40 Java Collections Interview Questions and Answers

APRIL 3, 2018 BY PANKAJ — 131 COMMENTS

Java Collections Framework is the fundamental aspect of java programming language. It's one of the important topic for java interview questions. Here I am listing some important java collections interview questions and answers for helping you in interview. This is directly coming from my 12+ year of experience in java programming.

Java Collections Interview Questions

1. What are Collection related features in Java 8?
2. What is Java Collections Framework? List out some benefits of Collections framework?
3. What is the benefit of Generics in Collections Framework?
4. What are the basic interfaces of Java Collections Framework?
5. Why Collection doesn't extend Cloneable and Serializable interfaces?

Java Collections Interview Questions and Answers

1. What are Collection related features in Java 8?

Java 8 has brought major changes in the Collection API. Some of the changes are:

1. Java Stream API for collection classes for supporting sequential as well as parallel processing
2. Iterable interface is extended with forEach() default method that we can use to iterate over a collection. It is very helpful when used with lambda expressions because it's argument Consumer is a function interface.
3. Miscellaneous Collection API improvements such as *forEachRemaining(Consumer action)* method in *Iterator* interface, Map *replaceAll()*, *compute()*, *merge()* methods.

2. What is Java Collections Framework? List out some benefits of Collections framework?

Collections are used in every programming language and initial java release contained few classes for collections: **Vector**, **Stack**, **Hashtable**, **Array**. But looking at the larger scope and usage, Java 1.2 came up with Collections Framework that group all the collections interfaces, implementations and algorithms.
Java Collections have come through a long way with usage of Generics and Concurrent Collection classes for thread-safe operations. It also includes blocking interfaces and their implementations in java concurrent package.
Some of the benefits of collections framework are;

- Reduced development effort by using core collection classes rather than implementing our own collection classes.
- Code quality is enhanced with the use of well tested collections framework classes.
- Reduced effort for code maintenance by using collection classes shipped with JDK.
- Reusability and Interoperability

3. What is the benefit of Generics in Collections Framework?

Java 1.5 came with Generics and all collection interfaces and implementations use it heavily. Generics allow us to provide the type of Object that a collection can contain, so if you try to add any element of other type it throws compile time error.
This avoids ClassCastException at Runtime because you will get the error at compilation. Also Generics make code clean since we don't need to use casting and *instanceof* operator. I would highly recommend to go through **Java Generic Tutorial** to understand generics in a better way.

4. What are the basic interfaces of Java Collections Framework?

Collection is the root of the collection hierarchy. A collection represents a group of objects known as its elements. The Java platform doesn't provide any direct implementations of this interface.

Set is a collection that cannot contain duplicate elements. This interface models the mathematical set abstraction and is used to represent sets, such as the deck of cards.

List is an ordered collection and can contain duplicate elements. You can access any element from it's index. List is more like array with dynamic length.

A Map is an object that maps keys to values. A map cannot contain duplicate keys: Each key can map to at most one value.

Some other interfaces are *Queue*, *Dequeue*, *Iterator*, *SortedSet*, *SortedMap* and *ListIterator*.

5. Why Collection doesn't extend Cloneable and Serializable interfaces?

Collection interface specifies group of Objects known as elements. How the elements are maintained is left up to the concrete implementations of Collection. For example, some Collection implementations like List allow duplicate elements whereas other implementations like Set don't.
A lot of the Collection implementations have a public clone method. However, it does't really make sense to include it in all implementations of Collection. This is because Collection is an abstract representation. What matters is the implementation.
The semantics and the implications of either cloning or serializing come into play when dealing with the actual implementation; so concrete implementation should decide how it should be cloned or serialized, or even if it can be cloned or serialized.
So mandating cloning and serialization in all implementations is actually less flexible and more restrictive. The specific implementation should make the decision as to whether it can be cloned or serialized.

6. Why Map interface doesn't extend Collection interface?

Although Map interface and it's implementations are part of Collections Framework, Map are not collections and collections are not Map. Hence it doesn't make sense for Map to extend Collection or vice versa.
If Map extends Collection interface, then where are the elements? Map contains key-value pairs and it provides methods to retrieve list of Keys or values as Collection but it doesn't fit into the "group of elements" paradigm.

7. What is an Iterator?

Iterator interface provides methods to iterate over any Collection. We can get iterator instance from a Collection using *iterator()* method. Iterator takes the place of Enumeration in the Java Collections Framework. Iterators allow the caller to remove elements from the underlying collection during the iteration. Java Collection iterator provides a generic way for traversal through the elements of a collection and implements **Iterator Design Pattern**.

8. What is difference between Enumeration and Iterator interface?

Enumeration is twice as fast as Iterator and uses very less memory. Enumeration is very basic and fits to basic needs. But Iterator is much safer as compared to Enumeration because it always denies other

threads to modify the collection object which is being iterated by it.
Iterator takes the place of Enumeration in the Java Collections Framework. Iterators allow the caller to remove elements from the underlying collection that is not possible with Enumeration. Iterator method names have been improved to make it's functionality clear.

9. Why there is not method like Iterator.add() to add elements to the collection?

The semantics are unclear, given that the contract for Iterator makes no guarantees about the order of iteration. Note, however, that ListIterator does provide an add operation, as it does guarantee the order of the iteration.

10. Why Iterator don't have a method to get next element directly without moving the cursor?

It can be implemented on top of current Iterator interface but since it's use will be rare, it doesn't make sense to include it in the interface that everyone has to implement.

11. What is different between Iterator and ListIterator?

- We can use Iterator to traverse Set and List collections whereas ListIterator can be used with Lists only.
- Iterator can traverse in forward direction only whereas ListIterator can be used to traverse in both the directions.
- ListIterator inherits from Iterator interface and comes with extra functionalities like adding an element, replacing an element, getting index position for previous and next elements.

12. What are different ways to iterate over a list?

We can iterate over a list in two different ways – using iterator and using for-each loop.

```
List<String> strList = new ArrayList<>();

//using for-each loop
for(String obj : strList){
    System.out.println(obj);
}

//using iterator
Iterator<String> it = strList.iterator();
while(it.hasNext()){
    String obj = it.next();
    System.out.println(obj);
}
```

Using iterator is more thread-safe because it makes sure that if underlying list elements are modified, it will throw *ConcurrentModificationException*.

13. What do you understand by iterator fail-fast property?

Iterator fail-fast property checks for any modification in the structure of the underlying collection everytime we try to get the next element. If there are any modifications found, it throws *ConcurrentModificationException*. All the implementations of Iterator in Collection classes are fail-fast by design except the concurrent collection classes like ConcurrentHashMap and CopyOnWriteArrayList.

