School of Computer Engineering and Technology

T. Y. B. Tech. CSF (Artificial Intelligence and ML Techniques)

Academic Year: 2023-2024 Sem V

Artificial Intelligence and ML Techniques

Assignment 1 BFS and DFS

Title: Write a program to implement Breadth First Search / Depth First Search

Aim: Write a program to implement Breadth First Search / Depth First Search

Objective: To study Breadth first search and Depth first search

Theory: Write in brief

1. **Breadth First Search (BFS)**

BFS Example

BFS Algorithm

BFS Time and Space complexity

BFS Applications

2. **Depth First Search (DFS)**

DFS Example

DFS Algorithm

DFS Time and Space complexity

DFS Applications

Conclusion

FAQs

1. What is the difference between DFS and BFS?
2. Is BFS & DFS a complete algorithm? Is BFS & DFS optimal algorithm?
3. Why do we prefer queues instead of other data structures while implementing BFS?
4. Why can we not implement DFS using Queues? Why do we prefer stacks instead of other data structures?
5. Why can we not use DFS for finding the shortest possible path?