DAYANANDA SAGAR UNIVERSITY

Expert Talk on Understanding Turing Machines – The Foundation of Computability

SCHOOL OF ENGINEERING

DEPARTMENT OF CSE (AI & ML)

NAME OF COORDINATOR OF EVENT:

Dr. Shreyas Rajendra Hole **Prof. Sriramkumar R** **Dr. Abdul Haq Nalband**

Date of Event (19/05/2025)

4 QUALITY EDUCATION

INDEX

Note- Page number may not be required and delete the optional index which is not applicable (10 /12 only)

Note- all above points are mandatory other than 10 and 12.

1. Introduction of the Event

The Department of Computer Science and Engineering (Artificial Intelligence & Machine Learning), School of Engineering, Dayananda Sagar University, organized an Expert Talk titled "Understanding Turing Machines – The Foundation of Computability". This session was conducted in online mode for the benefit of undergraduate students studying Theory of Computation.

2. Objective of the Event

1. To provide students with a deeper understanding of the concept of Turing Machines.
2. To highlight Turing Machines as a fundamental topic in the Theory of Computation.
3. To lay the groundwork for the study of:
    - Computability
    - Automata Theory
    - Complexity Theory
4. To bridge the gap between theoretical knowledge and practical insight.
5. To enhance students' conceptual clarity.
6. To improve students' academic performance in core theoretical computer science topics.

3. Beneficiaries of the Event

The direct beneficiaries of this expert talk were 4th Semester undergraduate students (Sections A, B, C, and D) from the CSE (AI & ML) program. The event also welcomed faculty members and research enthusiasts who wished to enrich their understanding of theoretical computer science.

4. Details of the Guests

The resource person for the expert talk was Dr. Komal Rajendra Hole, currently serving as an Assistant Professor in the Department of Computer Science and Engineering at Prof. Ram Meghe Institute of Technology & Research (PRMIT&R), Badnera. She brings with her over 13 years of rich academic experience in the field of Computer Science.

Dr. Hole holds a Ph.D. in Computer Science and Engineering from Lovely Professional University (LPU), Jalandhar. She is highly regarded for her academic contributions, particularly in the areas of Automata Theory and Computability, and has delivered numerous expert lectures and workshops at reputed institutions across the country. Her research work has been widely published in reputable journals and international conferences, contributing significantly to advancements in modern computing technologies. Notably, she has a recent publication in the SCI Q1 journal "Neural Computing and Applications" with an impressive impact factor of 5.6. She has also earned Silver Medals in various NPTEL courses, demonstrating her commitment to continuous learning and academic excellence. Her primary areas of interest include Theory of Computation, Algorithm Design, Machine Learning, and Operating Systems. Beyond her academic and research accomplishments, Dr. Hole has been an active mentor to students, guiding them through innovative projects and fostering a strong culture of learning and development within the engineering community.

5. Brief Description of the event

The expert talk on "Understanding Turing Machine – The Foundation of Computability" was conducted successfully on 19th May 2025 via Microsoft Teams, beginning at 6:15 PM. The session was inaugurated by Dr. Shreyas Rajendra Hole, who warmly welcomed the students and the esteemed resource person, Dr. Komal Rajendra Hole, Assistant Professor, PRMIT&R, Badnera. During his welcome address, Dr. Shreyas R. Hole acknowledged the unwavering support and permissions granted by the university's higher authorities, without which the event would not have been possible. These included:

- Dr. D. Hemachandra Sagar – Chancellor, DSU
- Dr. D. Premachandra Sagar – Pro-Chancellor, DSU
- Dr. Amit Bhatt – Vice Chancellor, DSU
- Dr. Puttamadappa C – Registrar, DSU
- Dr. Udaya Kumar Reddy K.R. – Dean, School of Engineering
- Dr. Jayavrinda Vrindavanam V – Professor & Chairperson, Dept. of CSE (AI & ML)

