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Lab12
Subject - OOP lab
Class - B14
Branch - CSE
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Question 1) WAP to throw and handle 'division by zero' exception.

```cpp
#include <iostream>
using namespace std;

int main()
{
    int a, b, c;
    float d;
    cout << "a = ";
    cin >> a;
    cout << "b = ";
    cin >> b;
    cout << "c = ";
    cin >> c;

    try
    {
        if ((a - b) != 0)
        {
            d = c / (a - b);
            cout << "Result = " << d;
        }
        else
        {
            throw(a - b);
        }
    }
    catch (int i)
    {
        cout<<"catch is called \n";
        cout << "Result is infinite because a-b is = " << i;
    }
    return 0;
}
```

```
PS D:\KIIT_NOTES\2nd year sem_3\OOP_lab\18_11_2021> ./divisionByZero
a = 2
b = 2
c = 3
catch is called
Result is infinite because a-b is = 0
PS D:\KIIT_NOTES\2nd year sem_3\OOP_lab\18_11_2021>
```

Question 2) WAP to throw and handle 'array out of bound' exception.

```cpp
#include <iostream>
using namespace std;
int main()
{
    int n;
    cout << "Enter the size of array : ";
    cin >> n;
    int a[n];
    for (int i = 0; i < n + 2; i++)
    {
        try
        {
            if (i <= n)
            {
                cout << "Enter the element :";
                cin >> a[i];
            }
            else
                throw i;
        }
        catch (int i)
        {
            cout << "out of bond  exception caught" << endl;
        }
    }
    return 0;
}
```

```
PS D:\KIIT_NOTES\2nd year sem_3\OOP_lab\18_11_2021> ./arrayOutOfbond
Enter the size of array : 3
Enter the element :1
Enter the element :2
Enter the element :3
Enter the element :4
out of bond  exception caught
PS D:\KIIT_NOTES\2nd year sem_3\OOP_lab\18_11_2021>
```

Question 3)WAP to demonstrate multiple catch and catch all.

```cpp
#include <iostream>
using namespace std;

void test(int x)
{
   try
   {
      if (x > 0)
         throw x;
      else
         throw 'x';
   }
   catch (int x)
   {
      cout << "An integer is caught " << endl;
   }
   catch (char x)
   {
      cout << "A character is caught" << endl;
   }
}

int main()
{
   test(27);
   test(0);

   return 0;
}
```

```
PS D:\KIIT_NOTES\2nd year sem_3\OOP_lab\18_11_2021> ./CatchAll
An integer is caught
A character is caught
PS D:\KIIT_NOTES\2nd year sem_3\OOP_lab\18_11_2021>
```

Question 4)WAP to accept 10 integers in an array . Check all numbers in an array.When any negative number is found,throw an exception and take corrective measure.

```cpp
#include <iostream>
using namespace std;
int main()
{
    int n;
    cout << "Enter size of array : ";
    cin >> n;
    int a[n];
    try
    {
        for (int i = 0; i < n; i++)
        {
            cout << "Enter the element "<< " = ";
            cin >> a[i];
            try
            {
                if (a[i] < 0)
                {
                    throw a[i];
                }
            }
            catch (int i)
            {
                throw;
            }
        }
    }
    catch (int i)
    {
        cout << "Negative value is caught" << endl;
    }
    return 0;
}
```

```
PS D:\KIIT_NOTES\2nd year sem_3\OOP_lab\18_11_2021> ./negativeNum
Enter size of array : 3
Enter the element  = 1
Enter the element  = -2
Negative value is caught
PS D:\KIIT_NOTES\2nd year sem_3\OOP_lab\18_11_2021>
```

Question 5)WAP to accept a String . When any space is encountered , throw exception.

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

#define MAX 50
using namespace std;
int main()
{
    char a[MAX];
    cout << "Enter the string : ";
    cin.getline(a, MAX);

    int l = strlen(a);

    try
    {
        for (int i = 0; i < l; i++)
        {
            try
            {
                if (a[i] == ' ')
                {
                    cout << endl;
                    throw a[i];
                }
                else
                {
                    cout << a[i];
                }
            }
            catch (char c)
            {
                throw;
            }
        }
    }
    catch (char c)
    {
        cout << "Space is caught" << endl;
    }
    return 0;
}
```

```
PS D:\KIIT_NOTES\2nd year sem_3\OOP_lab\18_11_2021> g++ .\space.cpp -ospace
PS D:\KIIT_NOTES\2nd year sem_3\OOP_lab\18_11_2021> ./space
Enter the string : Akriti Choudhary
Akriti
Space is caught
PS D:\KIIT_NOTES\2nd year sem_3\OOP_lab\18_11_2021>
```