



Department of Computer Science and Engineering
Academic Year 2022 - 2023 (Even Semester)

Degree, Semester & Branch: IV Semester B.E. Computer Science and Engineering

Course Code & Title: CS3401 & Algorithms

Name of the Faculty member (s): Ms.P.Jothi Thilaga, AP(SG)/CSE

Innovative Practice Description

- **Unit / Topic:** Unit II / Graph Algorithms (BFS & DFS)
- **Course Outcome:** CO2
- **Topic Learning Outcome:** TLO5
- **Activity Chosen:** Think-Pair-Share
- **Justification:**

Graph Traversal algorithms are the important concepts used to search for a vertex in a graph. The traversal algorithms are used in various graph application. It helps the students to get a comprehensive knowledge on this topic. Students think individually about the different types of graph traversal algorithms and share their ideas with their classmates, which improves creative thinking and oral communication skills.

- **Time Allotted for the Activity:** 15 Minutes

- **Details of the Implementation:**

At the end of the class, the students were asked to think individually about the two types of graph traversal algorithms as discussed in the class, for 5 minutes. Then the students shared about the BFS and DFS algorithms and the content that was not clear in that particular topic to their pairs. Finally, specific pairs of students shared one graph traversal algorithm to the entire Class. The key points on traversal algorithms were shared by the students through this activity are depicted in the figure 1. This activity shows whether the students are able to understand the concept and their involvement in the particular class.

- **CO – PO / PSO mapping:**

CO	PO1	PO2	PO3	PO4	PO10	PSO1	PSO2	PSO3
CO1	3	2	1	1	2	2	1	1

(1 – Low 2 – Moderate 3 – High)

- **PO / PSO mapped:**

Innovative practice	PO1	PO2	PO3	PO4
	3	2	1	1
Justification for correlation	Graph Algorithms are the basic concept necessary to solve problem.	Traversal algorithms are used in analysis of engineering applications	To analysis complex problems and represent using these concepts	To provide the solution for complex problem using these graph algorithms.
	PO10	PSO1	PSO2	PSO3
	2	2	1	1
	Able to represent the solutions for the engineering problems	Able to use these concepts in the applications of Information Technology	Able to use the graph traversals for developing reliable IT applications	Graph traversals are helpful in solving real world problems in Research.

- **Images / Screenshot of the practice:**

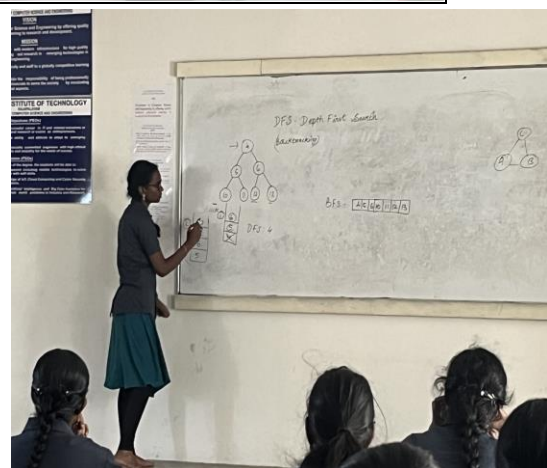
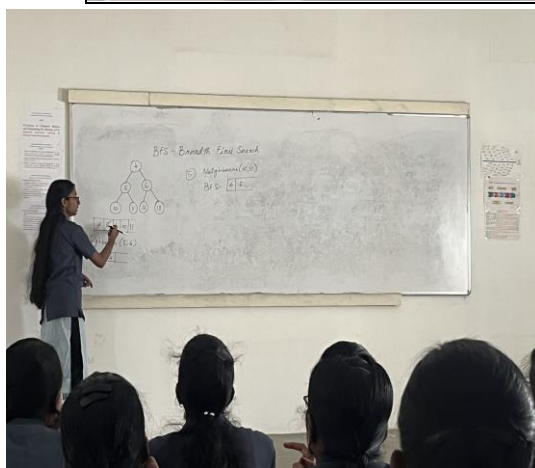


Figure 1: Think-Pair-Share Activity (Discussing with their pair students, share the concepts to entire class by Shamiksha & Gomathi Lakshmi)

- **Reflective Critique:**

- ❖ ***Feedback of practice from students and other stakeholders:***

- The students felt that they can able to understand the concept of graph traversal algorithms clearly after conducting this activity.
- They can also able to recall the important operations applied on various applications of these graph traversals.

- ❖ ***Benefit of the practice:***

- Students were actively participated in this activity.
- From this activity, the muddiest parts in the concept were identified and the key points of the BFS and DFS algorithms were discussed with the entire class for well understanding.
- Able to attend this topic in Internal Assessment Test.

- ❖ ***Challenges faced in implementation:***

- Some students are hesitated and lack to share the concepts that they learnt in the class.
- Make the students to know the impact and importance of sharing their views and understanding related to the topic and made them involve in the activity.

References:

- ❖ <https://www.readingrockets.org/strategies/think-pair-share>
- ❖ <https://www.readwritethink.org/professional-development/strategy-guides/usingthink-pair-share>
- ❖ https://www.ritrjpm.ac.in/images/computer-science/2021-2022/DAA_Unit1_Think-Pair-Share.pdf