JSPM's

Rajarshi Shahu College of Engineering, Pune

Department of Electronics & Telecommunication Engineering

INNOVATIONS IN TEACHING AND LEARNING

Subject: Signals & Systems **Class:** S.Y. BTech E&TC

NAME OF THE ACTIVITY: MCQ Quiz on MATLAB

I. **Concept:**.'MCQ Quiz on MATLAB' was designed to challenge and enhance the programming skills, to test MATLAB expertise and to compete with peers. Quiz is conducted on online Platform: Licensed Mentimeter on 27 Feb.2025.

II. Objective (Goal):

- **Assess Conceptual Understanding:** Evaluate students' foundational knowledge and understanding of MATLAB concepts like matrix operations, syntax, functions, and programming logic.
- **Promote Active Learning:** Encourage students to engage with the material and revise MATLAB concepts in a concise and focused format.
- **Identify Learning Gaps:** Help both students and instructors identify areas of weakness or misconceptions that need more attention.
- **Improve Problem-Solving Skills:** Sharpen students' ability to analyze and solve technical problems quickly under time constraints.
- **Preparation for Exams/Certifications:** Prepare students for university-level exams, competitive exams, or certification tests involving MATLAB.
- **Monitor Progress and Performance:** Provide a measurable way to track the progress of individual students and the class as a whole.

III. Appropriateness (Relevance of Selected Method):

- **Efficient Assessment of a Broad Syllabus:** MCQs allow coverage of a wide range of MATLAB topics—from basic syntax to complex functions—within a short time frame.
- **Objective and Unbiased Evaluation:** Since MCQs have predefined correct answers, they reduce subjectivity in grading and ensure fair assessment for all students.
- **Quick Feedback and Analysis:**Results can be generated instantly, enabling rapid feedback for students and allowing instructors to adjust teaching strategies if needed.
- **Enhances Retention Through Repetition:**Repeated exposure to concepts in quiz format improves long-term retention of information and boosts recall under exam conditions.
- **Technology-Friendly and Scalable:** MCQ quizzes can be easily deployed online or in-person using platforms like MATLAB Grader, Google Forms, or LMS tools—making them suitable for large classes

IV. Effective Presentation (Implementation Details):

Instructions were given to enter quiz with student's PRN Number. Quiz Score will be considered for ISE marks of SY Students since MATLAB tutorials are one of the ISE tools. For TY students this evaluation will be referred by T&P department in KPIT training process.

Passcode for mentimeter quiz was shared on student's whatsApp groups since students from all classes of EnTC were appearing from different locations. Already, students were told to be ready with internet connected device. Quiz consists of 25 number of Matlab related introductory knowledge based questions. For preparation, the YouTube video on 'Getting started with Matlab'

Video Link: https://youtu.be/c-EJn3whdvc

was suggested, which is recorded by Dr.Rane C.V., faculty member of JSPM's RSCOE, EnTC department. Students were informed to practice Matlab Instructions on 'Online GNU OCTAVE' or 'Online Matlab'. 179 students from the EnTC department has participated for the quiz. Certificates are given to first 5 ranks.

