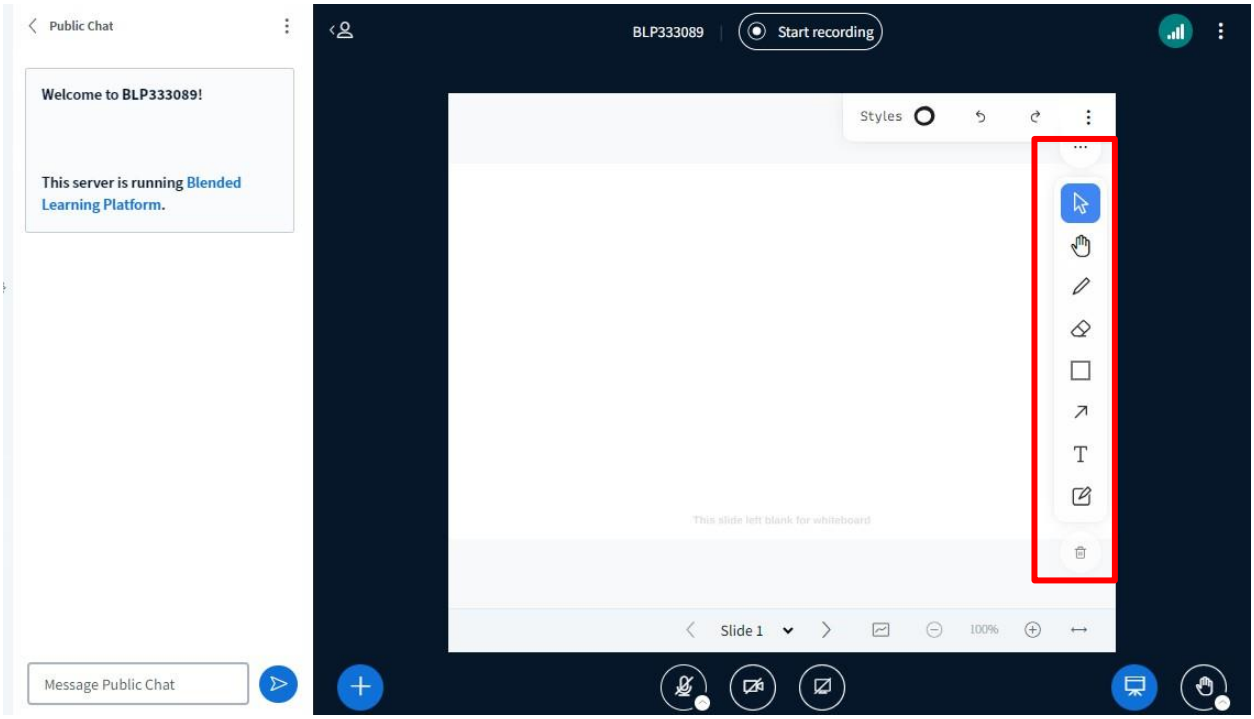
Click on the “screen Icon” in blue to minimize the presentation.

Raise hand



Click on the “raise hand” button to raise your hand.

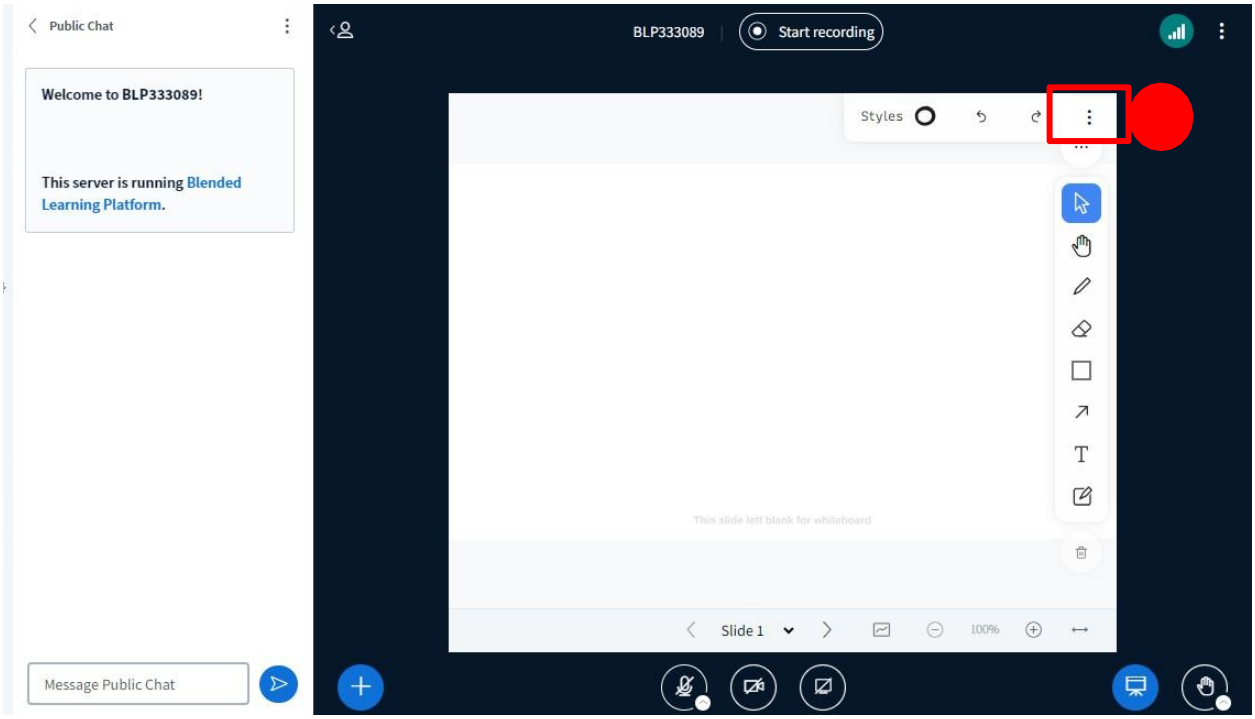
White Board



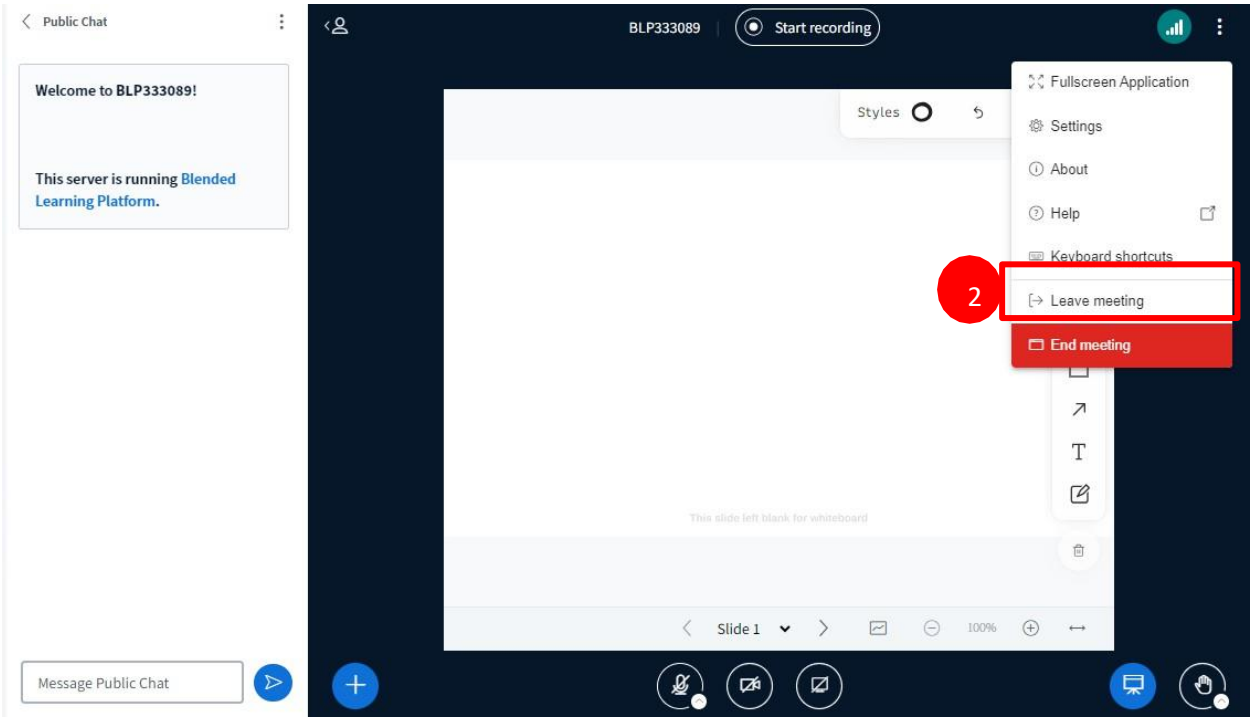
Users have multiple features associated with a whiteboard. The features of the whiteboard are listed below:

- Select object – The users can select an object by clicking on select.
- Move object – The users can select Pan to move the board.
- Pen- The users can select a pen to draw on the board.
- Eraser- The users can select an eraser to erase.
- Text- The users can add text.
- Sticky- The users can add sticky notes.
- Delete- The users can click on delete-to-delete text.

How to leave the meeting?

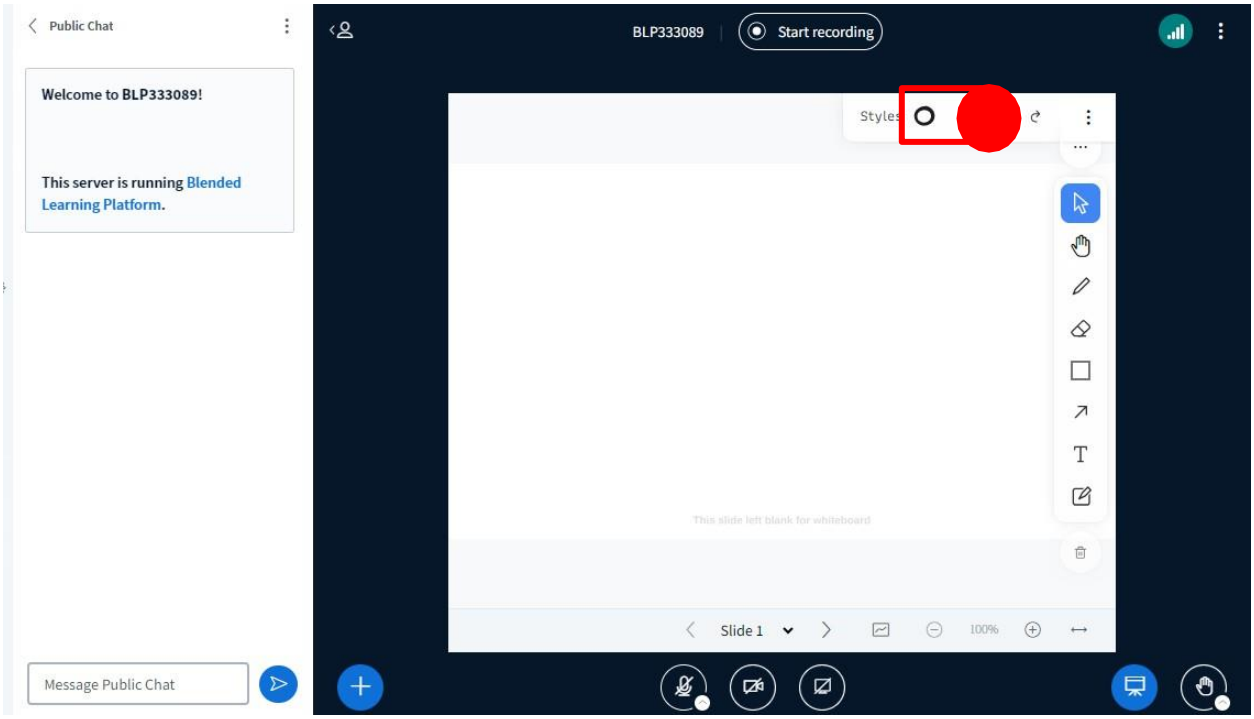


Step-1. Click on the “three dots”

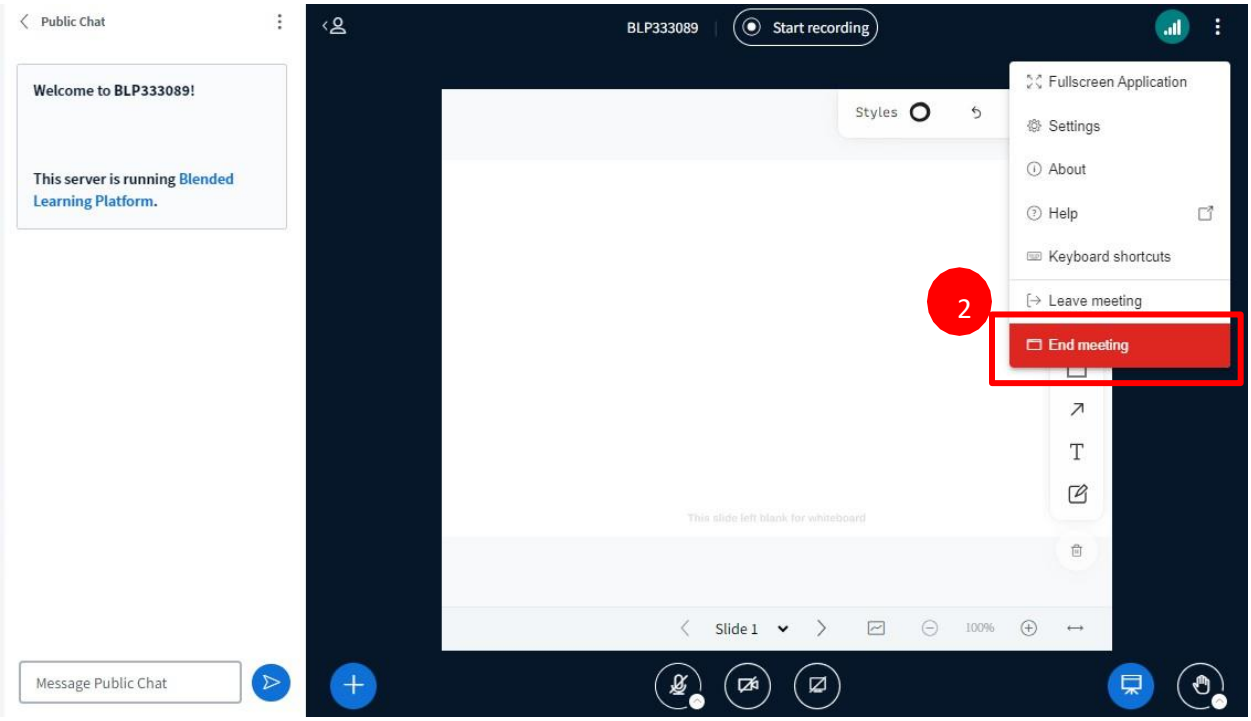


Step-2. Select ”Leave meeting”.

How to end the meeting?

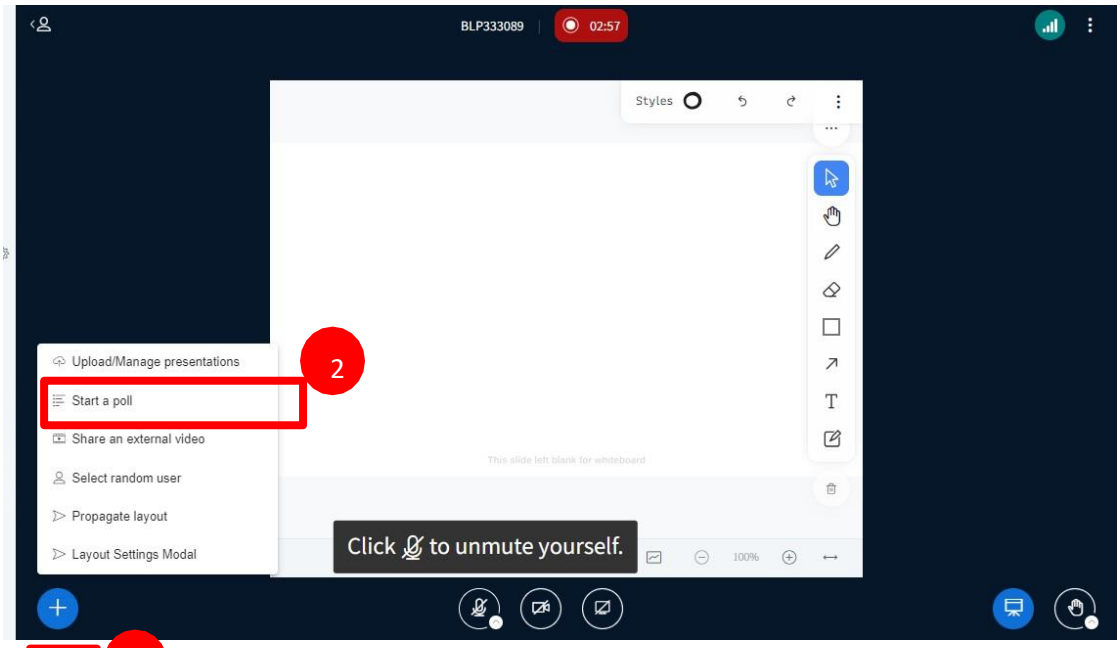


Step-1. Click on the “three dots”



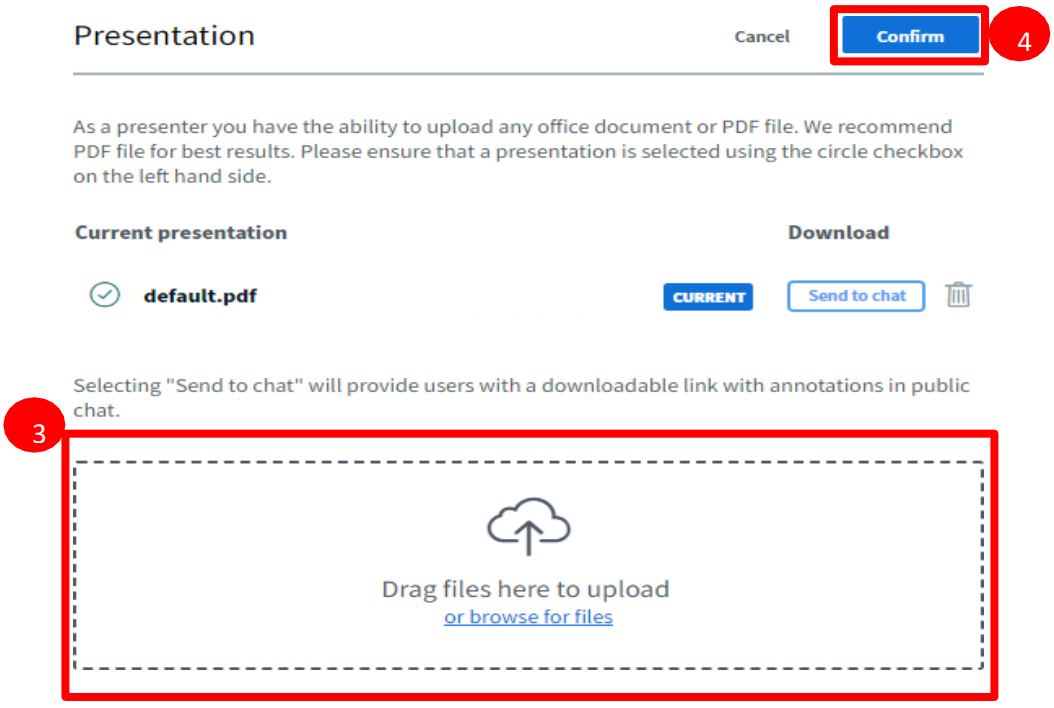
Step-2. Select “End meeting”.

How to upload a presentation?



Step-1. Click “+” in blue.

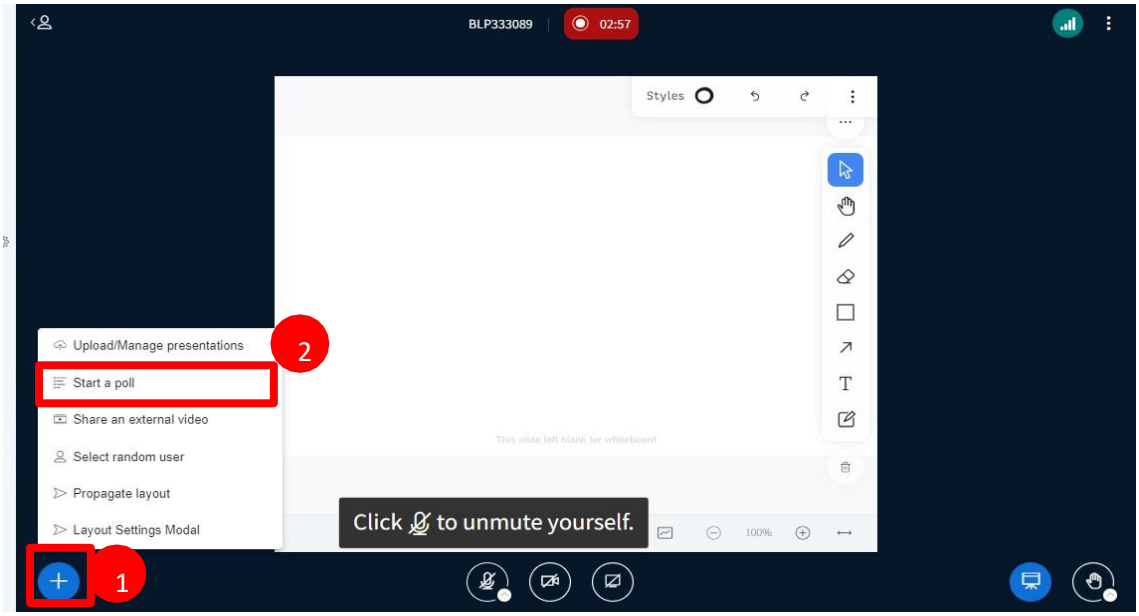
Step-2. Select Upload/Manage presentations.



Step-3. Click on “or browse for files” or drag and drop the file in the given space.

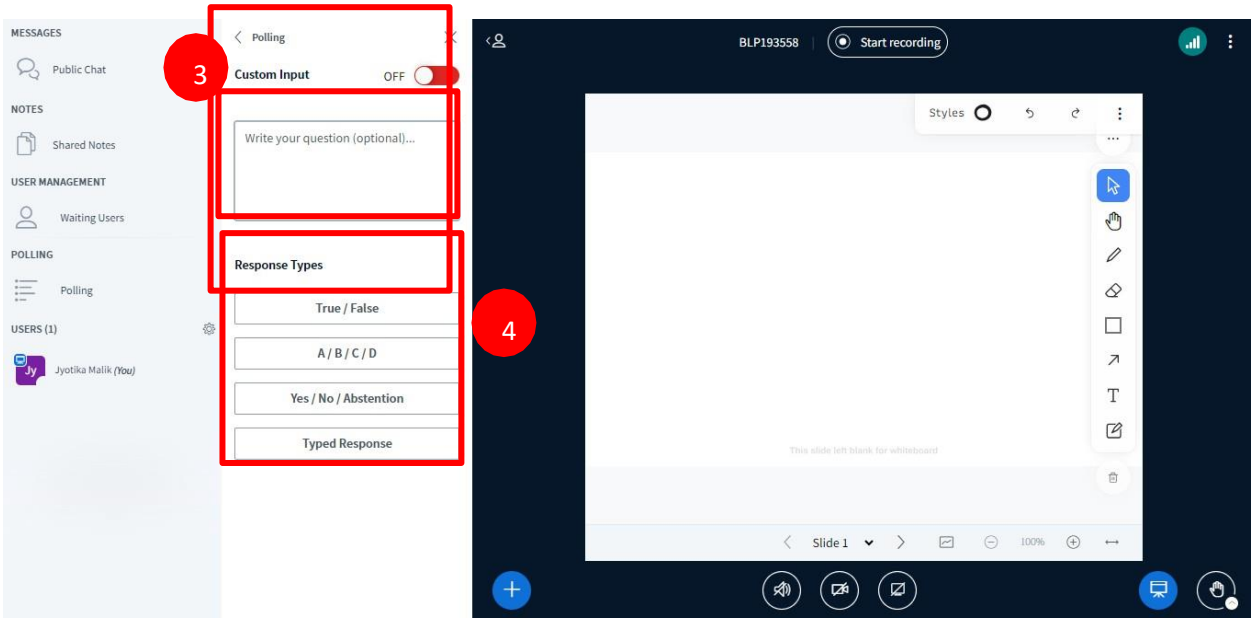
Step-4. Click on “Confirm”.

How to start a poll?



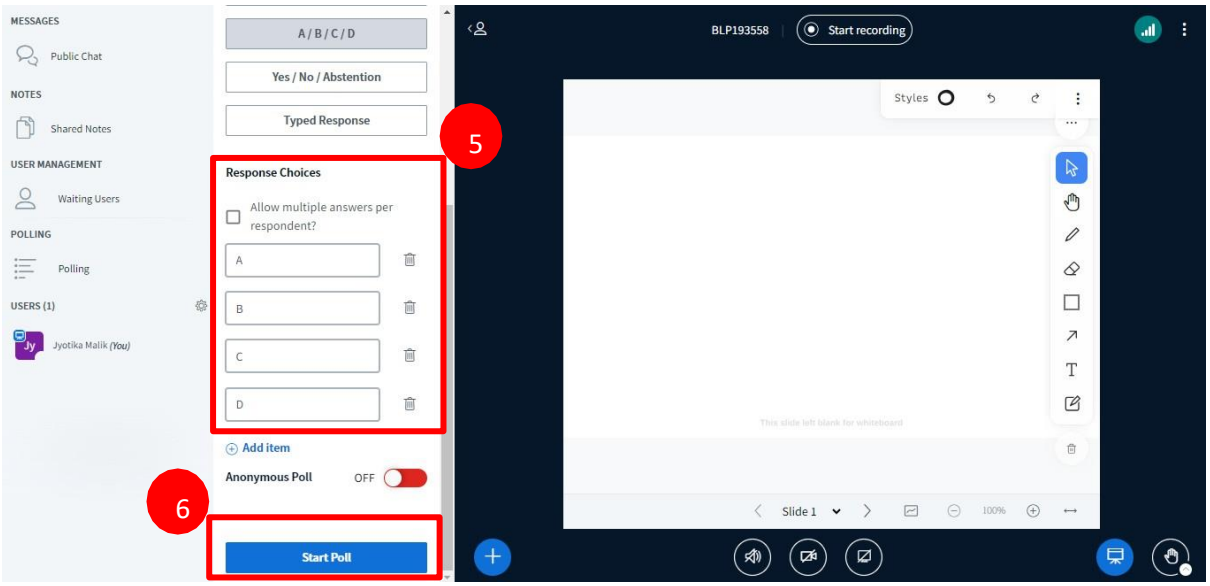
Step-1. Click “+” in blue.

Step-2. Select “Start a poll”.



Step-3. Type a question under “Write your question”.

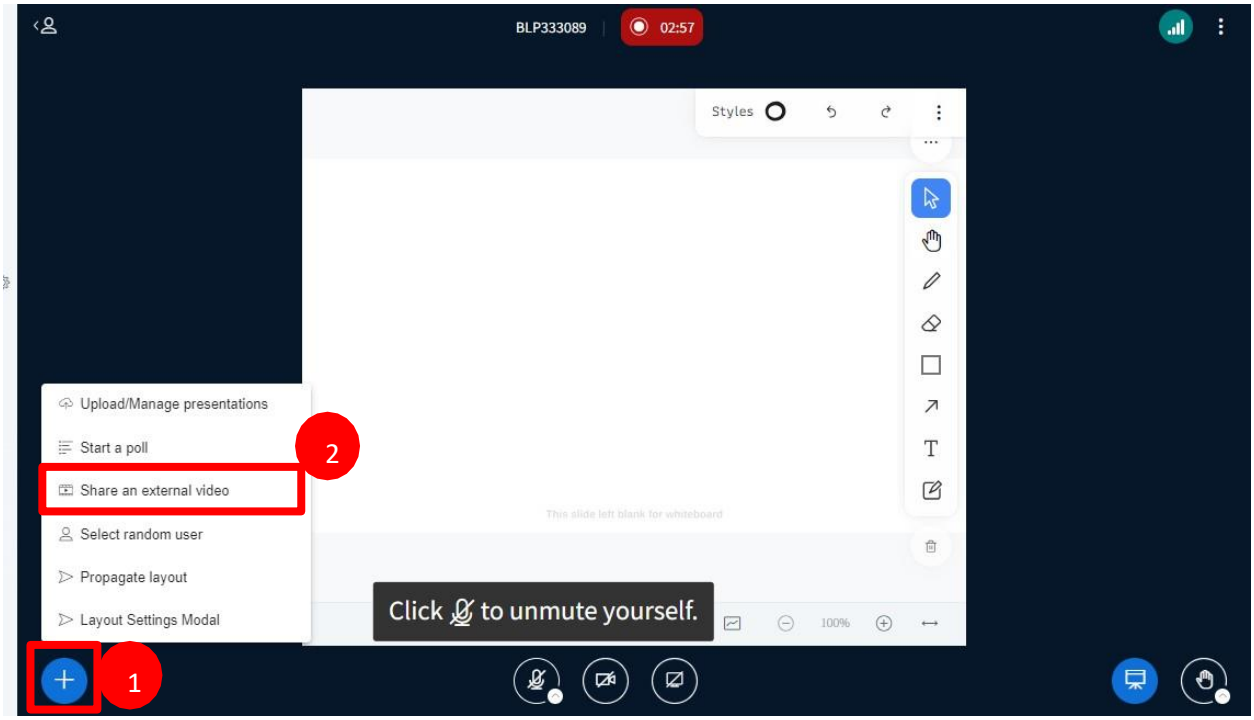
Step-4. Select “Response types”.



Step-5. Enter answers.

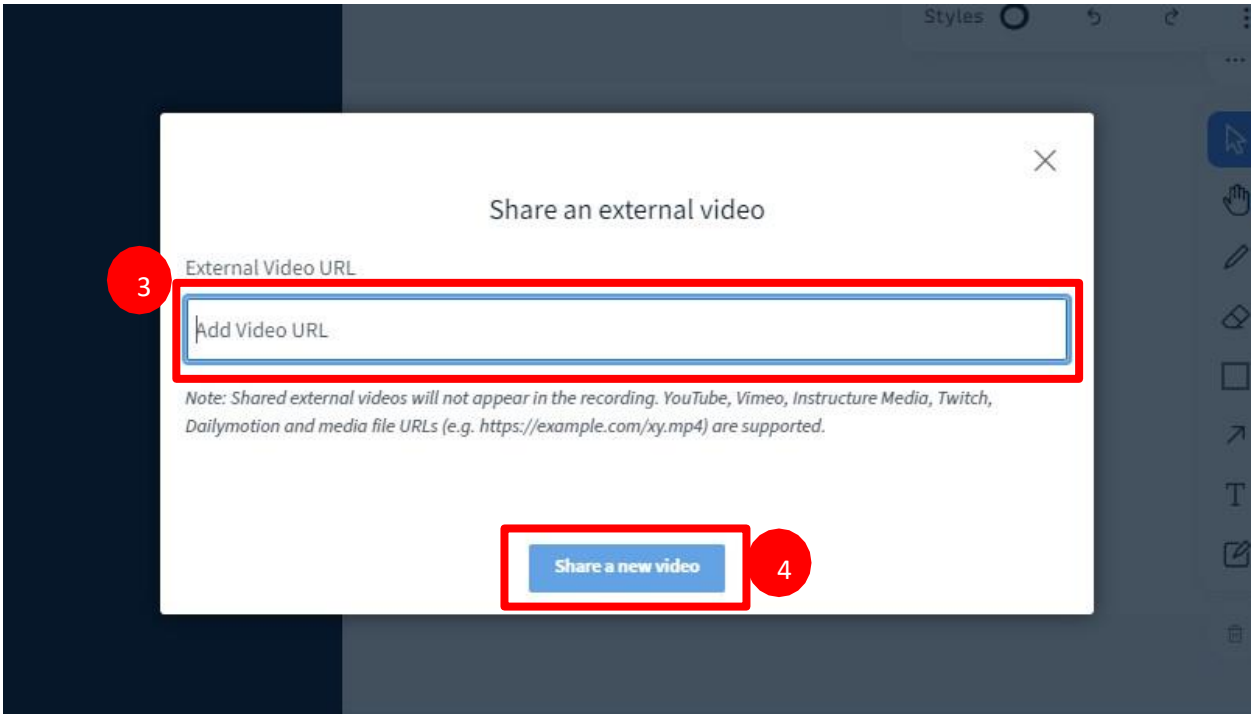
Step-6. Click on “Start Poll”.

How to share an external video?



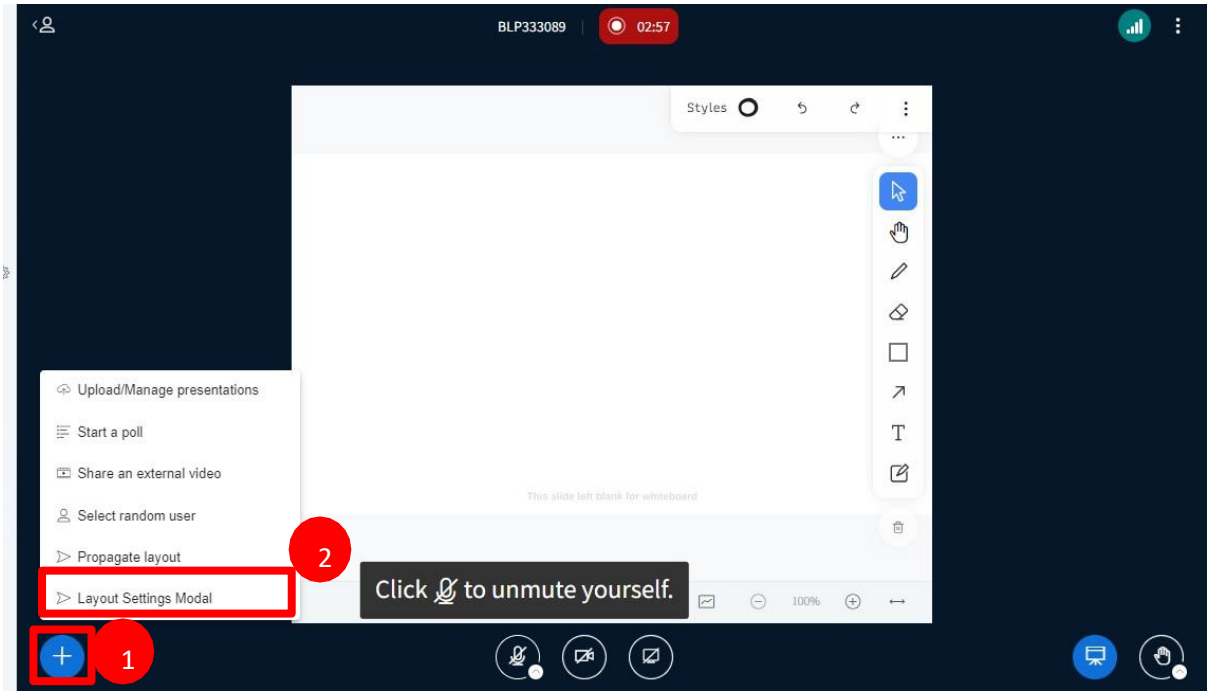
Step-1. Click “+” in blue.

