8.Write the python program to implement DFS.

Program:

```
from collections import defaultdict
class Graph:
        def __init__(self):
                self.graph = defaultdict(list)
        def addEdge(self, u, v):
                self.graph[u].append(v)
        def DFSUtil(self, v, visited):
                visited.add(v)
                print(v, end=' ')
                for neighbour in self.graph[v]:
                        if neighbour not in visited:
                                self.DFSUtil(neighbour, visited)
        def DFS(self, v):
                visited = set()
                self.DFSUtil(v, visited)
if __name__ == "__main__":
        g = Graph()
        g.addEdge(0, 1)
        g.addEdge(0, 2)
        g.addEdge(1, 2)
        g.addEdge(2, 0)
        g.addEdge(2, 3)
        g.addEdge(3, 3)

        print("Following is DFS from (starting from vertex 2)")

        g.DFS(2)
```

OUTPUT: