1) **Write a Java program that reads a string from the user and uses StringTokenizer to split the string into individual words. Print each word on a new line.**

Program :

```
package package_demo; // package
import java.util.*; //importing java.util package

public class MainDemo { //Main class
	public static void main(String[] args) {
		Scanner sc = new Scanner(System.in);
		System.out.print("Enter a String : ");		//reading String
		String str = sc.nextLine();
		StringTokenizer obj=new StringTokenizer(str, " "); //StringTokenizer
		while(obj.hasMoreTokens()) {
			System.out.println(obj.nextToken());
		}
	}
}
```

Output :

```
<terminated> MainDemo [Java Application] C:\Users\Umesh\.p2\
Enter a String : Java Program that reads String
Java
Program
that
reads
String
```

2) **Write a Java program that reads a string from the user and uses StringTokenizer to count the number of words in the string.**

Program :

```
package package_demo; // package
import java.util.*; //importing java.util package

public class MainDemo { //Main class
	public static void main(String[] args) {
		Scanner sc = new Scanner(System.in);
		System.out.print("Enter a String : "); //reading String
		String str = sc.nextLine();
		StringTokenizer obj=new StringTokenizer(str, " "); //StringTokenizer
		System.out.println("No. of words : " + obj.countTokens()); //the
		method returns no. of tokens
	}
}
```

Output :

```
<terminated> MainDemo [Java Application] C:\Users\Umesl
Enter a String : Java program reads String
No. of words : 4
```

3) **Write a Java program to create a LinkedList of strings, add elements at specific positions (beginning, middle, end), and print the list.**

Program :-

```
package package_demo; // package
import java.util.*; //importing java.util package

public class MainDemo { //Main class
	public static void main(String[] args) {
LinkedList<String> obj = new LinkedList<>(Arrays.asList("John","Roman","Edge"));
		obj.addFirst("Kane");			//at beginning
		obj.addLast("Undertaker");		//at end
		int middle = obj.size() / 2;
		obj.add(middle, "RajRox");		//at middle
		System.out.println(obj);		//printing
	}
}
```

Output :

```
<terminated> MainDemo [Java Application] C:\Users\Umesh\.p2\poo
[Kane, John, RajRox, Roman, Edge, Undertaker]
```

4) **Write a Java program to sort a given array list.**

Program :

```
package package_demo; // package
import java.util.*; //importing java.util package

public class MainDemo { //Main class
	public static void main(String[] args) {
		ArrayList<Integer> obj = new ArrayList<>(Arrays.asList(40,27,-7));
		System.out.println(obj);
		Collections.sort(obj);			//sorting here
		System.out.println("After sorting : ");
		System.out.println(obj);
	}
}
```

Output :

```
<terminated> MainDemo [J
[40, 27, -7]
After sorting :
[-7, 27, 40]
```

5) **Write a Java program to replace the second element of an ArrayList with the specified element.**

Program :-

```
package package_demo; // package
import java.util.*; //importing java.util package

public class MainDemo { //Main class
	public static void main(String[] args) {
		ArrayList<Integer> obj = new ArrayList<>();
		obj.add(1); obj.add(2); obj.add(3); obj.add(4);
		System.out.println(obj);
```

```
            obj.set(1, 19);                                  //Replacing 2nd element
            System.out.println("After replacing : "+obj); //printing
      }
}
```

Output :-

```
<terminated> MainDemo [Java Application] C:\
[1, 2, 3, 4]
After replacing : [1, 19, 3, 4]
```

6) Write a Java program to iterate a linked list in reverse order.

Program :-

```
package package_demo; // package
import java.util.*; //importing java.util package

public class MainDemo { //Main class
      public static void main(String[] args) {
            LinkedList<Integer> obj = new LinkedList<>();
            obj.add(1); obj.add(2); obj.add(3); obj.add(4);
            System.out.println(obj);
            for(int i = obj.size()-1; i >= 0; i--) {      //iterate reverse order
                  System.out.print(obj.get(i) + " ");
            }
      }
}
```

Output :-

```
<terminated> MainDemo [Java A
[1, 2, 3, 4]
4 3 2 1
```

7) Write a Java program to retrieve, but not remove, the last element of a linked list.

Program :-

```
package package_demo; // package
import java.util.*; //importing java.util package

public class MainDemo { //Main class
      public static void main(String[] args) {
            LinkedList<Integer> obj = new LinkedList<>();
            obj.add(1); obj.add(2); obj.add(3); obj.add(4);
            System.out.println(obj);                              //printing
            System.out.println("Last element : "+obj.getLast());
            System.out.println("Last element : "+obj.get(obj.size()-1));
      }
}
```

Output :-

```
<terminated> MainDemo [
[1, 2, 3, 4]
Last element : 4
Last element : 4
```

8) **Write a Java program to create a LinkedList of integers and print all the elements.**

Program :-

```
package package_demo; // package
import java.util.*; //importing java.util package

public class MainDemo { //Main class
	public static void main(String[] args) {
		LinkedList<Integer> obj = new LinkedList<>();
		obj.add(1); obj.add(2); obj.add(3); obj.add(4);
		System.out.println(obj);                                    //printing
		for(int x : obj) {
			System.out.println(x);
		}
	}
}
```

Output :-

```
<terminated> MainDemo [Jav
[1, 2, 3, 4]
1
2
3
4
```