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#include <iostream>
#include <string.h>
using namespace std;
class flight
{
public :
    int am[10][10];
    char city_index[10][10];
    flight();
    int create();
    void display(int city_count);
};
flight::flight()
{
    int i, j;
    for (i = 0; i < 10; i++)
    {
        strcpy(city_index[i], "xx");
    }
    for (i = 0; i < 10; i++)
    {
        for (j = 0; j < 10; j++)
        {
            am[i][j] = 0;
        }
    }
}
int flight::create()
{
    int city_count = 0, j, si, di, wt;
    char s[10], d[10], c;
    do
    {
        cout << "\n\nEnter Source City : ";
        cin >> s;
        cout << "\nEnter Destination City : ";
        cin >> d;
        for (j = 0; j < 10; j++)
        {
            if (strcmp(city_index[j], s) == 0)
                break;
        }
        if (j == 10)
        {
            strcpy(city_index[city_count], s);
            city_count++;
        }
        for (j = 0; j < 10; j++)
        {
            if (strcmp(city_index[j], d) == 0)
                break;
        }
        if (j == 10)
        {
            strcpy(city_index[city_count], d);
            city_count++;
        }
        cout << "\nEnter Distance From " << s << " And " << d << " : ";
        cin >> wt;
    } while (city_count < 10);
}

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    for (j = 0; j < 10; j++)
    {
        if (strcmp(city_index[j], s) == 0)
            si = j;
        if (strcmp(city_index[j], d) == 0)
            di = j;
        }
        am[si][di] = wt;
        cout << "\nDo you want to add more cities.....(y/n) : ";
        cin >> c;
    } while (c == 'y' || c == 'Y');
    return (city_count);
}

void flight::display(int city_count)
{
    int i, j;
    cout << "\n\nDisplaying Adjacency Matrix : \n\n";
    cout << "\t\t" << city_index[0];
    for (i = 1; i < city_count; i++)
        cout << "\t" << city_index[i];
    cout << "\n\n";
    for (i = 0; i < city_count; i++)
    {
        cout << city_index[i];
        for (j = 0; j < city_count; j++)
        {
            cout << "\t\t" << am[i][j];
        }
        cout << "\n\n";
    }
}

int main()
{
    flight f;
    int n, city_count;
    char c;
    do
    {
        cout << "\n***** Flight Main Menu *****";
        cout << "\n\n1.Create Graph\n2.Display Adjacency Matrix\n3.Exit";
        cout << "\n\nEnter your choice : ";
        cin >> n;
        switch (n)
        {
            case 1 : city_count = f.create();
                    break;
            case 2 : f.display(city_count);
                    break;
            case 3 : return 0;
        }
        cout << "\nDo you Want to Continue in Main Menu....(y/n) : ";
        cin >> c;
    } while (c == 'y' || c == 'Y');
    return 0;
}

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