14. What is difference between fail-fast and fail-safe?

Iterator fail-safe property work with the clone of underlying collection, hence it's not affected by any modification in the collection. By design, all the collection classes in *java.util* package are fail-fast whereas collection classes in *java.util.concurrent* are fail-safe.
Fail-fast iterators throw ConcurrentModificationException whereas fail-safe iterator never throws ConcurrentModificationException.
Check this post for CopyOnWriteArrayList Example.

15. How to avoid ConcurrentModificationException while iterating a collection?

We can use concurrent collection classes to avoid *ConcurrentModificationException* while iterating over a collection, for example CopyOnWriteArrayList instead of ArrayList.
Check this post for ConcurrentHashMap Example.

16. Why there are no concrete implementations of Iterator interface?

Iterator interface declare methods for iterating a collection but it's implementation is responsibility of the Collection implementation classes. Every collection class that returns an iterator for traversing has it's own Iterator implementation nested class.
This allows collection classes to chose whether iterator is fail-fast or fail-safe. For example ArrayList iterator is fail-fast whereas CopyOnWriteArrayList iterator is fail-safe.

17. What is UnsupportedOperationException?

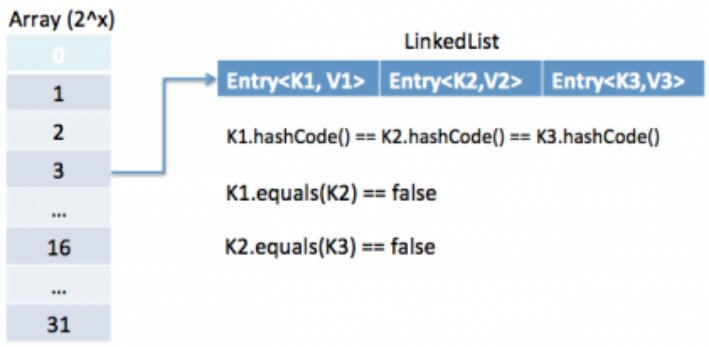
UnsupportedOperationException is the exception used to indicate that the operation is not supported. It's used extensively in JDK classes, in collections framework *java.util.Collections.UnmodifiableCollection* throws this exception for all *add* and *remove* operations.

18. How HashMap works in Java?

HashMap stores key-value pair in *Map.Entry* static nested class implementation. HashMap works on hashing algorithm and uses hashCode() and equals() method in *put* and *get* methods.

When we call *put* method by passing key-value pair, HashMap uses Key hashCode() with hashing to find out the index to store the key-value pair. The Entry is stored in the LinkedList, so if there are already existing entry, it uses equals() method to check if the passed key already exists, if yes it overwrites the value else it creates a new entry and store this key-value Entry.

When we call *get* method by passing Key, again it uses the hashCode() to find the index in the array and then use equals() method to find the correct Entry and return it's value. Below image will explain these detail clearly.



The other important things to know about HashMap are capacity, load factor, threshold resizing. HashMap initial default capacity is **16** and load factor is 0.75. Threshold is capacity multiplied by load factor and whenever we try to add an entry, if map size is greater than threshold, HashMap rehashes the contents of map into a new array with a larger capacity. The capacity is always power of 2, so if you know that you need to store a large number of key-value pairs, for example in caching data from database, it's good idea to initialize the HashMap with correct capacity and load factor.

19. What is the importance of hashCode() and equals() methods?

HashMap uses Key object hashCode() and equals() method to determine the index to put the key-value pair. These methods are also used when we try to get value from HashMap. If these methods are not implemented correctly, two different Key's might produce same hashCode() and equals() output and in that case rather than storing it at different location, HashMap will consider them same and overwrite them.

Similarly all the collection classes that doesn't store duplicate data use hashCode() and equals() to find duplicates, so it's very important to implement them correctly. The implementation of equals() and hashCode() should follow these rules.

- If *o1.equals(o2)*, then *o1.hashCode() == o2.hashCode()*should always be *true*.
- If *o1.hashCode() == o2.hashCode* is true, it doesn't mean that *o1.equals(o2)* will be *true*.

20. Can we use any class as Map key?

We can use any class as Map Key, however following points should be considered before using them.

- If the class overrides equals() method, it should also override hashCode() method.
- The class should follow the rules associated with equals() and hashCode() for all instances. Please refer earlier question for these rules.
- If a class field is not used in equals(), you should not use it in hashCode() method.
- Best practice for user defined key class is to make it immutable, so that hashCode() value can be cached for fast performance. Also immutable classes make sure that hashCode() and equals() will not change in future that will solve any issue with mutability.
  For example, let's say I have a class ***MyKey*** that I am using for HashMap key.

```
//MyKey name argument passed is used for equals() and hashCode()
MyKey key = new MyKey("Pankaj"); //assume hashCode=1234
myHashMap.put(key, "Value");

// Below code will change the key hashCode() and equals()
// but it's location is not changed.
key.setName("Amit"); //assume new hashCode=7890

//below will return null, because HashMap will try to look for key
//in the same index as it was stored but since key is mutated,
//there will be no match and it will return null.
myHashMap.get(new MyKey("Pankaj"));
```

  This is the reason why String and Integer are mostly used as HashMap keys.

21. What are different Collection views provided by Map interface?

Map interface provides three collection views:

1. **Set<K> keySet()**: Returns a Set view of the keys contained in this map. The set is backed by the map, so changes to the map are reflected in the set, and vice-versa. If the map is modified while an iteration over the set is in progress (except through the iterator's own remove operation), the results of the iteration are undefined. The set supports element removal, which removes the corresponding mapping from the map, via the Iterator.remove, Set.remove, removeAll, retainAll, and clear operations. It does not support the add or addAll operations.
2. **Collection<V> values()**: Returns a Collection view of the values contained in this map. The collection is backed by the map, so changes to the map are reflected in the collection, and vice-versa. If the map is modified while an iteration over the collection is in progress (except through the iterator's own remove operation), the results of the iteration are undefined. The collection supports element removal, which removes the corresponding mapping from the map, via the Iterator.remove, Collection.remove, removeAll, retainAll and clear operations. It does not support the add or addAll operations.
3. **Set<Map.Entry<K, V>> entrySet()**: Returns a Set view of the mappings contained in this map. The set is backed by the map, so changes to the map are reflected in the set, and vice-versa. If the map is modified while an iteration over the set is in progress (except through the iterator's own remove operation, or through the setValue operation on a map entry returned by the iterator) the

results of the iteration are undefined. The set supports element removal, which removes the corresponding mapping from the map, via the Iterator.remove, Set.remove, removeAll, retainAll and clear operations. It does not support the add or addAll operations.

