UNIT I

Set & Map of JCF

Classed in collection

- Interfaces are design rule, that is, it is the programmer task to have the implementations of each and every interfaces.
- • It seems, then how the java.util package is useful. The Collection class take care this.
- • The Collection class is the collection of classes which implements the interfaces we have discussed.
- • In addition, the collection classes include many abstract classes as well. Anyway, a programmer has full liberty to adopt the implemented collection classes in their programs or they can implement of their own.

Java supports for data structures

All the data structures as mentioned are called basic data structures

- Other any complex data structures can be realized with them.

- Since, data structures are important to build any software system (because together algorithm and data structures are used to develop programs), Java developer elegantly supports a good l ibrary of built-in data structures utilities.

- In Java, a concept has been introduced called collection.

Set collections of JCF

Set is a very useful concept in mathematics.

• Basically, Set is a type of collection that does not allow duplicate elements. That means an element can only exist once in a Set.

•Unlike other collection type such as array, list, linked list, set collection has the following distinctive characteristics.

1. Duplicate elements are not allowed.

2.Elements are not stored in order.

That means you cannot expect elements sorted in any order when iterating over elements of a Set. Set collections of JCF N

Interface Set

The Setinterface defines a set.

It extends Collection and specifies the behavior of a collection that does not allow duplicate elements.

•Therefore, the add( ) method returns false if an attempt is made to add duplicate elements to a set.

• Set is a generic interface that has this declaration: interface Set

Here, T specifies the type of objects that the set will hold.

• It does not specify any additional methods of its own.

Interface SortedSet

- The Sorted Set interface extends Set
  and declares the behavior of a set sorted in ascending order.
- • Sorted Set is a generic interface that has this declaration: interface Sorted Set
  Here, T specifies the type of objects that the set will hold
- Interface Navigable Set
- The NavigableSet interface extends SortedSet
  and declares the behavior of a collection that supports the retrieval of elements based on the closest match to a given value or values.
- • NavigableSet is a generic interface that has this declaration: interface NavigableSet
  Here, T specifies the type of objects that the set will hold

Class EnumSet

EnumSet extends AbstractSet and implements Set.

It iş specifically for use with elements of an enum type.

• It is a generic class that has this declaration: class EnumSet>
Here, E specifies the elements.

Notice that E must extend Enum, which enforces the requirement that the elements must be of the specified enum type.

• EnumSet defines no constructors. Instead, it uses the factory methods

Class HashSet

• Hash Set extends Abstract Set and implements the Set interface.

It creates a collection that uses a hash table for storage.

• HashSet is a generic class that has this declaration:

class Hash Set <E>

Here, E specifies the type of objects that the set will hold

Class LinkedHashSet

A Linked Hash Set is an ordered version of Hash Set
that maintains a doubly-linked list across all elements.
1.When the iteration order is needed to be maintained this class is used. When iterating through a HashSet the order is unpredictable, while a Linked Hash Set
lets us iterate through the elements in the order in which they were inserted.

2.When cycling through LinkedHashSetusing an iterator, the elements will be returned in t he order in which they were inserted.
The LinkedHashSet class extends HashSet
and adds no members of its own. It is a generic class that has this declaration:
class LinkedHashSet Here, E specifies the type of objects that the set will hold

Constructors and methods of Linked Hash Set

The constructors in the LinkedHashSet class are in the similar form that of the constructor in Hashset class.

 The LinkedHashSet class extends HashSet class and implements Set interface.

• The LinkedHashSet class does not define any exclusive methods of its own.

All methods are same as the methods as in HashSet class.

This implies that whatever the operations we can perform with Hash Set collections are also possible with the LinkedHashSet class. Hence, the manipulation of LinkedHashSet collections are not illustrated explicitly

Thank You