Step-2. Select “Share an external video”.



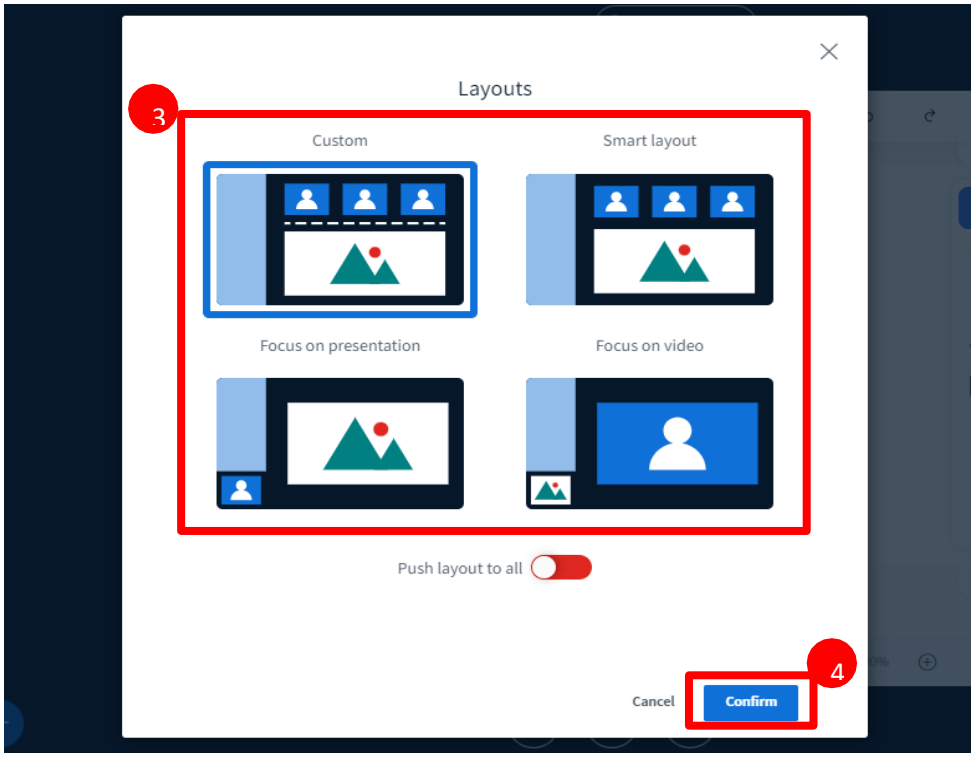
Step-3. Enter the URL, under Add Video URL. Step-4. Click on “Share a new video”

Layout Settings



Step-1. Click “+” in blue.

Step-2. Select “Layout Settings Modal”.



Step-3. Select the layout.

Step-4: Click on “Confirm”

E-Learning in Agricultural Education

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Shashi.dahiya@icar.gov

1. E-Learning in Agricultural Education

E-Learning Portal (https://elearning.icar.gov.in/) is an innovative initiative revolutionizing agricultural education with accessible and flexible learning opportunities. The portal's comprehensive course collection spans various academic disciplines, ensuring a holistic and enriching agricultural educational for students, researchers, faculty, and anyone who wants to learn about agriculture alike.

The diverse content types cater to students from different academic backgrounds and preferences. The portal offers courses for Undergraduate (UG) and Post-graduate (PG) students under separate headers. Students can delve into Course Content, PowerPoint presentations (PPTs), Glossary, and multiple-choice questions (MCQs) with assessments. PDFs offer detailed explanations and concepts, while engaging PPTs facilitate a better understanding of complex topics. The Glossary acts as a go-to resource for quick reference and interactive MCQs aid in self-assessment.

All the courses on the portal are methodically aligned with the agricultural education curriculum and are created by renowned faculty of agricultural universities. To maintain the high quality of the courses, unit reviewers and course reviewers maintain a system of checks and balances on the content that is finally delivered on the portal.

The comprehensive learning resources can be accessed anytime, anywhere, and learning can be undertaken at one's own pace. The E- learning portal is a holistic platform offering considerable resources in a systematic manner to provide the best digital education in the agriculture domain.

2. Capabilities of E-Learning Portal:

- **Course Content and Modules:**
  - Curriculum-based Resources: Hosts a diverse range of learning materials, including lectures, presentations, videos, e-books, and research papers aligned with agricultural studies.
  - Structured Courses: Organized into modules or courses covering various disciplines within agriculture, such as agronomy, horticulture, animal husbandry, and agricultural engineering.

- **Interactive Learning Tools:**

  Quizzes and Assessments: Provides tools for self-assessment, quizzes, and examinations to gauge understanding and knowledge retention.

- **Certification and Credentials:**

  Certificates: Issues certificates upon course completion or achievement milestones, which can be valuable for professional development.

- **User-Friendly Interface and Accessibility:**
  - Intuitive Design: A user-friendly interface for easy navigation and access to resources, suitable for users with varying levels of technical expertise.
  - Mobile Compatibility: Accessibility across multiple devices (computers, tablets, smartphones) to facilitate learning anytime, anywhere.

- **Continuous Updates and Improvement:**
  - Regular Content Updates: Ensures the inclusion of updated information, new research findings, and advancements in agricultural sciences.
  - Feedback Mechanism: Incorporates feedback loops for users to suggest improvements, report issues, and contribute to platform enhancement.

- **Integration with Institutions and Collaboration:**

  Integration with Universities: Collaborates with agricultural universities and institutes affiliated with ICAR to ensure alignment with their curriculum and requirements.

- **Technical Support and Training:**
  - Help Desk/Support: Provides assistance and troubleshooting for technical issues that users might encounter.
  - Training Resources: Offers guides, tutorials, or webinars to familiarize users with the platform's functionalities.

- **Resource Repository and Open Access:**

Centralized Repository: Acts as a centralized hub for accessing a wide range of agricultural resources, fostering an environment of open access to knowledge.

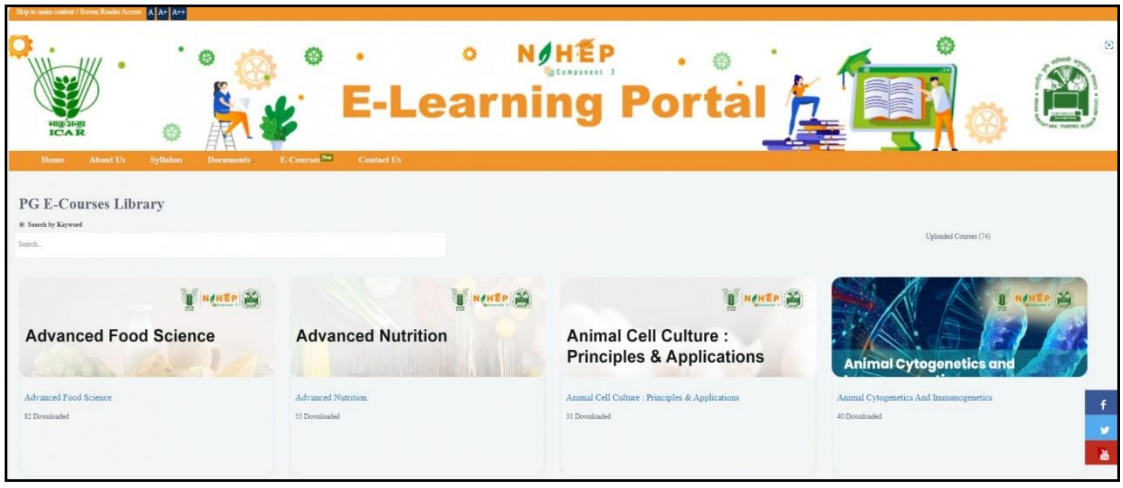
- **Analytics and Reporting:**

  Usage Analytics: Generates reports on user engagement, course completion rates, and other metrics to measure the effectiveness of the platform.

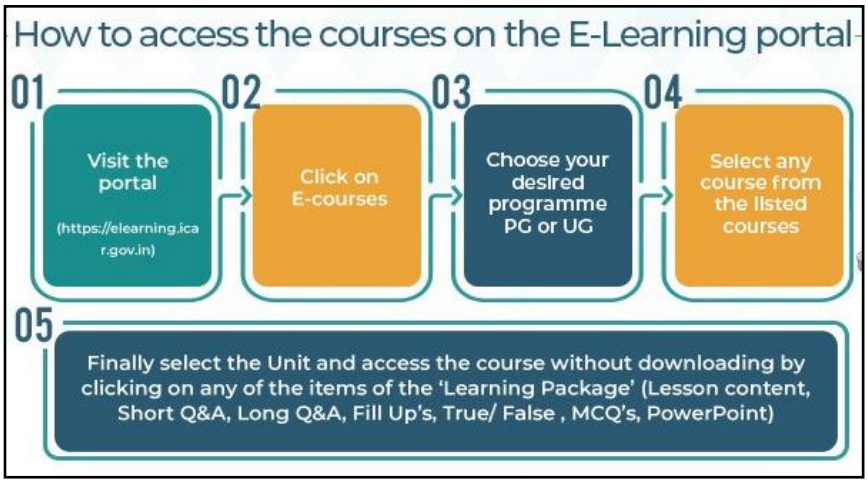
3. Features of E-Learning portal

- **Course Access and Resources:**

Students are able to access UG and PG courses and even are able to download them once they login. They can also view the course content such as lesson content, PDF presentation, MCQs, short Q&A, long Q&A, fill up's and true/false.



Steps to access course:



- **Access to content anytime-anywhere:**

  The portal content is available to anyone at any point of time. Within fraction of time whole content library can be accessed.

- **Self-paced learning:**

  Learners may have the flexibility to progress through courses at their own pace, allowing for a more personalized learning experience.

- **E-resources:**

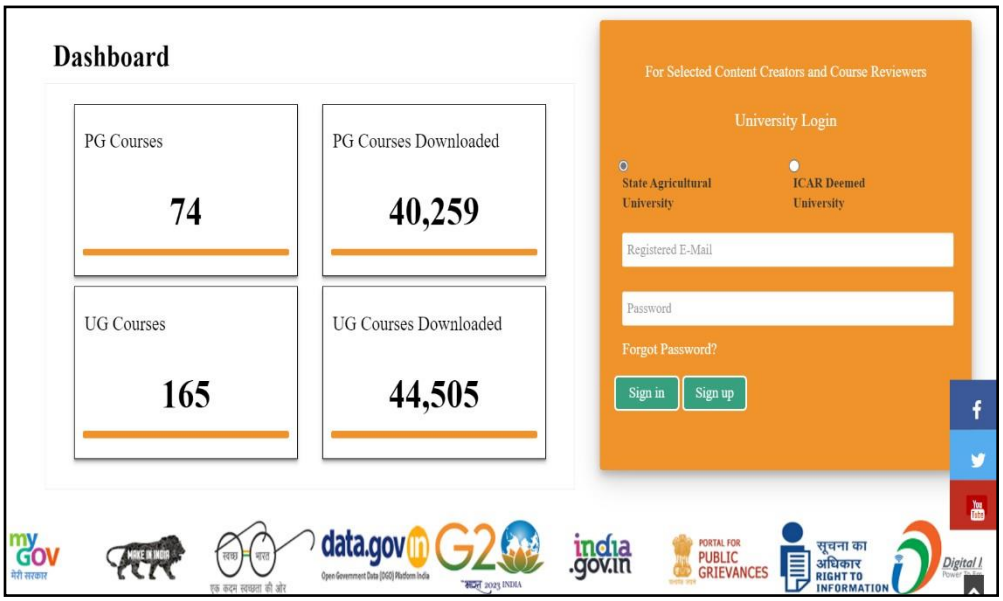
  ICAR might provide electronic resources like e-books, research papers, and other digital materials to support the learning process.

- **Multimedia Content:**

  E-learning platforms often incorporate multimedia elements like videos, animations, and interactive simulations to enhance the learning experience.

- **Spreading Knowledge:** It helps tell more people about agriculture and shows new ideas and discoveries.

- **Teaching Help:** Teachers can use it to learn new teaching methods and share ideas with other teachers.



4. Applications of E-Learning portal:

The ICAR (Indian Council of Agricultural Research) E-Learning portal serves various applications and purposes within the context of agricultural education and research. Here are several key applications:

- **Supplementary Learning Resource:**

- Augmenting Classroom Education: Supports traditional classroom teaching by providing additional resources like lectures, videos, and research materials.
- Enhanced Learning Experience: Supplements textbooks and lectures with multimedia content for a richer learning experience.

- **Remote Education and Accessibility:**

- Accessible Learning: Facilitates learning from anywhere, particularly beneficial for students in remote areas or those unable to attend physical classes.
- Flexibility: Offers flexibility in scheduling studies around other commitments due to its online accessibility.

➢ **Skill Enhancement and Professional Development:**

- Continuing Education: Provides opportunities for professionals in the agricultural field to enhance skills, update knowledge, and stay abreast of industry advancements.
- Certification Courses: Offers courses that contribute to professional development and certification.

➢ **Support for Research and Innovation:**

- Access to Research Materials: Provides access to a repository of research papers, case studies, and scholarly articles relevant to agricultural sciences.
- Collaborative Research: Facilitates collaboration among researchers and scholars across different institutions for collaborative projects and knowledge sharing.

➢ **Faculty Development and Training:**

- Training and Resource Hub: Offers resources, workshops, and training materials for faculty members to enhance their teaching methodologies and update their knowledge base.
- Professional Exchange: Encourages networking and exchange of ideas among educators in the agricultural field.

➢ **Assessment and Evaluation:**

- Student Evaluation: Provides tools for assessments, quizzes, and examinations to evaluate students' understanding and progress.
- Performance Tracking: Helps in tracking students' performance and understanding of course materials.

➢ **Promotion of Agricultural Education:**

- Outreach and Awareness: Helps in promoting agricultural education by reaching a wider audience, including aspiring students, professionals, and enthusiasts.
- Showcasing Innovations: Highlights innovative practices, research findings, and advancements in agricultural sciences.

- **Industry Integration and Collaboration:**

- Industry-Academia Collaboration: Encourages collaboration between academic institutions and industries within the agricultural sector for knowledge exchange and practical application.
- Job and Internship Opportunities: Connects students with industry opportunities, internships, and job placements within the agricultural domain.

- **Continual Improvement and Innovation:**

- Feedback Mechanism: Allows users to provide feedback, enabling continual improvement of course materials, platform usability, and overall learning experience.
- Adaptation to Technological Advances: Keeps pace with technological advancements, incorporating new tools and features to enhance learning.

- **Capacity Building and Empowerment:**

- Empowering Agricultural Community: Empowers farmers, agricultural professionals, and stakeholders by disseminating knowledge and best practices through accessible e-learning resources.
- The ICAR E-Learning portal serves as a multifaceted platform catering to various stakeholders within the agricultural education sector, contributing to education, research, skill development, and industry collaboration.

Development of Courses and Assessment in student Module of NARES-Blended Learning Platform

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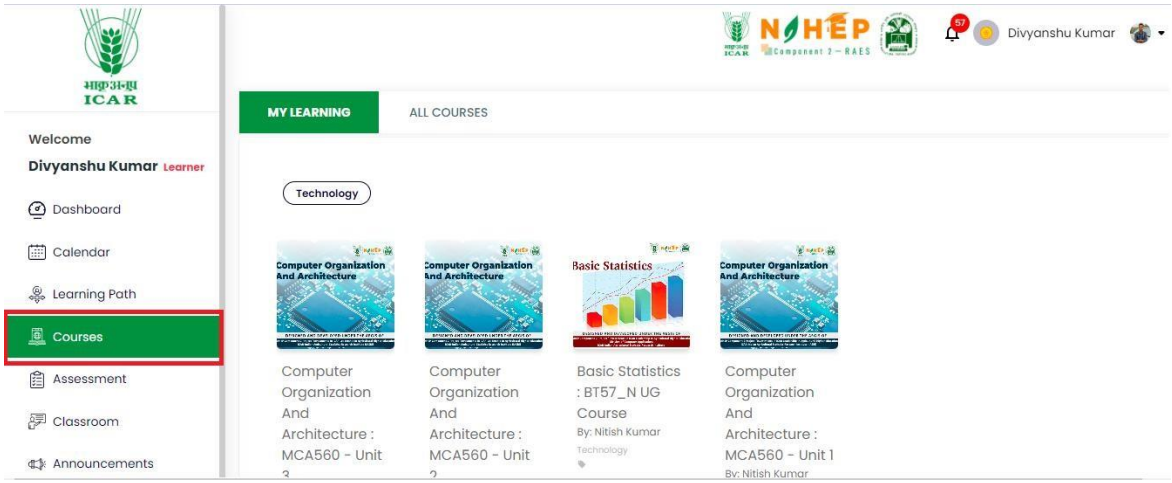
1. How View Courses?

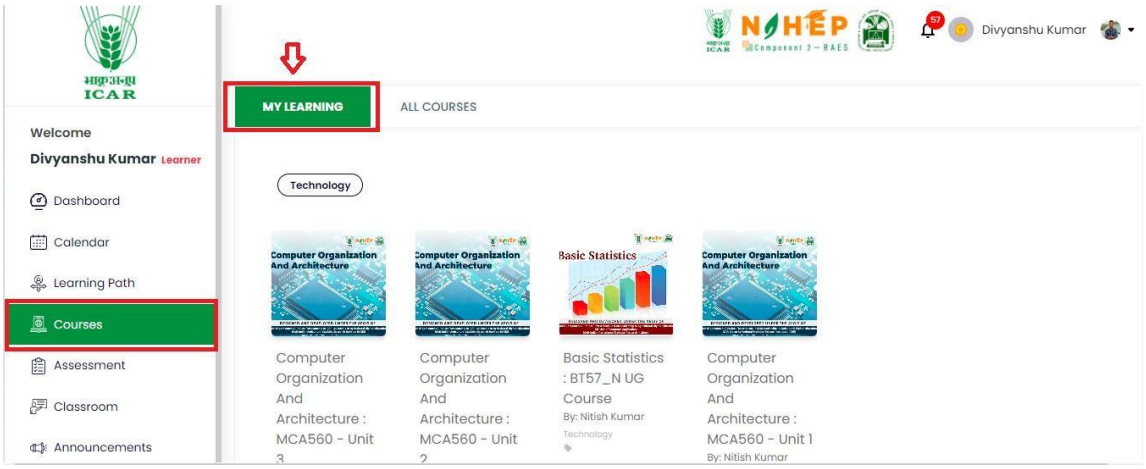
Step 1 – After successful login to the application go to the 'Courses' module, the below screen will appear. There will be two tabs: 'MY LEARNING' and 'ALL COURSES'



1.1 How to See Assigned Courses?

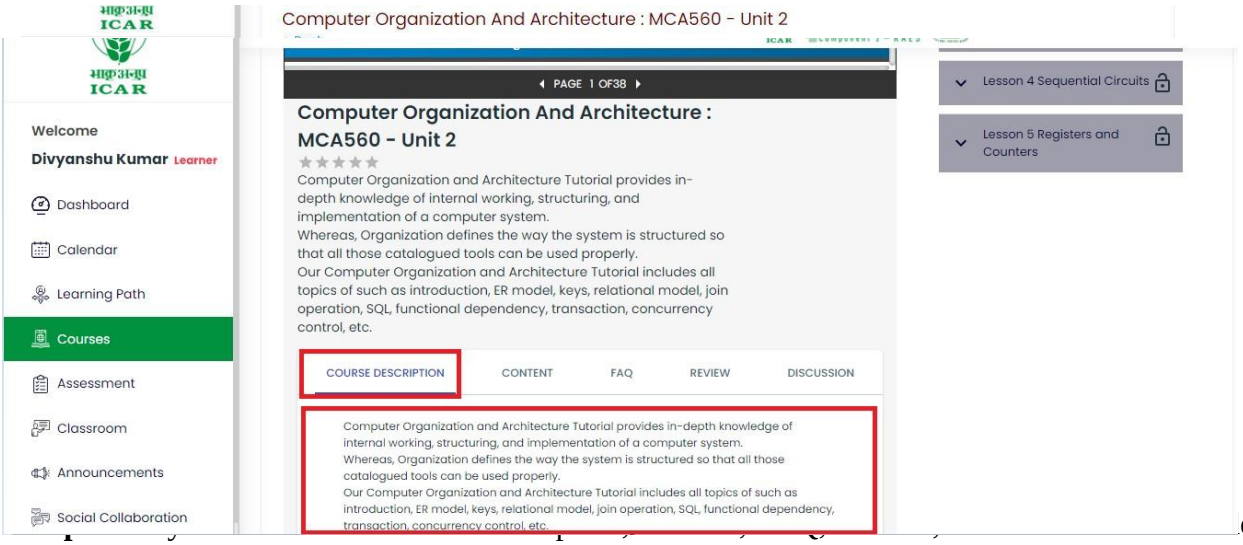
Step 1 – Users can see all the assigned courses to them under MY LEARNING section, as

shownbelow.

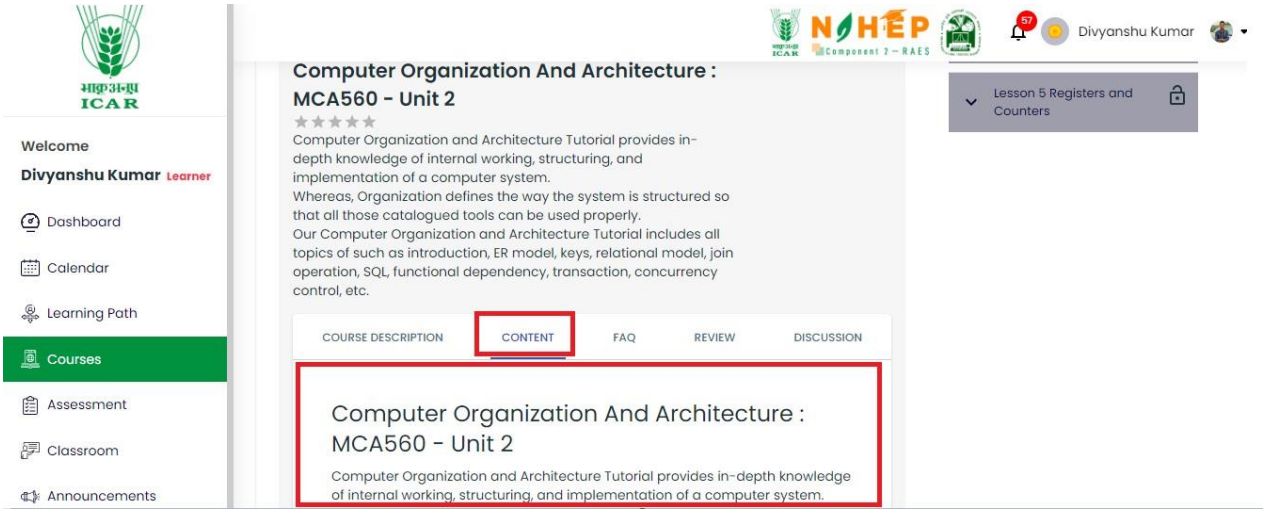


Step 2 – If you wish to watch videos or read the course, select the course topic, a new screen will appear as shown below.

Step 3 – Further lessons can be learnt by clicking on Course Content as shown below.

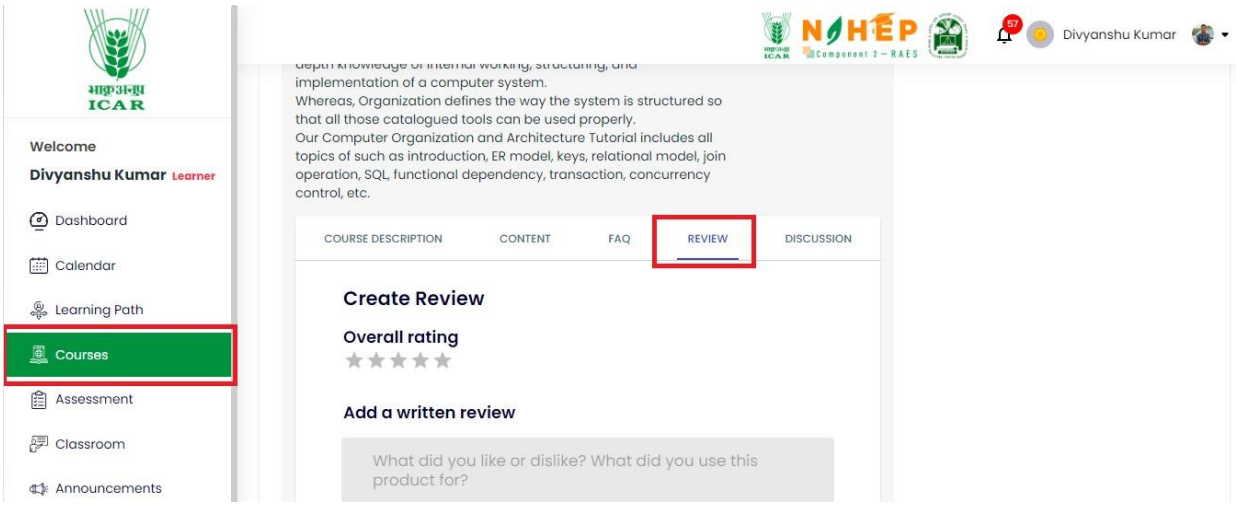


own the page a little and the screen will appear as shown below.

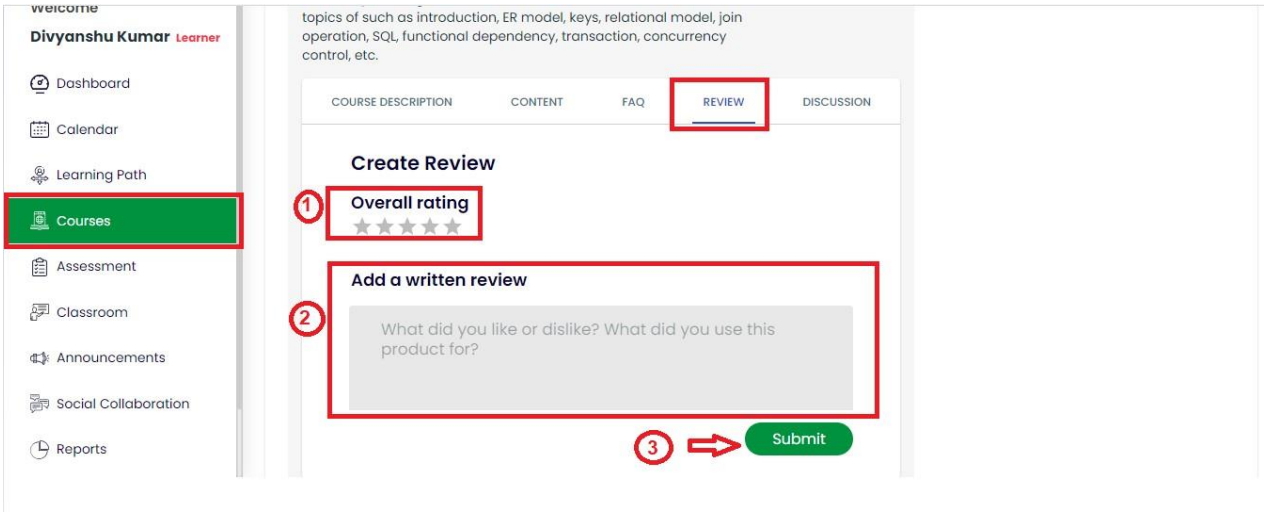


1.1.1 How to Rate a Course?

Step 1 – If you want to rate/review the course, click the Review option, and a page below will appear.

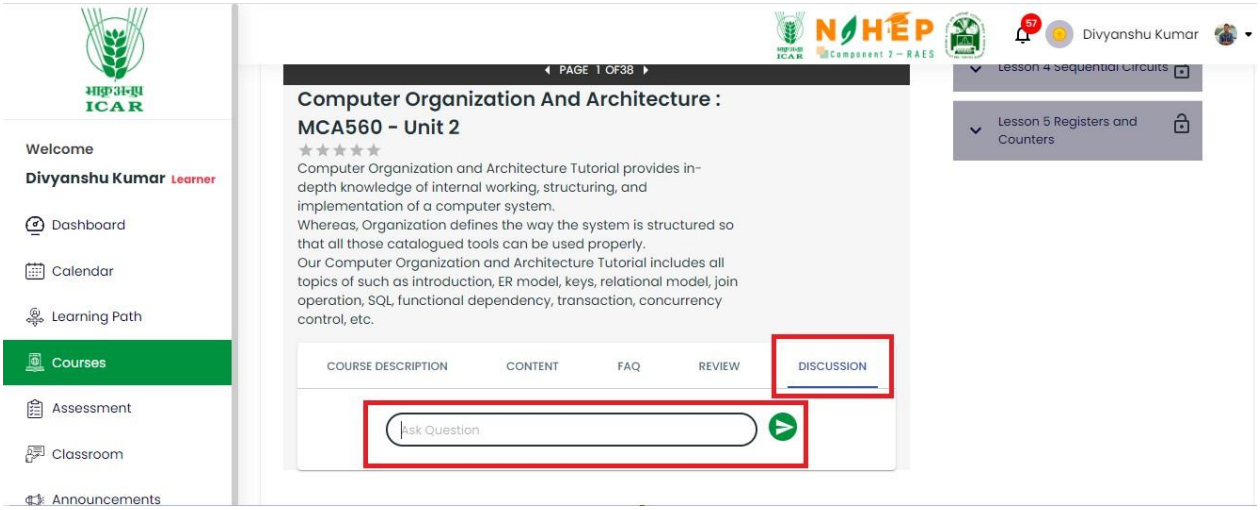


Step 2 – Put a star rating, write a comment, and click on submit button as shown in the below screen.



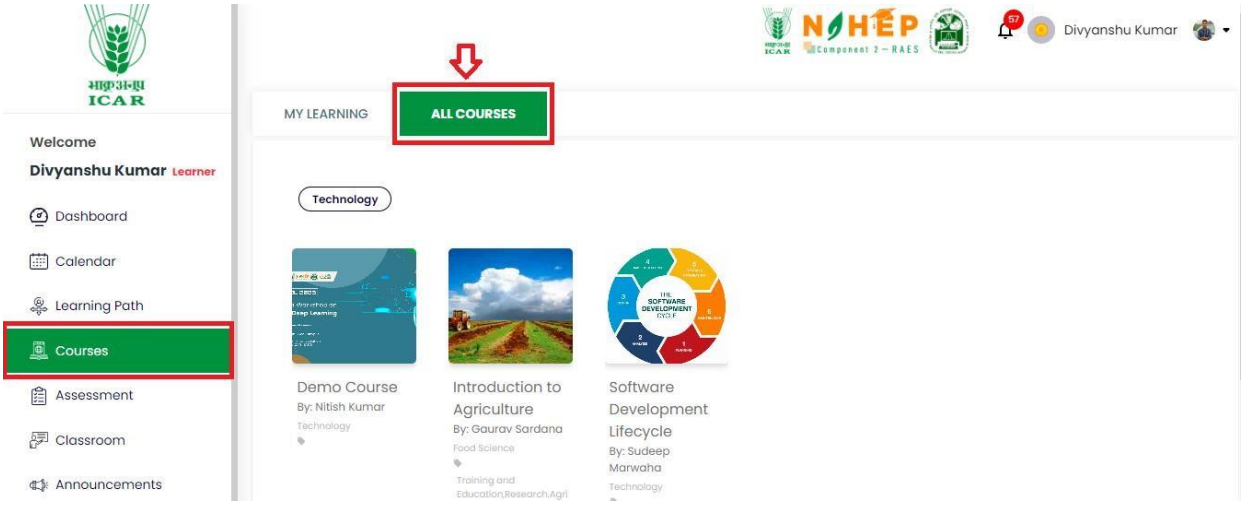
1.1.2 How to Start Discussion/Ask a Question?

Step 1 – If you wish to start a discussion or ask questions on the course with other students and faculties, click on the Discussion option, a below screen will appear and you can ask a question/start discussion.



1.1.3 Want to explore more Courses?

Step 1 – If you wish to explore more courses then they are available under the 'ALL COURSES' section as shown in the below screen.



