MALLA REDDY COLLEGE OF ENGINEERING

(Approved by AICTE-New Delhi and Affiliated to JNTUH-Hyderabad)
Maisammaguda, Post Via Dhulapally, Kompally, Secunderabad-500 100

A Report of
An e-workshop
on

Virtual Laboratories

on 12th July, 2024

Seminar Hall
Malla Reddy College of Engineering
Secunderabad-500100

An Initiative of
Ministry of Human Resources & Development, Govt of India

Under the Aegis of
National Mission on Education through Information and Communication Technology (NMEICT)

Participating Institute
IIIT Hyderabad

Malla Reddy College of Engineering

(Approved by AICTE-New Delhi & Affiliated to JNTUH-Hyderabad)

Maisammaguda, Secunderabad-500 100

Organising

An e-workshop on

Virtual Labs

on 12-07-2024 at 2.30 PM

An Initiative of

Ministry of Human Resource & Development

(MHRD-Govt of India)

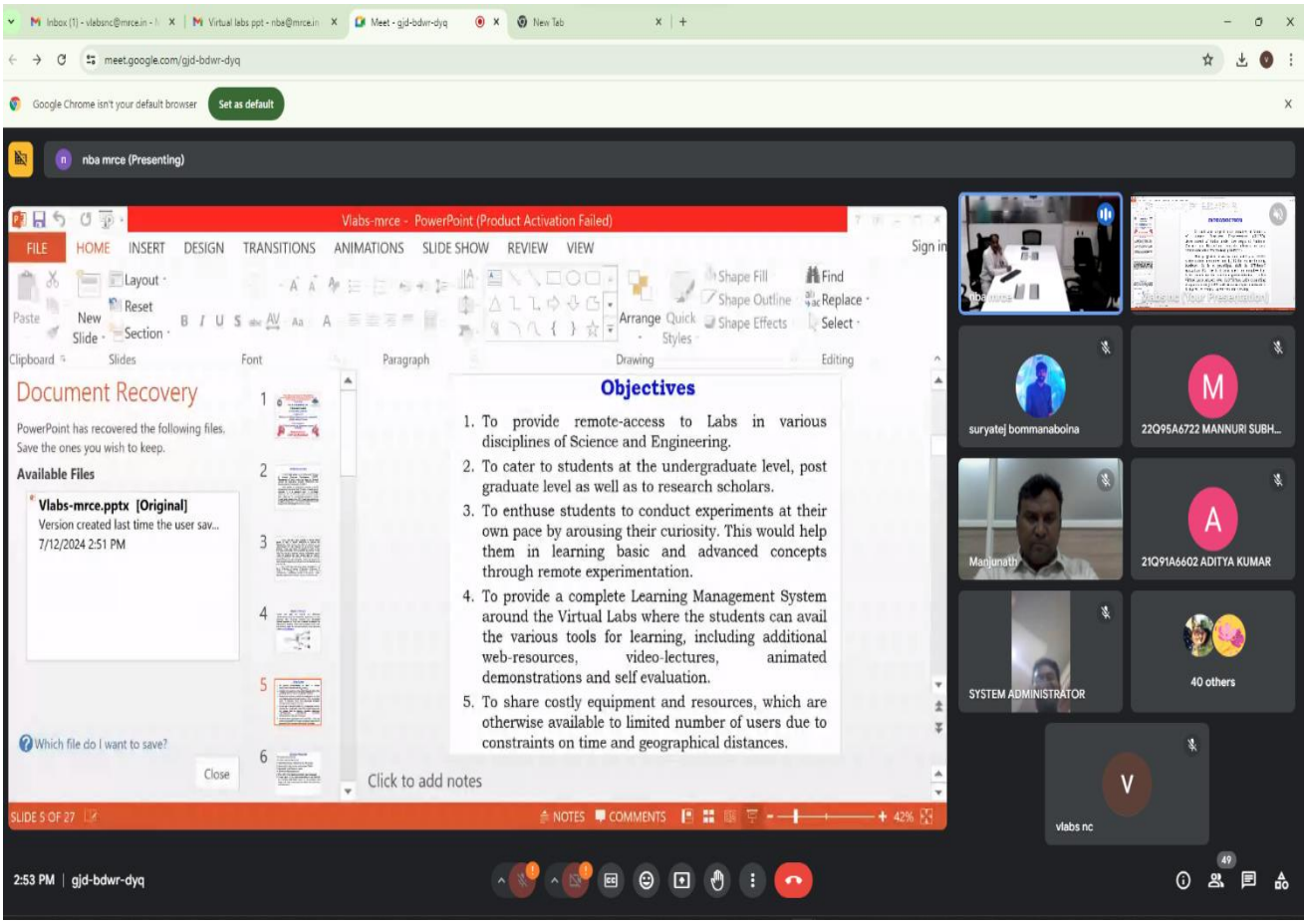
Under the aegis of

The National Mission on Education through ICT

(NMEICT)

Participating Institute

IIIT Hyderabad



The Agenda of the e-workshop is as follows:

- Welcome address by Principal Sir-MRCE - 05 minutes
- Introduction to Virtual Labs - 20 minutes
- Demo of Data Structures Lab 15 minutes
- Demo of EDC Lab - 20 minutes
- Explanation of Feedback and other documentation to be submitted – 10 minutes.
- Question and Answers from the participants - 15 minutes

The e-workshop on Virtual Laboratories was conducted on 12th July 2024 at 02.00PM in the Seminar Hall, Malla Reddy College of Engineering, Maisammaguda, Secunderabad-500 100.

Dr. V.Narasimha Reddy, Coordinator, Virtual labs Nodal Centre of MRCE welcomes Dr. M. Ashok, Principal of MRIET, Professor Ravi Shankar, Programme Manager, Virtual Labs IIIT Hyderabad, all Hods, Deans, faculty members and students to the e-workshop on Virtual labs organized by the institute with the support of participating institute IIIT Hyderabad.

Dr. M. Ashok, Principal of MRCE explains about the institute establishment and its milestones since inception year 2005. Principal sir thanks to the participating institute IIIT Hyderabad for giving an opportunity to conduct this e-workshop on Virtual Labs and invited the Sri. Ravi Shankar, Programme Manager, Virtual Labs IIIT Hyderabad to carry over the session.