22. What is difference between HashMap and Hashtable?

HashMap and Hashtable both implements Map interface and looks similar, however there are following difference between HashMap and Hashtable.

1. HashMap allows null key and values whereas Hashtable doesn't allow null key and values.
2. Hashtable is synchronized but HashMap is not synchronized. So HashMap is better for single threaded environment, Hashtable is suitable for multi-threaded environment.
3. *LinkedHashMap* was introduced in Java 1.4 as a subclass of HashMap, so incase you want iteration order, you can easily switch from HashMap to LinkedHashMap but that is not the case with Hashtable whose iteration order is unpredictable.
4. HashMap provides Set of keys to iterate and hence it's fail-fast but Hashtable provides Enumeration of keys that doesn't support this feature.
5. Hashtable is considered to be legacy class and if you are looking for modifications of Map while iterating, you should use ConcurrentHashMap.

23. How to decide between HashMap and TreeMap?

For inserting, deleting, and locating elements in a Map, the HashMap offers the best alternative. If, however, you need to traverse the keys in a sorted order, then TreeMap is your better alternative. Depending upon the size of your collection, it may be faster to add elements to a HashMap, then convert the map to a TreeMap for sorted key traversal.

24. What are similarities and difference between ArrayList and Vector?

ArrayList and Vector are similar classes in many ways.

1. Both are index based and backed up by an array internally.
2. Both maintains the order of insertion and we can get the elements in the order of insertion.
3. The iterator implementations of ArrayList and Vector both are fail-fast by design.
4. ArrayList and Vector both allows null values and random access to element using index number.

These are the differences between ArrayList and Vector.

1. Vector is synchronized whereas ArrayList is not synchronized. However if you are looking for modification of list while iterating, you should use CopyOnWriteArrayList.
2. ArrayList is faster than Vector because it doesn't have any overhead because of synchronization.
3. ArrayList is more versatile because we can get synchronized list or read-only list from it easily using Collections utility class.

25. What is difference between Array and ArrayList? When will you use Array over ArrayList?

Arrays can contain primitive or Objects whereas ArrayList can contain only Objects.
Arrays are fixed size whereas ArrayList size is dynamic.
Arrays doesn't provide a lot of features like ArrayList, such as addAll, removeAll, iterator etc.

Although ArrayList is the obvious choice when we work on list, there are few times when array are good to use.

- If the size of list is fixed and mostly used to store and traverse them.
- For list of primitive data types, although Collections use autoboxing to reduce the coding effort but still it makes them slow when working on fixed size primitive data types.
- If you are working on fixed multi-dimensional situation, using [][] is far more easier than List<List<>>

26. What is difference between ArrayList and LinkedList?

ArrayList and LinkedList both implement List interface but there are some differences between them.

1. ArrayList is an index based data structure backed by Array, so it provides random access to it's elements with performance as O(1) but LinkedList stores data as list of nodes where every node is linked to it's previous and next node. So even though there is a method to get the element using index, internally it traverse from start to reach at the index node and then return the element, so performance is O(n) that is slower than ArrayList.
2. Insertion, addition or removal of an element is faster in LinkedList compared to ArrayList because there is no concept of resizing array or updating index when element is added in middle.
3. LinkedList consumes more memory than ArrayList because every node in LinkedList stores reference of previous and next elements.

27. Which collection classes provide random access of it's elements?

ArrayList, HashMap, TreeMap, Hashtable classes provide random access to it's elements. Download java collections pdf for more information.

28. What is EnumSet?

java.util.EnumSet is Set implementation to use with enum types. All of the elements in an enum set must come from a single enum type that is specified, explicitly or implicitly, when the set is created. EnumSet is not synchronized and null elements are not allowed. It also provides some useful methods like copyOf(Collection c), of(E first, E… rest) and complementOf(EnumSet s).

Check this post for java enum tutorial.

29. Which collection classes are thread-safe?

Vector, Hashtable, Properties and Stack are synchronized classes, so they are thread-safe and can be used in multi-threaded environment. Java 1.5 Concurrent API included some collection classes that allows modification of collection while iteration because they work on the clone of the collection, so they are safe to use in multi-threaded environment.

30. What are concurrent Collection Classes?

Java 1.5 Concurrent package (*java.util.concurrent*) contains thread-safe collection classes that allow collections to be modified while iterating. By design Iterator implementation in *java.util* packages are fail-fast and throws ConcurrentModificationException. But Iterator implementation in *java.util.concurrent* packages are fail-safe and we can modify the collection while iterating. Some of these classes are *CopyOnWriteArrayList*, *ConcurrentHashMap*, *CopyOnWriteArraySet*.

Read these posts to learn about them in more detail.

- Avoid ConcurrentModificationException
- CopyOnWriteArrayList Example
- HashMap vs ConcurrentHashMap

31. What is BlockingQueue?

java.util.concurrent.BlockingQueue is a Queue that supports operations that wait for the queue to become non-empty when retrieving and removing an element, and wait for space to become available in the queue when adding an element.

BlockingQueue interface is part of java collections framework and it's primarily used for implementing producer consumer problem. We don't need to worry about waiting for the space to be available for producer or object to be available for consumer in BlockingQueue as it's handled by implementation classes of BlockingQueue.

Java provides several BlockingQueue implementations such as ArrayBlockingQueue, LinkedBlockingQueue, PriorityBlockingQueue, SynchronousQueue etc.
Check this post for use of BlockingQueue for producer-consumer problem.

32. What is Queue and Stack, list their differences?

Both Queue and Stack are used to store data before processing them. *java.util.Queue* is an interface whose implementation classes are present in java concurrent package. Queue allows retrieval of element in First-In-First-Out (FIFO) order but it's not always the case. There is also Deque interface that allows elements to be retrieved from both end of the queue.
Stack is similar to queue except that it allows elements to be retrieved in Last-In-First-Out (LIFO) order. Stack is a class that extends Vector whereas Queue is an interface.

33. What is Collections Class?

java.util.Collections is a utility class consists exclusively of static methods that operate on or return collections. It contains polymorphic algorithms that operate on collections, "wrappers", which return a new collection backed by a specified collection, and a few other odds and ends.