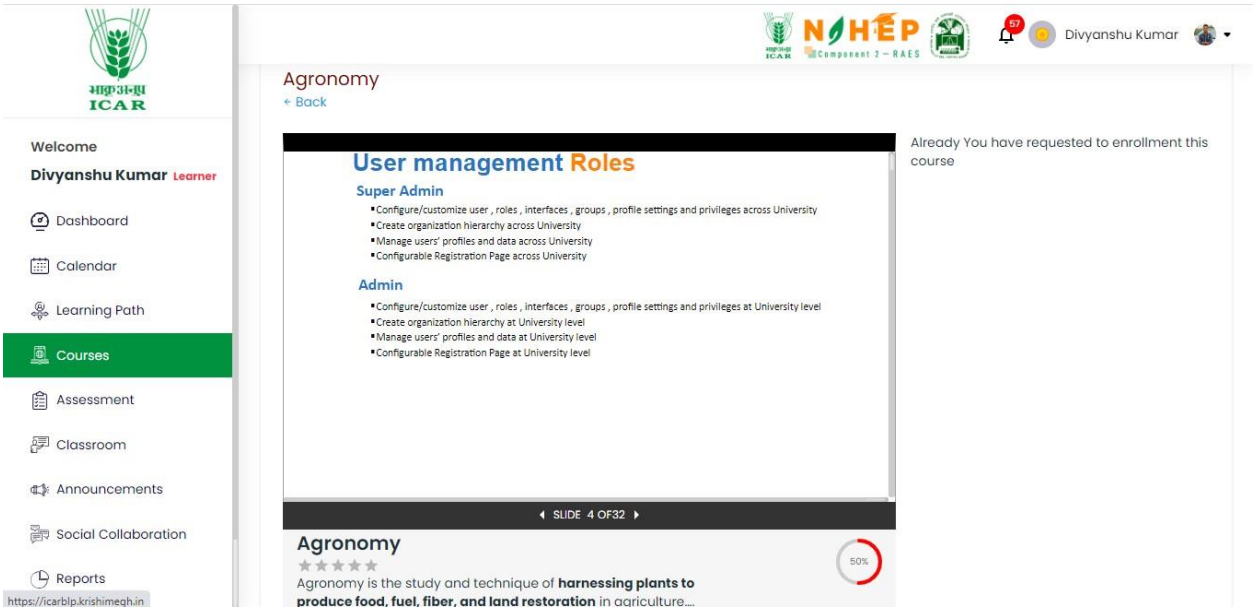
Step 2 – Click on any course of your choice, a below screen will appear with a short introduction about the course and an 'Enrol' button on the right-hand side as shown in the below screen.

Step 3 – Click on Enrol button, a below page will appear.

Step 4 – For going Back to the page, click the back button, and a screen below will appear as shown below.

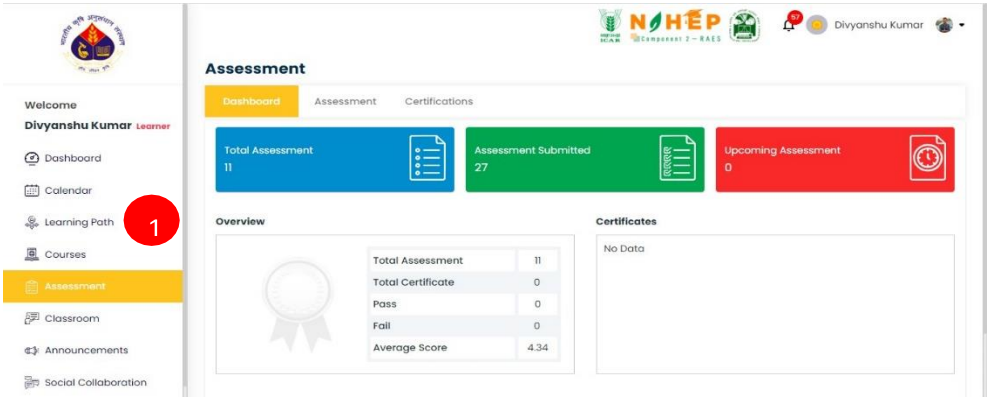
1.1.4. Want to see Course Progress?

Step 1 – Click on any assigned course and see the course percentage below. Suppose you have completed only 4 lessons out of 8 lessons then the course percentage will be seen as 50% as shown below.



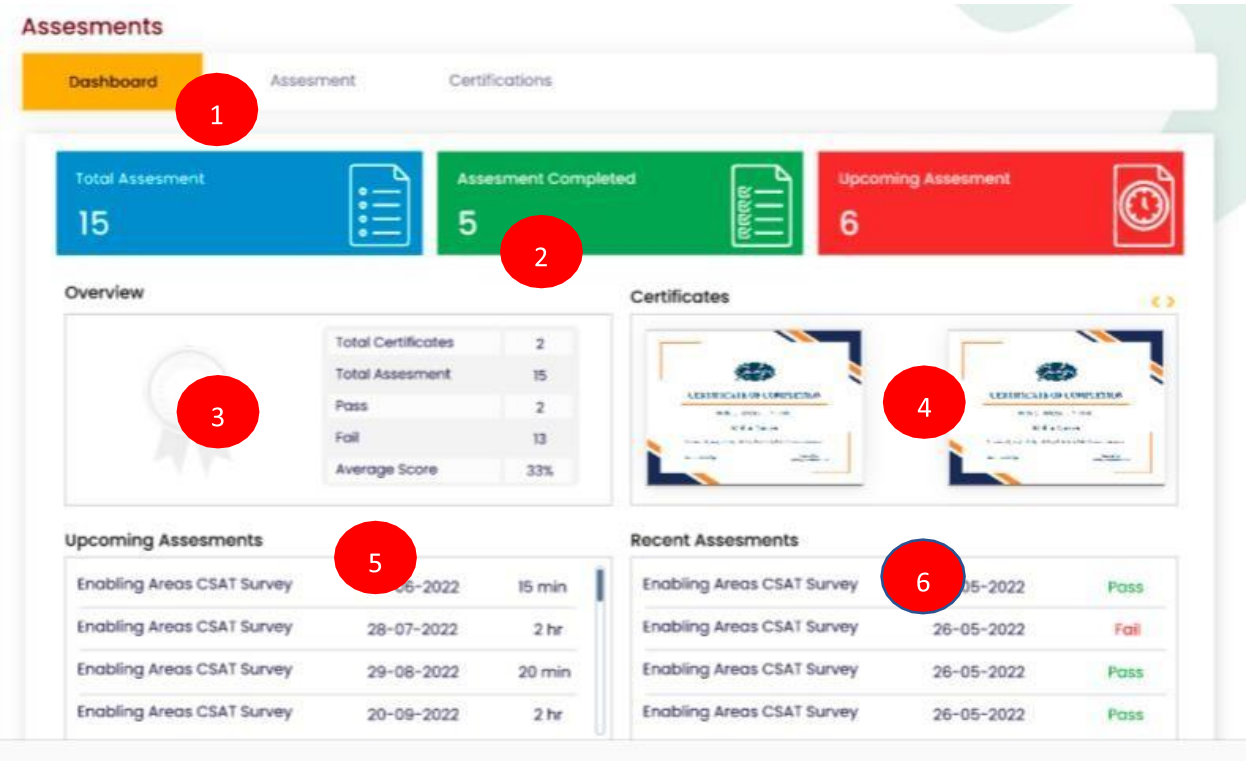
2. How to start an assessment?

2.1 Assessment Module



Step1. The User scrolls down the left menu bar to click on the Assessment module.

2.2 Dashboard



Step1. Users can see the assessment dashboard.

Step2. Users can see the Total Assessment count, Total Assessment Completed count, andUpcoming Assessment count.

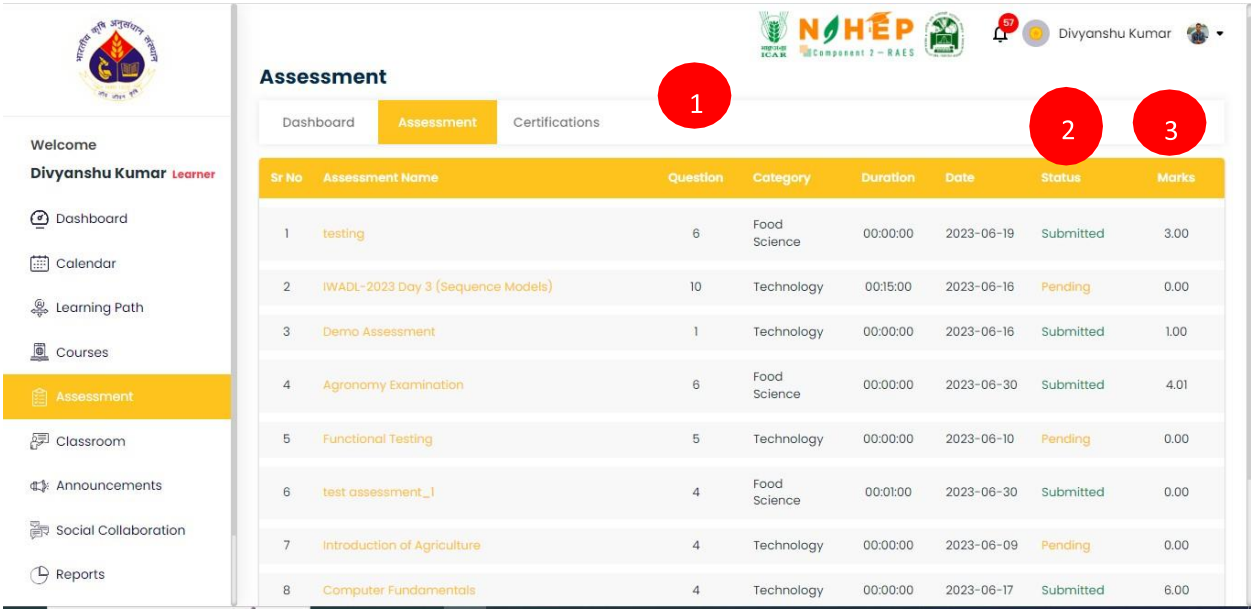
Step3. Users can see the Overview of the assessments completed like Total Certificates, TotalAssessments, the Pass-Fail, and Average score

Step4. Users can see the Certificates received.

Step5. Users can see the details of the Upcoming Assessments

Step6. Users can see Assessments that are recently completed.

2.3 Assessment

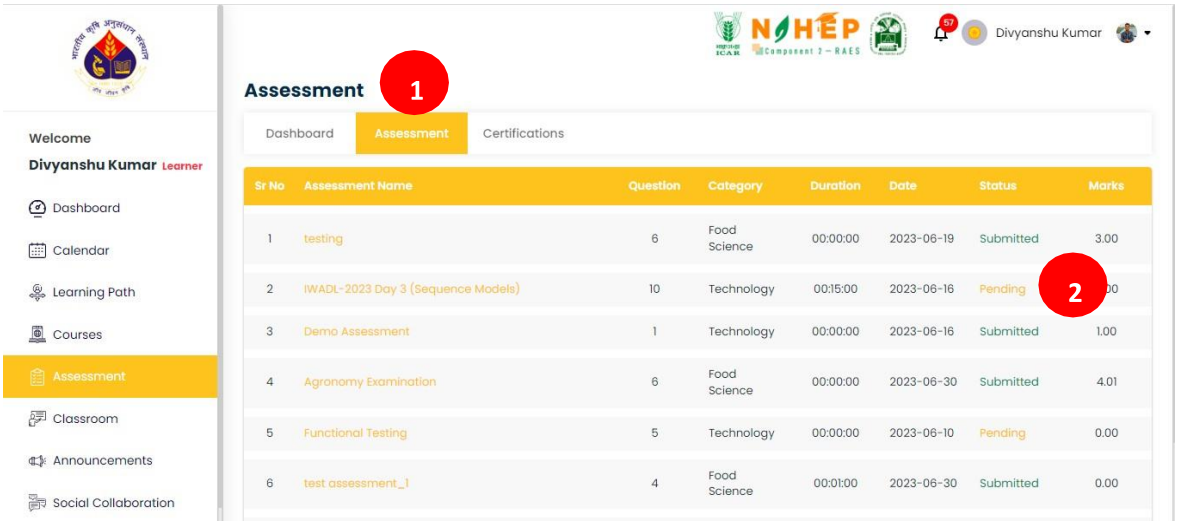


Step1. The users can see the list of all the assessments assigned to them.

Step2. Can check the status of the assessments, i.e., submitted or pending.

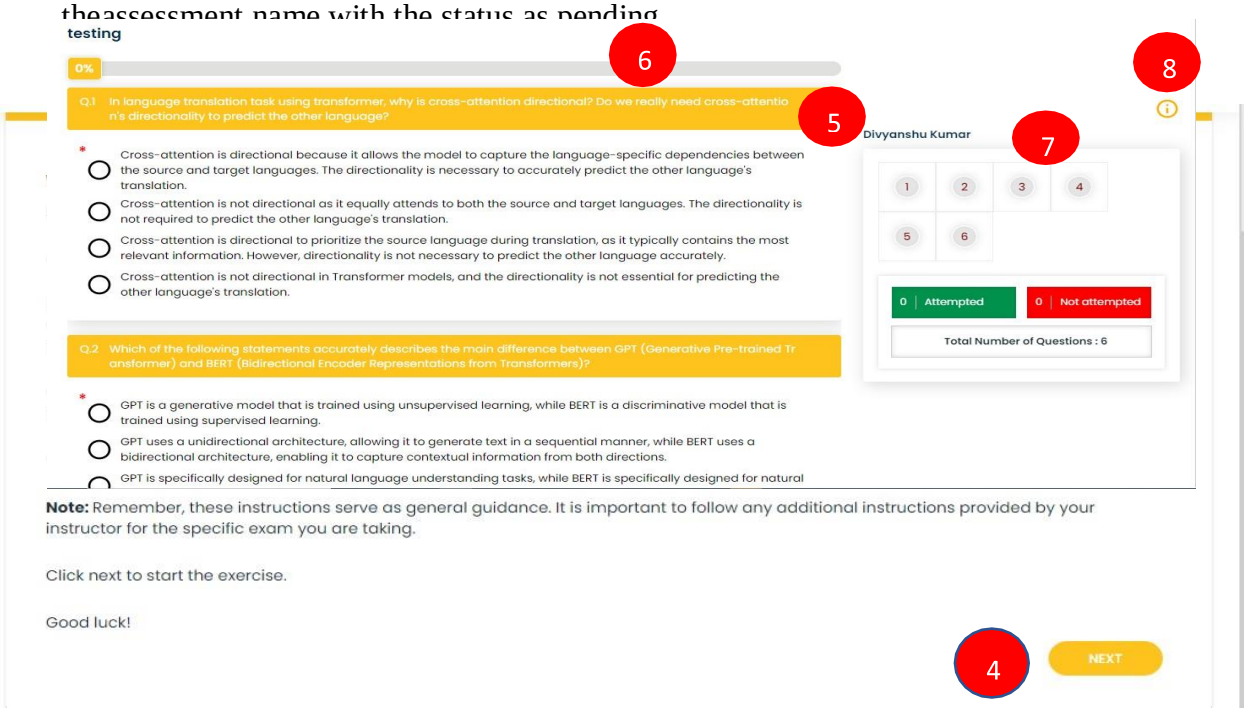
Step3. Click on the 'Marks' option to see the assessment marks received

2.4 Attempting Assessment.



Step1. The users click on the assessment tab to view the assessments assigned

Step2. The users can see the list of all the assessments assigned to them and clicks on theassessment name with the status as pending



Step3. The users can now be able to see the instructions on the screen.

Step4. The users click on next to attempt the assessment.

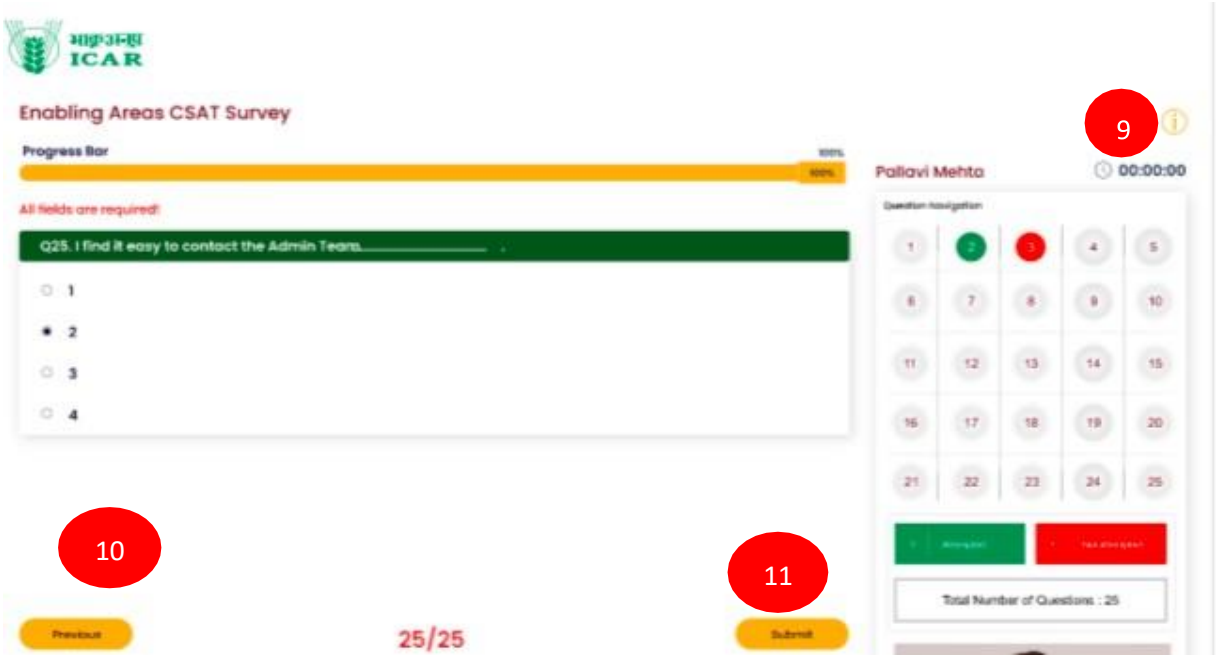
2.5 Assessment Screen

Step5. The users can now able to view the assessment questions.

Step6. The users can track their progress through the progress bar.

Step7. The users can view question view the question palette to track the status of individualquestions. Question numbers marked in green represent attempted, while those in red represent unattempted.

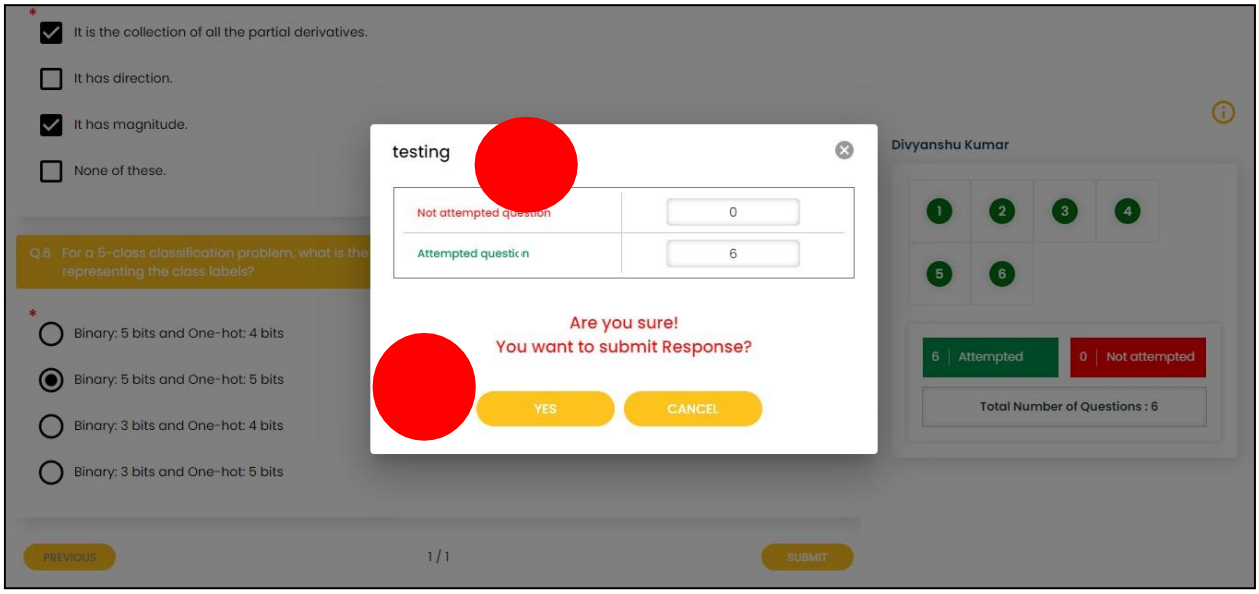
Step8. The user can see the assessment instructions again by clicking on the icon.



Step9. The users can see the timer running if the assessment is time-bound.

Step10. The users can move to previous questions by clicking on the previous button.

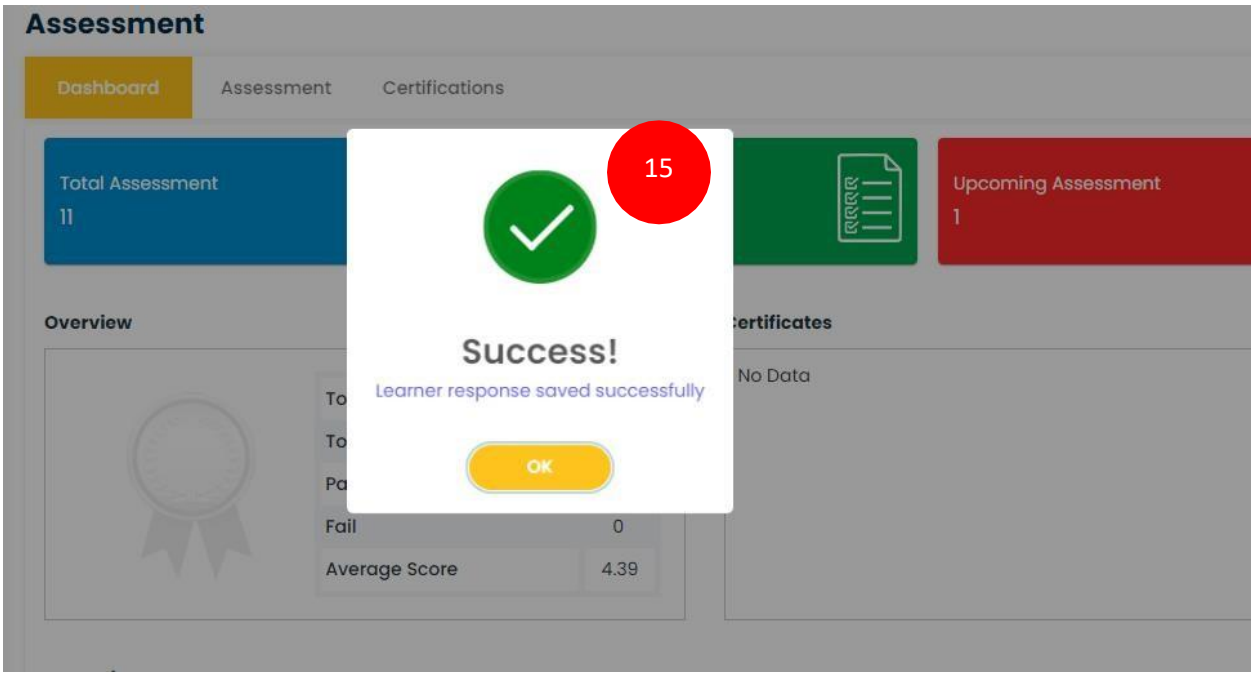
Step11. The user can submit the assessment by clicking on submit button



Step12. The users get the confirmation pop-up for the final submission.

Step13. The users can now click on Yes.

Step14. The user gets Thank you screen.



Step15. The user gets a Success screen after successful submission.

Development of Classroom, Announcement and Reports in Student Module of NARES-Blended Learning Platform

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Classroom Module- Blended Learning Platform

The classroom model of BLP aims to combine traditional face-to-face instruction with technology enhanced learning experiences providing an interactive and engaging environment for students.

Key components:

1. **Interactive sessions:**
   a) **Instructor-Led Discussions:** Engage students in live and interactive discussions to deepen their understanding and knowledge.
   b) **Group exercises:** Incorporate collaborative group exercises to encourage critical thinking.

2. **Technology Integration:**
   a) **Supplementary materials:** Utilize digital resources such as videos, slides, or supplementary reading materials to complement in-class discussions.
   b) **Digital Whiteboards or Presentation Tools:** Enhance visual learning using digital boards to illustrate complex concepts and facilitate real-time collaboration.

3. **Assessment and Feedback:**
   a) **Formative Assessments:** Conduct in-class quizzes or short assessments to gauge understanding and provide immediate feedback.
   b) **Class Participation Evaluation:** Encourage active participation and provide feedback to students based on their engagement during discussions and activities.

4. **Collaborative Learning Environment:**

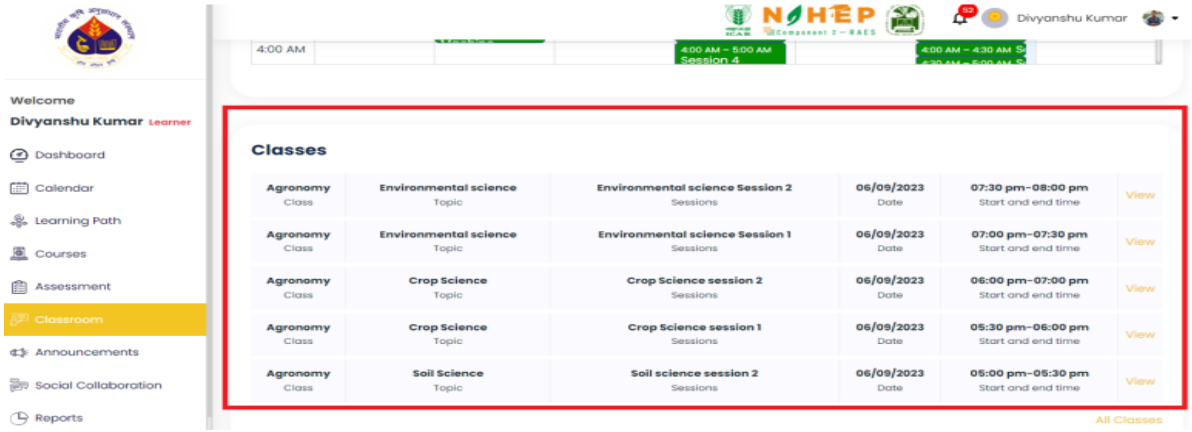
a) **Peer-to-Peer Interaction:** Encourage peer learning through group discussions, presentations, and peer review sessions.

b) **Facilitate Discussions:** Promote an open forum for students to ask questions, share insights, and explore diverse perspectives.

How to view classes?

Step 1: - Navigate to Classroom.

Step 2: - Click on "view all" to get access to all classes.



How to join a class?

Step 1: - Navigate to Classroom.

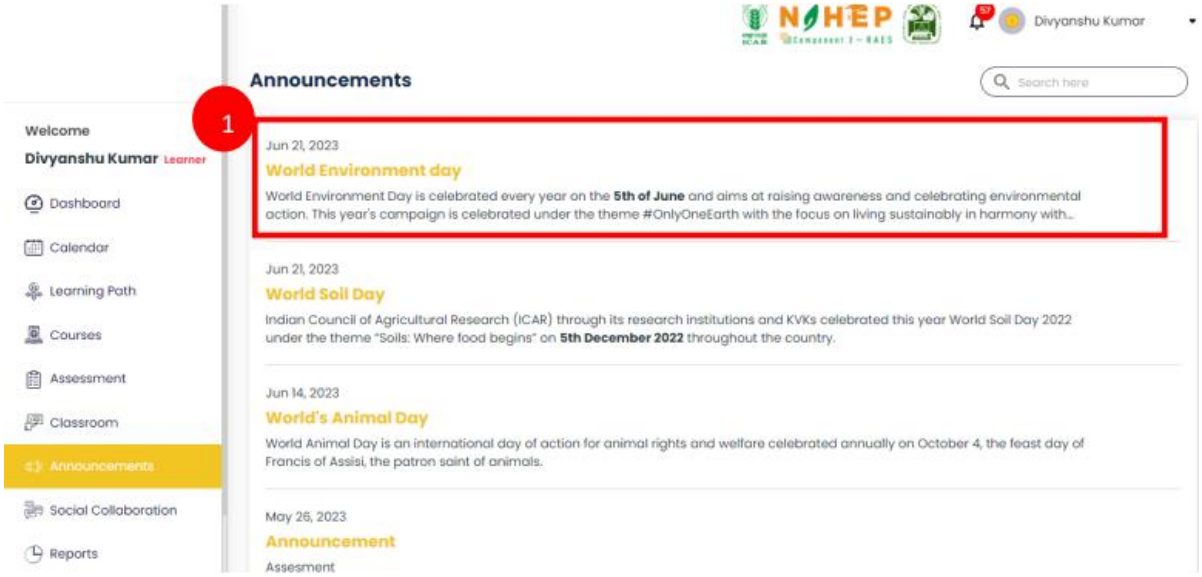
Step 2: - Click on "Play" icon to join the session.

Announcement Module- Blended Learning Platform

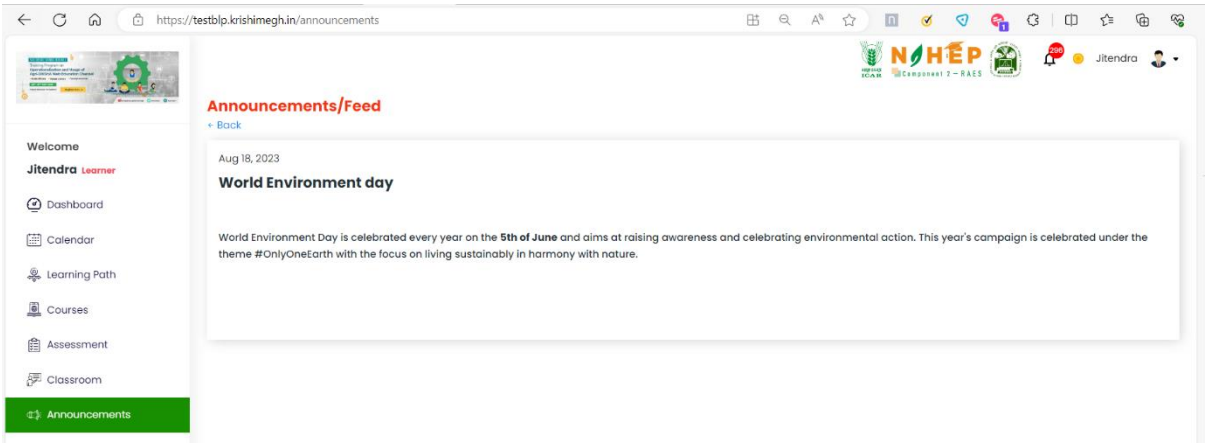
Announcement section with Blended Learning platform plays a crucial role for keeping student informed regarding an important event, course related updates or an important announcement.

How to view announcements?

Step 1: - Navigate to announcements.

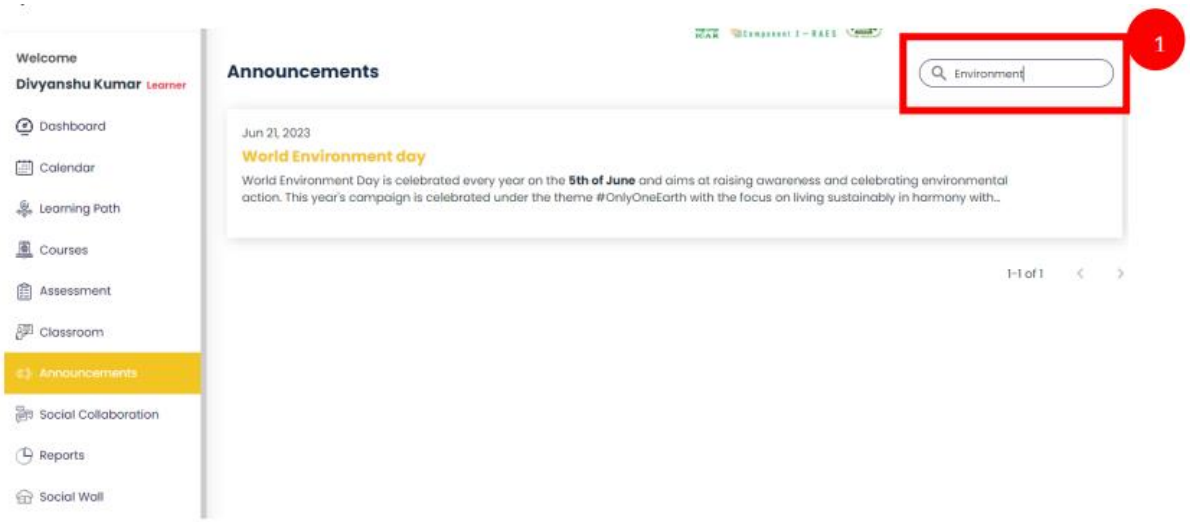


Step 2: - If a student clicks on an announcement, then they would be able to see that particular announcement.



How to search for an announcement?

Student can search for an announcement with the help of search functionality given in announcement section.