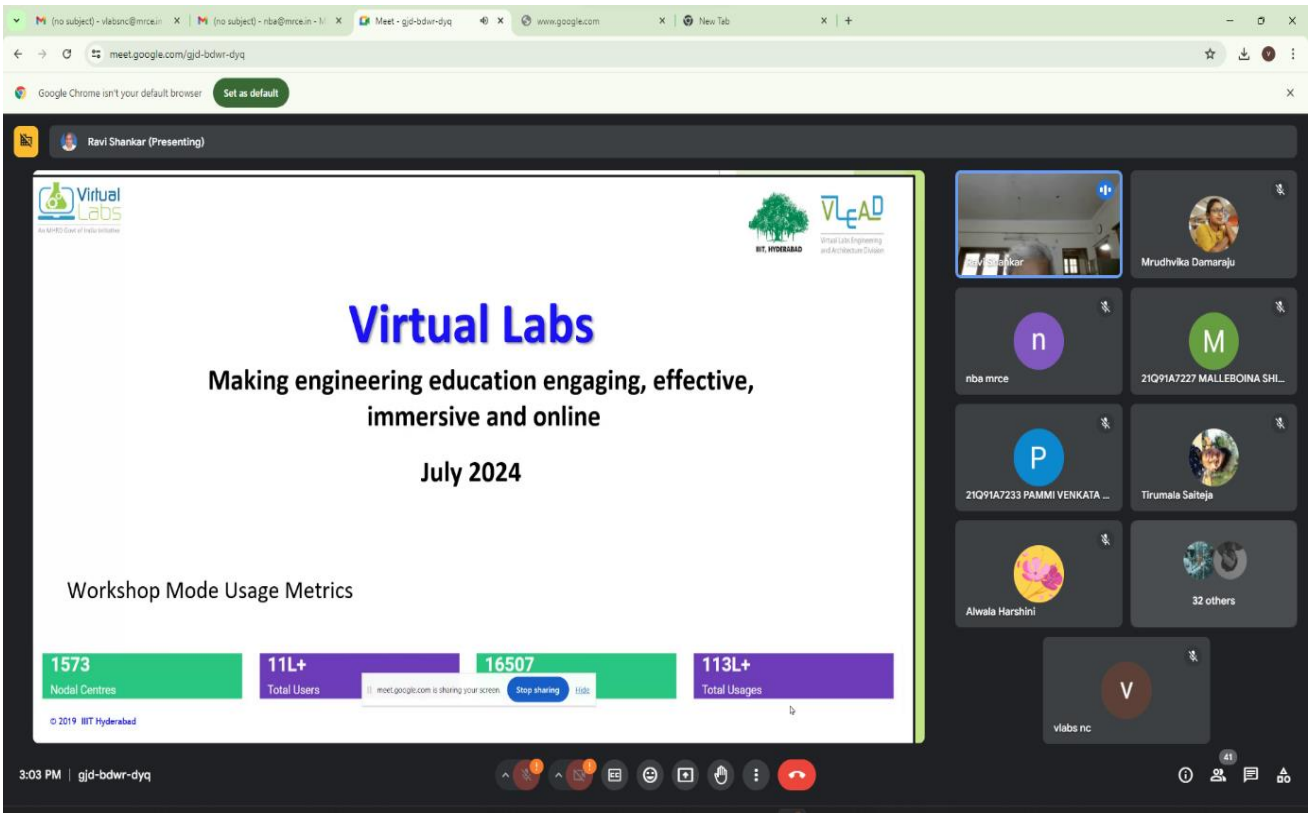
Sri. Ravi Shankar, Programme Manager, Virtual Labs IIIT Hyderabad welcomed the participants and encouraged them to avail this opportunity in enhancing their experience and serving as ambassadors of Virtual Labs back to their institute. The session followed with the introductory lecture by Sri. Ravi Shankar, Programme Manager, Virtual Labs IIIT Hyderabad on the "*Introduction to Virtual Laboratory Initiative*". This lecture clarified the concept of Virtual Laboratories, and how real or virtual the experiments can be. The flavor of remote triggered experiments, and the animations/ visualization of virtual laboratories was also demonstrated. The link of utilizing the