Assignment: 8

Page No.:
Date:

Q.1] What is set?

Ans Set is an unordered collection. set in Java doesn't maintain any order. Though set provide another alternative called Sortedset which can store set elements in specific sorting order.

- Set doesn't allow any duplicate. If you insert duplicate in set it will replace the order value. Any implementation of set in java will only contains unique elements

- Implementation of set interface includes Hashset, Treeset and LinkedHashset.

Q.2] What is Map?

Ans - A Map is useful if you have to search, update or delete elements on the basis of key.

- A map contains values on the basis of key, i.e. key and value pair. Each key and value pair is known as an entry. A Map contains unique keys

- These are two interfaces for implementing Map in java: Map and SortedMap

Page No.:
Date:

- These are three classes: HashMap, LinkedHashMap and TreeMap.

- A Map doesn't allow duplicate keys, but you can have duplicate values. HashMap and LinkedHashMap allow null keys and values, but TreeMap doesn't allow any null key or value.

Q.3] What is unmodifiable collection?

Ans The unmodifiable collection is a method in java.

- It is used to get an unmodifiable view of the specified collection.

- If any attempt occurs to modify the returned collection whether direct or via its iterator, result in an Unsupported Operation Exception.

- Hence, it is Unmodifiable Collection.

Q.4] What is singleton collection

Ans Singleton is a method in Java and it is in Java Collection.

- Singleton() method is used to get an immutable set which contains only the specified object.

- The singleton() method returns an immutable set which contains only the specified object.

Q.5] Enlist thread life cycle states.

Ans - A thread can be in one of the five states.

- According to sun, there is only 4 states in thread life cycle in java which is given below.

- The life cycle of the thread in java is controlled by JVM.

1. New
2. Runnable
3. Running
4. Non-Runnable (Blocked)
5. Terminated

=> Here,

New : The tread is in new state if you create an instance of thread class but before the invocation of start() method.

Page No.:
Date:

Runnable: The thread is in runnable state after invocation of start() method, but the thread scheduler has not selected it to be the running thread.

Running: It is in running state if the thread scheduler has selected it

Non-Runnable (Blocked): This state is when thread is still alive, but is currently not eligible to run

Terminated: A thread is in terminated or dead state when its run() method exits.

Q-6] What is thread synchronisation?

Ans Thread synchronisation is the concurrent execution of two or more threads that share critical resources.

- Threads should be synchronized to avoid critical resource use conflicts. Otherwise, conflicts may arise when parallel-running threads attempt to modify a common variable at the same time.

- For example: three threads - A, B and C are executed concurrently and

need to access a critical resource, z.

- To avoid conflicts when accessing z, threads A, B and C must be synchronized.

- Thus, when A accesses z, and B also tries to access z, B's access of z must be avoided with security measures until A finishes its operation and comes out of z.