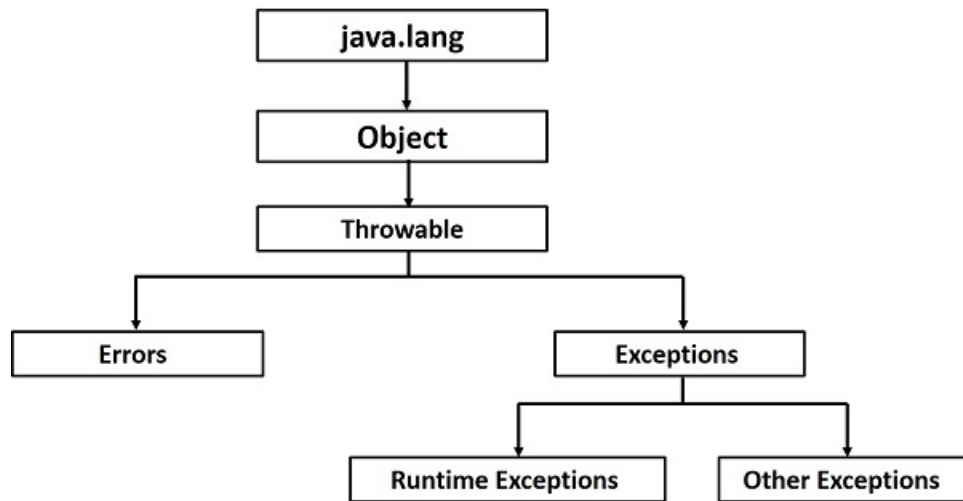


Exceptions and Errors in Java

The first thing that can help us to understand the Errors & Exceptions it's below:



As can we see, both Errors and Exceptions are the subclasses of `java.lang.Throwable` class.

Exceptions are the conditions that occur at runtime and may cause the termination of program. But they are recoverable using `try`, `catch` and `throw` keywords. Exceptions are divided into two categories:

- Checked exceptions like `IOException` known to the compiler at compile time.
- Unchecked exceptions like `ArrayIndexOutOfBoundsException` known to the compiler at runtime. It is mostly caused by the program written by the programmer.

An exception can occur for many different reasons. Following are some scenarios where an exception occurs.

- A user has entered an invalid data.
- A file that needs to be opened cannot be found.
- A network connection has been lost in the middle of communications or the JVM has run out of memory.

It is Also worth highlighting that we can create user-defined exceptions

Error “indicates serious problems that a reasonable application should not try to catch.” Errors are the conditions which cannot get recovered by any handling techniques. It surely causes termination of the program abnormally. Errors belong to *unchecked* type and mostly occur at runtime. Some of the examples of errors are Out of memory error or a System crash error.

For a better understanding of this information, we have the following comparative table:

ERRORS	EXCEPTIONS
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Recovering from Error is not possible.	We can recover from exceptions by either using a try-catch block or throwing exceptions back to caller.
All errors in java are unchecked type.	Exceptions include both checked as well as unchecked type.
Errors are mostly caused by the environment in which program is running.	Program itself is responsible for causing exceptions.
Errors occur at runtime and not known to the compiler.	All exceptions occur at runtime but checked exceptions are known to compiler while unchecked are not.
They are defined in java.lang.Error package.	They are defined in java.lang.Exception package
Examples: java.lang.StackOverflowError, java.lang.OutOfMemoryError	Examples: Checked Exceptions: SQLException, IOException Unchecked Exceptions: ArrayIndexOutOfBoundsException, NullPointerException, ArithmeticException.

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