Lesson 12: Exception Handling

1. An exception is an unexpected event that occurs during program execution. It affects the flow of the program instructions which can cause the program to terminate abnormally.

2. Errors- represent irrecoverable conditions such as Java virtual machine (JVM) running out of memory, memory leaks, stack overflow errors, library incompatibility, infinite recursion, etc.

3. Exceptions- Exceptions can be caught and handled by the program. When an exception occurs within a method, it creates an object. This object is called the exception object.

4. Java Exception Types
   - RuntimeException - A runtime exception happens due to a programming error. They are also known as unchecked exceptions. These exceptions are not checked at compile-time but run-time.
   - IOException - An IOException is also known as a checked exception. They are checked by the compiler at the compile-time and the programmer is prompted to handle these exceptions.

5. Java try...catch block - The block is used to handle exceptions in Java.

6. catch block- catches the exception and statements inside the catch block are executed. If none of the statements in the try block generates an exception, the catch block is skipped.

7. Java finally block - it is always executed no matter whether there is an exception or not. The finally block is optional. And, for each try block, there can be only one finally block.

8. Java throws keyword block - the Java throw keyword is used to explicitly throw a single exception. Whennwe throw an exception, the flow of the program moves from the try block to the catch block.