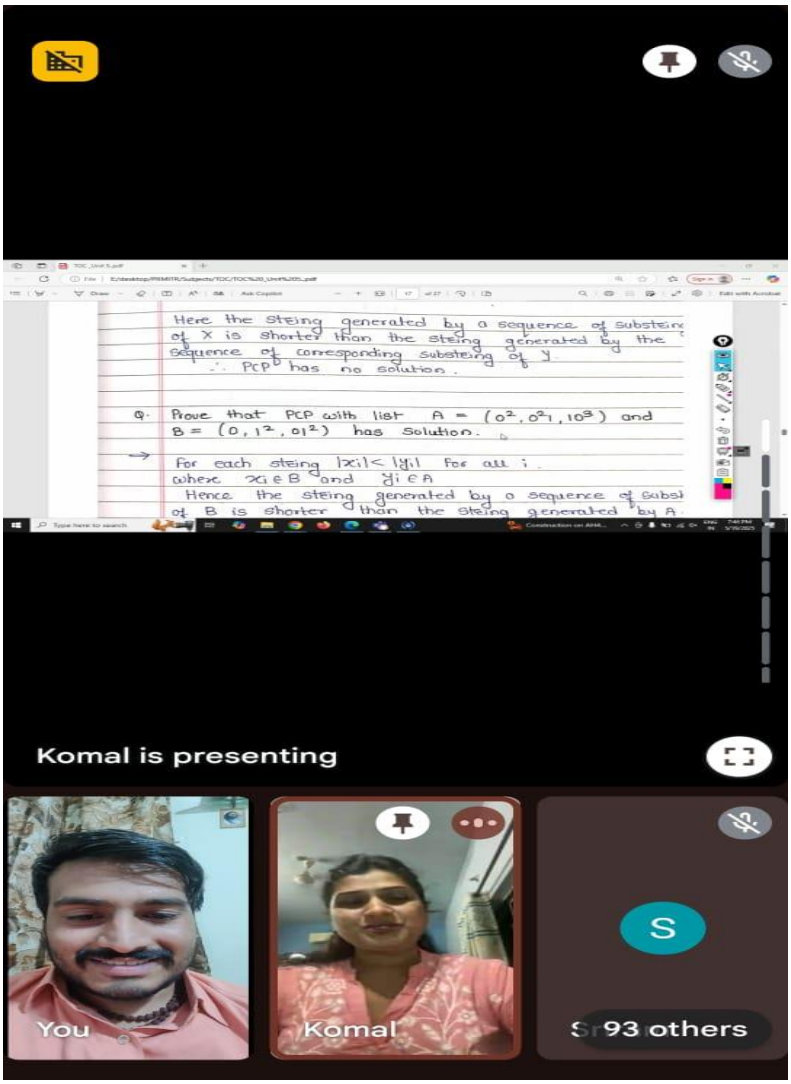
Following the welcome, Dr. Abdul Huk was invited to introduce the detailed biography of the resource person to the attendees. The session was then handed over to Dr. Komal Hole, who began with an engaging introduction to Turing Machines, followed by an insightful hands-on session. She also discussed Post Correspondence Problems with relevant numerical examples, enhancing conceptual clarity. The session witnessed active participation, with students posing several questions, making it highly interactive. Over 250 students from IV semester sections A, B, C, and D attended the talk.

To assess the participants' understanding, a quiz was conducted immediately after the talk, carrying 10 marks, which contributed to their internal assessment.

