DAYANANDA SAGAR
UNIVERSITY



"A Technical Talk on a Robotics Primer"

SCHOOL OF ENGINEERING

Department of Computer Science & Engineering (Artificial Intelligence and Machine Learning)

Date of Event (23rd March 2024)

SCHOOL OF
ENGINEERING

Dayananda Sagar University

Devarakaggalahalli, Harohalli Kanakapura Road, Ramanagara, Karnataka 562112

Department Of Computer Science & Engineering
(Artificial Intelligence & Machine Learning)

REPORT ON

"ROBOTICS - A PRIMER"

Resource person: Miss Shyni Thomas

Organized by

Department Of Computer Science & Engineering
(Artificial Intelligence & Machine Learning)

In association with
"YANTROVE" Robotics Club & IEEE RAS SBC Society

Dayananda Sagar University

23rd MARCH 2024

Resource person:

Miss. Shyni Thomas,
Senior Scientist, Center for AI and Robotics, DRDO

Conveners:

Dr. AMIT BHATT, In-charge Vice Chancellor, DSU
Dr. PUTTAMADAPPA C, Registrar, DSU
Dr. UDAYA KUMAR REDDY K R, Dean, SoE, DSU
Dr. RAMESH R GALIGEKERE, Dean (Academics), Science & Technology, DSU
Dr. JAYAVRINDA VRINDAVANAM V, Chairperson, and Professor, Department of CSE (AI & ML), DSU

Faculty Coordinators:

Prof. Subhash Mondal, Assistant Professor, Department of CSE (AI & ML)
Prof. Mitha Guru, Assistant Professor, Department of CSE (AI & ML)

