DAV INSTITUTE OF ENGG. & TECHNOLOGY
ACCREDITED BY NAAC WITH "A" GRADE

(Approved by AICTE; Affiliated to IKG-PTU,Jalandhar)

Mind Map Activity

Class: CSE 6th Semester

Course: Artificial Intelligence (BTCS 602-18)
Topic: *"Bayesian Networks- representation, construction and inference"*

Faculty Coordinator: Dr. Parveen Kakkar (Deptt. of CSE)

Academic Year: 2019-23

Date of Activity: May 13, 2022

Context:

Planned activity is the group activity. Basically, student involvement, thinking on problem statement, group discussion among the team and identification of solution is done.

Team formation is done as per the choice of students and comfort zone to get better outcome. Each group selected a topic to work. Students carried out the discussion among them and after a proper and satisfactory discussion the topic has finalized. Once the topic is finalized, students sit together and prepare a statement for the selected problem statement. Once solution is ready, students are used to draw the complete details on a chart paper and present in front of the complete class. Other students are expected to ask the cross questions and get involve in each other's work.

Activity Description

Step1 –Selection of team members as per your choice and comfort level

Step 2- Discussion on various topics related to course

Step 3- Finalization of topic in coordination of team members

Step 4- Discussion on solution finding and functioning of it.

Step 5- Finalization of most suitable solution

Step 6- Drawing the complete flow diagram, solution and advantages, disadvantages on chart

Step 7- Presentation of the topic and chart in front of the class

Step 8- Discussion and answering the questions by friends and teacher

Practice (Problem Statement)

1. This activity will be in class activity. This will be graded activity. Student's groups will be formed with.

2. Problem statement is given well in advance to students so that they can get prepared well and come with the required solution. 30 mins will be given for understanding and discussion among the members after coming to class before presentation.

3. After 30 mins instructor will take review on student's performance. Students will be instructed to present the work in front of complete class.

4. Faculty will coordinate and will help students in clarifying the understanding of the problem statement.

5. Faculty then will invite each group to present their work on board. Likewise, every group will be evaluated.

6. Faculty will give feedback (reflections on performances) on every group's performance.

All groups will be asked to submit a chart on the activity after the presentation of their groups.

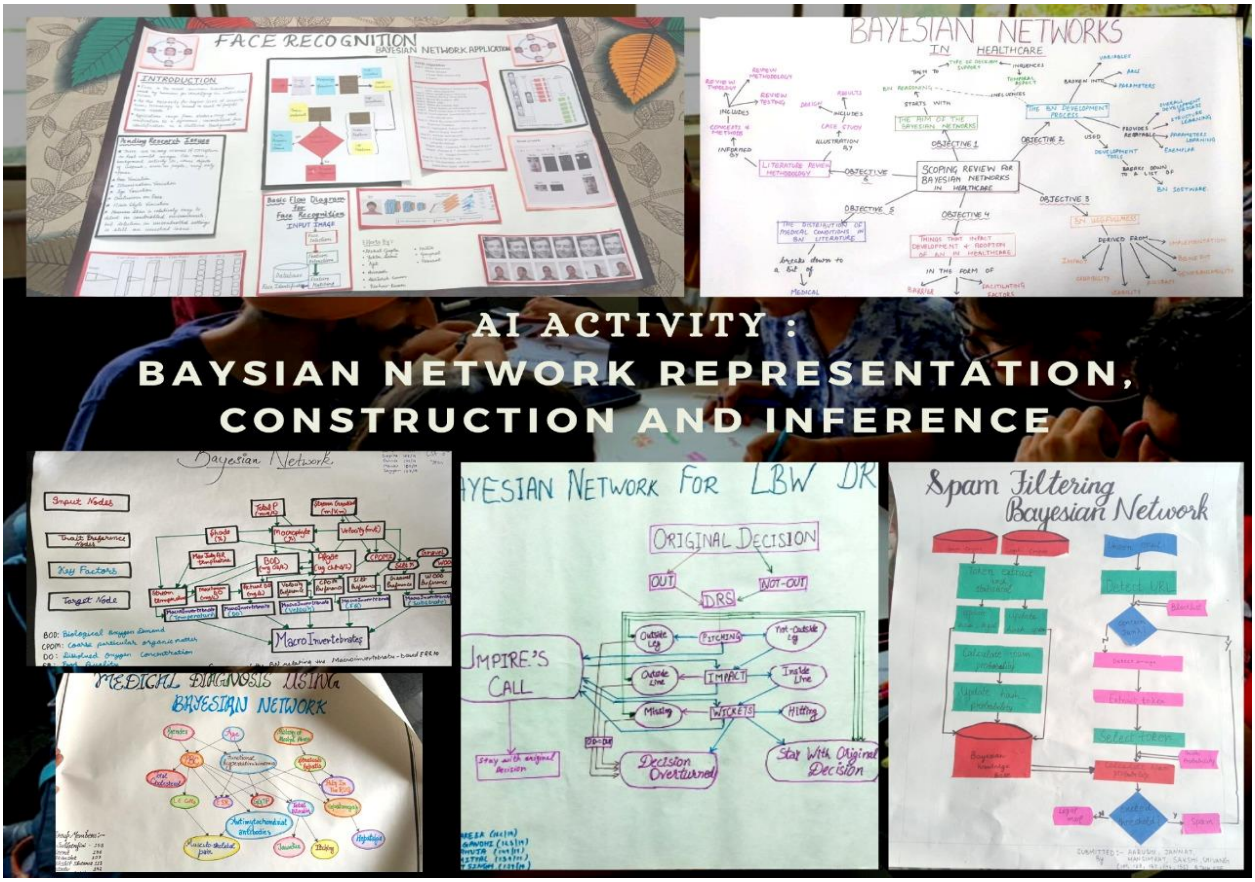
Evidence of Success / Outcome / Post reflection:

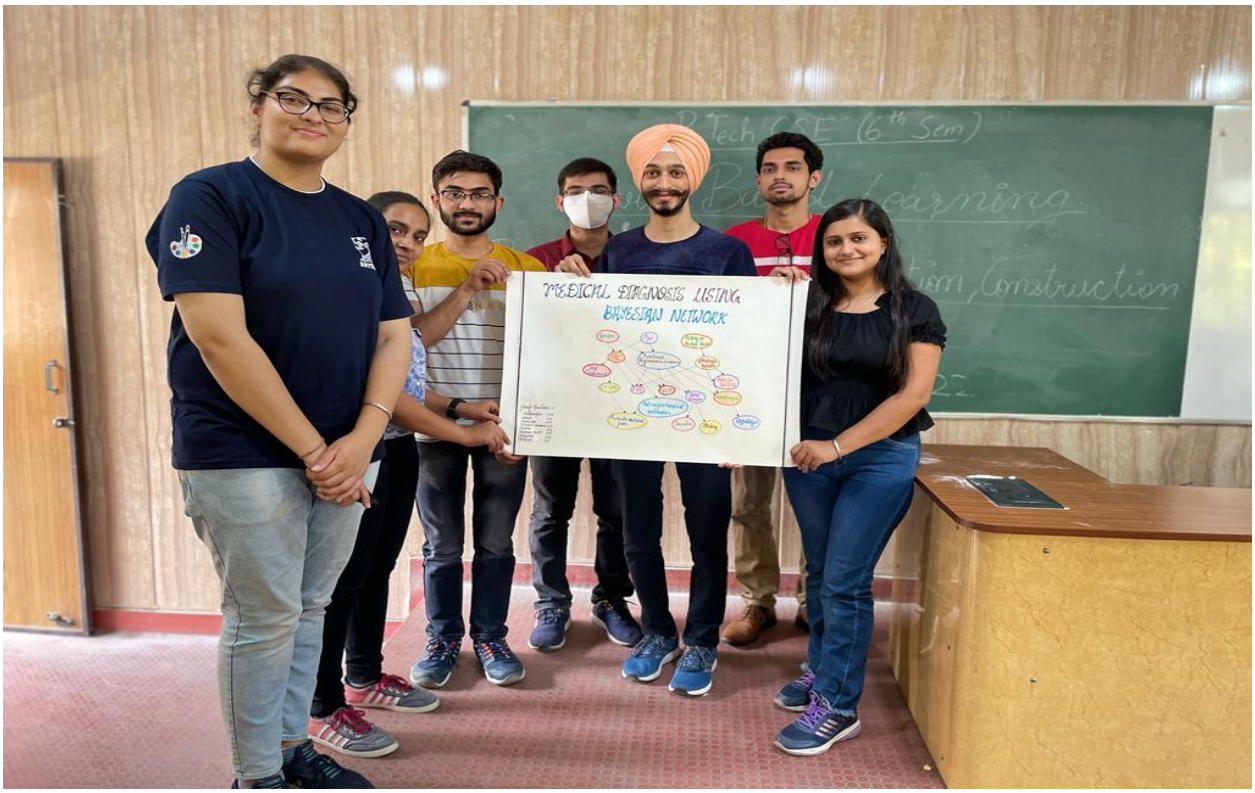
This activity basically helps the students in developing the various essential qualities among them like, team work, discussion involvement, thinking on critical topics and presentation skills. Students are motivated to work well and produce good results. Also, it is always desired that all the team members are involved and participated equally. Definitely student's involvement was always good and satisfactory performance is observed during the presentations.

Proofs Of The Activity

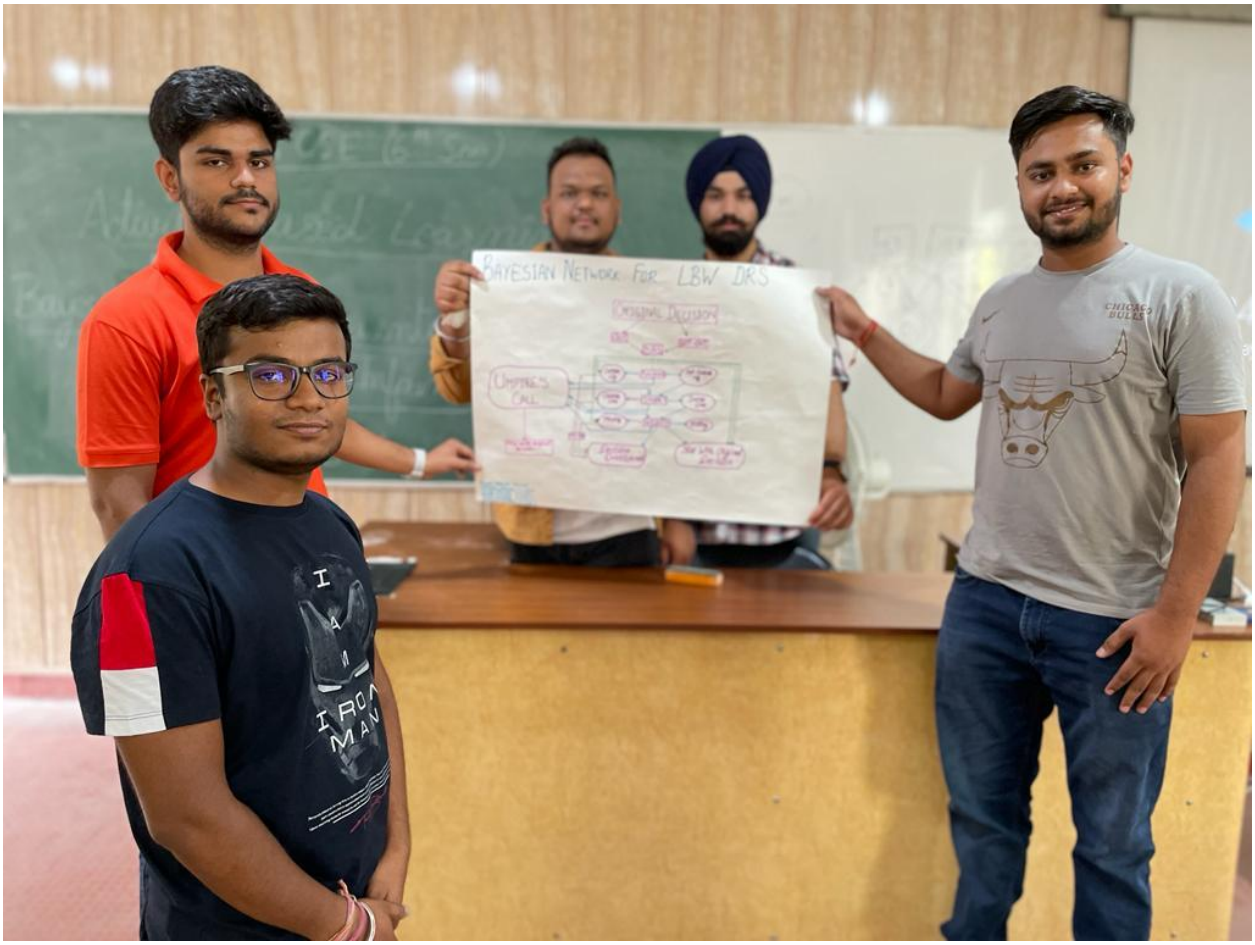

EENA


B.Tech CSE (6th Sem)


FACE RECOGNITION
BAYESIAN NETWORK APPLICATION
BAYESIAN NETWORKS
IN HEALTHCARE
AI ACTIVITY :
BAYSIAN NETWORK REPRESENTATION,
CONSTRUCTION AND INFERENCE
Bayesian Network
Input Nodes
Key Factors
Target Node
Macro Invertebrates
MEDICAL DIAGNOSIS USING
BAYESIAN NETWORK
ORIGINAL DECISION
OUT
NOT-OUT
DRS
UMPIRE'S CALL
Decision Overturned
Stay With Original Decision
Spam Filtering
Bayesian Network


