BVRIT HYDERABAD College of Engineering for Women
Department of Electronics and Communication Engineering

Name of the Activity: Design it yourself

Faculty Name: Dr. Anwar Bhasha Pattan

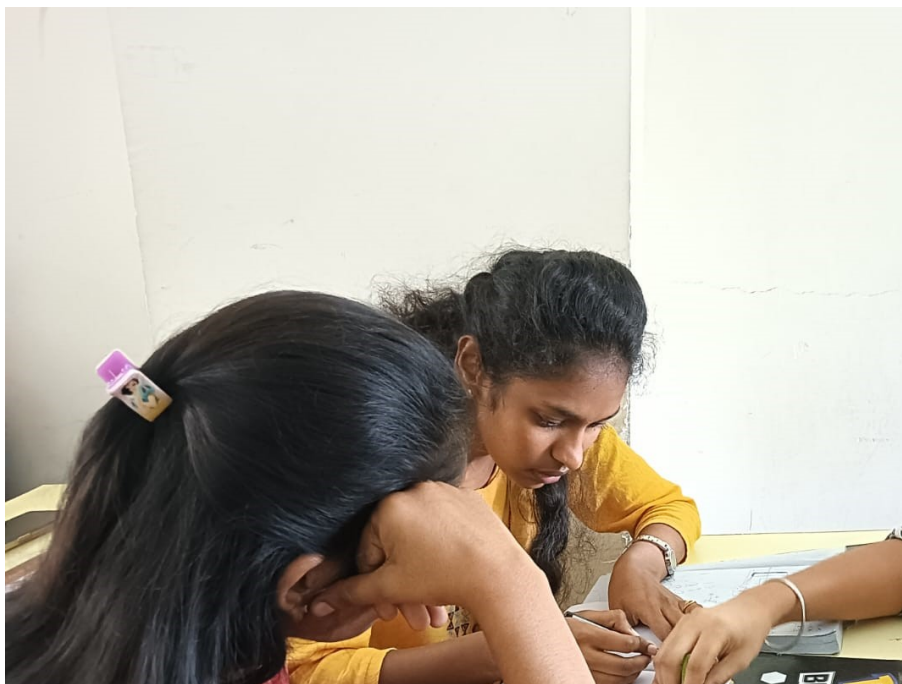**Class:** II – I / ECE –A

Academic Year: 2023-24

Subject Name: Digital Logic Design

Topic: Combinational Logic circuits

Brief Write - Up

This is a team activity where the students are teamed up and design a combinational circuit with given specifications. The questions are not direct and test their analytical and reasoning skills. This activity ignites their thinking and problem solving skills. The students participated enthusiastically and designed the circuits.

Photos:
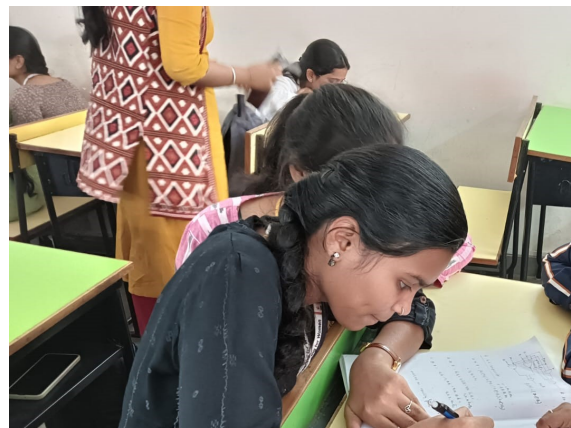
Faculty Sign

BVRIT HYDERABAD College of Engineering for Women
Department of Electronics and Communication Engineering

Name of the Activity: Summary Chart/Mind map

Faculty Name: Dr. Anwar Bhasha Pattan

Class: II – I / ECE –A

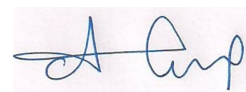**Academic Year:** 2023-24

Subject Name: Digital Logic Design

Topic: Summary on combinational and sequential logic design

Brief Write - Up

This group activity is to summarize the concepts of combinational and sequential logic design to create overall understanding of the topic. In this activity students have to draw a mind map or tree structure depicting the topics related to each other on a chart.

Photos:

Faculty Sign

BVRIT HYDERABAD College of Engineering for Women
Department of Electronics and Communication Engineering

Name of the Activity: Field Enquiry

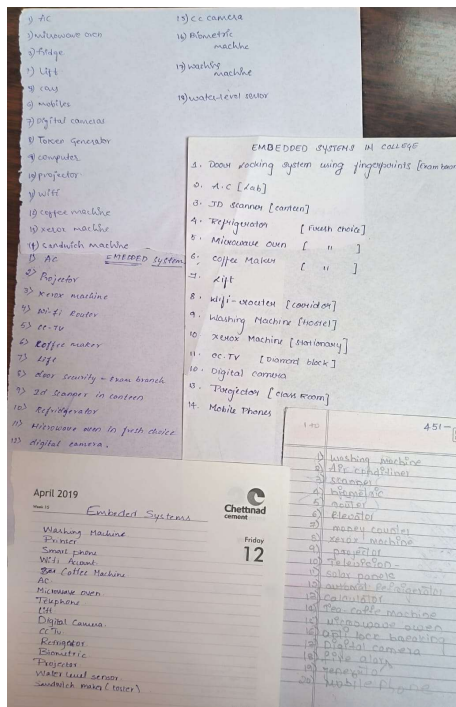**Faculty Name:** Dr. Anwar Bhasha Pattan

Class: III – II / ECE –B

Academic Year: 2023-24

Subject Name: Embedded System Design

Topic: Definition, purpose and applications of embedded systems

Brief Write up:

In this activity 3 to 4 students are teamed up and visit all the areas and rooms of the campus. Observe the electronic equipment or gadgets. They have to find out whether that particular system is an embedded system or not, the purpose of that particular embedded system and in what application category it comes. This activity improves the curiosity among students and they have actively involved in finding out. At the end they have to submit their findings on a paper including the places they visited, equipment they observed, etc.

Faculty Sign

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Department of Electronics and Communication Engineering

Name of the Activity: Group Discussion and Presentation

Faculty Name: Dr. Anwar Bhasha Pattan

Class: III – II / ECE –B

Academic Year: 2023-24

Subject Name: Embedded System Design

Topic: Scheduling Algorithms

Brief Write up:

This is an activity where the students have to think, discuss among themselves as small teams and share their understanding on the given topic. Here each group is given a scheduling algorithm, to discuss various scenarios where that particular scheduling algorithm is best suitable to implement, its pros and cons, etc. After some time, each team will present about it to all the remaining students. This way a deep revision of one algorithm and understanding of remaining algorithms happen to all the students.

Faculty Sign

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Department of Electronics and Communication Engineering

Name of the Activity: Understanding Modulation Techniques
Faculty Name: Dr. V. Santhosh Kumar Class /
Semester: II/II ECE B
Academic Year: 2023-24
Subject Name: ADC

Objectives of the Activity:
Enhance students' ability to differentiate and analyze modulation techniques such as AM and FM.

Description of the Activity:
This activity aims to provide students with a comprehensive understanding of various analog and digital modulation techniques used in communication systems. Through theoretical explanations and practical demonstrations/simulations, students will explore how modulation is employed to transmit signals effectively over long distances. The session introduces key concepts such as Amplitude Modulation (AM), Frequency Modulation (FM), Phase Modulation (PM), and digital techniques like Amplitude Shift Keying (ASK), Frequency Shift Keying (FSK), and Phase Shift Keying (PSK). Learners will analyze waveforms, compare spectral efficiency, and understand bandwidth requirements of each modulation scheme.

By the end of the activity, students will be able to:
Differentiate between analog and digital modulation.
Describe the advantages and limitations of various modulation techniques.
Apply modulation schemes to real-world communication scenarios.

