Java Basics   Prashanth.S(19MID0020)

Question

1) Get a string from the user and perform the following

(i) Take the last char and return a new string with the last char added at the front and back.("bat"->"tbatt")

(ii) Return a new string where the first and last chars have been exchanged. ("bat"->"tab")

Code

```java
package com.company;
import java.util.*;

public class Main {
    String str1;

    public String front_rear(String str1){
        return(str1.charAt(str1.length()-1) + str1 + str1.charAt(str1.length()-1));
    }

    public String twist(String str2) {
        return(str2.charAt(str2.length()-1) + str2.substring(1,str2.length()-1) + str2.charAt(0));
    }

    public static void main(String[] args) {
        Main obj1 = new Main();

        System.out.print("Enter a string : ");
        Scanner input =new Scanner(System.in);
        String str1 = input.nextLine();
        System.out.println("Output is : " + obj1.front_rear(str1));

        System.out.print("Enter a string : ");
        String str2 = input.nextLine();
        System.out.println("Output is : " + obj1.twist(str1));

    }
}
```

Output

```
"C:\Program Files\Amazon Corretto\jdk15.0.2_7\bin\java.exe" "-javaagent:C:\Program Files\JetBrains\IntelliJ IDEA Community Edit:
Enter a string : tab
Output is : btabb
Enter a string : tab
Output is : bat

Process finished with exit code 0
```

Code

```java
package com.company;
import java.util.*;

public class Main {
    String str1;

    public String front_rear(String str1){
        return(str1.charAt(str1.length()-1) + str1 +
str1.charAt(str1.length()-1));
    }

    public String twist(String str2) {
        return(str2.charAt(str2.length()-1) +
str2.substring(1,str2.length()-1) + str2.charAt(0));

    }

    public static void main(String[] args) {
        Main obj1 = new Main();

        System.out.print("Enter a string : ");
        Scanner input =new Scanner(System.in);
        String str1 = input.nextLine();
        System.out.println("Output is : " +
obj1.front_rear(str1));

        System.out.print("Enter a string : ");
        String str2 = input.nextLine();
        System.out.println("Output is : " + obj1.twist(str1));

    }
}
```

2) Write a Java program to do the following tasks.

a Write a Java program to find the number of even and odd integers in a given array of integers.

b Write a Java program to segregate all 0s on left side and all 1s on right side of a given array of 0s and 1s.

Code (2a)

```java
package com.company;
import java.util.Scanner;


public class Main
{
    static void Odd_Even(int arr1[]) {
        int count_even = 0;
        int count_odd  = 0;

        for (int i = 0; i < arr1.length; i++) {
            if (arr1[i] % 2 == 0) {
                count_even = count_even + 1;
            } else if (arr1[i] % 2 != 0) {
                count_odd = count_odd + 1;
            }
        }
        System.out.println("Number of Evens : " + count_even);
        System.out.println("Number of Odds  : " + count_odd);
    }

    public static void main(String[] args)
    {
        Scanner input = new Scanner(System.in);  // creating the input object

        System.out.print("Enter the number of elements : ");
        int n = input.nextInt();
        int arr1[] = new int[n];  // declaring the array

        System.out.print("Enter the array elements : ");
        for(int i=0;i<n;i++) {
            arr1[i] = input.nextInt();
        }
        Odd_Even(arr1);
    }
}
```

Output

```
"C:\Program Files\Amazon Corretto\jdk15.0.2_7\bin\java.exe" "-javaagent:C:\Program Files\JetBrains\IntelliJ IDEA Community Editi
Enter the number of elements : 10
Enter the array elements : 67 21 46 34 23 89 90 54 23 100
Number of Evens : 5
Number of Odds  : 5

Process finished with exit code 0
```

```java
package com.company;
import java.util.Scanner;

public class Main
{
    static void Odd_Even(int arr1[]) {
        int count_even = 0;
        int count_odd  = 0;

        for (int i = 0; i < arr1.length; i++) {
            if (arr1[i] % 2 == 0) {
                count_even = count_even + 1;
            } else if (arr1[i] % 2 != 0) {
                count_odd = count_odd + 1;
            }
        }
        System.out.println("Number of Evens : " + count_even);
        System.out.println("Number of Odds  : " + count_odd);
    }

    public static void main(String[] args)
    {
        Scanner input = new Scanner(System.in);  // creating
the input object

        System.out.print("Enter the number of elements : ");
        int n = input.nextInt();
        int arr1[] = new int[n];  // declaring the array

        System.out.print("Enter the array elements : ");
        for(int i=0;i<n;i++) {
            arr1[i] = input.nextInt();
        }
        Odd_Even(arr1);
    }
}
```

```java
1    package com.company;
2    import java.util.*;
3    import java.util.Arrays;
4
5    public class Main
6    {
7        static void Odd_Even(int arr1[]) {...}
21
22       static void Zeros_ones(int arr1[]) {
23           List<Integer> zeros = new ArrayList<>();
24           List<Integer> ones = new ArrayList<>();
25
26           for(int i=0;i<arr1.length;i++) {
27
28               if (arr1[i] == 0) {
29                   zeros.add(0);
30               } else if (arr1[i] == 1) {
31                   ones.add(1);
32               }
33           }
34
35           /*System.out.println("Main array : " + Arrays.toString(arr1));
36           System.out.println("Zero array : " + zeros);
37           System.out.println("One array  : " + ones);*/
38
39           List<Integer> combined = new ArrayList<Integer>();
40           combined.addAll(zeros);
41           combined.addAll(ones);
42
43           System.out.println("0's on left and 1's on right : " + combined);
44       }
45
46       public static void main(String[] args)
47       {
48           Scanner input = new Scanner(System.in);  // Creating the input object
49
50           System.out.print("Enter the number of elements : ");
51           int n = input.nextInt();
52           int arr1[] = new int[n];  // Declaring the array
53
54           System.out.print("Enter the array elements : ");
55           for(int i=0;i<5;i++) {
56               arr1[i] = input.nextInt();
57           }
58           //Odd_Even(arr1);
59           Zeros_ones(arr1);
60       }
61   }
62
```

```
"C:\Program Files\Amazon Corretto\jdk15.0.2_7\bin\java.exe" "-javaagent:C:\Program Files\JetBrains\IntelliJ IDEA Community Editi
Enter the number of elements : 15
Enter the array elements : 1 0 1 0 1 1 1 0 0 0 0 0 1 0 0
0's on left and 1's on right : [0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 1, 1, 1]

Process finished with exit code 0
```

Code (2b)

```java
package com.company;
import java.util.*;
import java.util.Arrays;

public class Main
{
    static void Odd_Even(int arr1[]) {
        int count_even = 0;
        int count_odd  = 0;

        for (int i = 0; i < arr1.length; i++) {
            if (arr1[i] % 2 == 0) {
                count_even = count_even + 1;
            } else if (arr1[i] % 2 != 0) {
                count_odd = count_odd + 1;
            }
        }
        System.out.println("Number of Evens : " + count_even);
        System.out.println("Number of Odds  : " + count_odd);
    }

    static void Zeros_ones(int arr1[]) {
        List<Integer> zeros = new ArrayList<>();
        List<Integer> ones = new ArrayList<>();

        for(int i=0;i<arr1.length;i++) {

            if (arr1[i] == 0) {
                zeros.add(0);
            } else if (arr1[i] == 1) {
                ones.add(1);
            }
        }

        /*System.out.println("Main array : " +
Arrays.toString(arr1));
        System.out.println("Zero array : " + zeros);
        System.out.println("One array  : " + ones);*/

        List<Integer> combined = new ArrayList<Integer>();
        combined.addAll(zeros);
        combined.addAll(ones);
```

```java
        System.out.println("0's on left and 1's on right : " +
combined);
    }

    public static void main(String[] args)
    {
        Scanner input = new Scanner(System.in);  // Creating
the input object

        System.out.print("Enter the number of elements : ");
        int n = input.nextInt();
        int arr1[] = new int[n];  // Declaring the array

        System.out.print("Enter the array elements : ");
        for(int i=0;i<5;i++) {
            arr1[i] = input.nextInt();
        }
        //Odd_Even(arr1);
        Zeros_ones(arr1);
    }
}
```