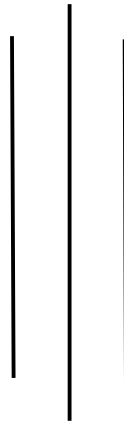


# **Object Oriented Programming Laboratory**

## **Assignment – 8**



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## Question 1:

```
// WAP to throw and handle 'division by zero' exceptions.

#include <iostream>
using namespace std;

int main()
{
    int a, b;
    cout << "Enter two numbers: ";
    cin >> a >> b;
    try
    {
        if (b == 0)
            throw "Division by zero is not possible";
        else
            cout << "Division of " << a << " by " << b << " is " << a / b << endl;
    }
    catch (const char *msg)
    {
        cout << msg << endl;
    }
    return 0;
}
```

Output:

```
PS C:\Users\KIIT01\Desktop\programming> cd "c:\Users\KIIT01\Desktop\programming"
Enter two numbers: 6 0
Division by zero is not possible
PS C:\Users\KIIT01\Desktop\programming\OOP-Class\10 november> |
```

## Question 2:

```
// WAP to throw and handle' array out of bound' exceptions.

#include <iostream>
using namespace std;

int main()
{
    int a[5] = {1, 2, 3, 4, 5};
    int i;
    cout << "Enter the index of the array: ";
    cin >> i;
    try
    {
        if (i > 4)
            throw "Array out of bound";
        else
            cout << "The value at index " << i << " is " << a[i] << endl;
    }
    catch (const char *msg)
    {
        cout << msg << endl;
    }
    return 0;
}
```

Output:

```
PS C:\Users\KIIT01\Desktop\programming> cd "c:\Users\KIIT01\Desktop\programming"
Enter the index of the array: 7
Array out of bound
PS C:\Users\KIIT01\Desktop\programming\OOP-Class\10 november> █
```

### Question 3:

```
// WAP to demonstrate multiple catch and catch all.
#include <iostream>
using namespace std;

void test(int a)
{
    try
    {
        if (a == 0)
            throw a;
        else if (a == 1)
            throw 'a';
        else if (a == -1)
            throw 1.1;
        else
            cout << "No exception" << endl;
    }
    catch (int i)
    {
        cout << "Caught an integer" << endl;
    }
    catch (char c)
    {
        cout << "Caught a character" << endl;
    }
    catch (...)
    {
        cout << "Caught something else" << endl;
    }
}

int main()
{
    test(0);
    test(1);
    test(-1);
    test(2);
    return 0;
}
```

Output:

```
PS C:\Users\KIIT01\Desktop\programming> cd "c:\Users\KIIT01\Desktop\programming\"
Caught an integer
Caught a character
Caught something else
No exception
PS C:\Users\KIIT01\Desktop\programming\OOP-Class\10 november>
```

## Question 4:

```
// WAP to find sort an integer array and a float array, using function template.

#include <iostream>
using namespace std;

template <class T>
void sort(T a[], int n)
{
    T temp;
    for (int i = 0; i < n; i++)
    {
        for (int j = i + 1; j < n; j++)
        {
            if (a[i] > a[j])
            {
                temp = a[i];
                a[i] = a[j];
                a[j] = temp;
            }
        }
    }
}

int main()
{
    int a[5] = {5, 4, 3, 2, 1};
    float b[5] = {5.5, 4.4, 3.3, 2.2, 1.1};
    sort(a, 5);
    sort(b, 5);
    cout << "Sorted integer array: ";
    for (int i = 0; i < 5; i++)
        cout << a[i] << " ";
    cout << endl;
    cout << "Sorted float array: ";
    for (int i = 0; i < 5; i++)
        cout << b[i] << " ";
    cout << endl;
    return 0;
}
```

Output:

```
PS C:\Users\KIIT01\Desktop\programming> cd "c:\Users\KIIT01\Desktop\programming\"
Sorted integer array: 1 2 3 4 5
Sorted float array: 1.1 2.2 3.3 4.4 5.5
PS C:\Users\KIIT01\Desktop\programming\OOP-Class\10 november>
```