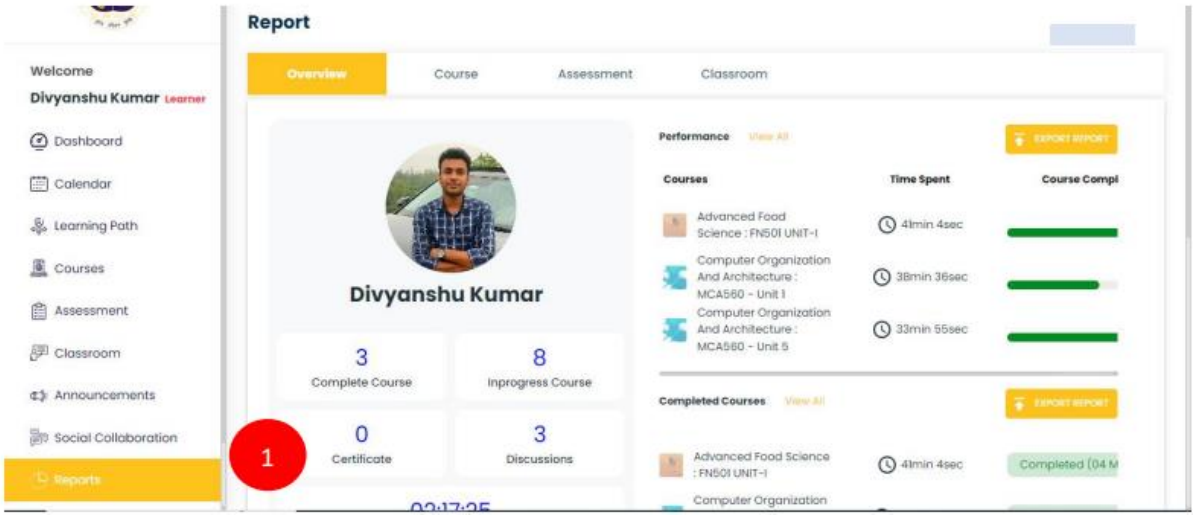


Reports Module- Blended Learning Platform

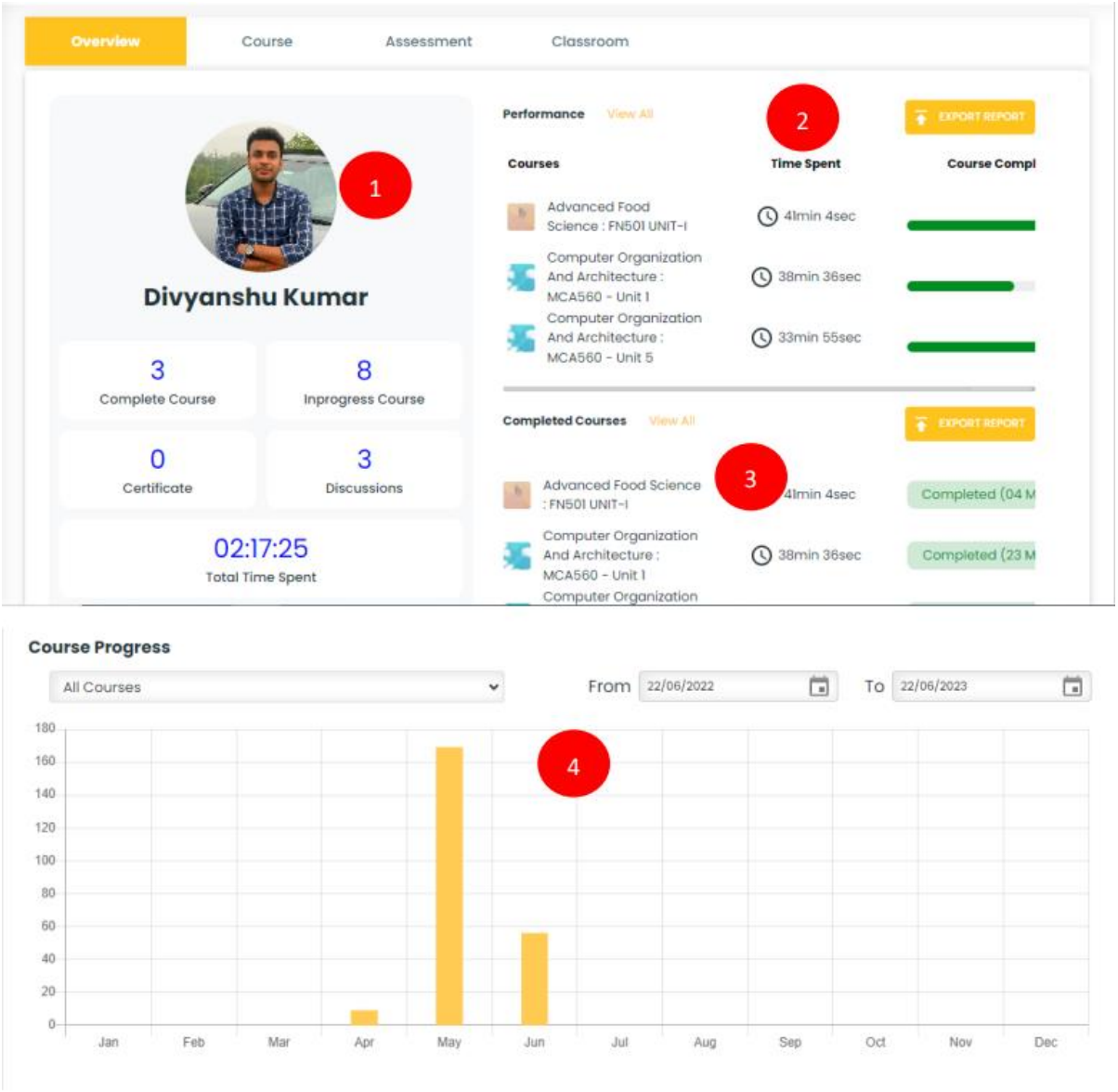
The report module in Blended learning Platform provides student with insights about their academic progress, performance metrics and classroom.

How to access reports?

Step 1: - Navigate to reports.



Step 2: - Click on overview to view overview report.



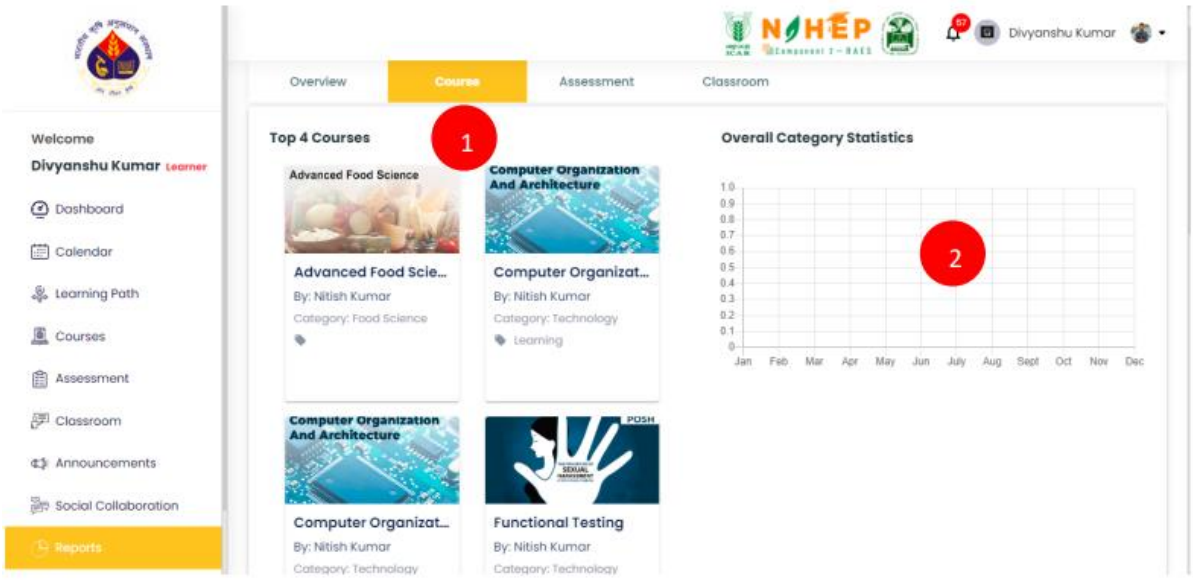
1: - BLP dashboard/report card

2: - Performance report

3: - Completed course report

4: - Course progress graph

Step 3: - Click on courses tab to view course report.


Welcome
Divyanshu Kumar Learner
Dashboard
Calendar
Learning Path
Courses
Assessment
Classroom
Announcements
Social Collaboration
Reports
Overview
Course
Assessment
Classroom
Divyanshu Kumar
Top 4 Courses
1
Advanced Food Science
Advanced Food Scie...
By: Nitish Kumar
Category: Food Science
Computer Organization And Architecture
Computer Organizat...
By: Nitish Kumar
Category: Technology
Learning
Computer Organization And Architecture
Computer Organizat...
By: Nitish Kumar
Category: Technology
POSH
Functional Testing
By: Nitish Kumar
Category: Technology
Overall Category Statistics
2
1.0
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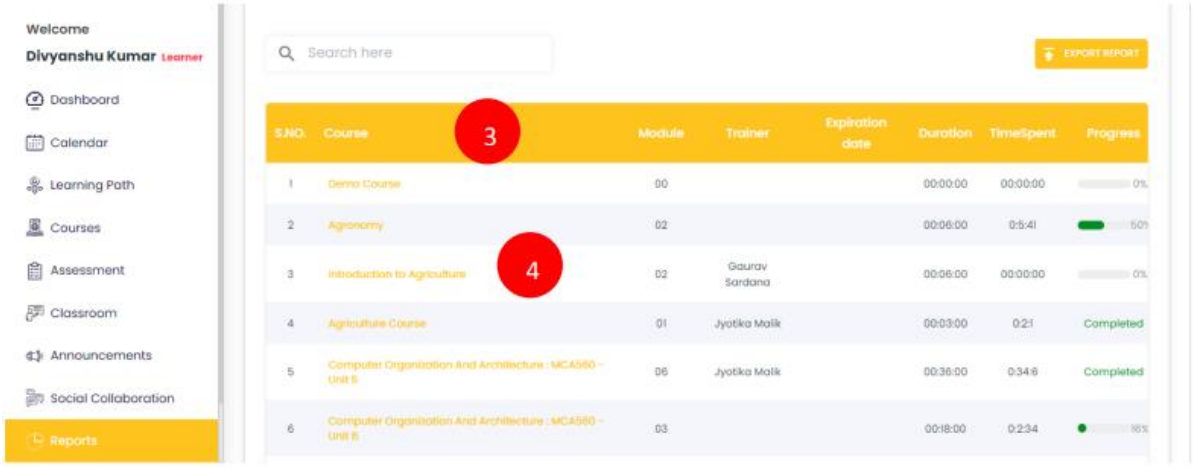
Welcome
Divyanshu Kumar Learner
Dashboard
Calendar
Learning Path
Courses
Assessment
Classroom
Announcements
Social Collaboration
Reports
Search here
EXPORT REPORT
3
S.NO.
Course
Module
Trainer
Expiration date
Duration
TimeSpent
Progress
1
Demo Course
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2
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02
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0:5:41
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Introduction to Agriculture
02
Gaurav Sardana
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Completed
5
Computer Organization And Architecture : MCA560 – Unit 5
06
Jyotika Malik
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6
Computer Organization And Architecture : MCA560 – Unit 5
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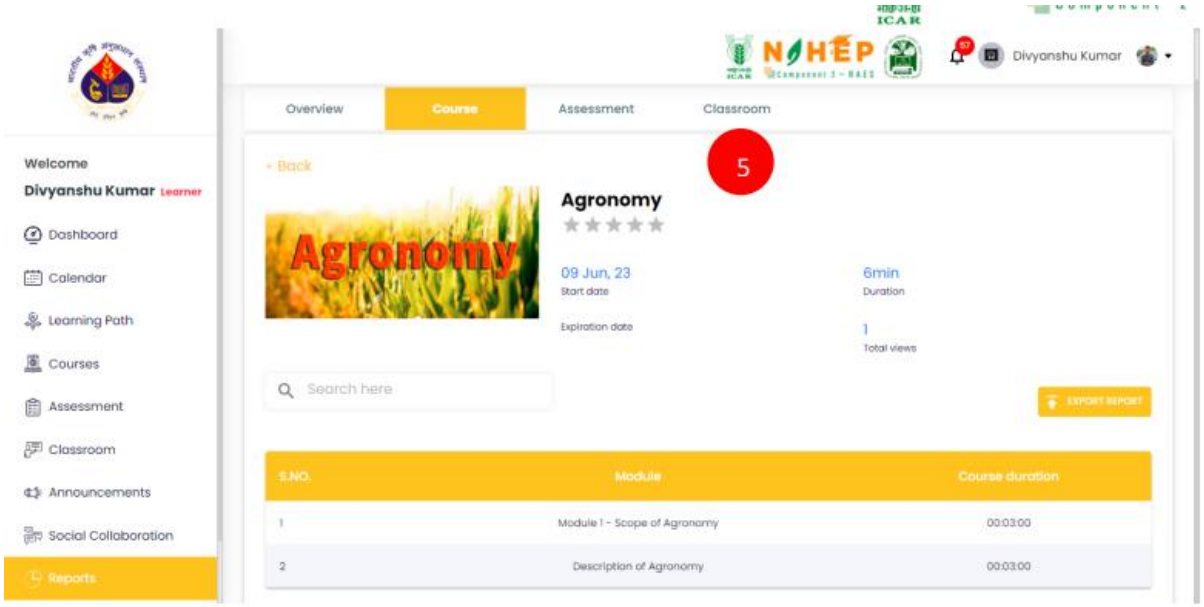


1: - Top courses

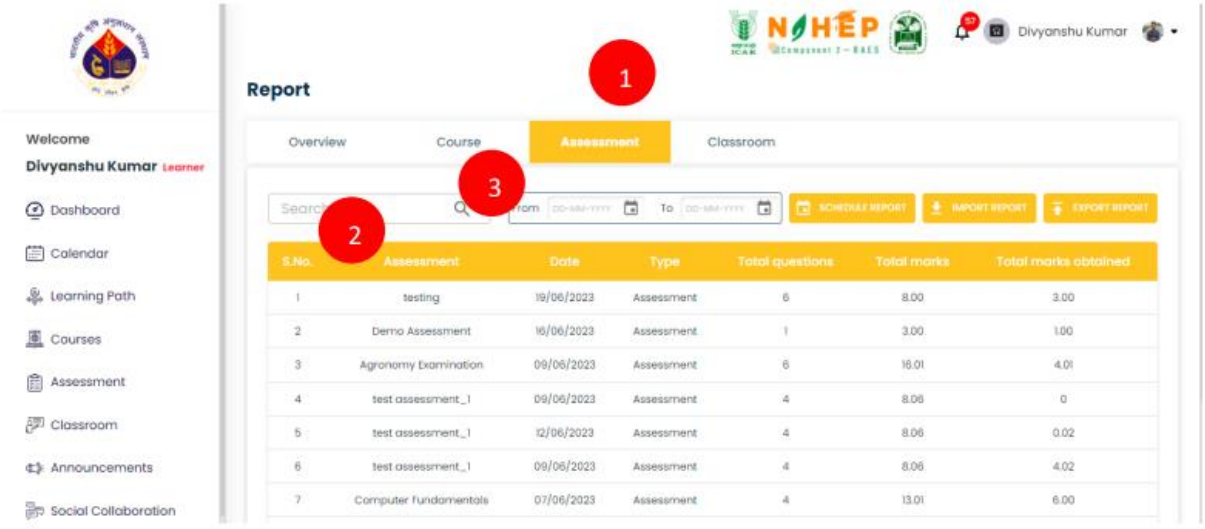
2: - Overall category statistics

3: - Course report

4: - User can click on individual course to view individual course report.

5: - Individual course report with module and duration

Step 4: - Click on assessment tab to view assessment report.

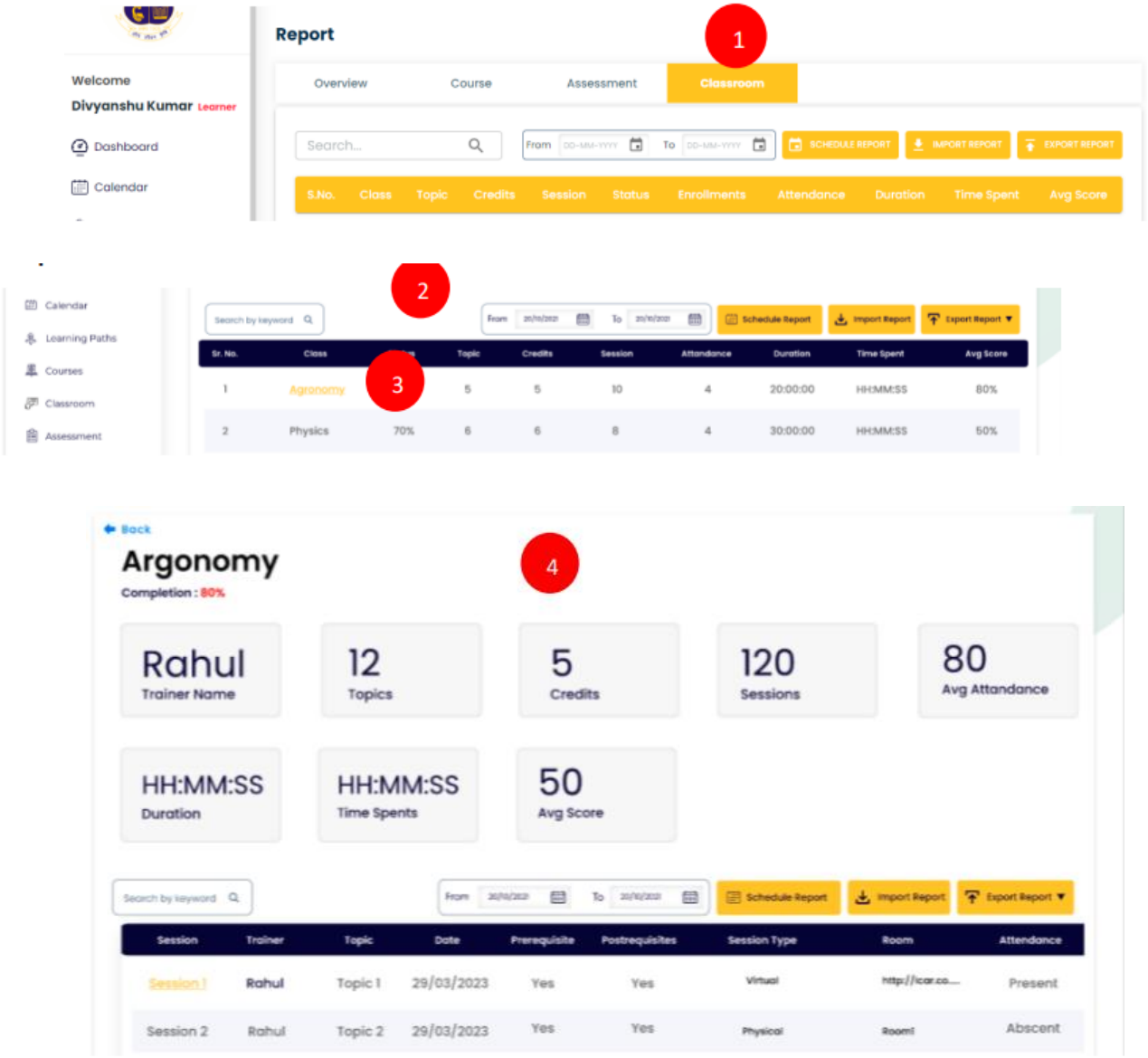


1:- Assessment tab

2:- Student can schedule, export or import report.

3: - Date filter with the help of which student can view assessment report for a particular period.

Step 5:- Click on classroom tab to view classroom report.



1: - Classroom tab

2: - Date filter with the help of which student can view classroom report for a particular period.

3: - Student can click on class name to view detailed report.

4: - Detailed report of class along with session details.

Overview of Academic Management System (AMS)

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Introduction of Academic Management System (AMS)

AMS is a web enabled system for management of All the academic activities of the university. The system caters to the needs of different users, i.e. Dean, Registrar, Head, Guide, Professor, Faculty, Teacher, student and other academic staff for performing their assigned tasks. System Has been designed in a modular approach with in-built workflows.

Benefits Using AMS

- Transparency
- Robustness
- Efficient
- Secure
- User Friendly
- Easy to Customize
- Less Error Prone
- Facilitates Automation
- Real Time Statistics readily available

Modules of AMS

1. E-learning
    - Sharing of lectures in doc, pdf and video format.
    - Upload e-content for the students.
2. Administration Management
    - Approval of Users like faculty and students
    - And New College

- Addition of Metadata like Degree, Discipline and Department.
- Mapping of Degrees with College and its department/Discipline.
- Start and Stop Semester Registration Process.
- Reporting part of University and College.
- Role Assignment of faculties and Administrative Staff.

3. Student Management
    - Profile Management.
    - Fees Management.
    - Course Selection.
    - View Attendance.
    - View Grade.
4. Faculty Management
    - Profile Management.
    - BOS Management (Role Wise).
    - Class Scheduling.
    - Attendance Marking.
    - Upload Course Content.
5. Course Management
    - Manage Course(Add/Update/Delete).
    - Offer Course Semester Wise.
    - Allocate Faculty for offered courses.

Role wise AMS Users

1. Professor/Head
    - Responsibilities of BOS (Course addition, offering and allocation).
    - Allocate Guide.
    - Approve Advisory Committee.
    - Upload e-content for the students.
2. Dean
    - Approval of Faculties.

- Approval of Students.
- Grade Approval Student wise.
- Scheduling Examination Scheme (As Per Role).

3. Student
    - Course Selection.
    - Fee Submission.
    - View Attendance.
    - Apply Certificates.
    - Course Selection and Registration form submission.
    - PPW/ORW Submission.
4. Admin
    - Basic Profile Management.
    - Multiple role functionality.
    - Manage Discipline.
    - Manage Colleges
    - Start and Stop Semester Registration Process.
5. Guide
    - Approval of Student as a Guide.
    - Approval of PPW and ORW.

Workflow of AMS

- User Registration as Faculty and Student.
- Faculty and Student Approval.
- Course Addition and Modification using BOS feature by Head of the divisions.
- Course offering and Allocation of Faculty.
- Fees submission of students when semester starts.

- UG Students will have to select and submit offered courses where PG Students will follow the process of Courses registration, PPW Submission, Advisory Committee submission and other PG forms will be filled throughout the semester.
- Approval of PG forms and other forms by guide, dean, Head/Professor as per the approval cycle followed by the university.
- Grade submission by faculty members after examination.
- Grade approval by other faculty staff as per the approval cycle.
- Grade sheet verification by Registrar office.
- Grade sheet, Transcript, Migration and other certificates to be generated by AMS.

View Reports Using AMS

- Discipline wise Fees
- Discipline wise Fellowship
- Course Registration Report
- Faculty Allocation Report
- Student Registration Report Courses
- Student Registration Report Roaster Form
- Non-Registered Students Report Roaster Form
- Result Status Report at Course Leader Level
- Student Result Reports
- Failure Report Course Wise
- Failure Report Student Wise
- Discipline Wise User Reports

Development of Assessment and Announcement in Faculty Module of NARES-Blended Learning Platform

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Assessment

The assessment module is the functionality that enables the faculty to create assessments in theform of surveys, polls, assessments, and quizzes. Student's responses will be reviewed post completing and submitting the assessments. The assessment created can comprises various types of questions like

- Multiple Choice
- Multiple Response
- Large Open Answer
- Small Answer
- Matching

Questions can also be tagged through advanced options, and durations for the questions can alsobe set. Different types of messages can be set for the assessment, like messages to be displayed before quiz comment box messages, messages displayed at the end of the quiz, etc. Some otheroptions like the number of questions per page, the time limit for the assessment, force submission after time expiry, the number of times the assessment can be attempted, and the start time and end time of the assessment.

Once assessment framing is complete from the faculty end, the same can be assigned to the students. Students will be notified through notifications about the assessments.

Other features of the Assessment Module are as follows:

- Conduct online tests, assignments, and examinations with efficient mechanisms ofevaluation and feedback.
- Ability to weigh and grade individual questions within an assessment.
- Get notifications for upcoming assessments.
- View assessment feedback.
- Ability to Create polls/surveys.
- Ability to report on question-level data from surveys and assessments/tests.

- Assign to Individual Learner or a Group in a fixed or Random Mode Bulk Upload.

Step1. The users can navigate to the assessment module by scrolling down the menu bar on theleft side.

Step2. Users can set the date range to filter assessments.

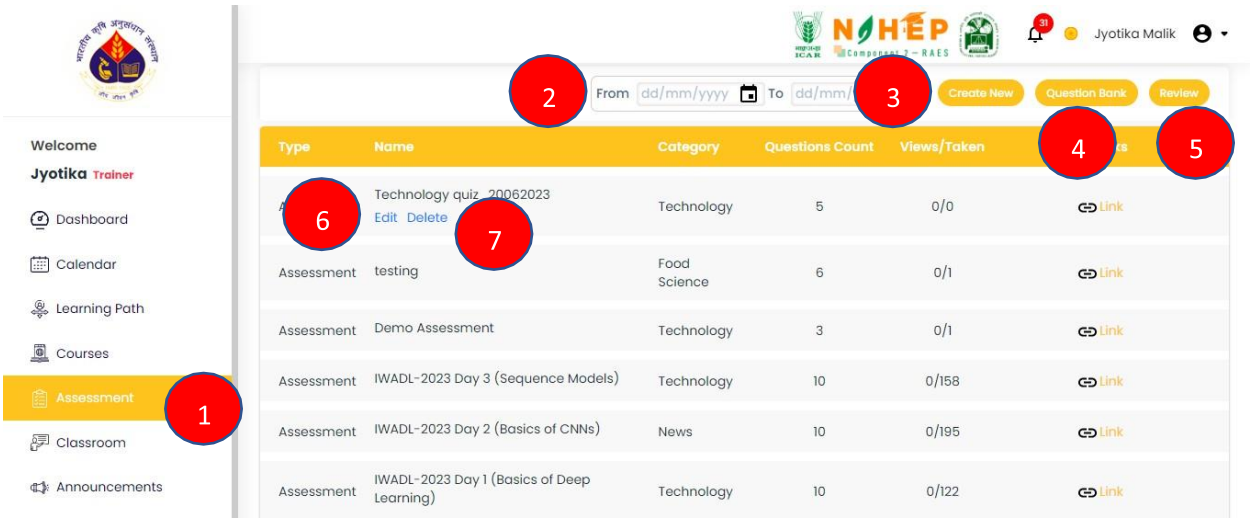
Step3. Users can click on ‘Create New’ button to create new assessments.

Step4. Users can click on ‘Question Bank’ to Import, Export, or Add new questions to thequestion bank.

Step5. Users can click on ‘Review’ button to review the assessments sent for review.

Step6. Users can click on ‘Edit’ to edit the assessment.

Step7. Users can click on ‘Delete’ to delete the assessments.



Create Assessment

Step1. The user Clicks on ‘Create New’ button.

Step2. A Create New pop-up will appear.

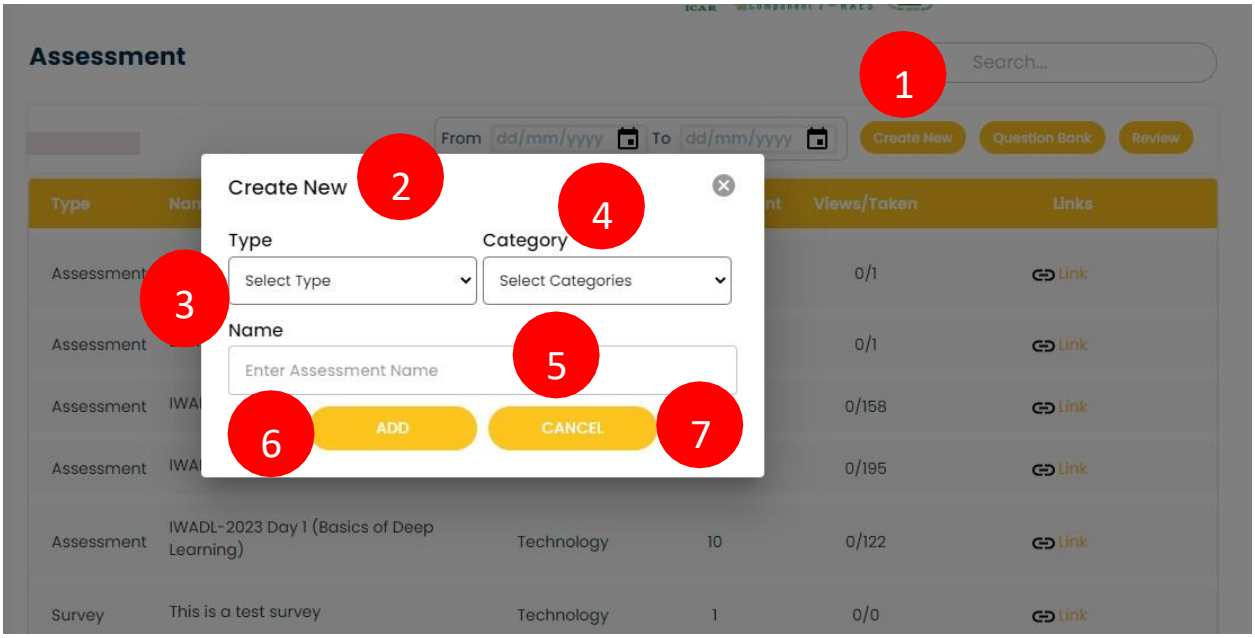
Step3. The users select the assessment types.

Step4. The users select the assessment category.

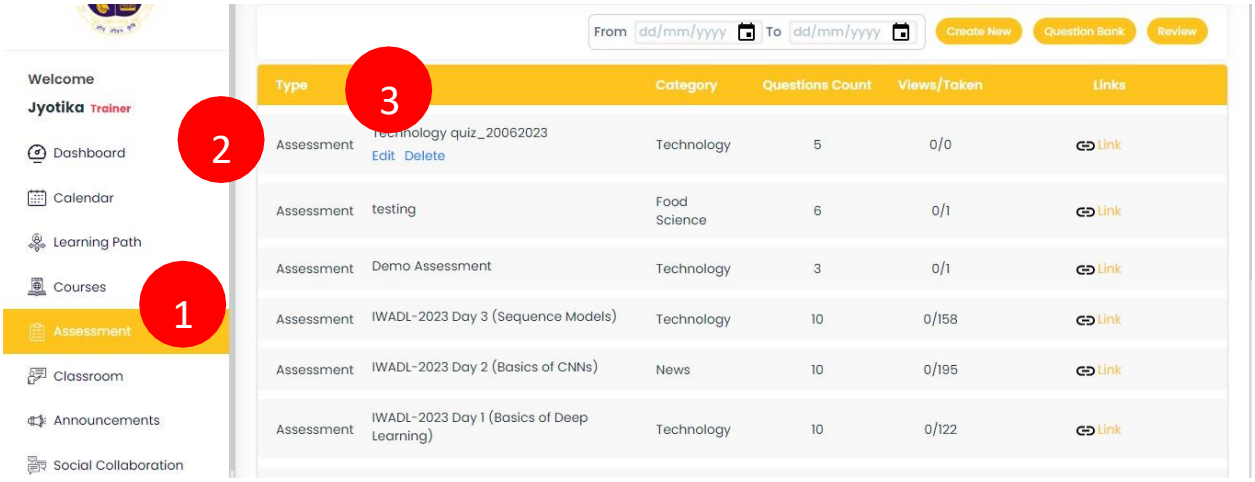
Step5. The users enter the assessment name.

Step6. The users click on ‘Add’ button to add the assessment framework.

Step7. The users can click on cancel if he/she wants to cancel the assessment.



Add Questions

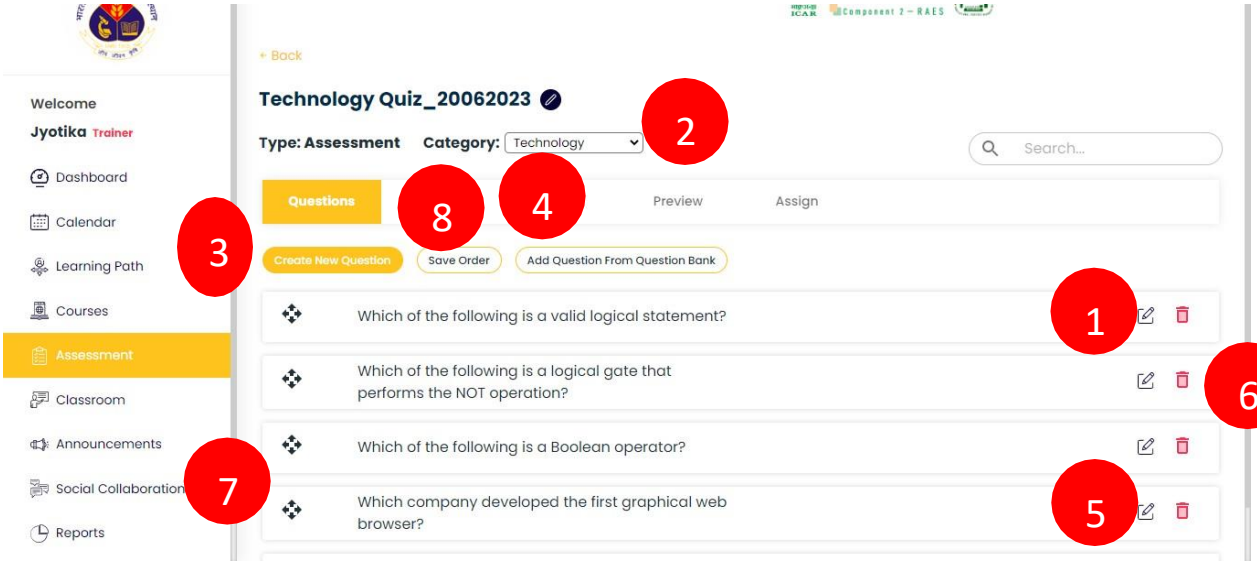


Step1. The users click on the assessment module.

Step2. The users find the assessment name.

Step3. The users click on edit.

Add Question Screen



Step1. The users click on the edit icon to edit the assessment name.

Step2. The users can change categories through the drop-down.

Step3. The users can click on create new questions to add new questions.

Step4. The users click on Add question from Question Bank to add questions from questionbank.

Step5. The user clicks on the edit icon to edit the question.

Step6. The user clicks on the delete icon questions to delete the question.

Step7. The user clicks on the drag icon to drag the question to change the order.

Step8. The user clicks on the save order icon to save the order.

Steps to Create Questions

Multi-Choice

Step1. The users can set the question as a multi-choice through the drop-down

Step2. The users can type the question.

