

2008-graph.cpp

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// create a graph
// by panomkhawn
// June 2008
// This program is for AI LAB03 year 2008

#include<iostream>
#include<string>

using namespace std;

struct node
{
    string name;
    struct node *next;
};

struct mainnode
{
    string mname;
    struct node *tonode;
    struct mainnode *mnext;
};

mainnode *first,*mptr;

node *ptr;

void create_graph()
{
    //for node A
    first = new mainnode;//pointer first points at
mainnode A
    mptr = first;
    mptr->mname = "A";
    mptr->tonode = new node;
    ptr = mptr->tonode;
    ptr->name = "B";
    ptr->next = new node;
    ptr = ptr->next;
    ptr->name = "D";
    ptr->next = new node;
    ptr = ptr->next;
    ptr->name = "E";
    ptr->next = NULL;

    //for node B
    mptr->mnext = new mainnode;
    mptr = mptr->mnext;
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mptr->mname = "B";
mptr->tonode = new node;
ptr = mptr->tonode;
ptr->name = "A";
ptr->next = NULL;

//for node C
mptr->mnext = new mainnode;
mptr = mptr->mnext;
mptr->mname = "C";
mptr->tonode = new node;
ptr = mptr->tonode;
ptr->name = "D";
ptr->next = NULL;

//for node D
mptr->mnext = new mainnode;
mptr = mptr->mnext;
mptr->mname = "D";
mptr->tonode = new node;
ptr = mptr->tonode;
ptr->name = "A";
ptr->next = new node;
ptr = ptr->next;
ptr->name = "C";
ptr->next = NULL;

//for node E
mptr->mnext = new mainnode;
mptr = mptr->mnext;
mptr->mname = "E";
mptr->tonode = new node;
ptr = mptr->tonode;
ptr->name = "A";
ptr->next = new node;
ptr = ptr->next;
ptr->name = "F";
ptr->next = NULL;

//for node F
mptr->mnext = new mainnode;
mptr = mptr->mnext;
mptr->mname = "F";
mptr->tonode = new node;
ptr = mptr->tonode;
ptr->name = "E";
ptr->next = NULL;
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mptr->mnext = NULL; //end of main node
}

void adjacent()
{
    string getname;
    cout<<"Please enter node name: ";
    cin>>getname;
    cout<<getname<<" has the following adjacent
node(s) :";

    mptr = first;
    while (mptr != NULL)
    {
        if (mptr->mname == getname)
        {
            ptr = mptr->tonode;
            while (ptr != NULL)
            {
                cout<<" "<<ptr->name;
                ptr = ptr->next;
            }
        }

        mptr = mptr->mnext;
    }

    cout<<endl;
}

void main()
{
    create_graph();
    adjacent();
}

```