Exception Handling

What is an Exception in Java?
An Exception is an event that disrupts the normal flow of a program's instructions.

What are the types of Exceptions in Java?
Checked Exceptions and Unchecked Exceptions (runtime Exceptions).

What is the difference between checked and unchecked Exceptions?
Checked Exceptions are checked at compile time, whereas unchecked Exceptions are checked at runtime.

What is a Try-catch block?
A Try-catch block is used to handle Exceptions. Code that might throw an Exception is placed inside the Try block, and the catch block handles the Exception.

What is the use of the finally block?
The finally block contains code that is always executed after a Try block, regardless of whether an Exception is thrown or not.

Can a Try block exist without a catch block?
Yes, but it must have a finally block. but we can't use the catch block without a Try block.

What is the difference between throw, throws and throwable?
throw is used to throw an Exception explicitly, while throws is used in a method signature to declare the Exceptions that might be thrown by the method.
Throwable forms a part of the super class that is for all types of errors and exceptions in java.

What are custom Exceptions?
Custom Exceptions are user-defined Exceptions created by extending the Exception class.

What is the base class for all Exceptions in Java?
java.lang.Throwable.

What is the difference between Exception and Error?
A serious problem that cannot be recovered from, typically arising from system-level issues called an Error An issue that can disrupt the normal flow of a program but can be caught and handled is called Exception.

What is the difference between final, finally, and finalize?

- final: Keyword used to declare constants.
- finally: Block used for code that must be executed.
- finalize(): Method called by the garbage collector before an object is destroyed.

What is the stack trace?
The stack trace is a report of the active stack frames at a particular point in time during the execution of a program.

What is a chained Exception?
A chained Exception is an Exception that has another Exception as its cause.

What is the Try-with-resources statement?

A Try-with-resources statement automatically closes resources when the Try block exits.

What do you understand by an unreachable catch block error?
The catch blocks should follow the order of the most specific ones at the top to the most general ones at the bottom. If this is not followed, an unreachable catch block error is thrown during compile time.

What is the difference between ClassNotFoundException and NoClassDefFoundError?
ClassNotFoundException: This Exception occurs when we Try to load a class that is not found in the classpath at runtime by making use of the loadClass() or Class.forName() methods.
NoClassDefFoundError: This Exception occurs when a class was present at compile-time but was not found at runtime.

What is Exception propagation?
It refers to the transferring of Exceptions from one method to the previous method to handle the Exception efficiently.

Advantage of Exception handling?
Exception handling maintains the flow of program execution. It handles the exceptions.

In which case finally the block is not executed?
The finally block may not execute if the JVM exits while the try or catch code is being executed.

What do you mean by ClassCastException?
It is a RuntimeException that occurs when JVM is unable to cast an object of one type to another type.

Can checked exceptions be thrown from the static block?
Checked Exceptions cannot be thrown from the static block; there's no specific path to catch checked Exceptions.

What is re-throwing an exception?
When an exception is found in the catch block, first of all, the Exception is caught by the catch block. Then, the Exception has to be re-thrown. To re-throw an exception, we use the throw keyword.

Explain the hierarchy of exceptions in Java.

java.lang.Error: It is a super class for all types of errors in Java.

1) java.lang.VirtualMachineError: –
    - StackOverFlowError
    - OutOfMemoryError
2) java.lang.AssertionError
3) java.lang.LinkageError:
    - NoClassDefFoundError
    - IncompatibleClassChangeError

java.lang.Exception: It is a super class of all exception types in Java. Common

1) RunTimeException
    - ArithmeticException
    - NumberFormatException
    - NullPointerException
    - ArrayIndexOutOfBoundsException
    - ClassCastException
2) java.lang.InterruptedException

3) java.lang.IOException
4) java.lang.SQLException
5) java.lang.ParseException