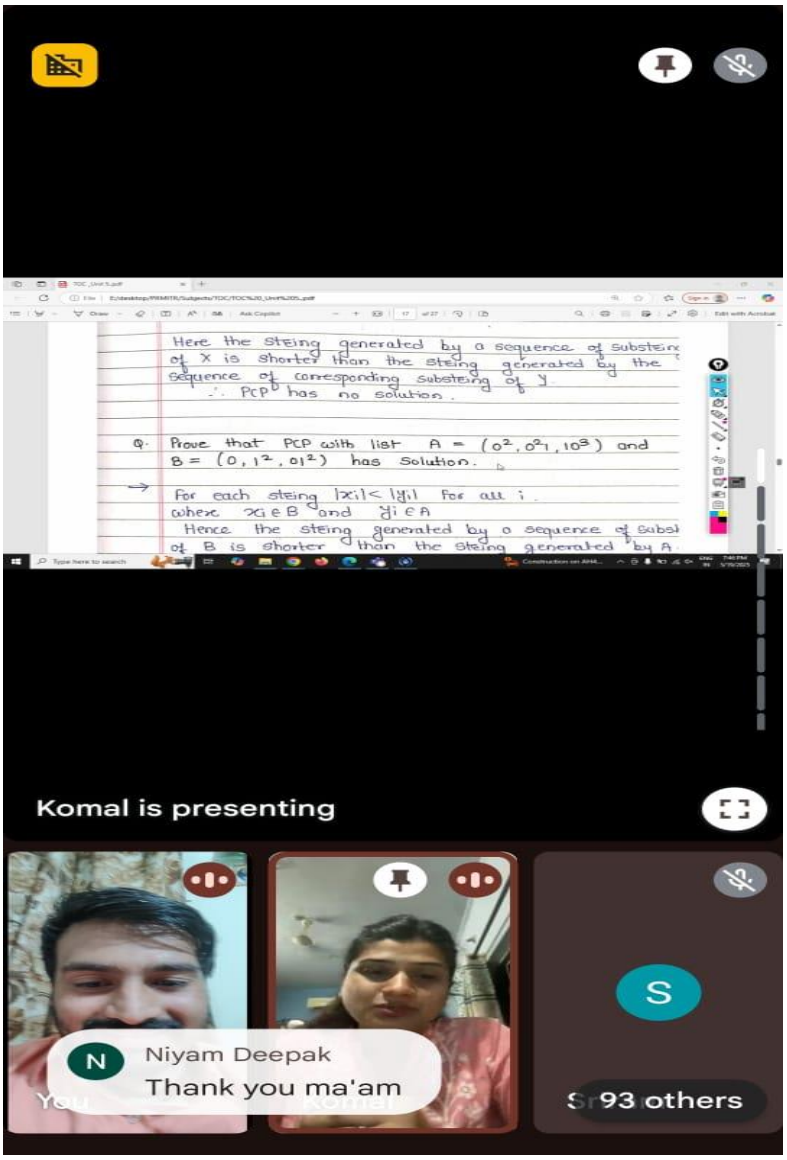
The session concluded with a Vote of Thanks delivered by Prof. Sriram Kumar, who appreciated the efforts of the speaker, coordinators, and students for making the event a grand success.

6. Photographs (3 to 5 max all aligned– with geo tagging)

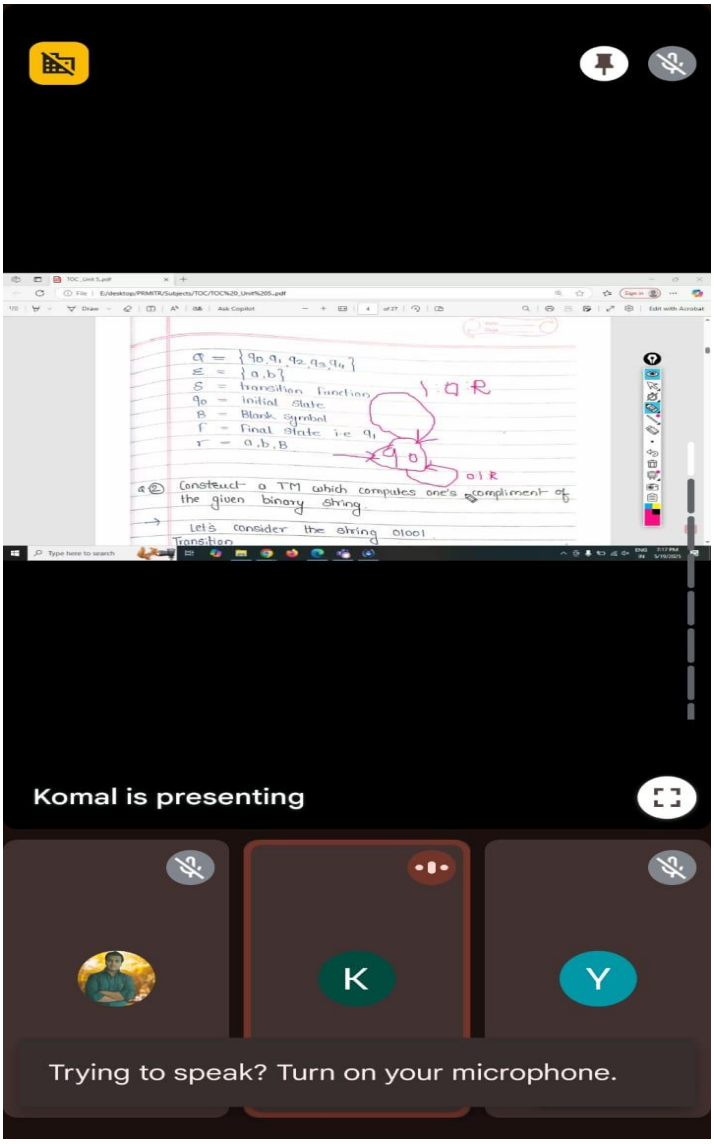
3 to 5 geotagged photographs of the event or screenshots of the event (if online) with captions