This activity enhances conceptual clarity and prepares students for advanced topics in wireless communication and signal processing.
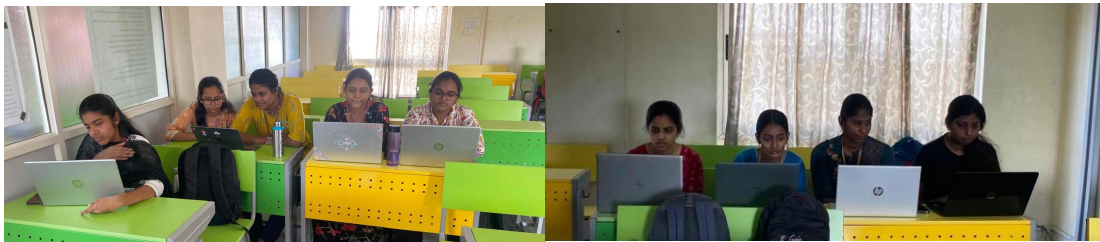
Number of students involved: 62
Date of the activity: 13/03/2024
For any Queries, please contact: santhosh.v@bvrithyderabad.edu.in

Name of the Activity: **Chart Preparation on Digital Electronic Circuits**

Faculty Name: Dr. V. Santhosh Kumar

Class /Semester: II/I IT B

Academic Year: 2023-24

Subject Name: Digital Electronics

Objectives of the Activity:

To enhance students' understanding of Digital Electronic Circuits.

To foster collaborative learning and teamwork among students.

To develop students' skills in presenting technical information visually.

Description of the Activity:

The chart preparation activity focused on the key concepts and components of Digital Electronic Circuits. Students were divided into groups of four and tasked with creating detailed charts on various topics related to Digital Electronic Circuits, such as logic gates, flip-flops, multiplexers, and demultiplexers.

Outcome/Feedback:

Students' Performance: All groups successfully completed their charts, demonstrating a good understanding of their assigned topics. The charts were visually appealing and contained accurate information.

Teamwork and Collaboration: The activity promoted teamwork, as students collaborated effectively within their groups.

Feedback from Instructors: The instructors provided positive feedback on the students' work, noting improvements in their comprehension and presentation skills.

Students' Feedback: Students found the activity engaging and informative. They appreciated the hands-on approach to learning and the opportunity to work in teams.

No. of Students Participated: 69

Date: 21-November-2023

For any Queries, please contact: santhosh.v@bvrithyderabad.edu.in

BVRIT HYDERABAD College of Engineering for Women
Department of Electronics and Communication Engineering

Activity: Chart Preparation on Digital Electronic Circuits

Faculty Name: Dr.V.Hindumathi

Class / Semester: II / I / IT-A

Academic Year: 2023-24

Subject Name: Digital Electronics

Topic: Combinational Logic Design

Date: 17-11-2023

Number of Students Participated: 68

Brief Write - Up

To promote collaborative learning and deepen conceptual understanding, a Chart Preparation Activity was conducted on the theme of Digital Electronic Circuits. This interactive session allowed students to explore key concepts through teamwork and creative visualization.

Students were grouped in teams of four, encouraging interaction, cooperation, and peer-to-peer learning. Each group was assigned a specific topic within the scope of digital electronics, including logic gates, flip-flops, multiplexers, demultiplexers, encoders, decoders, and counters. These topics were carefully selected to ensure comprehensive coverage of both foundational and advanced elements in digital circuit design.

The activity emphasized visual learning, with students creating informative charts that included theoretical concepts, circuit diagrams, truth tables, and practical applications. These charts not only reinforced classroom learning but also served as a platform for students to showcase their presentation, technical communication, creativity, and teamwork skills.

Overall, the activity was a success in making digital electronics more engaging, accessible, and enjoyable for students while supporting active and experiential learning.

Objectives:

- To enhance students' understanding of Digital Electronic Circuits.

- To foster collaborative learning and teamwork among students.

- To develop students' skills in presenting technical information visually

Photos:

(Dr.V.Hindumathi)

BVRIT HYDERABAD College of Engineering for Women
Department of Electronics and Communication Engineering

Name of the Activity: Retaining concepts by using Probing Questions

Faculty Name: Ms. M. Praveena
Class / Semester: II / I ECE A
Academic Year: 2023-24
Subject Name: Digital Logic Design
Topic: Unit V (Special Purpose Diodes)

No. of students participated: 52

Brief Write-up (Not exceeding 200 Words)

This is a group activity wherein students confer among themselves over different number systems for a period of 10min. They were given instructions of what type of questions will be asked. Then one group was selected and one by one every student needs to give a fact related to properties, conversion & applications related to the number system they were allotted. All the other batches have to pay a close observation to what this batch is explaining and need to identify any faults in the facts they have explained. This procedure is repeated with all the other batches.

Objective:
This gives a wide range of scope to the students to discuss with their peers regarding the concepts and help them in better understanding the concepts because of these discussions in peer group and identifying the mistakes done by other peers.

For any queries, please contact to below mail: praveena.m@bvrithyderabad.edu.in

BVRIT HYDERABAD College of Engineering for Women
Department of Electronics and Communication Engineering

Name of the Activity: Application oriented Project

Faculty Name: Ms. Rama Lakshmi G
Class / Semester: III/II ECE A
Academic Year: 2023-24
Subject Name: Antennas and Wave Propagation
Topic: Application oriented Project
Student Participated: 52

Brief Write-up
In this Application oriented Project activity, students will explore the fundamentals of antenna design by simulating and analyzing different types of antennas using MATLAB's/CST Antenna Toolbox. The activity focuses on understanding how design parameters such as shape, frequency, array configuration, and material affect antenna performance.
Students will:
- Model various antennas (Dipole, Patch, Array)
- Simulate radiation patterns in 2D and 3D
- Measure performance metrics: Gain, Beamwidth, Directivity, S-parameters
- Optimize antenna parameters for specific applications like 5G, IoT, or satellite communication
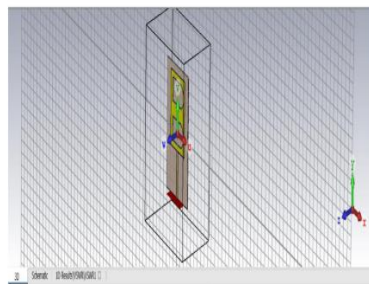- Present findings through a technical report and visual plots

Objective:
To provide hands-on experience in designing and analyzing various antennas through simulation tools, understanding radiation patterns, and relating theoretical concepts with practical results.

Photographs
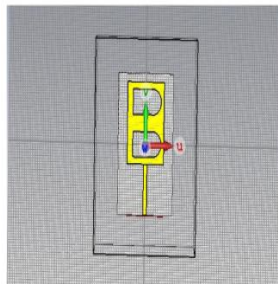
Front view

Perspective view

For any queries, please contact to below mail: ramalakshmi.g@bvrithyderabad.edu.in

BVRIT HYDERABAD College of Engineering for Women
Department of Electronics and Communication Engineering

Name of the Activity: Four corners

Faculty Name: Ms. Rama Lakshmi G
Class / Semester: IV/I ECE A
Academic Year: 2023-24
Subject Name: Digital Image Processing
Topic: Unit IV (Image segmentation)
Student Participated: 41

Brief Write-up

It is an assessment strategy where students are asked to decide regarding a problem or question. This strategy results in improving the critical thinking of the students. Here a problem or a question is posed to students and provide four different responses like Strongly agree, Agree, Disagree and Strongly Disagree. These options represent the 4 corners of the classroom. The students are asked to choose an option for the given problem or question and then they are asked to explain as to why they have chosen that option. Once the justifications of their peers are also given, students are given an option of choosing a different corner from their original choice. Finally, by hearing all the discussions rendered by their peers and suggestions from faculty, by the end of this activity all the students will come to a clarity as to why this corner is chosen for the given problem or question. This activity certainly helps the students in getting a clarity on the concept, clear their misconceptions and improve their oral skills as they are actively involved in the discussions with their peers.

