```java
import java.util.ArrayList;
import java.util.Scanner;

public class ArrayListOperation {
    private ArrayList<Integer> list = new ArrayList<>();
    private ArrayList<Integer> even = new ArrayList<>();
    private ArrayList<Integer> odd = new ArrayList<>();
    private ArrayList<Integer> prime = new ArrayList<>();
    private ArrayList<String> string = new ArrayList<>();
    private ArrayList<String> palindrome = new ArrayList<>();

    public void getdata() {
        int element, num;
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter Element:");
        element = sc.nextInt();
        for (int i = 0; i < element; i++) {
            System.out.println("Enter Num:");
            num = sc.nextInt();
            list.add(num);
        }
    }

    public void evenOdd() {
        for (int i = 0; i < list.size(); i++) {
            if ((list.get(i)) % 2 == 0) {
                even.add(list.get(i));
            } else {
                odd.add(list.get(i));
            }
        }
```

```java
    }

    public void prime() {
        int i, j, flag = 0;
        for (i = 0; i < list.size(); i++) {
            flag = 0;
            for (j = 2; j < list.get(i); j++) {
                if ((list.get(i) % j == 0)) {
                    flag = 1;
                    break;
                }
            }
            if (flag == 0) {
                prime.add(list.get(i));
            }
        }
    }

    public void display() {
        System.out.println("List:" + list);
        System.out.println("Even:" + even);
        System.out.println("Odd:" + odd);
        System.out.println("Prime:" + prime);
    }

    public void setString() {
        int num;
        String s;
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter no of Strings do you want to enter:");
        num = sc.nextInt();
```

```java
        for (int i = 0; i < num; i++) {

            System.out.println("Enter String:");

            s = sc.next();

            string.add(s);

        }

        System.out.println("String:" + string);

    }


    public void getPalindrome() {


        for (int i = 0; i < string.size(); i++)

        {

        String s = string.get(i);

        int flag=0;

        for (int j = 0; j<s.length();j++)

        {

            if (s.charAt(j) == s.charAt(s.length() - 1 - j))

        {

            flag=1;


        }


        }

        if(flag==1)

          {

                    palindrome.add(s);

          }
```

```java
        } System.out.println("Palindrome:" + palindrome);


    }
}
 import java.util.Scanner;


public class main {


        public static void main(String[] args) {

                ArrayListOperation a=new  ArrayListOperation();

                a.getdata();

                a.evenOdd();

                a.prime();

                a.display();

                a.setString();

                a.getPalindrome();

        }
}
```