facility and not duplicating it everywhere was also stressed so that the same infrastructure can be shared by the students for getting a first-hand experience of the laboratories and being ready for doing the actual experiment. The transition from data to information to knowledge to wisdom was very well conveyed by Sri. Ravi Shankar

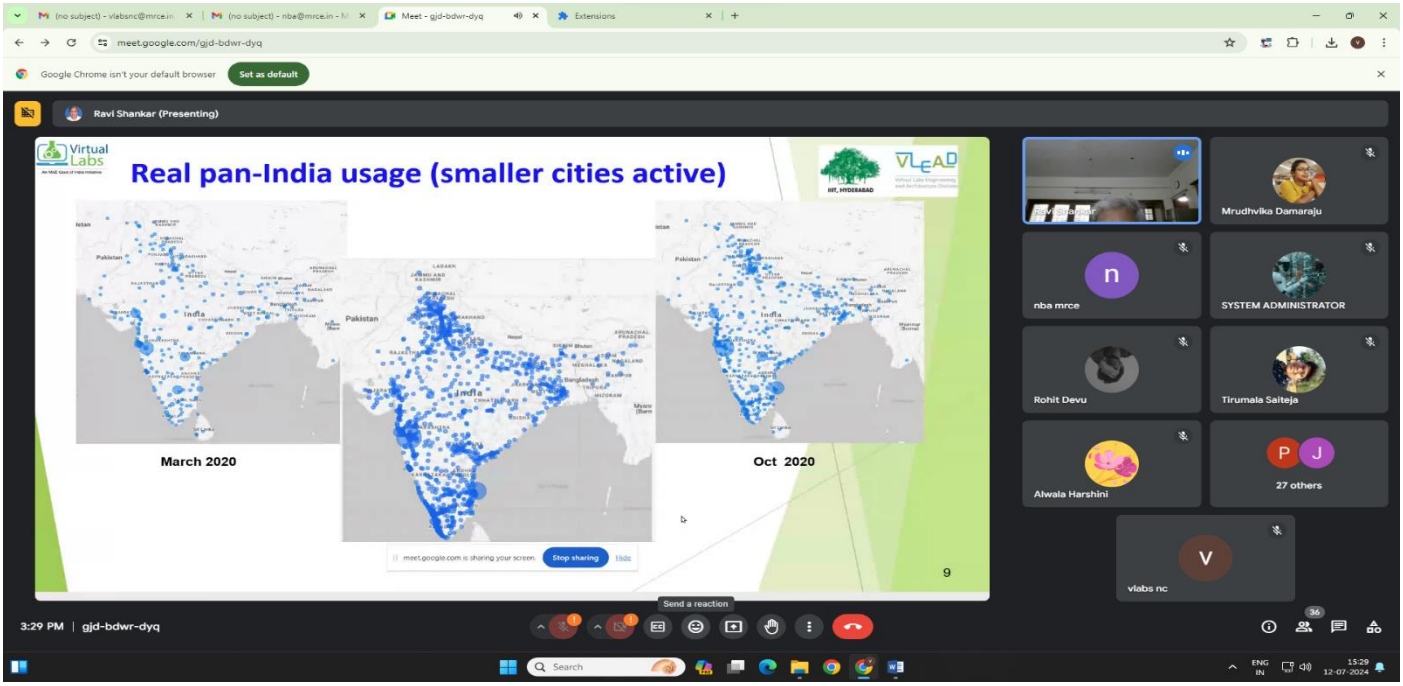
Mrs. Mrudvika Dhamaraju, Programme Associate, IIIT Hyderabad explain the content of experiments that can be utilized for demonstration and the actual developed virtual lab experiments were demonstrated to the participants. One Basic electronics and one computer science virtual lab experiments simulation and visualization were demonstrated.

