

**Lab 6: BFS & DFS**

- Q1** Write a function `BFS()` to do a breadth first search from a input vertex  $v$  and print out the visited vertices in the order of visiting. The labels of  $v$  are from 1 to  $|V|$ . The algorithm will visit the neighbor nodes in ascending order. The function prototype is given as follows:

```
void BFS (Graph g, int v);
```

- Q2** Write a function `DFS_I()` to do a depth first search from a input vertex  $v$  and print out the visited vertices in the order of visiting. The labels of  $v$  are from 1 to  $|V|$ . The algorithm will visit the neighbor nodes in ascending order. The function prototype is given as follows:

```
void DFS_I (Graph g, int v);
```

- Q3** Rewrite the DFS algorithm in Q2 in a recursive approach. The function prototype is given as follow:

```
void DFS_R (Graph_DFS g, int v);
```