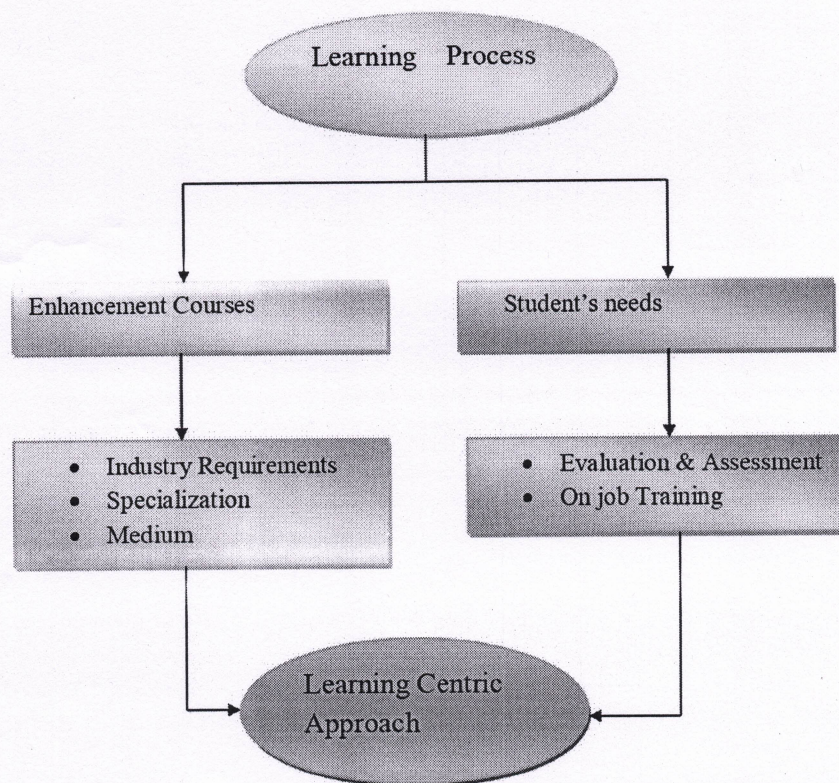**2.3.1. Student centric methods, such as experiential learning, participative learning and problem solving methodologies are used for enhancing learning experiences**

To improve the level of understanding in students, the following innovative approaches are undertaken by the institution.

- ➢ ICT Supported Learning
  - ▪ ICT in Education
  - ▪ SAKSHAT a One Stop Education Portal
  - ▪ SWAYAM
  - ▪ NPTEL
  - ▪ DELNET
  - ▪ IET Digital Library
  - ▪ COURSERA
- ➢ Course Based Projects
- ➢ Classroom Discussions
- ➢ Soft skills Workshops
- ➢ Short Presentations
- ➢ Role Play
- ➢ Mind Map

1. ICT Supported Learning

Information and Communication Technology or ICTs allow users to participate in a rapidly changing world in which work and other activities are increasingly transformed by access to varied and developing technologies. The Indian Information Technology and industry accounts for a 5.9% of the country's GDP and export earnings as of 2009, while providing employment to a significant number of its tertiary sector workforce. More than 2.3 million people are employed in the sector either directly or indirectly, making it one of the biggest job creators in India and a mainstay of the national economy.

Use of ICT

ICT tools can be used to find, explore, analyze, exchange and present information responsibly and without discrimination. ICT can be employed to give users quick access to ideas and experiences from a wide range of people, communities and cultures.

ICT in Education

Realising the importance of Information and Communication Technology (ICT) the Ministry of Human Resource Development as per the Mission Document, ICT is the tool in education available to enhance the current enrolment rate in Higher Education, at present 15 percent to 30 percent by the end of the 11th Plan period.

