C++ Week 1 Basics

All the practicals for this module will be developed within a C++ Console Project using Visual Studio 2017/2019.

The exercises utilise I/O operations so you will need to include the iostream library within the source file and state you are using the std namespace (see example below).

```
#include <iostream>

using namespace std;

int main()
{
	return 0;
}
```

Exercise 1

Within the main function add the statements necessary to request a person's first **name** (type string) and **age** (type int) and display the values as confirmation on a single line. Use the variable names **name** and **age** and declare them as local variables within the main function. See presentation on how to pause the console window, so that you can see the output from the program before the window closes.

Exercise 2

Extend exercise 1 by defining a constant to store the number of days in a year (assume it is always 365) and use it to calculate how many days old the person is. This should be output to the screen.

Exercise 3

Extend exercise 2 by defining a pointer (named **pAge)** to an integer type and assign it the address of the variable age. Output the address contained within the pointer to the screen.
Assign the value 10 to the age variable and output to the display both age and that of the value pointed to by pAge. Both should display the same value as the pointer contains the address of the age variable.

C++ Week 1 Basics

Exercise 4

Extend exercise 3 by define a reference to an integer type named **rAge** and assign it the variable age.
Assign the value 19 to age and display both its value and that of the reference.
As in exercise 3 both values should be the same. This time the reference points to the variable age.

Before attempting exercise 5 comment out your solutions to exercises 1,2,3 & 4.

Exercise 5

Define a global variable named **salary** of type int and assign it a value of 20000 . Display its value within main.
Now define a second global with the same name and type and assign it the value 15000 (the income from your second job). Display its value within main.
Why does the complier not like this?
Use two namespaces named **firstJob** and **secondJob** overcome this problem.

Exercise 6

Add a new file to your project by selecting **Project->Add New Item** and selecting the Header File (.h). Name the file MyVars.h and click the add button. You should see it appear within the Header Files folder within the solutions explorer.
Within the new file define a variable named surname of type string and assign it your surname. You will need to include the <string> library and indicate that you are using the std namespace.
Make the changes necessary to display the variable from within the main function.

Exercise 7

From within the main function display the following information.

1. The number of letters in your surname.
2. The first character
3. The last character.

C++ Week 1 Basics

Exercise 8: Quick Test

Answer the following questions before entering the code to determine the answers.

1. Given these definitions

```
int x = 10;
int *i;
i = &x;
```

   Which of the following statements will change the value of i to 30?

```
i = 30;
*i = 30;
```

2. Why will this code generate a compiler error?

```
char married = 'Y';
float *pChar = &married;
```

Exercise 9

- Display the current time in the standard format.
- Now display the seconds elapsed since 01/01/1970
- Finally display the individual values for the hours, minutes and seconds.