



EXCELSSIOR EDUCATION SOCIETY'S

K.C. College of Engineering and Management Studies & Research

(Affiliated to University of Mumbai)

MithBunder Road, Near Hume Pipe, Kopri, Thane (E)- 400603

Department of Computer Engineering							
Academic Year (2021-22)							
Innovative Teaching Learning Activity Details							
SR. No.	Name of Activity	Coordinator	Type Of Activity			Date	Duration
			Curricular	Co-Corricular	Extra Curricular		
1	Online wheeldecide.com Quiz	Nilima Patil	Curricular(DLC OA)			21-22 odd sem	1 hour
2	Think Pair Share	Keerti Kharatmol	Curricular(CSS)			21-22 odd sem	1 hour
3	Mind Mapping	Keerti Kharatmol	Curricular(ML)			21-22 odd sem	1 hour
4	Quiz Assignment from available SWAYAM course	Shraddha Shrivastava	Curricular(AOA)			21-22 even sem	2 weeks
5	VLabs available on IIITH Website	Shraddha Shrivastava	Curricular(AOA)			21-22 even sem	1 hour
6	Crossword puzzle	Suman Bhujbal	Curricular(Micro processor)			21-22 even sem	1 hour
7	CrossWord Puzzle	Dr. Ravi Prakash	Curricular(MIS)			21-22 odd sem	1 hour



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Department of Computer Engineering A.Y. 2021-22 (ODD SEM)

Name of Faculty: Mrs. Nilima Patil

Subject : DLCOA

Class: SE A and B SEM III

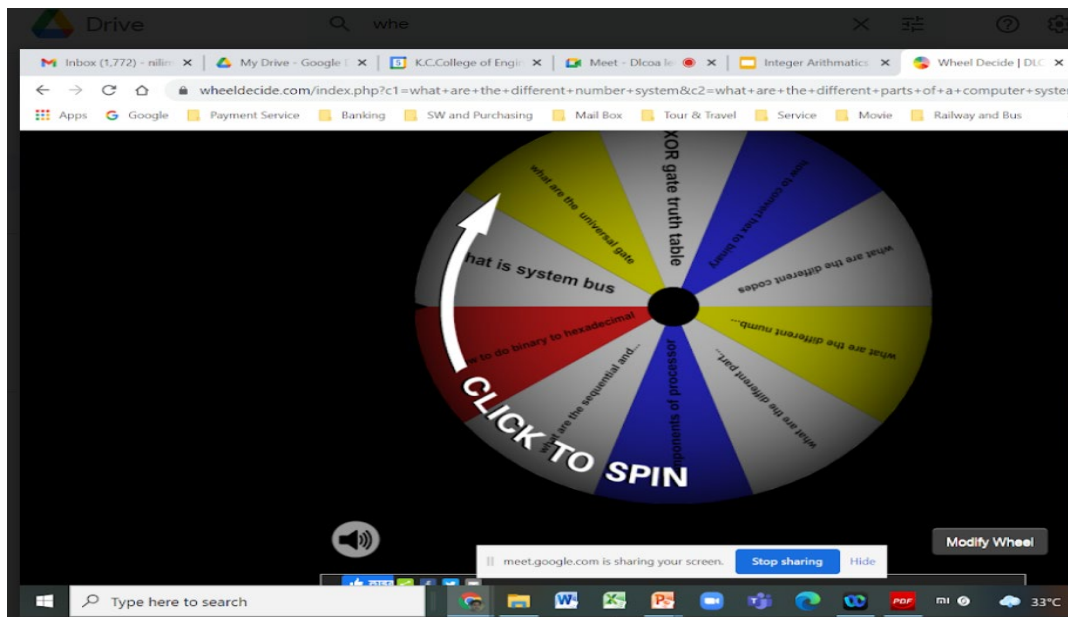
Methodology Followed: Google meet, Google classroom

Difficulty faced: Students do not get the exact understanding of the topic through regular online or offline classroom teaching and sometimes they get bored. So to make it interesting through some topic quiz

New Method Identified: Online wheeldecide.com Quiz

Activity Report:

Wheel decide is a free online spinner tool that allows you to create your own digital quiz. It is an amazing tool to make random choices. Use our Wheel Decide wheel and make random picks from your choices.



