




25-09-2021

ARTIFICIAL INTELLIGENCE  
PRACTICAL 2  
ROLL No. 2109805

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CLASS: TYBSc CS  
ROLL No: 2109805  
SUBJECT: ARTIFICIAL INTELLIGENCE



## Practical 2: BFS

**Q1) Demonstrate BFS Algorithm.**

**Ans:**

[bfs.py](#)

```
"""
```

```
bfs.py
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Author: Jagrut Gala
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Date: 17-07-2021
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Practical: 2
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```
Objective: Demonstrate BFS Algorithm
```

```
"""
```

```
def bfs(visit_complete, graph, current_node):
    visit_complete.append(current_node)
    queue = []
    queue.append(current_node)

    while queue:
        s = queue.pop(0)
        print(s)

        for neighbour in graph[s]:
            if neighbour not in visit_complete:
                visit_complete.append(neighbour)
                queue.append(neighbour)

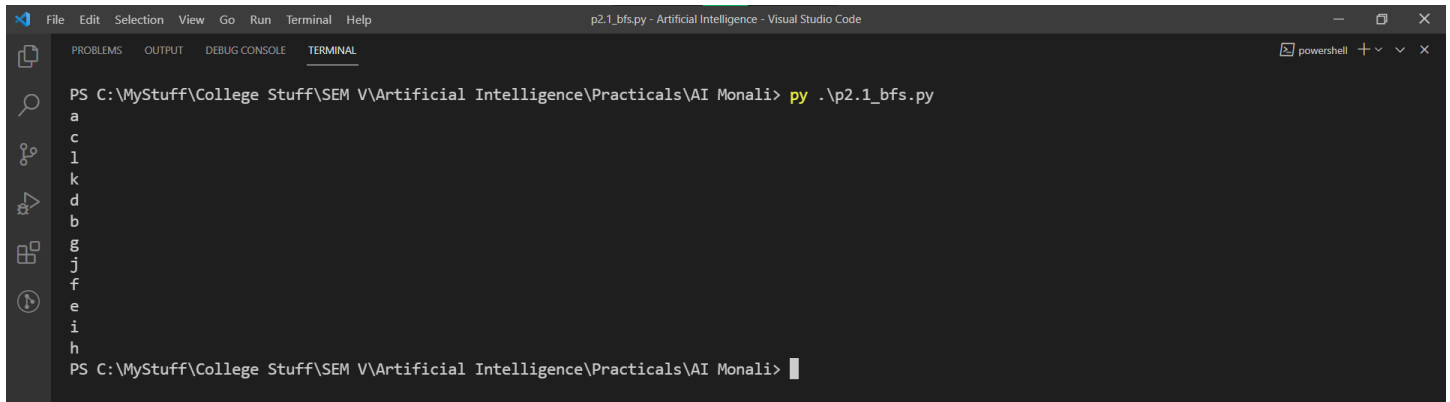
big_graph= {
    "a": set(["k", "c", "l"]),
    "b": set(["k", "j"]),
    "c": set(["a"]),
    "d": set(["k", "g"]),
    "e": set(["j"]),
    "f": set(["h", "i"]),
    "g": set(["d", "f"]),
    "h": set(["f"]),
    "i": set(["f"]),
    "j": set(["b", "e"]),
    "k": set(["a", "b", "d"]),
    "l": set(["a"]),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

bfs([], big_graph, 'a')
```

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The image shows a screenshot of a Visual Studio Code terminal window. The terminal is titled "p2.1\_bfs.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 .\p2.1\_bfs.py". The output of the script is displayed as a single column of characters: "a", "c", "l", "k", "d", "b", "g", "j", "f", "e", "i", "h". The terminal window has a dark background and a light-colored text. The Visual Studio Code interface is visible in the background, including the menu bar and the sidebar.

```
File Edit Selection View Go Run Terminal Help
p2.1_bfs.py - Artificial Intelligence - Visual Studio Code
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
PS C:\MyStuff\College Stuff\SEM V\Artificial Intelligence\Practicals\AI Monali> py .\p2.1_bfs.py
a
c
l
k
d
b
g
j
f
e
i
h
PS C:\MyStuff\College Stuff\SEM V\Artificial Intelligence\Practicals\AI Monali>
```