

Java for beginners

Exception Handling



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Agenda

- ① Exception
- ② Concept
- ③ Exception class hierarchy
- ④ Throwable
- ⑤ Types of Exceptions
- ⑥ Handling Exceptions

Find Output

```
class Example{  
    public static void main (String []args){  
        System.out.println ("Result : " + 3/0)  
    }  
}
```

Find Output

```
class Example{  
    public static void main (String []args){  
        System.out.println ("Result : " + 3/0)  
    }  
}
```

No compilation error , but runtime error
Exception in thread "main" java.lang.
ArithmaticException: / by zero at Example.
Main (Example.java:3)

Find Output

```
class Example {
    public static void main (String [Jargs) {
        String s1;
        System.out.println("Result: " + s1.length());
    }
}
```

Find Output

```
class Example {
    public static void main (String [Jargs) {
        String s1;
        System.out.println("Result: " + s1.length());
    }
}
```

A compile time error, as s1 is a blank variable.

Find Output

```
class Example {
```

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

```
        String s1 = null;
```

```
        System.out.println("Result: " + s1.length());
```

```
}
```

```
}
```



s1, member



P → member



Find Output

```
class Example {  
    public static void main (String []args) {  
        String s1 = null;  
        System.out.println("Result: " + s1.length());  
    }  
}
```

No Compilation error, but Run time error
Exception in thread "main"
java.lang.NullPointerException at
Example.main(Example.java: 5)

Exception

Robust

So, what are NullPointerException and ArithmeticException?

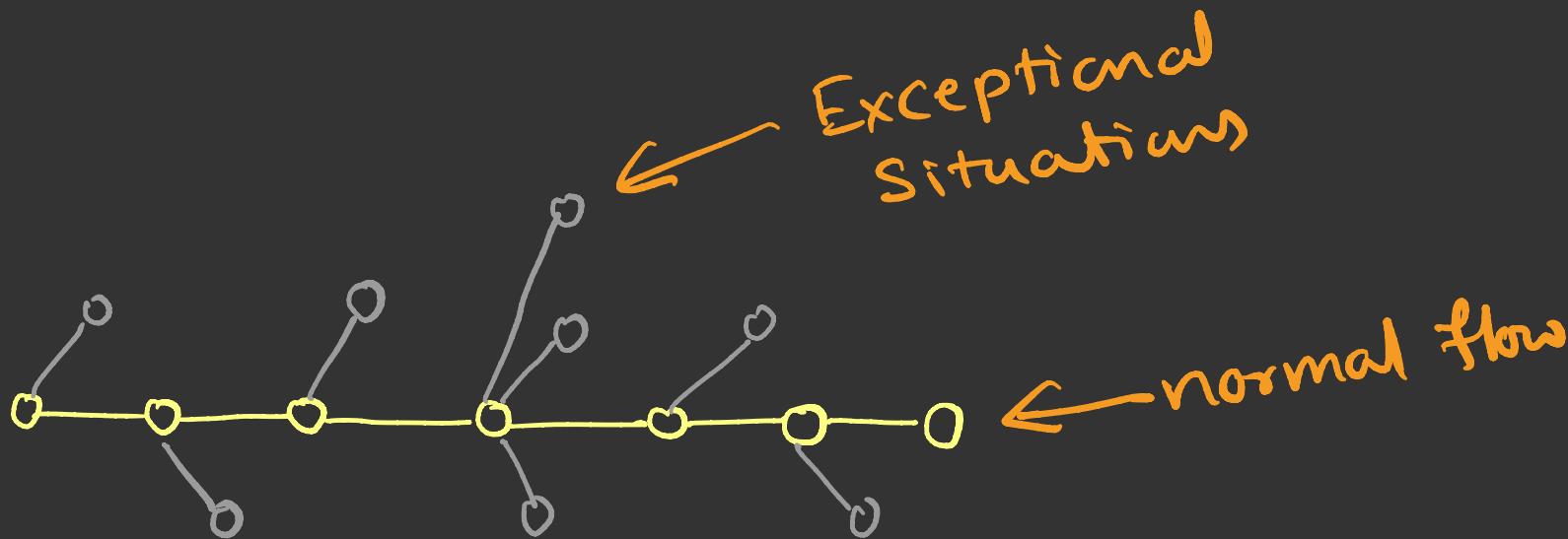
They are classes in java.lang package

Exceptions are any abnormal, unexpected events or extraordinary conditions that may occur at runtime.

They could be FileNotFoundException, unable to get connection exception and so on.

On such conditions java throws an exception object

Normal flow



if your program is ready to respond
in exceptional situations along with the
normal flow, then your program is robust.

Java exceptions are basically java objects

Java exception handling is used to handle error conditions in a program systematically by taking the necessary action.

Any exception not specifically handled within a java program are caught by the java runtime environment.

Concept

{

some code

some code (exception occurred)

some code

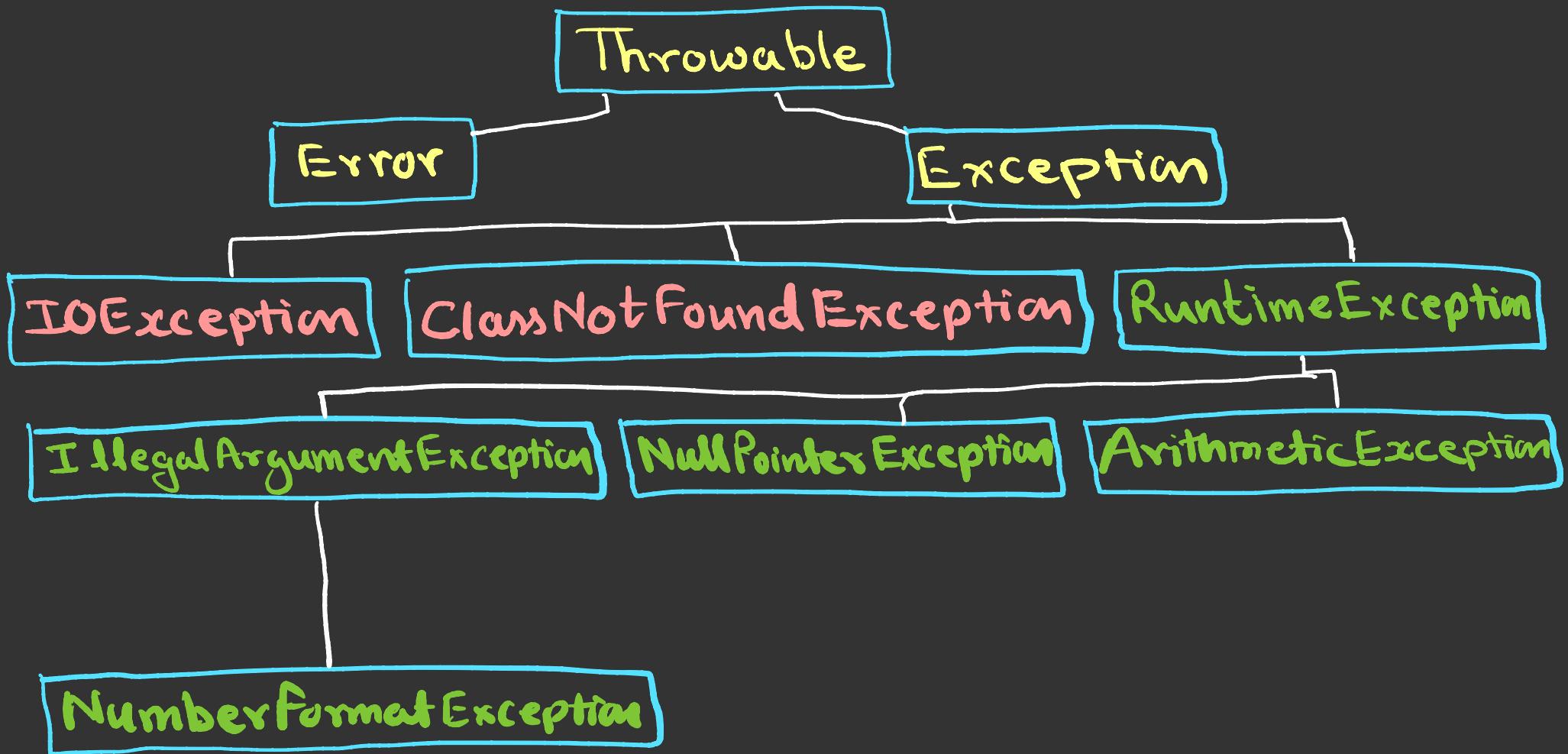
}

{

handling code
for exception

}

Class Hierarchy



An exception is a subclass of the Exception class, which is a subclass of the Throwable class

Java exceptions are raised with the throw keyword and handled within a catch block

Throwable

The Throwable class provides a String variable that can be set by the subclasses to provide a detail message that provides more information of the exception occurred

All classes of Throwables define a one parameter constructor that takes a String as the detailed message.

The class Throwable provides getMessage() function to retrieve an exception

Types of Exceptions

- ① Checked (Compile time checking)
- ② Unchecked (Runtime exceptions)

Unchecked exceptions are RuntimeException
and any of its subclasses.

They are basically business logic programming
errors.