Outcome: This activity helped to understand the concept better through quiz activity



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Department of Computer Engineering A.Y. 2021-22 (EVEN SEM)

Name of Faculty: Keerti Kharatmol

Sub: Cryptography and System Security

Class: T.E.Computer Engineering SEM:VI

Methodology followed: Students formed groups and summarized topics related to Cryptographic Algorithms.

Difficulty faced: Students faced difficulty in understanding Algorithms which were solved through in the session. Guidance regarding this was then provided.

New method identified: Think Pair Share

Activity report: Think Pair Share (TPS) is a collaborative learning strategy in which students work together to solve a problem or answer a question about an assigned reading. This technique requires students to (1) think individually about a topic or answer to a question, and (2) share ideas with classmates.

Groups of students are given topics assigned by faculty. Students have to write and brainstorm about the given topic(Think Phase). This is shared with other students in the group(Pair Phase). The group concludes the problem statement and shares the answers with other groups(Share Phase)

Outcome: Students learned how to do collaborative study



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Group No - 06

Mayekar - 06
Nalawade - 09
Deepika Sahu - 24

Cryptography & System Security

Diffie Hellman

- It is a key exchange protocol.
- It doesn't follow any security Algorithm.
- When one user wants to send a data to another user & if during transmission of data if any intruder got to know about the encryption key then he/she might be able to decrypt the secret message of the user.
- In order to protect this attack we use diffie hellman key exchange algorithm.
- Also it follows Asymmetric Crypt key

Cryptography Algorithm

```
graph TD
    Alice[Alice] --> Ax[A = g^x mod n]
    Bob[Bob] --> Bx[B = g^y mod n]
    Ax --> A[A]
    Bx --> B[B]
    A --> K1[K1 = B^x mod n]
    B --> K2[K2 = A^y mod n]
    K1 --> K[K]
    K2 --> K
```

x = private key of A
 y = private key of B
A = Public key Alice
B = Public key Bob

$K_1 = K_2 = K$



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Example -

Given -

$$n = 11$$

$$g = 5$$

$$x = 2$$

$$y = 3$$

$$A = g^x \text{ mod } n$$

$$B = g^y \text{ mod } n$$

$$A = 5^2 \text{ mod } 11$$

$$B = 5^3 \text{ mod } 11$$

$$A = 3$$

$$B = 4$$

$$K_1 = B^A \text{ mod } n$$

$$K_2 = A^B \text{ mod } n$$

$$K_1 = 4^3 \text{ mod } 11$$

$$K_2 = 3^4 \text{ mod } 11$$

$$K_1 = 5$$

$$K_2 = 5$$



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Department of Computer Engineering A.Y. 2021-22 Odd Sem

Name of Faculty: Prof.Keerti Kharatmol

Sub: Machine Learning

Class: B.E. Computer Engineering SEM: VII

Methodology followed: Class Room Teaching, Written Assignments, Remedial lectures

Difficulty faced: Students do not get the exact understanding of the topic through regular classroom teachings and basic written subject assignments.

New method identified: Mind Mapping

Activity Report: A mind map is a diagram used to visually organize information. A mind map is hierarchical and shows relationships among pieces of the whole. It is often created around a single concept, drawn as an image in the center of a blank page, to which associated representations of ideas such as images, words and parts of words are added. Major ideas are connected directly to the central concept, and other ideas branch out from those major ideas. Mind mapping is an effective means to take notes and brainstorm essay topics. A mind map involves writing down a central theme and thinking of new and related ideas which radiate out from the center

Outcome: This activity helped to understand the concept better than regular assignments

