#include <string>

#include <iostream>

#include <fstream>

#include <cstdlib>

#include <vector>

using namespace std;

struct Connect

{

int start, end;

double distance;

string name, kind;

Connect(string n, string k, int s, int e, double d)

{

start = s;

end = e;

name = n;

kind = k;

distance = d;

};

};

struct Location

{

int index;

string state, name;

double longitude, latitude, distance;

vector<Connect> connects;

Location(int i, double lo, double la, double d, string s, string n)

{

index = i;

longitude = lo;

latitude = la;

distance = d;

state = s;

name = n;

};

void add(Connect c)

{

connects.push\_back(c);

};

};

int main()

{

vector<Location> locations;

double longitude, latitude, distance;

string state, name, kind, ignored;

int start, end, index = 0;

ifstream myfile("/home/www/class/een318/intersections.txt");

while (myfile >> longitude >> latitude >> distance >> state)

{

getline(myfile, name);

Location location(index, longitude, latitude, distance, state, name);

locations.push\_back(location);

index++;

}

myfile.close();

ifstream myfile1("/home/www/class/een318/connections.txt");

while (myfile1 >> name >> kind >> start >> end >> distance)

{

Connect connect1(name, kind, start, end, distance);

Connect connect2(name, kind, end, start, distance);

locations[start].add(connect1);

locations[end].add(connect2);

}

myfile1.close();

cout << "open file success" << endl;

cout << "Location to start: ";

cin >> index;

if (index < 0 || index >= locations.size())

{

cout << "input num between 0 and " << locations.size() << endl;

return 0;

}

cout << endl;

for (;;)

{

vector<Connect> connect = locations[index].connects;

cout << "Location " << locations[index].index << ", " << locations[index].distance;

cout << " miles from " << locations[index].name << ", " << locations[index].state << endl;

cout << "roads leading away:" << endl;

for (int j = 0; j < connect.size(); j ++)

{

cout << " " << j + 1 << ": " << connect[j].name << ", " << connect[j].distance;

cout << " miles to location " << connect[j].end << endl;

}

int k = 0;

while (k < 1 || k > connect.size())

{

cout << "take which road? ";

cin >> k;

if (k < 1 || k > connect.size())

{

cout << "error road" << endl;

return 0;

}

cout << endl;

}

index = connect[k - 1].end;

}

}