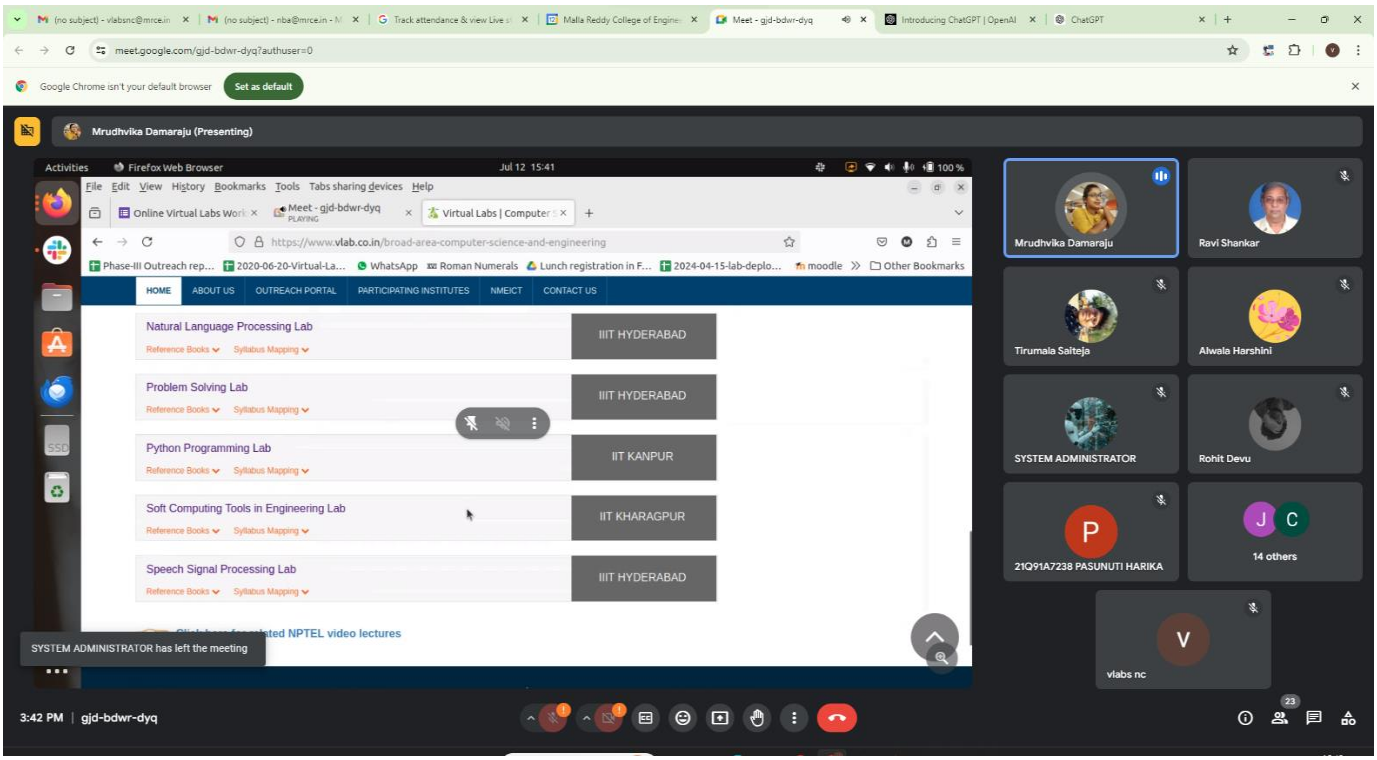
Mrs. Mrudvika Dhamaraju sharing the feedback forms filling data, downloading and uploading to the vlabs portal with the participants.

