NANYANG TECHNOLOGICAL UNIVERSITY SINGAPORE

SC1007 Data Structures and Algorithms

Lab 6: BFS & DFS

School of Computer Science and Engineering *Nanyang Technological University*

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);
```