Pic 1 – Expert Talk Session with Resource Person Dr. Komal R Hole

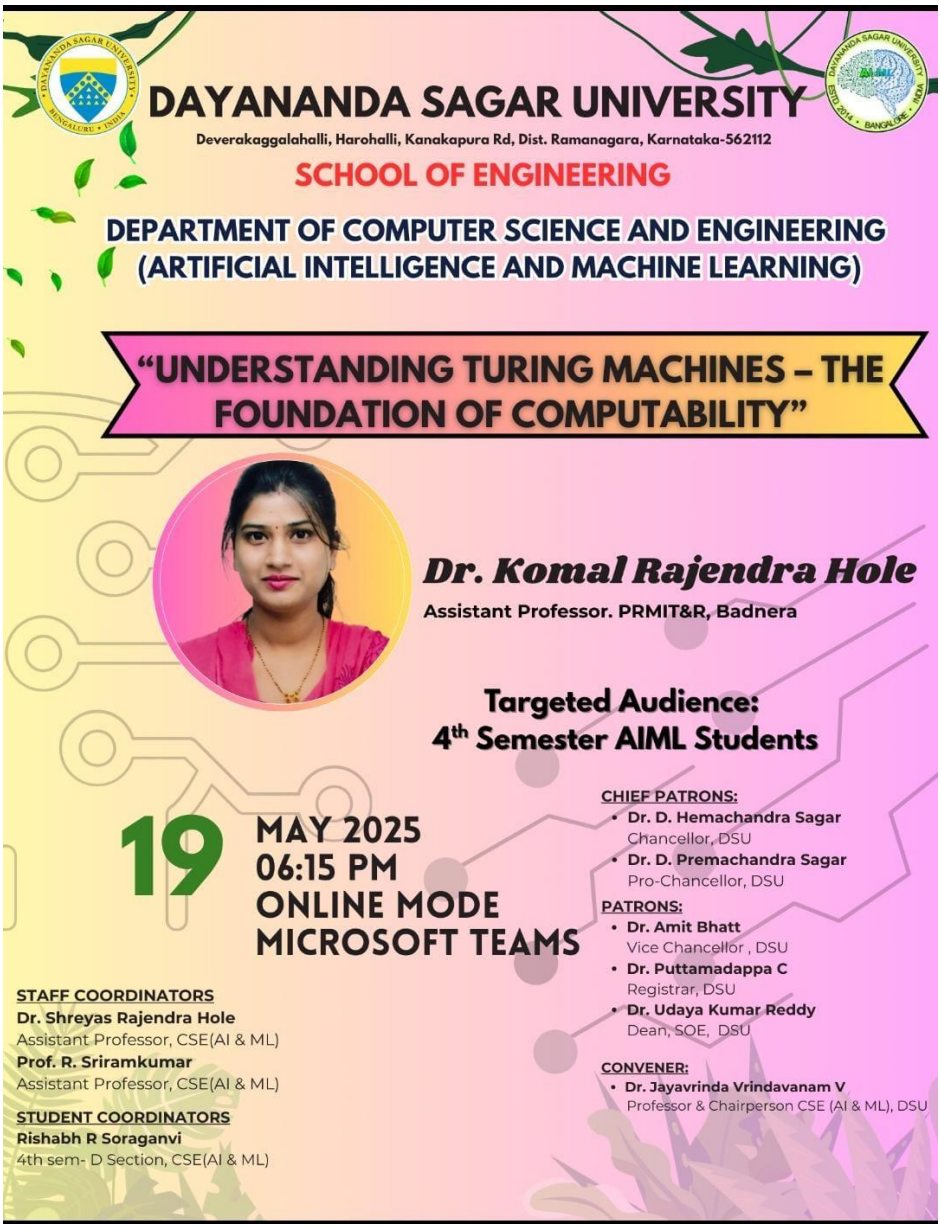


Pic 2 – Student Acknowlegment to Resource Person during Session



Pic 3 – Turing Machine Mumerical Explaination by Expert person hand on session

7. Brochure or creative of the event



8. Schedule of the Event

19th May 2025

9. Attendance of the Event

Online Attendance:

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ENG23AM0050	Eng23am0273	ENG23AM0048	ENG23AM0019	ENG23AM0084	ENG23AM0021	ENG23AM0239