Types of Machine Learning



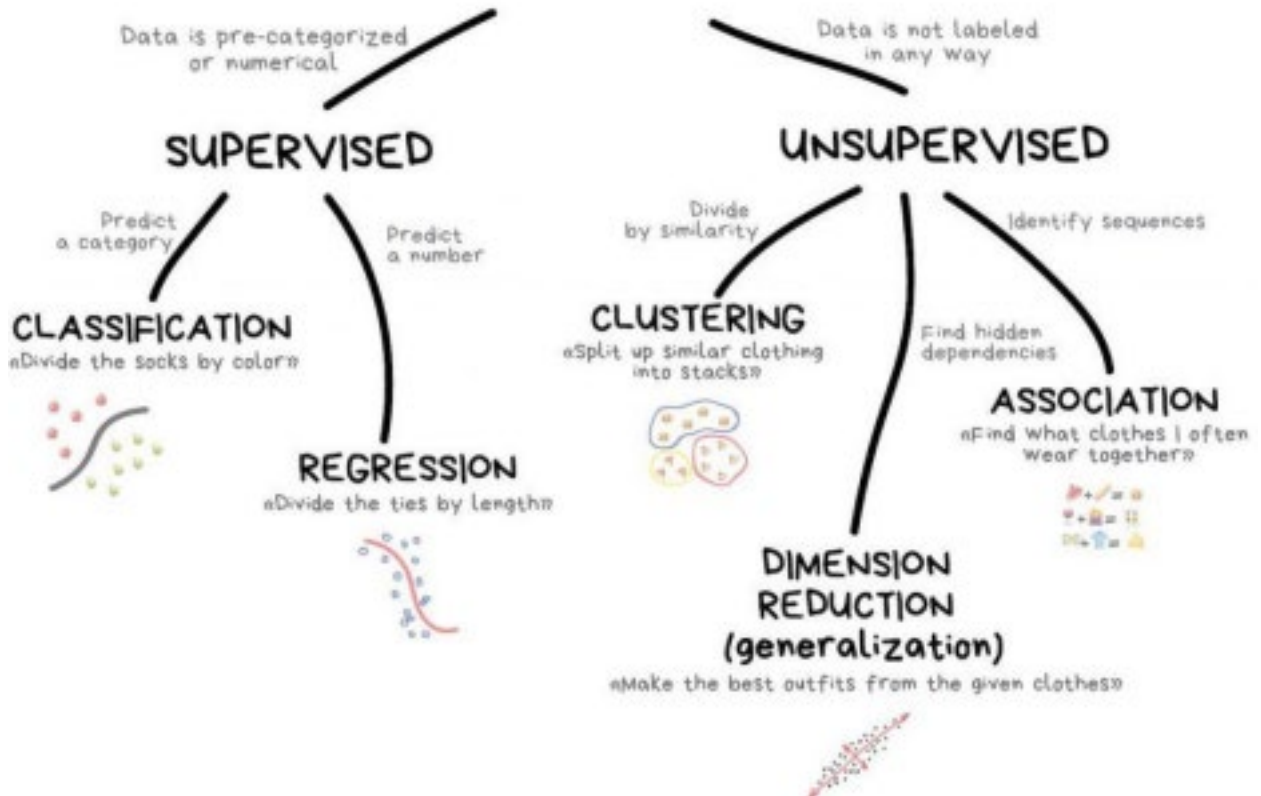
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CLASSICAL MACHINE LEARNING



