ListIterator: More Practice

**E** it.next();

**E** it.previous();

**void** it.add(E) *//adds obj before the element that will be returned by next.*

**void** it.remove() *//removes the last element that was returned by next.*

Sometimes, next or previous has not been set, which causes run-time errors for remove. Predict the state of each iterator below.

1. Given a ListIterator in this initial state: ^A B C D

|  |  |  |
| --- | --- | --- |
|  | **new state** | **returns** |
| iter.add(″X″); | X^ A B C D |  |
| iter.next(); | X A^ B C D | A |
| iter.remove(); | X ^B C D |  |
| iter.remove(); | IllegalStateException |  |

1. Given a ListIterator in this initial state: ^B C D

|  |  |  |
| --- | --- | --- |
|  | **new state** | **returns** |
| iter.add(″A″); | A^ B C D |  |
| iter.next(); | A B^ C D | B |
| iter.previous(); | A^ B C D | B |
| iter.remove(); | A^ C D |  |
| iter.next(); | A C^ D | C |
| iter.add(″Z″); | A C Z D |  |
| iter.remove(); | IllegalStateException |  |

1. Given a ListIterator in this initial state: B^C

|  |  |  |
| --- | --- | --- |
|  | **new state** | **returns** |
| iter.previous(); | ^B C | B |
| iter.add(″X″); | X^ B C |  |
| iter.next(); | X B^ C | B |
| iter.next(); | X B C^ | C |
| iter.next(); | NoSuchElementException |  |

1. Given a ListIterator in this initial state: ^A B

|  |  |  |
| --- | --- | --- |
|  | **new state** | **returns** |
| iter.remove(); | IllegalStateException |  |