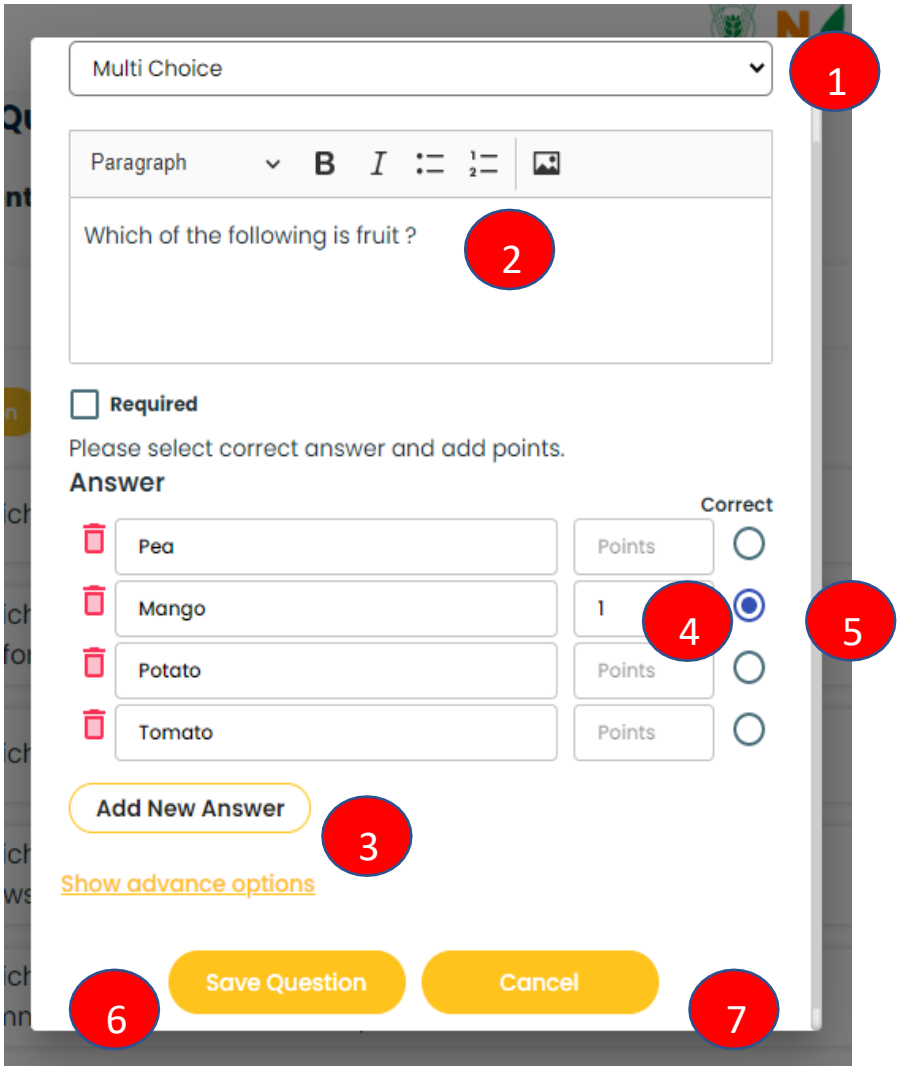
Step3. The users clicks on Add New Answer to add the answers.

Step4. The users enter the point for the correct answer.

Step5. The users can check the correct radio button.

Step6. The users click on ‘Save Question’ to save the question.

Step7. The users click on the ‘Cancel’ button to cancel the question.



Large Open Answer

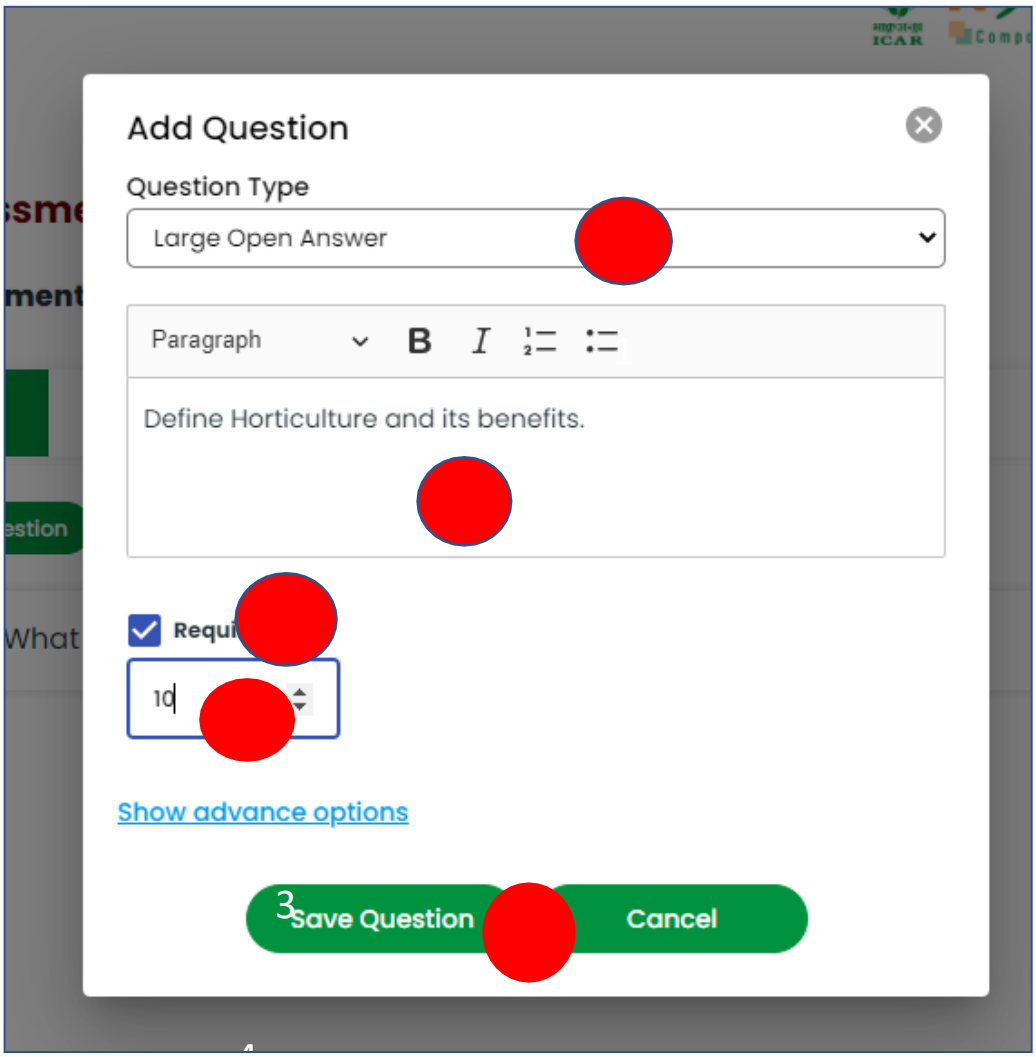
Step1. The user can set the question as Large Open Answer through the drop-down

Step2. The users can type the question.

Step3. The users check the required option.

Step4. The users enter the point details.

Step5. The users click on Save Question to save the question.



Small Answer

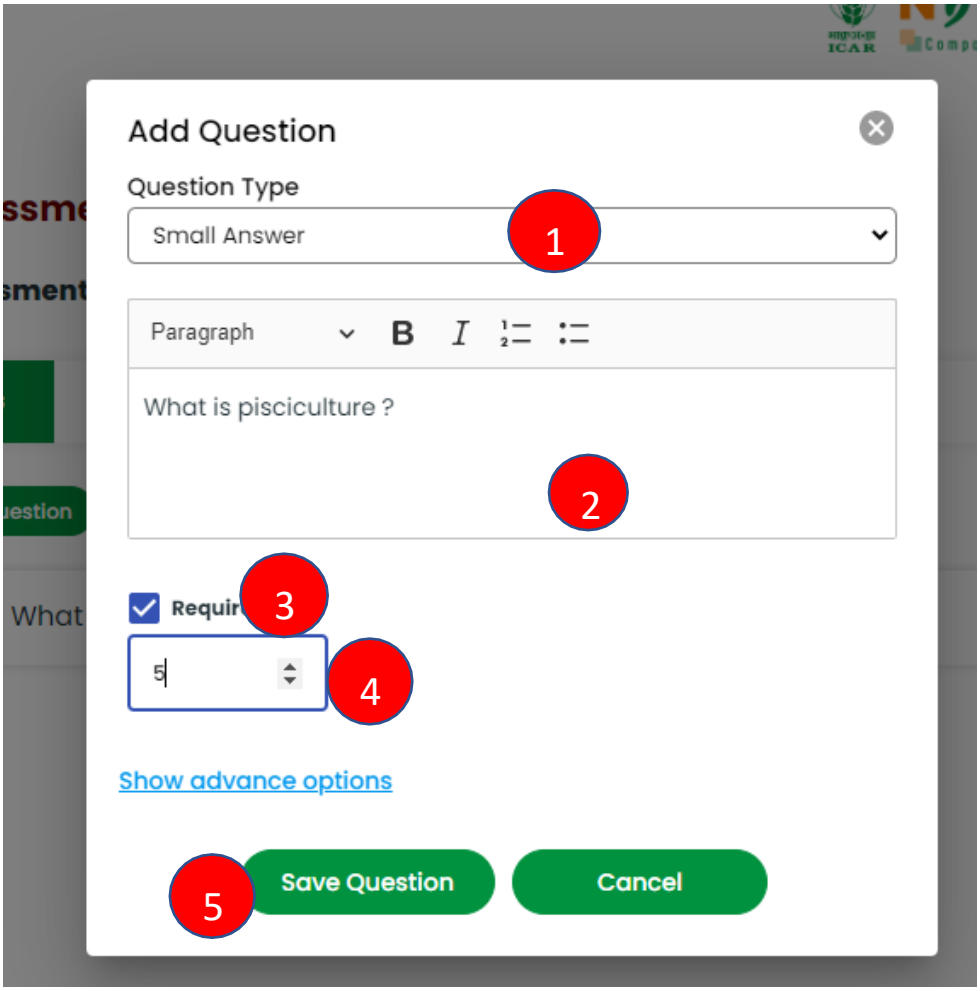
Step1. The users can set the question as Small Answer through the drop-down

Step2. The users can type the question.

Step3. The users check the required option.

Step4. The users enter the point details.

Step5. The users click on Save Question to save the question.



Match the following

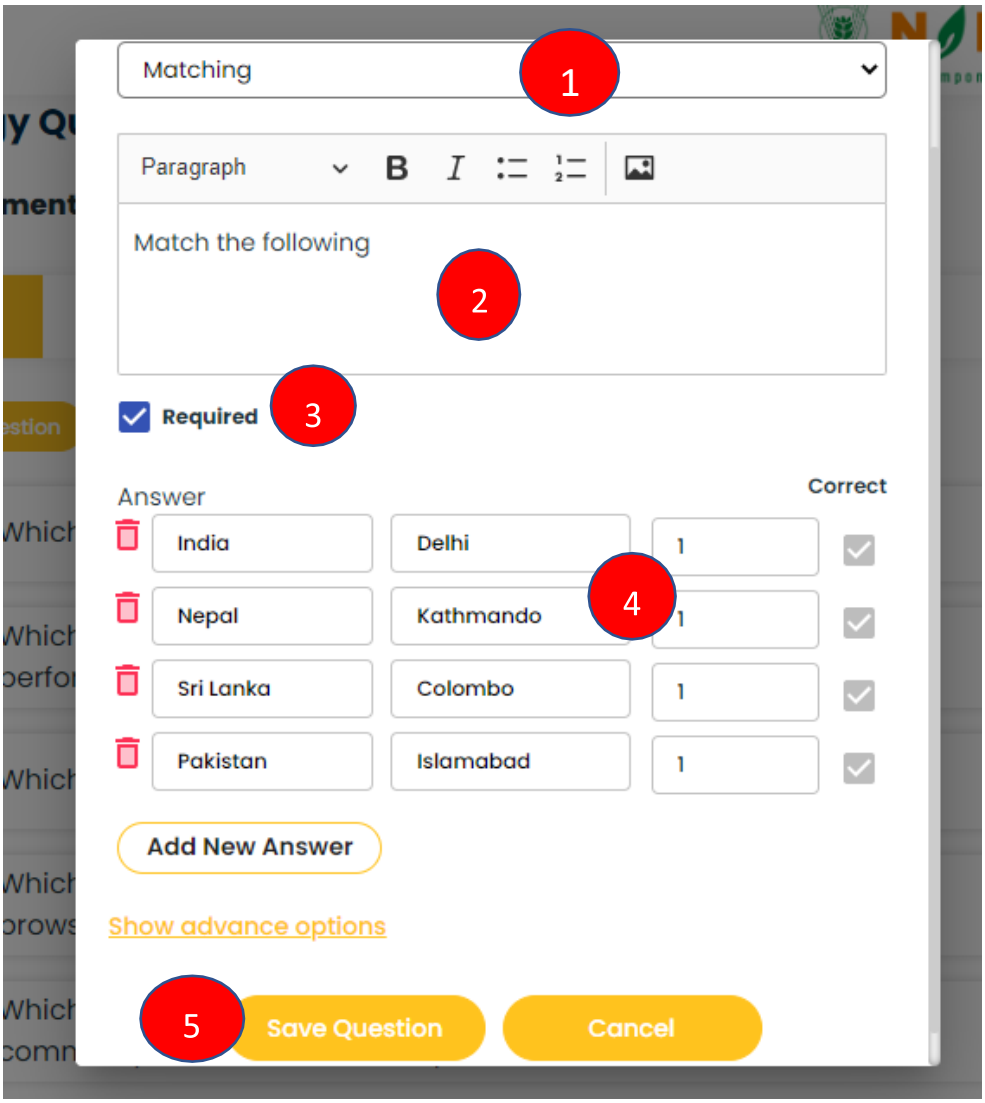
Step1. The users can set the question as Matching through the drop-down

Step2. The users can type the question.

Step3. The users can check the required option.

Step4. The users add the answer and assigns the points and checks the correct option.

Step5. The users click on the save question.



Multi Response

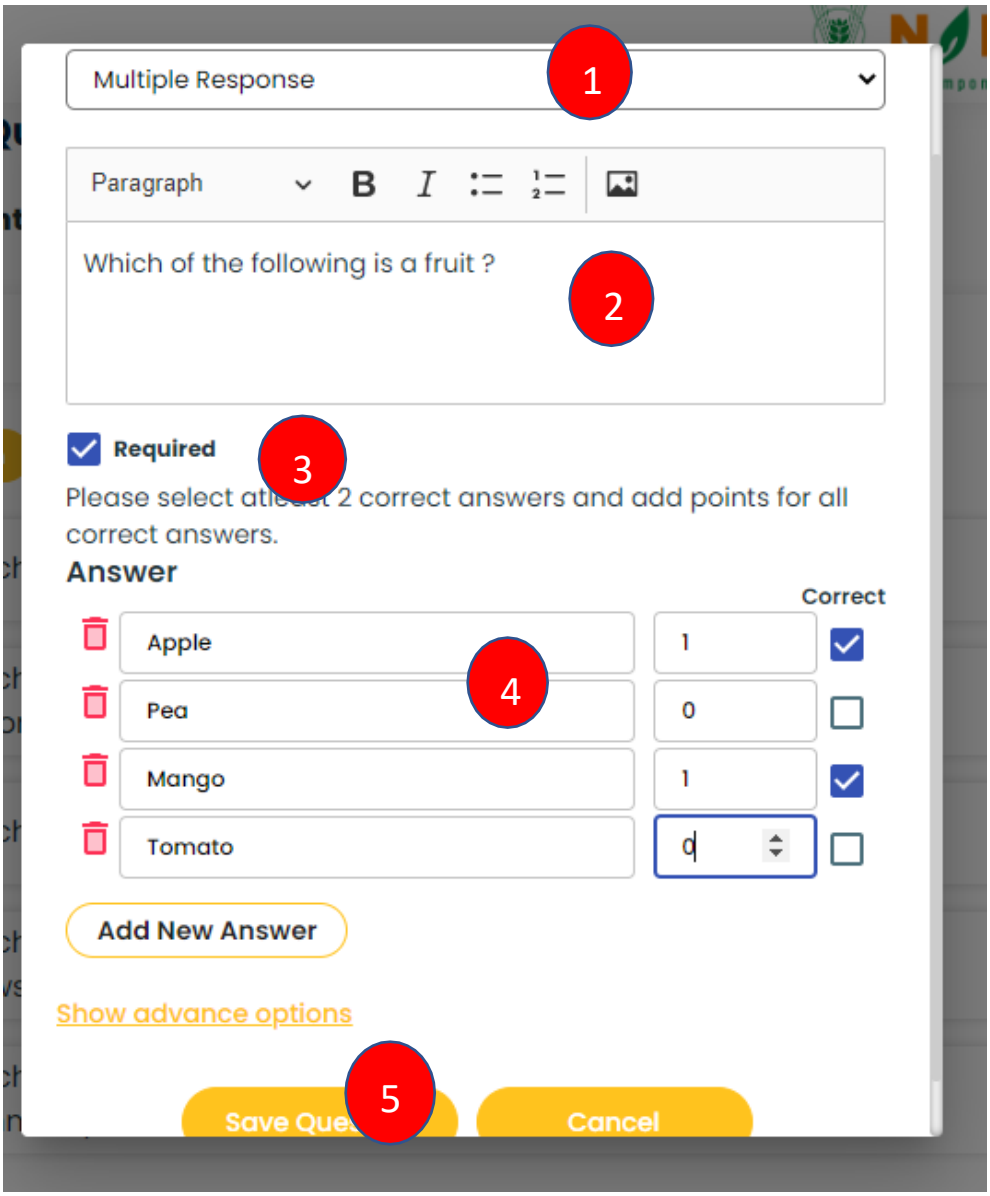
Step1. The users can set the question as Multiple Responses through the drop-down

Step2. The users can type the question.

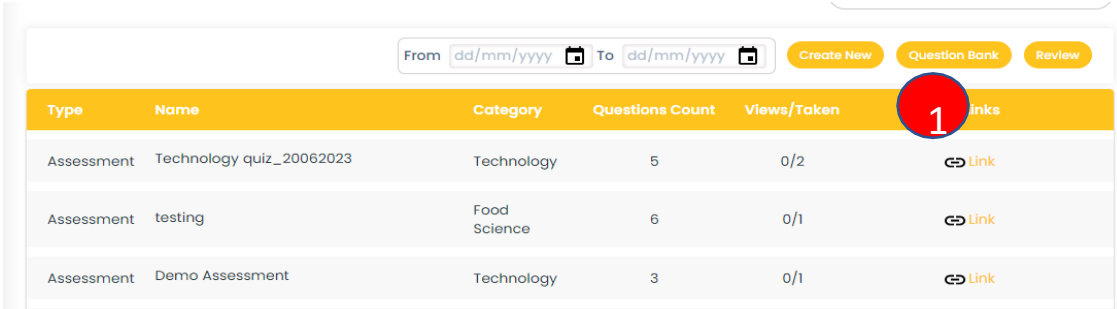
Step3. The users check the required option.

Step4. The users add the answers, provides the points, and checks the correct option.

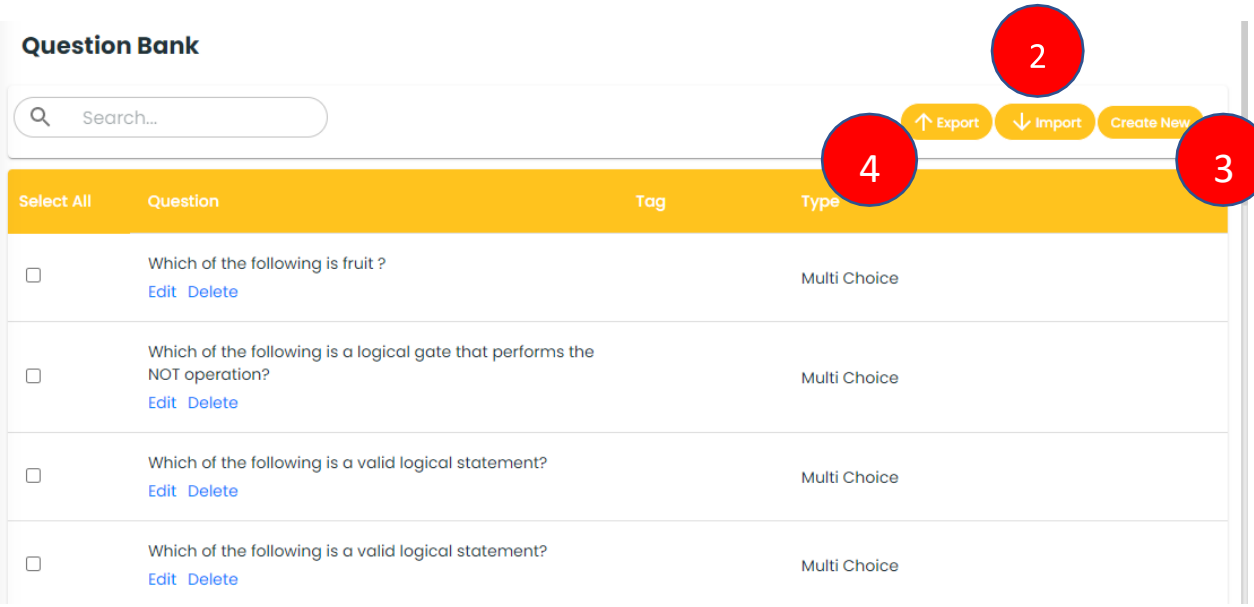
Step5. The users click on Save Question to save the question.



Steps to Create/Export/Import Question Bank



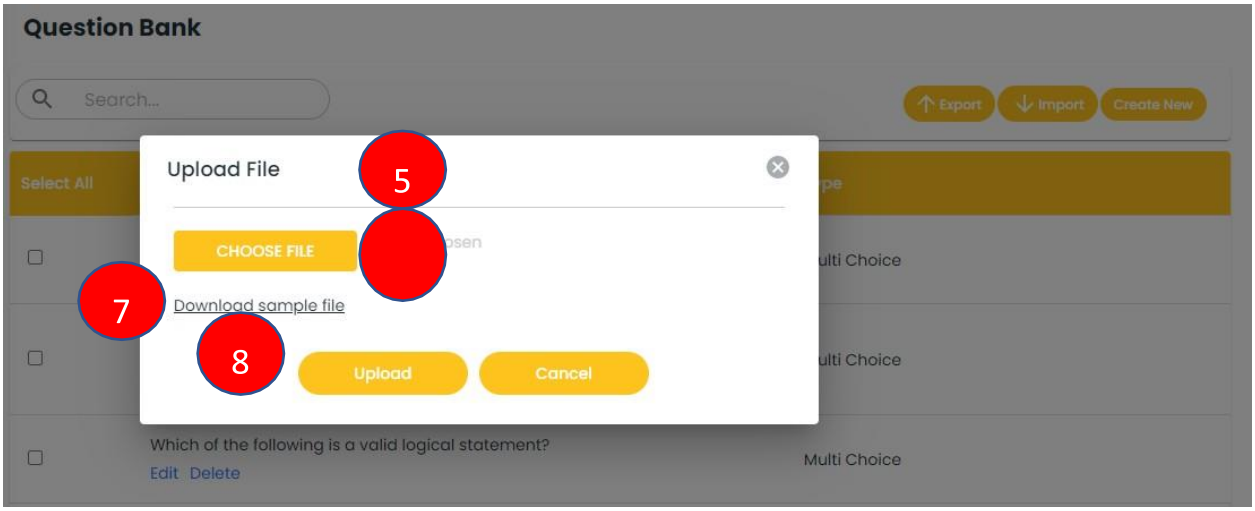
Step1. The users can create a question by clicking on the question bank.



Step2. Users can import the questions by clicking on the import button.

Step3. Users can add new questions from 'Create New' button.

Step4. Users can export questions from the Export button.

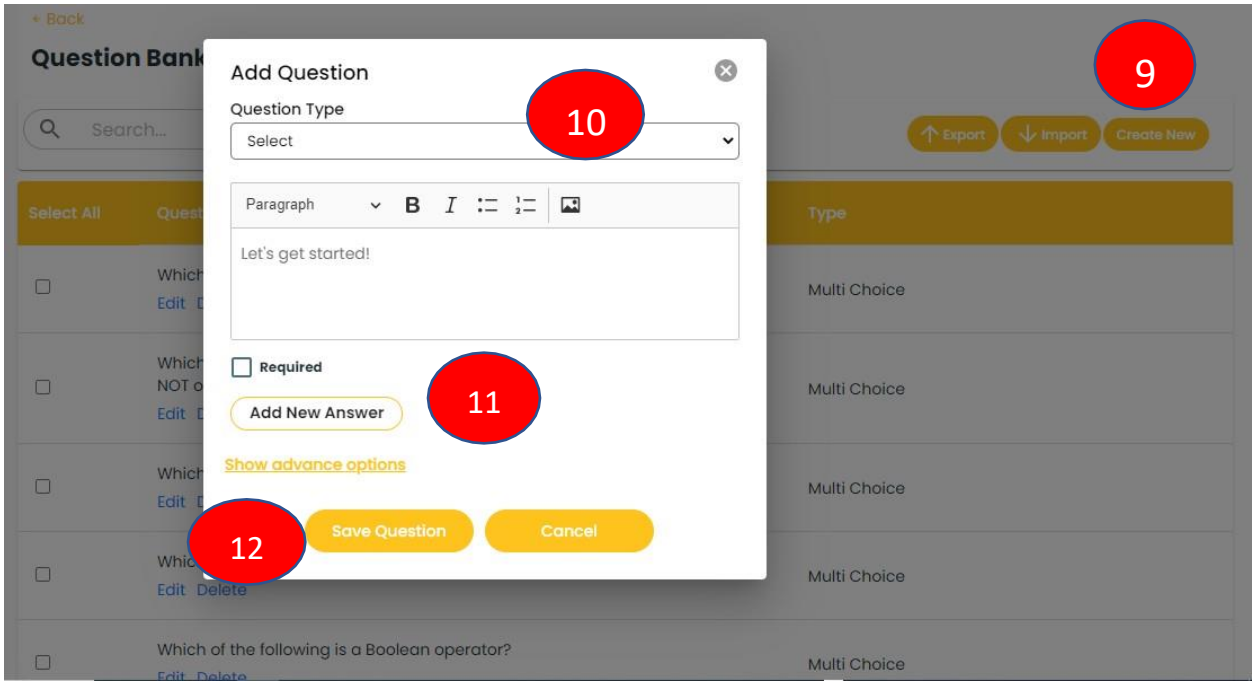


Step5. The users get the upload file screen when he/she clicks on the import button.

Step6. Users can now choose the file to upload by clicking on choose file.

Step7. Users can download the sample file to prepare the question sheet to be uploaded.

Step8. The users click on the upload button once have browsed and selected the question file.

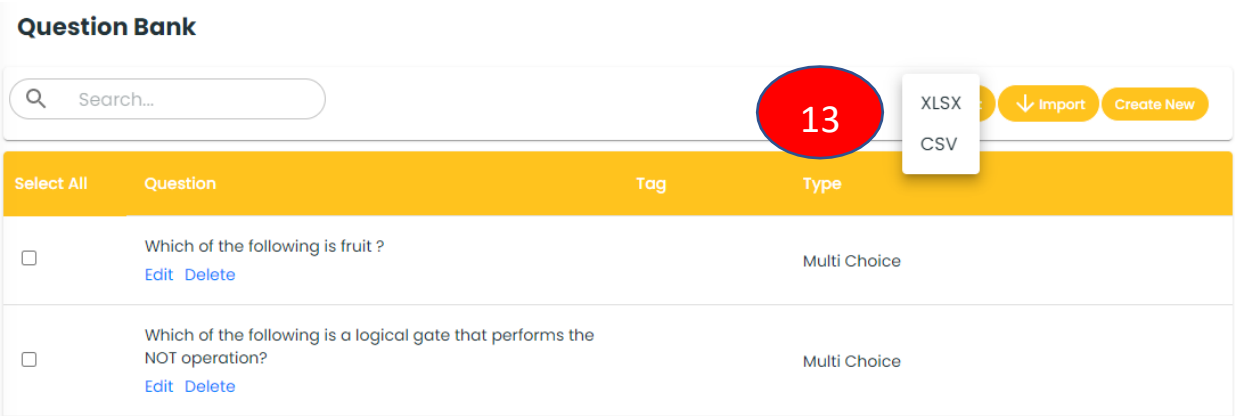


Step9. The users click on create new button to add question screen.

Step10. The users select the question type and types of the question.

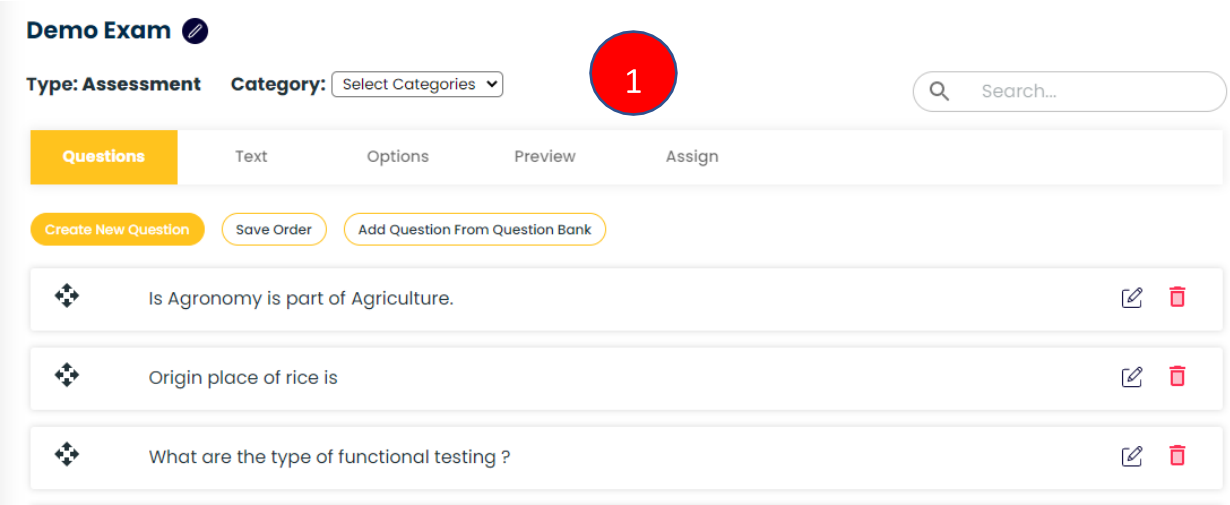
Step11. Users click on the Add New Answer button to add answer options.

Step12. The users can click on Save Question to save the questions.

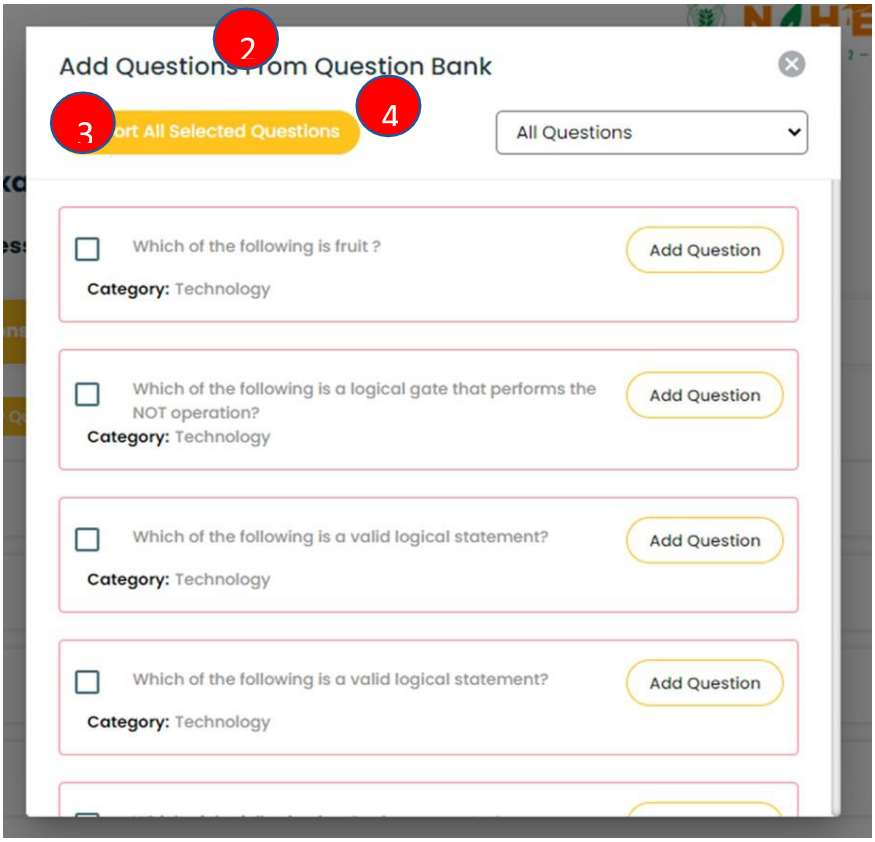


Steps13. The users click on the export button to export the questions in .xlsx and .csv.

Steps to Create Assessment from Question Bank



Step1. The users click on Add Questions from the question bank.

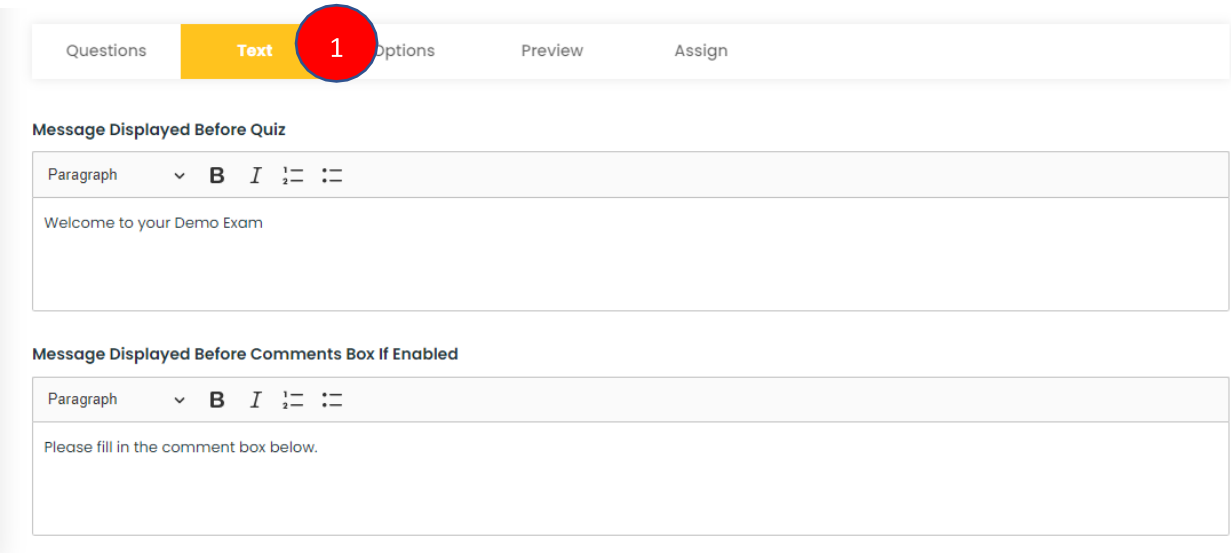


Step2. Add Questions from Question Bank Screen appears.

