Practical 8: Compute n-moment

Codes:

```java
import java.io.*;
import java.util.*;

public class n_moment {
    public static void main(String args[]) {
        int n = 15; // Total number of elements in the stream
        String stream[] = {"a", "b", "c", "b", "d", "a", "c", "d", "a", "b",
"d", "c", "a", "a", "b"};
        int zero_moment = 0, first_moment = 0, second_moment = 0, count = 1,
flag = 0;
        ArrayList<Integer> arrlist = new ArrayList(); // Creating a new
ArrayList

        System.out.println("Arraylist elements are::");
        for (int i = 0; i < 15; i++) {
            System.out.println(stream[i] + " "); // Printing the elements of
the stream
        }

        Arrays.sort(stream); // Sorting the elements of the stream

        for (int i = 1; i < n; i++) {
            if (stream[i] == stream[i - 1]) { // If current element is same as
previous element
                count++; // Increment the count
            } else {
                // System.out.println("Hello"+i);
                arrlist.add(count); // Add the count to the ArrayList
                count = 1; // Reset the count
            }
        }
        arrlist.add(count); // Add the last count to the ArrayList

        zero_moment = arrlist.size(); // Zeroth moment is the size of the
ArrayList
        System.out.println("\n\n\nValue of Zeroth moment for given stream::" +
zero_moment);

        for (int i = 0; i < arrlist.size(); i++) {
            first_moment += arrlist.get(i); // Summing up all the elements in
the ArrayList
        }
        System.out.println("\n\nValue of First moment for given stream::" +
first_moment);
```

```
        for (int i = 0; i < arrlist.size(); i++) {
            int j = arrlist.get(i);
            second_moment += (j * j); // Computing the second moment by
summing up the squares of all elements in the ArrayList
        }
        System.out.println("\n\nValue of Second moment for given stream::" +
second_moment);
    }
}
```

OUTPUT

```
Arraylist elements are::a
b
c b
d
a
c d
a
b
d c
a
a b
Value of Zeroth moment for given stream::4
Value of First moment for given stream::15


Value of Second moment for given stream::59
```