FACULTY OF ENGINEERING & TECHNOLOGY

CSPS103: Object Oriented Programming

Lecture-38

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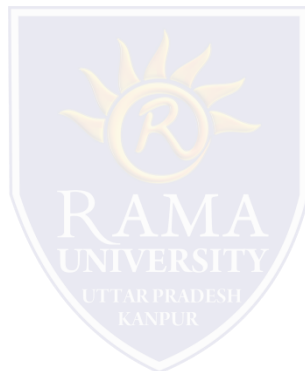preeti.ru@ramauniversity.ac.in

OBJECTIVES

In this lecture, you will learn to:

❖ **Exception Handling Keywords**

❖ **try/catch**
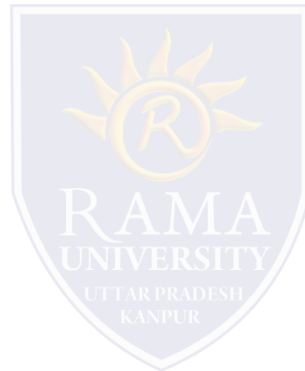
❖ **try/catch example**

❖ **User-Defined Exceptions**

EXCEPTION HANDLING KEYWORDS

In C++, we use 3 keywords to perform exception handling:

1. try

2. catch, and

3. throw

TRY/CATCH

❏In C++ programming, exception handling is performed using try/catch statement.

❏The C++ try block is used to place the code that may occur exception.

❏The catch block is used to handle the exception.
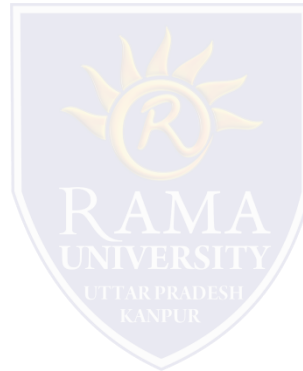
TRY/CATCH EXAMPLE

```cpp
#include <iostream>


float division(int x, int y) {
   if( y == 0 ) {
      throw "Attempted to divide by zero!";
   }
   return (x/y);
}
int main () {
   int i = 25;
   int j = 0;
   float k = 0;
   try {
      k = division(i, j);
      cout << k << endl;
   }catch (const char* e) {
      cerr << e << endl;
   }
   return 0;
}
```

❏ The new exception can be defined by overriding and inheriting exception class functionality.

Example

```cpp
#include <iostream>

#include <exception>


class MyException : public exception{

    public:

        const char * what() const throw()

        {

            return "Attempted to divide by zero!\n";

        }

};
```
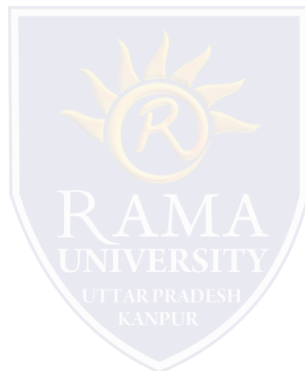
```cpp
int main()
{
    try
    {
        int x, y;
        cout << "Enter the two numbers : \n";
        cin >> x >> y;
        if (y == 0)
        {
            MyException z;
            throw z;
        }
        else
        {
            cout << "x / y = " << x/y << endl;
        }
    }
    catch(exception& e)
    {
        cout << e.what();
    }
}
```
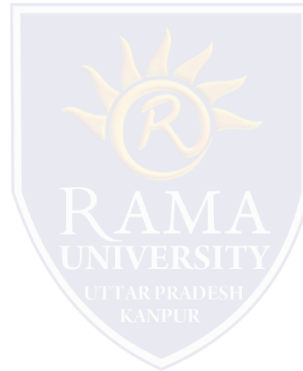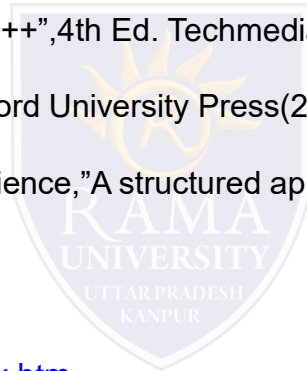
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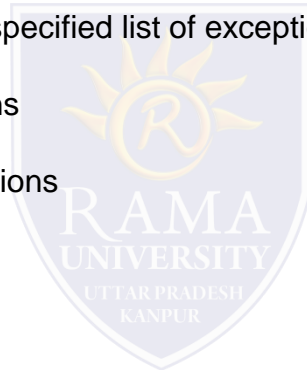
Multiple Choice Question:

Q1. What is meant by exception specification?

a) A function is limited to throwing only a specified list of exceptions

b) A catch can catch all types of exceptions

c) A function can throw any type of exceptions
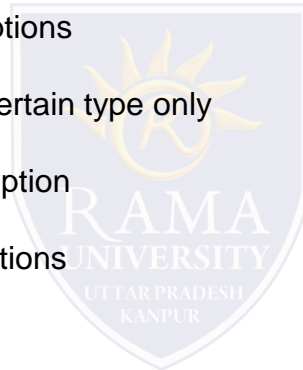
d) A try can catch all types of exceptions

Multiple Choice Question:

Q2. Identify the correct statement about throw(type).

a) A function can throw any type of exceptions

b) A function can throw an exception of certain type only

c) A function can't throw any type of exception
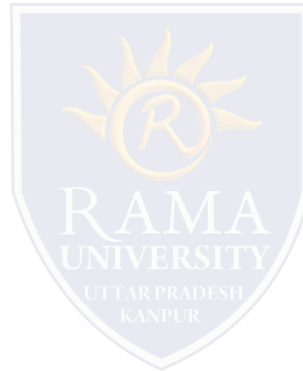
d) A function can catch all types of exceptions

Multiple Choice Question:

Q3. What will happen when a programs throws any other type of exception other than specified?

a) terminate

b) arise an error

c) run

d) throw

Multiple Choice Question:

Q4. What do you mean by "No exception specification"?

    a) It throws nothing

    b) It can throw anything

    c) It can catch anything

    d) It can try anything

Multiple Choice Question:

Q5. Which operations don't throw anything?

a) Operations which are reversible

b) Operations which are irreversible

c) Operations which are static

d) Operations which are dynamic

In this lecture, you learned that:

➢ The new exception can be defined by overriding and inheriting exception class functionality.