

Practical 1: DFS

Q1) Demonstrate DFS Algorithm

Ans:

dfs.py

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"""
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dfs.py
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Author: Jagrut Gala
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Date: 10-07-2021
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Practical: 1
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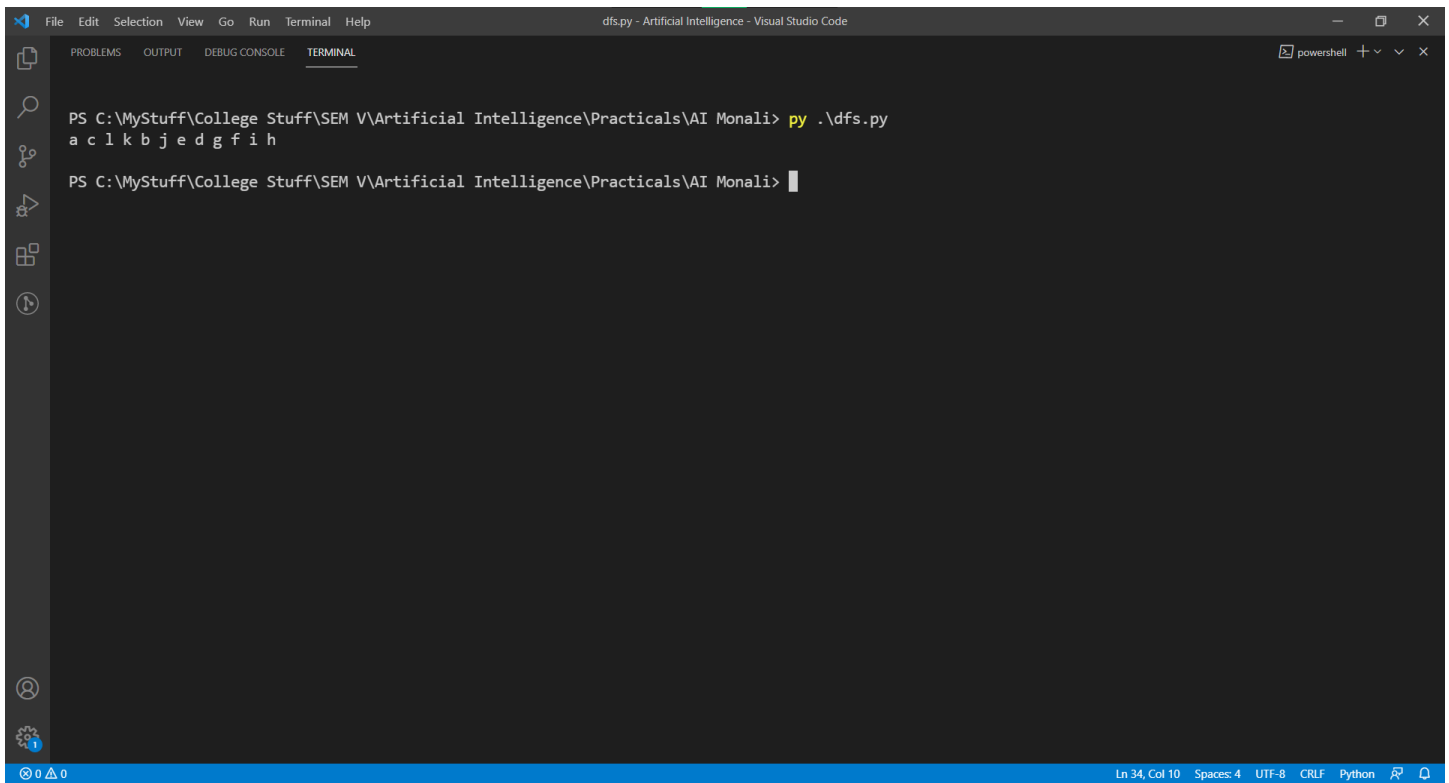
```
Objective: Demonstrate DFS Algorithm
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```
"""
```

```
def dfsRecursive(graph, start, visited=None):  
    if visited is None:  
        visited = set()  
    visited.add(start)  
    print(start, end=" ")  
    for next in graph[start] - visited:  
        dfsRecursive(graph, next, visited)  
    return visited
```

```
big_graph= {  
    "a": set(["k", "c", "l"]),  
    "b": set(["k", "j"]),  
    "c": set(["a"]),  
    "d": set(["k", "g"]),  
    "e": set(["j"]),  
    "f": set(["h", "i"]),  
    "g": set(["d", "f"]),  
    "h": set(["f"]),  
    "i": set(["f"]),  
    "j": set(["b", "e"]),  
    "k": set(["a", "b", "d"]),  
    "l": set(["a"]),  
}
```

```
dfsRecursive(big_graph, 'a')  
print("\n")
```



The image shows a screenshot of a Visual Studio Code terminal window. The terminal is titled "dfs.py - Artificial Intelligence - Visual Studio Code". The command prompt is "PS C:\MyStuff\College Stuff\SEM V\Artificial Intelligence\Practicals\AI Monali>". The user has entered the command "py .\dfs.py" and the output is "a c l k b j e d g f i h". The terminal is running in a PowerShell shell. The status bar at the bottom indicates the current line and column is "Ln 34, Col 10", the encoding is "UTF-8", the line ending is "CRLF", and the language is "Python".

```
PS C:\MyStuff\College Stuff\SEM V\Artificial Intelligence\Practicals\AI Monali> py .\dfs.py
a c l k b j e d g f i h

PS C:\MyStuff\College Stuff\SEM V\Artificial Intelligence\Practicals\AI Monali>
```