Faculty Name: **Prof. Jignasha A. S.**

Class & Division: **SE A & B**

Subject: **Operating System**

Academic Year **2021-22 (FH-22)**

List of Innovative Teaching Methods

1. Group Discussion

2. Using Youtube Video

Objectives

Student will be able to

- To breed fresh ideas and take inputs from a particular group

- To perceive the common ideas of students on a particular topic

- To identify the solution of a specific problem or issue.

- To get familiar with the real time operating systems.

- To acquire knowledge and skills for understanding and implementing functions of different operating systems.

- Understand the topics discussed in youtube video

Outcomes

Student will be able to

- Think & discuss topics.

- Generates creative thinking in all participants, something beyond the obvious answers and solution to a specific problem.

- Enables profound and in-depth understanding of the subject.

- Enables profound and in-depth understanding of the subject.

- Understand technical differences in various operating systems.

- Apply advantageous methods for developing systems as an interest in this field.
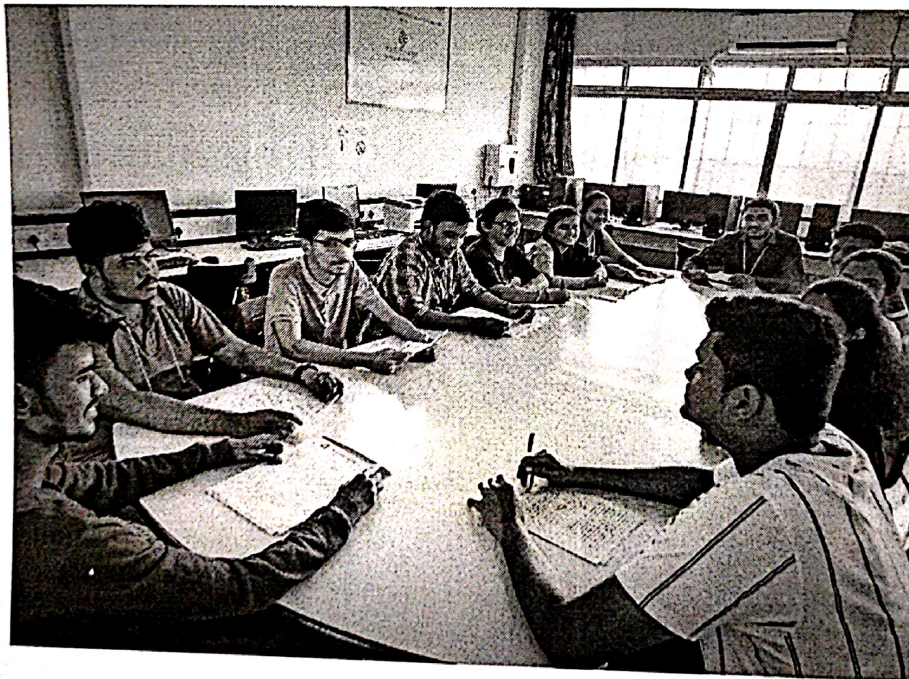
- Learn from the video later.

All the students of class SE-A&B participated in group discussion. The group discussion topics includes