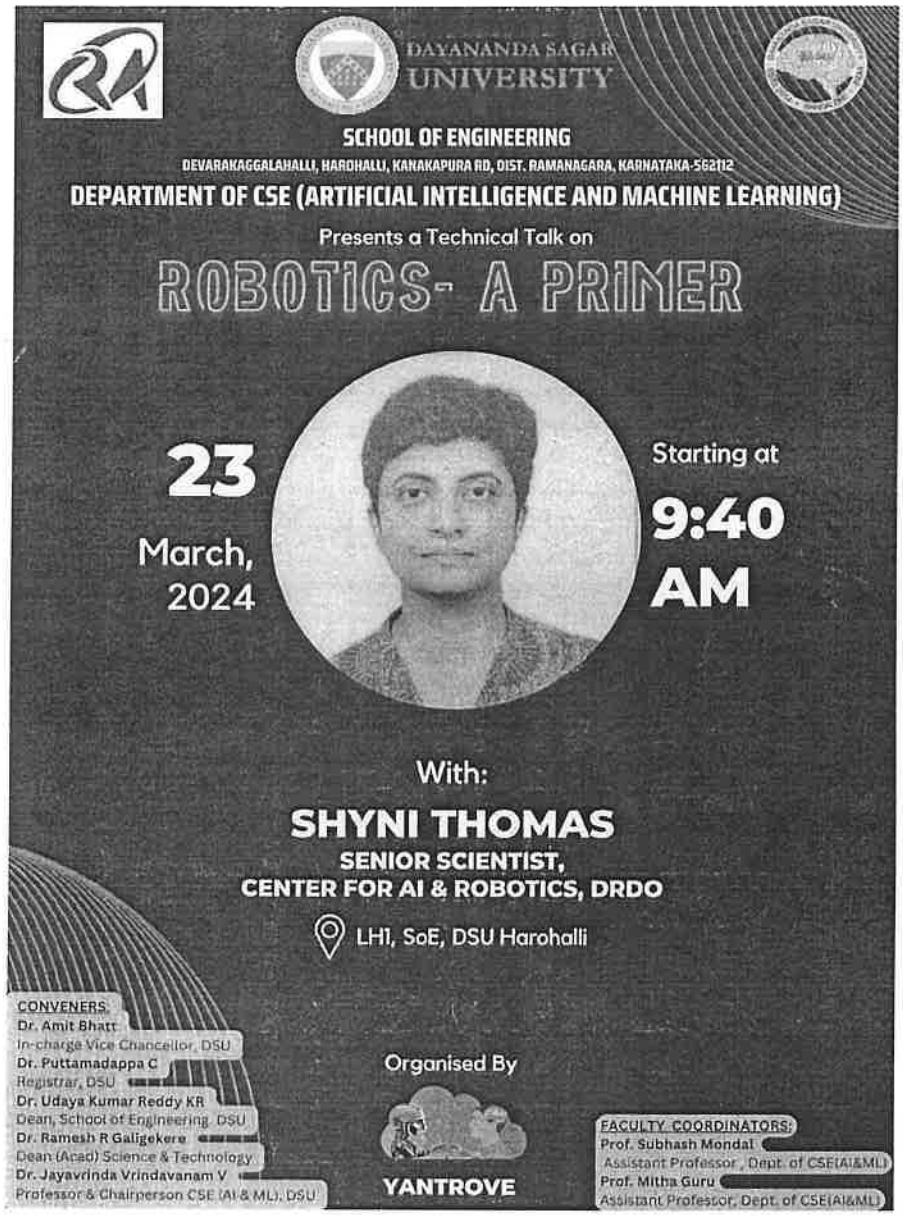


Figure 1: Technical Talk Poster

Date: 23.03.2024

Event Report

Miss Shyni Thomas, an esteemed expert in the field of robotics, recently delivered a captivating online technical talk at Dayananda Sagar University, enlightening 2nd year students on the vast realm of robotics and its diverse applications. Her talk was not just informative but also inspiring, shedding light on the transformative potential of robotics in various industries. Mrs. Thomas commenced her discourse by delving into the fundamentals of robotics, elucidating the integration of mechanical, electrical, and computer science principles in designing and developing robotic systems. She artfully navigated through complex topics, making them accessible and engaging for the students. Furthermore, she elaborated on the wide-ranging applications of robotics, from industrial automation and healthcare advancements to space exploration and artificial intelligence. Her insights into the future of robotics and its impact on society left the audience in awe

of the endless possibilities that this field presents. Overall, Miss Shyni Thomas's technical talk was a resounding success, leaving an indelible impression on the young minds at Dayananda Sagar University and igniting their passion for exploring the fascinating world of robotics.

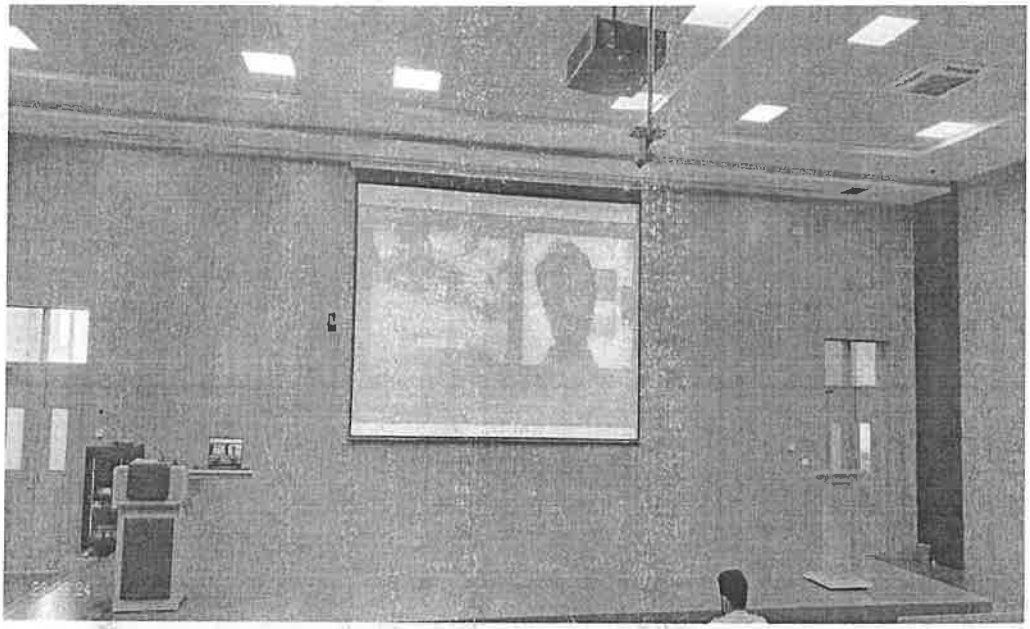


Figure 2: Mrs Shyni Thomas discussing about robotics

Dr. Jayavrinda Vrindavanam, an esteemed figure in the academic landscape, played a crucial role in elucidating the significance of "AI and Robotics " to the students at Dayananda Sagar University. With a keen understanding of the pivotal shifts in technology and the increasing relevance of robotics in modern-day problem-solving, Dr. Jayavrinda Vrindavanam provided a compelling introduction to the workshop, setting the stage for a transformative learning experience.

