**Lab 10**

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**Lab Report:** This lab was, once again, fairly simple although I am skeptical about the output of the lab. I still have a little trouble going through the BFS and DFS which I will study independently in my own time. This lab took me about an hour to put together. I can confirm that I did this lab 100% independently with no help from outside sources (i.e. classmates or the internet).

**Prelab:**

BFS (A):

A B C D E F

BFS (B):

B C A D F E

BFS (C):

C D B A F E

BFS (D):

D F E

BFS (E):

E F

BFS (F):

F E

DFS:

E F D C B A

**Lab Tasks:**

lab\_10.cpp:

#include<iostream>

#include<stdio.h>

#include<fstream>

#include<utility>

#include<set>

#include<list>

#include"d\_graph.h"

#include"d\_util.h"

int main(){

graph<char> graphB;

list<char> dfsList;

char input;

graphB.insertVertex('A');

graphB.insertVertex('B');

graphB.insertVertex('C');

graphB.insertVertex('D');

graphB.insertVertex('E');

graphB.insertVertex('F');

ifstream fileB;

fileB.open("graphB.dat",std::fstream::in);

while (fileB){

char v1,v2;

int w;

fileB>>v1;

fileB>>v2;

fileB>>w;

graphB.insertEdge(v1,v2,w);

}

puts("Lab 10:");

printf("Pick a Vertex to traverse from in graph B: ");

std::cin>>input;

printf("BFS from %c (Visited Nodes):\n",input);

set<char> bOut=bfs(graphB,input);

writeContainer(bOut.begin(),bOut.end());

puts("");

printf("DFS(Reverse Order):\n");

dfs(graphB,dfsList);

writeContainer(dfsList.begin(),dfsList.end());

puts("");

return 0;

}

**Sample Outputs:**

Output 1:

Lab 10:

Pick a Vertex to traverse from in graph B: A

BFS from A (Visited Nodes):

A B C D E F

DFS (Reverse order):

A B C D F E

Output 2:

Lab 10:

Pick a Vertex to traverse from in graph B: B

BFS from B (Visited Nodes):

A B C D E F

DFS (Reverse order):

A B C D F E

Output 3:

Lab 10:

Pick a Vertex to traverse from in graph B: C

BFS from C (Visited Nodes):

A B C D E F

DFS (Reverse order):

A B C D F E

Output 4:

Lab 10:

Pick a Vertex to traverse from in graph B: D

BFS from D (Visited Nodes):

D E F

DFS (Reverse order):

A B C D F E

Output 5:

Lab 10:

Pick a Vertex to traverse from in graph B: E

BFS from E (Visited Nodes):

E F

DFS (Reverse order):

A B C D F E

Output 6:

Lab 10:

Pick a Vertex to traverse from in graph B: F

BFS from F (Visited Nodes):

E F

DFS (Reverse order):

A B C D F E