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Topic	List - Iterator	Last updated on	10 January 2025

1. Which method is used to return an iterator to the start of the list in a Java List?
    a. listIterator()
    b. iterator()
    c. startIterator()
    d. beginningIterator()

   Ans: a. listIterator()

   Explanation: Used to return an iterator for traversing a list starting at its beginning.

2. Which method is used to check if there are more elements to iterate through when using the Iterator interface?
    a. hasMore()
    b. hasNext()
    c. isNext()
    d. nextElement()

   Ans: b. hasNext()

   Explanation: Checks if more elements exist while iterating using an Iterator.

3. What is the syntax for using a for-each loop to traverse a collection in Java?
    a. for (ElementType element : collection) { // code }
    b. for (ElementType element = collection.next()) { // code }
    c. for (int i = 0; i < collection.size(); i++) { // code }
    d. for (Iterator it : collection) { // code }

   Ans: a. for (ElementType element : collection) { // code }

   Explanation: Syntax for a for-each loop to traverse collections.

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4. When would you prefer using the Iterator interface over the for-each loop in Java?
    a. When you want a simpler, more concise syntax.
    b. When you need to modify the collection while traversing it.
    c. When you don't need to remove elements during iteration.
    d. When you need to access the collection in reverse order.

Ans: b. When you need to modify the collection while traversing it.

Explanation: Iterator is preferred when modifying a collection while traversing.

5. Which of the following methods is used to retrieve the next element in a collection when using an Iterator in Java?
    a. get()
    b. next()
    c. nextElement()
    d. fetch()

Ans: b. next()

Explanation:Retrieves the next element from the collection during iteration.

6. Which of the following is true about the for-each loop in Java?
    a. It requires explicit calls to the next() and hasNext() methods.
    b. It can be used only with the Set interface.
    c. It can traverse any Iterable object, including List and Set.
    d. It modifies the collection while traversing.

Ans: c. It can traverse any Iterable object, including List and Set.

Explanation: The for-each loop can traverse any Iterable like List or Set.

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7. What does the remove() method in the Iterator interface do?
    a. Removes the first element of the collection.
    b. Removes the current element from the collection while iterating.
    c. Removes the last element in the collection.
    d. Removes the element at the specified index.

Ans: b. Removes the current element from the collection while iterating.

Explanation: Removes the current element from the collection during iteration.

8. What is the main disadvantage of using the for-each loop compared to the Iterator interface?
    a. It is less readable and more complicated.
    b. It cannot remove elements during traversal.
    c. It can only be used with lists.
    d. It requires more code than an Iterator.

Ans: b. It cannot remove elements during traversal.

Explanation: For-each loop cannot remove elements during traversal.

9. What is the primary purpose of the Iterator interface in Java's Collection Framework?
    a. To modify elements while traversing a collection.
    b. To retrieve elements one by one from a collection.
    c. To sort elements in a collection.
    d. To prevent iteration through a collection.

Ans: b. To retrieve elements one by one from a collection.

Explanation: Iterator's purpose is to fetch elements one by one.

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10. Which of the following is true about the Iterator interface in Java?
    a. It is the only cursor available to traverse collections.
    b. It allows multiple cursors to traverse the collection at the same time.
    c. It can only be used with lists in the Java Collection Framework.
    d. It is not applicable to Set or Queue collections.

Ans: a. It is the only cursor available to traverse collections.

Explanation: Iterator provides only one cursor for traversing collections.

11. Which method of the Iterator interface is used to check if there are more elements in the collection?
    a. hasNext()
    b. isNext()
    c. nextElement()
    d. hasNextElement()

Ans: a. hasNext()

Explanation: Checks if there are more elements to iterate through.

12. How do you retrieve the next element in a collection when using an Iterator?
    a. By calling getNext().
    b. By calling next().
    c. By calling nextElement().
    d. By calling retrieve().

Ans: b. By calling next().

Explanation: Retrieves the next element using the Iterator interface.

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13. Which of the following methods is used to remove the current element from the collection during iteration using an Iterator?

    a. remove()
    b. delete()
    c. removeElement()
    d. discard()

Ans: a. remove()

Explanation: Removes the current element from a collection during iteration.

14. What happens if you call the next() method on an Iterator when there are no more elements in the collection?

    a. It throws a NoSuchElementException.
    b. It returns null.
    c. It throws an IndexOutOfBoundsException.
    d. It silently returns false.

Ans: a. It throws a NoSuchElementException.

Explanation: Thrown if next() is called when no elements exist.

15. Which of the following is NOT a method defined by the Iterator interface in Java?

    a. hasNext()
    b. next()
    c. remove()
    d. clear()

Ans: d. clear()

Explanation:clear() is not a method of the Iterator interface.

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16. Which of the following statements about the Iterator interface is correct?
    a. Iterator can only be used with List collections.
    b. Iterator is not thread-safe.
    c. Iterator is the only method of traversing a Queue in Java.
    d. Iterator cannot be used to modify a collection.

Ans: b. Iterator is not thread-safe.

Explanation: Iterator is not inherently thread-safe in Java.

