

Week 05

Functions:

C++ programs are basically just a series of functions which are able to call each other.

The general format of a C++ function is,

```
return_type function_name(data_type parameter1, data_type parameter2, ...)
{
    function_body
}
```

The return type of a function is int by default, so if no return type is declared, the compiler expects the function to return an integer.

If no data is to be returned from the function, then its type is declared as void.

The parameter list may also be void, when there are no parameters to the function, and the brackets may be left empty if this is the case.

Any function which is not void must contain a return statement as the last statement in the function.

E.g.: int sqr(int value_in)

```
{
    int squared=value_in*value_in;
    return squared;
}
```

The return statement may return the result of an expression directly instead of via a variable.

E.g.: int sqr(int value_in)

```
{
    return value_in*value_in;
}
```

The main Function:

All C++ programs start executing at a special function called main.

It frequently looks like,

```
void main()
```

```
{
    ...
}
```

Example:

```
void main()
```

```
{
    int x;
    int y;
    int z;
    x=4;
    y=2;
    z=x+y;
}
```

You could even compile, link and run this program, but we can't see any output.

Output:

Unfortunately C++ has no I/O syntax.

C++ has its own set of I/O library syntax defined in a header file called iostream.h.

We must include this header file in our program before main, as follows.

```
#include <iostream.h>
```

To output data onto the screen, we use the word cout followed by the insertion / put to operator (<<).

E.g.: cout<<x;



```
cout<<"This is a string literal";
cout<<"Value of x is: "<<x<<" Value of y is: "<<y;
cout<<"Value of x is: "<<x<<endl<<" Value of y is: "<<y<<endl; //endl forces a line feed
```

Example:

```
#include <iostream.h>
void main()
{
    int x;
    int y;
    int z;
    x=4;
    y=2;
    z=x+y;
    cout<<"Value of z is "<<z<<endl;
}
```

Output:

Value of z is 6

Input:

To input data from the keyboard, we use the word cin followed by the extraction / get from operator (>>).

E.g.: cin>>x;
cin>>x>>y;
cout<<"Enter a number: "; cin>>x;

Example:

```
#include <iostream.h>
void main()
{
    int x,y,z;
    cout<<"Please enter an integer: ";
    cin>>x;
    cout<<"Please enter the second integer: ";
    cin>>y;
    z=x+y;
    cout<<"Total is "<<z<<endl;
}
```

Output:

Please enter an integer: 4
Please enter the second integer: -6
Total is -2

Comments:

There two ways of writing comments in C++.

// This is a single line comment

and

/* This is a
multi line comment */