Assignment 11 – collection and map

1. What is the collection framework in java?

Ans: The collection framework is a set of interfaces, implementations and algorithms that provide a way to work with

group of objects. It was introduced to simplify the process of storing, manipulating and processing collection of data.

2. What is the difference between ArrayList and LinkedList?

Ans: ArrayList:

1. ArrayList class implements the List interface.
2. it uses dynamic array to store the duplicate element of different data types.
3. it is suitable for rear-end insertion

LinkedList:

1. LinkedList implements the list and deque interface.
2. it uses doubly linked list internally to store the elements.
3. it is suitable for insertion at middle.

3. What is the difference between Iterator and ListIterator?

Ans: Iterator:

1. we can traverse the elements of a list in forward direction.
2. it can be used in List, Set and Queue.
3. important methods are hasNext(), next() and remove().

ListIterator:

1. we can traverse the elements of a list in forward and backward direction.
2. it can be used in List collection only.
3. important methods are add(), hasNext(), hasPrevious() and remove().

4. What is the difference between Iterator and Enumeration?

Ans: Iterator:

1. we can traverse the elements of a list in forward direction.
2. it can be used in List, Set and Queue.
3. important methods are hasNext(), next() and remove().

Enumeration:

1. it is only legacy interface.
2. it is suspended by interface
3. it contains only two methods hasMoreElements() and nextElement().

5. What is the difference between List and Set?

Ans: List:

1. List can contain the null and duplicate values.
2. methods of the List are based on the index.
3. allows multiple null values

Set:

1. It restricts us from entering the distinct value in it.
2. It stores the value in a sorted way.
3. allows only single null value.

6. What is the difference between HashSet and TreeSet?

Ans: HashSet:

1.it uses hash table for storage.
2. it uses hashing mechanism
3. it is unordered collection of elements.
4. it is suitable for unordered collection.

TreeSet:

1.it uses binary search tree
2. it is faster than HashSet.
3. it is ordered collection of elements.
4. it is suitable for ordered collection.

7. What is the difference between Array and ArrayList?

Ans: Array:

1. it is used to store primitive data types and objects.
2. size is fixed
3. limited methods compared to ArrayList.

ArrayList:

1. it is used to store objects only.
2. size is dynamic
4. more methods compared to Array.

8.What is Map in java?

Ans: A map is an interface that represents a collection of key-value pairs which is known as entry. It contains unique keys.

9.What are the commonly used implementations of map in java?

Ans: commonly used implementations of map in java are HashMap, LinkedHashMap and TreeMap.

10.What is the difference between HashMap and TreeMap?

Ans: HashMap is an unordered collection that uses hashing to store the key-value pairs, while TreeMap is a sorted collection that stores the key-value pairs in a sorted order.

11.How do you check if a key exists in java?

Ans: we can check if a key exists in a Map in Java using the containsKey() method or the get() method.