**Prerequisites:**

The program can be executed in a Linux environment having g++ support.

gcc version 4.6.3 (Ubuntu/Linaro 4.6.3-1ubuntu5)

This is to ensure that freopen has access to stdin. In mac, it may not have the access so please use a Linux OS like Ubuntu. A free Ubuntu based VM can be accessed from here with all setup done:

http://www.saasbook.info/bookware-vm-instructions

The input file must be in the format as given in the question with no spaces or extra characters. The program discards the first nine characters from the first line and then scans for the number of vertices and after the number of lines of vertices it again discards the first six characters from the line containing “edges: 641” and scans for the number of edges followed by the edges’ lines. It should be like this:

vertices: 275

0 1 1

1 1 2

………

edges: 641

0 17 18

1 37 38

2 56 57

Please make sure the input file is named as “input.txt”. This is the default name that the program looks for to take input. You can either rename your file or you can rename the file name in the program’s source code (.cpp file) and recompile it.

Make sure the macro in the Search\_Graph.cpp file named “MAX\_NODES” is set to a value greater than the number of nodes that you are giving as input. Currently it is set at 1000. To change it look for the line “#define MAX\_NODES 1000” in the Search\_Graph.cpp and change 1000 to a value greater than the number of nodes that you are giving as input.

**How to compile and run:**

Compile the Search\_Graph.cpp file by using the following command in your linux terminal after copying all the files (Search\_Graph.cpp and input.txt are must!) to your current folder:

$ g++ -o Search\_Graph Search\_Graph.cpp

This creates an executable named Search\_Graph file in your current directory. The executable executes using GBFS algorithm by default. To run BFS or DFS, provide it the parameter bfs or dfs as the command line argument as follows:

For GBFS:

$ ./Search\_Graph gbfs

OR

$ ./Search\_Graph

For BFS:

$ ./Search\_Graph bfs

For DFS:

$ ./Search\_Graph dfs

Note that the parameters are case sensitive. Currently only downcase is supported.

In case of any problem, please feel free to email or call or whatsapp.

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Thanks,

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