The Ministry also launched a web portal named "SAKSHAT" a 'One Stop Education Portal'. The high quality e-content once developed will be uploaded on SAKSHAT in all disciplines and subjects. Several projects are in the completion stage and are expected to change the way teaching and learning is done in India.

e - Resource for e-Content - Useful ICT links
"SAKSHAT" a One Stop Education Portal

"SAKSHAT" a 'One Stop Education Portal'. The high quality e-content once developed will be uploaded on SAKSHAT in all disciplines and subjects. Several projects are in the completion stage and are expected to change the way teaching and learning is done in India.

http://www.sakshat.ac.in/

Advanced Learners undertake SWAYAM, NPTEL, COURSERA.

SWAYAM- Study Webs of Active –Learning for Young Aspiring Minds

SWAYAM is a programme initiated by Government of India and designed to achieve the three cardinal principles of Education Policy viz., access, equity and quality. The objective of this effort is to take the best teaching learning resources to all, including the most disadvantaged. SWAYAM seeks to bridge the digital divide for students who have hitherto remained untouched by the digital revolution and have not been able to join the mainstream of the knowledge economy.

https://swayam.gov.in/

NPTEL-National Programme on Technology Enhanced Learning

The National Programme on Technology Enhanced Learning (NPTEL) was initiated by seven Indian Institutes of Technology (Bombay, Delhi, Kanpur, Kharagpur, Madras, Guwahati and Roorkee) along with the Indian Institute of Science, Bangalore in 2003. Largest online repository in the world of courses in engineering, basic sciences and selected humanities and social sciences subjects

https://nptel.ac.in/course.php

NPTEL MOOCs

NPTEL began offering open online courses in March 2014 along with certificates from the IITs/IISc for those who completed the courses successfully. Massive Open Online Courses (MOOC) is essentially an asynchronous platform and a process for teaching through pre-recorded lectures, resource video materials, lecture notes, assignments and quizzes, which are usually online and provide self assessment in regular intervals during learning. The online courses offered by NPTEL, unlike other popular MOOCs portals, include courses from all disciplines of Engineering such as Biotechnology, Ocean Engineering, Metallurgical Sciences etc apart from the popular ones such as Computer Science Engineering or Electrical Engineering. Examples of some such courses are Cell Culture Technologies, Forest Biometry, Integral equations, calculus of variations and its applications, Solid state physics, Regression Analysis,etc.

https://onlinecourses.nptel.ac.in/

Principal
Kommuri Pratap Reddy Institute of Technology
Opp. NTPC Power Grid,
Ghanpur (V), Ghatkesar (M)
Ranga Reddy District Pin Code- 500 088

3

DELNET- Developing Library Network

DELNET was started at the India International Centre Library in January 1988 and was registered as a society in 1992. It was initially supported by the National Information System for Science and Technology (NISSAT), Department of Scientific and Industrial Reseach, Government of India. It was subsequently supported by the National Informatics Centre, Department of Information Technology, Ministry of Communications and Information Technology, Government of India and the Ministry of Culture, Government of India.

DELNET has been established with the prime objective of promoting resource sharing among the libraries through the development of a network of libraries. It aims to collect, store, and disseminate information besides offering computerised services to users, to coordinate efforts for suitable collection development and also to reduce unnecessary duplication wherever possible.

http://delnet.nic.in/

IET Digital Library

The IET- Institution of Engineering and Technology Digital Library holds more than 190,000 technical papers from 1994 onwards for all IET journals, magazines, books, conference publications and seminar digests. Highly cited journals such as Electronics Letters are available alongside 24 research journal titles, The Journal of Engineering, the IET's new open access journal, Micro & Nano Letters, the IET's online only journal, the IET's member magazine Engineering & Technology, plus seminar digests and conference publications

http://digital-library.theiet.org/

COURSERA

Coursera provides universal access to the world's best education, partnering with top universities and organizations to offer courses online.

https://www.coursera.org/

KPRIT CSE Department ICT Supported Learning

Faculty enrolling NPTEL online courses of their interest and appearing for Certification Exam conducted by NPTEL. Faculty motivating students under their mentorship to enroll