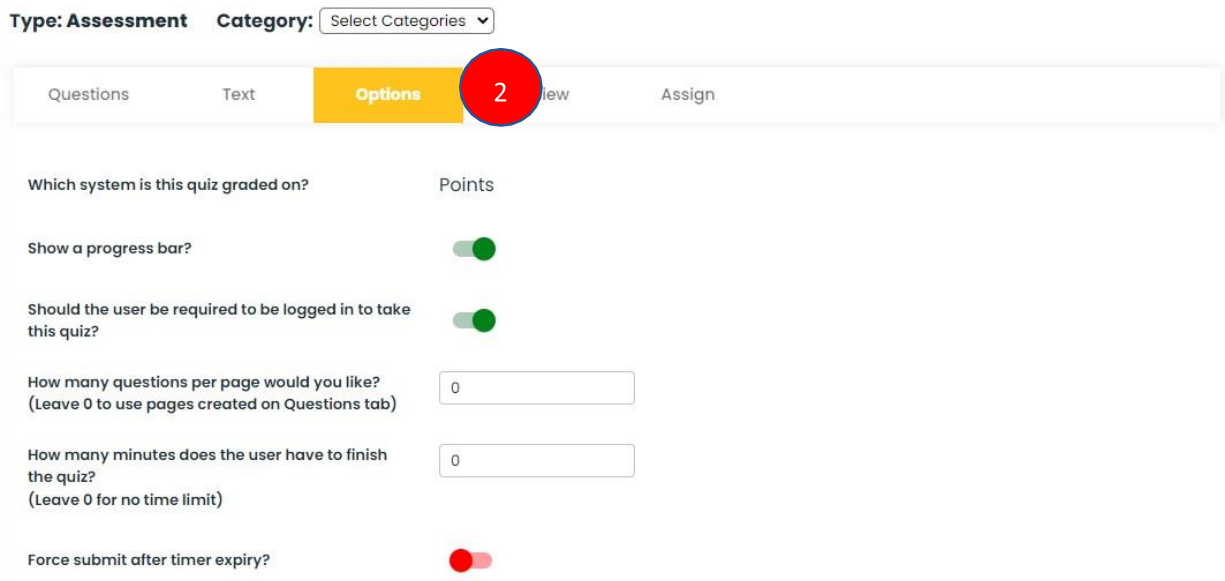
Step3. Select a question to be imported and click on Import All Selected Questions.

Step4. Users can use all question filters to filter questions.

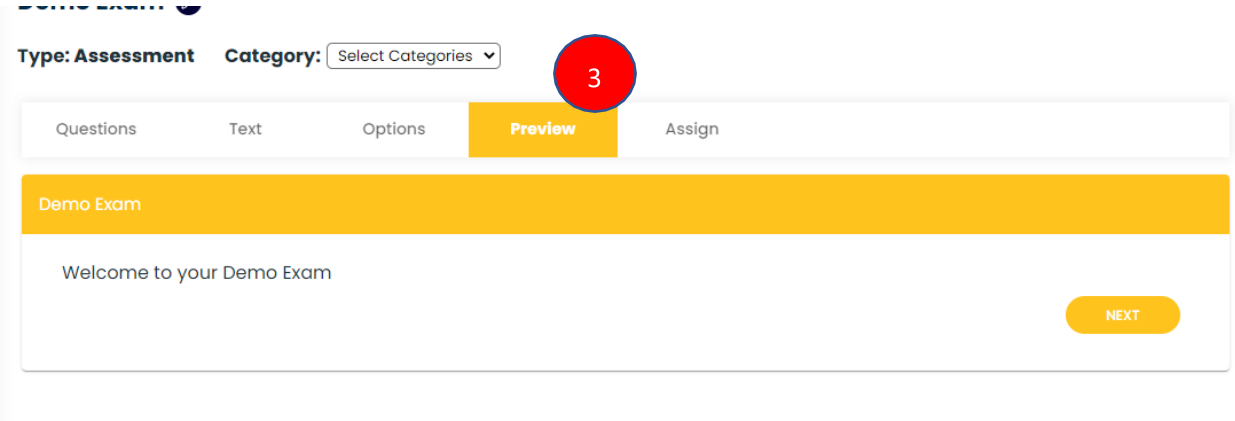
Managing Assessment Configuration



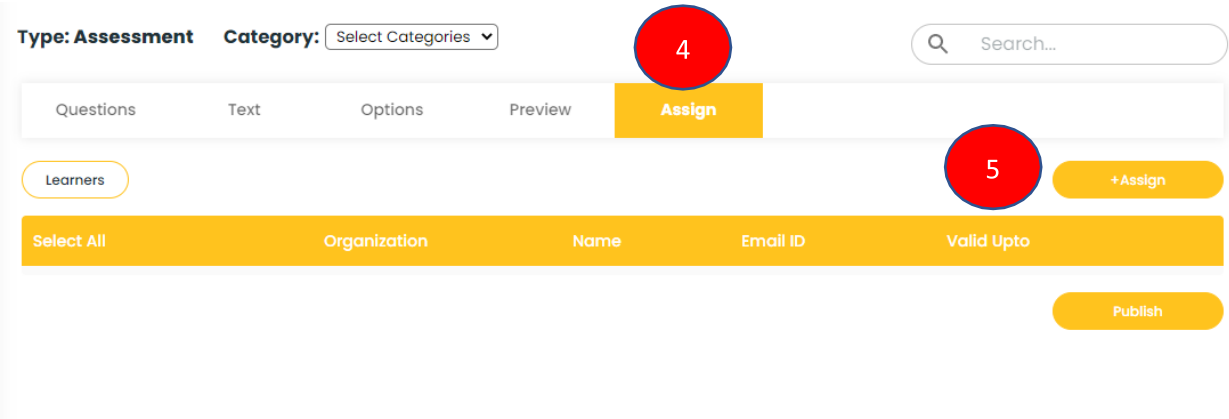
Step1. The users click on the 'Text' tab and can now edit the pre-configured messages from thissection.



Step2. The users click on the ‘Options’ tab to edit the assessment option from this section.



Step3. Users can click on the Preview tab to get a preview of the assessment.



Step4. Users can click on Assign to assign the assessment to the students.

Step5. The users click on +Assign Button to assign the assessment to the students.

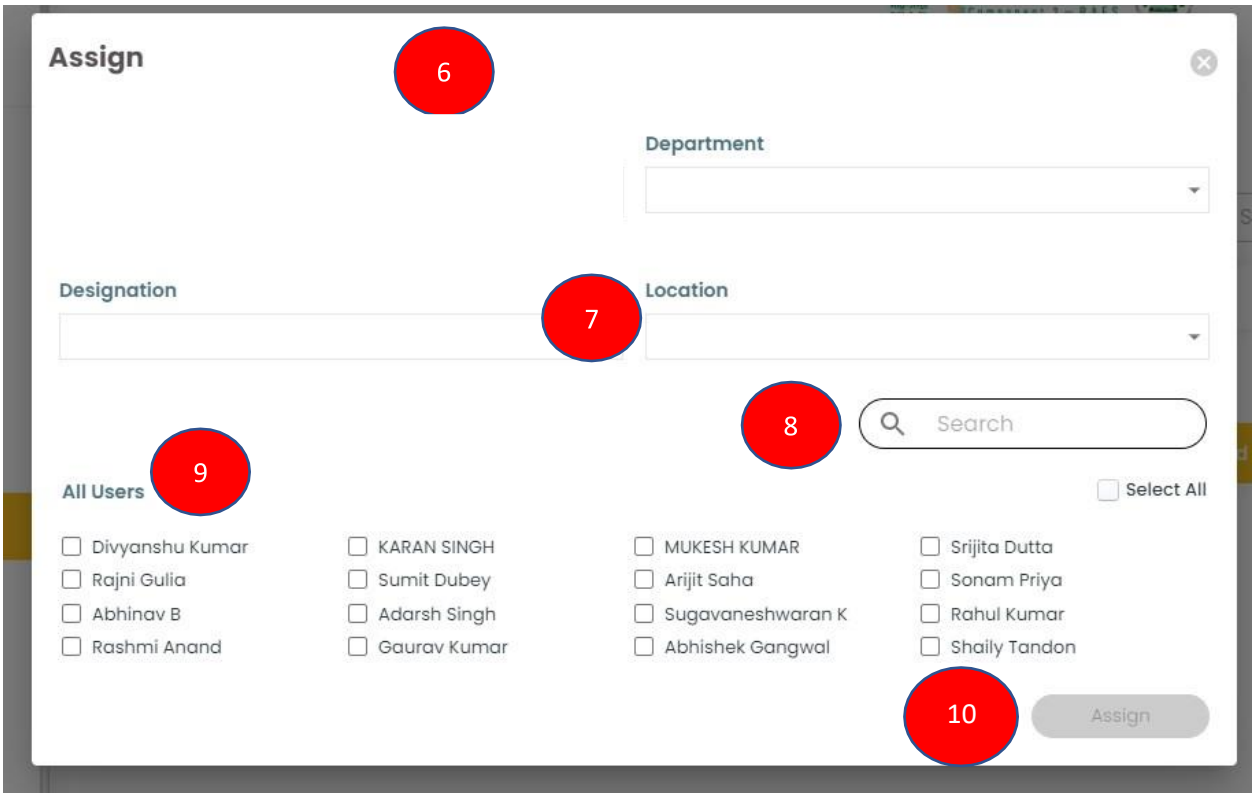
Step6. The users get the assigned screen.

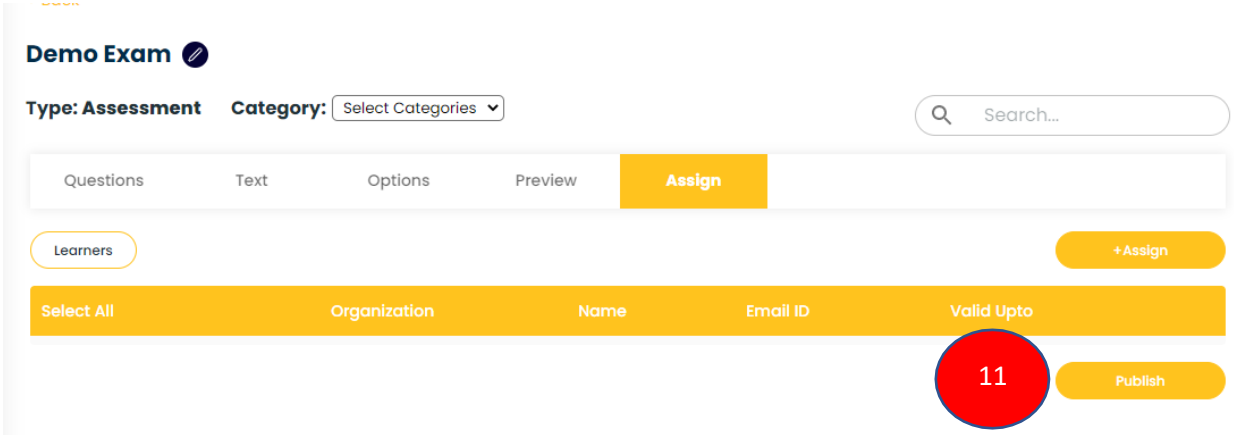
Step7. The users select department, designation, and location from the drop-down.

Step8. Users can search for specific users from the search bar.

Step9. Users can select specific users from the list of users.

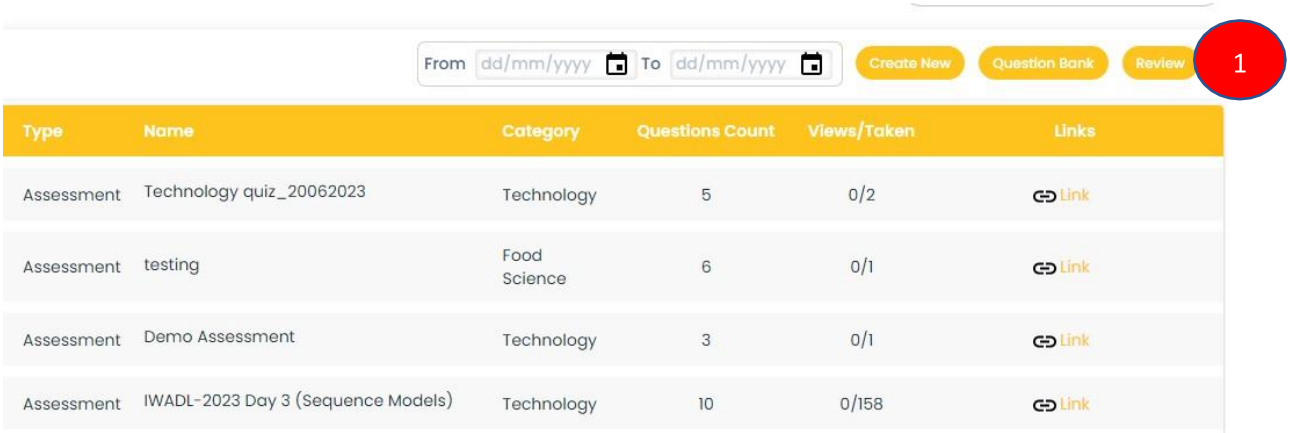
Step10. The users click on assign once the students have been selected.



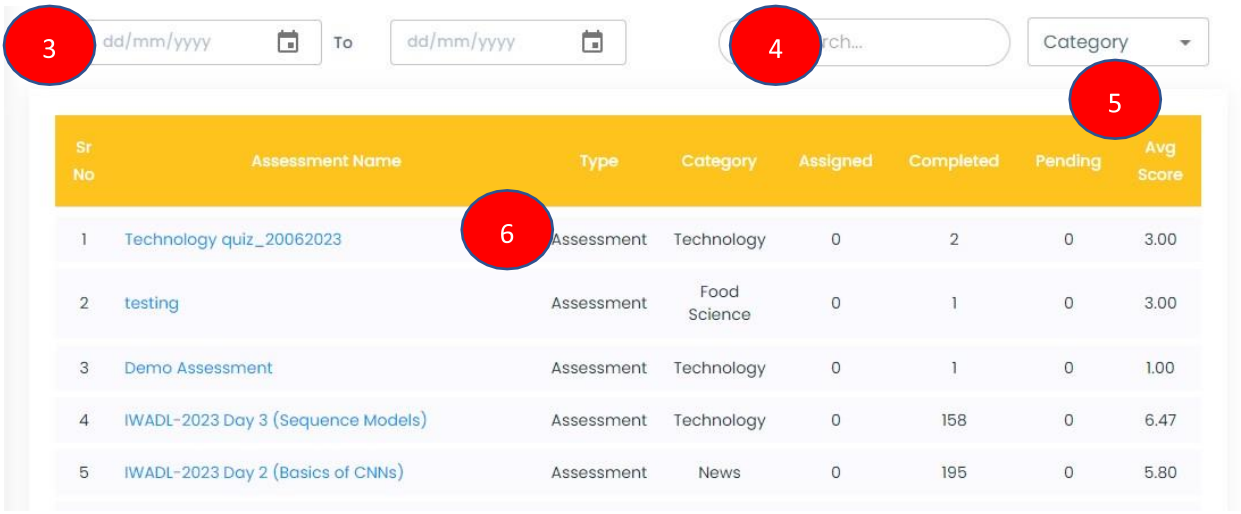


Step11. The users click on ‘Publish’ button to publish the assessment.

Assessment Review



Step1. The users click on the 'Review' button to view the assessments.



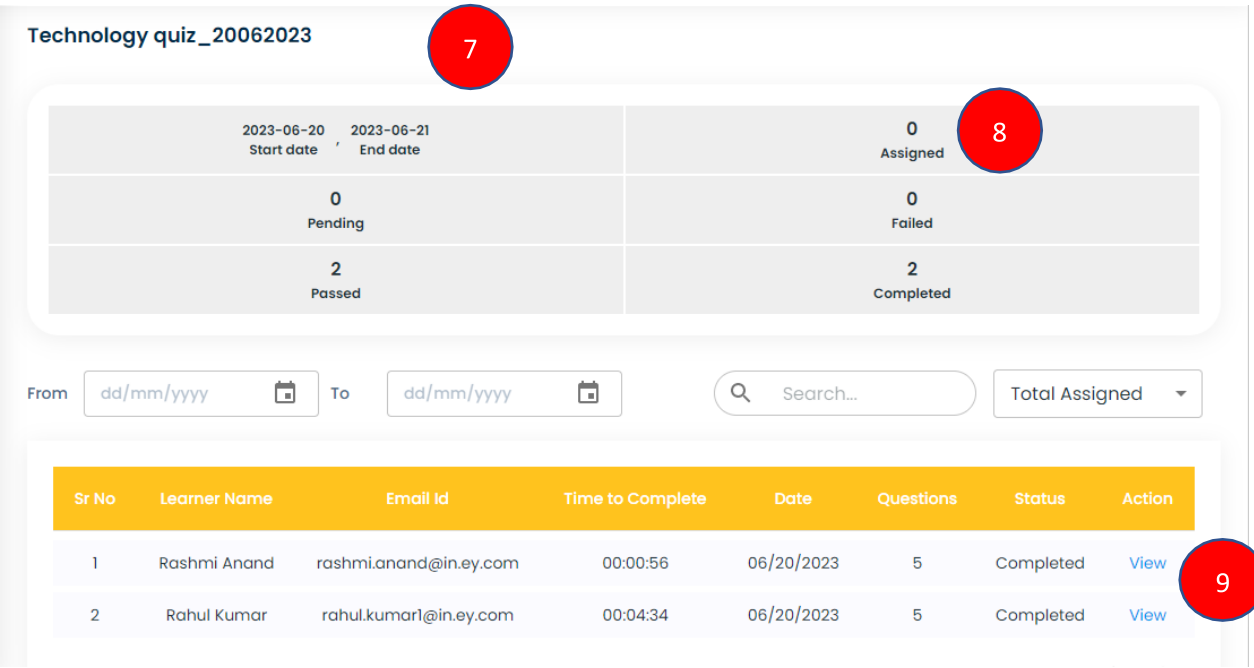
Step2. The users get the assessment review screen.

Step3. Users can set the date range.

Step4. Users can search for the assessment name from here.

Step5. The users can set the filter of category from here.

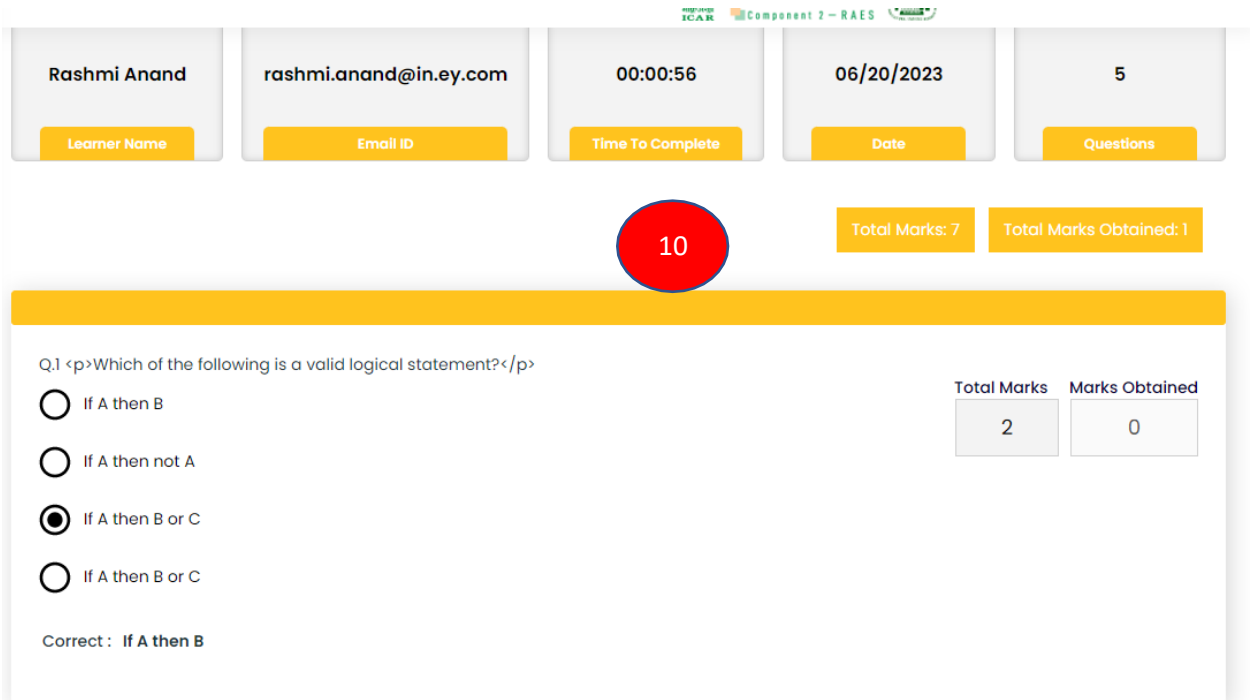
Step6. The users click the assessment name hyperlink to open the review screen.



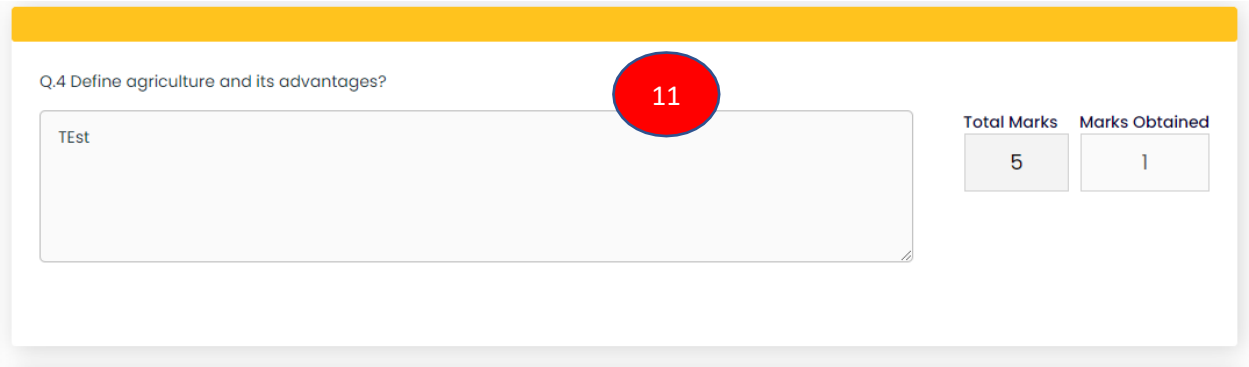
Step7. The users get the assessment review screen.

Step8. The users get the details of the assigned, pending, passed, and failed completedassessments.

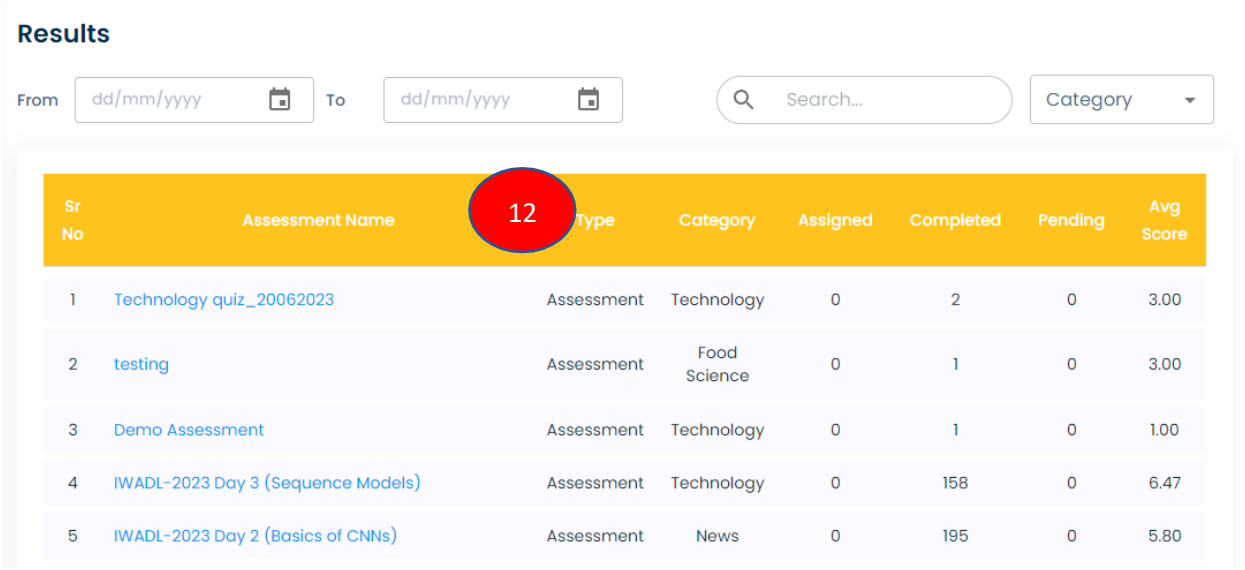
Step9. The users click on view to review the assessment of the student.



Step10. The users get the review screen with all the student details.



Step11. The users can only review the long or short answer type question and therefore allocate marks in the marks obtained section and finally clicks on save.



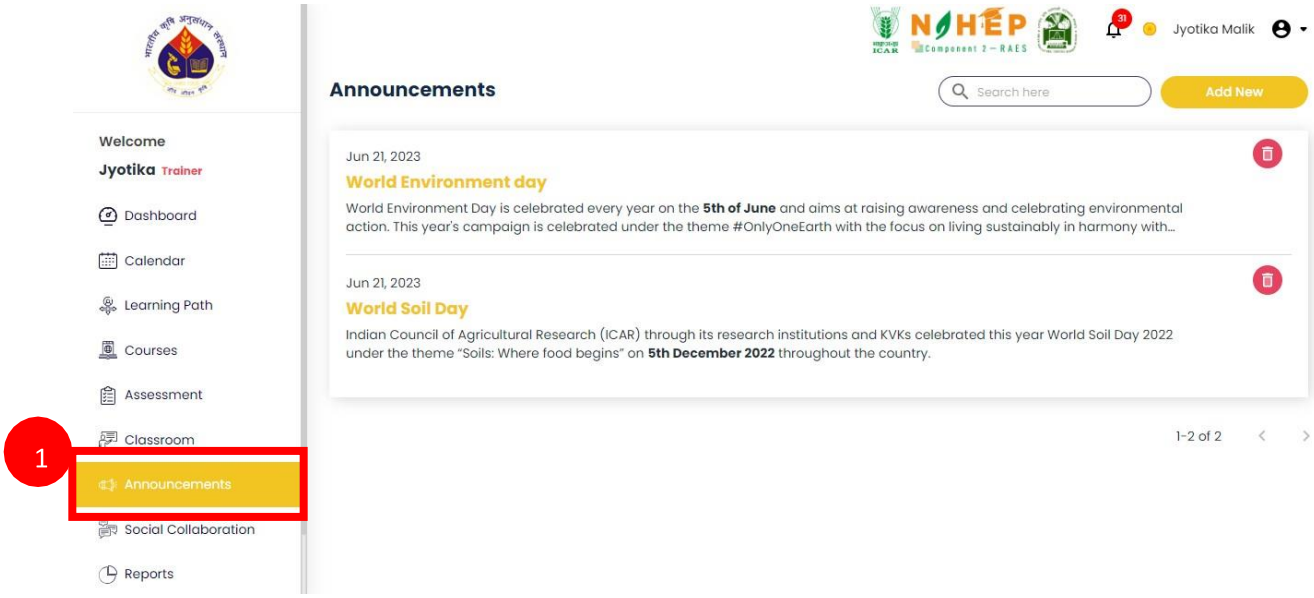
Step12. Once the user has completed the review of the assessment, its name will be hyperlinked, and all the corresponding columns of the assessment will be filled accordingly.

Announcement

Announcement modules comprise the functionality to make global announcements. Announcements made by faculty can be viewed by the students through the announcementmodule. These announcements can also be scheduled to be published later.

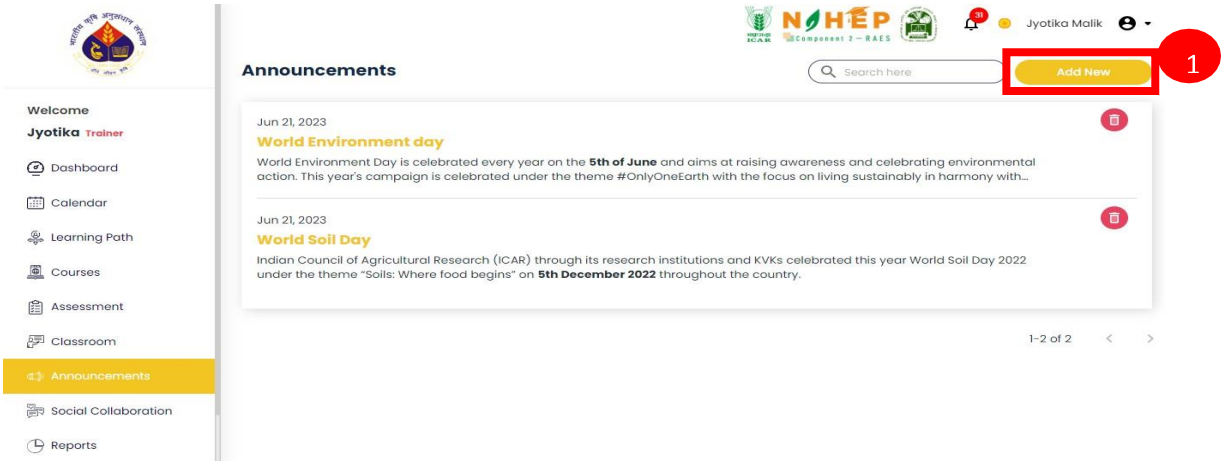
How to view announcements?

Users can click on the announcement from the left navigation. Once the user selects announcements, they will be able to see the announcements with the date of Publish.



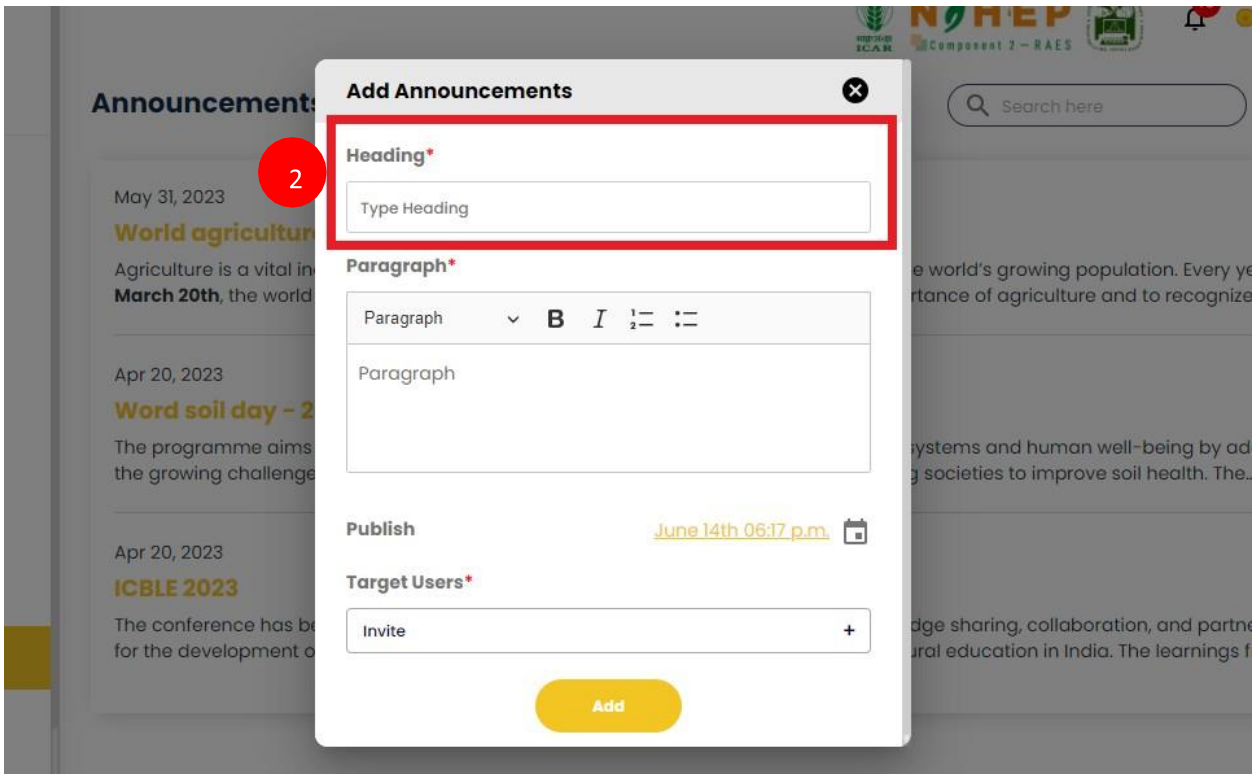
Step-1. Click on the "Announcement Name". Users can read the complete announcement.

How to add a new announcement?



Step- 1. Click on “Add new” button to create a new announcement.

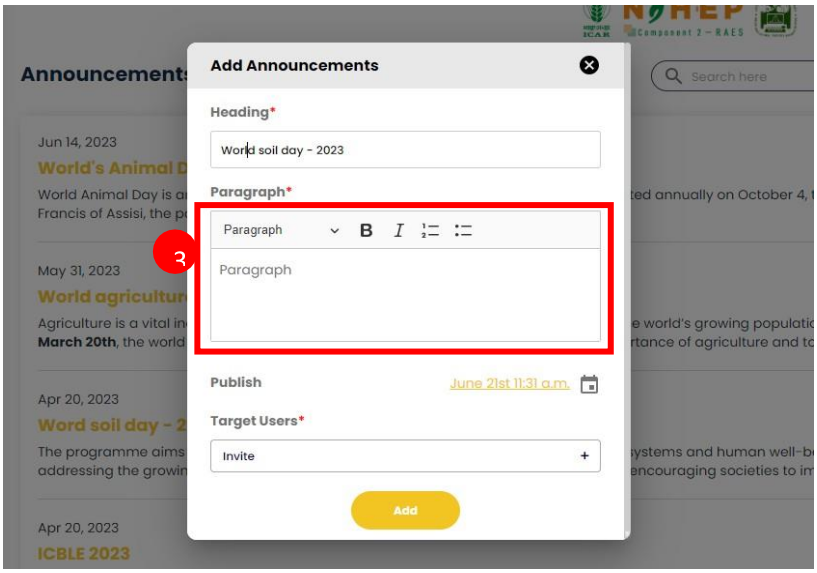
A pop-up will appear, “Add Announcements”.