17. Can you use the Iterator interface to traverse elements in both ordered and unordered collections (e.g., List and Set)?
    a. Yes, Iterator can be used to traverse any collection in the Java Collection Framework.
    b. No, Iterator can only be used for ordered collections like List.
    c. Yes, but only with ordered collections like List.
    d. No, Iterator cannot traverse unordered collections like Set.

Ans: a. Yes, Iterator can be used to traverse any collection in the Java Collection Framework.

Explanation: Iterator can traverse any collection in Java.

18. What is the main advantage of using Iterator over a traditional for loop in Java?
    a. Iterator allows you to modify the collection during traversal.
    b. Iterator provides better performance than a for loop.
    c. Iterator can only be used to traverse List collections.
    d. Iterator is a simpler and less efficient way to traverse collections.

Ans: a. Iterator allows you to modify the collection during traversal.

Explanation: Iterator allows modifying collections while iterating.

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19. Which of the following best describes the Iterator interface in Java?
    a. It is a universal iterator that can be applied to any Collection object.
    b. It is only applicable to List collections.
    c. It can only be used for read operations and not for removal of elements.
    d. It is a specialized iterator used only for Set collections.

Ans: a. It is a universal iterator that can be applied to any Collection object.

Explanation: Iterator is universal, applicable to any Collection.

20. Which of the following operations can be performed by the Iterator interface in Java?
    a. Only read operations (i.e., retrieving elements).
    b. Both read and write operations.
    c. Both read and remove operations.
    d. Only remove operations.

Ans: c. Both read and remove operations.

Explanation: Iterator supports reading and removing elements.

21. What makes the Iterator interface in Java a "universal" iterator?
    a. It can only be used for ordered collections like List.
    b. It works with any type of collection (e.g., List, Set, Queue).
    c. It can only be used with primitive data types.
    d. It requires an explicit index to traverse elements.

Ans: b. It works with any type of collection (e.g., List, Set, Queue).

Explanation: Iterator is universal across List, Set, and Queue.

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22. Which of the following methods in the Iterator interface allows you to remove an element from a collection while iterating?

    a. next()
    b. hasNext()
    c. remove()
    d. delete()

Ans: c. remove()

Explanation: Iterator removes an element at the current position.

23. Can the Iterator interface be used for modifying (i.e., adding or replacing) elements in a collection during iteration?

    a. Yes, it can modify elements by using set() method.
    b. No, it can only read and remove elements, not modify them.
    c. Yes, it can modify elements using the add() method.
    d. No, it can only add elements, but not replace or modify them.

Ans: b. No, it can only read and remove elements, not modify them.

Explanation: Iterator cannot modify or replace elements.

24. What happens if you try to call the remove() method on an Iterator when the next() method has not been called yet?

    a. It throws a NoSuchElementException.
    b. It throws an IllegalStateException.
    c. It returns null.
    d. It silently ignores the call.

Ans: b. It throws an IllegalStateException.

Explanation: Thrown if remove() is called before next().

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25. Which of the following statements is true about the Iterator interface in Java?
    a. The Iterator interface can only be used for iterating over List objects.
    b. The Iterator interface is a universal iterator, allowing traversal and removal of elements from any collection type.
    c. The Iterator interface can only be used with collections that implement Set.
    d. The Iterator interface can only be used with Queue collections for traversal.

Ans: b. The Iterator interface is a universal iterator, allowing traversal and removal of elements from any collection type.

Explanation: Iterator works for all collection types in Java.

26. Which of the following methods is part of the Iterator interface in Java to check if there are more elements to iterate?
    a. hasNext()
    b. hasMore()
    c. nextAvailable()
    d. nextElement()

Ans: a. hasNext()

Explanation: Verifies the availability of elements during iteration.

27. In which scenario would you use an Iterator over a for-each loop?
    a. When you need to modify the collection during iteration.
    b. When the collection is ordered, the elements must be accessed by index.
    c. When you need a simpler syntax without the ability to remove elements.
    d. When you don't need to perform any removal operations during traversal.

Ans: a. When you need to modify the collection during iteration.

Explanation: Iterator is ideal for modifying collections.

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28. Which of the following is true about the remove() method of the Iterator interface?
    a. It removes the element at the current position and shifts the other elements.
    b. It removes the element from the end of the collection.
    c. It removes the first element in the collection.
    d. It removes the element from the current position and prevents further traversal.

Ans: a. It removes the element at the current position and shifts the other elements.

Explanation: Iterator removes the current element and shifts subsequent ones.

29. Which of the following is true about the Iterator interface in Java?
    a. It supports iteration in both forward and backward directions.
    b. It supports adding or replacing elements during iteration.
    c. It supports only forward direction iteration and does not allow replacing or adding elements.
    d. It allows modifying the collection during iteration by adding new elements.

Ans: c. It supports only forward direction iteration and does not allow replacing or adding elements.

Explanation: Iterator supports only forward traversal.

30. Which of the following operations is NOT supported by the Iterator interface?
    a. Iterating over elements in the forward direction.
    b. Adding new elements to the collection during iteration.
    c. Removing elements from the collection during iteration.
    d. Traversing the collection element by element.