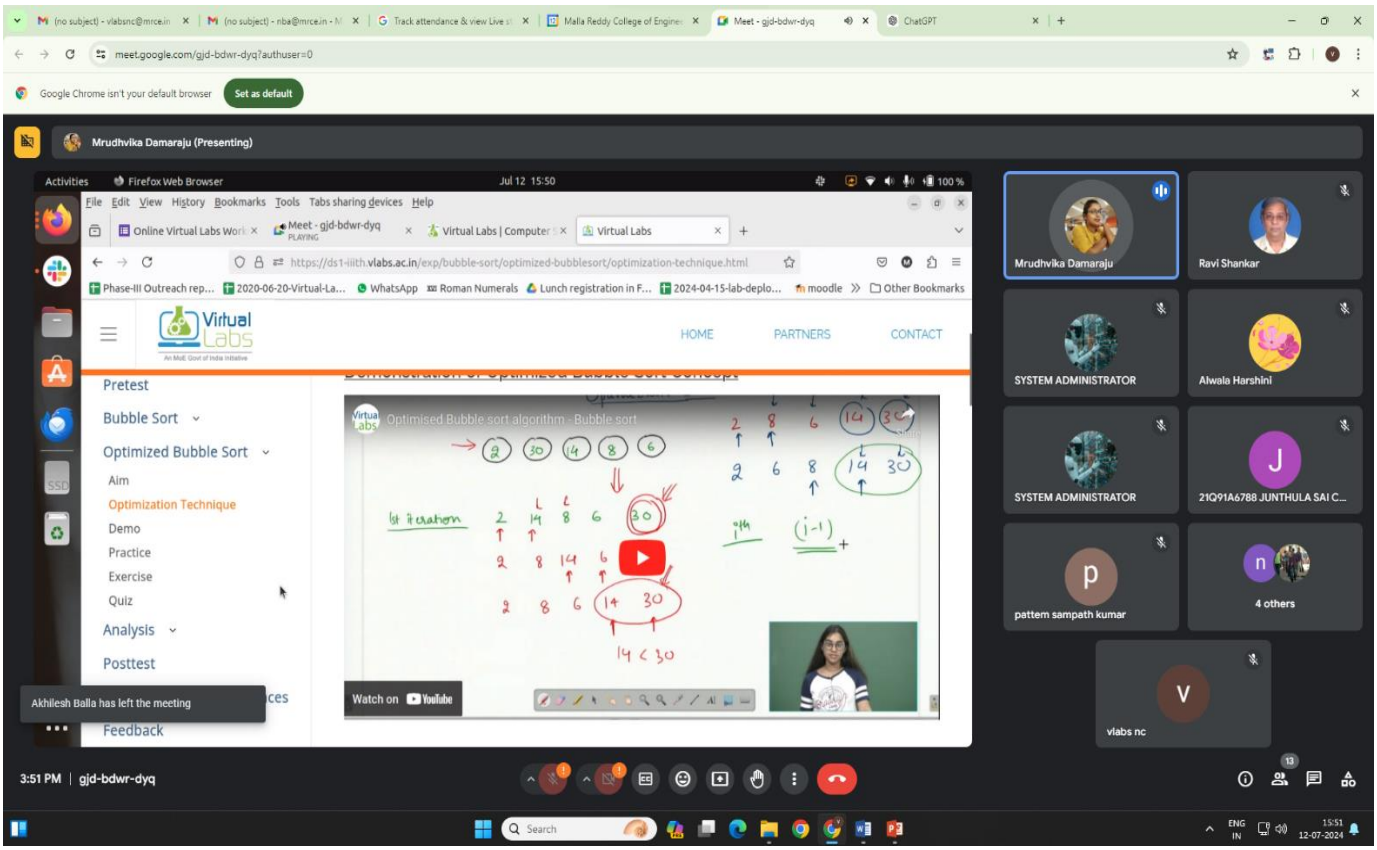
The e-workshop on Virtual Laboratories was attended by 139 faculty and students together from all engineering branches of our institute. The aim of this workshop was to create awareness on the utilization of web-based experiments, virtualization and simulations towards enhanced learning. The purpose was to facilitate the understanding and concepts of various lab experiments in the college where the state-of-the-art experimentations facilities and infrastructure is not present.

