CT103: Week 17 Lab Session (06/02/2024)

*Note: This assignment will count towards your final grade. Make sure you submit your solution by following the "**Submission Instructions**" at the end of this document. You have **until midnight tonight to submit your solution on Canvas**.*

Late assignment submissions will receive a penalty.

Please make sure you **write comments** explaining what your code does. Start your C program with a **comment stating your; Name, Student ID and Date**.

Write a C program that does the following. You should test each of your functions in main(). Include screenshots showing your code working.

1. Write a function to read in and print an array of doubles. The function should have the following prototype: void printDoubleArray(double* dp, int len); (**20 marks**)

2. Write a function to read in two integer pointers. The function should then swap the values of the integers that these pointers point to. Use the following function prototype: void swapIntegerValues(int* i1, int* i2); (**20 marks**)

3. Write a function to square all of the values in an array of integers. Use the following function prototype: void squareIntArray(int* i1, int len); (**20 marks**)

4. Write a function to print an array of integers backwards. Use the following function prototype: void printIntegerArrayBackwards(int* arr, int len); (**20 marks**)

5. Write a function to print an array of random numbers between 0 and max. Use the following prototype: void randomIntArray(int* arr, int len, int max); (**20 marks**)

Your program should output something similar to the following screenshot. You must **upload a screenshot** showing your program working. If your programme does not work and you cannot produce a screenshot, please add a note stating this.

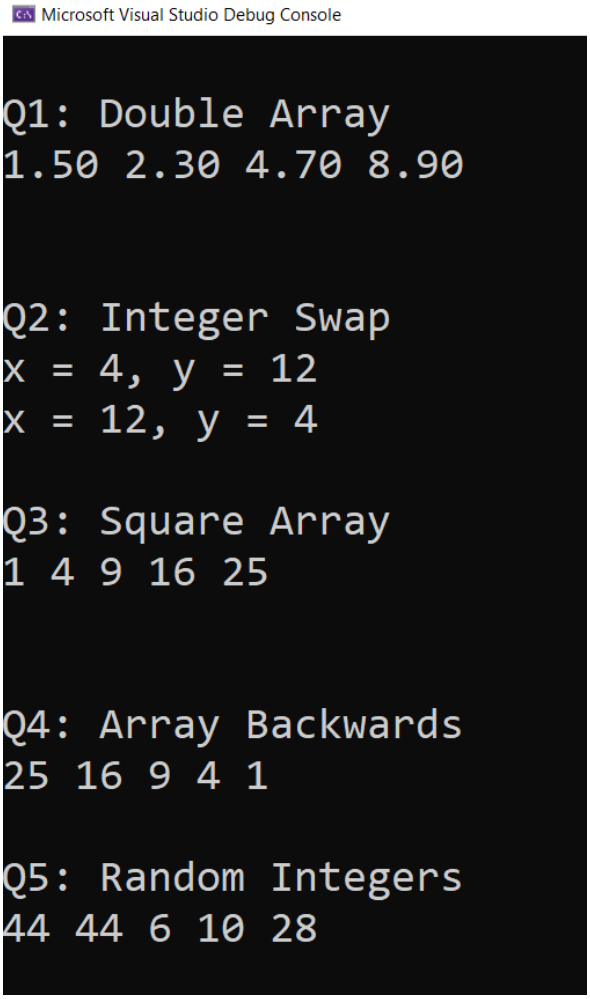

Figure 1: Code Output

Plagiarism Notice:

A definition of plagiarism is passing off the work of another personas one's own.
You are allowed to ask the lab tutors for help, collaborate with your classmates and review online and print resources for high-level problem solving and background research. You are each expected to complete this assignment individually. This means that every line of code and comment in your submission should be written by you alone. Please see the University of Galway Code of Practice for Dealing with Plagiarism for further information on plagiarism:
https://www.universityofgalway.ie/media/registrar/policiesmay2023/QA220-Academic-Integrity-Policy-v2.0-Sept-2023.pdf
Plagiarism is a serious academic offence and may lead to a loss of some or all marks and/or disciplinary proceedings if it is detected in any of your submissions. Students who facilitate others to copy their work are also subject to plagiarism sanctions (including loss of marks), so you should not share your assignment solutions with classmates.

Submission Instructions:

Please do the following to submit your solutions to the assignment.

- Copy and paste your code into a word document labelled 'AssignmentX_YOURNAME_ID.doc', e.g. 'Assignment7_JoeBloggs_123456789.doc'.

- Make sure to **include screenshots of your code working** in the .doc file. Use: 'Windows' + 'Shift' + 'S' on your keyboard. On a Mac, you should use the keys: 'shift' + 'command' + '3' or 'shift' + 'command' + '4'.

- Add both: **your .c program and your .doc files** to a folder called 'AssignmentX_YOURNAME_ID_Submission'.

- Zip the folder up and **submit the .zip file on Canvas** under CT103 Assessments. To zip the folder, right click and press 'Send To' then 'Compressed (zipped) folder'. On Mac, right click the folder and press 'Compress'.

- If for some reason you still cannot access Canvas. Send your .zip folder to the lab instructors by email. They will be available for the duration of the lab.