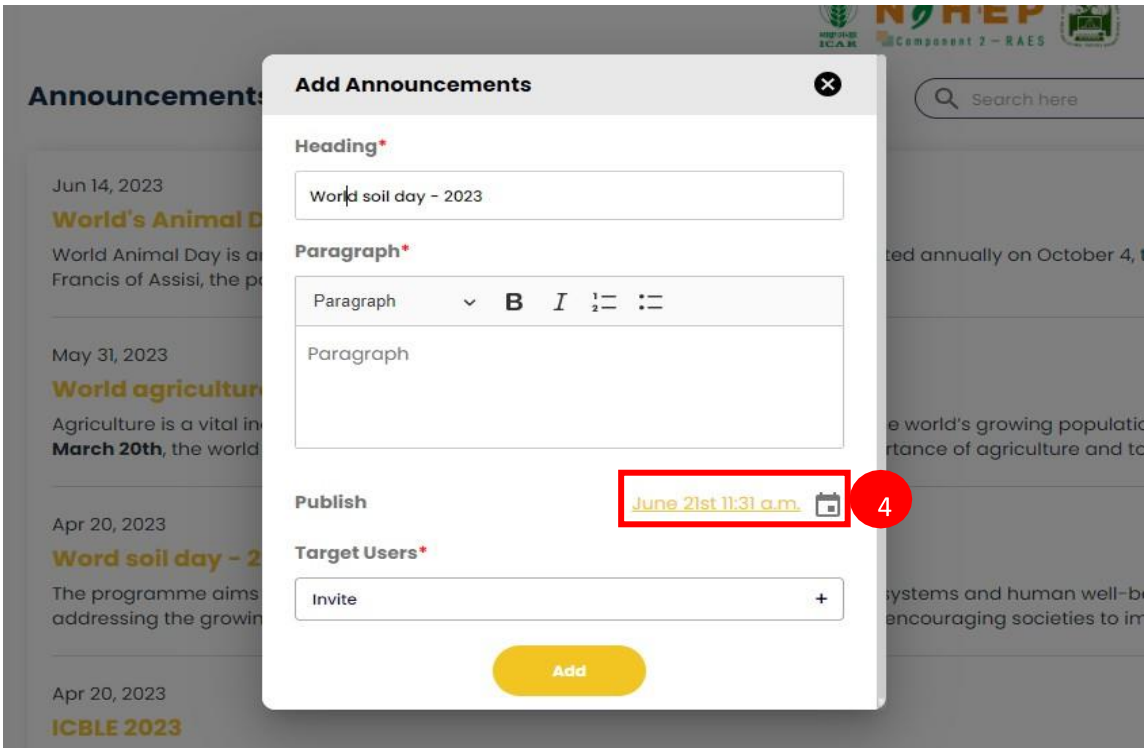


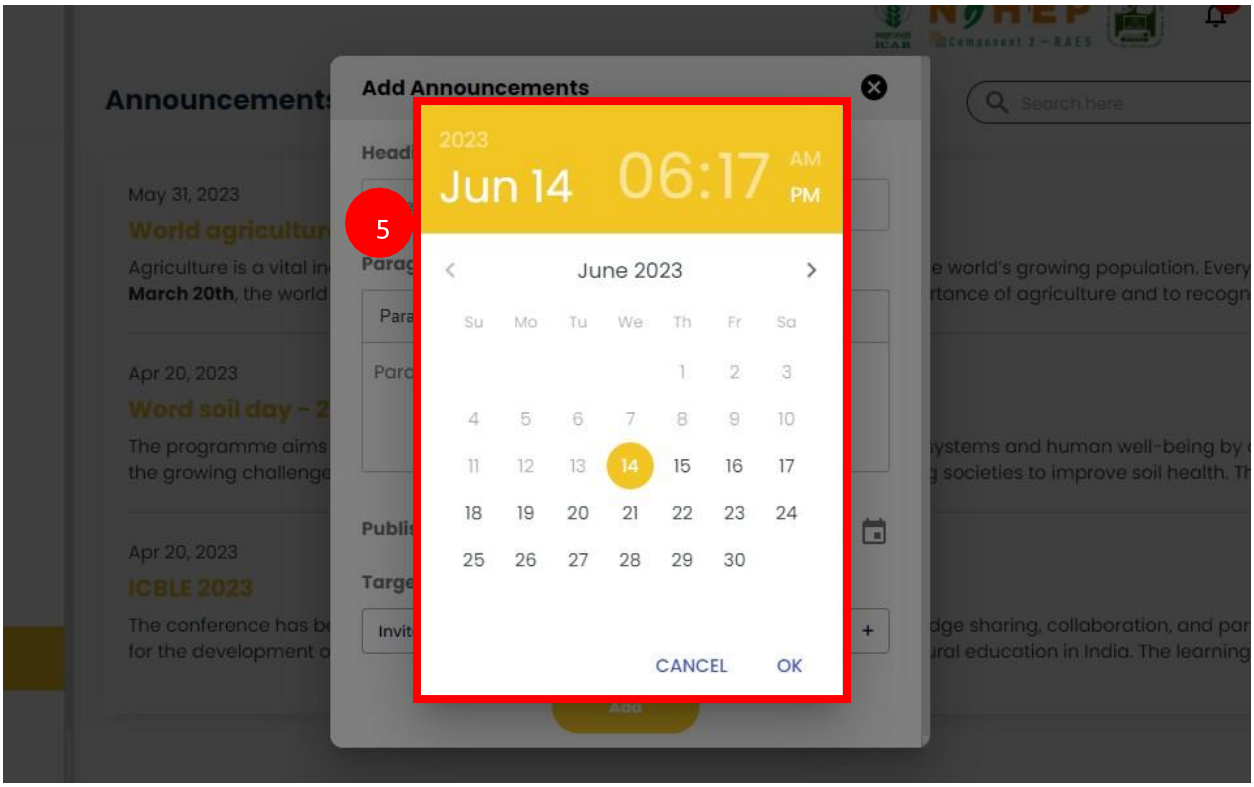
Step-2. Add Heading of the announcement under “Heading” option.

Step-3. Add a description for an announcement under “Paragraph” option.

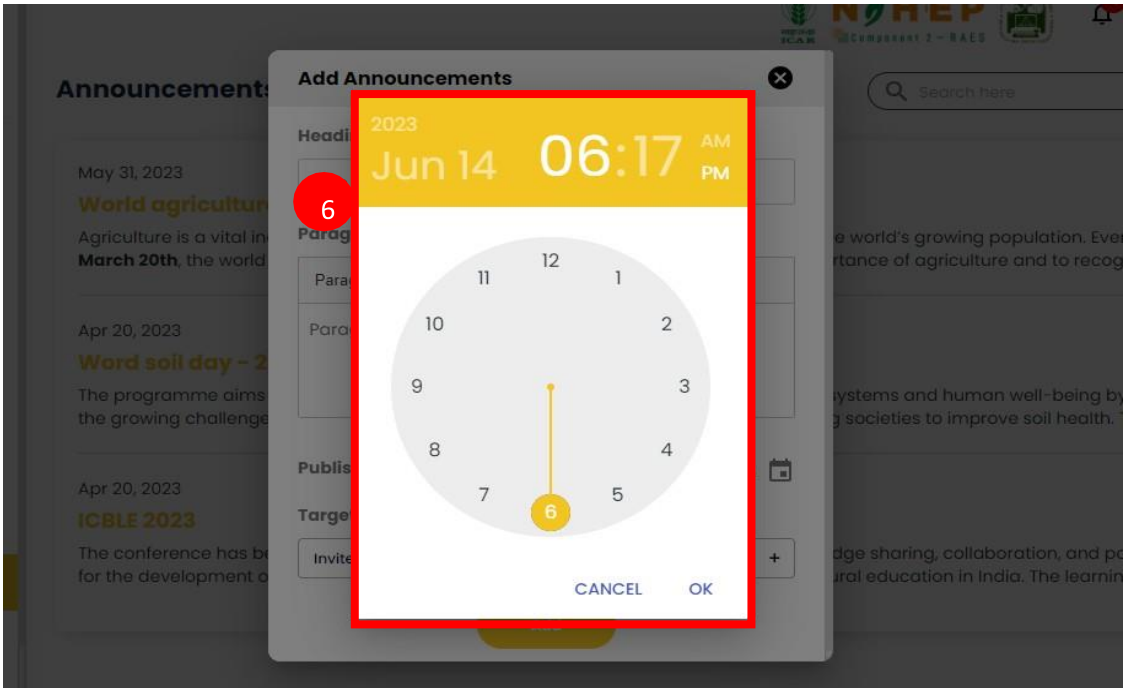
Step-4. Select Publish date and time of an announcement by clicking on the calendar associated with Publish.


Announcements
Add Announcements
Heading*
World soil day - 2023
Paragraph*
Paragraph
Paragraph
Publish
June 21st 11:31 a.m.
Target Users*
Invite
Add
3

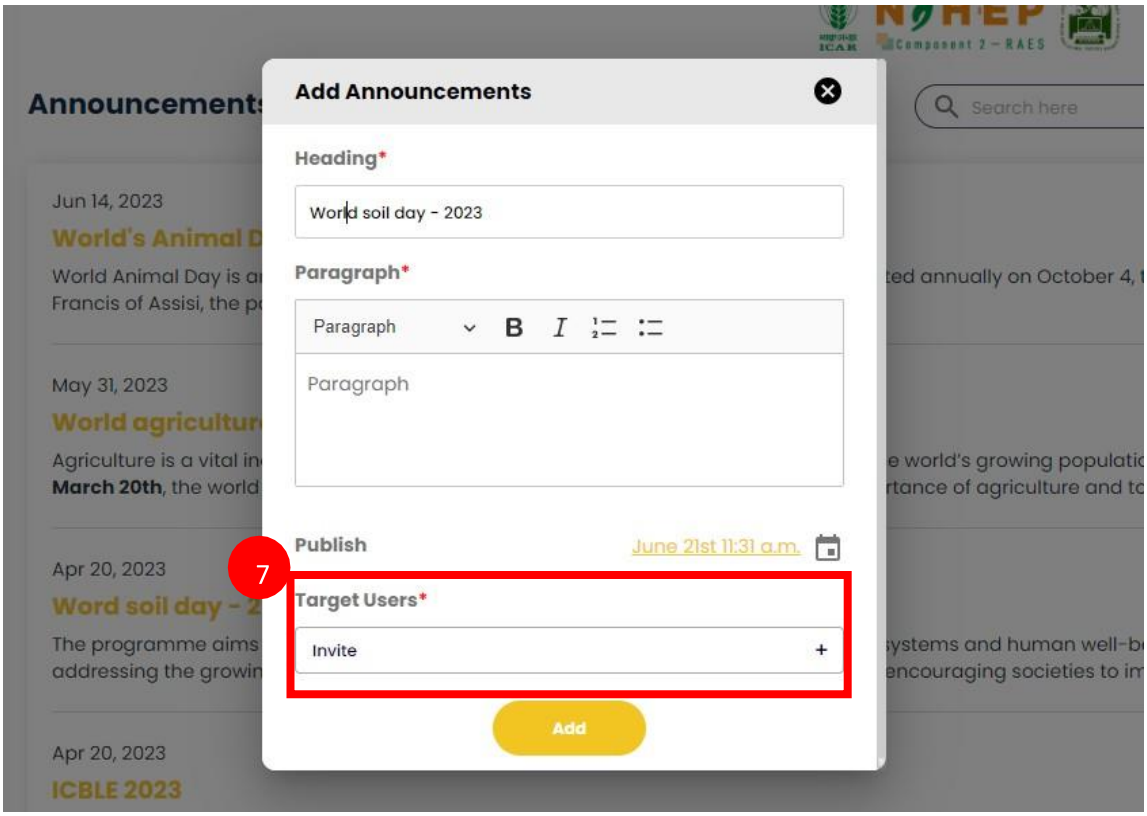

Announcements
Add Announcements
Heading*
World soil day - 2023
Paragraph*
Paragraph
Paragraph
Publish
June 21st 11:31 a.m.
Target Users*
Invite
Add
4



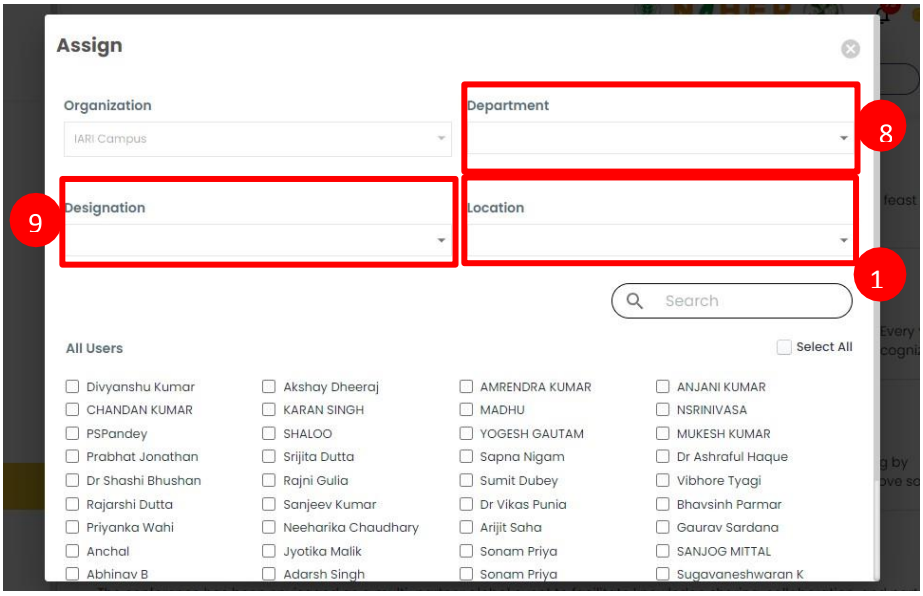
Step-5. Select Date.



Step-6. Select time.



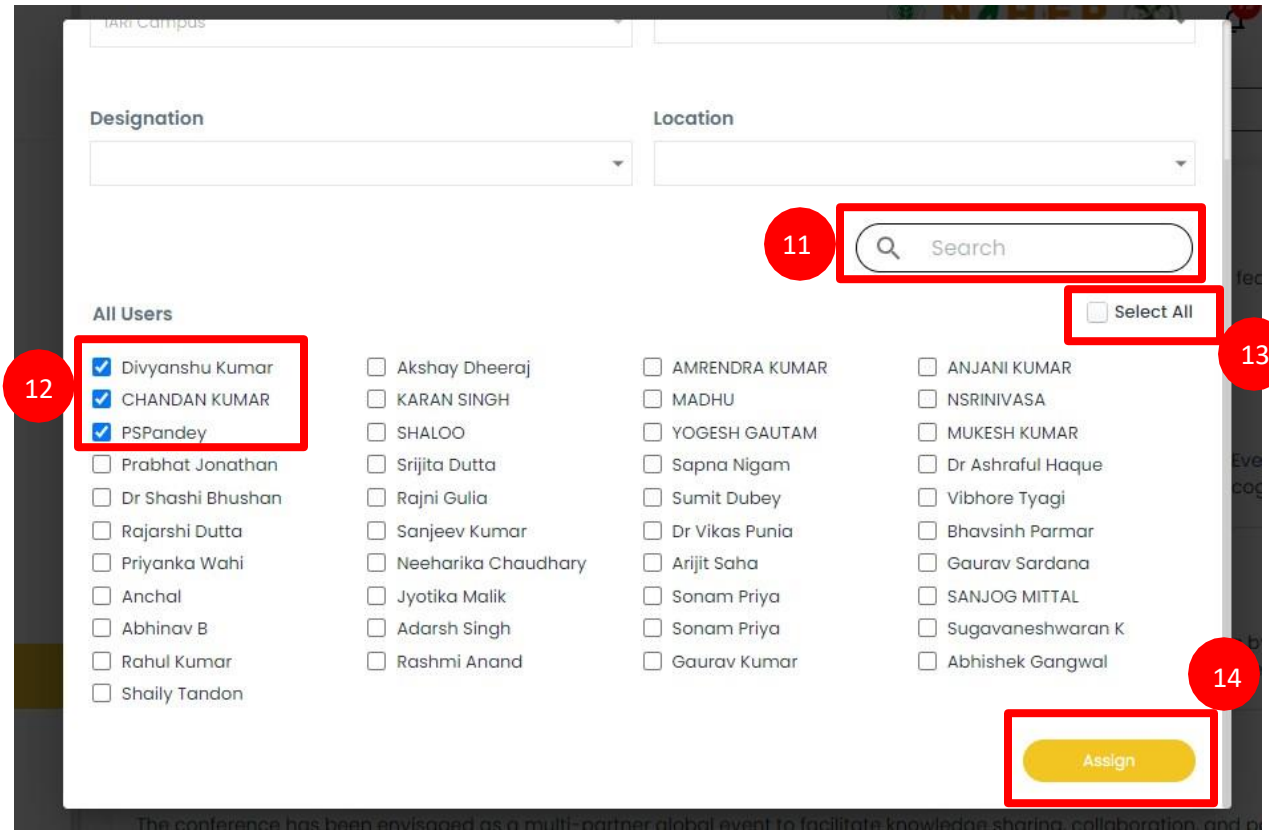
Step-7. Click on the "+" associated with an invite. A pop will display to assign participants



Step-8. Select "Department" from the drop-down menu.

Step-9. Select "Designation" from the drop-down menu.

pStep-10. Select “Location” from the drop-down menu.

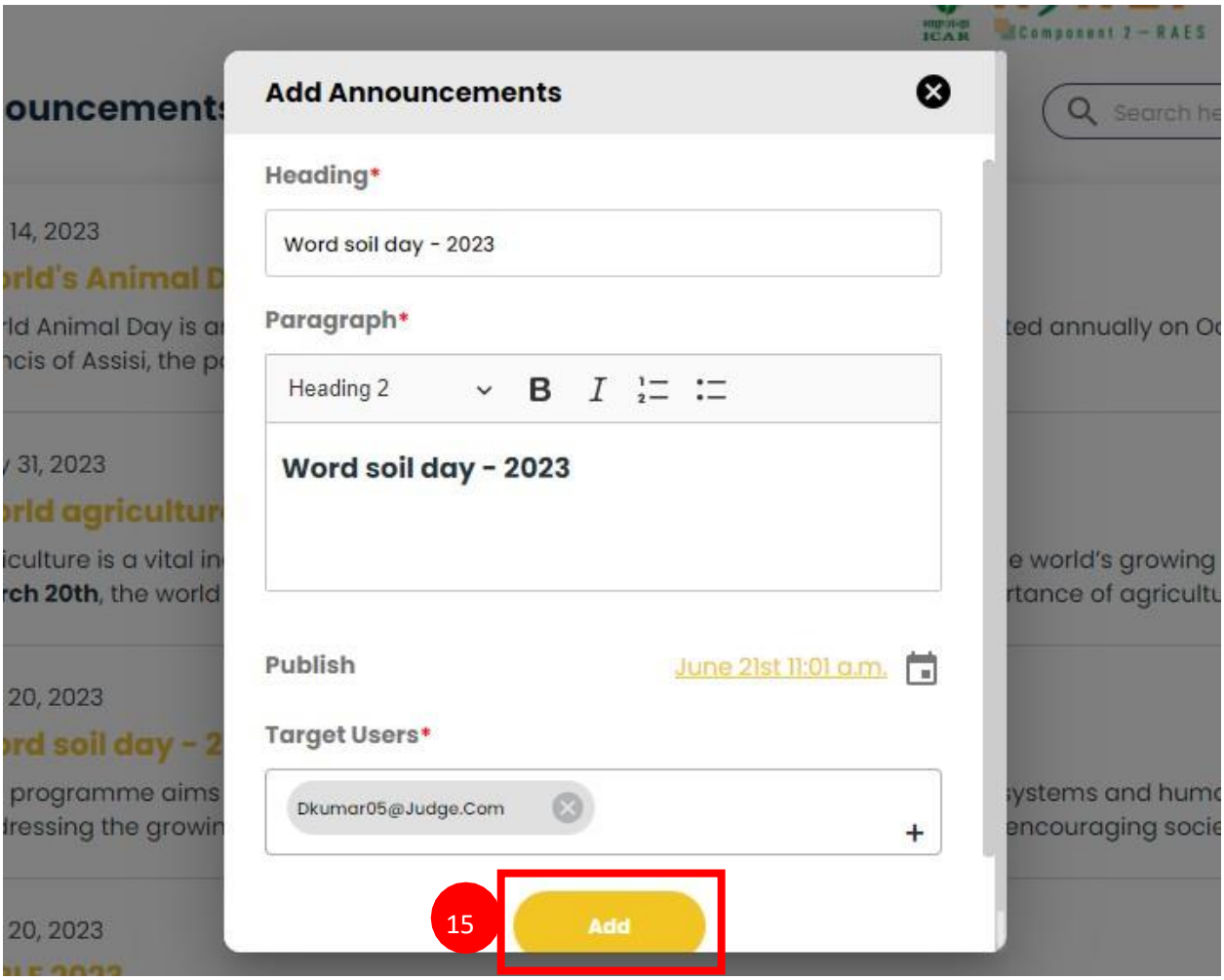


Step-11. Search the student’s name in the local ‘Search’ given.

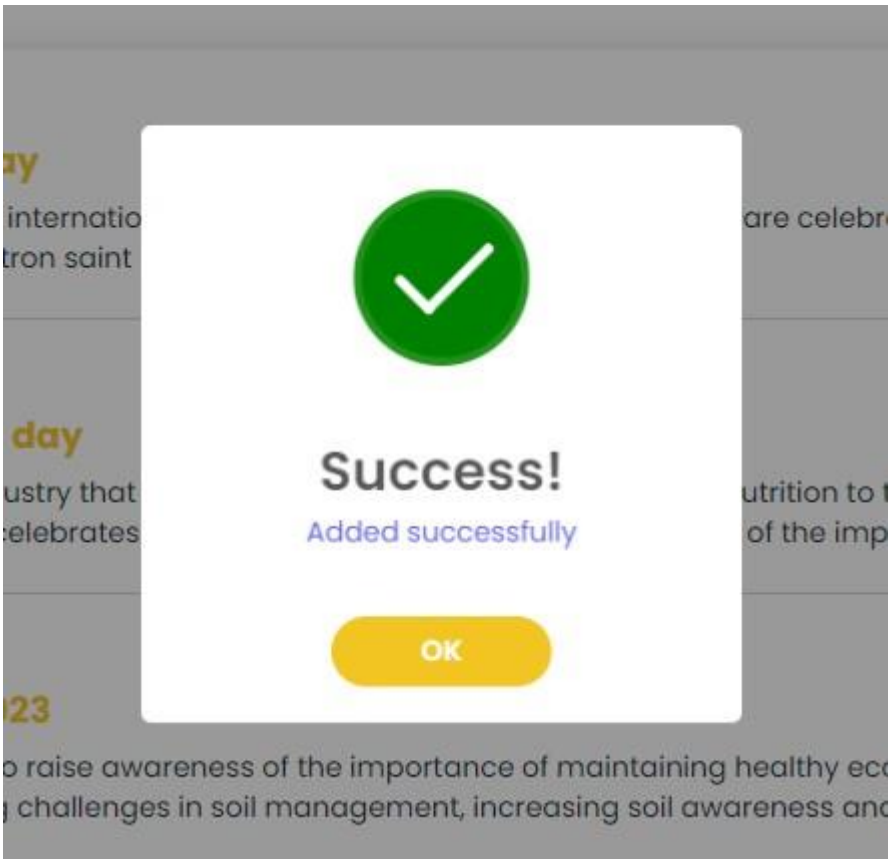
Step-12. Click on the check boxes associated with the names of the students.

Step-13. Click on the check box associated with “Select All” if you wish to select all the students.

Step-14. Click on **“**Assign”.



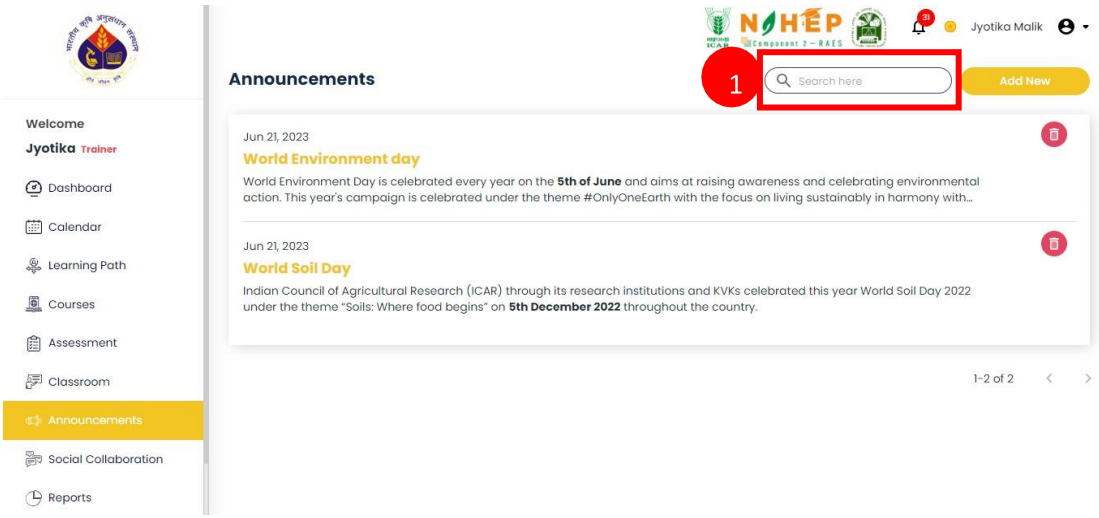
Step-15. Click on “Add” button to save the announcement.



A success message will appear, “Added successfully”.

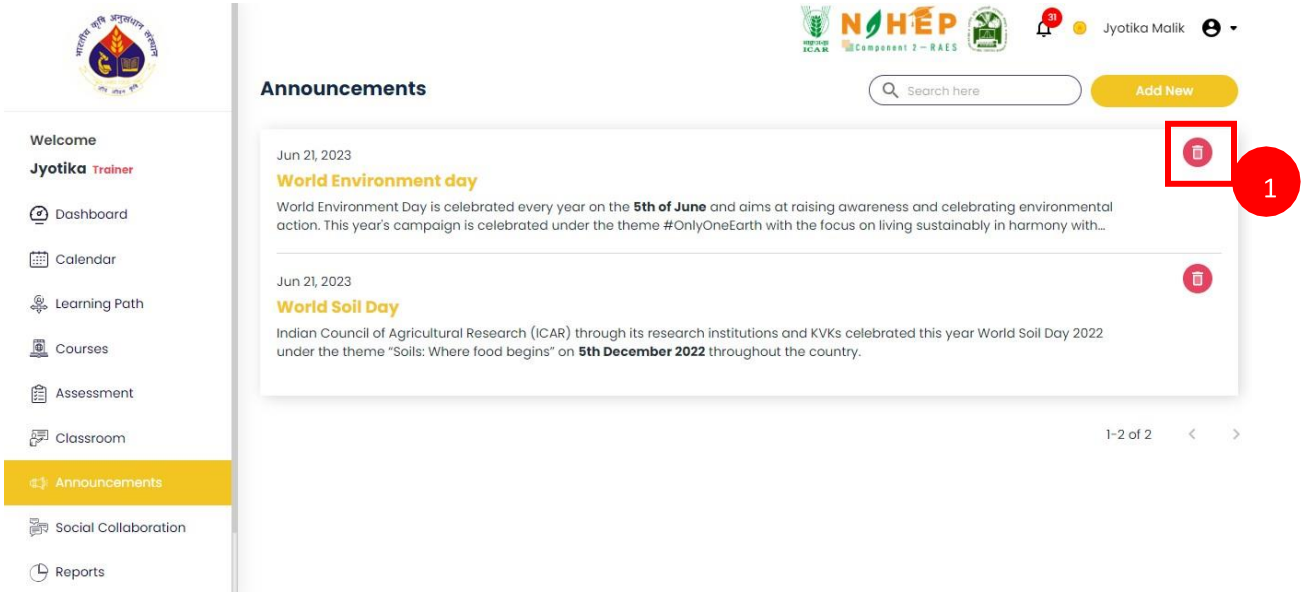
How to search for an announcement?

When the user select announcement from the left menu navigation, they can see an option for search.



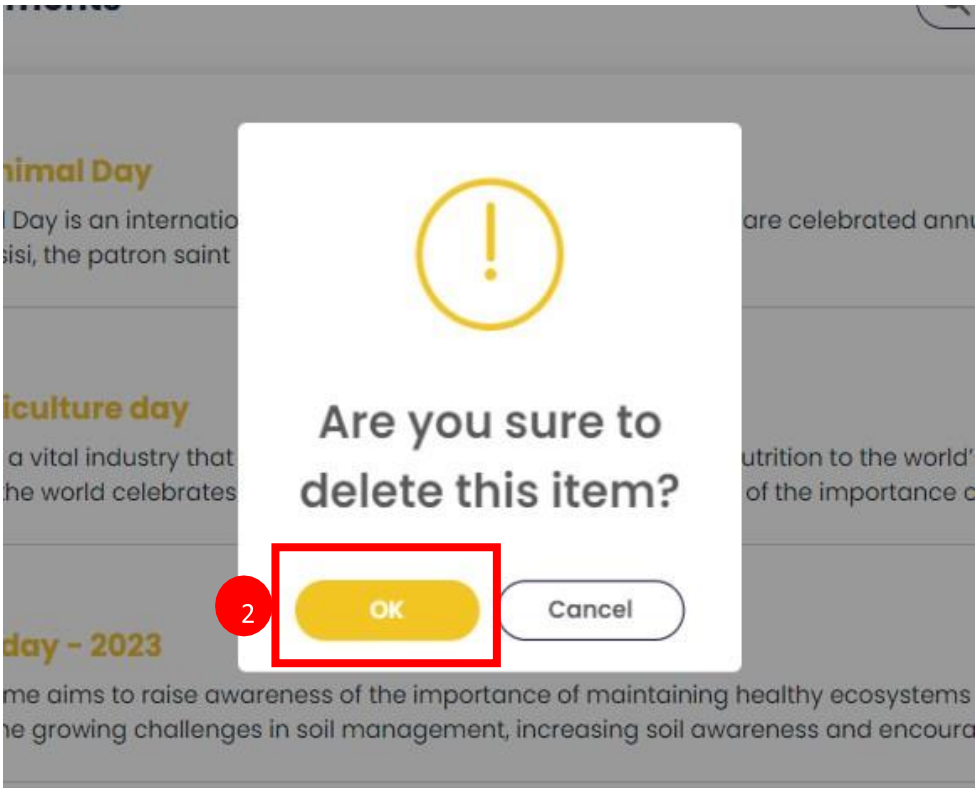
Step-1. Type the heading or keywords to search for any announcement.

How to Delete an Announcement?

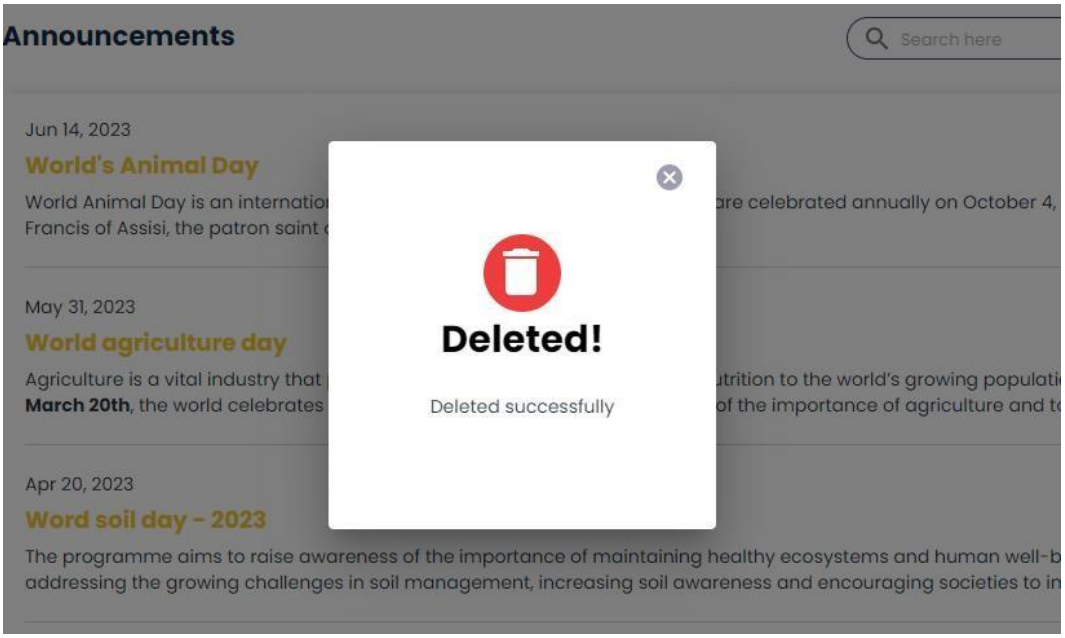


Step-1. Click on the delete button associated with every announcement published.

Once the users click on delete, a pop-up will appear with the message "Are you sure to delete this item"?



Step-2. Click on “OK” to delete this item. Click on “Cancel” to cancel the selection



Development of Learning Paths, Reports & Social Walls under Faculty Modules of NARES-Blended Learning Platform

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chandan.deb@icar.gov.in

A. Learning Paths: Creating a learning path in a blended learning platform involves combining online and offline resources to deliver a comprehensive educational experience.

