Day-5 Interview Questions

1. What is Exception Handling?

Exception Handling is a mechanism that is used to handle runtime errors. It is used primarily to handle checked exceptions. Exception handling maintains the normal flow of the program. There are mainly two types of exceptions: checked and unchecked. Here, the error is considered as the unchecked exception.

2. How many types of exceptions can occur in a Java program?

There are mainly two types of exceptions: checked and unchecked. Here, an error is considered as the unchecked exception. According to Oracle, there are three types of exceptions:

- Checked Exception: Checked exceptions are the ones which are checked at compile time. For example, SQLException, ClassNotFoundException, etc.
- Unchecked Exception: Unchecked exceptions are the ones which are handled at runtime because they can not be checked at compile time. For example, ArithmeticException, NullPointerException, ArrayIndexOutOfBoundsException, etc.
- Error: Error causes the program to exit since they are not recoverable. For Example, OutOfMemoryError, AssertionError, etc.

3 .What is the difference between Checked Exception and Unchecked Exception?

1) Checked Exception

The classes that extend Throwable class except RuntimeException and Error are known as checked exceptions, e.g., IOException, SQLException, etc. Checked exceptions are checked at compile time.

2) Unchecked Exception

The classes that extend RuntimeException are known as unchecked exceptions, e.g., ArithmeticException, NullPointerException, etc. Unchecked exceptions are not checked at compile time.

4 .What is the base class for Error and Exception?

Ans: The Throwable class is the base class for Error and Exception.

5 .What is the difference between throw and throws keywords?

throw keyword	**throws keyword**
1) The throw keyword is used to throw an exception explicitly.	The throws keyword is used to declare an exception.
2) The checked exceptions cannot be propagated with throw only.	The checked exception can be propagated with throws
3) The throw keyword is followed by an instance.	The throws keyword is followed by class.
4) The throw keyword is used within the method.	The throws keyword is used with the method signature.
5) You cannot throw multiple exceptions.	You can declare multiple exceptions, e.g., public void method()throws IOException, SQLException.

6. What is a ‘finally’ block?

The "finally" block is used to execute the important code of the program. It is executed whether an exception is handled or not. In other words, we can say that the finally block is the block which is always executed. Finally block follows try or catch block. If you don't handle the exception, before terminating the program, JVM runs finally block, (if any). The finally block is mainly used to place the cleanup code such as closing a file or closing a connection. Here, we must know that for each try block there can be zero or more catch blocks, but only one finally block. The finally block will not be executed if the program exits(either by calling System.exit() or by causing a fatal error that causes the process to abort).

8. Can finally block be used without a catch?

Yes, according to the definition of finally block, it must be added after try or catch block, therefore, we can use try block instead of catch.

9. What is exception propagation?

An exception is first thrown from the top of the stack and if it is not caught, it drops down the call stack to the previous method, If not caught there, the exception again drops down to the previous method, and so on until they are caught or until they reach the

very bottom of the call stack. This procedure is called exception propagation. By default, checked exceptions are not propagated.

10. How are the keywords final, finally and finalize different from each other?

- final keyword: By using this keyword,
    - we can declare a variable as final (meaning, variable value cannot be changed).
    - we can declare a method as final (meaning, that method cannot be overridden).
    - we can declare a class as final (meaning, that class cannot be extended).
- finally keyword: This is used in conjunction with the try catch block or the try block where we want to run some logic whether or not an exception has occurred.
- finalize keyword: This is a method called by the Garbage Collector just before destroying the objects no longer needed in the program.

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

No.	final	finally	finalize
1)	Final is used to apply restrictions on class, method, and variable. The final class can't be inherited, a final method can't be overridden, and a final variable value can't be changed.	Finally is used to place important code, it will be executed whether an exception is handled or not.	Finalize is used to perform clean up processing just before an object is garbage collected.
2)	Final is a keyword.	Finally is a block.	Finalize is a method.

12 . What is the purpose of the finalize() method?

The finalize() method is invoked just before the object is garbage collected. It is used to perform cleanup processing. The Garbage collector of JVM collects only those objects that are created by the new keyword. So if you have created an object without new, you can use the finalize method to perform cleanup processing (destroying remaining objects). The cleanup process is the process to free up all the resources, network which were previously used and no longer needed. It is essential to remember that it is not a reserved keyword, the finalize() method is present in the Object class hence it is

available in every class as Object class is the superclass of every class in java. Here, we must note that neither finalization nor garbage collection is guaranteed.