4

NPTEL courses and then solving Assignments with help of concerned faculty, listening NPTEL videos and appearing for certification exam. Faculty prepares power point slides on some theoretical concepts and having complex diagrams and then presents in the respective class room.
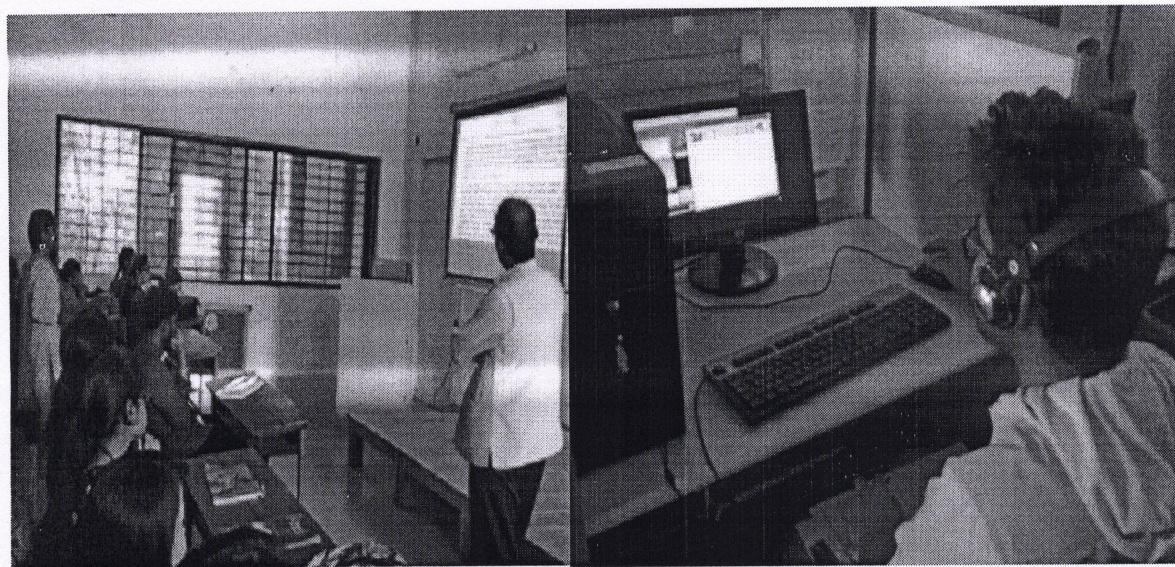
2. Advanced Learners are encouraged to carry out Lab based Projects to enrich their skills.

Sr. No.	Title	Student Details	Roll No
1	Soil Moisture sensor using ESP8266	D. Srilatha A. Preethi	17RA1A0447 17RA1A0438
2	Smart Controller	M. Preethika Ch. Mani Kumari	17RA1A0432 17RA1A0422
3	Home Automation System using ESP8266	K. Akhila U. Harika K. Preethi	16RA1A0405 16RA1A0414 16UA1A0487
4	Traffic Light Controller using Aurdino	P. Prashanthi P. Keerhti Y. Niharika	17RA1A0431 17RA1A0415 17RA1A0426
5	Obstacle detecting robot	AurabindoNaik Manu Kaushik Prasad Pichi Reddy	17RA1A0405 17RA1A0423 17RA1A0429
6	Portable Mobile Charger	Akhil Nikhil Venkatesh	16UA1A0404 16UA1A0420 16UA1A0427

Principal
Kommuri Pratap Reddy Institute of Technology
Opp. NTPC Power Grid,
Ghanpur (V), Ghatkesar (M)
Ranga Reddy District, Pin Code- 500 088

5

7	Smart dustbin using Aurdino	Krishna Veni	17RA1A0416
		Supriya	17RA1A0448
8	Google Assisted Voice Controller Message Display	Manideep	17RA1A0421
		Sharwani	17RA1A0444
9	Fire Alarm Detection system using Aurdino	Mahathi	17RA1A0418
		Ramya	17RA1A0434
10	Medicine Reminder Using Aurdino	G.Vyshnavi	16RA1A0431
		N.R.Aarthi	16RA1A0401
11	Seven Segment Display Using Aurdino	G.Vyshnavi	16RA1A0431
		V.Bhavya	16RA1A0401
		CH.Saipriya	16RA1A0432