Types of Machine Learning

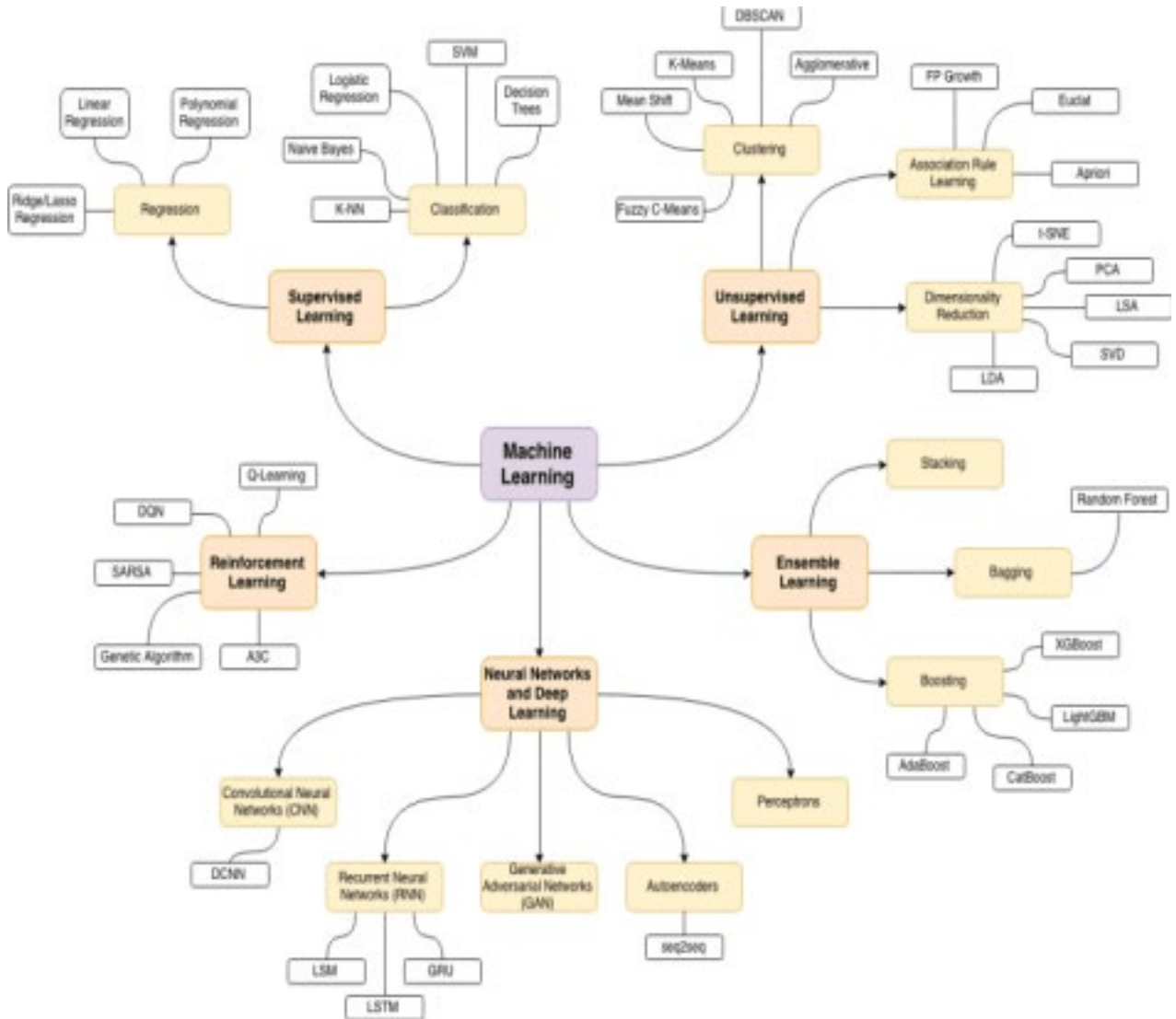


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Department of Computer Engineering A.Y. 2021-22 (EVEN SEM)

Name of Faculty: Mrs. Shraddha Shrivastava

Subject: AOA

Class: SE A and B SEM IV

Methodology Followed: NPTEL SWAYAM websites , Google classroom

Difficulty faced: Sometimes students face difficulty in understanding topics of tough subjects and it becomes a challenge for them to get exact understanding of the topic through regular online or blackboard & chalk method of teaching. So for better understanding and to make the topics more graspable Swayam lectures were used and assignment was taken from that course.

New Method Identified: Quiz Assignment from available SWAYAM course

Activity Report:

SWAYAM courses are available for almost all subjects and the quality of its content is non-questionable. The videos available are 90% matching to the Mumbai University Syllabus and use better learning and teaching method of applying , analyzing, examples from real world etc. The questionnaire formed after each module deeply assesses the knowledge gain of the student. Hence the assignment was the quiz assignments of each module matching with the academic syllabus.



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The screenshot shows a PDF viewer window with the following content:

SRUSHTI BHOSALE
SE DIV A ROLL NO: 8

Week 1:

Analysis of Algorithms
Latest Submission Grade: 100%

1. What is the order of growth of the solution to the Question like recurrence $T_1 = 8T_1 + 1 + \sum_{i=1}^{T_1} T_{i-1} + T_{i-2}$ with $T_0 = 0$?

2. Which of the following is a standard technique for analyzing algorithms by proving an upper bound on the worst case?

Week 2:

Recurrences
Latest Submission Grade: 95%

1. Which of the following is true of the number of comparisons used by MergeSort?

2. Suppose that $M_n = 10n^2 + 10n + 2$ with $n \geq 1$ and $M_0 = 0$. What is the value of M_2 ?

At the bottom right of the PDF, there is a watermark: "Activate Windows Go to Settings to activate Windows."