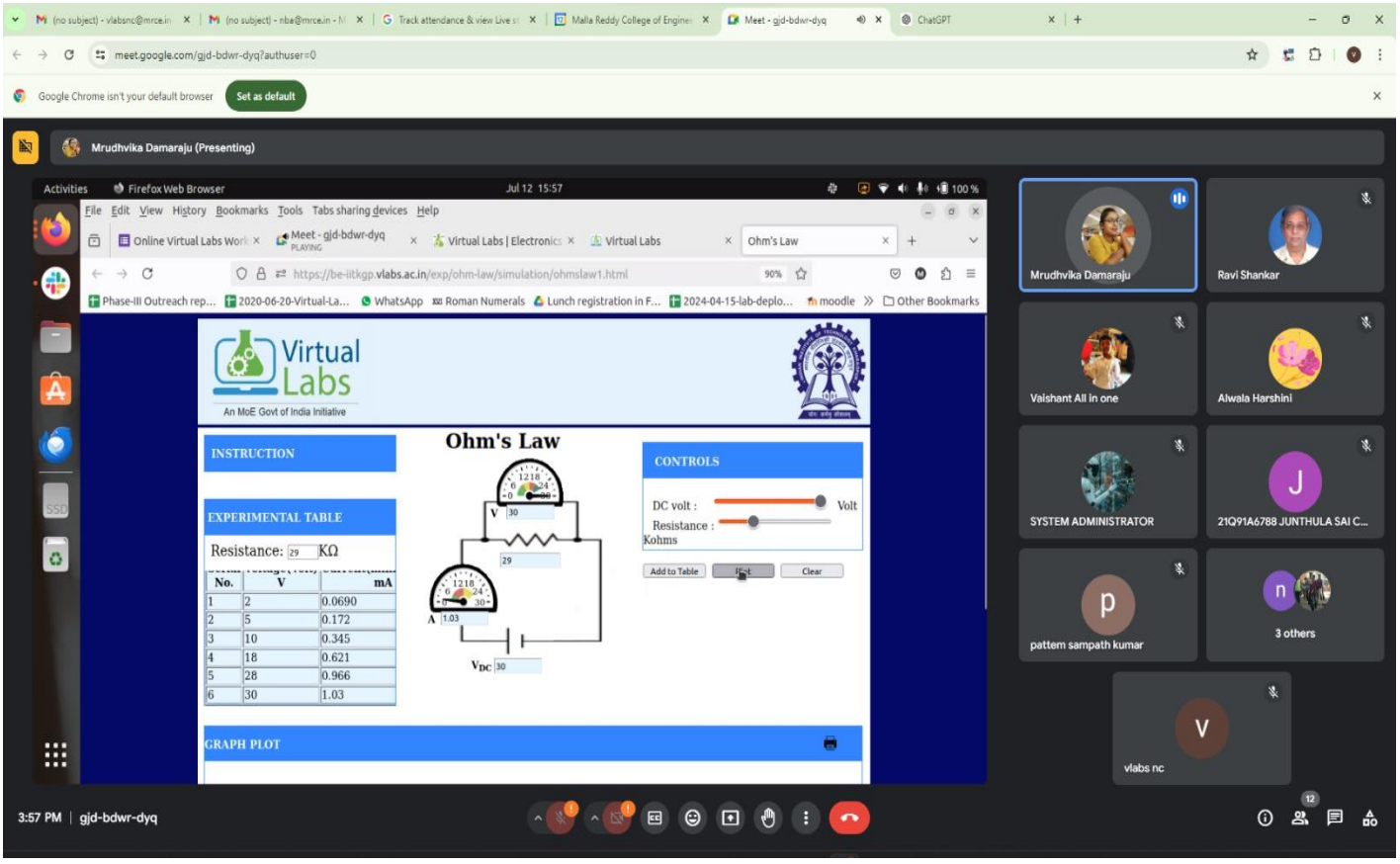
An overwhelming participation of over 200 faculty and students were requested, but owing to logistics issue, a priority list is created to allow the e-workshop. Then the coordinators of the department conducted the sessions separately on virtual labs for their students and faculty to experience the Virtual lab experiments. This overwhelming response has mandated that the next virtual lab be organized soon enough to let the developed zeal continue igniting young minds.