Abstract

This article describes a project developed using principles of Project Based Learning (PBL) and aims to use an embedded system for soil monitoring, thus measuring soil moisture and implementing automatic irrigation, as well as, the temperature and humidity of the environment. The configuration data for irrigation time control and the lower and upper limits of soil moisture percentage can be adjusted through a PHP page, where also the monitoring of the variation of soil moisture through a graph can be done in real time. The proposed project is divided into two steps using PBL. Phase one focuses on developing a circuit with sensors capable of doing measurement of ambient parameters and soil moisture, and phase two, on developing an irrigation system to control soil moisture, both using Internet of Things (IoT) concepts.

Expected Outcome:PO1, PO2

Principal
Kommuri Pratap Reddy Institute of Technology
Opp. NTPC Power Grid,
Ghanpur (V), Ghatkesar (M)
Ranga Reddy District. Pin Code: 500 08~

CONTENTS

Vision of the Institute

To emerge as a premier institute for high quality professional graduates who can contribute to economic and social developments of the Nation.

Mission of the Institute

Mission	Statement
IM1	To have holistic approach in curriculum and pedagogy through industry interface to meet the needs of Global Competency.
IM2	To develop students with knowledge, attitude, employability skills, entrepreneurship, research potential and professionally ethical citizens.
IM3	To contribute to advancement of Engineering & Technology that would help to satisfy the societal needs.
IM4	To preserve, promote cultural heritage, humanistic values and spiritual

7

values thus helping in peace and harmony in the society.

Vision of the Department

To impart quality technical education in Electronics and Communication with accent on creativity, innovation and research thereby producing competent engineers who can meet global challenges with societal commitment.

Mission of the Department

Mission	Statement
DM1	To impart quality education to students in Basic Sciences, Mathematics, Electronics and Communication Engineering through innovative teaching-learning processes.
DM2	To facilitate students to define, design, and solve engineering problems in the field of Electronics and Communications Engineering using various Electronic Design Automation (EDA) tools.
DM3	To encourage research culture among faculty and students thereby facilitating them to be creative and innovative through constant interaction with R & D organizations and Industry.
DM4	To inculcate teamwork, imbibe leadership qualities, professional ethics and social responsibilities in students and faculty.

References:

[1] Gary Scalzi, "Implications of current radar research on antennas and propogation," in *Proceedings of the 2012 IEEE International Symposium on Antennas and Propagation*, 2012, pp. 1 - 2.

[2] Gary Scalzi, "Implications of current radar research on antennas and propogation," in *Proceedings of the 2012 IEEE International Symposium on Antennas and Propagation*, 2012, pp. 1 - 2.

[3] Gary Scalzi, "Implications of current radar research on antennas and propogation," in *Proceedings of the 2012 IEEE International Symposium on Antennas and Propagation*, 2012, pp. 1 - 2.
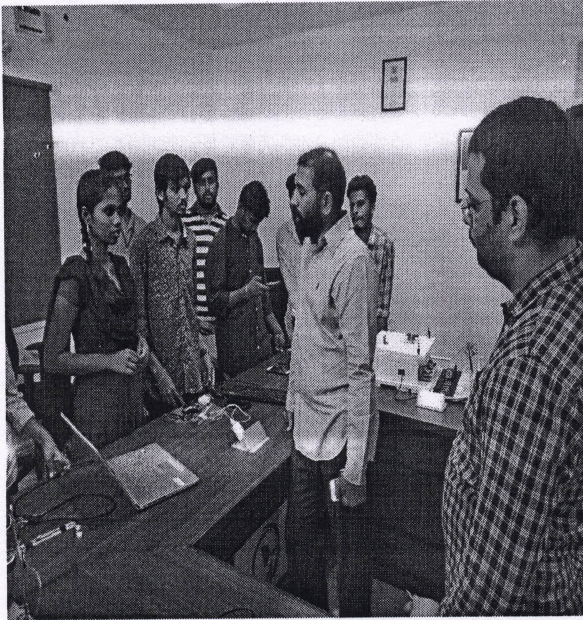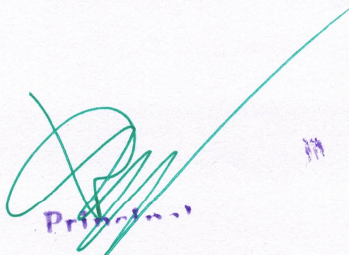
3. Classroom Discussions

Idea:

To make students discuss a given topic.