Objective:
To Understand the grasping level of students regarding topics learnt and to clear the misconception in the related topic.

Photographs

For any queries, please contact to below mail: ramalakshmi.g@bvrithyderabad.edu.in

Activity: Group Learning

Faculty Name: N SRINIVASARAO

Class / Semester: B.Tech II / II

Academic Year: 2023 - 2024

Subject Name: Analog and Digital Communications

Topic: Unit-III, "Transmitters and Receivers"

Brief Write – Up: A group of students was assigned the topic **"Transmitters and Receivers"**, a core component of the Analog and Digital Communications syllabus. The group was responsible for:

- Demonstrating the working principles of transmitters and receivers using visual aids, models, or simulations.
- Explaining practical applications and relevance of the topic in modern communication systems.
- Interacting with the rest of the class through Q&A sessions and discussions.

The remaining students participated as evaluators, assessing the presenters based on clarity of explanation, technical accuracy, engagement, and demonstration effectiveness.

Objective:

- To enhance student understanding of the fundamental concepts of transmitters and receivers in communication systems.
- To encourage collaborative learning through peer-to-peer teaching.
- To develop students' communication, presentation, and technical skills.

For any Queries contact: srinivasarao.n@bvrithyderabad.edu.in
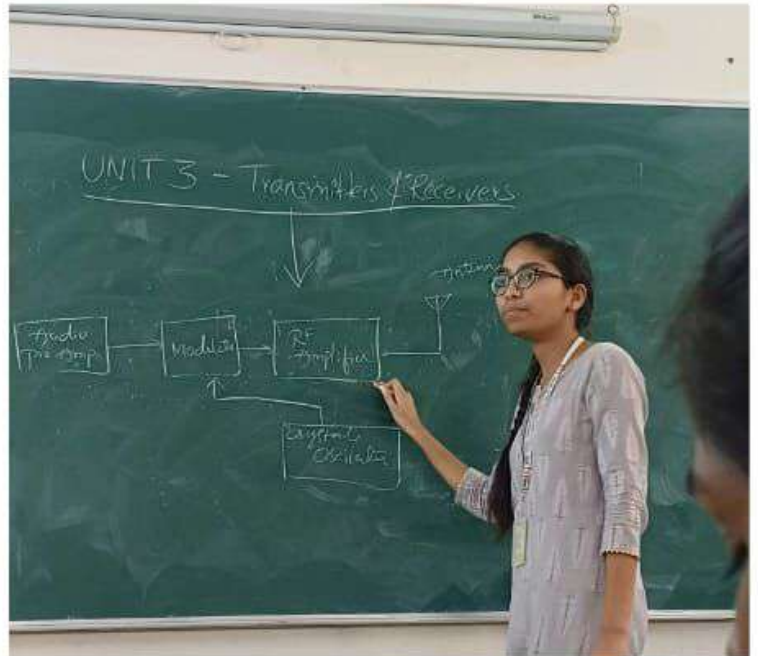
Photos:

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Department of Electronics and Communication Engineering

Activity: Chart Preparation

Faculty Name: N SRINIVASARAO

Class / Semester: B.Tech II / I

Academic Year: 2023 - 2024

Subject Name: Digital Electronic Circuits.

Topic: Unit-II – "Fundamentals in Digital Circuits design"

Brief Write – Up:

This activity centered around creating detailed charts on fundamental concepts and components of Digital Electronic Circuits. Students were organized into groups of four and assigned topics such as logic gates, flip-flops, multiplexers, and demultiplexers. The goal was to visually represent and explain these topics, fostering both technical comprehension and presentation skills.

Objective:

- To deepen students' understanding of Digital Electronic Circuits.
- To promote collaborative learning and teamwork among students.
- To enhance students' ability to present technical information in a visual format..

For any Queries contact: srinivasarao.n@bvrithyderabad.edu.in

Photos:

BVRIT HYDERABAD College of Engineering for Women
Department of Electronics and Communication Engineering

Name of the Activity: Crossword Puzzle

Faculty Name: T. Amy Prasanna
Class / Semester: I IT B
Academic Year: 2023-24
Subject Name: Electronic Devices and Circuits
Topic: Unit I,II(PN Junction Diode and its Applications)
**Date :** 18-07-2024
No. Of Students: 63
Brief Write-up (Not exceeding 200 Words)
students are divided into groups; They are asked to prepare Crossword puzzle by preparing questions from Unit 1 and 2 related to PN junction diode. It is the activity to encourage students to work as a group by discussing various topics in order to prepare questions and answers and finally build a Puzzle.

Objective:
This gives a wide range of scope to the students to analyze the concepts as a group and help them in better understanding the concepts.
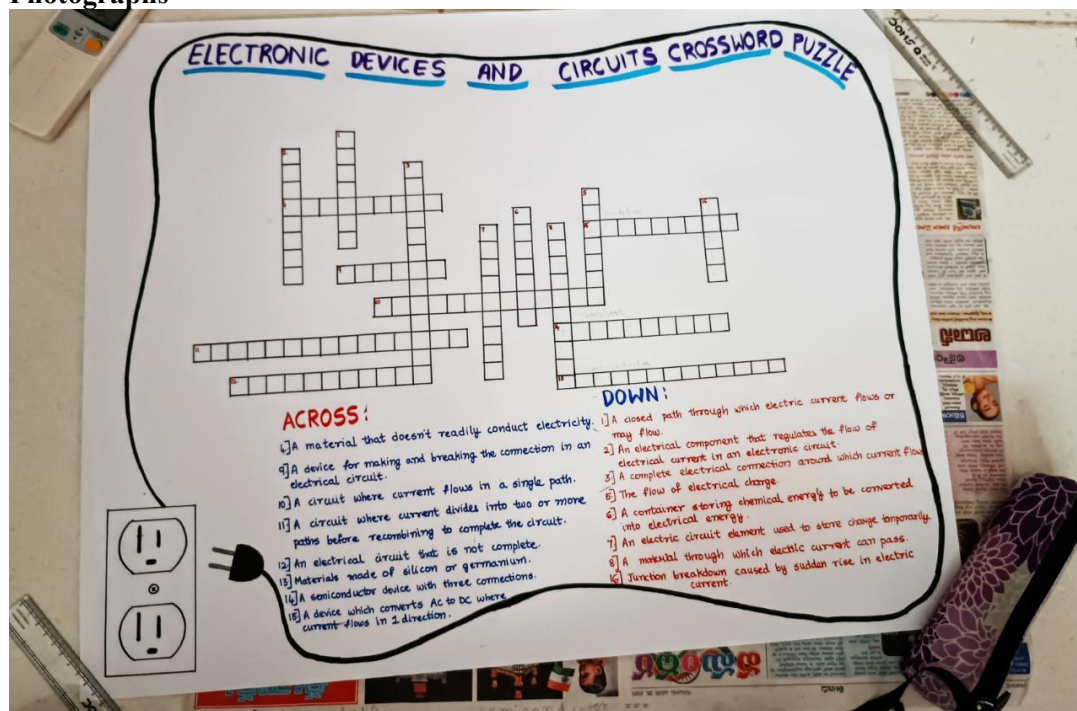
Photographs

For any queries, please contact to below mail: prasanna.tella@bvrithyderabad.edu.in

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Department of Electronics and Communication Engineering

Name of the Activity: Chart preparation

Faculty Name: T. Amy Prasanna
Class / Semester: I IT - B
Academic Year: 2023-24
Subject Name: Electronic Devices and circuits
**Topic:** Unit I (Diodes)

Brief Write-up (Not exceeding 200 Words)
students are divided into groups, They need to make a chart on given topic by collecting required material. This activity makes the students to involve in a team and discuss various concepts with peer and there by enhancing knowledge on those concepts.

Objective:
This gives a wide range of scope to the students to discuss the concepts as a group and help them in better understanding the concepts.
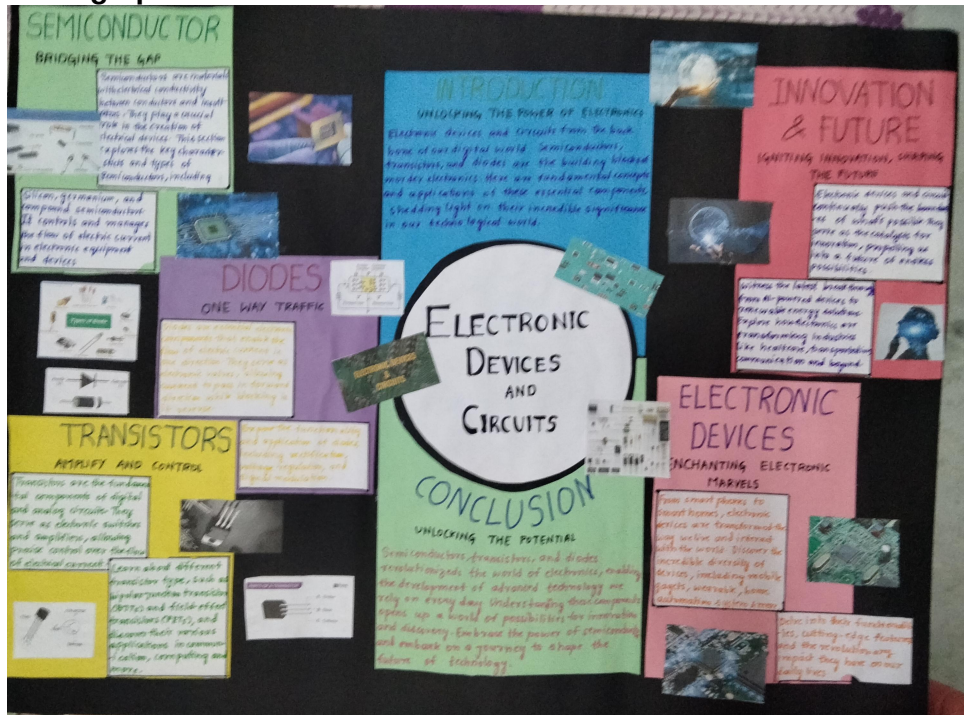
Photographs

For any queries, please contact to below mail: prasanna.tella@bvrithyderabad.edu.in

BVRIT HYDERABAD
College of Engineering for Women
(Approved by AICTE, Affiliated to JNTUH)
UGC Autonomous
(Accredited by NBA – EEE, ECE, CSE & IT and NAAC with 'A' Grade)

Event Name: Techno Cross word puzzle

Date (s) of Conduction: 14-02-2024

Name of the Course: **MPMC**

Branch, year and sem: ECE B III-I

No. of Participants: 58

Organized by: Dr.M.Parvathi

About the Event: Filling the cross word puzzle based on the questions given from the topic ARM processor, its architecture, features, register file banks, applications, conducted for ECE B 3rd year in their first semester. Total 58 number of students have participated in this activity. The activity is related CO C311.5. Few sample questions are represented here: 1) size of the ARM instruction (32 bit), 2) Expand AMBA (Advanced Microcontroller Bus Architecture (AMBA)) bus 3)The number of data registers in ARM processor (sixteen)

Photos

The activity is mapped to the following CO

CO No.	Course Outcomes
C311 – Micro Processor and Micro Controller	
C311.5	Analyze the architectural features and instruction set of ARM processor.

Evaluation Criteria : The total number of questions in the Techno cross word puzzle asked for 20. Performance evaluation was done based on their score outcomes. Students were segregated into groups as per their seeting in rows. Total four rows, R1, R2, R3 and R4. Whci ever row student respnds first priority was given to answer the question. The maximum scored row is Row2, second highest observed is Row 3.

Row Numbers	Score Obtained	Position Placed
1	3	Fourth
2	8	First
3	5	Second
4	4	Third

BVRIT HYDERABAD College of Engineering for Women
Department of Electronics and Communication Engineering

Activity: Classroom Activity

Faculty Name: Dr. L. Bhargava Kumar

Class / Semester: II-II ECE - B

Academic Year: 2023-24

**Subject Name:** PTSP

Topic: Unit - I, II Topics

Brief Write – Conducted classroom activity for II B.Tech II Semester students on PTSP subject on various dates during the semester. The activity includes a presentation or explanation of the topic for few minutes. They have given various examples for the random signals:

- The output voltage of the wind power generator
- The voltage from a solar detector (solar panels)
- Signal from an instrument that measures the instantaneous height of ocean wave
- A voltage signal from a vibration analyzer attached to an automobile driving over rough terrain
- Timely changing Sensex waveforms
- Medical ECG waveforms
- Population meter

Objective: Conducting these activities for the students in this subject

i) Evaluate students' **grasp of fundamental concepts** such as operation of the devices through their characteristics, etc.
ii) Identify **conceptual gaps or misconceptions** early in the learning process.

Photos:
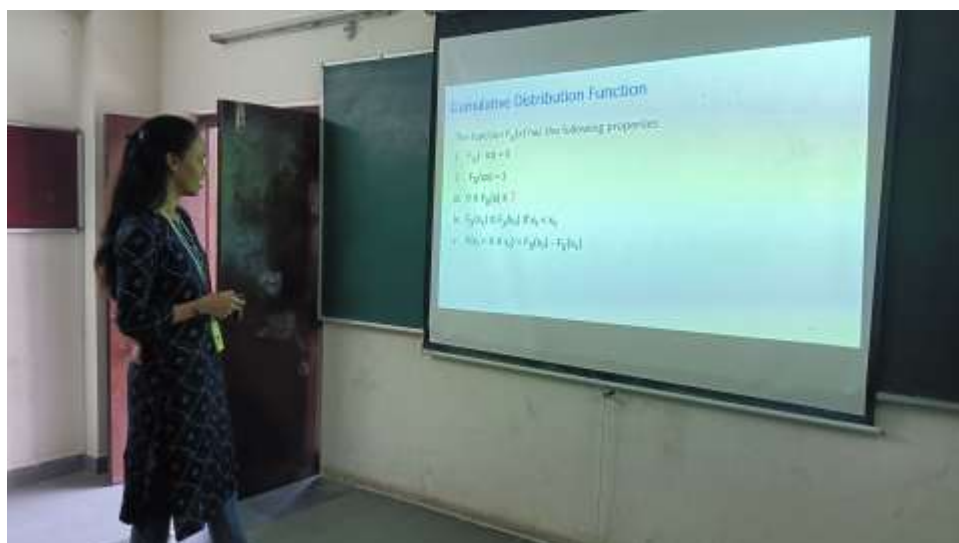
For any Queries contact: bhargavakumar.l@bvrithyderabad.edu.in

BVRIT HYDERABAD College of Engineering for Women
Department of Electronics and Communication Engineering
Activity: Mind Map

Faculty Name: Dr J Naga Vishnu Vardhan

Class / Semester: II – II / ECE –A

Academic Year: 2023-24

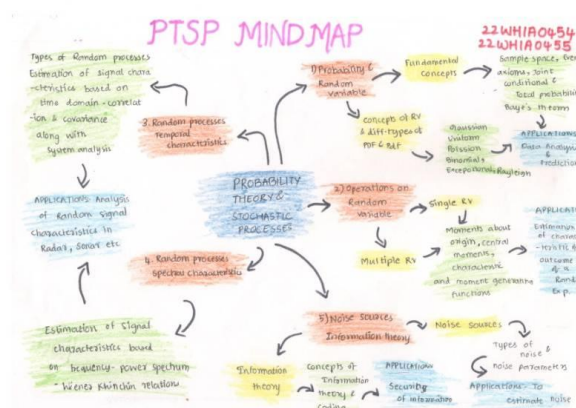**Subject Name:** Probability Theory and Stochastic Processes

Brief Write - Up

Students were formed into a team of 2. Every team was asked to take any one concept or a unit or the entire course and represent in the form of Mind Map

Objective:

This activity helps the students in better retention and recall of information, connection between topics and better understanding the need of a concept or process along with application.