MEDICAL DIAGNOSIS USING
BAYESIAN NETWORK


B.Tech CSE (6th Sem)
BAYESIAN NETWORKS
IN HEALTHCARE
SCOPING REVIEW FOR BAYESIAN NETWORKS IN HEALTHCARE
OBJECTIVE 1
OBJECTIVE 2
OBJECTIVE 3
OBJECTIVE 4
OBJECTIVE 5
LITERATURE REVIEW METHODOLOGY


BAYESIAN NETWORK FOR LBW DRS
MEDICAL DECISION
UMPIRE'S CALL

Student Reviews-

This activity push us to take an initiative about the topic we have already covered in the course & brainstorms various aspects among our peers. The presentation had an environment that will incubate many new ideas.

(Mr. Japesh Dixit)

It is a very interesting activity i enjoyed a lot, it helps to inculcate team spirit, creative thinking, and coordination...it's a fun. activity!

(Ms. Arushi Sharma)

It Improves Writing skills and thinking power

(Ms. Gopika)

It Helps with Memorization and Retention.

(Mr. Sehajdeep Singh)

It helps you learn new concepts. ...

It's a fun way of learning. ...

It makes complex ideas easier to understand. ...

It improves your presenting. ...

It boosts your creativity. ...

It improves productivity. ..

(Ms. Jannat Miglani)

Amazing "*Bayesian Networks- representation, construction and inference*" mind mapping activity, highly recommended for all

students, so they have the knowledge prior before getting to the stage where they actually need to execute these things and save

(Ms. Yukta)

It is a very interesting activity i enjoyed a lot, it helps to creative thinking, and coordination...it's a fun activity!

(Mr. Shivang Seth)

Critics: Following are the observation related to Mind map activity

Feedback has been taken from students:

Positive Observations:

- Students have enjoyed a lot during this activity. It was really learning with fun.
- They have discussed topic of Bayesian Network , have prepared mind map of the topic and have presented the topic in groups.
- According to them they have better understanding of the concept and problem statement
- It has been observed that students are able to understand complex topic in very simple way.
- Students find it very interesting & also they had fun while creating charts and discussions.
- Some of the students who are slow learners are able to understand and present the topic in very effective way.

Negative observations –

- Some of the students were absent in the class so were not able to participate in the activity
- In groups some students were very active during the activity while few students are less active.

DAV Institute of Engineering & Technology, Jalandhar

Name of Activity	**Mind Map: What's trending?**
Class/ Semester	**CSE 6th Sem**
Academic Year	**2021-2022**
Course name	**Cloud Computing (BTCS 612-18)**
Topic	**Recent Trends in Cloud Computing**
Faculty Coordinator	**Ms. Shaveta Kalsi**

The Mind Map activity on 'Recent Trends in Cloud Computing' was organized for the students of BTech CSE 6th Sem on 13th May 2022.

Activity Description:

This was a group activity and is graded one. The selection of team members was as per choice and comfort level of students. The topic was given well in advance to the students so that they could prepare properly and can come up with their ideas. Each group was allocated a topic. Students carried out the discussion amongst themselves in teams to prepare a solution for the given problem statement. Once ready with the solution, students were required to acquaint their ideas on charts and ppt's and then present in front of the class. Other students were encouraged to do cross-questioning and give an honest feedback.

The faculty coordinator evaluated and gave feedback on each group's performance. After all the group presentations, all the participants were asked to submit the charts to the faculty coordinator.

Assessment Rubrics:

Criteria	**Ratings**			**Pts.**
Poster preparation and presentation	**10**	**8**	6	**10**
	Excellent Poster preparation, PPT Preparation & presentation	Moderate Poster preparation, PPT Preparation & presentation	Any one from Poster preparation/ PPT Preparation and presentation	
Total				**10**

Evidence of Success / Outcome / Post Reflection

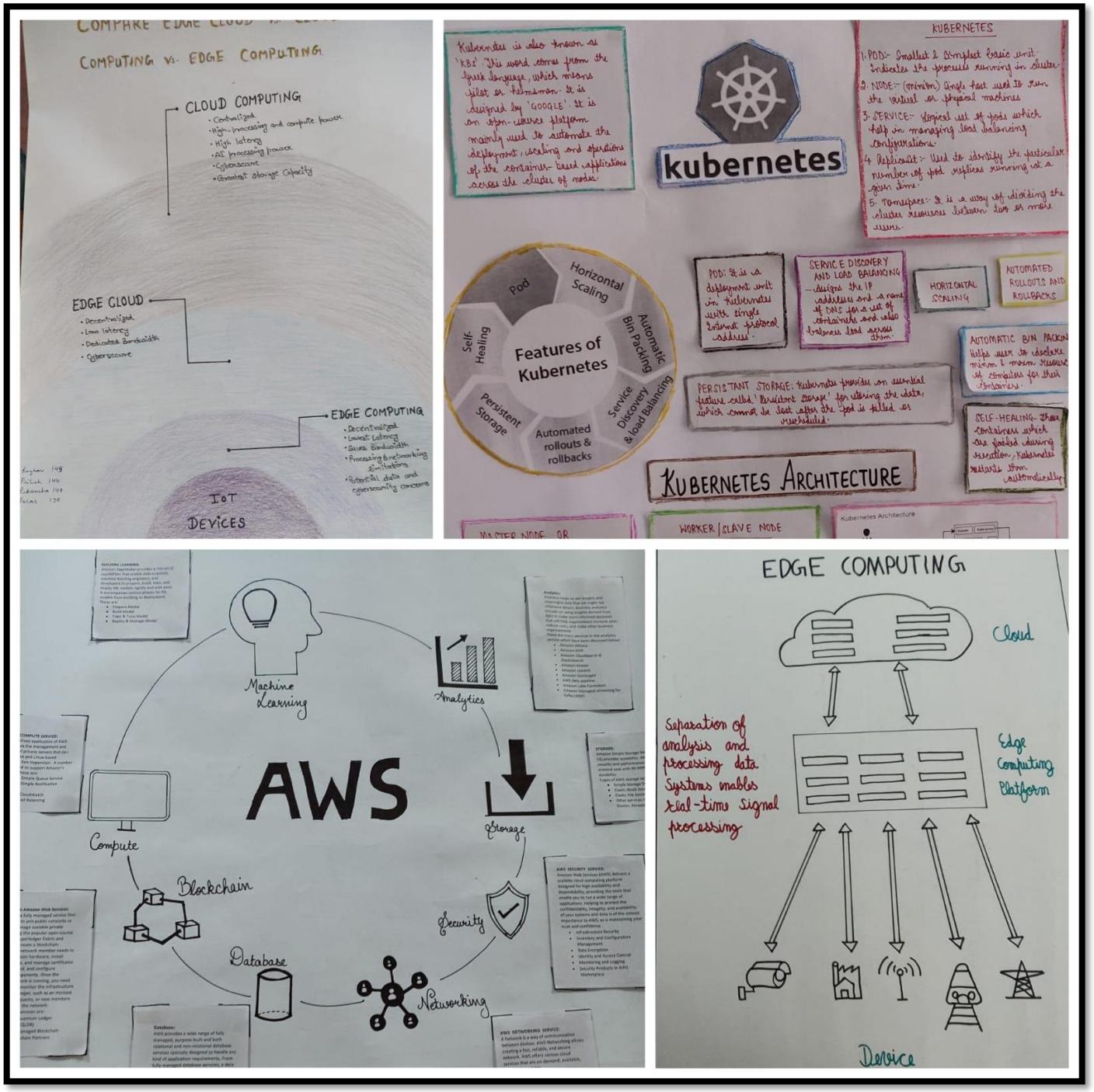
This activity basically helped the students in developing the various qualities like, teamwork, discussion involvement, thinking on critical topics, stage fear, furnishing communication skills and presentation skills.