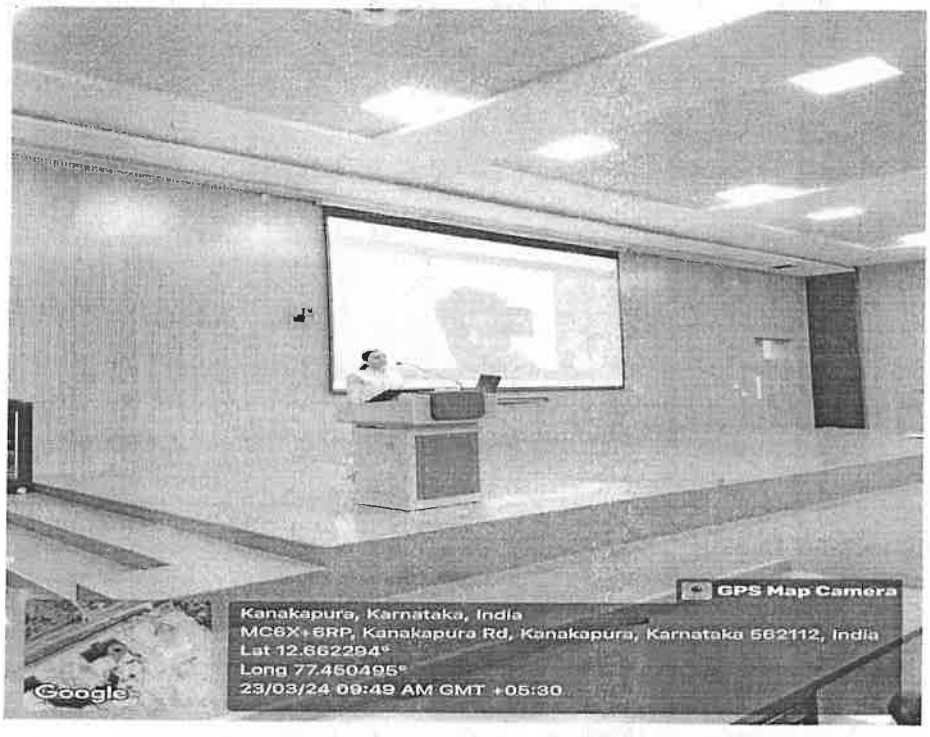


Figure 3: Dr Jayavrinda Vrindavanam welcoming the gathering and Miss Shyni Thomas.

In a packed lecture hall at Dayananda Sagar University, C Vishnu Vardhan and Gaana Shree S, Student Coordinator of the event, took the stage to extol the achievements of their esteemed chief guest, Shyni Thomas. Vishnu highlighted Thomas's groundbreaking research in renewable energy, lauding her contributions to sustainable technology. Gaana Shree emphasized Thomas's academic journey, underscoring her multiple degrees and prestigious accolades. Both students spoke passionately about Thomas's commitment to education and her role as a mentor to aspiring scholars. The audience listened intently, inspired by Thomas's success and the impact she has had on the fields of science and academia.



Figure 4: Coordinator of students to celebrate Miss Shyni Thomas' accomplishments