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The screenshot shows a PDF document titled 'A8_AOA Coursea quizzes.pdf' open in a browser. The document content is as follows:

SRUSHTI BHOSALE
SE DIV A ROLL NO: 8

Week 1:

Analysis of Algorithms
Latest Submission Grade 100%

1. What is the order of growth of the solution to the Diophantine equation $F_1 = F_2^2 + 1$ $\sum_{i=1}^n (F_i + F_{i+1})$ with $F_1 = 0$? 1/100%
2. Which of the following is a standard technique for analyzing algorithms by proving O- upper bounds on the worst case? 1/100%

Week 2:

Recurrences
Latest Submission Grade 50%

1. Which of the following is a true statement of the number of comparisons used by the program? 1/100%
2. Suppose that $a_n = (n - 2)a_{n-1} + n$ for $n > 2$ with $a_1 = a_2 = 0$. What is the value of a_4 ? 1/100%

Activate Windows
Go to Settings to activate Windows.

Students enrolled: 77

Outcome: This activity helped the students to gain better understanding of syllabus topics and also made them easier to retain.



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Department of Computer Engineering A.Y. 2021-22 (EVEN SEM)

Name of Faculty: Mrs. Shraddha Shrivastava

Subject: AOA

Class: SE A and B SEM IV

Methodology Followed: Virtual Labs by IITH

Difficulty faced: Sometimes students face difficulty in understanding the applicability of subject topics in the real world. So for better understanding Virtual Labs from IITH were used to explain Minimum spanning trees(Kruskal's and Prim's Algorithms) to the students.

New Method Identified: VLABs available on IITH Website

Activity Report:

Virtual Labs provide detailed explanation along with simulation, demo , practice and Analysis along with Quiz . The students get better understanding of concepts and applications in this method of teaching.

The screenshot shows a web browser window with multiple tabs. The active tab is titled "Virtual Labs" and the address bar shows the URL "ds2-iith.vlabs.ac.in/exp/min-spanning-trees/kruskals-algorithm/basic-concept.html". The page content includes a navigation menu on the left with options like Overview, Recap, Algorithm, and Quiz. The main content area is titled "Minimum Spanning Trees" and contains text explaining Kruskal's Algorithm. It states: "In Kruskal's Algorithm, we take the fastest possible approach to create MST. We first sort the edges of graph in increasing order. Check the edges in sorted order if they should be in MST or not. Whenever we see the newly taken edge making circle (checked by Union-find) (refer picture below), we do not keep it in MST or else we will proceed further. We keep performing the above steps over the array again and again till all the edges are checked." Below this text, there are three diagrams illustrating the process. The first diagram shows a graph with nodes A, B, C, D and edges with weights 1, 2, 3, 4, 5, 6, 7. Edges 1 and 2 are highlighted in green, with the text "Edges 1,2 are added to MST". The second diagram shows the same graph with edges 1, 2, and 3. Edge 3 is highlighted in red, with the text "Adding edge 3 to MST does not form any circle". The third diagram shows the graph with edges 1, 2, and 3 added, with the text "So, edge 3 is added to MST in this step". The bottom of the screenshot shows the Windows taskbar with the time 4:49 PM and date 5/11/2022.



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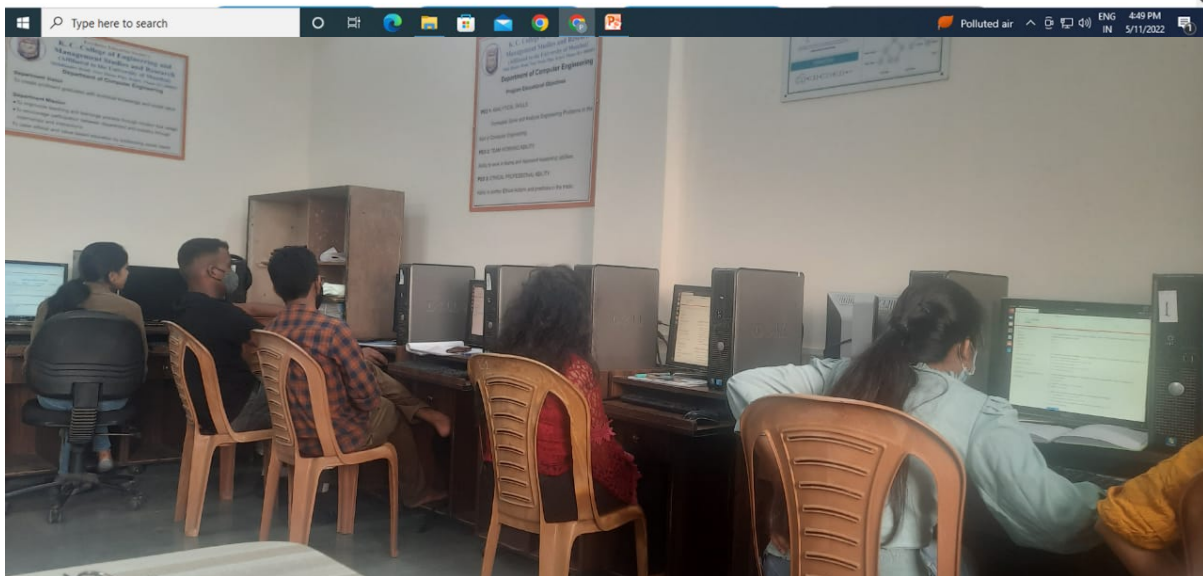
Minimum Spanning Trees

