

40. Java Exception.

Code:

```
class Exc0{
    public static void main(String[] args){
        int ans = 13 / 0;
    }
}
```

Output:



The screenshot shows a terminal window titled 'suvam@suvam-Inspiron-3543 ~/Desktop/java'. The user enters the command 'javac Exc0.java' and then 'java Exc0'. The output shows an 'Exception in thread "main" java.lang.ArithmeticException: / by zero' at line 3 of Exc0.java. The terminal window has a menu bar with 'File', 'Edit', 'View', 'Search', 'Terminal', and 'Help'. The background shows a desktop with icons for 'narkane1' and 'Exc0 class'.


```
suvam@suvam-Inspiron-3543 ~/Desktop/java $ javac Exc0.java
suvam@suvam-Inspiron-3543 ~/Desktop/java $ java Exc0
Exception in thread "main" java.lang.ArithmeticException: / by zero
    at Exc0.main(Exc0.java:3)
suvam@suvam-Inspiron-3543 ~/Desktop/java $
```

41. Java Exception Handling using try & catch.

Code:

```
class Exc1{
    public static void main(String[] args){
        try{
            int ans = 13/0;
            System.out.println("It's not printed !!");
        }catch(ArithmeticException e){
            System.out.println("This is a Arithmetic Exception !");
        }
        System.out.println("Done");
    }
}
```

Output:



The screenshot shows a terminal window titled 'suvam@suvam-Inspiron-3543 ~/Desktop/java'. The user enters the command 'javac Exc1.java' and then 'java Exc1'. The output shows 'This is a Arithmetic Exception !' followed by 'Done'. The terminal window has a menu bar with 'File', 'Edit', 'View', 'Search', 'Terminal', and 'Help'. The background shows a desktop with icons for 'narkane1' and 'Exc0 class'.

```
suvam@suvam-Inspiron-3543 ~/Desktop/java $ javac Exc1.java
suvam@suvam-Inspiron-3543 ~/Desktop/java $ java Exc1
This is a Arithmetic Exception !
Done
suvam@suvam-Inspiron-3543 ~/Desktop/java $
```

42. Handle an Exception & move on.

Code:

```
import java.util.Random;
class Exc2{
    public static void main(String[] args){
        Random r = new Random();
        int a=0, b=0, c=0;
        for(int i =0; i<5;i++){
            try{
                b = r.nextInt();
                c = r.nextInt();
                a = 122 / (b/c);
            }catch(ArithmeticException e){
                System.out.println("Division by 0 ");
                a = 0;
            }
            System.out.println("Value of a : " + a);
        }
    }
}
```

Output:



```
suvam@suvam-Inspiron-3543 ~/Desktop/java
File Edit View Search Terminal Help
suvam@suvam-Inspiron-3543 ~/Desktop/java $ javac Exc2.java
suvam@suvam-Inspiron-3543 ~/Desktop/java $ java Exc2
Value of a : -122
Division by 0
Value of a : 0
Division by 0
Value of a : 0
Division by 0
Value of a : 0
Division by 0
Value of a : 0
suvam@suvam-Inspiron-3543 ~/Desktop/java $
```

43. Displaying a Description of an Exception.

Code:

```
class Exc3{
    public static void main(String[] args){
```

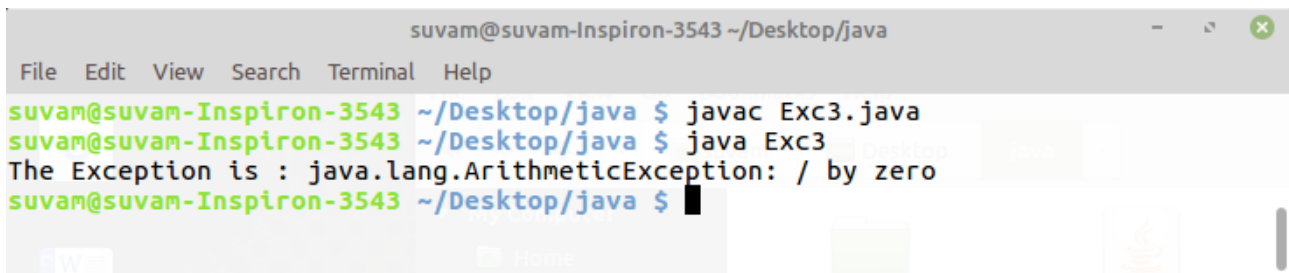
```

    try{
        int ans = 30 / 0 ;
    }catch(ArithmeticException e){
        System.out.println("The Exception is : "+ e);
    }

}
}

```

Output:



```

suvam@suvam-Inspiron-3543 ~/Desktop/java
File Edit View Search Terminal Help
suvam@suvam-Inspiron-3543 ~/Desktop/java $ javac Exc3.java
suvam@suvam-Inspiron-3543 ~/Desktop/java $ java Exc3
The Exception is : java.lang.ArithmeticException: / by zero
suvam@suvam-Inspiron-3543 ~/Desktop/java $

```

44. Multiple catch clause.

Code:

```

class Exc4{
    public static void main(String args[]){
        try{
            int a = args.length;
            System.out.println("a = " + a);
            int b = 30/a;
            int c[] = {1};
            c[33] = 30;
        }catch(ArithmeticException e){
            System.out.println("Divided by 0");
        }catch(ArrayIndexOutOfBoundsException e){
            System.out.println("Array index oob : " + e);
        }
        System.out.println("Try catch done !");
    }
}

```

Output:

```
suvam@suvam-Inspiron-3543 ~/Desktop/java
File Edit View Search Terminal Help
suvam@suvam-Inspiron-3543 ~/Desktop/java $ javac Exc4.java
suvam@suvam-Inspiron-3543 ~/Desktop/java $ java Exc4
a = 0
Divied by 0
Try catch done !
suvam@suvam-Inspiron-3543 ~/Desktop/java $ java Exc4 hello
a = 1
Array index oob : java.lang.ArrayIndexOutOfBoundsException: 33
Try catch done !
suvam@suvam-Inspiron-3543 ~/Desktop/java $
```

45. A subclass must come before it's superclass in a series of catch statment else unreachable code will be created.

Code:

```
class Exc5{
    public static void main(String args[]){
        try{
            int ans = 30/0;
        }catch(Exception e){
            System.out.println("Exception !!!");
        }catch(ArithmeticException e){
            System.out.println("Divied by 0");
        }
    }
}
```

Output:

```
suvam@suvam-Inspiron-3543 ~/Desktop/java
File Edit View Search Terminal Help
suvam@suvam-Inspiron-3543 ~/Desktop/java $ javac Exc5.java
Exc5.java:7: error: exception ArithmeticException has already been caught
        }catch(ArithmeticException e){
          ^
1 error
suvam@suvam-Inspiron-3543 ~/Desktop/java $
```

46. Nested Try Statements.

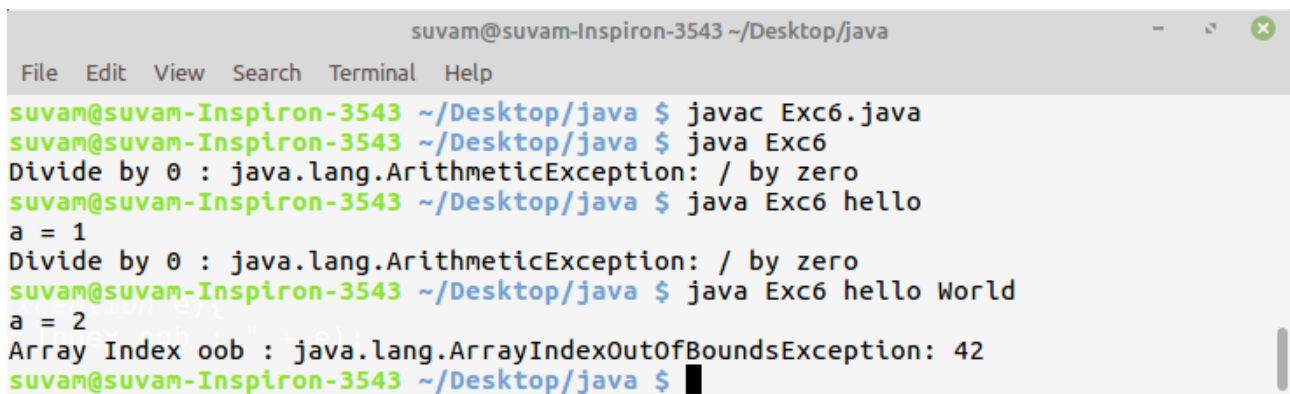
Code:

```
class Exc6{
    public static void main(String args[]){
        int a = args.length;

        try{
            int b = 30/a;
            System.out.println("a = " + a);
            try{
                if(a == 1)        a = a/(a-a);
                if(a == 2){
                    int c[] = {1};
                    c[42] = 99;
                }
            }catch(ArrayIndexOutOfBoundsException e){
                System.out.println("Array Index oob : " + e);
            }

        }catch(ArithmeticException e){
            System.out.println("Divide by 0 : "+e);
        }
    }
}
```

Output:



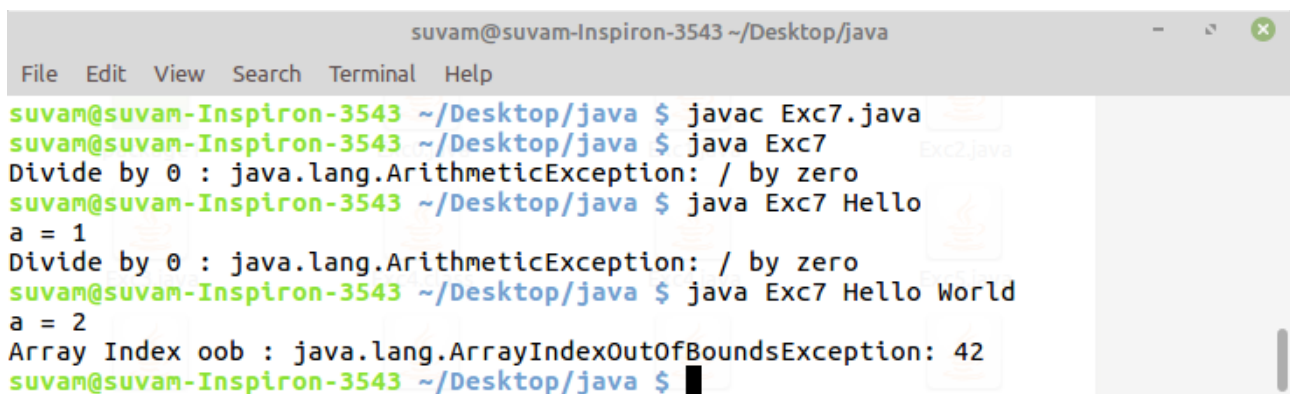
```
suvam@suvam-Inspiron-3543 ~/Desktop/java
File Edit View Search Terminal Help
suvam@suvam-Inspiron-3543 ~/Desktop/java $ javac Exc6.java
suvam@suvam-Inspiron-3543 ~/Desktop/java $ java Exc6
Divide by 0 : java.lang.ArithmeticException: / by zero
suvam@suvam-Inspiron-3543 ~/Desktop/java $ java Exc6 hello
a = 1
Divide by 0 : java.lang.ArithmeticException: / by zero
suvam@suvam-Inspiron-3543 ~/Desktop/java $ java Exc6 hello World
a = 2
Array Index oob : java.lang.ArrayIndexOutOfBoundsException: 42
suvam@suvam-Inspiron-3543 ~/Desktop/java $
```

47. Try Statements can be implicitly nested via calls to methods.

Code:

```
class Exc7{
    public static void main(String args[]){
        int a = args.length;
        try{
            int b = 30/a;
            System.out.println("a = " + a);
            check(a);
        }catch(ArithmeticException e){
            System.out.println("Divide by 0 : "+e);
        }
    }
    static void check(int a){
        try{
            if(a == 1)        a = a/(a-a);
            if(a == 2){
                int c[] = {1};
                c[42] = 99;
            }
        }catch(ArrayIndexOutOfBoundsException e){
            System.out.println("Array Index oob : " + e);
        }
    }
}
```

Output:



```
suvam@suvam-Inspiron-3543 ~/Desktop/java
File Edit View Search Terminal Help
suvam@suvam-Inspiron-3543 ~/Desktop/java $ javac Exc7.java
suvam@suvam-Inspiron-3543 ~/Desktop/java $ java Exc7
Divide by 0 : java.lang.ArithmeticException: / by zero
suvam@suvam-Inspiron-3543 ~/Desktop/java $ java Exc7 Hello
a = 1
Divide by 0 : java.lang.ArithmeticException: / by zero
suvam@suvam-Inspiron-3543 ~/Desktop/java $ java Exc7 Hello World
a = 2
Array Index oob : java.lang.ArrayIndexOutOfBoundsException: 42
suvam@suvam-Inspiron-3543 ~/Desktop/java $
```

48. Java Exception handling using 'Throw'.

Code:

```
class Exc8{
    public static void main(String[] args){
        try{
            demo();
        }catch(ArithmeticException e){
            System.out.println("Recaugth : " + e);
        }
    }
    static void demo(){
        try{
            throw new ArithmeticException("DEMO");
        }catch(ArithmeticException e){
            System.out.println("Caugth inside demo method !");
            throw e;
        }
    }
}
```

Output:

```
suvam@suvam-Inspiron-3543 ~/Desktop/java
File Edit View Search Terminal Help
suvam@suvam-Inspiron-3543 ~/Desktop/java $ javac Exc8.java
suvam@suvam-Inspiron-3543 ~/Desktop/java $ java Exc8
Caught inside demo method !
Recaugth : java.lang.ArithmeticException: DEMO
suvam@suvam-Inspiron-3543 ~/Desktop/java $
```