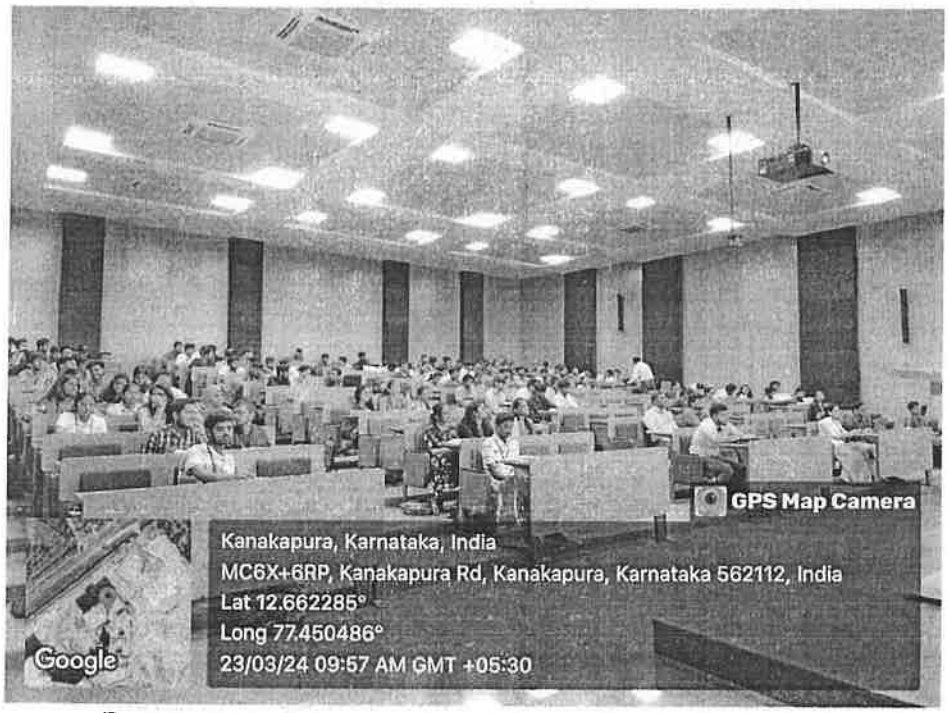


Figure 5: Students being attentive during Miss Shyni Thomas's session.

Despite geographical limitations, several students were able to participate in the event remotely via Google Meet (GMeet). Through this online platform, they were able to engage in the workshop sessions alongside their peers, despite physical distance. The integration of GMeet allowed for seamless interaction, enabling remote students to ask questions and contribute to discussions. This inclusive approach ensured that all participants, regardless of their location, could benefit from the knowledge-sharing and collaborative learning opportunities offered by the workshop. Additionally, the utilization of GMeet facilitated the recording of sessions, enabling students to revisit key concepts and materials at their convenience, further enhancing the accessibility and effectiveness of the event.

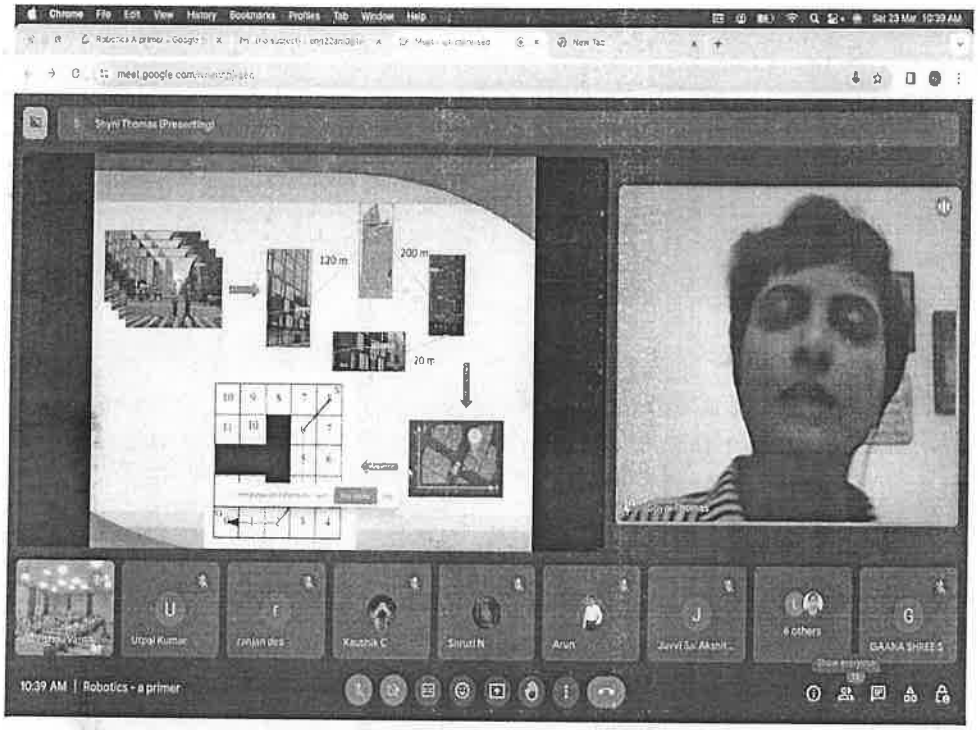


Figure 6: Student participants joined the event through online Google Meet.

