Department of Computer Science and Business Systems

Academic Year 2024– 2025 (Odd/ ~~Even~~ Semester)

Degree, Semester & Branch: B.Tech, V & CSBS

Course Code & Title: CCS335 & Cloud Computing

Name of the Faculty member(s): Dr.M.Gomathy Nayagam

Innovative Practice Description

- **Unit/Topic: Unit II / Virtualization Types.**
- **Course Outcome:** CO 2
- **Topic Learning Outcome:** 2a
- **Activity Chosen: Case Study**
- **Justification:**
  Using case study active learning for the topic "Virtualization Types" allows students to analyze real-world scenarios where different virtualization techniques (e.g., hardware, OS-level, and application virtualization) are applied. By exploring case studies, students can understand how these virtualization types are used in various industries, such as cloud computing, data centers, and IT management. This approach encourages critical thinking, as students evaluate the pros and cons of each type in practical situations. It also promotes problem-solving, as students recommend the best virtualization solutions for specific business needs, reinforcing their theoretical understanding with practical, real-world examples.
- **Time Allotted for the Activity:**20 Minutes
- **Details of the Implementation:**
  - Course instructor explained the various virtualization types within 25 minutes viz full, para and emulation virtualization with the real time use cases/ case studies.
  - Followed by the discussion, course instructor posted the following real time examples/ use cases/ case study to the students for identifying the virtualization types for the particular case study and asked the randomly chosen group of students to justify their answers for another 20 minutes
  - The case study questions are:
    1. Let's say that you are working in the IT department of a big company that sells clocks all over the world. The CEO wants to save money and asks for a way to spend less on IT equipment but still wants employees to be able to use a computer that can access the company's files wherever they are in the world. Doing more with less. This is what virtualization does best.Based on

your knowledge of virtualization as a technique to turn one piece of hardware into many usable virtual machines, you deduce that creating virtual machines for the employees is your best option, but which hypervisor meets your needs in this scenario?

2. At home, Tim owns a Windows laptop that he likes to use for listening to music and blogging. Sometimes he lets his kids use his laptop to play Minecraft™ after they finish their homework. Recently, Tim's eight-year-old son accidentally deleted some important documents on Tim's laptop. Instead of banning his kids from using his laptop to play their favorite game, Tim decided to create a virtual machine for the kids to use so that their actions don't affect the real machine. Unfortunately, Tim doesn't have servers at home like there are at the company he works for. The good thing is, he only needs to create one VM for each of his kids, which is way less VMs to manage than at the clock company

- Fig shows the sample case study discussion of the students Ms.Banu, and Ms.Sushma

- **CO–PO/ PSO mapping:**

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO 2	3	3	3	2	2	-	-	-	1	1	1	1	3	1	3

(1– Low 2–Moderate 3 – High)

- **PO/ PSO mapped:**

Innovative practice	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**
	3	3	3	2	2
Justification for correlation	The students could be able to apply the basic engineering knowledge know the virtualization types.	The students could be able formulate the solution for given problem using the different types of virtualization techniques	The students could able to provide the solution for identifying the relationship between the various virtualization types	The students could be able to apply virtualization techniques.	The students could be able to use the appropriate hypervisor software's to create different types of virutalizations

	PO9	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**

Innovative practice	1	1	1	1	3	1	
Justification for correlation	The students could able to know their responsibility to apply different virtualization techniques as an individual.	The students could be able to communicate their results of the problem and discuss with their peer team members	The students could able to apply the various configuration features of hypervisors when they do mini project in this course	The students could be able to learn the newer hypervisor	The students could be able to apply Virtualization technology	The students could able to apply Virtualization technique in their application	

Innovative practice	**PSO3**
	3
Justification for correlation	The student could able to apply the concept of virtualization types in real-time project

- **Images/Screen shot of the practice:**

Fig. Class Listen the Case study Question

Fig. MsSushma, and Ms. Banu discussed the Case Study Question Answer.

- **Reflective Critique:**
  - ***Feedback of practice from students and other stakeholders:***
    - The case study activity was incredibly insightful. It allowed the students to apply theoretical knowledge to real-world scenarios, making the concepts of virtualization types much clearer. Working in groups helped them to see different perspectives, and the discussions were engaging. Students particularly liked the opportunity to research and analyze real-world challenges, which deepened their understanding. However, some parts were challenging, and they had more time to explore each model in-depth. Overall, it was a valuable experience that improved the student's critical thinking and decision-making skills related to virtualization types.
  - ***Benefit of the Practice (E.g. Outcome Attainment would have increased due to innovative practice over conventional practice)***
    - It helps students to know, recap and apply all the virtualization types in real world scenario and they performed well about the concept during their internal assessment test.
  - ***Challenges faced in implementation:***
    - Make all students to participate in the discussion group.

Signature of Faculty Member **HOD**

(Dr.M.Gomathy Nayagam)