Glimpses

Students presenting in front of Peer Groups

Team Presentations

Students discussion and preparation of charts



Mind Maps prepared by the students

Positive Observations

- Students enjoyed a lot during this activity. They enjoyed while learning.
- They are encouraged to enhance their soft skills.
- Students learn to work in teams.
- It helps to inculcate creative thinking and coordination.
- It helps in memorizing and learning concepts.

Negative Observations

- Since it was a group activity, the level of contribution of different students was observed to be different. Some students participated very actively while others did not show the required enthusiasm.

❖ The feedback of this activity has been taken through the following link - https://forms.gle/JxLibcoK5JwegHqh6

DAV INSTITUTE OF ENGG. & TECHNOLOGY ACCREDITED BY NAAC WITH "A" GRADE (Approved by AICTE; Affiliated to IKG-PTU, Jalandhar)	**Mind Map Activity For CSE 2nd Year :"Parallel Processing"**	
	ACADEMIC YEAR: 2021-22	**Moderator: Dr Parveen Kakkar**

Mind Map Activity

Class: CSE 4th Sem

Course: Computer Organization & Architecture (BTES 401-18)

Faculty Coordinator: Dr. Parveen Kakkar (Deptt. of CSE)

Academic Year: 2021-22

Date of Activity: May 19, 2022

Context:

Planned activity is the group activity. Basically, student involvement, thinking on problem statement, group discussion among the team and identification of solution is done.

Team formation is done as per the choice of students and comfort zone to get better outcome. Each group selected a topic to work. Students carried out the discussion among them and after a proper and satisfactory discussion the topic has finalized. Once the topic is finalized, students sit together and prepare a statement for the selected problem statement. Once solution is

