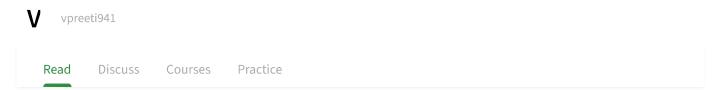


# Try, catch, throw and throws in Java



### What is an Exception?

An <u>exception</u> is an "unwanted or unexpected event", which occurs during the execution of the program i.e, at run-time, that disrupts the normal flow of the program's instructions. When an exception occurs, the execution of the program gets terminated.

# Why does an Exception occur?

An exception can occur due to several reasons like a Network connection problem, Bad input provided by a user, Opening a non-existing file in your program, etc

### Blocks & Keywords used for exception handling

1. try: The try block contains a set of statements where an exception can occur.

```
try
{
    // statement(s) that might cause exception
}
```

2. **catch**: The catch block is used to handle the uncertain condition of a try block. A try block is always followed by a catch block, which handles the exception that occurs in the associated try

block.

```
catch
{
    // statement(s) that handle an exception
    // examples, closing a connection, closing
    // file, exiting the process after writing
    // details to a log file.
}
```

- 3. **throw**: The throw keyword is used to transfer control from the try block to the catch block.
- 4. **throws**: The throws keyword is used for exception handling without try & catch block. It specifies the exceptions that a method can throw to the caller and does not handle itself.
- 5. **finally**: It is executed after the catch block. We use it to put some common code (to be executed irrespective of whether an exception has occurred or not ) when there are multiple catch blocks.

Example of an exception generated by the system is given below:

```
Exception in thread "main"

java.lang.ArithmeticException: divide

by zero at ExceptionDemo.main(ExceptionDemo.java:5)

ExceptionDemo: The class name

main:The method name

ExceptionDemo.java:The file name

java:5:line number
```

### Java

```
// Java program to demonstrate working of try,
// catch and finally

class Division {
    public static void main(String[] args)
    {
        int a = 10, b = 5, c = 5, result;
        try {
            result = a / (b - c);
            System.out.println("result" + result);
        }

        catch (ArithmeticException e) {
            System.out.println("Exception caught:Division by zero");
        }

        finally {
```

```
System.out.println("I am in final block");
}
}
```

### Output:

```
Exception caught:Division by zero I am in final block
```

An example of throws keyword:

## Java

```
// Java program to demonstrate working of throws
class ThrowsExecp {
    // This method throws an exception
    // to be handled
    // by caller or caller
    // of caller and so on.
    static void fun() throws IllegalAccessException
        System.out.println("Inside fun(). ");
        throw new IllegalAccessException("demo");
    // This is a caller function
    public static void main(String args[])
    {
        try {
            fun();
        catch (IllegalAccessException e) {
            System.out.println("caught in main.");
}
```

### **Output:**

```
Inside fun().
caught in main.
```

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