This class contains methods for collection framework algorithms, such as binary search, sorting, shuffling, reverse etc.

34. What is Comparable and Comparator interface?

Java provides Comparable interface which should be implemented by any custom class if we want to use Arrays or Collections sorting methods. Comparable interface has compareTo(T obj) method which is used by sorting methods. We should override this method in such a way that it returns a negative integer, zero, or a positive integer if "this" object is less than, equal to, or greater than the object passed as argument.

But, in most real life scenarios, we want sorting based on different parameters. For example, as a CEO, I would like to sort the employees based on Salary, an HR would like to sort them based on the age. This is the situation where we need to use *Comparator* interface because *Comparable.compareTo(Object o)* method implementation can sort based on one field only and we can't chose the field on which we want to sort the Object.

Comparator interface *compare(Object o1, Object o2)* method need to be implemented that takes two Object argument, it should be implemented in such a way that it returns negative int if first argument is less than the second one and returns zero if they are equal and positive int if first argument is greater than second one.

Check this post for use of Comparable and Comparator interface to sort objects.

35. What is difference between Comparable and Comparator interface?

Comparable and Comparator interfaces are used to sort collection or array of objects.

Comparable interface is used to provide the natural sorting of objects and we can use it to provide sorting based on single logic.
Comparator interface is used to provide different algorithms for sorting and we can chose the comparator we want to use to sort the given collection of objects.

36. How can we sort a list of Objects?

If we need to sort an array of Objects, we can use *Arrays.sort()*. If we need to sort a list of objects, we can use *Collections.sort()*. Both these classes have overloaded sort() methods for natural sorting (using Comparable) or sorting based on criteria (using Comparator).
Collections internally uses Arrays sorting method, so both of them have same performance except that Collections take sometime to convert list to array.

37. While passing a Collection as argument to a function, how can we make sure the function will not be able to modify it?

We can create a read-only collection using `Collections.unmodifiableCollection(Collection c)` method before passing it as argument, this will make sure that any operation to change the collection will throw `UnsupportedOperationException`.

38. How can we create a synchronized collection from given collection?

We can use `Collections.synchronizedCollection(Collection c)` to get a synchronized (thread-safe) collection backed by the specified collection.

39. What are common algorithms implemented in Collections Framework?

Java Collections Framework provides algorithm implementations that are commonly used such as sorting and searching. Collections class contain these method implementations. Most of these algorithms work on List but some of them are applicable for all kinds of collections.
Some of them are sorting, searching, shuffling, min-max values.

40. What is Big-O notation? Give some examples?

The Big-O notation describes the performance of an algorithm in terms of number of elements in a data structure. Since Collection classes are actually data structures, we usually tend to use Big-O notation to chose the collection implementation to use based on time, memory and performance.

Example 1: ArrayList `get(index i)` is a constant-time operation and doesn't depend on the number of elements in the list. So it's performance in Big-O notation is O(1).
Example 2: A linear search on array or list performance is O(n) because we need to search through entire list of elements to find the element.

41. What are best practices related to Java Collections Framework?

- Chosing the right type of collection based on the need, for example if size is fixed, we might want to use Array over ArrayList. If we have to iterate over the Map in order of insertion, we need to use TreeMap. If we don't want duplicates, we should use Set.
- Some collection classes allows to specify the initial capacity, so if we have an estimate of number of elements we will store, we can use it to avoid rehashing or resizing.
- Write program in terms of interfaces not implementations, it allows us to change the implementation easily at later point of time.
- Always use Generics for type-safety and avoid ClassCastException at runtime.
- Use immutable classes provided by JDK as key in Map to avoid implementation of hashCode() and equals() for our custom class.

- Use Collections utility class as much as possible for algorithms or to get read-only, synchronized or empty collections rather than writing own implementation. It will enhance code-reuse with greater stability and low maintainability.

42. What is Java Priority Queue?

PriorityQueue is an unbounded queue based on a priority heap and the elements are ordered in their natural order or we can provide Comparator for ordering at the time of creation. PriorityQueue doesn't allow null values and we can't add any object that doesn't provide natural ordering or we don't have any comparator for them for ordering. Java PriorityQueue is not thread-safe and provided O(log(n)) time for enqueing and dequeing operations. Check this post for java priority queue example.

43. Why can't we write code as *List<Number> numbers = new ArrayList<Integer>();*?

Generics doesn't support sub-typing because it will cause issues in achieving type safety. That's why List<T> is not considered as a subtype of List<S> where S is the super-type of T. To understanding why it's not allowed, let's see what could have happened if it has been supported.

```
List<Long> listLong = new ArrayList<Long>();
listLong.add(Long.valueOf(10));
List<Number> listNumbers = listLong; // compiler error
listNumbers.add(Double.valueOf(1.23));
```

As you can see from above code that IF generics would have been supporting sub-typing, we could have easily add a Double to the list of Long that would have caused *ClassCastException* at runtime while traversing the list of Long.

44. Why can't we create generic array? or write code as *List<Integer>[] array = new ArrayList<Integer>[10];*

We are not allowed to create generic arrays because array carry type information of it's elements at runtime. This information is used at runtime to throw *ArrayStoreException* if elements type doesn't match to the defined type. Since generics type information gets erased at compile time by Type Erasure, the array store check would have been passed where it should have failed. Let's understand this with a simple example code.

```
List<Integer>[] intList = new List<Integer>[5]; // compile error
Object[] objArray = intList;
List<Double> doubleList = new ArrayList<Double>();
doubleList.add(Double.valueOf(1.23));
objArray[0] = doubleList; // this should fail but it would pass because at runtime intList and
doubleList both are just List
```

Arrays are covariant by nature i.e S[] is a subtype of T[] whenever S is a subtype of T but generics doesn't support covariance or sub-typing as we saw in last question. So if we would have been allowed to create generic arrays, because of type erasure we would not get array store exception even though both types are not related.

To know more about Generics, read **Java Generics Tutorial**.

I will keep on adding more questions on java collections framework as and when I found them, if you found it useful please share it with others too, it motivates me in writing more like these. ☺

Please let me know if I have missed any important question, I will include that to list.

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About Pankaj

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Recently I started creating video tutorials too, so do check out my videos on **Youtube**.

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Comments

Venus says

APRIL 20, 2018 AT 10:22 AM

Can someone pls tell difference between for loop and iterator .. even in Iterator we can not modify collection as it throws Concurrent ModificationException.

Reply

Nand says

MARCH 23, 2018 AT 9:39 AM

Hi Pankaj.