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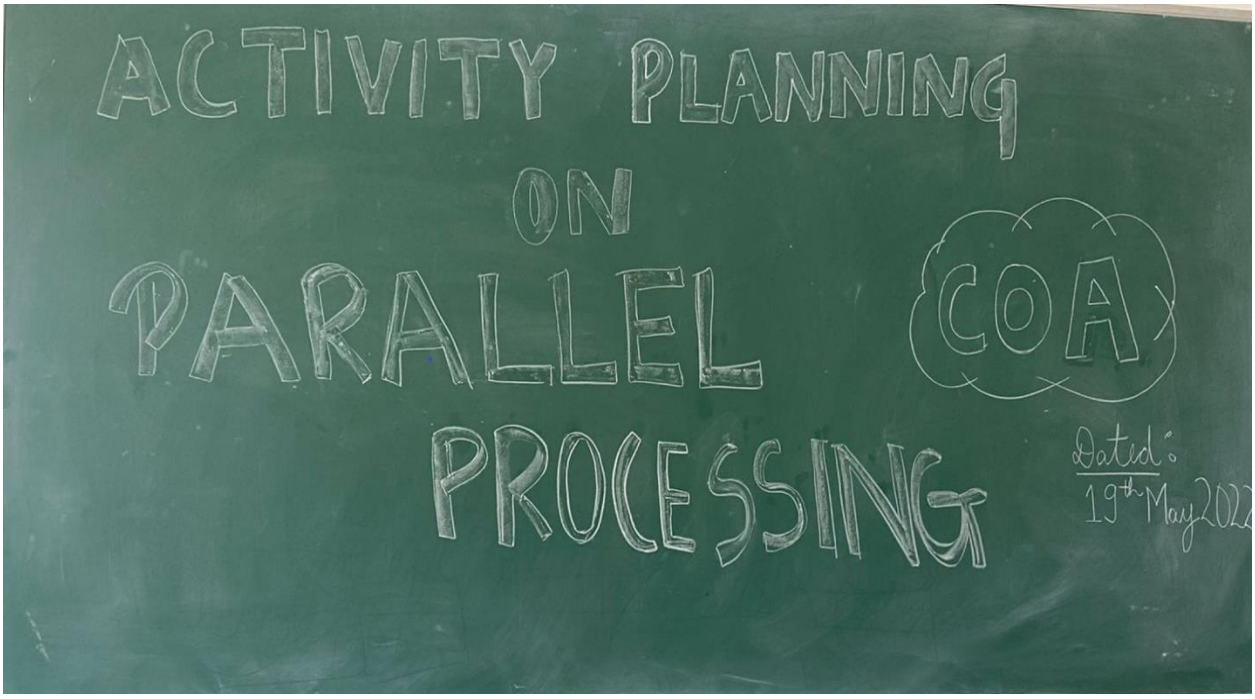
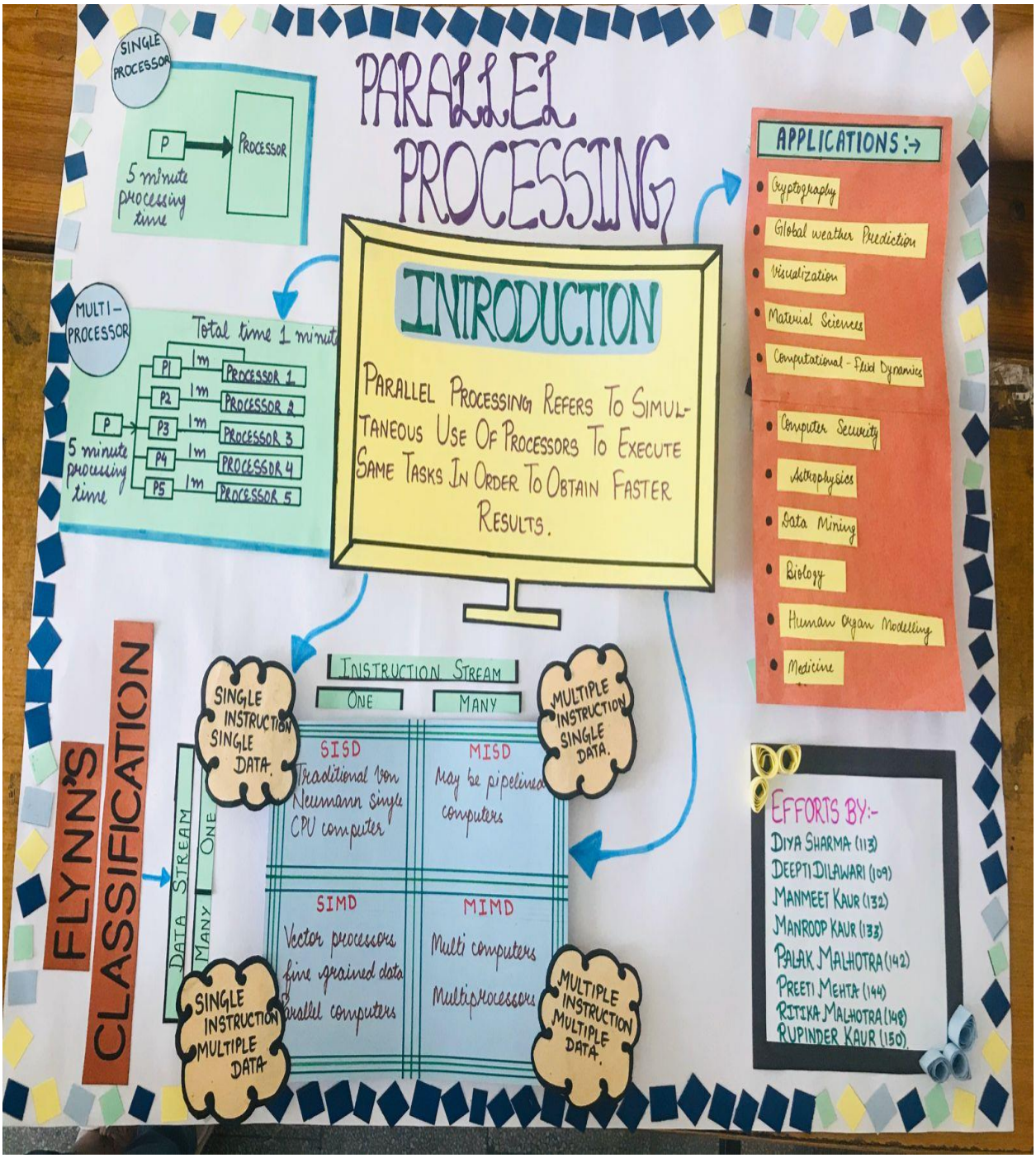
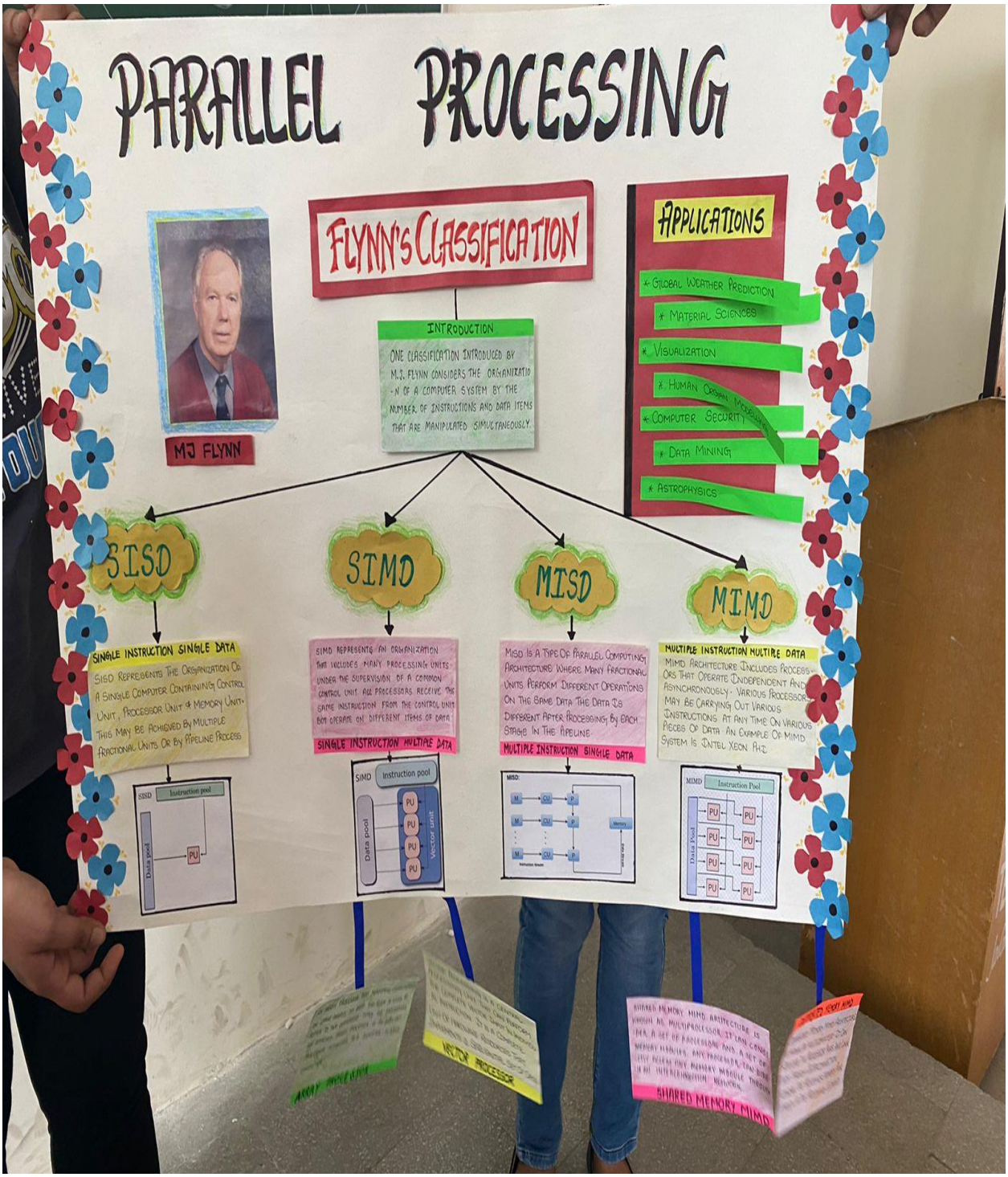
Proofs Of The Activity

