

# ASSIGNMENT 2

## PIJ LAB

NAME: ARJUN KHADIKAR

PRN: 21070126019

BATCH: AIML A1

Part1: Write a Java program that declares two arrays named 'even' and 'odd'. Accept numbers from the user and move them to respective arrays depending on whether they are even or odd.

Part2: Implement a java function that finds 2 neighboring numbers in an array with the smallest distance to each. The function should return the index of the 1st number.

Part 3: Write a Java program to convert an array into ArrayList and vice versa.

CODE:

```
import java.util.*;
import java.util.Scanner;

class Smallest_distance
{
    static void smallest_distance()
    {
        int[] arr = new int[10];
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter 10 numbers: ");
        for (int i = 0; i < 10; i++) {
            arr[i] = sc.nextInt();
        }
        int min = Integer.MAX_VALUE;
        int minI=0,minJ=0;
        for (int i = 0; i < 9; i++) {
            int diff = arr[i+1] - arr[i];
            if(diff < min){
                min = diff;
                minI = i;
                minJ = i+1;
            }
        }
        System.out.println("The smallest distance is between " + arr[minI] + "
and " + arr[minJ]+ " and the distance is " + min);
        sc.close();
    }
}
```

```
    }  
}
```

```
class Array_List{  
    static void arraylist()  
    {  
        int[] array = new int[10];  
        Scanner sc = new Scanner(System.in);  
        System.out.println("Enter 10 numbers: ");  
        for(int l = 0; l < 10; l++)  
        {  
            int n = sc.nextInt();  
            array[l] = n;  
        }  
  
        ArrayList<Integer> list = new ArrayList<Integer>();  
        for(int l = 0; l < 10; l++){  
            list.add(array[l]);  
        }  
        System.out.println(list);  
        sc.close();  
    }  
}
```

```
public class ArrayEvenOdd  
{  
    public static void main(String[] args) {  
  
        System.out.println("1. Smallest distance between two numbers in an  
array");  
        System.out.println("2. Array to ArrayList");  
        System.out.println("3. Even and Odd numbers");  
        System.out.println("Enter your choice: ");  
        Scanner sc1 = new Scanner(System.in);  
        int choice = sc1.nextInt();  
        switch(choice)  
        {  
            case 1:  
                Smallest_distance.smallest_distance();  
                break;  
            case 2:  
                Array_List.arraylist();  
                break;  
            case 3:  
                // Create two arrays odd and even  
                int[] odd = new int[10];
```

```

int[] even = new int[10];

Scanner sc = new Scanner(System.in);
System.out.print("Enter numbers to classify, enter 'end' to
stop: ");

while(true)
{
    String input = sc.nextLine();
    if(input.equals("end"))
    {
        break;
    }
    else
    {
        int num = Integer.parseInt(input);
        if(num%2 == 0)
        {
            for(int i=0; i<even.length; i++)
            {
                if(even[i] == 0)
                {
                    even[i] = num;
                    break;
                }
            }
        }
        else
        {
            for(int i=0; i<odd.length; i++)
            {
                if(odd[i] == 0)
                {
                    odd[i] = num;
                    break;
                }
            }
        }
    }
}

sc.close();
// Print the arrays
System.out.println("Even numbers: ");
for(int i=0; i<even.length; i++)
{
    if(even[i] != 0)
    {

```

```

        System.out.print(even[i]+" ");
    }
}
System.out.println();
System.out.println("Odd numbers: ");
for(int i=0; i<odd.length; i++)
{
    if(odd[i] != 0)
    {
        System.out.print(odd[i]+" ");
    }
}

default:
    System.out.println("Invalid choice");
}
sc1.close();
}
}

```

## OUTPUT

```

1. Smallest distance between two numbers in an array
2. Array to ArrayList
3. Even and Odd numbers
Enter your choice:
1
Enter 10 numbers:
1 2 3 4 5 6 7 8 9 10
The smallest distance is between 1 and 2 and the distance is 1

Process finished with exit code 0

```

```
1. Smallest distance between two numbers in an array
2. Array to ArrayList
3. Even and Odd numbers
Enter your choice:
2
Enter 10 numbers:
1 2 3 4 5 6 7 8 9 10
[1, 2, 3, 4, 5, 6, 7, 8, 9, 10]

Process finished with exit code 0
|
```

```
1. Smallest distance between two numbers in an array
2. Array to ArrayList
3. Even and Odd numbers
Enter your choice:
3
Enter numbers to classify, enter 'end' to stop: 20
19
10
5
end
Even numbers:
20 10
Odd numbers:
19 5 Invalid choice

Process finished with exit code 0
```

GITHUB LINK: <https://github.com/Arjunn786/JAVA-SEMM-4.git>