

**Course Name: A Level (2nd Sem)**

**Subject: JAVA**

**Topic :throw and throws keyword in java**

**Date: 16-04-20**

## **Java throw keyword:**

In Java exception handling, **throw keyword** is used to explicitly throw an exception from a method or constructor. We can throw either checked or unchecked exception in java by throw keyword. The throw keyword is mainly used to throw custom exception. Only object of Throwable class or its sub classes can be thrown. Program execution stops on encountering throw statement, and the closest catch statement is checked for matching type of exception.

### **Syntax:**

throw ThrowableInstance

### **Example:**

```
class Throw1
{
    static void validateMarks(int marks)
    {
        if (marks <80)
            throw new ArithmeticException("Not Oracle certified");
        else
            System.out.println("Oracle certified ");
    }

    public static void main(String args[])
    {
        validateMarks (86);
        System.out.println("welcome ...");
    }
}
```

### **Explanation:**

In this example, we have created the validateMarks () method that takes integer value as a parameter. If the marks is less than 80, we are throwing the ArithmeticException otherwise print a message that you are Oracle certified.

## Java throws keyword:

Any method that is capable of causing exceptions must list all the exceptions possible during its execution, so that programmer calling that method gets a prior knowledge about which exceptions are to be handled. A method can do so by using the **throws** keyword.

```
class Throws1
{
    static void check() throws ArithmeticException
    {
        System.out.println("Inside check function");
        throw new ArithmeticException("demo");
    }

    public static void main(String args[])
    {
        try
        {
            check();
        }
        catch(ArithmeticException e)
        {
            System.out.println(e);
        }
    }
}
```

## 2<sup>nd</sup> example of throws keyword

```
import java.io.*;
class file1 {
    public static void main(String[] args) throws IOException {
        FileWriter file = new FileWriter("c:\\a.txt");
        file.write("NIELIT");
        file.close();
    }
}
```

### Explanation:

In this example the programmer makes a prior announcement that the code may be risky so throws exception with the method itself. The above code will throw an exception if the above mentioned file is not created first or gets deleted.

## The difference between throw and throws

throw	throws
throw keyword is used to throw an exception explicitly.	throws keyword is used to declare an exception possible during its execution.
throw keyword is followed by an instance of Throwable class or one of its sub-classes.	throws keyword is followed by one or more Exception class names separated by commas.
throw keyword is declared inside a method body.	throws keyword is used with method signature (method declaration).
We cannot throw multiple exceptions using throw keyword.	We can declare multiple exceptions (separated by commas) using throws keyword.
<b>Example:</b>  throw new IOException("can not open File");	<b>Example:</b>  throws IOException, ArrayIndexOutOfBoundsException;

### Exercise:

1. Why throw keyword is necessary? Explain with proper example.
2. Explain the usage of throws keyword with example.
3. Write down the differences between throw and throws keyword.