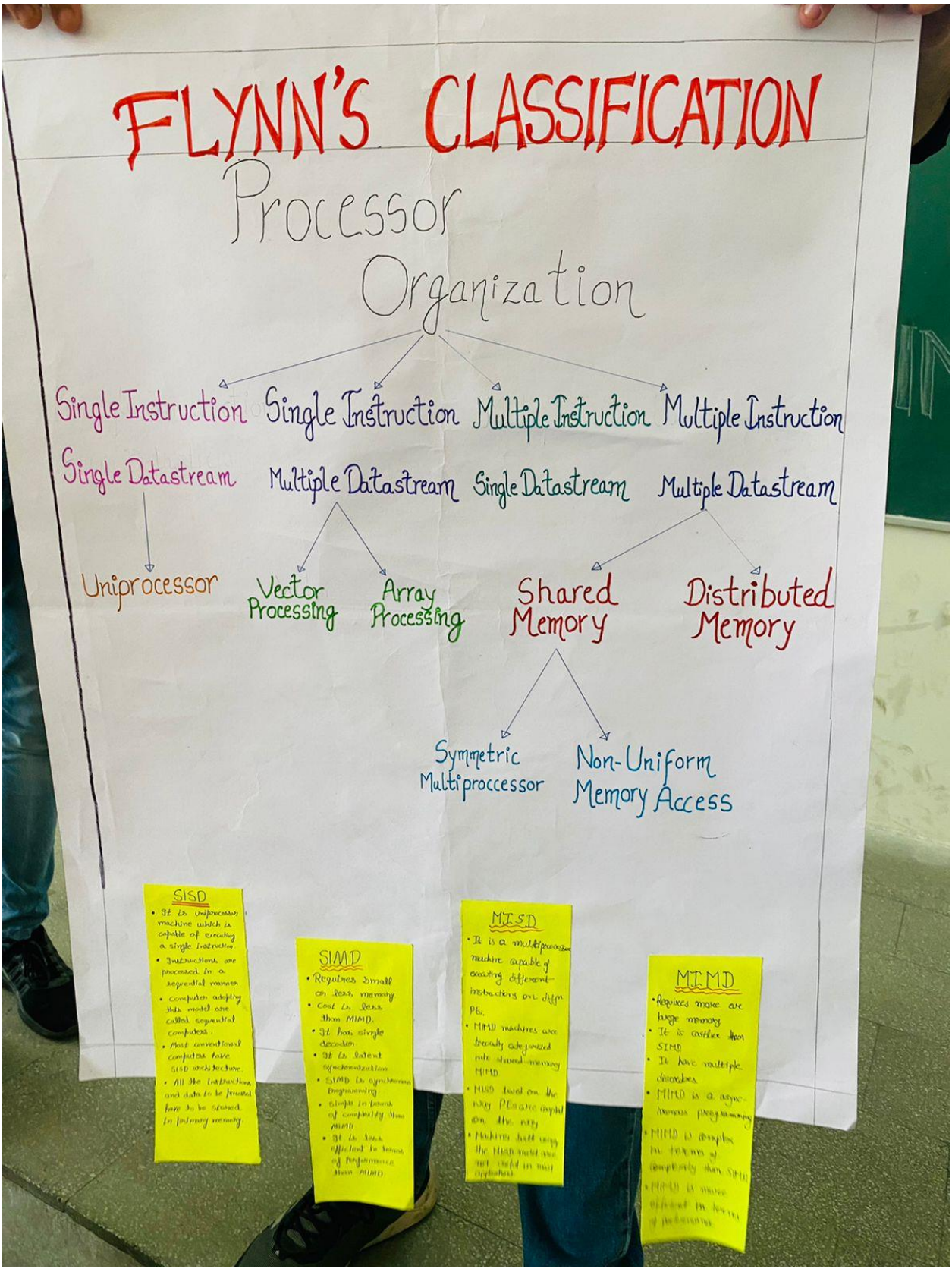



RODUCTION
Refers To Simul
Of Processors To Execute
In Order To Obtain Faster
Results.


FUTURE


PARALLEL PROCESSING
SINGLE PROCESSOR
P
PROCESSOR
5 minute processing time
MULTI-PROCESSOR
Total time 1 minute
P1
P2
P3
P4
P5
1m
PROCESSOR 1
PROCESSOR 2
PROCESSOR 3
PROCESSOR 4
PROCESSOR 5
INTRODUCTION
PARALLEL PROCESSING REFERS TO SIMULTANEOUS USE OF PROCESSORS TO EXECUTE SAME TASKS IN ORDER TO OBTAIN FASTER RESULTS.
APPLICATIONS :-
Cryptography
Global weather Prediction
Visualization
Material Sciences
Computational - Fluid Dynamics
Computer Security
Astrophysics
Data Mining
Biology
Human Organ Modelling
Medicine
FLYNN'S CLASSIFICATION
INSTRUCTION STREAM
ONE
MANY
DATA STREAM
ONE
MANY
SINGLE INSTRUCTION SINGLE DATA.
MULTIPLE INSTRUCTION SINGLE DATA.
SISD
Traditional von Neumann single CPU computer
MISD
May be pipelined computers
SIMD
Vector processors fine grained data parallel computers
MIMD
Multi computers
Multiprocessors
SINGLE INSTRUCTION MULTIPLE DATA
MULTIPLE INSTRUCTION MULTIPLE DATA.
EFFORTS BY:-
DIYA SHARMA (113)
DEEPTI DILAWARI (109)
MANMEET KAUR (132)
MANROOP KAUR (133)
PALAK MALHOTRA (142)
PREETI MEHTA (144)
RITIKA MALHOTRA (148)
RUPINDER KAUR (150)