meet.google.com/gjd-bdwr-dyq
Google Chrome isn't your default browser
Set as default
Ravi Shankar (Presenting)
Real pan-India usage (smaller cities active)
March 2020
Oct 2020
Mrudhvika Damaraju
nba mrce
SYSTEM ADMINISTRATOR
Rohit Devu
Tirumala Saiteja
Alwala Harshini
27 others
vlabs nc
Send a reaction
3:29 PM | gjd-bdwr-dyq


meet.google.com/gjd-bdwr-dyq?authuser=0
Google Chrome isn't your default browser
Set as default
Mrudhvika Damaraju (Presenting)
Natural Language Processing Lab
IIIT HYDERABAD
Problem Solving Lab
IIIT HYDERABAD
Python Programming Lab
IIT KANPUR
Soft Computing Tools in Engineering Lab
IIT KHARAGPUR
Speech Signal Processing Lab
IIIT HYDERABAD
SYSTEM ADMINISTRATOR has left the meeting
Mrudhvika Damaraju
Ravi Shankar
Tirumala Saiteja
Alwala Harshini
SYSTEM ADMINISTRATOR
Rohit Devu
21Q91A7238 PASUNUTI HARIKA
14 others
vlabs nc
3:42 PM | gjd-bdwr-dyq


Mrudhvika Damaraju (Presenting)
Google Chrome isn't your default browser
Set as default
Virtual Labs
HOME
PARTNERS
CONTACT
Pretest
Bubble Sort
Optimized Bubble Sort
Aim
Optimization Technique
Demo
Practice
Exercise
Quiz
Analysis
Posttest
Feedback
Optimised Bubble sort algorithm - Bubble sort
Watch on YouTube
Akhilesh Balla has left the meeting
Mrudhvika Damaraju
Ravi Shankar
SYSTEM ADMINISTRATOR
Alwala Harshini
SYSTEM ADMINISTRATOR
21Q91A6788 JUNTHULA SAI C...
pattem sampath kumar
4 others
vlabs nc
3:51 PM | gjd-bdwr-dyq


Mrudhvika Damaraju (Presenting)
Google Chrome isn't your default browser
Set as default
Virtual Labs
An MoE Govt of India Initiative
INSTRUCTION
Ohm's Law
CONTROLS
DC volt :
Volt
Resistance :
Kohms
Add to Table
Plot
Clear
EXPERIMENTAL TABLE
Resistance: 29 KΩ
No. | V | mA
1 | 2 | 0.0690
2 | 5 | 0.172
3 | 10 | 0.345
4 | 18 | 0.621
5 | 28 | 0.966
6 | 30 | 1.03
GRAPH PLOT
Mrudhvika Damaraju
Ravi Shankar
Vaishant All in one
Alwala Harshini
SYSTEM ADMINISTRATOR
21Q91A6788 JUNTHULA SAI C...
pattem sampath kumar
3 others
vlabs nc
3:57 PM | gjd-bdwr-dyq

Objectives:

1. The primary objective of the workshop was to foster understanding and promote the effective utilization of Virtual Labs in educational settings.
2. To provide remote-access to Labs in various disciplines of Science and Engineering. These Virtual Labs would cater to students at the undergraduate level, post graduate level as well as to research scholars.
3. To enthuse students to conduct experiments by arousing their curiosity. This would help them in learning basic and advanced concepts through remote experimentation.
4. To provide a complete Learning Management System around the Virtual Labs where the students can avail the various tools for learning, including additional web-resources, video-lectures, animated demonstrations and self evaluation.
5. Virtual Labs represent a pivotal advancement in education technology, offering dynamic, interactive learning environments that transcend traditional classroom boundaries.
6. The workshop aimed to showcase their potential impact on enhancing learning outcomes, research capabilities, and skill development among educators and students.
7. To share costly equipment and resources, which are otherwise available to limited number of users due to constraints on time and geographical distances.

Salient Features:

1. Virtual Labs will provide to the students the result of an experiment by one of the following methods (or possibly a combination)

- Modeling the physical phenomenon by a set of equations and carrying out simulations to yield the result of the particular experiment. This can, at-the-best, provide an approximate version of the 'real-world' experiment.
- Providing measured data for virtual lab experiments corresponding to the data previously obtained by measurements on an actual system.
- Remotely triggering an experiment in an actual lab and providing the student the result of the experiment through the computer interface. This would entail carrying out the actual lab experiment remotely.

2. Anytime anywhere lab
3. Virtual Labs are free to use
4. Accessible through internet on any PC/Laptop/ Smartphone/Tablet
5. Developed in self-learning mode
6. Innovative experimentations
7. Over 197 Virtual Labs have already been developed
8. Virtual Labs will be made more effective and realistic by providing additional inputs to the students like accompanying audio and video streaming of an actual lab experiment and equipment.

Key Insights and Outcomes

1. **Educational Impact**: Participants gained insights into how Virtual Labs can facilitate practical learning experiences, enabling students to experiment in a simulated environment, thereby enhancing comprehension and retention of concepts.
2. **Collaborative Learning**: The workshop fostered collaboration among educators, researchers, and technologists, encouraging the exchange of ideas and experiences in deploying Virtual Labs to address educational challenges.
3. **Policy Implications**: Discussions highlighted the need for supportive policies and infrastructure investments to scale up Virtual Labs initiatives across educational institutions nationwide.
4. **Next Steps**: Participants were encouraged to apply the knowledge gained to enhance their institution's educational offerings, explore partnerships for technology integration, and contribute to the broader goals of the NMEICT.

Feedback of Participants

From all disciplines, nearly 139 faculty and students were visited the Virtual Labs portal. The overall feedback from the participants was highly encouraging, and sure it was directed towards the better utilization and dissemination finally to the students. The visualization and user-interface was highly interactive, and this exposure of virtual lab through this workshop witnessed delighted faces. Certain constructive comments were also received such as: to increase the number of demonstrations, providing more animations, etc, which is attributed to the limited time given for presentations. All, in all the reciprocation from the end of participants was very positive and publicizing the availability of Virtual Labs for enhancing the learning and knowledge through simulation based virtual experiments.

Conclusion

The Virtual Labs e-workshop organized by Malla Reddy College of Engineering served as a platform for meaningful dialogue and knowledge-sharing among stakeholders committed to advancing educational excellence through ICT. The collaboration with IIIT Hyderabad and support from the Ministry of HRD underscored the workshop's significance in shaping the future of education in India. As the workshop concluded, participants expressed enthusiasm about implementing new strategies and technologies learned during the sessions. The event not only enriched understanding but also reinforced the collective commitment to harnessing technology for educational transformation.

Finally the e-workshop on Virtual laboratories was concluded with vote of thanks by the coordinator of Virtual laboratories, Malla Reddy College of Engineering.

Acknowledgments

Malla Reddy College of Engineering extends heartfelt gratitude to all participants, speakers, and collaborators for their invaluable contributions to the success of the e-workshop on Virtual Labs. Special thanks to the participating Institute IIIT-Hyderabad, Ministry of HRD and NMEICT for their continuous support and guidance in advancing educational initiatives nationwide.

Dr. V. Narasimha Reddy
Professor, ME Dept.
Nodal Centre Coordinator
Virtual Labs-MRCE

A Journey from Concept to Reality

Email: vlabsnc@mrce.in Ph. +91-9490806006