KJSCE/IT/SY/SEM IV/HO-IAI/2022-23

**Batch:B4 Experiment Number:02**

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**Aim of the Experiment:** To implement DFS - Uninformed search algorithm in state space

**Program/ Steps:**

def DFS(graph, start, end, visited=None, path=None):

if visited is None:

visited = set()

if path is None:

path = []

visited.add(start)

path = path + [start]

print("Fringe:", start)

print("Visited:", visited)

if start == end:

return path

for node in graph[start]:

if node not in visited:

new\_path = DFS(graph, node, end, visited, path)

if new\_path:

return new\_path

return None

graph = {'A': ['B', 'C'],

'B': ['D', 'E'],

'C': ['F'],

'D': [],

'E': ['F'],

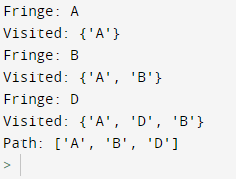
'F': []}

start = 'A'

goal = 'D'

print("Path:", DFS(graph, start, goal))

**Output/Result:**

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# Outcomes:

**CO2:Analyze and formalize the problem (as a state space, graph, etc.) and select**

**the appropriatesearch method and write the algorithm**

**Conclusion (based on the Results and outcomes achieved):**

By conducting this experiment we learned and implemented the concepts of DFS - Uninformed search algorithm in state space.

# References:

1. Stuart Russell and Peter Norvig, Artificial Intelligence: A Modern

Approach, Second Edition, Pearson Publication

2. Luger, George F. Artificial Intelligence : Structures and strategies for complex problem

solving , 2009 ,6th Edition, Pearson Education

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