Exercise 8-2: The Average Function

#include <iostream>

#include <math.h>

using namespace std;

void Calc\_Avg(int array[], const int size) //calculate average function...

{

int total = 0;

int result;

for (int i = 0; i < size; i++)

{

total += array[i]; //add array elements...

}

result = total / size; //divide total value of elements by array size...

cout << "The average is " << result << endl;

}

int main()

{

const int SIZE = 10; //can be changed...

int array[SIZE];

cout << "Enter " << SIZE << " numbers: ";

for (int i = 0; i < SIZE; i++)

{

cin >> array[i]; //fill array with user input...

}

Calc\_Avg(array, SIZE); //call calculate average function...

system("pause");

return 0;

}

Exercise 8-4: Arrays on the Menu

#include <iostream>

#include <string>

#include <Windows.h>

using namespace std;

void Display\_Menu()

{

cout << endl;

cout << "|\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*| |\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*|" << endl;

cout << "|\*START - (from)\*| |\* END - (to) \*|" << endl;

cout << "|\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*| |\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*|" << endl;

cout << "|1. Eagle Way | |1. Eagle Way |" << endl;

cout << "|2. I-234 | |2. I-234 |" << endl;

cout << "|3. Daltry Lane | |3. Daltry Lane |" << endl;

cout << "|4. Park Street | |4. Park Street |" << endl;

cout << "|\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*| |\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*|" << endl;

cout << endl;

}

void Display\_Rates()

{

const int NUM\_ROWS = 5;

const int NUM\_COLS = 5;

string rates[NUM\_ROWS][NUM\_COLS] = {

{ " ", "Eagle Way ", "I-234 ", "Daltry Lane ", "Park Street " },

{ "Eagle Way ", "$0.00 ", "$1.33 ", "$1.56 ", "$2.28 " },

{ "I-234 ", "$1.33 ", "$0.00 ", "$0.58 ", "$1.33 " },

{ "Daltry Lane ", "$1.56 ", "$0.58 ", "$0.00 ", "$0.95 " },

{ "Park Street ", "$2.28 ", "$1.33 ", "$0.95 ", "$0.00 " } };

cout << endl << "These are the current toll rates..." << endl << endl;

for (int rows = 0; rows < NUM\_ROWS; rows++)

{

for (int cols = 0; cols < NUM\_COLS; cols++)

{

cout << rates[rows][cols] << " ";

}

cout << endl;

}

cout << endl;

}

void Calc\_Cost(int start, int end)

{

const int NUM\_ROWS = 4;

const int NUM\_COLS = 4;

double costs[NUM\_ROWS][NUM\_COLS] = {

{ 0.00, 1.33, 1.56, 2.28 },

{ 1.33, 0.00, 0.58, 1.33 },

{ 1.56, 0.58, 0.00, 0.95 },

{ 2.28, 1.33, 0.95, 0.00 } };

//I do not know how to call a multi-dimensional array from main()...

cout << "Travel will cost $" << costs[start-1][end-1] << endl << endl;

}

void main()

{

int start;

int end;

char contKey;

do {

Display\_Menu();

Display\_Rates();

cout << "Enter the number which corresponds to your start location: ";

cin >> start;

while (start < 0 || start > 4)

{

cout << "Invalid input." << endl;

cout << "Enter the number which corresponds to your start location: ";

cin >> start;

}

cout << "Enter the number which corresponds to your end location: ";

cin >> end;

while (end < 0 || end > 4)

{

cout << "Invalid input." << endl;

cout << "Enter the number which corresponds to your end location: ";

cin >> end;

}

Calc\_Cost(start, end);

cout << "Would you like to enter another route?" << endl;

cout << "Enter 'C' to continue or anything else to quit: ";

cin >> contKey;

system("cls");

} while (contKey == 'c' || contKey == 'C');

cout << "Have a nice drive!" << endl;

Sleep(1000);

system("pause");

}