Ch-8

TreeSet :-

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- The underlined data structure for TreeSet is Balanced Tree.
- Duplicates are not allowed.
- Insertion order is not preserved.
- Heterogeneous data not allowed. (if ~~hte~~ class cast Exception)
- null insertion is possible (only once)
- TreeSet implements Serializable, and Cloneable but not Random Access interface.
- All objects will be inserted based on some sorting order. It may be default natural sorting order or customized sorting order.

Constructors :-

(1) `TreeSet t = new TreeSet();`

creates empty TreeSet Object where all objects will be inserted in default natural sorting order.

(2) `TreeSet t = new TreeSet(Comparator c);`

Creates empty TreeSet objects ~~will be~~ where all objects will be inserted according to customized sorting order specified by comparator object.

(3) `TreeSet t = new TreeSet(Collection c);`

↳ inter conversion

(4) `TreeSet t = new TreeSet(SortedSet s);`

Ex:-

```
public class TreeSetDemo
{
    psvm(String[] args)
    {
        TreeSet t = new TreeSet();
        t.add("A");   t.add("a");
        t.add("B");   t.add("Z");
        t.add("L");
        // t.add(new Integer(10)); // CCE
        // t.add(null); → NPE
        S.O.P(t); → [A, B, Z, L, a] → O/P
    }
}
```

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Null Acceptance :→

① For Non-empty Treeset, if we are trying to insert null then we will get NPE

② → For empty Treeset, as the first element null is allowed but, After inserting that null, if we are trying to insert any other then we will get R.T.E saying. NPE.

* NOTE :- untill 1.6 V, null is allowed as the first element to the empty treeset but from 1.7 V onwards. null is not allowed even as the first element i.e. "null" Such type of story Not applicable for TreeSet from 1.7 V onwards.

Ex2 ⇒

```
public class TreeSetDemo1
{
  P S V m (String [] args)
  {
  Treeset t = new TreeSet();
  t.add (new StringBuffer ("A"));
  - - - - - - - - ("B");
  - - - - - - - - - - ("C");
  - - - - - - - - - ("D");
  s.o.p(t);
}}
```

⇒ RTE :- class Cast Exception bcoz

StringBuffer not Implements Comparable interface

→ If we are depending on default natural sorting order, compulsory the Object should be homogenious and comparable otherwise we will get R.T.E saying classCastException.