## Tutorial - Week 10

**Objectives:** To practice with C++

- Reference function parameters
- Default function parametersFunction overloading
- Function templates
- 1. Will this code compile successfully? If your answer is NO, what is the problem and how will you fix it?

```
#include <iostream>
using namespace std;
void showVolume( int length, int width = 1, int height = 1 );
int main()
     showVolume(2, 3, 4);
     showVolume( 2, 3);
     showVolume(2);
     showVolume();
     return 0;
}
void showVolume(int length, int width = 1, int height = 1)
     cout << "Volume of a box with \n''
         << "Length = " << length << ", Width = " << endl;
         << "and Height = " << height
         << " is " << length*width*height << endl;
     return;
}
```

2. Explain how these three function calls will be interpreted by C++ compiler.

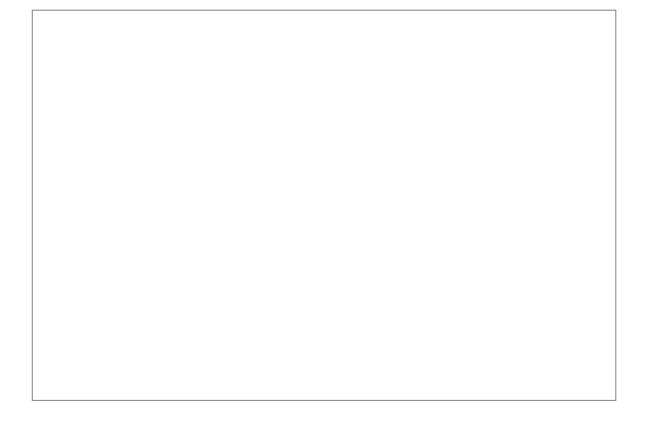
```
template <typename
T> T getMax( T p1, T
p2 )
{
    if (p1 < p2) return p2;
    else return p1;
}

double c, a=2.7,
b=6.9; c = getMax( a, b );

char z, x='J',
y='A'; z = getMax(
x, y );

int ia = 7, ib = 2;
int v = getMax( ia, ib );</pre>
```

3. You need to implement a C++ function that takes two parameters of type unsigned char. It increments them providing that both operations don't cause overflow. The function returns true if both values have been incremented or false otherwise. How can all values be passed back if only one value can be returned by a function?



bool	incrValues(	( unsigned	char&	days=0,	unsigned	char&	hours=0	);
	Г							

4. If variables a, b, and c are 504, 302.558, and −12.31, respectively, write a C++ program fragment that will display the line below. Do not display any quoted strings of blanks. Rather, adjust the field widths using setw to produce the blanks shown. (For clarity, a I denotes a blank space.)

```
1150411111302.561111-12.3
```

- 5. write a program to sort three numbers in C++. Be sure to write a function called order to achieve this. Use two reference parameters in function order.
- 6. What two kinds of parameters does C++ allow functions and operators to have? What is the difference between these two kinds?