Assignment-04
Explaination

Task-1a

The code represented a graph by vertices and edges with weights in a matrix. The matrix is a 2D representation of the graph.

Task-1b

The code represented a graph by vertices and edges with weights in a adjacency list. The adjacency is a list of lists, where each sublist contains tuples representing edges and their weights.

Task-2

The code first represented the graph by adjacency list then performs BFS Traversal starting from vertex 1.

Task-3

The code first represented the graph by adjacency list then performs DFS traversal starting from vertex 1.

Task-4

The code detects if there exists any cycle or not. with the help of DFS Traversal. If there exists any cycle it returns 'Yes'. Otherwise it returns 'NO'.

Task-5

The code finds the shortest path from vertex 1 to the target vertex, and writes the shortest path and its length (referred to as 'Time') with the help of BFS traversal.

Task-6

The code performs DFS traversal from each cell marked with '.' and counts the maximum number of cells marked with 'D' that can be reached. The grid is represented by a matrix, where '#' represents blocked cells, '.' represents open cells, and 'D' represents cells with diamonds.