ENGG1340 Computer Programming II

COMP2113 Programming Technologies

Module 6 Checkpoint Exercise

Name: Shaheer Ziya

University ID: 3035946760

Instructions:

For checkpoint 6.1 – 6.3, please type your answer right after the question in this Word document and submit the file on Moodle. For checkpoint 5.6 onwards, please complete them on the corresponding activities on Moodle.

**Checkpoint 6.1**

There may be error(s) in the following statements. Correct the error(s) if any, if no error, please write “no error”.

1. double a[1][2] = {{2,3}, {3,2}};
2. double b[1][2] = {{3}};
3. char b[1000] = "string";

Ans:

1. The problem is that there are only 2 slots in the array to fill yet items are provided.

I assume it was meant to be a 2D array with (2,3) in the first row and (3,2) in the second row. Which would mean the command we want is double a[2][2] = {{2, 3}, {3, 2}};

1. This works without flaw because the extra braces are just ignored and only the first element in the array is initialized.
2. There is no huge issue with this as this is declared as a C-string

**Checkpoint 6.2**

Consider the following code:

Text

Description automatically generated

1. What is the output if the above program is executed? (if no output, please write “no output”)
2. What is the output if e(a, b, c, 3); is added to line 25? (if no output, please write “no output”)
3. What is the output if e(a, b, c, 5); is added to line 25? (if no output, please write “no output”)

Ans:

1. There is no output as the function e() isn’t called.
2. The output should be 2 3 4 2 3 4 2 3 4 because a = {2, 2, 2}, b = {3, 3, 3} & c = {4, 4, 4}. And their elements are called in an alternating order
3. This gives an error because d-1 = 4, which cannot be accessed because the largest index for the arrays is 2.

**Checkpoint 6.3**

Assume a 3D double array x is defined as:

double x[2][2][3] = {{{3, 4, 2}, {0, -3, 9}}, {{13, 4, 56}, {5, 9, 3}}};

Write a program that would find the maximum and minimum values in this 2-by-2-by-3 double array x. Print the maximum and minimum value after they are found.

Ans:

// MinMax.cpp

// Find the minimum and maximum values in a 2x2x3 array

// Created by Shaheer Ziya

#include <iostream>

using namespace std;

int main()

{

const int Rows = 2, Cols = 2, Depth = 3;

double x[Rows][Cols][Depth] = {{{3, 4, 2}, {0, -3, 9}}, {{13, 4, 56}, {5, 9, 3}}};

double min, max = 0;

for (int i{0}; i < Rows; i++)

{

for (int j{0}; j < Cols; j++)

{

for (int k{0}; k < Depth; k++)

{

if (x[i][j][k] > max)

{

max = x[i][j][k];

}

else if (x[i][j][k] < min)

{

min = x[i][j][k];

}

}

}

}

cout << "The minium value is: " << min << endl;

cout << "The maximum value is: " << max << endl;

return 0;

}

Graphical user interface, application

Description automatically generated