Exception Handling and Collections

Exception Handling

An exception is an unwanted or unexpected event, which occurs during the execution of a program i.e., at run time, that disrupts the normal flow of the program's instructions.

Error: An Error indicates serious problem that a reasonable application should not try to catch.
Exception: Exception indicates conditions that a reasonable application might try to catch.

All exception and errors types are sub classes of class Throwable, which is base class of hierarchy.

One branch is headed by Exception. This class is used for exceptional conditions that user programs should catch. NullPointerException is an example of such an exception.Another branch,Error are used by the Java run-time system(JVM) to indicate errors having to do with the run-time environment itself(JRE).

- The run-time system searches the call stack to find the method that contains block of code that can handle the occurred exception. The block of the code is called Exception handler.
- The run-time system starts searching from the method in which exception occurred, proceeds through call stack in the reverse order in which methods were called.
- If it finds appropriate handler then it passes the occurred exception to it. Appropriate handler means the type of the exception object thrown matches the type of the exception object it can handle.
- If run-time system searches all the methods on call stack and couldn't have found the appropriate handler then run-time system handover the Exception Object to default exception handler, which is part of run-time system. This handler prints the exception information in the following format and terminates program abnormally.

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Collections

The Collection in Java is a framework that provides an architecture to store and manipulate the group of objects.

Java Collections can achieve all the operations that you perform on a data such as searching, sorting, insertion, manipulation, and deletion.

A Collection represents a single unit of objects, i.e., a group.
The Collection interface is the interface which is implemented by all the classes in the collection framework. It declares the methods that every collection will have. In other words, we can say that the Collection interface builds the foundation on which the collection framework depends.

List interface is the child interface of Collection interface. It inhibits a list type data structure in which we can store the ordered collection of objects. It can have duplicate values.

List interface is implemented by the classes ArrayList, LinkedList, Vector, and Stack.