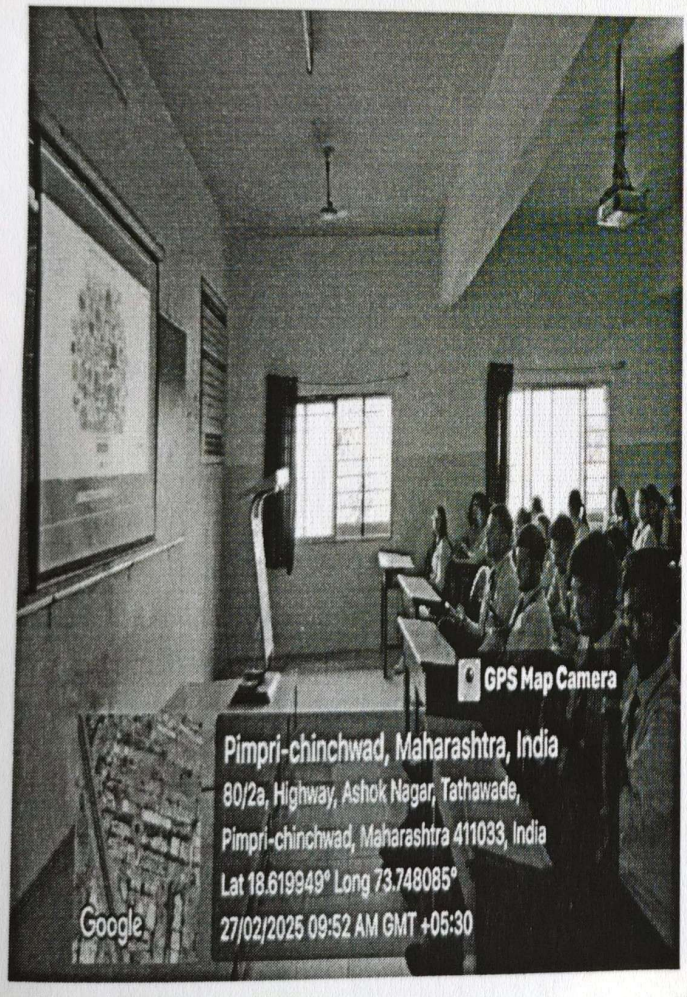


Fig.1 Students are attending the Online Quiz

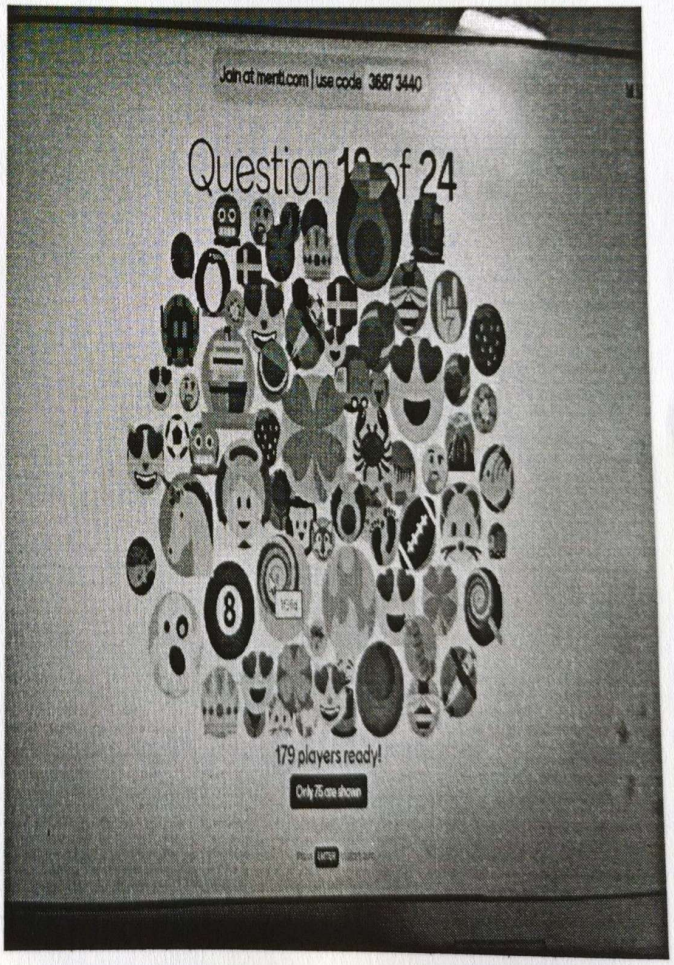


Fig.2 179 participants from EnTC department

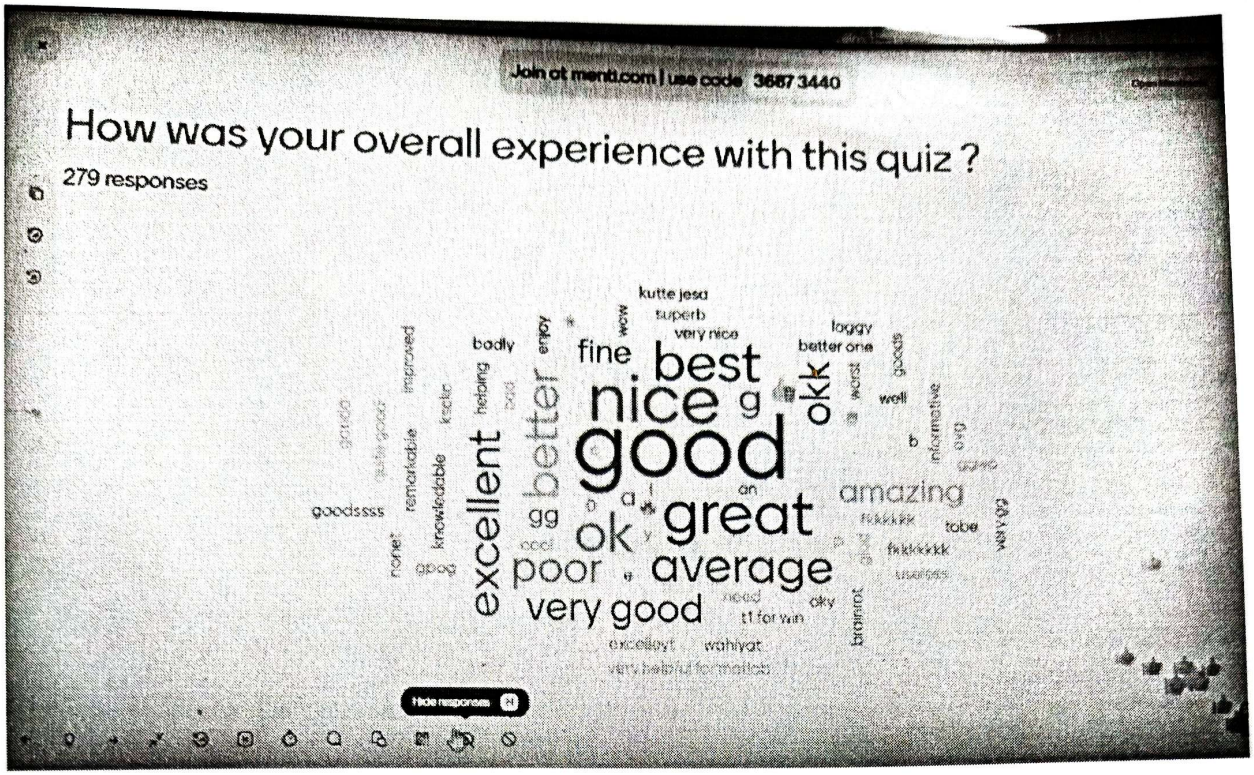
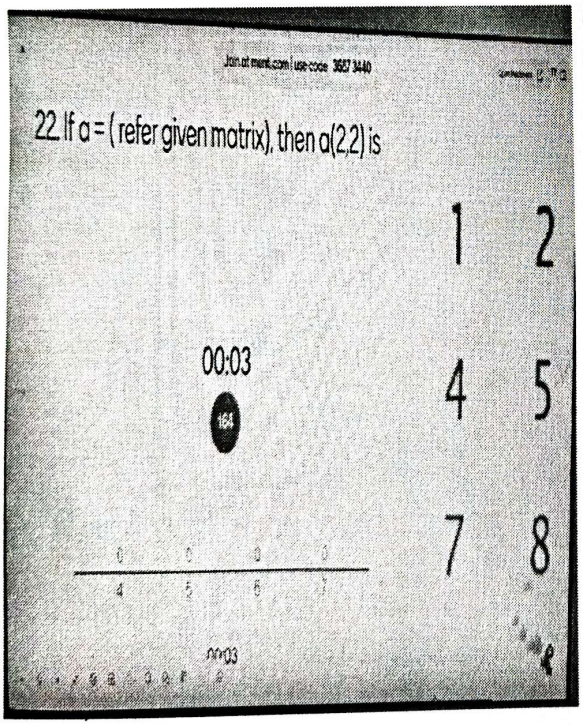


