



Assignment

Submitted To: Mam Yasmeen Jana

Submitted By: Ayesha Habib

Subject: Artificial Intelligence

Date: 4/4/2023

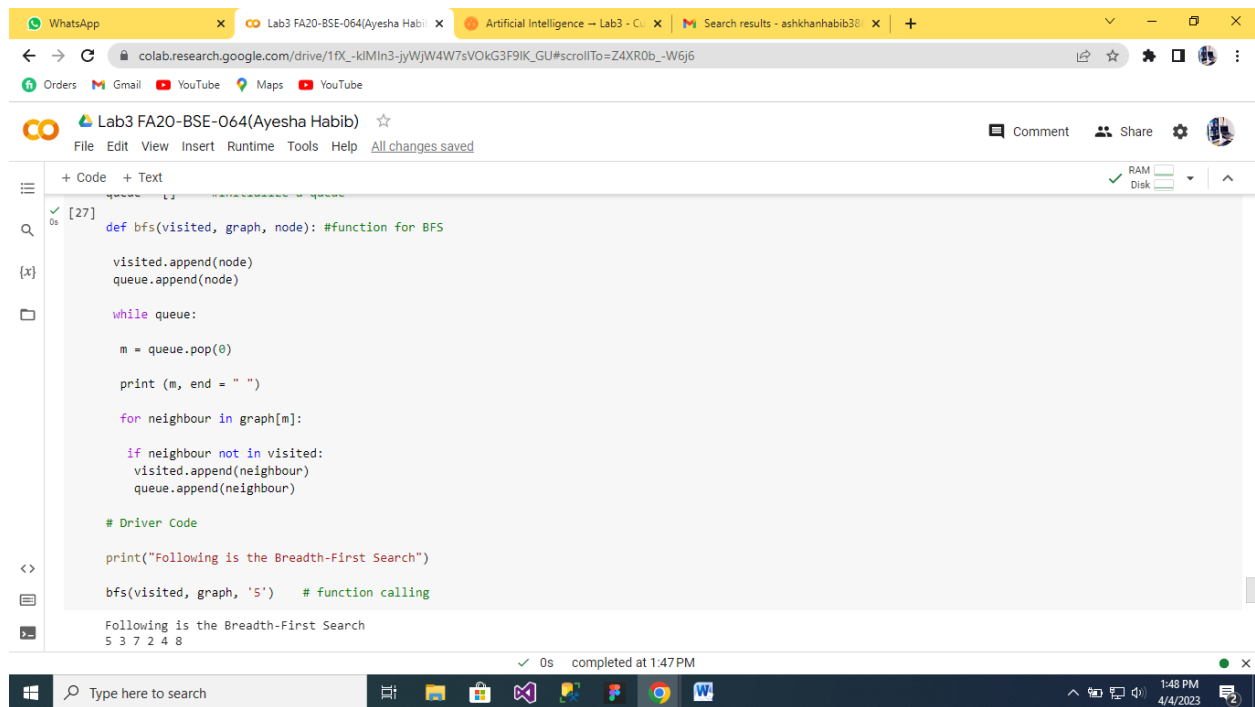
Activity 1

A screenshot of a Google Colab notebook interface. The browser tabs at the top include WhatsApp, Lab3 FA20-BSE-064(Ayesha Habib), Artificial Intelligence - Lab3 - C, and Search results - ashkhanhabib38. The address bar shows a Google Drive link. The notebook title is 'Lab3 FA20-BSE-064(Ayesha Habib)'. The code editor displays a graph structure and a BFS function. The graph has nodes 2 through 8, with node 5 connected to 3 and 7, node 3 to 2 and 4, node 7 to 8, and nodes 2, 4, and 8 having no outgoing edges. The BFS function is defined and partially executed, showing the visited and queue lists. The status bar at the bottom indicates '0s completed at 1:47 PM'.

```
[ ] graph = {
  '5' : ['3', '7'],
  '3' : ['2', '4'],
  '7' : ['8'],
  '2' : [],
  '4' : ['8'],
  '8' : []
}

visited = [] # List for visited nodes.
queue = [] #Initialize a queue

def bfs(visited, graph, node): #function for BFS
    visited.append(node)
    queue.append(node)
    while queue:
```



WhatsApp Lab3 FA20-BSE-064(Ayesha Habib) Artificial Intelligence - Lab3 - C Search results - ashkhanhabib38

colab.research.google.com/drive/1fX_kIMln3-jyWjW4W7sVOKG3F9IK_GU#scrollTo=Z4XR0b_-W6j6

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Lab3 FA20-BSE-064(Ayesha Habib)