Topics discussed during the session: -

- **What are robots?**

Robots are programmable machines designed to carry out specific tasks autonomously or semi-autonomously. They can be equipped with sensors, actuators, and AI capabilities to interact with their environment and perform various functions, from industrial manufacturing to household chores.

- **Robotics anatomy**

The anatomy of a robot typically includes a body structure, actuators (such as motors or hydraulics), sensors (like cameras, lidar, or touch sensors), a control system (which can be centralized or distributed), and sometimes an artificial intelligence component for decision-making.

- **Types of robots (based on locomotion)**

Robots can be categorized based on their locomotion capabilities, including wheeled robots, legged robots (bipedal or quadrupedal), aerial robots (drones), underwater robots

(submersibles), and even hybrid designs combining multiple locomotion methods for versatility in different environments.

- **Why do we need different types of robots?**

Different types of robots are necessary to perform tasks efficiently in diverse environments. For example, wheeled robots excel in flat, structured areas like warehouses, while legged robots navigate rough terrain. Aerial drones are ideal for aerial surveillance, and underwater robots are used for marine exploration and maintenance.

- **Few example robots from DRDO were displayed**

Some examples of robots developed by DRDO (Defense Research and Development Organization) include the Daksh robot for bomb disposal, the Muntra series of unmanned ground vehicles for defense applications, and the NETRA series of surveillance drones for reconnaissance missions.



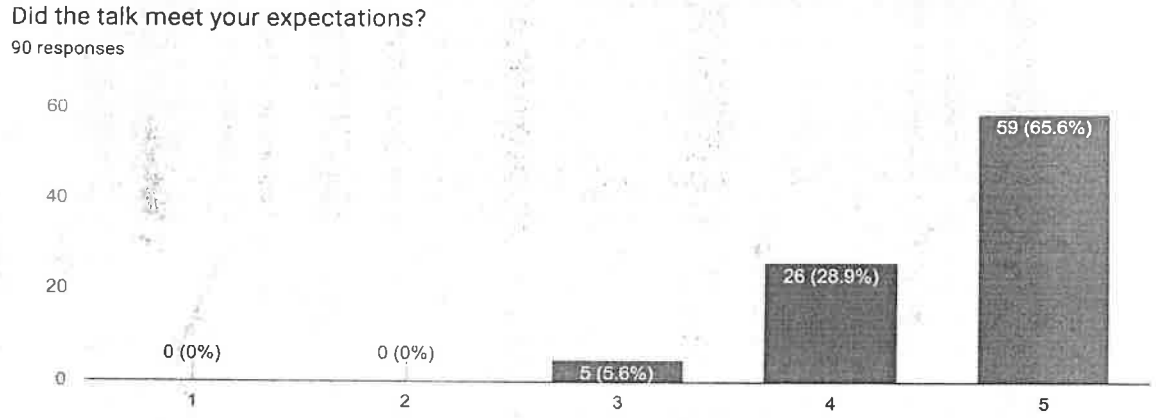
Figure 7: Miss Shyni Thomas discussing the respective topics.

