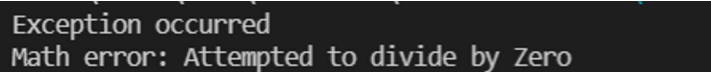# LAB - 14

Q1 Wap to display the Divide by zero exception(Arithmetic Exception)

```cpp
#include <iostream>
using namespace std;
float Division(float num, float
den){
    if (den == 0)
    {
        throw runtime_error("Math error: Attempted to divide by Zero
\n"); }
    return (num / den);
}
int main()
{
    float numerator, denominator, result;
    numerator = 10;
    denominator = 0;
    try
    {
        result = Division(numerator, denominator);
        cout << "The quotient is " << result << endl;
    }
    catch (runtime_error
    &e){
        cout << "Exception occurred" << endl << e.what();
    }
}
```

```
Exception occurred
Math error: Attempted to divide by Zero
```

Q2. Wap to create exception if user enter 0 it raise exception "zero entered" if enter negative
it raise "Negative Exception" if enter positive then it raise "Positive Exception"

```cpp
#include <iostream>
#include <string>
using namespace std;
int main()
{
    int x;
    try
    {
        cout << "Enter any Value: ";
        cin >> x;
        if (x == 0)
        throw("Zero"); else if (x < 0)
            throw x;
        else

            throw 'x';
    }
    catch (int x)
    {
        cout << "Negative Exception Block, value is: " << x <<
endl; }
    catch (char const *b)
    {
        cout << "Zero Exception Block, value is: " << x << endl;
    }
    catch (char a)
    {
        cout << "Positive Exception Block, value is: " << x << endl;
    }
```

```
    return 0;
}
```

```
Enter any Value: 0
Zero Exception Block, value is: 0
PS C:\Users\KIIT\Documents\OOPS LAB\OOPS LAB 14> c
Enter any Value: 1
Positive Exception Block, value is: 1
PS C:\Users\KIIT\Documents\OOPS LAB\OOPS LAB 14> c
Enter any Value: -1
Negative Exception Block, value is: -1
```

Q3. Question no 2 try to do with using function.

```cpp
#include <iostream>
#include <string>
using namespace std;
void check(int x)
{
   if (x == 0)
      throw("Zero");
   else if (x < 0)
      throw x;
   else
      throw 'x';
}
int main()
{
   int n;
   cout << "Enter a numbers : ";
   cin >> n;
   try
   {
      check(n);
   }
   catch (int n)
   {
      cout << "Negative exception.
\n"; }
   catch (char const *b)
   {
      cout << "Zero entered.\n";
   }
   catch (char a)
   {
      cout << "Positive exception.\n";
   }
   return 0;
}
```

```
Enter a numbers : 0
Zero entered.
PS C:\Users\KIIT\Documents\OOPS LAB\OOPS LAB 14> cd
Enter a numbers : 1
Positive exception.
PS C:\Users\KIIT\Documents\OOPS LAB\OOPS LAB 14> cd
Enter a numbers : -1
Negative exception.
```

Q4. Question no 2 try to do using three dot() mechanism

```cpp
#include <iostream>
using namespace std;
int main()
{
   int a, b;
   cout << "Enter any Value of a and b: ";
   cin >> a >> b;
   try
   {
```

```cpp
    if (b == 0)
        throw(0);
    else if (b < 0)
        throw string("-1");
    else
        cout << "a/b = " << a / b <<
endl; }
catch (int e)
{
    cout << "Zero Exception Block " << endl;
}
catch (...)
{
    cout << "Negative Exception Block " << endl;
}
return 0;
}
```

```
Enter any Value of a and b: 10 0
Zero Exception Block
PS C:\Users\KIIT\Documents\OOPS LAB\OOPS LAB 14> c
Enter any Value of a and b: 10 -1
Negative Exception Block
PS C:\Users\KIIT\Documents\OOPS LAB\OOPS LAB 14> c
Enter any Value of a and b: 10 1
a/b = 10
```

Q5. Wap to enter your age if age not in 1-100 it raise invalid age.

```cpp
#include <iostream>
using namespace std;
int main()
{
    int Val, a;
    try
    {
        cout << "Enter any Age: ";
        cin >> Val;
        if (Val == 0)
            cout << "Person is not born" << endl;
        else if (Val <= 1 && Val >= 100)
            throw(Val);
        else
            throw(Val);
    }
    catch (int a)
    {
        cout << "Valid Age" << a <<
endl; }
    catch (float b)
    {
        cout << "Invalid Age " << b << endl;
    }
    return 0;
}
```

```
Enter any Age: 1
Valid Age 1
PS C:\Users\KIIT\Documents\OOPS LAB\OOPS LAB 14>
Enter any Age: 0
Person is not born
```

Q6. Wap to enter employee details eno,ename,edesg,esal. if salary is zero or negative then it raise exception invalid salary otherwise display eno,ename,gross salary based TA=9% of basic HRA=15% of basic.
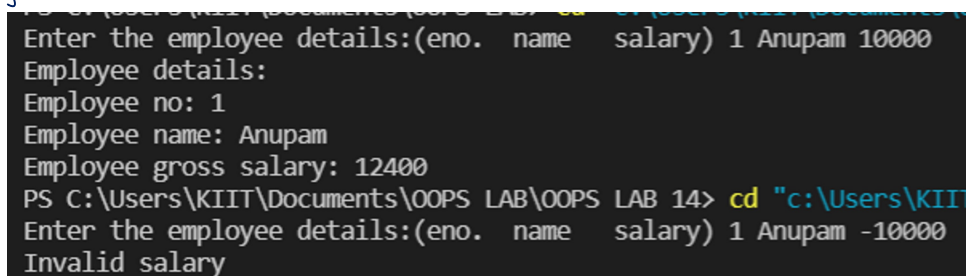
```cpp
#include <iostream>
using namespace std;
int main()
{
```

```cpp
{
    int eno, esal;
    char ename[20];
    cout << "Enter the employee details:(eno. name   salary) ";
    cin >> eno >> ename >> esal;
    try
    {
        if (esal <= 0)
            throw "Invalid salary";
        else
        {
            int hra = esal * 15 / 100;
            int ta = esal * 9 / 100;
            int gross = esal + hra + ta;
            cout << "Employee details: " << endl;
            cout << "Employee no: " << eno << endl;
            cout << "Employee name: " << ename << endl; cout
                << "Employee gross salary: " << gross << endl;
        }
    }
    catch (const char
    *e){
        cout << e << endl; }
    return 0;
}
```

```
Enter the employee details:(eno.  name    salary) 1 Anupam 10000
Employee details:
Employee no: 1
Employee name: Anupam
Employee gross salary: 12400
PS C:\Users\KIIT\Documents\OOPS LAB\OOPS LAB 14> cd "c:\Users\KII
Enter the employee details:(eno.  name    salary) 1 Anupam -10000
Invalid salary
```

Q7. Wap to create two class Father and Son. Data member fname, fage, sname, sage. If father age is less than son age then it raise exception "Son age is exceed than father".

```cpp
#include <iostream>
using namespace std;
class Father
{
public:
    string fname;
    int fage;
};
class Son : public Father
{
public:
    string sname;
    int sage;
};
int main()
{
    Son s;
    cout << "Enter the name of father and son: ";
    cin >> s.fname >> s.sname;
    cout << "Enter the age of father and son: ";
    cin >> s.fage >> s.sage;
    try
    {
        if (s.fage < s.sage)
            throw string("Son age is exceed than father");
        else
            cout << "Son age is less than father" << endl;
    }
```

```
    catch (string
    e){
      cout << e << endl;
    }
    return 0;
}
```

```
Enter the name of father and son: P A
Enter the age of father and son: 50 20
Son age is less than father
PS C:\Users\KIIT\Documents\OOPS LAB\OOPS LAB 14> cd "c:\
Enter the name of father and son: P A
Enter the age of father and son: 35 40
Son age is exceed than father
```