Photos:

For any queries, please contact: vishnu.j@bvrithyderabad.edu.in

BVRIT HYDERABAD College of Engineering for Women

Department of Electronics and Communication Engineering

Activity: Probability at Play – Techno Crossword

Faculty Name: Dr J Naga Vishnu Vardhan

Class / Semester: II – II / ECE –A

Academic Year: 2023-24

Subject Name: Probability Theory and Stochastic Processes

Brief Write - Up

Students were formed into a team of 2. Crossword on the concepts of PTSP was given. Students Team whoever completed with all correct in minimum time are winners.

Objective:

This activity helps the students to recall the concepts of the course

Photos:

For any queries, please contact: vishnu.j@bvrithyderabad.edu.in

BVRIT HYDERABAD
College of Engineering for Women
Department of Electronics and Communication Engineering

Activity: Lab into Class

Faculty Name: Mr. N.M. Sai Krishna

Class: II – I / EEE

Academic Year: 2023–24

**Subject Name:** Analog Electronics Circuits

Topic: Clippers

Date: 17/11/2023

Brief Write-Up

The Lab into Class activity on **Clippers** focused on bridging theoretical understanding with practical implementation of wave-shaping circuits. Students explored the design and behavior of various clippers, including series and shunt configurations using diodes. They examined how clippers can be used to remove or "clip" parts of input waveforms above or below certain voltage levels.

Students analyzed input-output waveform characteristics and interpreted the effect of bias voltages and diode orientation. Circuit performance was verified using breadboards and oscilloscopes to validate expected results.

Photo(s):
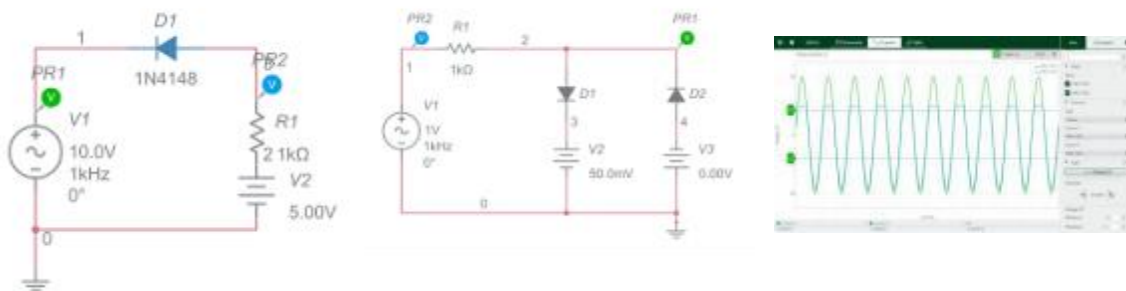
Impact:

This hands-on activity helped students consolidate their theoretical understanding of waveform shaping through clippers. It improved their analytical thinking and problem-solving skills, as they gained exposure to both ideal and practical diode behavior. The experience fostered better engagement, increased confidence, and readiness to apply these concepts in real-world circuit design challenges.

BVRIT HYDERABAD College of Engineering for Women
Department of Electronics and Communication Engineering

Activity: Decoding DSP - A Charades Challenge

Faculty Name: Dr V.Hindumathi

Class: III – II / ECE –B

Academic Year: 2023-24

Subject Name: Digital Signal Processing

Topic: Filter Design

Date: 23-07-24

Number of Students participated: 64

Brief Write - Up

In digital signal processing (DSP) class, students engaged with an interactive and entertaining activity to reinforce understanding of key topics. Students played a game of charades, where each team member took turns acting out the names of various DSP topics without speaking. Other students then had to guess the topic being portrayed. This not only tested students knowledge of DSP concepts but also encouraged teamwork and creativity in conveying complex ideas through gestures and expressions.

The activity proved to be an effective and enjoyable learning method. It allowed students to break away from traditional lectures and engage in a hands-on, participatory approach to learning.

Topics Covered:

- Overlap save method
- Circular convolution
- Hamming window
- Symmetric property
- Gibbs phenomenon
- Down sampling
- Lowpass filter

Objectives:

- To enhance students' understanding of Filter design concepts for the given specifications .

- To foster collaborative learning and teamwork among students.

- To develop students' skills in presenting technical information visually

Photo(s):

For any Queries contact: hindumathi.v@bvrithyderabad.edu.in

(Dr.V.Hindumathi)

BVRIT HYDERABAD College of Engineering for Women
Department of Electronics and Communication Engineering
Activity: A Life with Sensor (Think-Pair-Share)

Faculty Name: Dr Viswanadham R

Class / Semester: IV – I / ECE –A

Academic Year: 2023-24

Subject Name: Electronic Sensors

Brief Write - Up

Divide the students with groups and asked them to identify the sensors in mobile phones of various companies.

Objective:

This activity helps the students to explore the types of sensors along with functionalities.

Photos:

For any queries, please contact: viswanadh.r@bvrithyderabad.edu.in

BVRIT HYDERABAD College of Engineering for Women
Department of Electronics and Communication Engineering
Activity: Progauge(Think-Pair-Share)

Faculty Name: Dr Viswanadham R

Class / Semester: III – II / IT-A

Academic Year: 2023-24

Subject Name: Introduction to Embedded Systems

Brief Write - Up

Divide the students with groups and asked them to write features of programming languages.

Objective:

This activity helps the students to understand the importance of programming languages in embedded systems

Photos:

For any queries, please contact: viswanadh.r@bvrithyderabad.edu.in

BVRIT HYDERABAD College of Engineering for Women
Department of Electronics and Communication Engineering

Name of the Activity: Code Analysis

Faculty Name: Mr. P.Rajesh Kumar

Class: III – II / EEE

Academic Year: 2023-24

**Subject Name:** Microprocessors & Microcontrollers
Topic: Unit II (8051 Microcontroller – Architecture, Instruction set and Addressing Modes)
Brief Write – Up In this activity programs are given on the black board and students are asked to analyse various Assembly language programs. They have to explain the instructions line by line and write the output line by line. Based on the program output they will identify the program purpose. Marks are assigned based on their explanation and correct output.
Date: 12-06-2024

No. of Students Participated: 62

Photos:
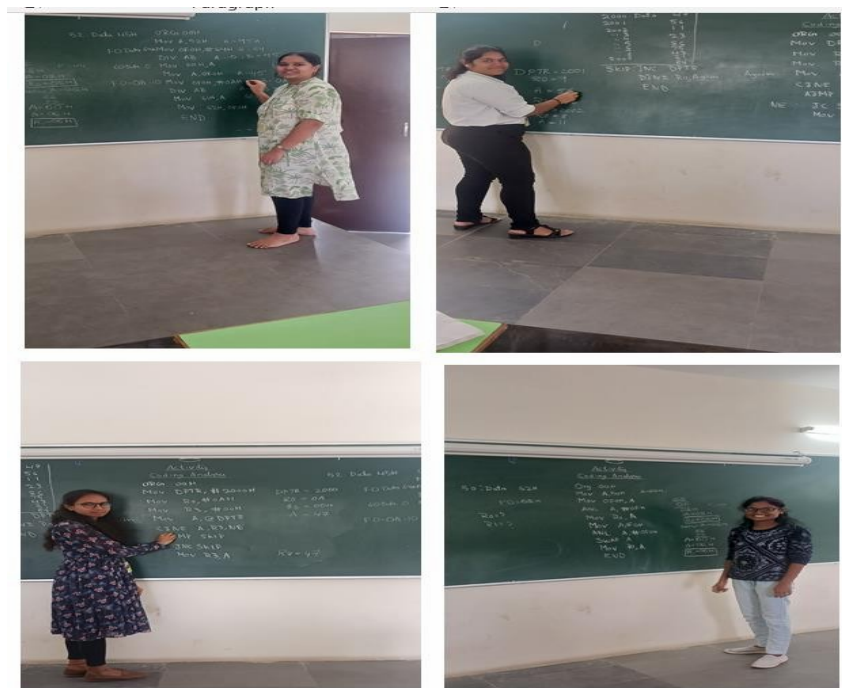
For any queries, please contact to below mail: rajeshkumar.p@bvrithyderabad.edu.in