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ENG23AM0101	ENG23AM0080	ENG23AM0046	ENG23AM0029	ENG23AM0195	Eng23am0231	ENG23AM0102
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eng23an0024	ENG23AM0242	ENG23AM0045	ENG23AM0243	ENG23AM0189	ENG23AM0077	ENG23AM0196
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10. News Publication

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11. Feedback of the Event

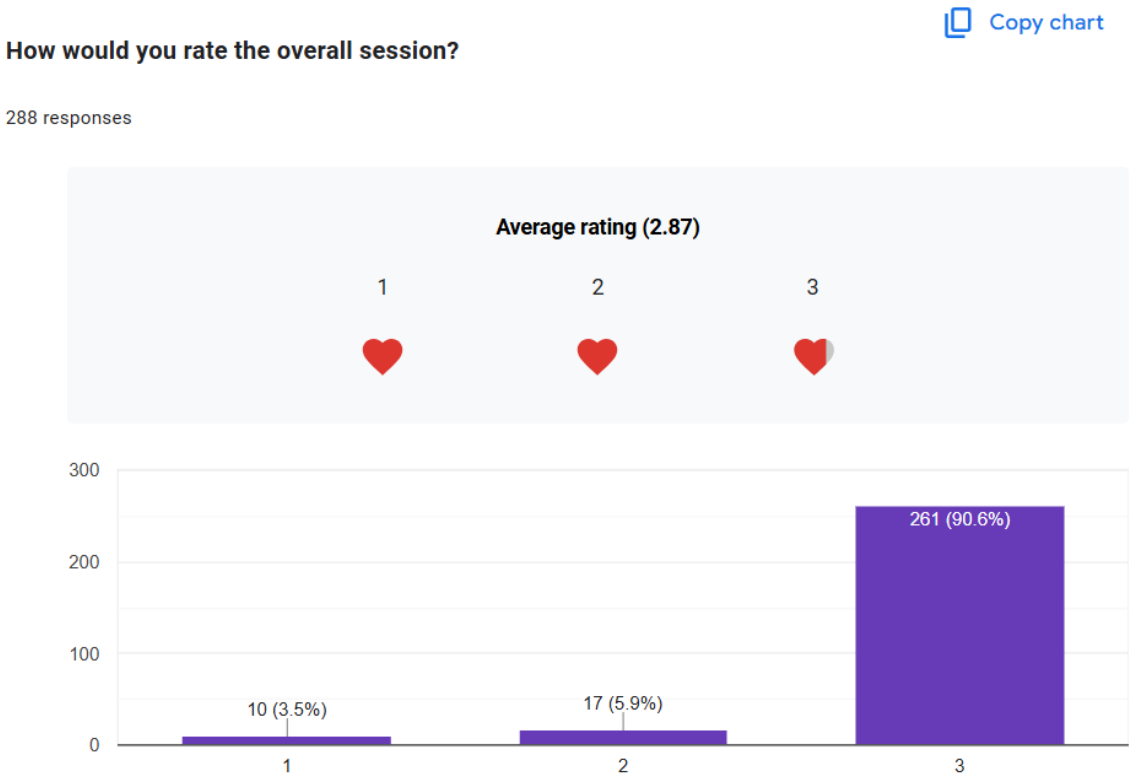

Fig1 : Feedback Question 01.

