12/06/2025

Thursday

**Collections**:

* Iterable is parent Interface.
* Collecection is child of Iterable
* Childs of collection

1. List (I)
   1. ArrayList
   2. LinkedList
   3. Vector
      1. Stack
2. Queue(I)
3. Set(I)
   1. HashSet
   2. LinkedHashSet

**HashSet:**

* Doesn’t maiantain insertion order.
* Doesn’t allow duplicate values.
* Allows null values

**LinkedHashSet**:

* It is a Class that is available inside java.util package
* Implements Set interface.
* It **maintains Insertion Order.**

Features:

1. No duplicate elements allowed like Hashset.
2. Maintains Insertion Order.
3. Allows null element

**TreeSet:**

* It is a Class, part of java collection framework.

Features:

1. It is used to store unique elements in sorted order(by default ascending order)
2. No duplicate elements allowed
3. Does not allow null elements. When we try to add null element a NullPointerException will be thrown.
4. ClassCastException Occurs in TreeSet and TreeMap.

**EXCEPTION HANDLING**

* Exception is an event that occurs during the execution of program disturbs the normal flow of instructions.
* Types of Exceptions:

1. Checked Exceptions (Compile time)

Ex: IOException, SQLException, FileNotFoundException

1. Unchecked Exceptions (Run Time)

Ex: NullPointerException, ArthemeticException, ArrayIndexOtOfboundException

Keywords:

1. **try** : contains code that might throw an exception.
2. **catch** : contains and handles the Exception
3. **finally** : block that is always executed Ex: whether exception occurs or not JDBC connection closes
4. **throw** : used to throw explicitly an exception
5. **throws** : declares exception a method can throw

* Alone on try block is not allowed.
* One try block can have multiple catch blocks

Nested try-catch :

* One try block inside another try block.

try {

try {

//risky code

} catch (Exception e) {

//

}

} catch (Exception e) {

//

}

Throw :

* used to manully throw an exceptiomm
* only one exceptioj thrown at a time
* inside method
* Ex: throw new ArithmeticException(“Error”)

Throws : used to throw that a method may hrow exception

* in method declaration
* ex: void myMethod() throws IOException, SQLException, NullPointerException {

// code

}

**MULTITHREADING**:

* Thread : small unit of process
* Process: program under execution
* It is a feature of java
* Used for concurrent execution of program (called as thread) for maximum CPU utilization.
* Multithreading in java can be achieved by using

1. Thread class
2. Runnable interface

* Runnable interface is the parent

Methods of Thread class:

1. start() : starts a new thread
2. run() : code that runs in the thread
3. sleep(ms) : suspends thread for milliseconds
4. join() : waits for a thread to finish
5. isAlive() : checks if thread is still running or not
6. setPriority(int): set thread priority ( 1to 10)
7. getName()
8. setName()