3D5- Assignment 4 report  
Task 1 Output

DFS: A B C D F E

BFS: A B D E C F

Task 2 Output

A B C G E F D

The length of the shortest path between A and A is 0

The length of the shortest path between A and B is 1

The length of the shortest path between A and C is 2

The length of the shortest path between A and D is 7

The length of the shortest path between A and E is 5

The length of the shortest path between A and F is 7

The length of the shortest path between A and G is 3

Task 3

* Approach

In t3.h, structures for vertices and edges were made to model an overall graph structure for the Dublin transport system where linked lists were used to manage edges connected to each vertex.   
  
In t3.c, the “load\_edges” and “load\_vertices” functions were used to read the data from CSV files into the graph structure. The “shortest\_path” function was used to implement a modified version of the Dijkstra's algorithm used in t2.c to find the shortest path between bus stops. Arrays were used to track visited nodes and calculate distances. In order to prevent memory leaks the “free\_memory” function was used to deallocate dynamically allocated memory for vertices, edges, and other data structures.

* Output

Please enter stating bus stop > 300

Please enter destination bus stop > 253

Segmentation fault (core dumped)

As I wasn’t able to get my Task3 code running without it producing a segmentation fault or not showing an output altogether, I cannot say whether or not the implemented algorithm worked as intended.