Fig.3 Quiz experience sharing from the participants



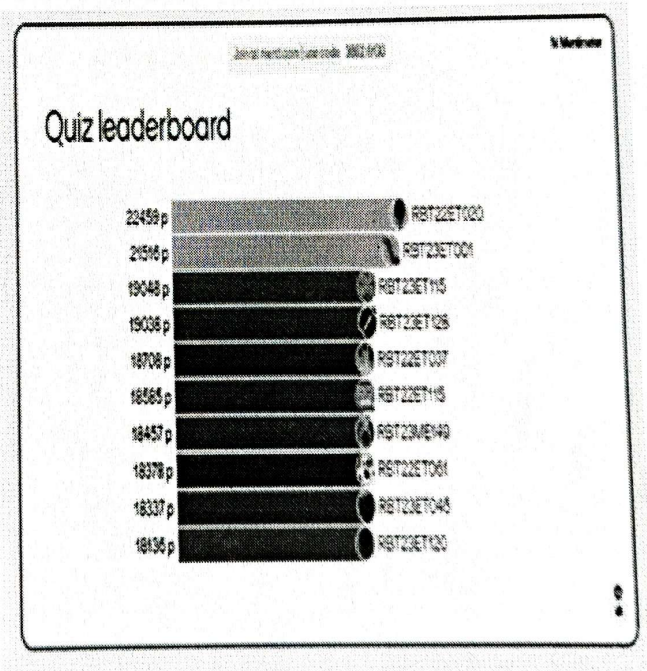


Fig.4 Quiz Leaderboard

V. Results (Impact):

A. This activity helps Higher-Order Thinking.
B. It acted as a practice session for KPIT placement drive students.
C. Competition with peer.
D. Prerequisite for Matlab tutorial solving for SY students.

VI. Reproducibility and Reusability by Other Scholars for Further Development

Sr.No	Innovation Used by	Details of User	Purpose of Reproducibility and Reusability
1	Other div. stud.	SYA	Quick feedback & analysis

VII. PEER REVIEW AND CRITIQUE

NAME OF THE ACTIVITY: mcq Quiz on **Matlab Simulator**

Category: Internal/External/Interdepartmental

Score: (1:Least 2: Moderate 3:Highly)

Question 1. Is this Innovative Teaching and Learning Methodology useful during content delivery?

Question 2. Did this innovation increase student motivation or participation?

Question 3. Will it show improvement in student learning?

Question 4. Suggestions for improvement in future iterations.

Category	Name of Peer	Organization	Q.1	Q.2	Q.3	Q. 4 Suggestion/Critique
External	Mrs. Mrunalini Bhandarkar	PCCOE, Pune	2 Y	2 Y	2 Y	Good initiative.
Internal	Dr. Rane C.V.	RSCOE	2	2	3	can take model competition & also, for software models

Mrs. Shubhangi P. Vibhute
Course Co-ordinator

Dr.Rane Charushila Vijay
Module Co-ordinator

Dr.S.C.Wagaj
HOD E&TC