```java
//1. Write a program to iterate through a list using Iterator
package Iterator_Interface;
import java.util.ArrayList;
import java.util.Iterator;
import java.util.List;
public class Challenge1 {
	public static void main(String[] args) {
		List<String> fruits = new ArrayList<>();
	fruits.add("Apple");
	fruits.add("Banana");
	fruits.add("Mango");
	fruits.add("Orange");
	Iterator<String> iterator = fruits.iterator();
	System.out.println("Iterating through the list: ");
	while (iterator.hasNext()) {
	   System.out.println(iterator.next());
	}
	}
}
```

```java
//2. Demonstrate removing an element from a list while iterating using Iterator.
package Iterator_Interface;
import java.util.ArrayList;
import java.util.Iterator;
import java.util.List;
public class Challenge2 {
	public static void main(String[] args) {
		List<String> fruits = new ArrayList<>();
	fruits.add("Apple");
	fruits.add("Banana");
	fruits.add("Mango");
	fruits.add("Orange");
	Iterator<String> iterator = fruits.iterator();
	System.out.println("Original list: "+ fruits);
	while (iterator.hasNext()) {
	    if (iterator.next().equals("Mango")) {
			iterator.remove();
	   }
	}
	System.out.println("List after removing 'Mango': " + fruits);
	    }
}
```

```java
//3. Show how to use ListIterator to iterate in both directions.
package Iterator_Interface;
import java.util.ArrayList;
import java.util.List;
```

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import java.util.ListIterator;
public class Challenge3 {
        public static void main(String[] args) {
                List<String> fruits = new ArrayList<>();
            fruits.add("Apple");
            fruits.add("Banana");
            fruits.add("Mango");
            fruits.add("Orange");
            ListIterator<String> iterator = fruits.listIterator();
            System.out.println("Forward Iteration");
            while (iterator.hasNext()) {
               System.out.println(iterator.next());
            }
            System.out.println("\nBackward Iteration:");
            while (iterator.hasPrevious()) {
               System.out.println(iterator.previous());
            }
        }
}


//4. Design a program that reads a list of book titles and removes those starting with a specific
letter using an iterator.
package Iterator_Interface;
import java.util.ArrayList;
import java.util.Iterator;
import java.util.List;
import java.util.Scanner;
public class Challenge4 {
        public static void main(String[] args) {
                List<String> bookTitles = new ArrayList<>();
    bookTitles.add("aBook1");
    bookTitles.add("bBook1");
    bookTitles.add("ABook2");
    bookTitles.add("bBook2");
    bookTitles.add("cBook");
    bookTitles.add("dBook");
    System.out.println("Original Books list:");
    for (String book : bookTitles) {
       System.out.println(book);
    }
    Scanner sc = new Scanner(System.in);
    System.out.print("\nEnter the starting letter to remove books: ");
    char c = sc.nextLine().toLowerCase().charAt(0);
    Iterator<String> iterator = bookTitles.iterator();
    while (iterator.hasNext()) {
       String book = iterator.next();
       if (book.toLowerCase().startsWith(String.valueOf(c))) {
          iterator.remove();
```

```
        }
    }
    System.out.println("\nList after removing books with title stating with letter '"+c+"':");
    for (String book : bookTitles) {
        System.out.println(book);
    }
    sc.close();
        }
}


//5. Create a program that reverses the elements in a list using ListIterator.
package Iterator_Interface;
import java.util.ArrayList;
import java.util.List;
import java.util.ListIterator;
public class Challenge5 {
        public static void main(String[] args) {
                List<String> fruits = new ArrayList<>();
    fruits.add("Apple");
    fruits.add("Banana");
    fruits.add("Mango");
    fruits.add("Orange");
    ListIterator<String> iterator = fruits.listIterator();
    System.out.println("Original List: "+fruits);
    List<String> reversed = new ArrayList<>();
    ListIterator<String> iterator1 = fruits.listIterator(fruits.size());
    while (iterator1.hasPrevious()) {
        reversed.add(iterator1.previous());
    }

    System.out.println("Reversed List: "+ reversed);
        }
}
```