Please expalin once again below line .

Hashtable is synchronized but HashMap is not synchronized. So HashMap is better for single threaded environment, Hashtable is suitable for multi-threaded environment.
Reply

Sanjay Roy says
JANUARY 28, 2018 AT 10:44 AM
Hi,
I do follow your posts for various topics in Java. As I am not very old as a programmer , I was going through the fail-fast property of Iterator by writing small programs to just get accustomed with the exception it throws when any modification is done to the underlying Collection being iterated by it,
For me the concept goes well with List but when I was implementing the fail-fast property of Iterator with Map, I was not getting any Exception even after modification to the Collection. I am attaching a snippet of the code below. Please do check and let me know why I wasn't getting any Exception even after I add Entries in the Map.

```
Map test = new HashMap();
test.put(1, "abc");
test.put(2, "cde");
test.put(3, "efg");
test.put(4, "ghi");
test.put(5, "ijk");
test.put(6, "klm");
Iterator iterator = test.keySet().iterator();
while(iterator.hasNext()) {
if(it.next().equals(6)) {
test.put(6, "yui");
test.put(7, "lll");
test.put(8, "kkk");
test.put(9, "sss");
}
}
for(Map.Entry m: test.entrySet()) {
System.out.println(m.getKey() + " " + m.getValue());
}
```

Do bare me with all the reference names been used in the program. It was only for test purpose
Reply

Pankaj says
JANUARY 28, 2018 AT 8:33 PM
The problem is with your if condition, you are doing the modification on the last item. Change it to `if(it.next().equals(4))` and you will get the exception.
Reply

Sanjay Roy says
JANUARY 28, 2018 AT 9:15 PM
Thanks for the response. It does work but can you tell me if possible why the exception is not getting thrown if the condition is made on the last entry?. I am modifying something there also.
Thanks in advance
Reply

arvind says
FEBRUARY 15, 2018 AT 9:00 AM
Because it is the next() method that is throwing the ConcurrentModificationException and if it is not called then no exception.
And this is what happening in your code.
Reply

Rajesh says
NOVEMBER 24, 2017 AT 5:24 PM
Very good collection…
Reply

Sanju says
SEPTEMBER 19, 2017 AT 10:10 PM
Question#44 : "Since generics type information gets erased at runtime "
but according to https://docs.oracle.com/javase/tutorial/java/generics/erasure.html information erased at compile time. Is there any misunderstand from my side?
Reply

Pankaj says
SEPTEMBER 19, 2017 AT 10:21 PM
You are absolutely right, it was a typo error. I have fixed the post. Thanks for the comment, I appreciate it.
Reply

Anurag Singh says
JULY 24, 2017 AT 3:08 AM
this post is awesome for every one who wanted to crack the java interview.
thank you so much.
Reply

Veera Kanisetty says
JULY 27, 2017 AT 12:26 AM
Really superb , looking for these kind of stuff in all Java frameworks as well. Thanks
Reply

livermor says
JANUARY 19, 2017 AT 6:02 PM
4 point is wrong.
Map is not under the Collections interface.
Reply

Vineet Kapoor says
MAY 29, 2017 AT 1:48 AM
Yes True.
Reply

Vikas Palakurthi says
MAY 29, 2017 AT 11:22 PM
The question is “What are the basic interfaces of Java Collections Framework”. It specifically says “Collections Framework”.
Map is an interface in Collections framework, but is not a sub-interface of Collection interface.
Reply

Avisha Jindal says
NOVEMBER 15, 2016 AT 11:30 PM
I was once asked in an interview. What is the meaning of making an array list 'final'? Does it mean that we won't be able to add elements to it? Till date whomever i've asked this question to , has not been able to answer it correctly. Please add more such type of tricky interview questions.
Reply

Tarun says
DECEMBER 14, 2016 AT 3:33 AM
@avisha if you use final with any attribute or any other thing you can't instantiate again eg . final int i =6;
you not change value of i again same as
final List list = new ArrayList (); you cant instantiate it again like list = new LinkedList(); or somthing but you add the vlaue inside the list .
Reply

Vineet Kapoor says
MAY 29, 2017 AT 1:51 AM
This means that you cannot rebind the variable to point to a different collection instance:
final List list = new ArrayList();
list = new ArrayList(); // Since `list' is final, this won't compile
Reply

zurreyab says
JULY 17, 2017 AT 2:50 AM
compile
Reply

Rupa says
APRIL 12, 2018 AT 7:40 AM
It simply means that you cant change or modify its reference.
final List al = new ArrayList();
The al reference is pointing to the object Arraylist() cannot be modified
Reply

Dabbiru Gautam says
NOVEMBER 15, 2016 AT 9:48 PM
HI,
Great work done for collating all questions at one place.
For 36. The object needs to Implement Comparable or Comparator first and should have the implementation for compareTo() or compare(). Then we can use Colletions.sort().
Regards,
Gautam
Reply

Kannan says
MAY 5, 2017 AT 2:40 AM
When you use collection to hold any wrapper class objects, then there is no need of implementing Comparable or Comparator interface.
Ex: List list = new ArrayList();
Collections.sort(list); //will sort based on lexicographical.
When you use any custom objects (says Person, Employee), then you have implement any of interface and tell based which fields collections has to be sorted.
Say ArrayList holds list of Employee object, and you want to sort by employee salary or name then you have to go with any above interface.
Ex. List empList = new ArrayList();
Collections.sort(empList); //compile time error if you don't implement Comparable or Comparator interface
Reply

Vineet Kapoor says
MAY 29, 2017 AT 1:55 AM
Yes true
Reply

vedant maheshwari says
AUGUST 27, 2016 AT 8:31 AM
hi Pankaj ,
Can you give more explanation on Q44.