Implementation:

- ➤ Select topic
- ➤ Students are divided into three groups.
- ➤ Each group is assigned a name based on topic selected.
- ➤ Students are asked to give their views on the concept.
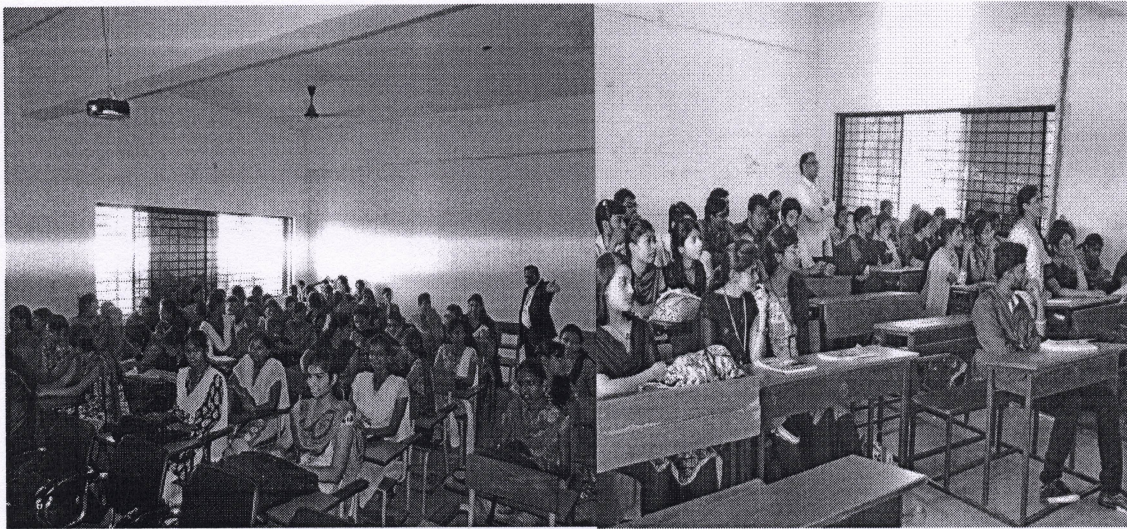- ➤ They are asked to prepare and give seminars on the given topics.

Outcome:

Active participation of students.Remembering the topic for a longer time.

Principal

Kommuri Pratap Reddy Institute of Technology
Opp. NTPC Power Grid.
Ghanpur (V), Ghatkesar (M).
Ranga Reddy District, Pin Code- 500 085

4. Soft Skills Workshops

"Aricent Academy" conducted specialized training to the faculty of Engineering at KPRIT during June 2016 by developing state-of-the-art facilities. They conducted one week workshop on "PRESENTATION SKILLS" which was attended by our faculty. The faculty has been using the workshop techniques in the class room to improve qualification of students.

KPRIT Management organizes Faculty Development Program on "PERSONALITY DEVELOPMENT AND SOFT SKILS" every academic year beginning for all teaching faculty at Rama Krishna Math, Hyderabad in association with Vivekananda Institute of Human Excellence. The faculty has been using the workshop techniques in the class room to improve qualification of students.
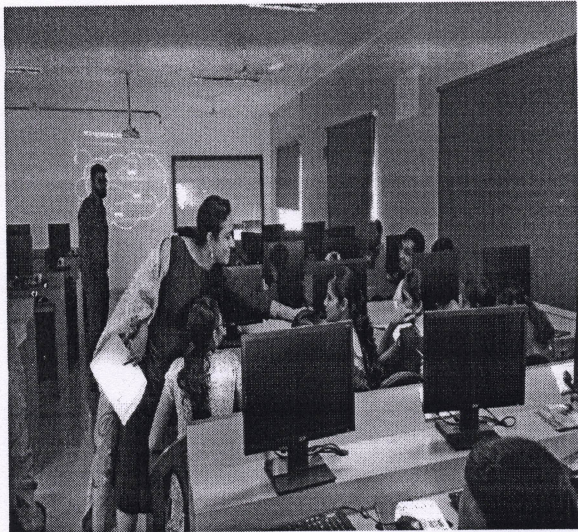
Implementation:

➢ Select topic
➢ Students are divided into three groups.
➢ Each group is assigned a name based on topic selected.
➢ Students are asked to give their views on the concept.
➢ They are asked to prepare and give seminars on the given topics.

Outcome:

Active participation of students.Remembering the topic for a longer time.

Principal
Kommuri Pratap Reddy Institute of Technology
Opp. NTPC Power Grid.
Ghanpur (V), Ghatkesar (M)
Ranga Reddy District Pin Code- 500 088

5. Short Presentations

Idea:

To make students give a presentation on a given topic.
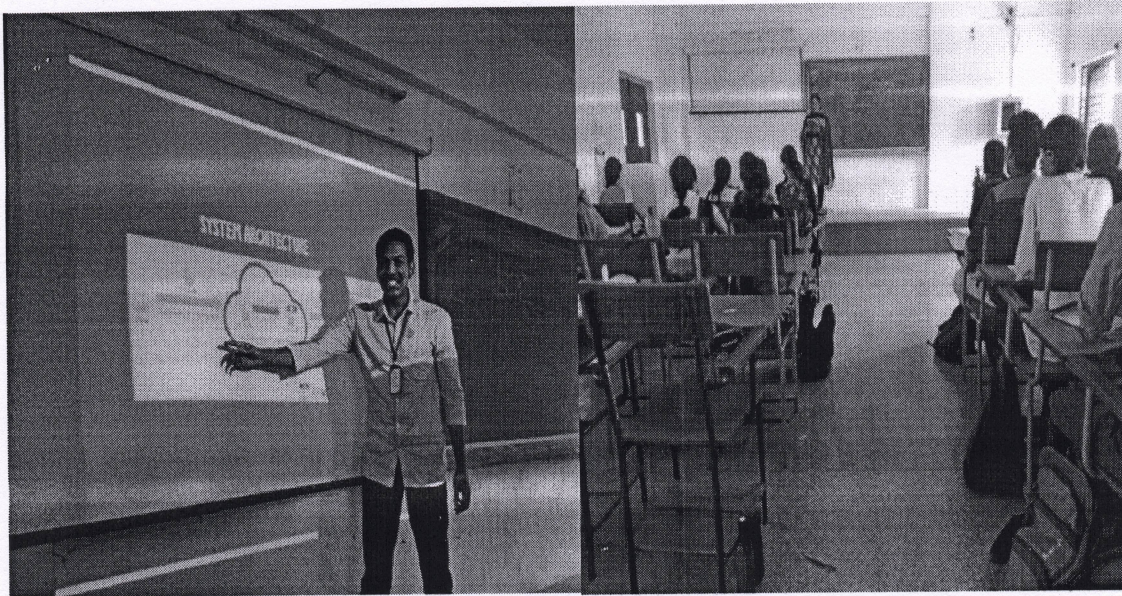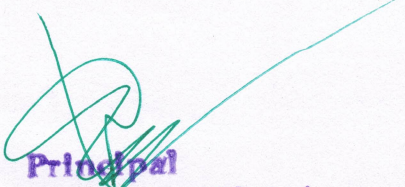
Implementation:

Selected 5 to 6 topics are given to some students.

They are asked to prepare and give seminars on the given topics.

Outcome:

Improved presentation skills of student and better analysing of a topic.

Principal
Kommuri Pratap Reddy Institute of Technology
Opp. NTPC Power Grid,
Ghanpur (V), Ghatkesar (M)
Ranga Reddy District Pin Code: 500 08*

6. Role Play

Idea:

Students are given a scenario and other options to solve a particular issue, then the students are exposed to decision making in a given environment.