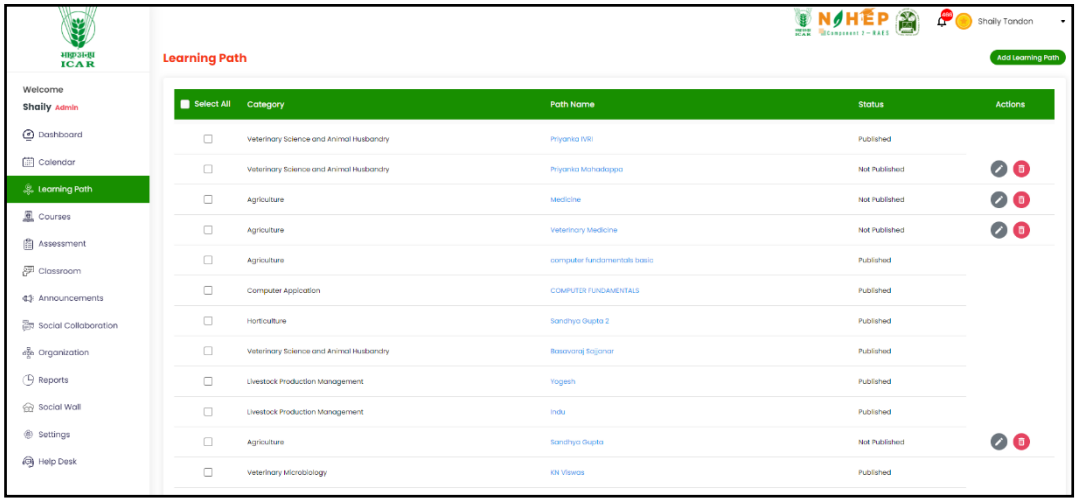


Figure: Learning path dashboard and learning path creation

Learning path can be created by the admin account of the university. Different topics from different courses can be taken and design a learning path for any student. Student can see the assigned learning path in their respective dashboard.

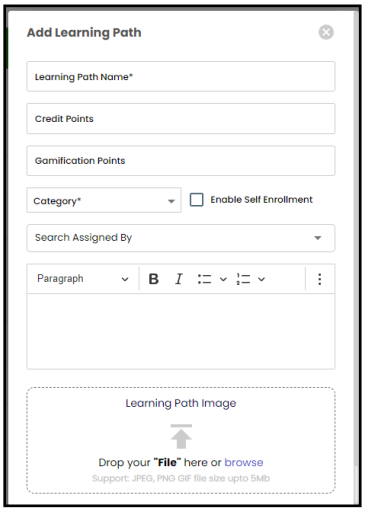


Figure: Adding learning path wizard

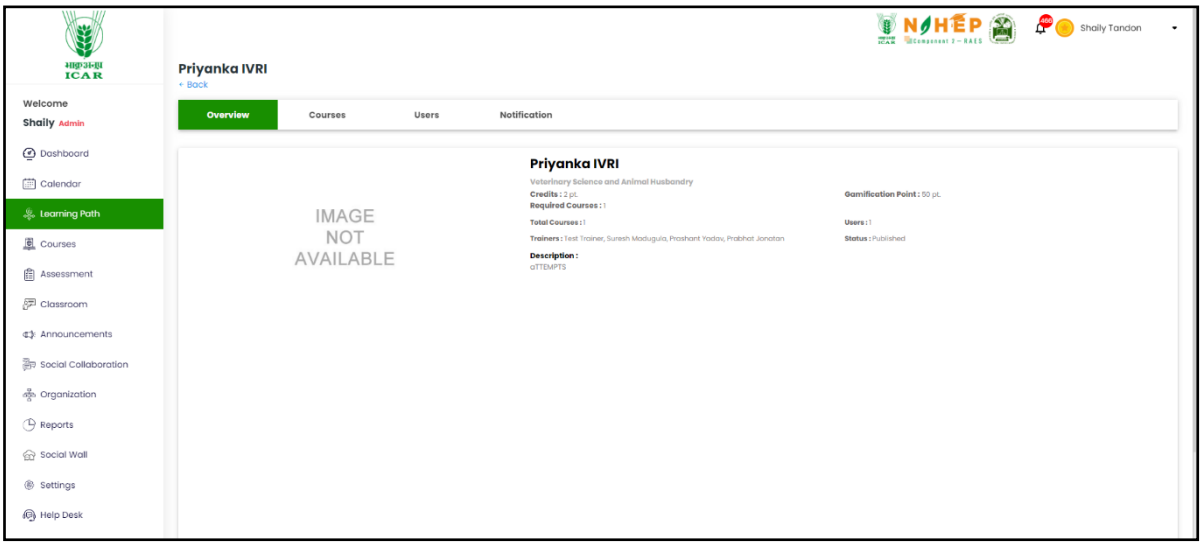


Figure: Dashboard of learning path

Learning path has four tap namely overview, courses, users and notification. In overview the basic description of the learning path can be seen. Courses tab will help to select the courses and the topics from the course list. Users tab will be used for selecting the students and the faculty for any learning path. Notification tab will be used for the publication of the learning path and send notification to the users.

B. Report

The course reporting system is designed to empower users with a comprehensive overview of their educational journey. By offering features such as the ability to view top courses, overall category statistics, and detailed course reports, learners gain valuable insights into their academic progress. The platform further enhances user experience with specific functionalities like assessment reports, accessible through the Assessment Tab, enabling users to export, import, and schedule assessments while applying search filters and date ranges. Additionally, the Classroom Tab facilitates the exploration of classroom reports, with the option to delve into detailed class reports by clicking on specific class names. The system's versatility is highlighted through its importing, exporting, and scheduling functionalities, providing users with a flexible and convenient way to manage and analyze their educational data efficiently. Overall, this integrated approach empowers users to make informed decisions about their learning journey.

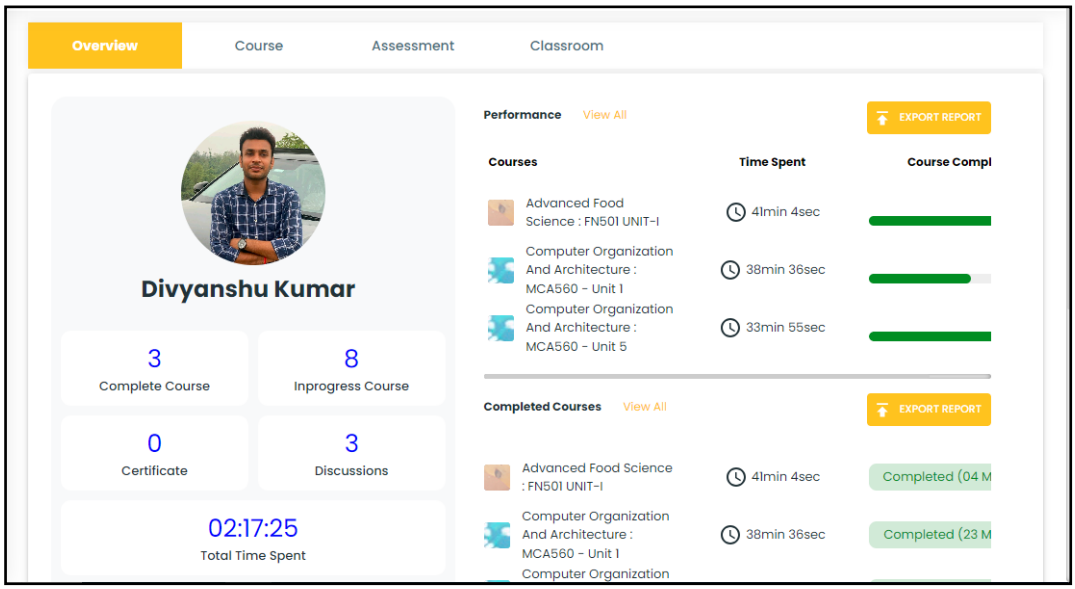
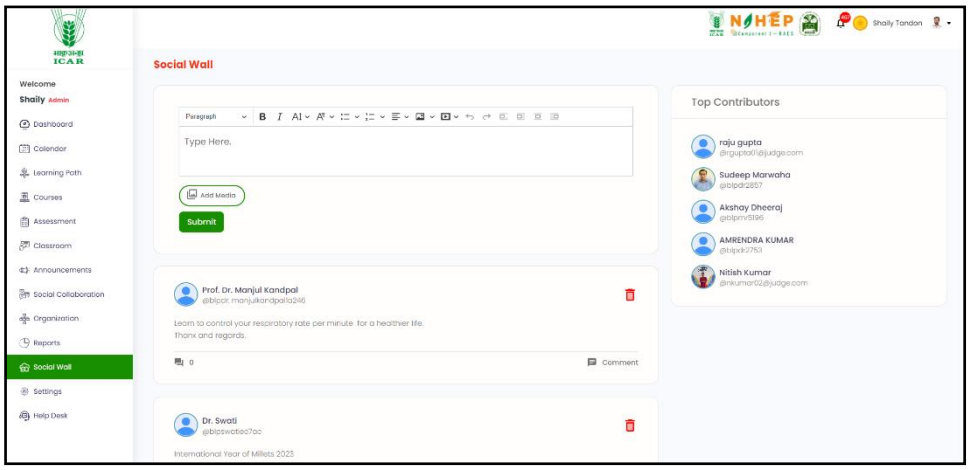


Figure: Report dashboard of the student

C. Social Wall



Social wall is the social media platform for NARES BLP users. In this option user can post the photos and also post comments for any of other post and also reply to own posts.

AR-VR Devices: Augmented and Virtual Reality Devices for Transforming Education through Blended Learning Platforms

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Introduction:

In recent years, Augmented Reality (AR) and Virtual Reality (VR) technologies have emerged as powerful tools with the potential to revolutionize various industries. In the field of education, these immersive technologies offer new ways of engaging students and enhancing learning experiences. When integrated into a blended learning platform, AR and VR devices create a dynamic and interactive environment that bridges the gap between traditional and digital learning methods.

AR and VR Devices in Education:

1. Immersive Learning Environments:

AR and VR devices transport students to virtual worlds or overlay digital information onto the real world, creating immersive learning environments. This enables students to explore historical sites, conduct virtual experiments, or even travel through space—all from the confines of their classroom.

2. Enhanced Engagement:

Traditional teaching methods often struggle to captivate students' attention. AR and VR devices provide a novel and engaging approach to learning, making it more enjoyable and memorable. Visualizing complex concepts in 3D or interacting with virtual simulations increases student engagement and understanding.

3. Personalized Learning:

Blended learning platforms powered by AR and VR allow for personalized learning experiences. Adaptive content and simulations can be tailored to students' individual learning styles, pace, and preferences, catering to a diverse range of students within the same classroom.

4. Real-world Application:

AR and VR technologies bring theoretical concepts to life by providing practical, real-world applications. Students can simulate tasks related to their field of study, such as medical procedures, architectural designs, or scientific experiments, gaining valuable hands-on experience in a risk-free environment.

Blended Learning Platform:

1. Combining Traditional and Digital Learning:

Blended learning platforms integrate traditional classroom teaching with online resources and interactive technologies. AR and VR devices play a crucial role in this integration by offering a seamless transition between physical and digital learning experiences.

2. Flexible Learning Models:

Blended learning caters to diverse learning styles and preferences by offering flexibility in how students' access and engage with educational content. AR and VR devices contribute to this flexibility by providing interactive content that complements traditional lectures and textbooks.

3. Data-driven Insights:

Blended learning platforms leverage data analytics to track students' progress and performance. AR and VR technologies enable the collection of detailed information on students' interactions within virtual environments, allowing educators to tailor their teaching strategies based on individual and collective data.

Implications for Education:

1. Increased Accessibility:

Blended learning platforms with AR and VR devices make education more accessible, breaking down geographical barriers and providing students with equal opportunities for high-quality learning experiences.

2. 21st-century Skill Development:

AR and VR technologies foster the development of essential 21st-century skills such as critical thinking, problem-solving, and collaboration. Students exposed to these immersive technologies are better equipped to thrive in a technology-driven society.

3. Preparation for Future Careers:

Integrating AR and VR into education prepares students for the digital workplaces of the future. Familiarity with these technologies enhances students' technological literacy and makes them more adaptable to rapidly evolving industries.

Augmented Reality (AR) and Virtual Reality (VR) devices have become emblematic of the cutting-edge advancements in technology, providing users with immersive experiences that bridge the gap between the physical and digital worlds. Behind the captivating visual and interactive experiences lie intricate internal workings and an array of sensors that enable these devices to deliver seamless and realistic encounters.

Internal Components of AR-VR Devices:

1. Processor Unit:

At the heart of every AR-VR device is a powerful processor unit responsible for handling the vast amount of data required for rendering immersive content in real-time. This unit executes complex algorithms to ensure smooth interactions and low latency, crucial for preventing motion sickness in users.

2. Graphics Processing Unit (GPU):

The GPU is dedicated to rendering high-quality graphics, ensuring that virtual environments and objects appear realistic and respond seamlessly to user interactions. Its processing power is instrumental in creating the visually stunning landscapes and detailed 3D models that define immersive experiences.

3. Display Technology:

AR-VR devices employ advanced display technologies, including OLED (Organic Light-Emitting Diode) and LCD (Liquid Crystal Display), to provide high-resolution visuals with low latency. Some AR devices utilize transparent displays to overlay digital information onto the real world, enhancing the augmented experience.

4. Tracking Systems:

Precise tracking is essential for maintaining the illusion of immersion. AR-VR devices incorporate tracking systems that monitor the user's movements in real-time. This includes both

positional tracking (tracking the device's location in physical space) and rotational tracking (tracking the device's orientation).

Sensors in AR-VR Devices:

1. Accelerometer:

The accelerometer measures changes in velocity and direction, providing information about the device's movement. This sensor is crucial for tracking head movements in VR devices, allowing users to look around and interact with virtual environments.

2. Gyroscope:

Working in conjunction with the accelerometer, the gyroscope measures the device's orientation and rotation. This enables a more accurate representation of movement, contributing to the overall realism of the virtual experience.

3. Magnetometer:

The magnetometer helps determine the device's orientation in relation to the Earth's magnetic field. This is particularly important for maintaining accurate directional information, ensuring that virtual and real-world orientations align seamlessly.

4. Depth Sensors:

Some AR-VR devices incorporate depth sensors, such as time-of-flight or structured light cameras. These sensors enable the device to perceive and understand the depth of the surrounding environment, facilitating the integration of virtual objects into the real world in AR applications.

5. Infrared Sensors:

Infrared sensors are often used for hand and gesture tracking. They detect infrared light emitted or reflected by the user's hands or other objects, allowing for natural and intuitive interactions within virtual environments.

In an era where technological advancements are reshaping industries, agriculture stands as no exception. Augmented Reality (AR) and Virtual Reality (VR) modules are proving to be invaluable tools in agricultural education, offering innovative ways to train the next generation of farmers and agribusiness professionals. These immersive technologies bring a new

dimension to learning by providing hands-on experiences and practical insights, ultimately fostering a more informed and skilled workforce in the agricultural sector.

1. Interactive Learning Environments:

AR-VR modules in agricultural education transport students from traditional classrooms to interactive and dynamic learning environments. Virtual simulations allow students to explore the entire agricultural process—from planting and harvesting to pest management—in a risk-free setting. This hands-on approach enhances comprehension and retention of key concepts.

2. Realistic Field Training:

One of the key advantages of AR-VR modules is the ability to simulate real-world scenarios. In agriculture, this means replicating the challenges farmers face in the field. Students can engage in virtual field training, practicing equipment operation, crop management, and decision-making in various agricultural scenarios. These realistic simulations prepare students for the complexities of real-world farming.

3. Precision Agriculture Insights:

AR-VR modules provide insights into precision agriculture, a data-driven approach that optimizes crop yields while minimizing resource use. Students can use virtual reality to explore precision agriculture techniques, such as sensor-based monitoring, GPS-guided machinery, and variable rate technology. This exposure prepares them for the modern, technology-driven landscape of agriculture.

4. Crop Modelling and Planning:

Virtual reality modules enable students to experiment with crop modeling and planning. They can simulate different environmental conditions, assess the impact of various farming practices, and make informed decisions about crop selection and management strategies. This practical experience enhances students' ability to make data-driven decisions in their future agricultural careers.

5. Global Perspectives and Collaboration:

AR-VR modules can connect students to agricultural practices worldwide. Virtual field trips to farms in different regions allow students to observe diverse farming methods and challenges. Collaborative projects in virtual environments facilitate knowledge exchange and collaboration

among students from different geographical locations, providing a global perspective on agriculture.

6. Risk Mitigation and Sustainable Practices:

Agriculture faces various risks, including weather-related challenges, diseases, and market fluctuations. AR-VR modules allow students to explore risk mitigation strategies and sustainable farming practices in a controlled environment. This knowledge equips them to address real-world challenges and contribute to the development of resilient and sustainable agricultural systems.

Conclusion:

AR and VR devices, when integrated into blended learning platforms, represent a transformative force in education. The combination of immersive experiences, personalized learning, and data-driven insights not only enhances student engagement but also equips them with the skills needed for success in the 21st century. As educators continue to explore innovative approaches, the integration of AR and VR technologies is poised to play a pivotal role in shaping the future of education.

The internal workings of AR-VR devices are a marvel of technological innovation, seamlessly blending hardware components and sophisticated sensors to create immersive experiences. As advancements in technology continue, we can anticipate even more refined and powerful devices that push the boundaries of what is possible in the realm of augmented and virtual reality. Understanding the intricate dance of processors, sensors, and display technologies provides a glimpse into the complexity behind the magic of AR-VR experiences.

The integration of AR-VR modules into agricultural education represents a transformative shift in the way we prepare future professionals in the field. These technologies not only enhance learning experiences by providing immersive and interactive content but also equip students with practical skills and insights crucial for the rapidly evolving agricultural landscape. As the agricultural sector continues to embrace innovation, AR-VR modules are proving to be indispensable tools in cultivating a knowledgeable, skilled, and forward-thinking workforce for the future of agriculture.

AI-DISC: Artificial Intelligence Based Disease Identification System for Crops

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What is AI-DISC?

- **AI-DISC** (Artificial Intelligence based Disease Identification System for Crops) is an AI-enabled android mobile application for automatic identification of diseases through image
- Developed under **NAHEP Component 2** and **NASF Project** (Artificial Intelligence based mobile app for identification and advisory of maize diseases and Insect Pests)
- Images and advisories have been collected from **ICAR-IIMR**, **ICAR-IARI** and **11** SAUs
- Imagebase and Knowledgebase has been maintained in **NIBPP** (National Image Base for Plant Protection)
- Deployed and Hosted on **Krishi-Megh** Cloud Infrastructure
- Provides real time crop protection solution using **AI** and **Image-processing**
- Expert forum of AI-DISC facilitates Expert-Users interaction through chat for complex multifactor plant protection problems

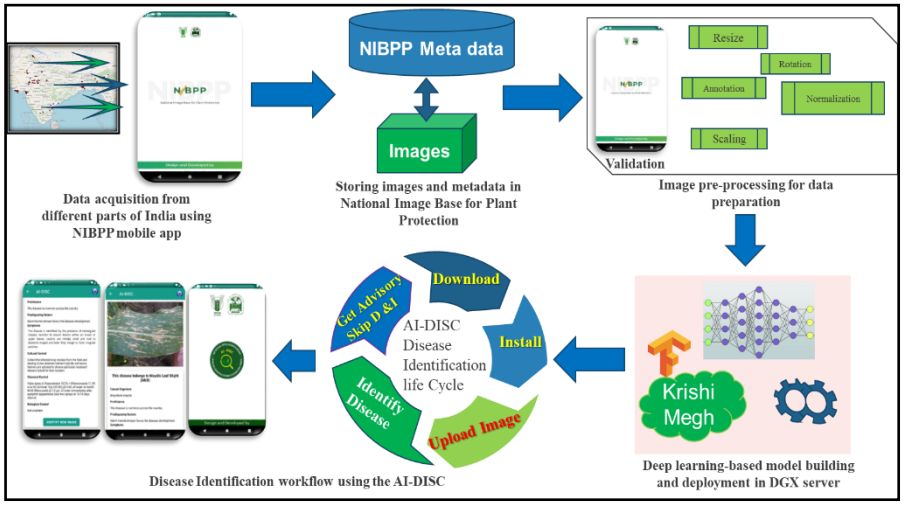


Figure: Developmental journey of AI-DISC

Simple Steps to Identify Crop Diseases

- Download AI-DISC android mobile app (https://play.google.com/store/apps/details?id=com.ai.ai_disc)
- Upload images with visible symptoms
- Get the disease and advisory automatically

Models

- Deep learning models over 19 crops (Rice, Wheat, Maize, Tomato, Mustard, Cotton, Brinjal, Apple, Peach, Kinnow, Mandarin, Assam Lemon, Chickpea, Green gram, Cluster bean, Moth bean, Chilli, Coriander etc.)
- Trained over 1.5 lakh images
- Developed and deployed in NVDIA GPU server

Features

- AI-enabled disease identification within fraction of seconds
- Expert consultations facility via text/video chat
- Real time reporting system for disease infestation across India

Figure: AI-DISC Mobile Home Screen

Types of Accounts in AI-DISC

Multiple Type of users with different privileges

Extension Worker/ Farmer

Image based disease identification

Report location wise disease occurrence

Domain Expert Account

Provide domain advisory to the users through chat and video call

Administrator

Overall control through NIBPP

Facilities available in AI-DISC: Identification

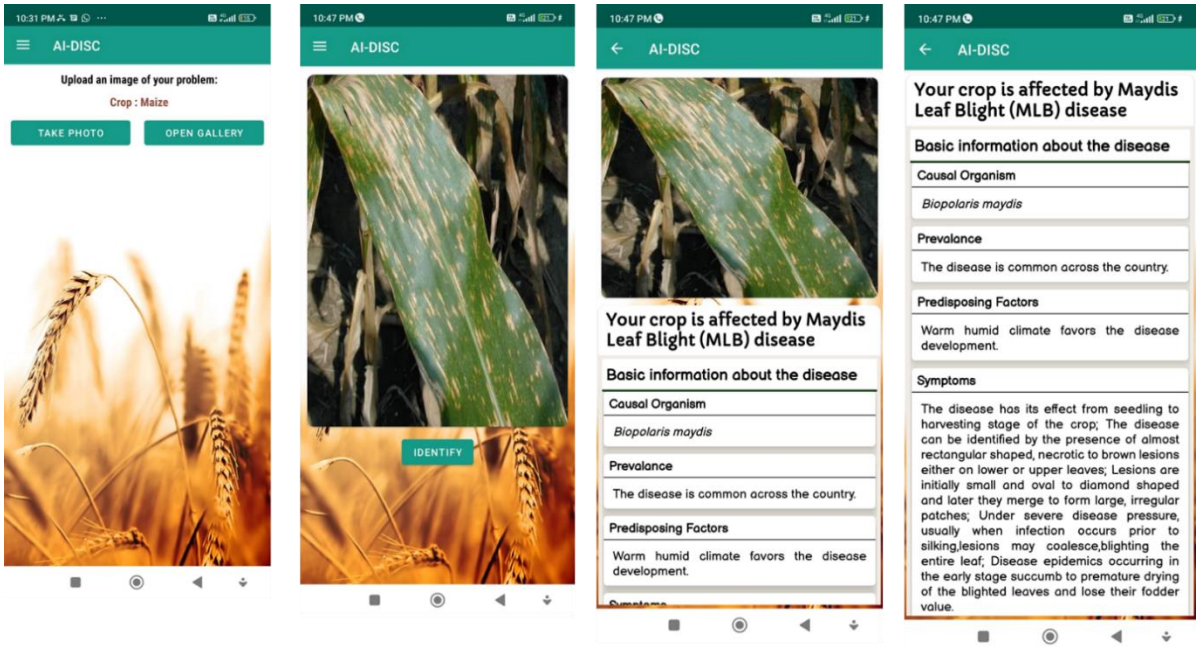


Figure: Identification Module of AI-DISC

Facilities available in AI-DISC: Reporting

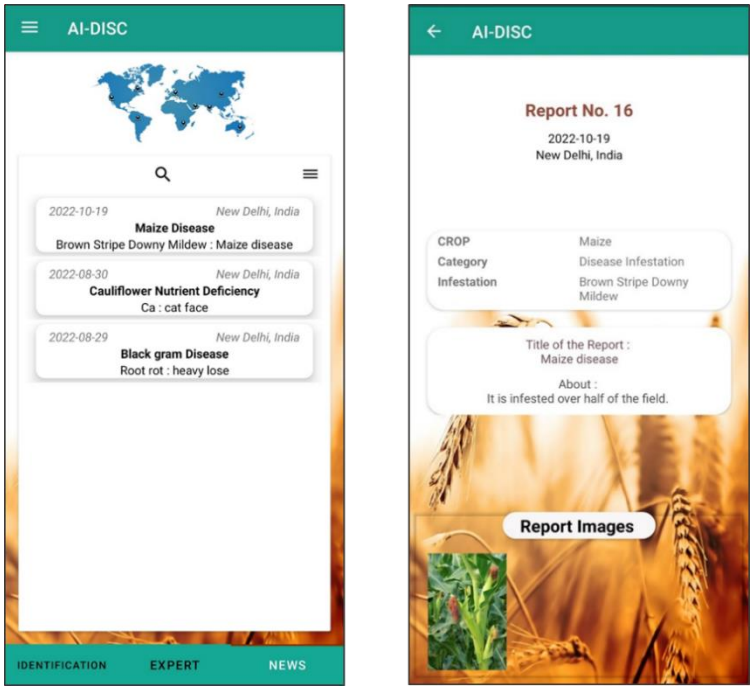


Figure: Reporting Module of AI-DISC

Report

Location wise report of plant diseases and related information along with images

Facilities available in AI-DISC: Expert Forum

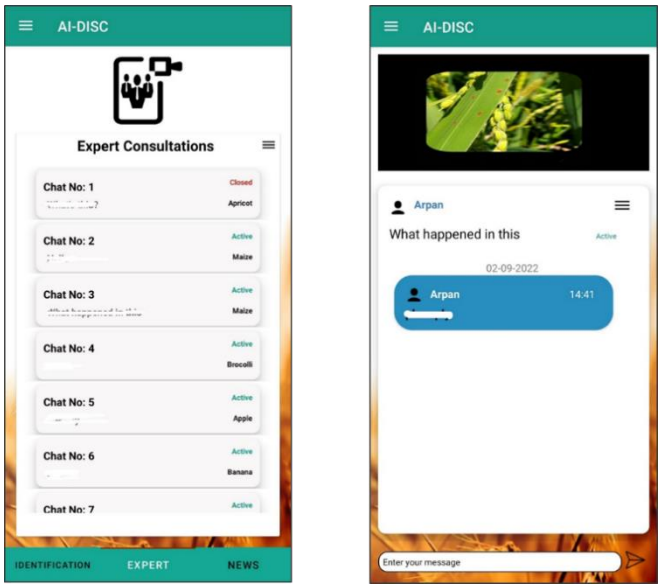


Figure: Expert forum of AI-DISC

Expert Forum

Query facility for plant protection problems

Expert-User Chat

Technology Used

App Development

Java

Android SDK

MS SQL Server

Model Programming

Python 3.6 and above

Packages

Tensorflow, Keras, Scikit-learn, Numpy, Pandas, Matplotlib

Model Train and Deploy

NVIDIA DGX GPU Clusters

Configuration

System: **NVidia DGX Server**

Operating system: **Ubuntu 18.04.3 LTS**

CPU processor: **Intel(R) Xeon(R) CPU E5-2698 v4 @ 2.20 GHz**

Graphics processor unit (GPU): **Tesla V100-SXM2- 32 GB**

RAM: **528 GB**

Deep learning framework : **PyTorch, TensorFlow**

Deep learning environment: **Jupyter Notebook**

Programming language: **Python**

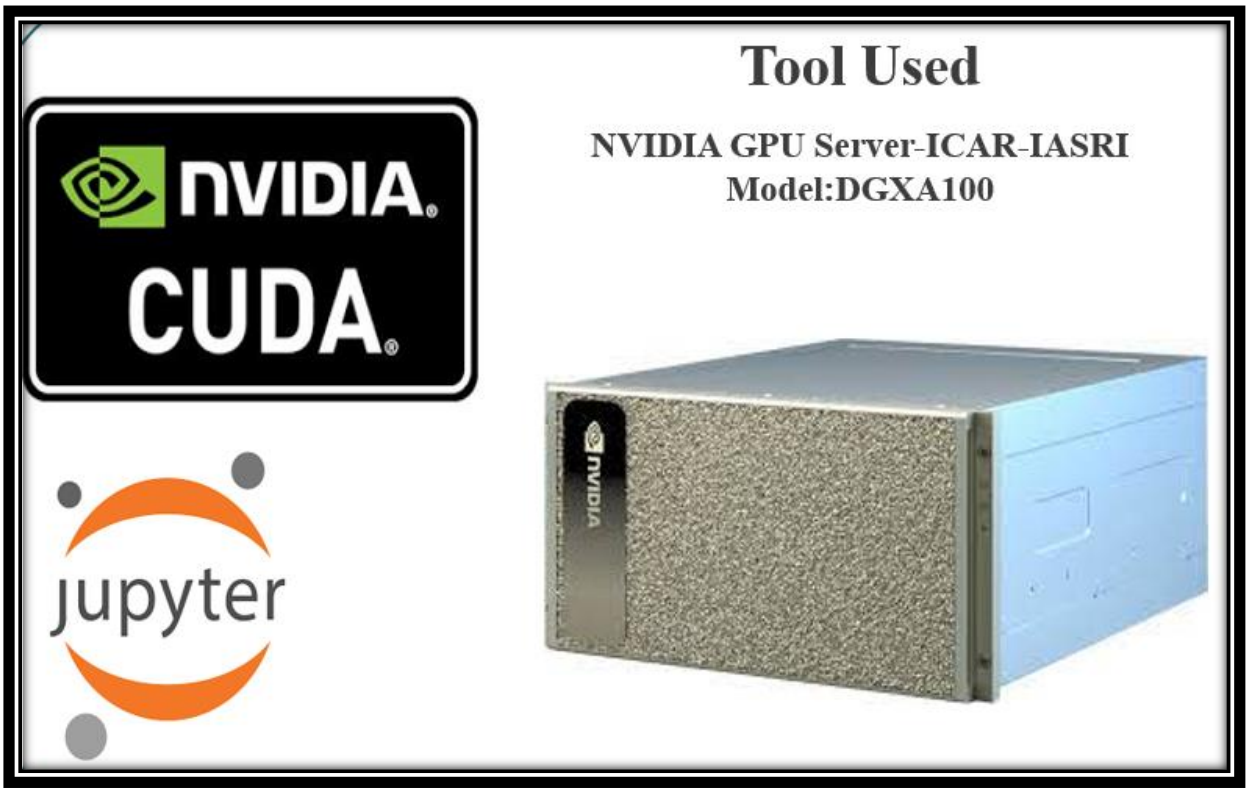
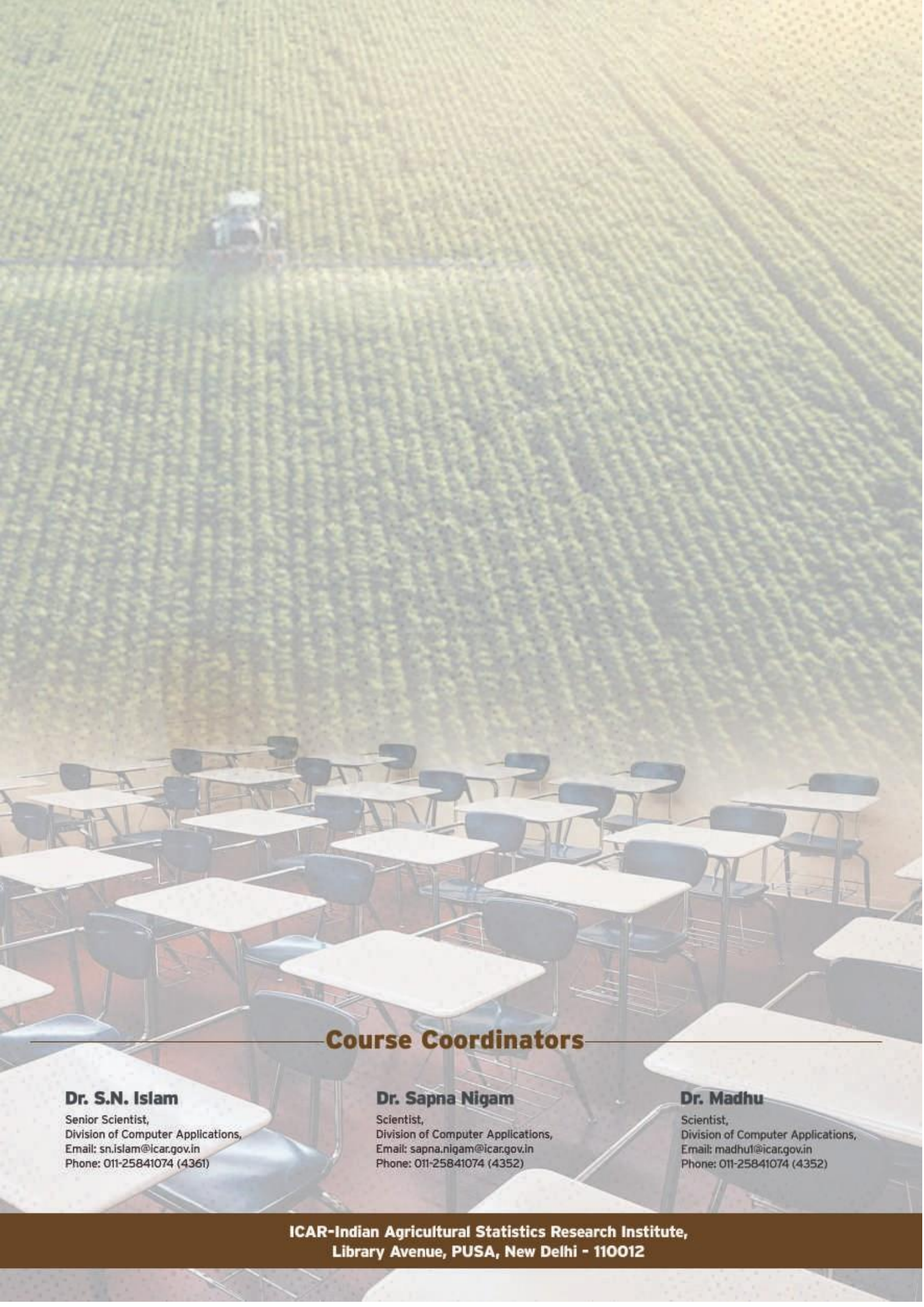


Figure: Tool Used for model development



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