As it says that Arrays doesn't allow to be generic. so what happen in case of Q44.
Will it give error or simply store the list of elements of integer and double?
Reply

Pankaj says
AUGUST 27, 2016 AT 11:00 AM
It will give compile error, the code is just to show what will happen if we assume that code will not give compile error.
Reply

GOPINATH M B says
JULY 8, 2016 AT 9:30 PM
Good collection bro…thank you:)
Reply

Dhananjay says
JUNE 21, 2016 AT 10:29 PM
Good work, very clear explanation.
Reply

Shreya says
MARCH 21, 2016 AT 3:38 AM
Thank you so much for providing the explanations.
Reply

ramana reddy says
FEBRUARY 10, 2016 AT 12:18 PM
Amazing work, very detailed. Thank you so much.
Reply

Raju says
JANUARY 26, 2016 AT 7:42 AM
@Pankaj how are writing this much long tutorial. You didn't get married ?? ☺
But any how i love your work and effort its very useful. thanks
Reply

Pankaj says
JANUARY 26, 2016 AT 8:11 AM
This is funny and nice. Actually I am married and my wife provide a lot of support in this and help me motivated.
Reply

Inder says
AUGUST 13, 2016 AT 9:38 AM
Hi Pankaj ,
Can you please revisit the answer to the question 22. I guess in HashMap only null keys are supported and not null values..
Reply

Pankaj says
AUGUST 13, 2016 AT 10:35 PM
For these, best way to confirm is write a simple program. See below program compiles and runs fine.

```
import java.util.HashMap;

public class Test {

public static void main(String args[]){

HashMap<String,String> m = new HashMap<String,String>();

m.put(null,null);
m.put("1","1");

System.out.println(m);
}

}
```

Reply

Kannan says
MAY 5, 2017 AT 2:42 AM
HashMap will allow only one null but n number of null values.
Reply

Bharath says
JANUARY 12, 2016 AT 4:01 AM
Very Nice collection Interview questions.
Thanks Pankaj.
Reply

Pratap Shinde says
JANUARY 11, 2016 AT 10:05 AM
Great work, Pankaj
Reply

vivek says
DECEMBER 21, 2015 AT 6:11 AM
Please do a program by adding scanning without using add method.
Reply

Bhaumik says
DECEMBER 3, 2015 AT 4:57 AM
Hello sir i cant see questions answers after the 21 no questions
Reply

Viswa says
OCTOBER 8, 2015 AT 11:22 PM
Excellent material..A big thanks for your efforts !!
Reply

Ashish Mane says
AUGUST 3, 2015 AT 12:17 AM
Grate efforts….keep it up.
Reply

Arun says
JULY 12, 2015 AT 12:17 AM
Dear Sir;
Greetings!!!
I have some doubt in Collection Frame Work-
1-Why we use interface why we did not use directly class.
like list interface accept duplicacy and arraylist iimplement it
then why we did not implement all the list feature in array list directly
and what is advantage of list iterface
Reply

Quang says
JANUARY 27, 2016 AT 10:03 PM
The interface useful as you want to change the implementation classes.
Maybe this time, you're using ArrayList and in five years I assume that your business will be upgraded so you have to replace ArrayList by LinkedList. If you use the implementation classes in function arguments , you have to replace all of them but if you use the interface, you dont need to update.
Let see example below:
void getInfo(List b) -> you can pass any implementation classes
void getInfo(ArrayList b) -> you can only pass ArrayList class.
Reply

RAHUL SAXENA says

JULY 11, 2015 AT 8:02 AM

Can you please explain in concurrent collection why iterator does not throw concurrent modification exception.You have written that it works on the clone of that object.

So please explain it deeply like where this clone is maintained and what operations are performed in the memory??

Reply

Ankita says

AUGUST 18, 2017 AT 1:14 AM

In concurrent collection like CopyOnWriteArrayList and CopyOnWriteArrayset, for every update operation a cloned copy of original object is created and the update operation is performed on that cloned copy rather than original copy.

Later on this cloned copy and original copy object are synched by JVM internally to perform the update.Since the update is performed on cloned copy rather than original copy so we don't get concurrentModifationException.

Also if we have many write operations it is not recommended to use this concurrent class becoz for every update one cloned copy is created and performance degrades.

Reply

Vishwadeep Aggarwal says

APRIL 2, 2015 AT 2:57 AM

Could you please explain Que 29. and if Collection Classes are thread safe then please explain how??

Reply

Paresh Bhavsar says

MARCH 19, 2015 AT 11:46 PM

very good Collections of questions and answers … thanx.

Reply

Vishy says

MARCH 16, 2015 AT 12:16 PM

Fine list of questions & answers..

Reply

Eswaran says
MARCH 16, 2015 AT 10:21 AM
please tell about equals and hashcode method deeply
Reply

Vinod Karathiya says
MARCH 13, 2015 AT 11:50 AM
Really Nice work, As experienced person I don't have these much knowledge. Again Thanks a lot.
Reply

Sharmi says
JANUARY 21, 2015 AT 10:13 PM
Please use the language short and precise. I read a question "Why Collection doesn't extend Cloneable and Serializable interfaces?" it took me 5 minutes to understand what exactly are you trying to say.
Reply

dakshina gandikota says
JANUARY 10, 2015 AT 5:31 PM
In Question#20
Line 12: myHashMap.get(new MyKey("Pankaj"));
If Line 12: were to be
myHashMap.get(key);
would the "theory" that mutable class as key is a bad idea hold?
By the way, the definition of mutable is up in the air. Is it a final class with final methods and fields?
Reply

dakshina gandikota says
JANUARY 7, 2015 AT 2:49 PM
Questions 14 and 30 contradict each other wrt ConcurrentHashMap.
Reply

Pankaj says
JANUARY 9, 2015 AT 1:51 AM
No it was not contradicting, however answer in Q30 was confusing. I have modified it and it should be clear now.
Reply

dakshina gandikota says
JANUARY 9, 2015 AT 10:10 AM
Thanks. Why not Vector for random access of its contents, along side ArrayList, HashMap, TreeMap and Hashtable?
Reply

Anoop says
DECEMBER 23, 2014 AT 2:13 AM
Correction: "If we have to iterate over the Map in order of insertion, we need to use TreeMap". Its LinkedHashMap.
Reply

Vu Le says
DECEMBER 30, 2014 AT 10:57 PM
If we have to iterate over the Map in order of insertion, we need to use LinkedHashMap. With TreeMap if you need to iterate by sorted order
Reply

kiran says
DECEMBER 20, 2014 AT 1:37 AM
Great Job sir..... Thank u
Reply

Pabel Lopez says
NOVEMBER 23, 2014 AT 11:03 PM

It will be very helpful to have an image of the main collections (collection, set, list, Queue and map) sometimes is easier to watch the image as a tree than reading the description.
Thank you.
Reply

sampath kumar madala says
NOVEMBER 22, 2014 AT 9:26 AM
Q: 30– " By design iterator is fail fast and throws ConcurrentModificationException" Is this statement conflicts with explanation in Q:14 !!!
Reply

Pankaj says
NOVEMBER 22, 2014 AT 10:11 AM
Don't get confused, both are right explanation. Iterator is just an interface and their corresponding implementation are either fail-fast or fail-safe.
All the iterator implementation in java.util package collection classes are fail-fast whereas collection classes in java.util.concurrent implement fail-safe iteraator.
Reply

