ASSIGNMENT 2

PIJ LAB

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BATCH: AIML A3

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