49. Java Exception handling using 'Throws'.**Code:**

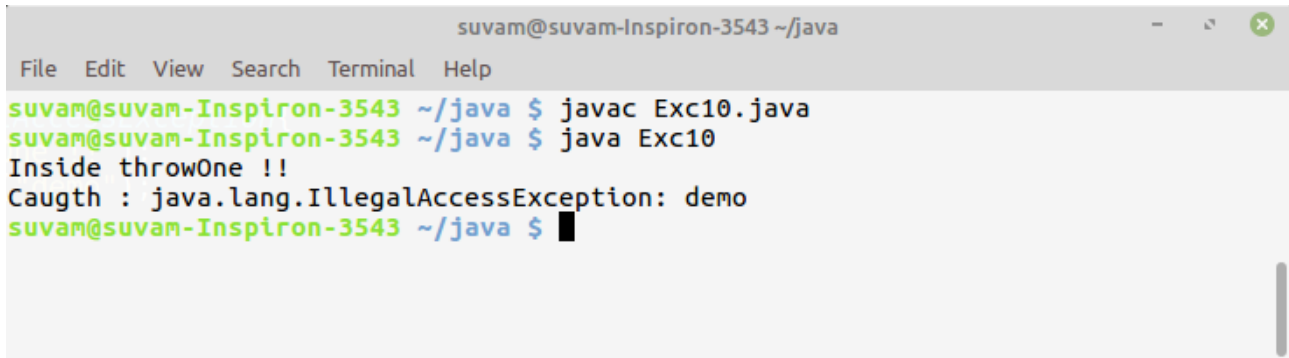
```
class Exc10{
    public static void main(String[] args){
        try{
            throwOne();
        }catch(IllegalAccessException e){
            System.out.println("Caugth : " + e);
        }
    }
}
```

```

        static void throwOne() throws IllegalAccessException{
            System.out.println("Inside throwOne !!");
            throw new IllegalAccessException("demo");
        }
    }
}

```

Output:



```

suvam@suvam-Inspiron-3543 ~/java
File Edit View Search Terminal Help
suvam@suvam-Inspiron-3543 ~/java $ javac Exc10.java
suvam@suvam-Inspiron-3543 ~/java $ java Exc10
Inside throwOne !!
Caught : java.lang.IllegalAccessException: demo
suvam@suvam-Inspiron-3543 ~/java $

```

50. Use of finally.

Code:

```

class Exc11{
    public static void main(String[] args){
        try{
            methodA();
        }catch(Exception e){
            System.out.println("Exception Caught");
        }
        methodB();
        methodC();
    }

    static void methodA(){
        try{
            System.out.println("Inside methodA");
            throw new RuntimeException("Demo !");
        }finally{
            System.out.println("methodA's finally");
        }
    }
}

```

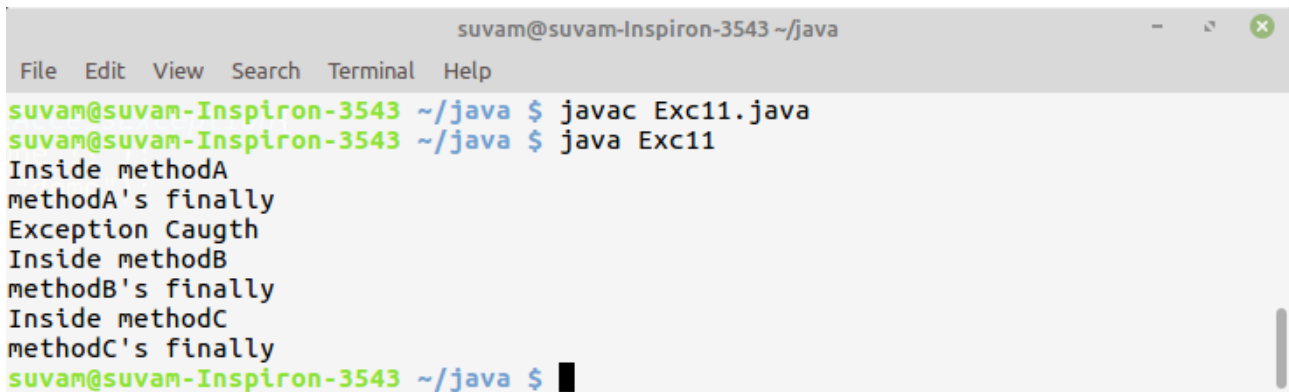


```
}

static void methodB(){
    try{
        System.out.println("Inside methodB");
        return;
    }finally{
        System.out.println("methodB's finally");
    }
}

static void methodC(){
    try{
        System.out.println("Inside methodC");
        return;
    }finally{
        System.out.println("methodC's finally");
    }
}
}
```

Output:



```
suvam@suvam-Inspiron-3543 ~/java
File Edit View Search Terminal Help
suvam@suvam-Inspiron-3543 ~/java $ javac Exc11.java
suvam@suvam-Inspiron-3543 ~/java $ java Exc11
Inside methodA
methodA's finally
Exception Caught
Inside methodB
methodB's finally
Inside methodC
methodC's finally
suvam@suvam-Inspiron-3543 ~/java $
```