PARALLEL PROCESSING
FLYNN'S CLASSIFICATION
MJ FLYNN
INTRODUCTION
ONE CLASSIFICATION INTRODUCED BY M.J. FLYNN CONSIDERS THE ORGANIZATIO -N OF A COMPUTER SYSTEM BY THE NUMBER OF INSTRUCTIONS AND DATA ITEMS THAT ARE MANIPULATED SIMULTANEOUSLY.
APPLICATIONS
* GLOBAL WEATHER PREDICTION
* MATERIAL SCIENCES
* VISUALIZATION
* HUMAN ORGAN MODELING
* COMPUTER SECURITY
* DATA MINING
* ASTROPHYSICS
SISD
SIMD
MISD
MIMD
SINGLE INSTRUCTION SINGLE DATA
SISD REPRESENTS THE ORGANIZATION OF A SINGLE COMPUTER CONTAINING CONTROL UNIT, PROCESSOR UNIT & MEMORY UNIT. THIS MAY BE ACHIEVED BY MULTIPLE FRACTIONAL UNITS OR BY PIPELINE PROCESS
SIMD REPRESENTS AN ORGANIZATION THAT INCLUDES MANY PROCESSING UNITS UNDER THE SUPERVISION OF A COMMON CONTROL UNIT. ALL PROCESSORS RECEIVE THE SAME INSTRUCTION FROM THE CONTROL UNIT BUT OPERATE ON DIFFERENT ITEMS OF DATA.
SINGLE INSTRUCTION MULTIPLE DATA
MISD IS A TYPE OF PARALLEL COMPUTING ARCHITECTURE WHERE MANY FRACTIONAL UNITS PERFORM DIFFERENT OPERATIONS ON THE SAME DATA THE DATA IS DIFFERENT AFTER PROCESSING BY EACH STAGE IN THE PIPELINE
MULTIPLE INSTRUCTION SINGLE DATA
MULTIPLE INSTRUCTION MULTIPLE DATA
MIMD ARCHITECTURE INCLUDES PROCESS-ORS THAT OPERATE INDEPENDENT AND ASYNCHRONOUSLY - VARIOUS PROCESSOR MAY BE CARRYING OUT VARIOUS INSTRUCTIONS AT ANY TIME ON VARIOUS PIECES OF DATA AN EXAMPLE OF MIMD SYSTEM IS INTEL XEON PHI
SISD
Instruction pool
Data pool
PU
SIMD
Instruction pool
Data pool
PU
VECTOR UNIT
MISD
MIMD
Instruction Pool
Data Pool
VECTOR PROCESSOR
SHARED MEMORY MIMD


FLYNN'S CLASSIFICATION
Processor Organization
Single Instruction Single Datastream
Single Instruction Multiple Datastream
Multiple Instruction Single Datastream
Multiple Instruction Multiple Datastream
Uniprocessor
Vector Processing
Array Processing
Shared Memory
Distributed Memory
Symmetric Multiproccessor
Non-Uniform Memory Access
SISD
• It is uniprocessor machine which is capable of executing a single instruction.
• Instructions are processed in a sequential manner
• computers adopting this model are called sequential computers.
• Most conventional computers have SISD architecture.
• All the instructions and data to be treated have to be stored in primary memory
SIMD
• Requires small or less memory
• Cost is less than MIMD.
• It has single decoder
• It is latent synchronization
• SIMD is synchronous programming
• Simple in terms of complexity than MIMD
• It is less efficient in terms of performance than MIMD
MISD
• It is a multiprocessor machine capable of executing different instructions on different PEs.
• MISD machines were basically categorized into shared-memory MIMD
• MISD based on the way PEs are coupled to the MSM
• Machines built using the MISD model are not useful in most applications
MIMD
• Requires more or large memory
• It is costlier than SIMD
• It have multiple processors
• MIMD is a asynchronous programming
• MIMD is complex in terms of complexity than SIMD
• MIMD is more efficient in terms of performance

PARALLEL PROCESSING

Definition

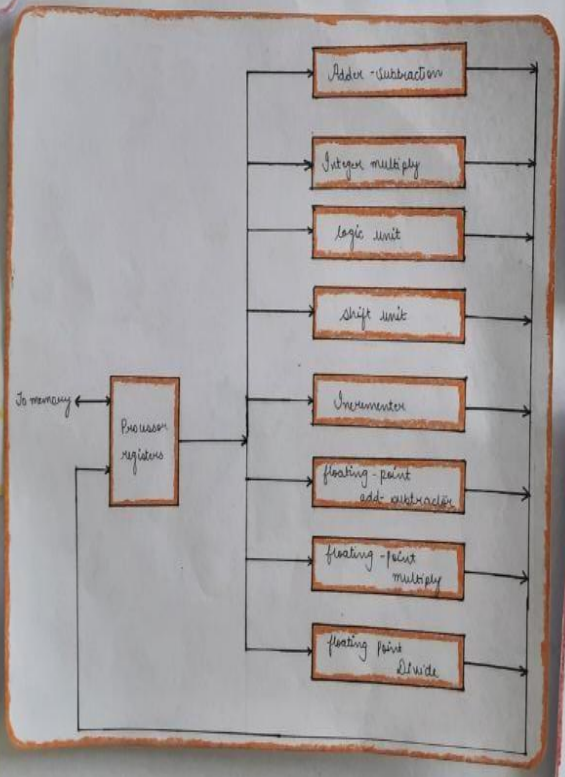
parallel processing can be described as a class of techniques which enables the system to achieve simultaneous data processing tasks to increase the computational speed of computer system

Advantages

1) solve larger problems in a short point of time
2) It has massive data storage and quick data computations
3) It can help keep you organized

Disadvantages

1) Power consumption is huge by multiple processors
2) parallel solutions are harder to implement
3) High cross cost due to parallelization



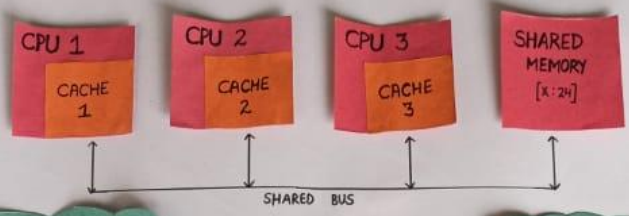
Flynn's Taxonomy

USES AND APPLICATION

1. predictive modelling and simulations
   a) Numerical weather prediction
   b) oceanography and astrophysics
   c) socioeconomics and government use
2. Engineering design and automation
   a) finite element analysis
   b) Artificial intelligence and automation
   c) Remote sensing applications
3. Medical Military and basic research

