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Exception Handling with Method Overriding in Java

There are many rules if we talk about method overriding with exception handling.

Some of the rules are listed below:

- o **If the superclass method does not declare an exception**

- o If the superclass method does not declare an exception, subclass overridden method cannot declare the checked exception but it can declare unchecked exception.

- o **If the superclass method declares an exception**

- o If the superclass method declares an exception, subclass overridden method can declare same, subclass exception or no exception but cannot declare parent exception.

If the superclass method does not declare an exception

Rule 1: If the superclass method does not declare an exception, subclass overridden method cannot declare the checked exception.

Let's consider following example based on the above rule.

TestExceptionChild.java



```
import java.io.*;
class Parent{
    // defining the method
    void msg() {
        System.out.println("parent method");
    }
}

public class TestExceptionChild extends Parent{
```



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.method in child class

```
// gives compile time error
void msg() throws IOException {
    System.out.println("TestExceptionChild");
}

public static void main(String args[]) {
    Parent p = new TestExceptionChild();
    p.msg();
}
}
```

Output:

```
C:\Users\Anurati\Desktop\abcDemo>javac TestExceptionChild.java
TestExceptionChild.java:14: error: msg() in TestExceptionChild cannot override msg()
) in Parent
    void msg() throws IOException {
           ^
 overridden method does not throw IOException
1 error
```

Rule 2: If the superclass method does not declare an exception, subclass overridden method cannot declare the checked exception but can declare unchecked exception.

TestExceptionChild1.java

```
import java.io.*;
class Parent{
    void msg() {
        System.out.println("parent method");
    }
}

class TestExceptionChild1 extends Parent{
    void msg()throws ArithmeticException {
        System.out.println("child method");
    }
}

public static void main(String args[]) {
    Parent p = new TestExceptionChild1();
    p.msg();
}
}
```

Output:

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```
C:\Users\Anurati\Desktop\abcDemo>javac TestExceptionChild1.java
C:\Users\Anurati\Desktop\abcDemo>java TestExceptionChild1
child method
```

If the superclass method declares an exception

Rule 1: If the superclass method declares an exception, subclass overridden method can declare the same subclass exception or no exception but cannot declare parent exception.

Example in case subclass overridden method declares parent exception

TestExceptionChild2.java

```
import java.io.*;
class Parent{
    void msg()throws ArithmeticException {
        System.out.println("parent method");
    }
}

public class TestExceptionChild2 extends Parent{
    void msg()throws Exception {
        System.out.println("child method");
    }

    public static void main(String args[]) {
        Parent p = new TestExceptionChild2();

        try {
            p.msg();
        }
        catch (Exception e){}
    }
}
```

Output:

```
C:\Users\Anurati\Desktop\abcDemo>javac TestExceptionChild2.java
TestExceptionChild2.java:9: error: msg() in TestExceptionChild2()
in Parent
    void msg()throws Exception {
           ^
    overridden method does not throw Exception
1 error
```



↑ SCROLL TO TOP ↴ subclass overridden method declare

TestExceptionChild3.java

```
import java.io.*;
class Parent{
    void msg() throws Exception {
        System.out.println("parent method");
    }
}

public class TestExceptionChild3 extends Parent {
    void msg()throws Exception {
        System.out.println("child method");
    }
}

public static void main(String args[]){
    Parent p = new TestExceptionChild3();

    try {
        p.msg();
    }
    catch(Exception e) {}
}
}
```

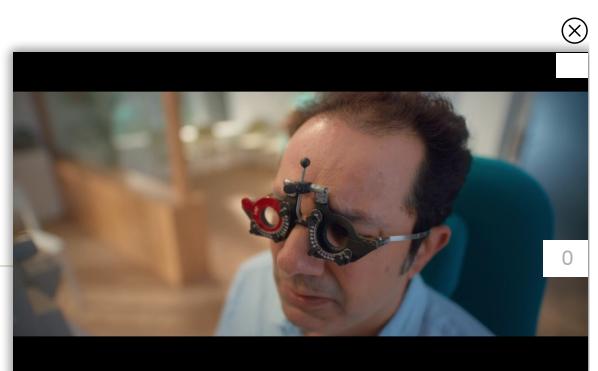
Output:

```
C:\Users\Anurati\Desktop\abcDemo>javac TestExceptionChild3.java
C:\Users\Anurati\Desktop\abcDemo>java TestExceptionChild3
child method
```

Example in case subclass overridden method declares subclass exception

TestExceptionChild4.java

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```

void msg()throws Exception {
    System.out.println("parent method");
}

}

class TestExceptionChild4 extends Parent{
    void msg()throws ArithmeticException {
        System.out.println("child method");
    }
}

public static void main(String args[]){
    Parent p = new TestExceptionChild4();

    try {
        p.msg();
    }
    catch(Exception e) {}
}
}