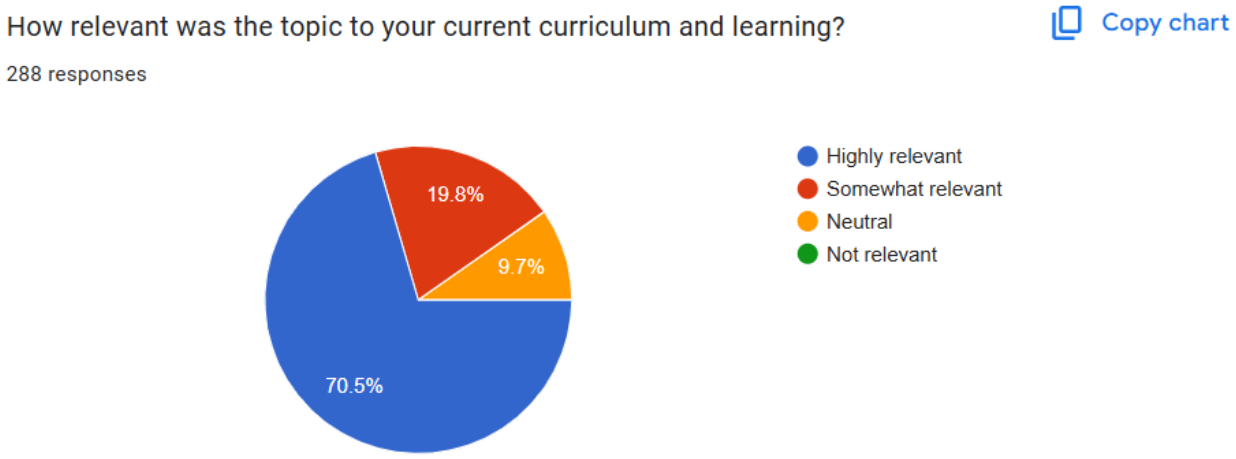

Fig 2: Feedback Question 02

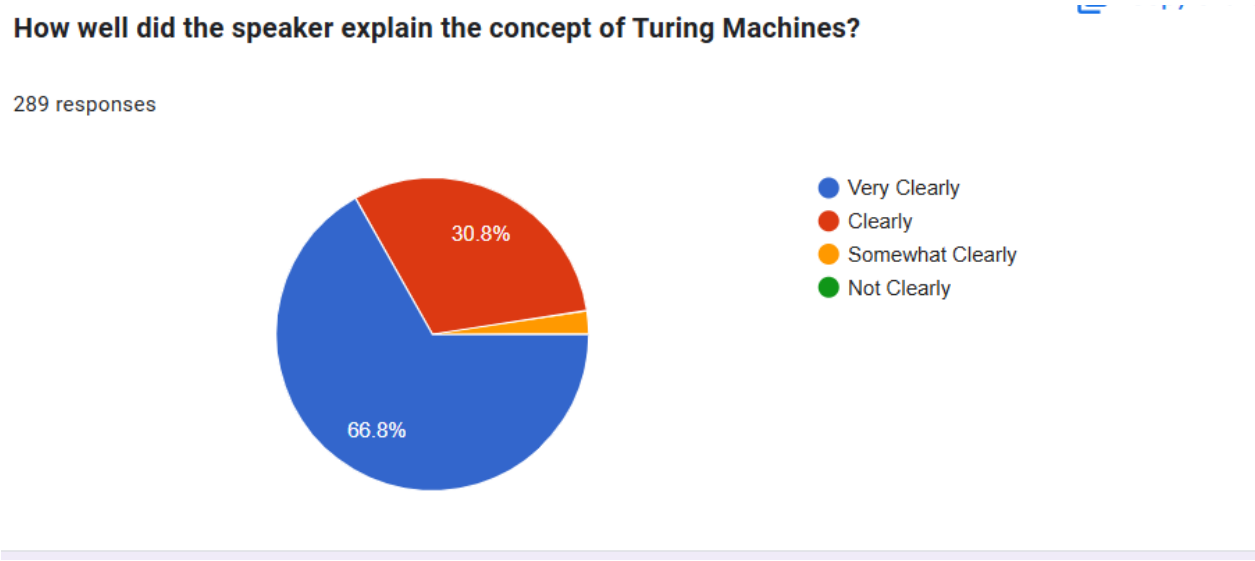

Fig 3: Feedback Question 03

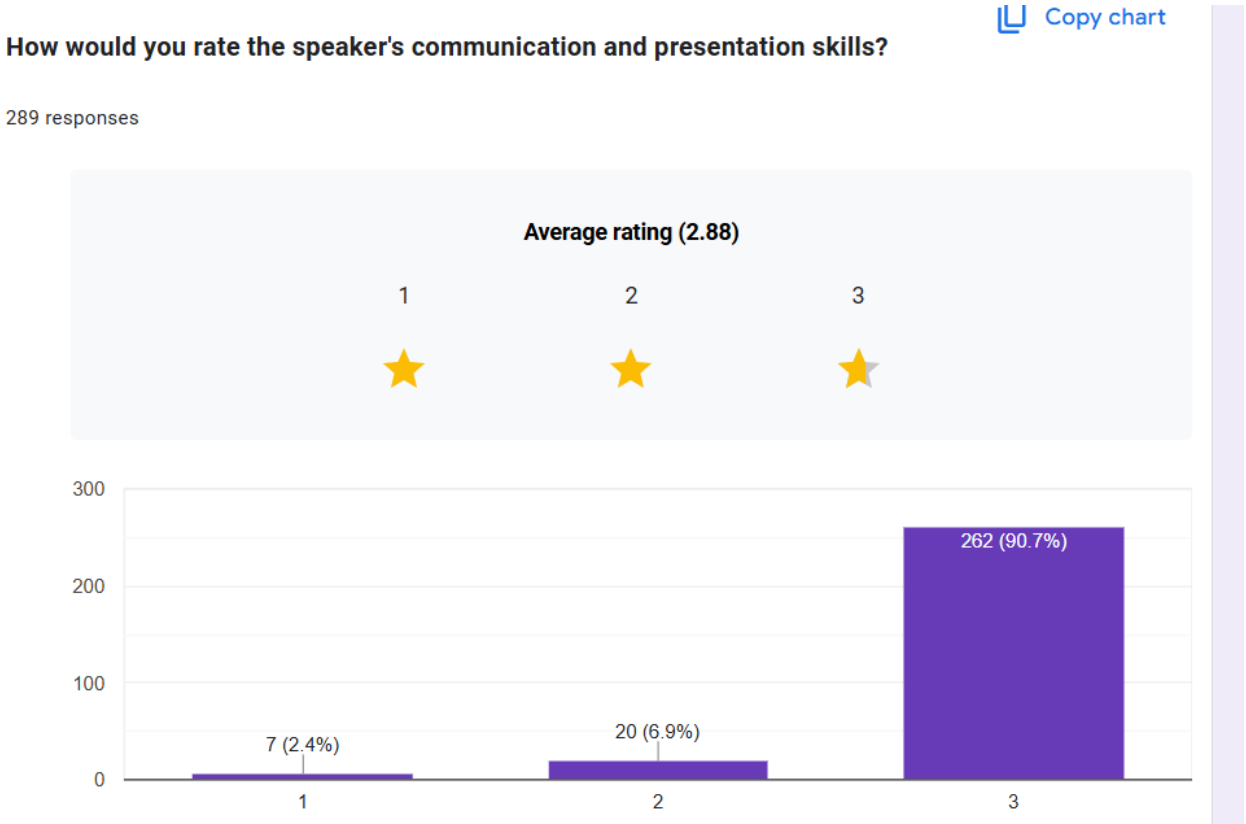

Fig 3: Feedback Question 04

12. Link of website- if uploaded on portal

Signature of the Coordinator

Seal and Signature of the Head of Department/Unit with date

Digital Signature certificate is also acceptable