CACHE COHERENCE

BLOCK DIAGRAM



COHERENCE MECHANISMS

- DIRECTORY BASED
- SNOOPING
- SNARFING

WRITE THROUGH AND WRITE BACK IN CACHE

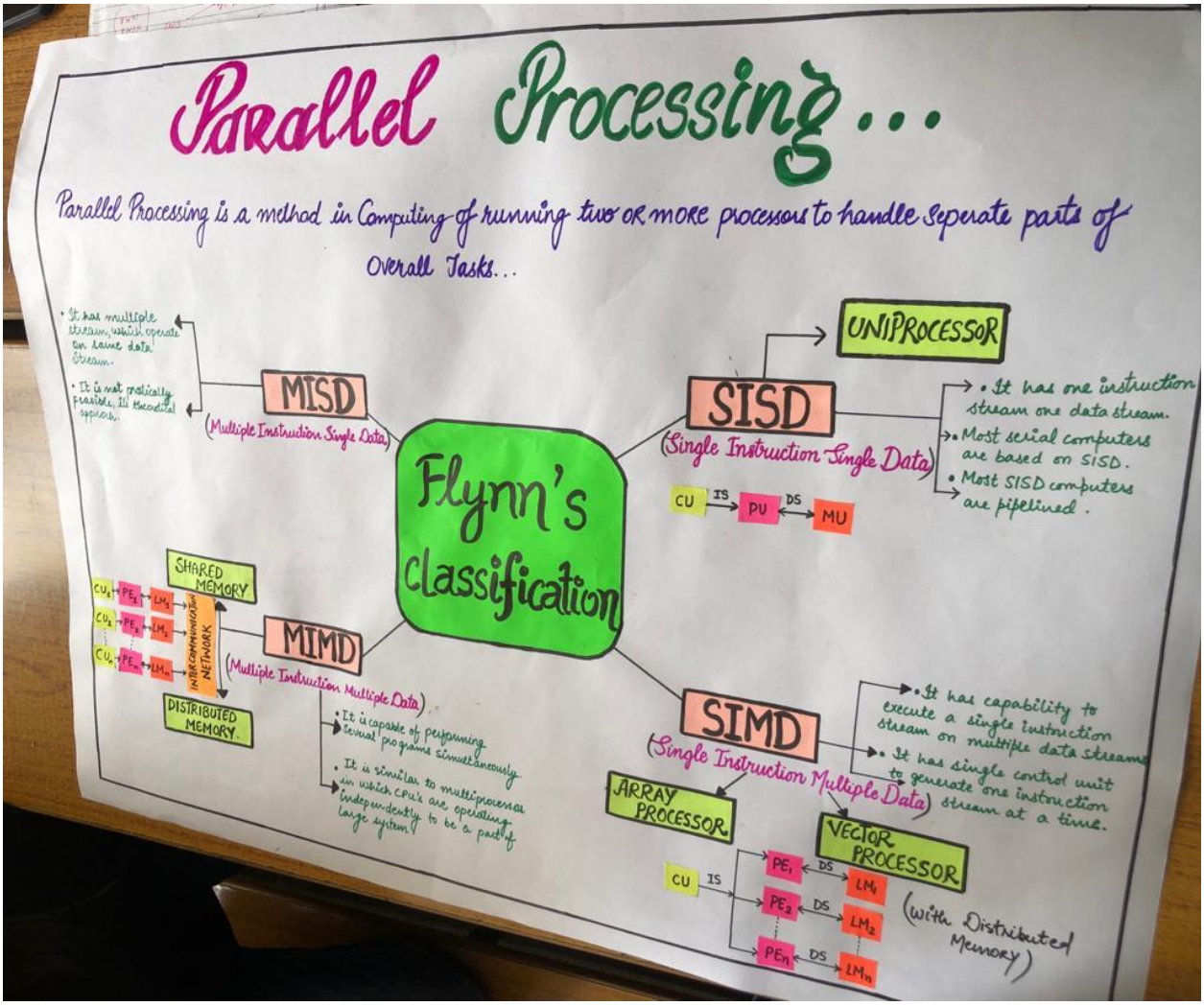
- WRITE THROUGH
  - → Simpler & more reliable.
  - → Helps in data recovery.
  - → Solves the inconsistency problem.
- WRITE BACK
  - → Also known as write deferred.
  - → Data is updated only in cache & updated into memory at later time.

LEVELS

- Every write operation to occur simultaneously.
- All processes see exactly the same sequence of changes of values for each operand.
- Different processors may see an operation & assume different sequences of values; this is known as non-coherent behavior.

PROTOCOL

- MSI protocol (Modified, Shared, Invalid)
- MOSI protocol (Modified, Owned, Shared, Invalid)
- MESI protocol (Modified, Exclusive, Shared, Invalid)
- MOESI protocol (Modified, Owned, Exclusive, Shared, Invalid)


Parallel Processing...
Parallel Processing is a method in Computing of running two or more processors to handle seperate parts of overall Tasks...
Flynn's classification
UNIPROCESSOR
SISD
(Single Instruction Single Data)
• It has one instruction stream one data stream.
• Most serial computers are based on SISD.
• Most SISD computers are pipelined.
CU
IS
PU
DS
MU
MISD
(Multiple Instruction Single Data)
• It has multiple stream, which operate on same data stream.
• It is not practically possible, Its theoretical approach.
MIMD
(Multiple Instruction Multiple Data)
SHARED MEMORY
INTERCONNECTION NETWORK
DISTRIBUTED MEMORY
• It is capable of performing several programs simultaneously.
• It is similar to multiprocessor in which CPU's are operating independently to be a part of large system.
SIMD
(Single Instruction Multiple Data)
• It has capability to execute a single instruction stream on multiple data streams.
• It has single control unit to generate one instruction stream at a time.
ARRAY PROCESSOR
VECTOR PROCESSOR
(with Distributed Memory)
PE1
PE2
PEn
LM1
LM2
LMn


POLO
DESEROY
EXCUSES


ACTIVITY PLANNING
Parallel Processing...
Flynn's classification
SISD
MISD
SIMD
MIMD
FUTURE
DAV
INSTITU
OF
ENGG. &
TECHNO


CACHE COHERENCE
BLOCK DIAGRAM


PARALLEL PROCESSING
FLYNN'S CLASSIFICATION
APPLICATIONS


ACTIVITY PLANNING
PARALLEL PROCESSING
INTRODUCTION
FLYNN'S CLASSIFICATION


FLYNN'S CLASSIFICATION

ACTIVITY ON PARALLEL PROCESSING

SUB:- COMPUTER ORGANISATION AND ARCHITECTURE

Student Reviews-

Amazing Mind Map activity on Parallel processing under Computer architecture, highly recommended for all students, so they have the knowledge prior before getting to the stage where they actually need to execute these things. (Palak Malhotra)

It is a very interesting activity i enjoyed a lot, it helps to creative thinking, and coordination...it's a fun activity!

(Ritika)

It is a very interesting activity i enjoyed a lot, it helps to inculcate team spirit, creative thinking, and coordination...it's a fun activity!

(Abhay Jassal)

It Improves Writing skills and thinking power.

(Shivam Gupta)

It Helps with Memorization and Retention.

(Preeti Kumari)

It helps you learn new concepts. ...

It's a fun way of learning. ...

It makes complex ideas easier to understand. ...

It improves your presenting. ...

It boosts your creativity. ...

It improves productivity. ..

(Diya Sharma)

Critics: Following are the observation related to Mind map activity

Feedback has been taken from students:

Positive Observations:

- Students have enjoyed a lot during this activity. It was really learning with fun.
- They have discussed topic of calculation of Income Under Head Salaries, have prepared mind map of the topic and have presented the topic in groups.
- According to them they have better understanding of the concept and problem statement
- It has been observed that students are able to understand complex topic in very simple way.
- Students find it very interesting & also they had fun while creating charts and discussions.
- Some of the students who are slow learners are able to understand and present the topic in very effective way.

Negative observations –

- Some of the students were absent in the class so were not able to participate in the activity
- In groups some students were very active during the activity while few students are less active.