```

Output:

```

C:\Users\Anurati\Desktop\abcDemo>javac TestExceptionChild4.java
C:\Users\Anurati\Desktop\abcDemo>java TestExceptionChild4
child method

```

Example in case subclass overridden method declares no exception**TestExceptionChild5.java**

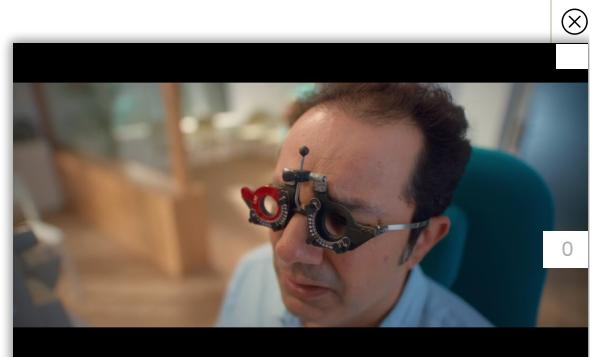
```

import java.io.*;
class Parent {
    void msg()throws Exception{
        System.out.println("parent method");
    }
}

class TestExceptionChild5 extends Parent{
    void msg() {
        System.out.println("child method");
    }
}

public static void main(String args[]){
    TestExceptionChild5();
}

```

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```
try {  
    p.msg();  
}  
catch(Exception e) {}  
  
}  
}
```

Output:

```
C:\Users\Anurati\Desktop\abcDemo>javac TestExceptionChild5.java  
C:\Users\Anurati\Desktop\abcDemo>java TestExceptionChild5  
child method
```

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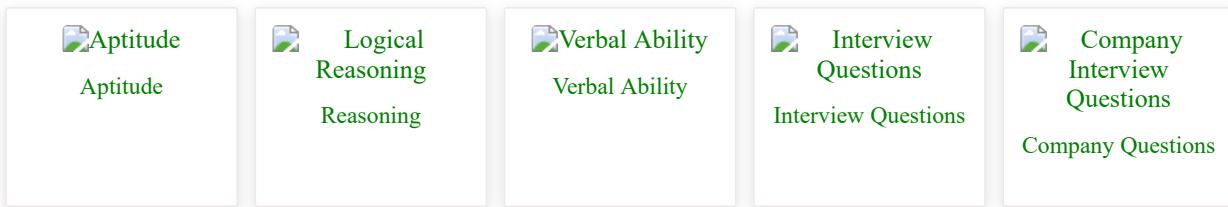
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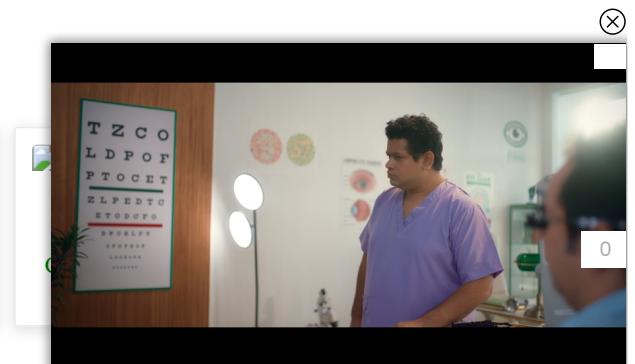
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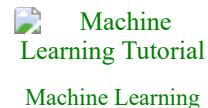
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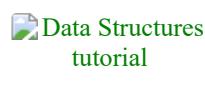


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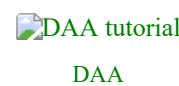
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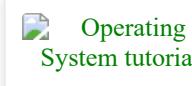
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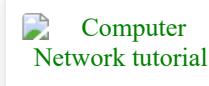
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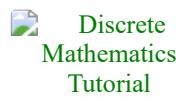
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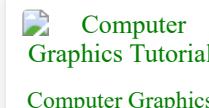
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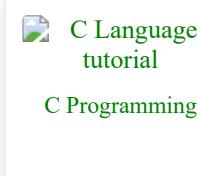
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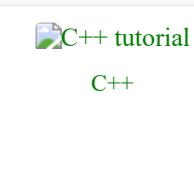
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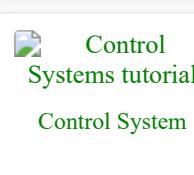
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