

# AI23231-PRINCIPLES OF ARTIFICIAL INTELLIGENCE LAB

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**Ex name** : IMPLEMENTATION OF DEPTH FIRST SEARCH

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## **Problem:**

```
def __init__(self, graph):

    self.graph = graph
    self.visited = set()

    def dfs(self, current, goal, path=None):
        if path is None:
            path = []

        self.visited.add(current)
        path.append(current)

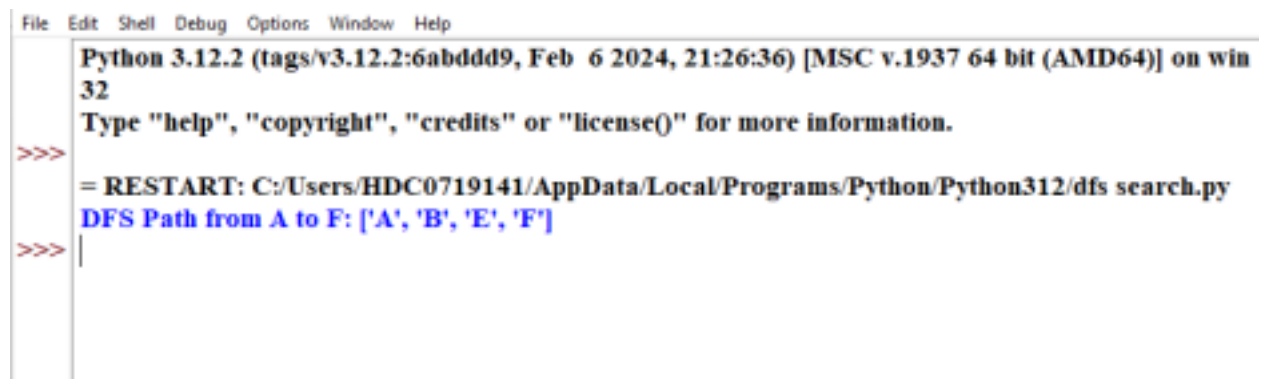
        if current == goal:
            return path

        for neighbor in self.graph.get(current, []):
            if neighbor not in self.visited:
                result = self.dfs(neighbor, goal, path.copy())
                if result:
                    return result
        return None

warehouse_graph_data = {
    'A': ['B', 'C'],
    'B': ['D', 'E'],
    'C': ['F'],
    'D': [],
    'E': ['F'],
    'F': []
```

```
}  
wg = WarehouseGraph(warehouse_graph_data)  
start = 'A'  
goal = 'F'  
found_path = wg.dfs(start, goal)  
print(f"DFS Path from {start} to {goal}: {found_path}")
```

## OUTPUT:



```
File Edit Shell Debug Options Window Help  
Python 3.12.2 (tags/v3.12.2:6abddd9, Feb 6 2024, 21:26:36) [MSC v.1937 64 bit (AMD64)] on win  
32  
Type "help", "copyright", "credits" or "license()" for more information.  
>>>  
= RESTART: C:/Users/HDC0719141/AppData/Local/Programs/Python/Python312/dfs search.py  
DFS Path from A to F: ['A', 'B', 'E', 'F']  
>>> |
```