Introduction to Programming 1 – Worksheet 12

Part 1 – Data Type Sizes

Question 1

Write a program named Q1.c. This program should print the size of each of the following types:
- char
- short
- long
- long long
- long double

Part 2 - Pointers

Question 2

Write a C program named Q2.c that declares and initializes (to any value you like) a double, an int, and a char. Next declare and initialize a pointer to each of the three variables. Your program should then print the address of, and value stored in, and the memory size (in bytes) of each of the **six** variables.

Question 3

Write a C program called Q3.c. In this program you should add a function called **bigVowels** that takes a string as a parameter and does not return any value. In this function you should loop through the string **using a pointer** and replace every lowercase vowel with an upper case vowel. The function bigVowels should not have any square brackets.

In the main function, you should declare a string (with some value) and pass it as a parameter to the function bigVowels. After the function has been called you should print the string to the screen.

Question 4

Write a new program that declares an integer of type int called **x**, initialises it to the value 100, and prints out the value of **x**. Your program should then pass **x** by reference to a void function called **func_1**. **func_1** should change the value of **x** to 200. Finally your program should print the value of **x** again (In the main function). The output of your program should be:

```
x is 100
x is 200
```