BVRIT HYDERABAD College of Engineering for Women
Department of Electronics and Communication Engineering

Name of the Activity: Padlet

Faculty Name: Mr. P.Rajesh Kumar

Class: IV – I / CSE A&B

Academic Year: 2023-24
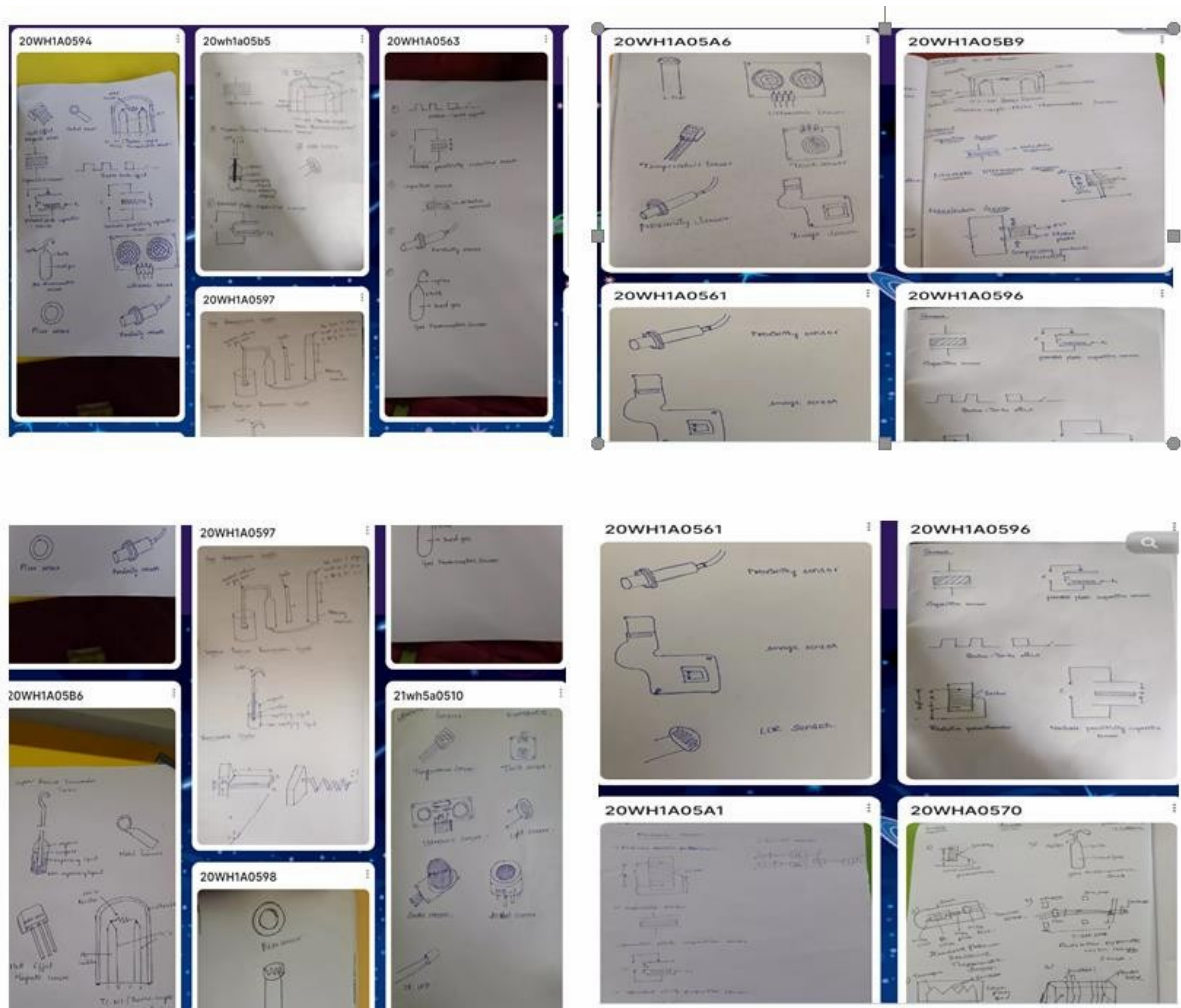
Subject Name: Electronic Sensors
Topic: Unit II Thermal Sensors
Brief Write – Up In this activity students are given various sensors topics and are asked to draw the diagrams of various sensors related to the topic. The drawn figures are taken picture using mobile phones. Then students will log into the padlet website using the link shared through mail. After logging into padlet the students will upload their images with their names using the add button .The added images can be seen by all the students

Date: 22-11-2023
No. of Students Participated: 45

Photos:

BVRIT HYDERABAD College of Engineering for Women
Department of Electronics and Communication Engineering

Name of the Activity: Real-Time Project

Faculty Name: Mr.R.Priyakanth
Class / Semester: II/I ECE A
Academic Year: 2023-24
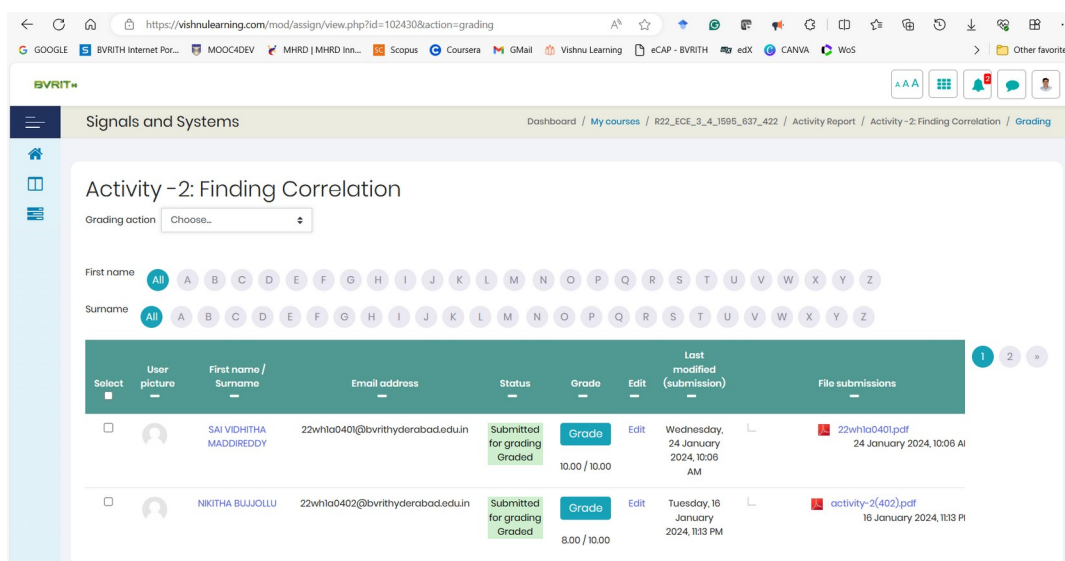**Subject Name**: Signals and Systems
Topic: Unit V (Correlation)

Brief Write-up (Not exceeding 200 Words)

This personalized project requires students to actively participate in real-time analysis to explore correlations between their own voice signals and those of their siblings, cousins, or a relation. By engaging in practical applications, students will develop a strong grasp of signal processing techniques, refining their skills through hands-on experiences. This initiative not only enhances comprehension of the subject matter but also encourages independent learning and technical mastery.