Prakash says
NOVEMBER 19, 2014 AT 2:57 AM
What is ThreadLocal? Pleas explain with some realtime example?
Reply

Jagadeesh says
OCTOBER 16, 2014 AT 2:16 AM
HI Pankaj,
I great to see this site, It is very useful for Interviews, But here I found only 21 questions and answers,Can u post all the answers?
Thanks a lot
Reply

Dharmendra says
SEPTEMBER 21, 2014 AT 1:43 AM
Very good collection of Collection questions ☺
Reply

Danny says
SEPTEMBER 18, 2014 AT 11:04 PM
each and every question is very nicely explained, good job!
Reply

Aditya Peshave says
SEPTEMBER 14, 2014 AT 8:05 PM
Hi,
really nice tutorial.
Just a correction:
the default capacity of HashMap is 16.
reference:
http://grepcode.com/file/repository.grepcode.com/java/root/jdk/openjdk/6-b14/java/util/HashMap.java#HashMap.%3Cinit%3E%28%29
Reply

Karl says
AUGUST 26, 2014 AT 1:09 AM
Very good collection of Collections interview questions.
Reply

Karl says
AUGUST 25, 2014 AT 7:57 PM
Very good Collections interview questions!
Reply

Amit says
AUGUST 22, 2014 AT 1:28 AM
wow! Really very nice articles
Reply

vinita says
JULY 22, 2014 AT 3:58 AM
good collection of question….thanx
Reply

pk says
JULY 9, 2014 AT 4:44 AM
gud collection of questions
Reply

sudheer says
JULY 4, 2014 AT 3:25 AM
awesome posts by you pankaj…thanks a lot.
Reply

Arti says
JUNE 28, 2014 AT 8:30 AM
I am not able to view all the questions though i am following you on twitter. I was able to view all the 40 questions for some days but not now. Please check.
Reply

chandan says
JUNE 6, 2014 AT 1:27 AM
Thanks Pankaj…Excellent post. Please also add answers for questions from 22 onwards.
Reply

Abhay says
JUNE 5, 2014 AT 8:14 AM
Hi Pankaj,
You have not added answers to all questions listed above ? Please provide answers also if possible.
Your answers are easy to understand and very clear. Thanks in advance.
Reply

Abhay says
JUNE 5, 2014 AT 8:17 AM
Please ignore:)
Reply

Maruthi says
MAY 4, 2014 AT 10:40 PM
Good collection of collections interview questions with nice explanation
Reply

jkbkrk says
MARCH 19, 2014 AT 7:36 PM
Great site! One question about no. 40:
"If we have to iterate over the Map in order of insertion, we need to use TreeMap."
Shouldn't it be:
"If we have to iterate over the Map in order of insertion, we need to use **LinkedHashMap.**" or
"If we have to iterate over the Map in **natural order**, we need to use TreeMap."
Thanks.
Reply

Sateesh Kumar U says
MARCH 19, 2014 AT 5:58 PM
Great work. Thanks alot Pankaj..!!
Reply

Sushil says
MARCH 12, 2014 AT 5:12 AM
Thank you very much.
I deeply appreciate your efforts.
Reply

nikhil sethiya says
MARCH 7, 2014 AT 9:58 AM
great work sir…..!!
Reply

nikhil sethiya says
MARCH 7, 2014 AT 9:57 AM
Excellent Work……..!!
Reply

jameer says
MARCH 6, 2014 AT 7:54 AM
Hello, Pankaj.
Awesome Explanation.
Reply

vidhya says
MARCH 1, 2014 AT 9:27 AM
Amazing work, thanks a lot.
Reply

Narayanarao Menda says
FEBRUARY 17, 2014 AT 7:46 PM
It's amazing tutorial…thank u very much..
Reply

Shelly says
FEBRUARY 11, 2014 AT 9:40 AM
Hi Pankaj,
Its a great article just one thing that i question 40 you mention If we have to iterate over the Map in order of insertion, we need to use TreeMap it shouldn't be linkedhashmap instead of treemap.
Thanks
Reply

Pankaj says
FEBRUARY 12, 2014 AT 12:05 AM
We can use both TreeMap or LinkedHashMap.
Reply

Brijeshwar says
SEPTEMBER 27, 2014 AT 9:39 AM
Hi Pankaj,
Insertion order is maintained only in LinkedHashMap whereas TreeMap maintains key based SortedOrder, Please correct me if I am wrong.
Reply

Vu Le says
DECEMBER 30, 2014 AT 11:00 PM
It should be LinkedHashMap not TreeMap, TreeMap with natural order
Reply

Divya says
FEBRUARY 2, 2014 AT 10:46 AM
Hello Pankaj,
Can you please explain the the question no 43 "Why can't we create generic array" in more detail and in easy way. It's very difficult to understand it.
Please help me out.
Thanks,
Divya ☺
Reply

Pankaj says

FEBRUARY 2, 2014 AT 9:34 PM

Let's get through each line in the sample code and try to understand what is happening.

1. List<Integer>[] intList = new List<Integer>[5];

This line will throw compile time exception now because we can't have generic array. Just for the sake of argument, let's assume that it's allowed and compiler don't throw any error.

Since generics type information gets erased at runtime by Type Erasure, it will be like an array of List at runtime like List[] intList = new List[5];

2. Object[] objArray = intList;

Perfectly valid statement, creating an object array.

3. List<Double> doubleList = new ArrayList<Double>();

At runtime List doubleList = new ArrayList();

4. doubleList.add(Double.valueOf(1.23));

Valid statement, adding Double to the list.

5. objArray[0] = doubleList;

You see the problem here, since the objArray is referring to intList, we are basically setting doubleList to one of the elements of the array that is supposed to contain only Integer List. And it will work fine because for Array both intList and doubleList are just list, since there is no type information available.

That's why Generic Arrays are not supported in Java.

Reply

Harsha says

JANUARY 26, 2014 AT 4:06 PM

Good one !!! Keep it up , your explanation is good and practical .

Reply

Rajan says

JANUARY 21, 2014 AT 9:44 AM

Hi Pankaj,

Thanks for such a nice detail on collections.