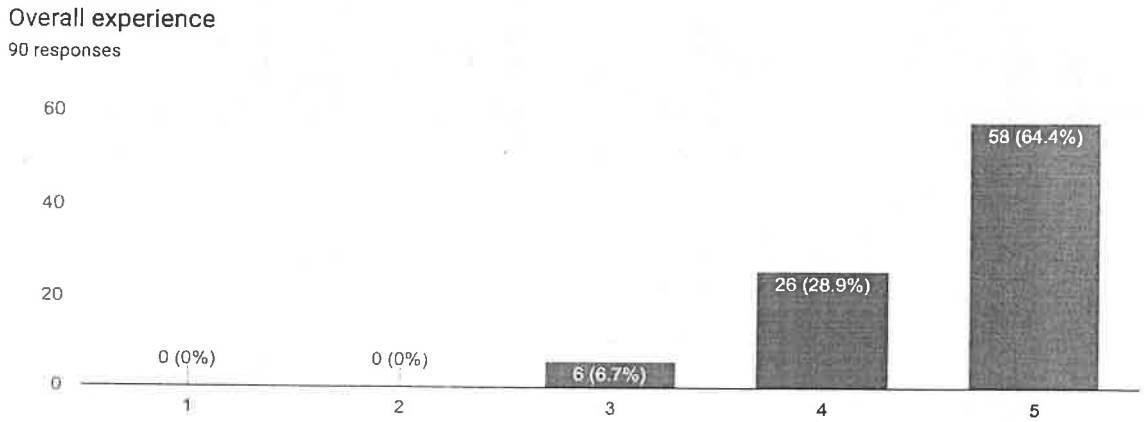
On behalf of Dayananda Sagar University and from the department of CSE (AI & ML), Prof. Subhash Mondal, Faculty Coordinator of the YANTROVE club and Faculty Adviser of IEEE RAS SBC Society, extended heartfelt gratitude to our esteemed guest, Miss Shyni Thomas. Her insightful lecture on renewable energy has left an indelible mark on our students. We thank you for sharing your expertise and inspiring us to strive for excellence in sustainable technology.



Figure 8: Prof. Subhash Mondal gives a vote of thanks.

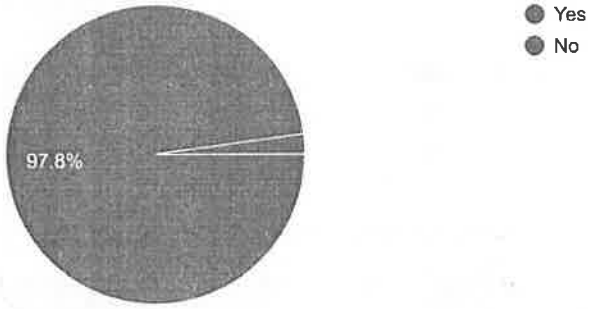
Participant Feedback:





Would you participate in similar upcoming events?

90 responses



Prof. Subhash Mondal
Assistant Professor, CSE (AI & ML)
Coordinator, "YANTROVE" Club.
Faculty Adviser, IEEE RAS SBC, DSU

Prof. Mitha Guru
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4	ENG22AM0136	SUJAL PATEL	
5	ENG22AM0137	THAMMISETTY SUSHMITHA	
6	ENG22AM0139	UTPAL KUMAR	
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8	ENG22AM0141	JEYADHEEP V	
9	ENG22AM0142	VIGNESH R NAIR	
10	ENG22AM0143	YERE BHARATH	
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19	ENG22AM0152	HARSHITHA K	
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21	ENG22AM0155	MOHAMMED REHAN SHARIFF	
22	ENG22AM0156	NACHIKETH R	
23	ENG22AM0157	NAGAVENKATA SREE VIVEK AVASARALA	
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25	ENG22AM0159	PIHUL WARADKAR	
26	ENG22AM0160	POOJITHA R	
27	ENG22AM0161	PRATHAM CHETTRI	
28	ENG22AM0162	RUBEN CHACKO SANTOSH	
29	ENG22AM0163	SOHAN J S	

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ENG22CS0273 C. Akshaya
ENG22CS0272 C.V. DHATRI
ENG22CS0258 Avula Subhang

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9	ENG22AM0075	ANANYA ROHIDAS SHET	
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12	ENG22AM0078	AVUTALA DHRUVISH REDDY	
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14	ENG22AM0080	AYUSH MISHRA	
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18	ENG22AM0084	CHETHAN S	
19	ENG22AM0085	CHILAKA SAI RAGHAVENDRA	
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21	ENG22AM0087	DEEPAK MAHTO	
22	ENG22AM0088	DHRUTI PURUSHOTHAM	
23	ENG22AM0089	DISHANT THAPAR	
24	ENG22AM0090	GADDAM DEVESWAR REDDY	
25	ENG22AM0091	GADIYARAM MAHI KARTHIKEYA	
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