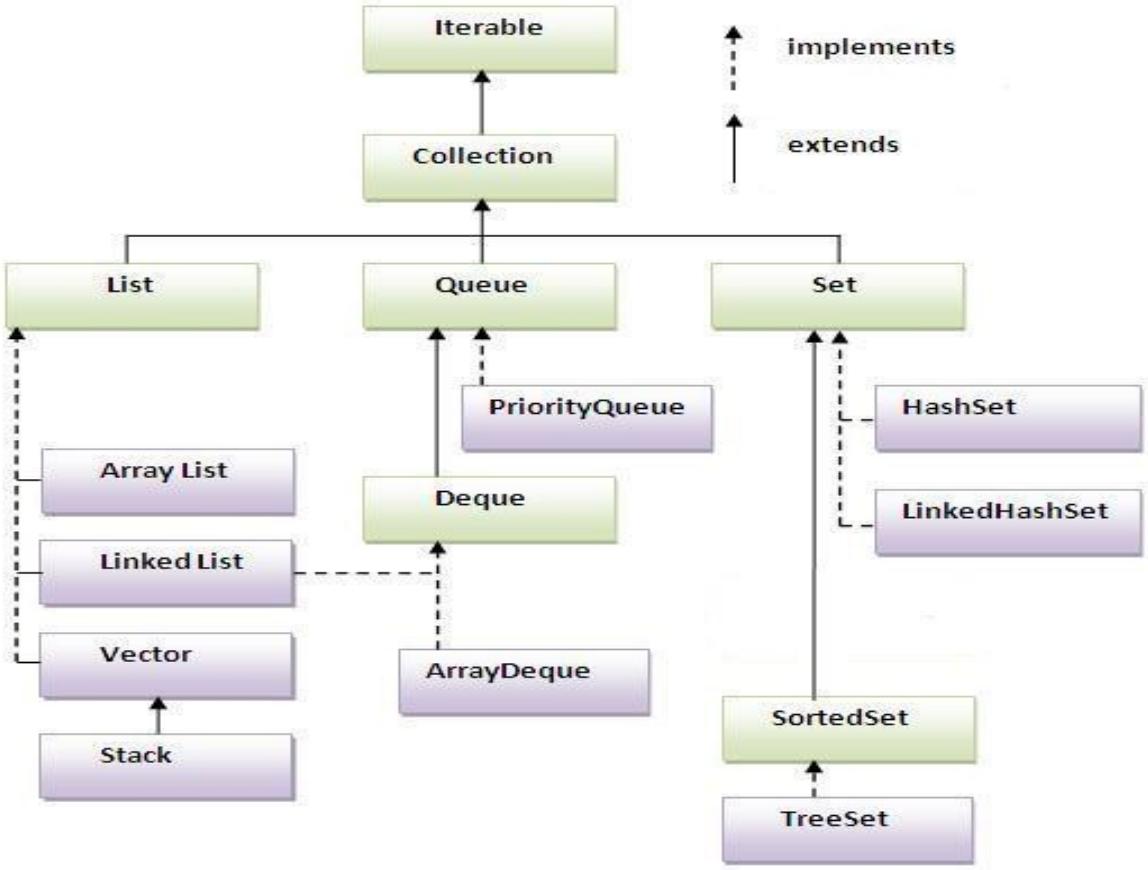
Lab 1) Implement the following Data Structure in JAVA

- **Linked Lists**
- **Stacks**
- **Queues**
- **Set**
- **Map**

The **java.util** package contains all the classes and interfaces for Collection framework.



Methods of Collection interface

There are many methods declared in the Collection interface. They are as follows:

No.	Method	Description
1	public boolean add(Object element)	is used to insert an element in this collection.

2	public boolean addAll(Collection c)	is used to insert the specified collection elements in the invoking collection.
3	public boolean remove(Object element)	is used to delete an element from this collection.
4	public boolean removeAll(Collection c)	is used to delete all the elements of specified collection from the invoking collection.
5	public boolean retainAll(Collection c)	is used to delete all the elements of invoking collection except the specified collection.
6	public int size()	return the total number of elements in the collection.
7	public void clear()	removes the total no of element from the collection.
8	public boolean contains(Object element)	is used to search an element.
9	public boolean containsAll(Collection c)	is used to search the specified collection in this collection.
10	public Iterator iterator()	returns an iterator.
11	public Object[] toArray()	converts collection into array.
12	public boolean isEmpty()	checks if collection is empty.

SKELTON OF JAVA.UTIL.COLLECTION INTERFACE

```
public interface Collection<E> extends
        Iterable<E> {int size();
        boolean isEmpty();
        boolean
        contains(Object o);
        Iterator<E> iterator();
        Object[] toArray();
        <T> T[] toArray(T[] a);boolean add(E e);
        boolean remove(Object o);
        boolean addAll(Collection<?
        extends E> c);boolean
        removeAll(Collection<?> c);
        boolean retainAll(Collection<?>
        c);
        void clear();
        boolean
        equals(Object o);int
        hashCode();  }
```

ALGORITHM for All C}ollection Data

Structures:-Steps of Creation of

Collection

1. Create a Object of Generic Type E,T,K or V
2. Create a Model class or Plain Old Java Object (POJO) of type.
3. Generate Setters and Getters
4. Create a Collection Object of type either Set or List or Map or Queue
5. Add Objects to the

   collectionBoolean

   add(E e)
6. Add Collection to the Collection.

   Boolean addAll(Collection)
7. Remove or retain data from

   Collection Remove(Collection)

   retailAll(Collection)
8. Iterate Objects using Enumeration or Iterator

   or ListIteratorIterator listIterator()
9. Display Objects from Collection
10. END

SAMPLE INPUT:

Sample

Employee

Data Set:

(employee.txt

)

e100,james,asst.prof,cse,8000,16000,4000,8.7

e101,jack,asst.prof,cse,8350,17000,4500,9.2

e102,jane,assoc.prof,cse,15000,30000,8000,7.8

e104,john,prof,cse,30000,60000,15000,8.8

e105,peter,assoc.prof,cse,16500,33000,8600,6.9

e106,david,assoc.prof,cse,18000,36000,9500,8.3

e107,daniel,asst.prof,cse,9400,19000,5000,7.9

e108,ramu,assoc.prof,cse,17000,34000,9000,6.8

e109,rani,asst.prof,cse,10000,21500,4800,6.4

e110,murthy,prof,cse,35000,71500,15000,9,3

EXPECTED OUTPUT:-

Prints the information of employee with all its attributes