Throws Clause

Agenda

1 **Throws Clause**

Throws Clause

Using throws

- Sometimes, a method is capable of causing an exception that it does not handle
- Then, it must specify this behavior so that callers of the method can guard themselves against that exception
- While declaring such methods, you have to specify what type of exception it may throw by using the **throws** keyword
- A **throws** clause specifies a comma-separated list of exception types that a method might throw:
  - type method-name(parameter list) throws exception-list

Using throws (Contd.).

```
class ThrowsDemo{
  static void throwOne(){
    System.out.println("Inside throwOne.");
    throw new FileNotFoundException();
  }
  public static void main(String args[]){
    throwOne();
  }
}
```

What happens when this code is compiled ?

Compilation Error……why?

Implementing throws

```
import java.io.*;
class ThrowsDemo{
  static void throwOne() throws FileNotFoundException{
    System.out.println("Inside throwOne.");
    throw new FileNotFoundException();
  }
  public static void main(String args[]) {
    try{
        throwOne();
    }
    catch (FileNotFoundException e){
        System.out.println("Caught " + e);
    }
  }
}
```

Rule governing overriding method with throws

- The overriding method must NOT throw checked exceptions that are new or broader than those declared by the overridden method

For eg : A method that declares(throws) an SQLException cannot be overriden by a method that declares an IOException, Exception or any other exception unless it is a subclass of SQLException

- In other words, if a method declares to throw a given exception, the overriding method in a subclass can only declare to throw the same exception or its subclass

- This rule does not apply for unchecked exceptions

Quiz

- What will be the result, if we try to compile the following code (FileNotFoundException is a subclass of IOException)

```
import java.io.*;
class Super {
  void m1() throws FileNotFoundException {
    FileInputStream fx = new FileInputStream("Super.txt");
  }
}
class Sub extends Super {
  void m1() throws IOException {
    FileInputStream fx = new FileInputStream("Sub.txt");
  }
}
```

Yes, it will throw compilation Error

Quiz (Contd.).

- What will be the result, if we try to compile the following code (FileNotFoundException is a subclass of IOException)

```
import java.io.*;
class Super {
  void m1() throws IOException {
    FileInputStream fx = new FileInputStream("Super.txt");
  }
}
class Sub extends Super {
  void m1() throws FileNotFoundException {
    FileInputStream fx = new FileInputStream("Sub.txt");
  }
}
```

No Error! Compilation successful

Quiz (Contd.).

- What will be the result, if we try to compile the following code

```
class Super {
  void m1() throws ArithmeticException {
    int x = 100, y=0;
        int z=x/y;
        System.out.println(z);
  }
}
class Sub extends Super {
  void m1() throws NumberFormatException {
    System.out.println("Wipro");
  }
}
```

No Error! Compilation successful

Quiz (Contd.).

- What will be the result, if we try to compile the following code (FileNotFoundException & SQLException are not related hierarchically)

```
import java.io.*;
import java.sql.*;
class Super {
  void m1() throws FileNotFoundException {
    FileInputStream fx = new FileInputStream("Super.txt");
  }
}
class Sub extends Super {
  void m1() throws SQLException {
    FileInputStream fx = new FileInputStream("Sub.txt");
  }
}
```

It will throw compilation Error

Quiz (Contd.).

What will be the result, if we try to compile and execute the following code

```
import java.io.*;
class Plane {
public Plane() throws IOException, RuntimeException {
System.out.println("Plane");
}
}
class Jet extends Plane { }
public class Tester {
public static void main(String args[]) throws IOException {
new Plane();
}
}
```

It will throw compilation Error

Summary

In this session, you were able to :

- Learn about throws clause

Thank You