Instructions

Min. Speed Max. Speed

Observations

Activate Windows
Go to Settings to activate Windows.



Outcome: This activity helped the students to understand how actually these algorithms are implemented in the real world.



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Department of Computer Engineering 2021-2022 (Even Sem)

Name of Faculty: Suman Bhujbal

Sub: Microprocessor

Class: S.E.Computer Engineering SEM:IV

Methodology followed: Powerpoint Presentation, Google meet, Google classroom

Difficulty faced: Students find difficulty in skills like reasoning, problem-solving and developing solutions.

New method identified: Crossword puzzle

Activity report: Crossword puzzle is given to students based on Introduction to Microprocessor. Students had a Formed group of 3 to 4 students. submitted their answers in Google meet and Google Classroom.



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drive.google.com/drive/folders/1GNigEaBrwde12UvqM009LCQoLX1jA1GV

crossword- Question.png

Complete the crossword puzzle below

Name: _____

Created using the Crossword Maker on TheTeachersCorner.net

Across

- 2. Used for temporary Storage of data
- 4. second generation computers used this
- 5. Performs operations like +, -, /, *
- 6. To store data
- 8. To convert High level language to low level

Down

- 1. It is a brain of microcomputer
- 3. This unit gives input data to microprocessor.
- 7. Third generation computers used this

MP SEM IV lab manual

logo.jpg

Show all

4:34 PM 5/12/2022



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drive.google.com/drive/folders/1GNigEaBrwde12UvqM009LCQoLX1jA1GV

crossword- Answer.png

Complete the crossword puzzle below

Name: _____

Across

- Used for temporary Storage of data (**register**)
- second generation computers used this (**transistor**)
- Performs operations like +, -, /, * (**alu**)
- To store data (**memory**)
- To convert High level language to low level (**decode**)

Down

- It is a brain of microcomputer (**microprocessor**)
- This unit gives input data to microprocessor. (**input**)
- Third generation computers used this (**ic**)

Created using the Crossword Maker on TheTeachersCorner.net

logo.jpg

MP SEM IV lab manual

4:35 PM 5/12/2022

Outcome: Students learned how to do collaborative study and problem solving



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Department of Computer Engineering 2021-2022 (Odd Sem) INNOVATION IN TEACHING LEARNING

Class: BE SEM: VII

Subject: Management Information System (ILOC)

Faculty Name: Dr. Ravi Prakash

Academic Year: (2021-2022)

Activity: CrossWord Puzzle

Activity Report:

Students attempted a CrossWord Puzzle which was based on the technical aspects of the subject. After attempting students were also asked to share the feedback. The feedback depicts the impact analysis. The detailed report of Impact analysis is attached with the report.



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The screenshot shows a Google Drive interface with a folder named 'ILOC MIS Puzzle 10.08.2021'. Inside the folder, there are two files:

- CROSSWORD PUZZLE 10.08.2021**: A document containing a crossword puzzle grid and a list of clues. The clues are as follows:

Clue	Answer
Data processing (Top down)	Data base language (L to R)
Mathematical determinant	Cloud
Assistance	Data base language
Intelligence based action	Online data processing
Data base language	Procedure
Format of data	Curiosity
Role	Role
- ILOC MIS Puzzle 10.08.2021: Impact Analysis**: A document titled 'ILOC MIS Puzzle 10.08.2021: Impact Analysis'. It includes the following details:
 - Class: BE 4thSemester
 - Subject: Learning Technology Gate
 - Section: 4010
 - Chapter: Database
 - 1. Simple
 - 2. Intermediate
 - 3. Strongly Agree

Outcome: Students' learning was also mapped with program Outcome.

Prepared by ,

Dr Ravi Prakash