Reply

Akhil says

JANUARY 18, 2014 AT 3:01 PM

Hi Pankaj,
In question no 19, below line will always return null.
myHashMap.get(new MyKey('Pankaj'));
since its creating new key everytime and there is no value available for this key. Please update it,if i'm correct and one more please replace all the strings enclosed with double quotes.
Thanks,
Akhil
Reply

Pankaj says
JANUARY 18, 2014 AT 6:51 PM
Not that is not true. As stated HashMap uses equals() and hashcode() functions to find the value in the map. So if MyKey override these methods and provide correct implementation, then the hashcode will be same as any other value stored with same hashcode and we will get it. The code given in the question is to prove that immutability is required to avoid any data integrity issues in the Map, because if we change the data hashcode is changed and we will never be able to get the associated value.
And thanks for pointing out the quotation marks, I will change it.
Reply

sam says
JANUARY 16, 2014 AT 12:33 PM
Hi Pankaj ,
I was looking for some good interview question and found this . Its really very helpful and descriptive. You deserve praise for it . Excellent work Sir and keep it up !
Reply

Malli says
DECEMBER 20, 2013 AT 7:11 AM
Hi Pankaj,
Thanks for given a good kind of materiel. very useful to us. I request you, please provide JSF, EJB and JPA.
Reply

krishna says

DECEMBER 5, 2013 AT 5:06 AM
Thanks a TON ☺
Reply

Snehal Masne says
DECEMBER 1, 2013 AT 5:22 PM
Thanks a lot for this blog. I bookmarked it ☺
Thanks a lot buddy!!
Reply

test says
JANUARY 1, 2014 AT 11:25 AM
wow gr8 that u bukmrkd it….
Reply

Ganesh says
DECEMBER 1, 2013 AT 10:25 AM
Good Knowledge sharing and valuable informations not only from interview aspective but also to grow technically strong.
You are doing a fantastic job, Pls continue.
Reply

Arun says
NOVEMBER 15, 2013 AT 5:06 PM
good work Pankaj. its a wonderful collection..
Reply

siri says
NOVEMBER 13, 2013 AT 5:44 AM
Collections is a class it will be helpful to collection framework by providing methods.
Reply

Rameshwar Singh says
NOVEMBER 11, 2013 AT 6:48 AM
Hi,
Kindly help to remove extra characters from the code like “”.
Reply

siri says
NOVEMBER 13, 2013 AT 5:41 AM
It is collection framework not collections framework……
Reply

Abhishek Singh says
NOVEMBER 8, 2013 AT 8:19 AM
Wow, beautyfull artical in simple language……..Thanks.
Reply

Naresh says
NOVEMBER 5, 2013 AT 10:35 AM
Does the JDBC-ODBC Bridge support multiple concurrent open statements per connection?
if No, How?
Reply

Sandeep says
OCTOBER 29, 2013 AT 11:18 AM
Really helpful. keep it up ☺
Reply

Yogesh says
JULY 18, 2013 AT 11:23 AM
Thanks.It was really nice. Keep such good work up!
Reply

G.Palanikumar says
JULY 15, 2013 AT 6:13 AM
Respected Sir,
Really i proud of you. you were posted many questions always i am welcome. but company never discuss to candidate in first time they give some programs for interview time and write the output. i am expecting these kind of sample question with answer. thank you sir. if you find any mistake my words please forgive me sir. that is my suggestion thats all
Reply

Pankaj says
JULY 15, 2013 AT 7:49 PM
It depends on the interview type, if its telephonic round then expect more questions on core java related technologies. For programming questions, until unless you have deep knowledge of core technologies, you won't be able to answer them with confidence and answer the followup questions.
Reply

hmm says
JULY 11, 2013 AT 7:34 PM
what
Reply

Manish Dass says
JUNE 20, 2013 AT 12:42 PM
Good collection of questions from Collections.
Fantastic and very helpful.
Reply

Amit says
JUNE 19, 2013 AT 3:53 PM
This is really one of the best !!. Thanks a lot. Please keep sharing more.
Reply

vivek says
JUNE 19, 2013 AT 8:31 AM
Hi,
This is regarding question 17, there you mention "if map size is greater thn threshold , hashmap rehashes the content s of hashmap into new 'ARRAY' with larger capacity"
Don't we use linkedlist for for storing hasmap, I am beginner.
Can you please explain ?
Regards
Vivek
Reply

Pankaj says
JUNE 19, 2013 AT 7:40 PM
Here I am referring to the array that keeps indexes to the linked list, check the image in question 17 for better understanding.
Reply

Leo says
JUNE 11, 2013 AT 4:45 PM
Excellent post…. Really learnt lot of things in collections with full clarity….
thanks alot..
Reply

Rahul Sharma says
JUNE 9, 2013 AT 6:58 PM
Very well written and covering almost all the interviews related questions….great job indeed!!!
Reply

Tarun says
JUNE 8, 2013 AT 5:22 AM
nice collection of quesction thank for sharing.
Reply

Brijs Modi_1 says
JUNE 7, 2013 AT 1:28 PM
Good one
Reply

shashi says
JUNE 6, 2013 AT 10:43 AM
good work very useful
Reply

Rameshwar Singh says
JUNE 4, 2013 AT 10:34 AM
Thanks a lot!!!
This covers everything what an individual expects ☺
Really helpful.. keep up the good work..
Reply

Brijs says
JUNE 7, 2013 AT 1:26 PM
Good one
Reply

praveen says
JUNE 4, 2013 AT 1:42 AM
great work pankaj…. this helped me a lot
Reply

Praveen Kumar says
JUNE 2, 2013 AT 11:02 AM

Thanks a lot for this blog!! I bookmarked it..Thanks a lot buddy!!
Reply

abc says
MAY 15, 2013 AT 10:21 AM
Very Nice …
Reply

Anupam says
MAY 15, 2013 AT 9:45 AM
itz realy so good
Reply

Genia says
MAY 14, 2013 AT 12:39 AM
After looking at a number of the blog posts on your blog, I seriously appreciate your way of blogging. I book marked it to my bookmark site list and will be checking back soon. Take a look at my web site as well and tell me your opinion.
Reply

I M Futane says
APRIL 20, 2013 AT 2:02 AM
Good Question Collect From Util Package
Reply

Adinath Bhawani says
MARCH 15, 2013 AT 5:38 PM
a good collection of Java
Reply

Sushil says
FEBRUARY 22, 2013 AT 9:35 AM
Its a very good collection of Collection IQ.
Keep the work going and Thank you very much for sharing
Reply

Ambuj Tailang says
MAY 3, 2013 AT 11:57 AM
Awesome collection
Reply

GNS says
FEBRUARY 12, 2013 AT 8:02 PM
Very good collection of Collections interview questions. …
Reply

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