1. Windows vs Ubuntu

2. Windows vs MacOS

3. Can a gaming system be used as a regular machine at home or college at low cost?

Rubrics, Marks out of 15

1. Preparation (03 Marks)

2. Listening (03 Marks)

3. Responsiveness to discussion (03 Marks)

4. Demonstration of knowledge (03 Marks)
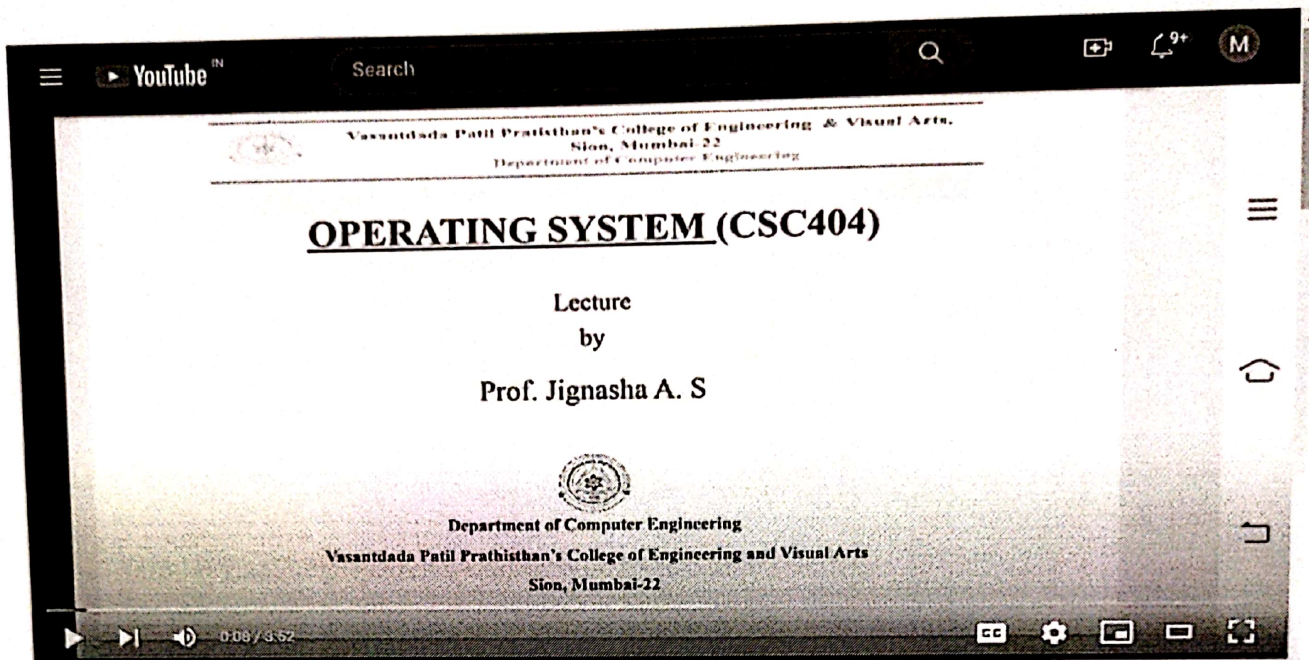
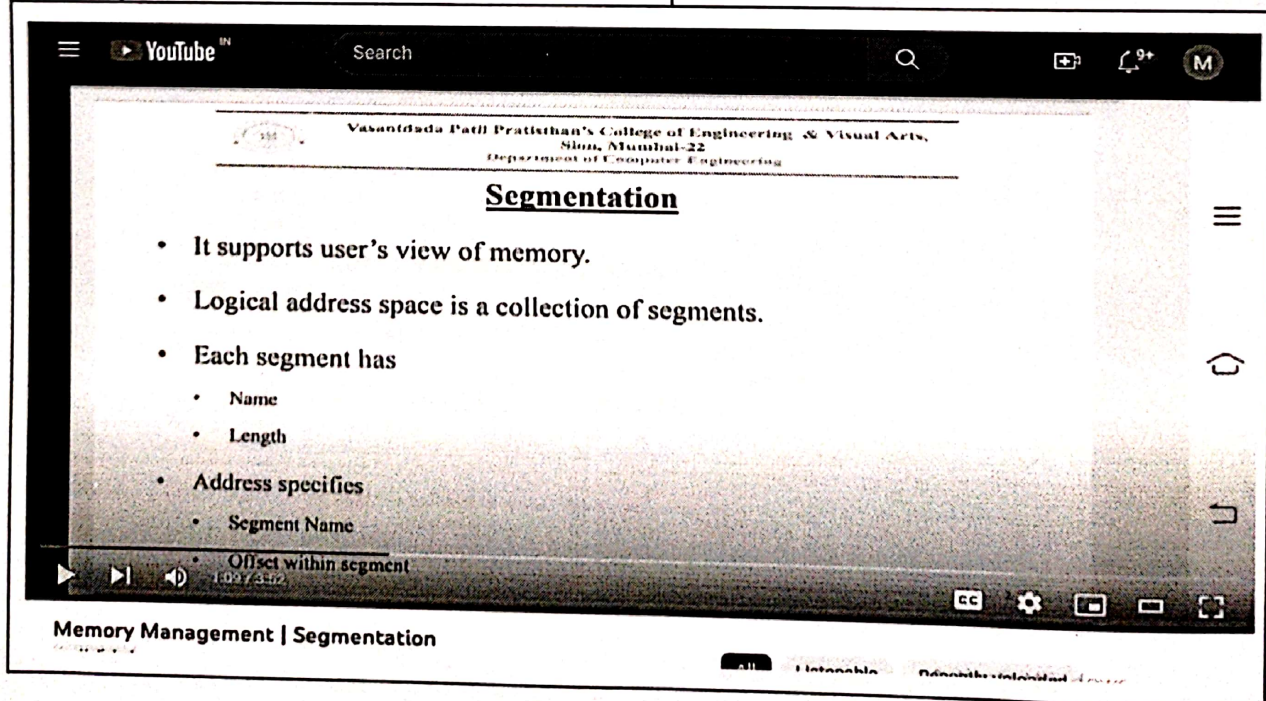5. Attitude (03 Marks)