File Edit View Insert Runtime Tools Help All changes saved

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```
[27] def bfs(visited, graph, node): #function for BFS

    visited.append(node)
    queue.append(node)

    while queue:

        m = queue.pop(0)

        print (m, end = " ")

        for neighbour in graph[m]:

            if neighbour not in visited:
                visited.append(neighbour)
                queue.append(neighbour)

# Driver Code

print("Following is the Breadth-First Search")

bfs(visited, graph, '5') # function calling
```

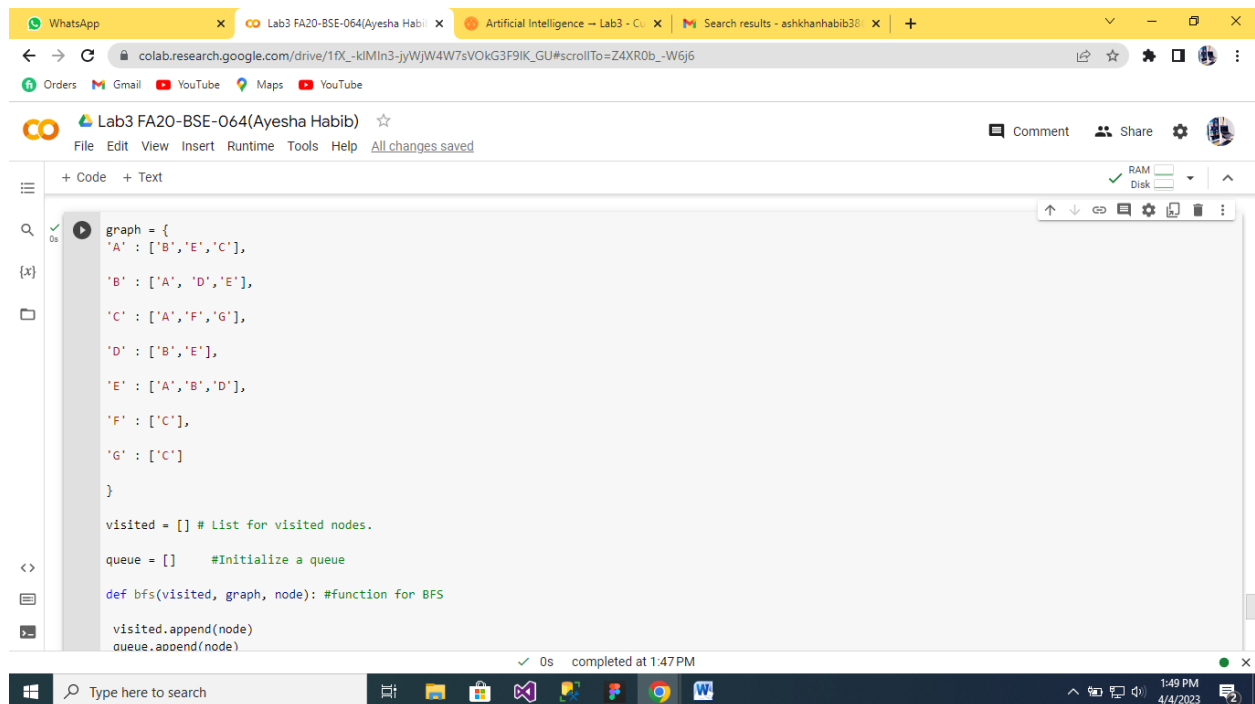
Following is the Breadth-First Search
5 3 7 2 4 8

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Activity 2



WhatsApp Lab3 FA20-BSE-064(Ayesha Habib) Artificial Intelligence - Lab3 - C Search results - ashkhanhabib38

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Lab3 FA20-BSE-064(Ayesha Habib)

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```
graph = {
    'A' : ['B','E','C'],
    'B' : ['A','D','E'],
    'C' : ['A','F','G'],
    'D' : ['B','E'],
    'E' : ['A','B','D'],
    'F' : ['C'],
    'G' : ['C']
}

visited = [] # List for visited nodes.

queue = [] #Initialize a queue

def bfs(visited, graph, node): #function for BFS

    visited.append(node)
    queue.append(node)
```

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Lab3 FA20-BSE-064(Ayesha Habib) ☆

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```
visited.append(node)
queue.append(node)

while queue:
    m = queue.pop(0)
    print (m, end = " ")

    for neighbour in graph[m]:
        if neighbour not in visited:
            visited.append(neighbour)
            queue.append(neighbour)

# Driver Code

print("Following is the Breadth-First Search")

bfs(visited, graph, 'A') # function calling

Following is the Breadth-First Search
A B E C D F G
```

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