

## ▼ Uninformed Search(BFS and DFS) - 19BCP138

```
# Class for Graph
class Graph:
    def __init__(self, V):
        self.V = V
        self.adj = {}
        for i in range(self.V):
            self.adj[i] = []

    # For Adding a Edge in Graph
    def add_edge(self, src, dest, isundir=True):
        self.adj[src].append(dest)
        if isundir:
            self.adj[dest].append(src)

    # For Printing the List
    def print_adj_list(self):
        for i in range(self.V):
            print(i, end=" : ")
            for j in self.adj[i]:
                print(j, end=" ")
            print()

    # For BFS
    def bfs(self, src, goal):
        q = [src]
        visited = [False]*self.V
        visited[src] = True
        while(len(q)):
            f = q[0]
            print(f, end=" ")
            q.pop(0)
            if(f==goal): return
            for i in self.adj[f]:
                if visited[i]==False:
                    q.append(i)
                    visited[i] = True

    def util(self, src, goal, visited):
        if visited[goal]==True: return
        visited[src] = True
        print(src, end=" ")
        for i in self.adj[src]:
            if visited[i]==False:
                self.util(i, goal, visited)
        return

    # For DFS
    def dfs(self, src, goal):
        visited = [False]*self.V
        self.util(src, goal, visited)
        return
```

```
# Adding the points in Graph
```

```
g = Graph(6)
```

```
g.add_edge(0, 1)
```

```
g.add_edge(1, 2)
```

```
g.add_edge(3, 2)
```

```
g.add_edge(5, 3)
```

```
g.add_edge(1, 4)
```

```
g.add_edge(4, 5)
```

```
# g.print_adj_list()
```

```
print("DFS --> ")
```

```
g.dfs(1, 4)
```

```
print("\n\nBFS --> ")
```

```
g.bfs(1, 4)
```

```
DFS -->
```

```
1 0 2 3 5 4
```

```
BFS -->
```

```
1 0 2 4
```