Objective:
Identifying the Correlation in a real-time voice signal is crucial in audio processing and voice recognition applications. Correlation in audio processing is pivotal for identifying similarities and patterns within sound signals, aiding in tasks like speech recognition and noise reduction. It enables the extraction of meaningful information, facilitating tasks such as speaker identification and audio classification. Ultimately, correlation enhances the efficiency and accuracy of various audio processing applications

Submissions through vishnulearning.com

For any queries, please contact to below mail: priyakanth.r@bvrithyderabad.edu.in

BVRIT HYDERABAD College of Engineering for Women
Bachupally, Hyderabad - 500090

Design of binary subtractor using MSI ICs

Aim: To design and implement 4-bit Binary subtractor using IC-74LS83 and using 2's complement technique .

Apparatus: 1. IC- 74LS83

2. IC- 74LS86

3. IC- 74LS04

Theory:

IC 74LS83 is a 4-bit parallel binary adder chip. It adds/subtracts a four-bit number (nibble) with another 4-bit number. The block symbol for the IC is shown in Fig.1. This IC has two sets of 4-bit inputs along with a carry input C0. It performs binary subtraction on the A & B inputs and the carry input C0. It generates a 4-bit Difference and a Borrow out C4.
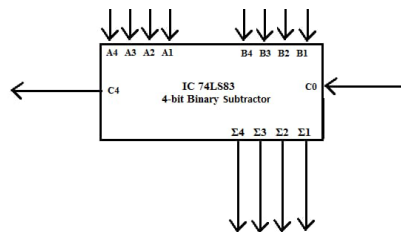

Fig. 1 Block Symbol of four-bit Subtractor IC

A circuit that can subtract 4-bit numbers can be designed using a control input and additional EX-OR IC 74LS86 For this we use the EX-OR gate as a "Controlled Inverter". The explanation for this concept can be easily understood from Fig.2. The four bit input B4, B3, B2 & B1 can be passed through the controlled inverter IC74LS83 and the A4, A3, A2 & A1 are connected directly to A inputs of IC 74LS83 as shown in Fig 3.
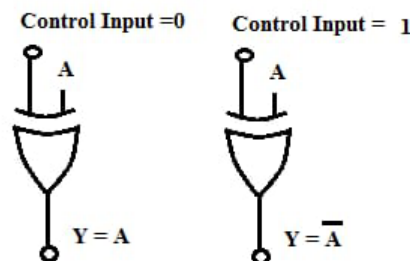

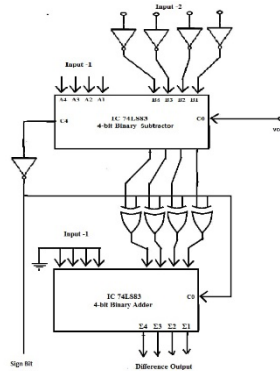Fig.2. Exclusive-OR gate used as a Controlled Inverter

Fig.3. 4-bit Binary Subtractor

Four-bit Subtraction: When Control input is set = 1, the Carry −in input C0 = 1. In this situation, the Ex-OR gates will provide 1,'s complement of the Input-2 to the B-inputs of Adder IC. Moreover as C0 = 1, the addition of 1 to the 1's complement of B gives 2's complement of B. Now the IC74LS83 adds Input-1 i.e. A4,A3, A2,A1 to the 2's complement of B and produces the Carry and Sum output on C4 & the lines Σ4, Σ3, Σ2, & Σ1.

Truth Table :

I/P15	I/P14	I/P13	I/P12	I/P10	I/P9	I/P8	I/P7	O/P15	O/P14	O/P13	O/P12	O/P11
0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	1	1	0	0	0	1
0	0	0	0	0	0	1	0	1	0	0	1	0
0	0	0	0	0	0	1	1	1	0	0	1	1
0	0	0	0	0	1	0	0	1	0	1	0	0
0	0	0	0	0	1	0	1	1	0	1	0	1
0	0	0	0	0	1	1	0	1	0	1	1	0
0	0	0	0	0	1	1	1	1	0	1	1	1
0	0	0	0	1	0	0	0	1	1	0	0	0
0	0	0	0	1	0	0	1	1	1	0	0	1
0	0	0	0	1	0	1	0	1	1	0	1	0
0	0	0	0	1	0	1	1	1	1	0	1	1
0	0	0	0	1	1	0	0	1	1	1	0	0

Procedure:

- Switch ON the circuit, by pressing Main Switch.

- Set the appropriate Inputs.

- After giving the inputs, observe the corresponding outputs.
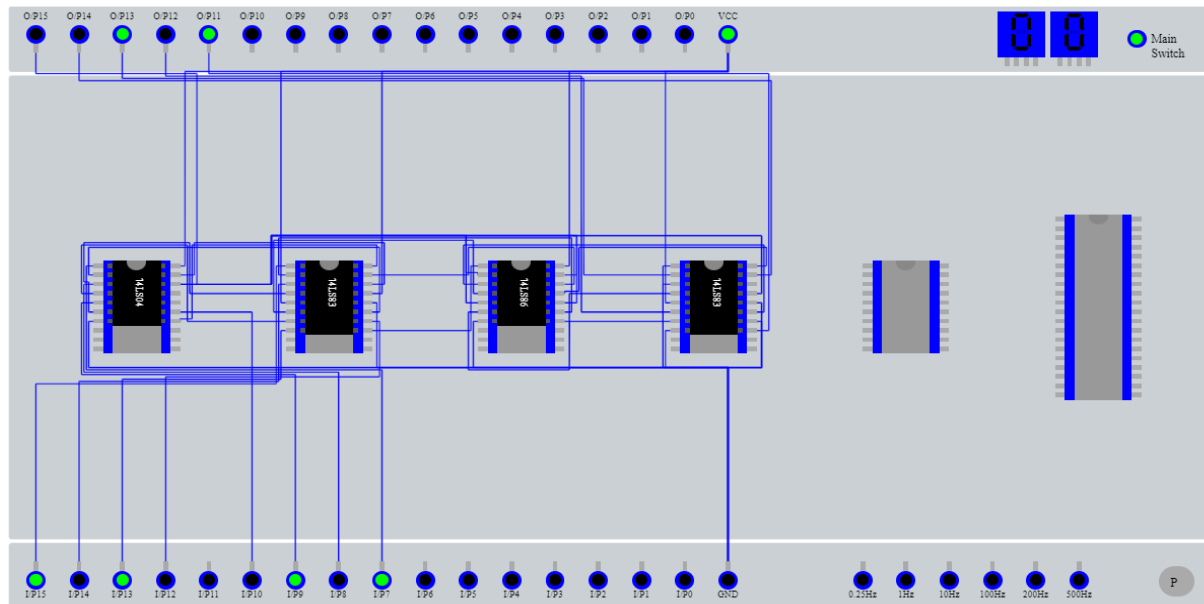
- Verify the results.

Simulation Results:

Fig.1.

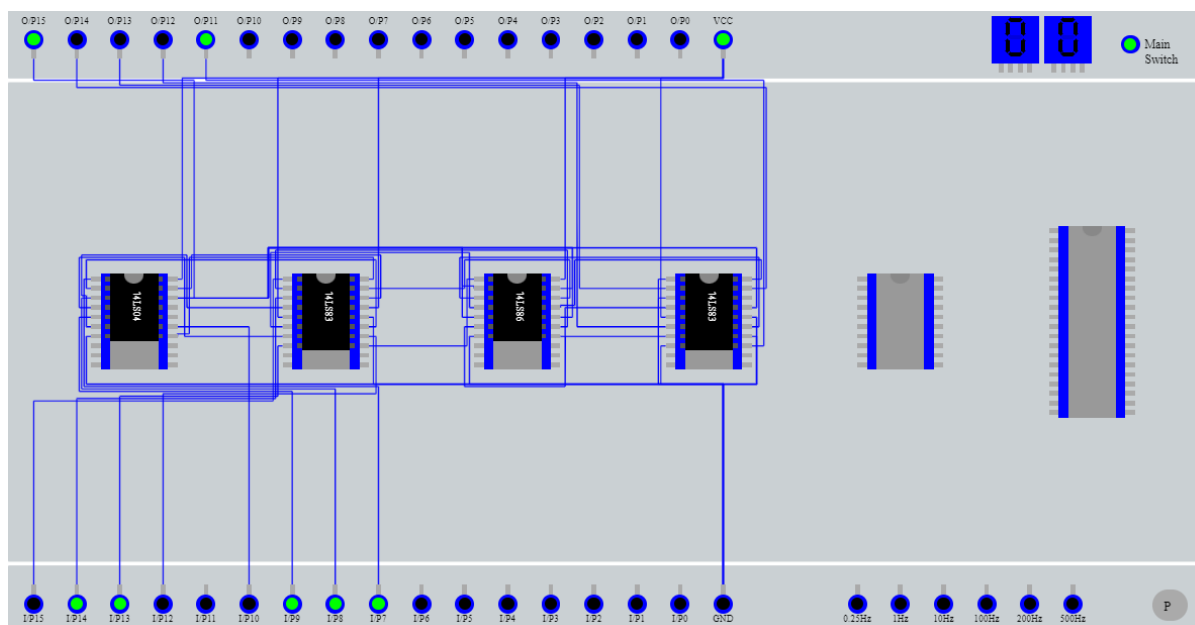Input: A3 A2 A1 A0 =1010; B3 B2 B1 B0=0101

Output:0101, Sign Bit=0

Fig.2.

Input: A3 A2 A1 A0 =0110; B3 B2 B1 B0=0111

Output:0001, Sign Bit=1

Fig.3.

Input: A3 A2 A1 A0 =1110; B3 B2 B1 B0=0111

Output:0111, Sign Bit=0

Conclusion:

Designed and implemented 4-bit Binary subtractor using IC-74LS83 and using 2's complement.

Photograph while doing the activity:

BVRIT HYDERABAD College of Engineering for Women
Department of Electronics and Communication Engineering

Name of the Activity: Case Study
Faculty Name: Ms. Rajidi Sahithi
Class / Semester: II EEE / II Sem
Academic Year: 2023-24
Subject Name: Digital Electronics
Topic: Unit II & III (Combinational Circuit Design)

Brief Write-up (Not exceeding 200 Words)

64 Students are divided into team and each team is assigned with a case study. They work in teams and present the case study in class. Students are given freedom choose their owm methodology for finding the solutions.

Objective:

Case Studies enable the students to think out of box and find solution to real time problems such as BCD to Braile Converter, Door Lock System etc. Students are able to recall the concepts and design the students.

Photographs:

For any queries, please contact to below mail: sahithi.r@bvrithyderabad.edu.in

Faculty Signature

BVRIT HYDERABAD College of Engineering for Women
Department of Electronics and Communication Engineering

Name of the Activity: Virtual Lab

Faculty Name: Dr M. Ranjeeth

Class: I – I / CSE –A & B

Academic Year: 2023-24

Subject Name: EDC

Topic: Transistor Configurations

Brief Write – Up

Transistor configuration refers to the various ways in which a transistor can be connected in a circuit to achieve different functionalities. The three primary transistor configurations are:

Common Emitter (CE) Configuration:

Description: In this configuration, the emitter terminal is common to both the input and output circuits.

Characteristics:

High Gain: Provides high current and voltage gain.

Phase Shift: There is a 180-degree phase shift between input and output signals.

Usage: Widely used for amplification purposes.

Common Base (CB) Configuration:

Description: Here, the base terminal is common to both the input and output circuits.

Characteristics:

Low Input Impedance: Typically, very low input impedance.

High Output Impedance: High output impedance.

No Phase Shift: No phase shift between input and output signals.

Usage: Used in high-frequency applications and for impedance matching.

Common Collector (CC) Configuration (also known as Emitter Follower):

Description: In this configuration, the collector terminal is common to both the input and output circuits.

Characteristics:

High Input Impedance: Very high input impedance.

Low Output Impedance: Low output impedance.

No Voltage Gain: Voltage gain is approximately 1 (unity).

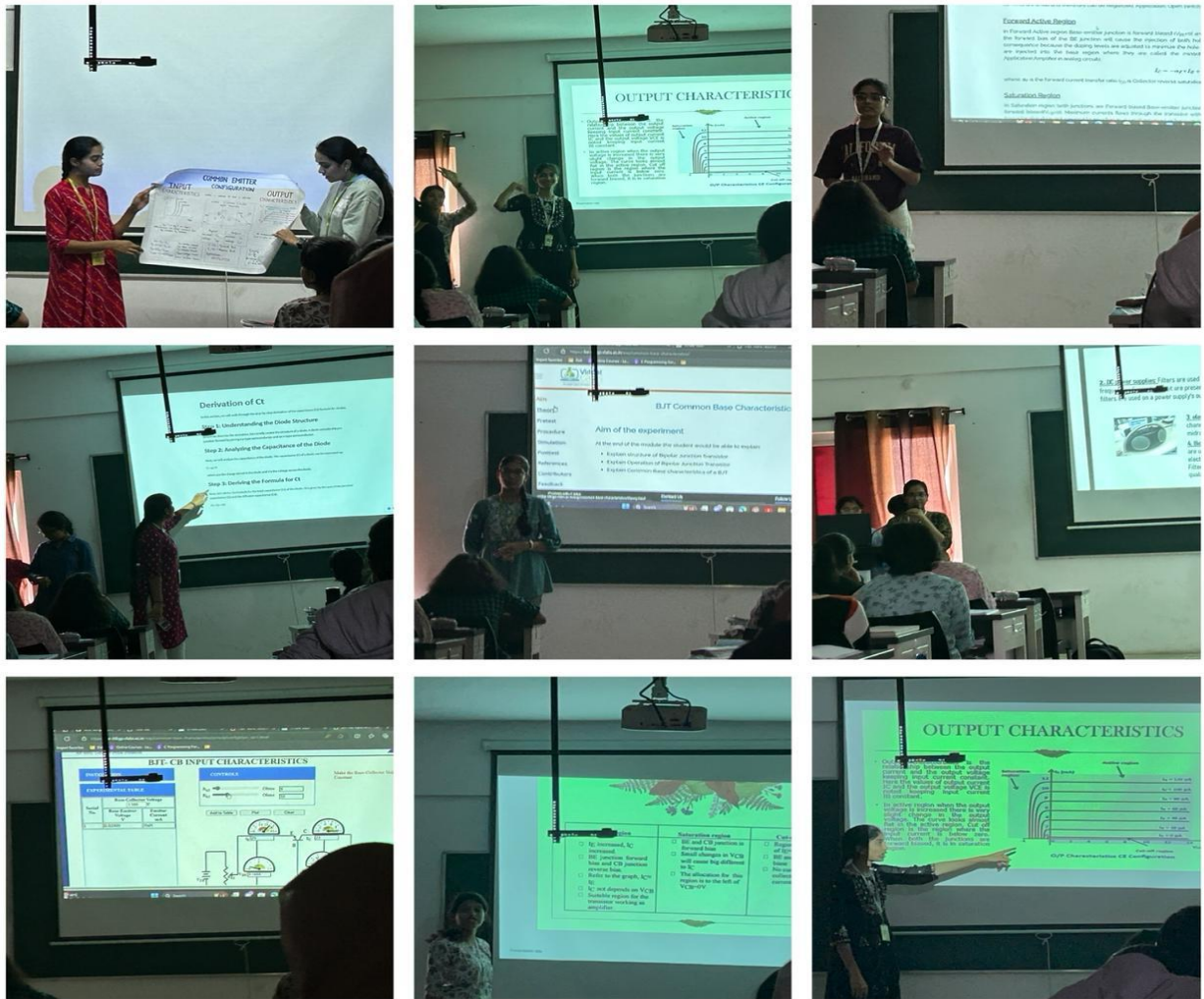No Phase Shift: No phase shift between input and output signals.

Usage: Used for impedance matching and as a buffer.

Date: 12-11-2023

No. of Students Participated: 140

Photos:

• Usage of ICT tools like Virtual Labs, PPT Presentations, Flipped Classroom, and Chart Preparation.

Faculty Sign