Sample snapshot,

In the Youtube Channel Ms. J, several OS topics are discussed.

OPERATING SYSTEM (CSC404)

Lecture
by

Prof. Jignasha A. S

Department of Computer Engineering
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Sion, Mumbai-22

Memory Management | Segmentation

Below table specifies the topic name and its corresponding youtube video links,

Sr. No	Topic Name	Links
1.	Memory Management	Segmentation	https://youtu.be/4EcX-Ba94Lw

Segmentation

- It supports user's view of memory.
- Logical address space is a collection of segments.
- Each segment has
  - Name
  - Length
- Address specifies
  - Segment Name
  - Offset within segment

Memory Management | Segmentation

2.	Memory Management | Paging	https://youtu.be/Qxi_lmVZZLY

Memory Management | Paging

3.	Critical-Section Problem & Semaphore	https://youtu.be/4Cq_aNoa9Bc

Critical-Section Problem & Semaphore

4.	Banker's Algorithm | Solved Examples	https://youtu.be/2EiN9Pt5NlM

YouTube | Search | Q 🎤 | 🔔⁹⁺ (M)

Sion, Mumbai-22
Department of Computer Engineering

Banker's Algorithm (...continued)

Safe State?   Need <= Available Resource

P1 : 0,7,5,0 <= 2,14,12,12   ; The condition is True. Thus, P1 is executed.

New Availability = Availability + Allocation = 2,14,12,12 + 1,0,0,0 = 3,14,12,12

Process	Allocation				Maximum Requirement				Remaining Need				Available Resource			
	A	B	C	D	A	B	C	D	A	B	C	D	A	B	C	D
P0	0	0	1	2	0	0	1	2	0	0	0	0	~~1~~	~~5~~	~~2~~	~~0~~
P1	1	0	0	0	1	7	5	0	0	7	5	0	~~1~~	~~5~~	~~3~~	~~2~~
P2	1	3	5	4	2	3	5	6	1	0	0	2	~~2~~	8	8	6
P3	0	6	3	2	0	6	5	2	0	0	2	0	~~2~~	~~14~~	~~11~~	8
P4	0	0	1	4	0	6	5	6	0	6	4	2	~~2~~	~~14~~	~~12~~	~~13~~
													3	14	12	12

SAFE SEQUENCE: P0, P2, P3, P4, P1

8:35 / 19:39

Banker's Algorithm | Solved Examples

Mapping

Innovative Method	PO & PSO	Mapping Level
Group Discussion 1. Windows vs Ubuntu 2. Windows vs MacOS 3. Can a gaming system be used as a regular machine at home or college at low cost?	Students will be able to PO1: Apply the knowledge of various operating systems to discuss the solution of complex engineering problems.	PO1: Moderately mapped
	PO9: Involve together individually and teamwork to discuss various ideas on the given topics.	PO9: Moderately mapped
	PO10: Communicate effectively in the discussions	PO10: Moderately mapped
	PO12: Recognize the use and need discussed for the given topic	PO12: Moderately mapped

	PSO1: Discuss effective and efficient real time solutions using practical knowledge	PSO1: Moderately mapped
Youtube Videos Memory Management | Segmentation Memory Management | Paging Critical-Section Problem & Semaphore Banker's Algorithm | Solved Examples	Students are able to PO1: apply the knowledge of core concepts of operating system related to memory and deadlocks PO2: Identify and formulate the deadlock problem PO3: Design and develop the solutions using discussed concepts in video PO12: This concepts are used as lifelong learning PSO1: Use in real time solutions	PO1: Moderately mapped PO2: Moderately mapped PO3: Moderately mapped PO12: Moderately mapped PSO1: Moderately mapped