

LAB 15

1. WAP to show following

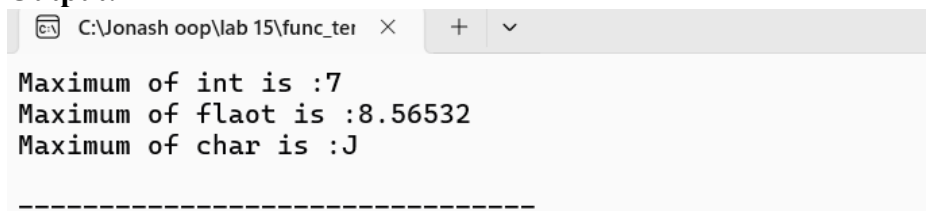
i) Function template to find the maximum value of generic type.

ii) Function template to find minimum value with multiple arguments.

i)

```
#include <iostream>
using namespace std;
template <typename A>
A maximum(A n1, A n2)
{
    if (n1 > n2)
        return n1;
    else
        return n2;
}
int main ()
{
    int n1 = 1, n2 = 7;
    float f1 = 3.9087, f2 = 8.56532;
    char c1 = 'J', c2 = 'A';
    cout << "Maximum of int is :" << maximum(n1, n2) << endl;
    cout << "Maximum of float is :" << maximum(f1, f2) << endl;
    cout << "Maximum of char is :" << maximum(c1, c2) << endl;
}
```

Output:



The screenshot shows a Windows command prompt window with the following output:

```
Maximum of int is :7
Maximum of float is :8.56532
Maximum of char is :J
-----
```

ii)

```
#include <iostream>
using namespace std;
template <typename A, typename B>
A minimum(A n1, B n2)
{
    if (n1 > n2)
        return n2;
    else
        return n1;
}
int main()
{
    int n1 = 1, n2 = 7;
    float f1 = 3.9087, f2 = 8.56532;
    char c1 = 'J', c2 = 'A';
    cout << "Minimum of int is :" << minimum(n1, n2) << endl;
    cout << "Minimum of float is :" << minimum(f1, f2) << endl;
    cout << "Minimum of char is :" << minimum(c1, c2) << endl;
}
```

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Output:

```
C:\Jonash oop\lab 15\minimu  X + v
Minimum of int is :1
Minimum of flaot is :3.9087
Minimum of char is :A

-----
Process exited after 0.1589 seconds with return value 0
Press any key to continue . . . |
```

2. WAP to show template class.

```
#include <iostream>
using namespace std;
template <class T>
class demo
{
    T a, b, c;

public:
    demo(T x, T y, T z)
    {
        a = x;
        b = y;
        c = z;
    }
    void sum()
    {
        cout << "Sum is " << a + b + c << endl;
    }
};

int main()
{
    demo<int> aa(1, 7, 4);
    aa.sum();
    demo<float> bb(1.2, 2.8, 3.6);
    bb.sum();
    return 0;
}
```

Output:

```
C:\Jonash oop\lab 15\templat  X + v
Sum is 12
Sum is 7.6

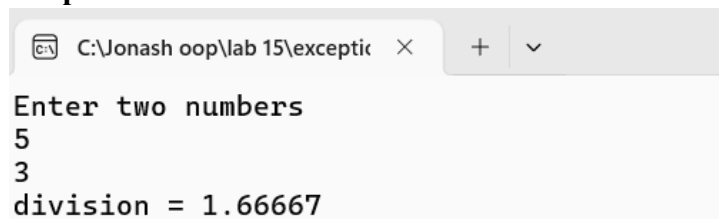
-----
Process exited after 0.158 seconds with return value 0
Press any key to continue . . . |
```

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3. WAP containing possible exception. Use try block to throw it and a catch block to handle it promptly.

```
#include <iostream>
using namespace std;
int main()
{
    int a, b;
    cout << "Enter two numbers " << endl;
    cin >> a >> b;
    try
    {
        if (b == 0)
            throw b;
        else
            cout << "division = " << (float)a / b << endl;
    }
    catch (int e)
    {
        cout << "Error zero cannot be divided!!!" << endl;
    }
}
```

Output:



```
Enter two numbers
5
3
division = 1.66667
```

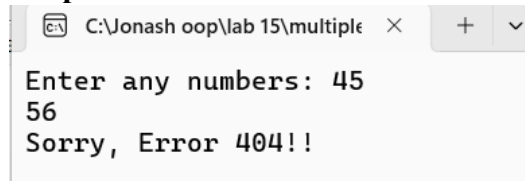
4. WAP to illustrate multiple catch and catch(...) [ellipse] handle

```
#include <iostream>
using namespace std;
int main()
{
    int n1, n2;
    cout << "Enter any numbers: ";
    cin >> n1 >> n2;
    try
    {
        if (n1 > 100)
            cout << n1 << " is greater than 100" << endl;
        else
            throw 111;
    }
    catch (char z)
    {
        cout << "No exception " << z << endl;
    }
    catch (...)
    {
        cout << "Sorry, Error 404!!" << endl;
    }
}
```

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```
}  
}  
}
```

Output:

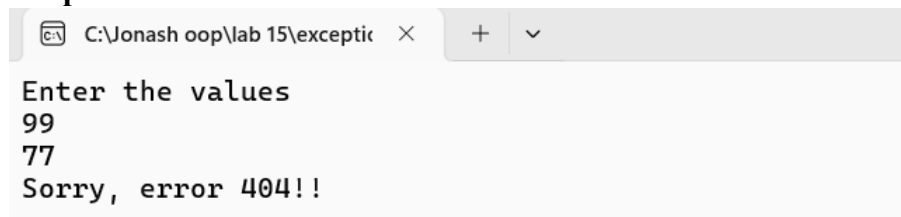


```
C:\Jonash oop\lab 15\multiple  
Enter any numbers: 45  
56  
Sorry, Error 404!!
```

5. WAP to illustrate exception handling in function.

```
#include <iostream>  
using namespace std;  
void excep(int x, int y)  
{  
    try  
    {  
        if (x > 100)  
            cout << x << " is greater than 100" << endl;  
        else  
            throw 111;  
    }  
    catch (char z)  
    {  
        cout << "No exception" << z << endl;  
    }  
    catch (...)  
    {  
        cout << "Sorry, error 404!!" << endl;  
    }  
}  
int main()  
{  
    int n1, n2;  
    cout << "Enter the values" << endl;  
    ;  
    cin >> n1 >> n2;  
    excep(n1, n2);  
}
```

Output:



```
C:\Jonash oop\lab 15\exceptio  
Enter the values  
99  
77  
Sorry, error 404!!
```