Implementation:

Some students are selected randomly. Each student is assigned a particular frequency. One student is selected to act as a low pass filter with particular cut-off frequency. He is made to stand at the door of classroom. Students come one by one. The student with frequency less than cut-off frequency is only allowed to enter the classroom. The other students are blocked at door.

Principal
Kommuri Pratap Reddy Institute of Technology
Opp. NTPC Power Grid,
Ghanpur (V), Ghatkesar (M)
Ranga Reddy District Pin Code: 500 08r
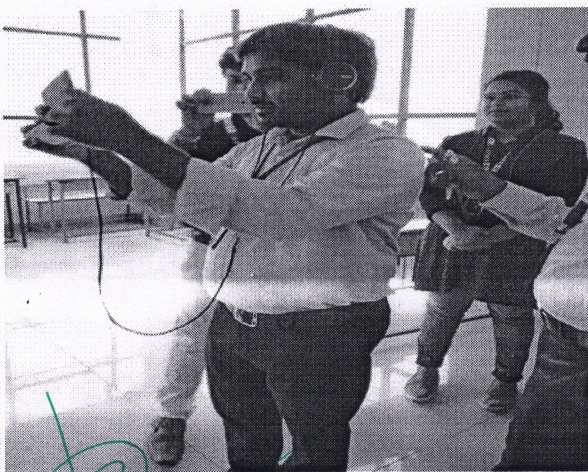
12
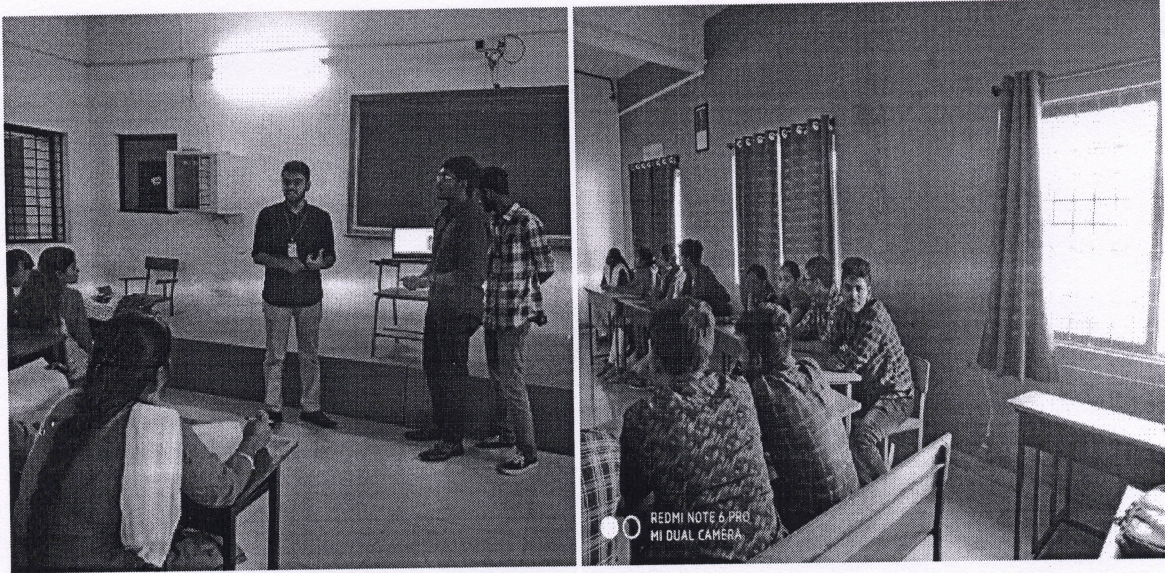
7. Mind Map

Idea:

Mind Maps can be used in class to brainstorm and generate discussions. This involves use of notes with keywords and images in classroom teaching.

Implementation:

Following image is shown to students and they are asked to discuss it among themselves. Topic name (represent diagram example related to that topic)

Outcome:

This will encourage students not only to participate but also to fully understand a topic and its nuances by creating connections between ideas. This makes students remember the topic for a longer time.