Ans: b. Adding new elements to the collection during iteration.

Explanation: Iterator doesn't support adding new elements.

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31. What is the primary limitation of the Iterator interface in Java?
    a. It can only iterate over List collections.
    b. It only supports forward direction iteration and does not allow element replacement.
    c. It supports backward direction iteration and adding new elements.
    d. It does not allow removing elements during iteration.

    Ans: b. It only supports forward direction iteration and does not allow element replacement.

    Explanation: Iterator doesn't support backward traversal.

32. Which of the following operations can an Iterator NOT perform during iteration over a collection?
    a. Moving to the next element.
    b. Removing an element from the collection.
    c. Replacing an existing element.
    d. Checking if there are more elements to iterate over.

    Ans: c. Replacing an existing element.

    Explanation: Iterator doesn't allow replacing elements directly.

33. When using the Iterator interface, what is the only direction you can traverse the collection?
    a. Both forward and backward.
    b. Only forward.
    c. Only backward.
    d. Only the first element can be accessed.

    Ans: b. Only forward.

    Explanation: Removes current elements during iteration.

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34. Which of the following is a limitation of the Iterator interface in Java?
    a. It allows the addition of new elements during iteration.
    b. It does not allow modification of elements directly (i.e., no replacement).
    c. It supports bidirectional traversal.
    d. It can only be used with Set collections.

    Ans: b. It does not allow modification of elements directly (i.e., no replacement).

    Explanation: Iterators cannot replace elements in collections.

35. Which of the following methods can be used by an Iterator to remove an element from the collection during iteration?
    a. remove()
    b. add()
    c. set()
    d. insert()

    Ans: a. remove()

    Explanation: Iterators can traverse collections only forward.

36. Which of the following operations is NOT supported by an Iterator in Java?
    a. Moving to the next element.
    b. Removing the current element from the collection.
    c. Replacing the current element with a new one.
    d. Checking if more elements are available in the collection.

    Ans: c. Replacing the current element with a new one.

    Explanation: Iterator doesn't allow replacing elements directly.

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37. What does the Java Collections Framework provide?

a. A way to manage database transactions.
b. An architecture to store and manipulate a group of objects.
c. A structure to manage memory allocations.
d. A way to define class hierarchies.

Ans: b. An architecture to store and manipulate a group of objects.

Explanation: Removes elements during iteration.

38. Which of the following operations can be performed using Java Collections?

a. Searching
b. Sorting
c. Insertion
d. Deletion
e. All of the above

Ans: e . All of the above

Explanation: Iterator cannot replace existing elements.

39. Which of the following operations is NOT typically associated with Java Collections?

a. Searching
b. Sorting
c. File I/O
d. Deletion

Ans: c. File I/O

Explanation: Java Collections provide structure to manage objects.

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40. Which of the following is a primary function performed by Java Collections?
    a. Memory allocation
    b. Object serialization
    c. Searching and sorting groups of objects
    d. Multithreading

Ans: c. Searching and sorting groups of objects

Explanation: Collections support searching, sorting, insertion, and deletion.

41. What is Collection in Java?
    a. A group of objects
    b. A group of classes
    c. A group of interfaces
    d. An abstract concept

Ans: a. A group of objects

Explanation: In Java, a Collection refers to a group of objects that are stored together.

42. Which of these packages contain all the collection classes?
    a. java.lang
    b. java.util
    c. java.net
    d. java.awt

Ans: b. java.util

Explanation: The java.util package in Java contains all the collection classes, such as List, Set, and Map, that allow you to store and manipulate data.

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43. How is a collection traversed?
    a. for each
    b. Iterator
    c. Both A and B
    d. Recursion

Ans: c. Both A and B

Explanation: You can traverse a collection using a for-each loop or an Iterator in Java, both of which allow you to access each element of the collection.

44. Which is the only cursor available for the collection framework?
    a. Recursion
    b. Iterator
    c. Pointer
    d. Streaming

Ans: b. Iterator

Explanation: The Iterator is the only cursor used to traverse or iterate through elements in a collection in Java.

45. Which of the following statements is true about an iterator in Java?
    a. An iterator moves only in the forward direction.
    b. An iterator moves only in the backward direction.
    c. An iterator moves in both forward and backward directions.
    d. An iterator cannot traverse collections.

Ans: a. An iterator moves only in the forward direction.

Explanation: An Iterator in Java is used to traverse a collection and can only move forward through the elements.

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46. What is true about the ListIterator?
    a. It moves only in the forward direction
    b. It moves only in the backward direction
    c. It moves in both forward and backward directions
    d. It doesn't traverse at all.

Ans: c. It moves in both forward and backward directions

Explanation: A ListIterator in Java is a type of iterator that can traverse a list in both forward and backward directions, unlike the regular Iterator which only allows forward traversal.

47. Which of the following is used for collection traversal?
    a. for each
    b. Iterator
    c. Both A and B
    d. Recursion

Answer: c. Both A and B

Explanation: Both the for-each loop and Iterator are used to traverse collections in Java efficiently. The for-each loop is simpler, while the Iterator provides more control.