JAVA ASSIGNMNET 2

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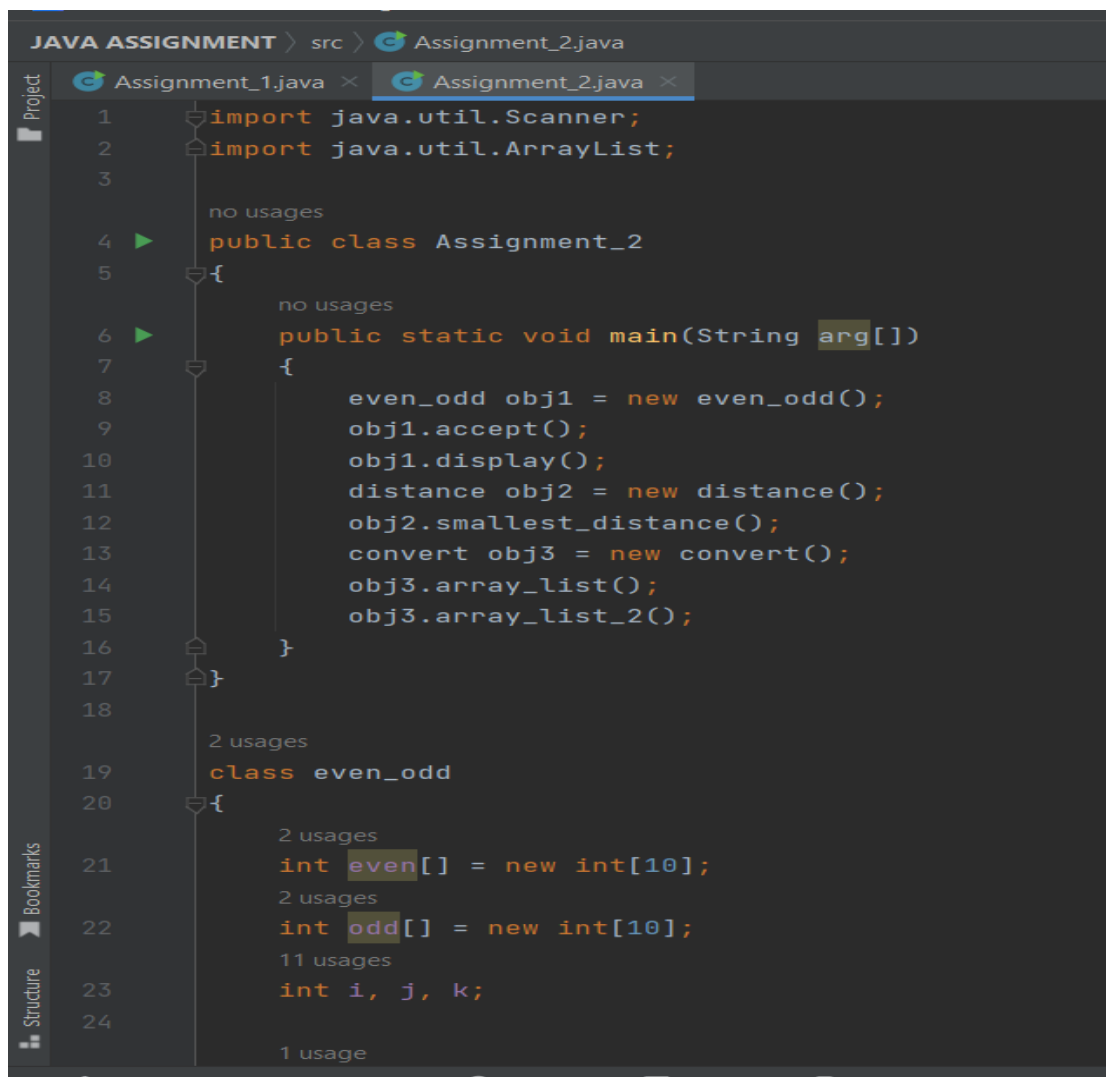
PRN : 21070126012

BATCH : AIML A1

QUESTION:-

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


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

public class Assignment_2
{
    public static void main(String arg[])
    {
        even_odd obj1 = new even_odd();
        obj1.accept();
        obj1.display();
        distance obj2 = new distance();
        obj2.smallest_distance();
        convert obj3 = new convert();
        obj3.array_list();
        obj3.array_list_2();
    }
}

class even_odd
{
    int even[] = new int[10];
    int odd[] = new int[10];
    int i, j, k;
```
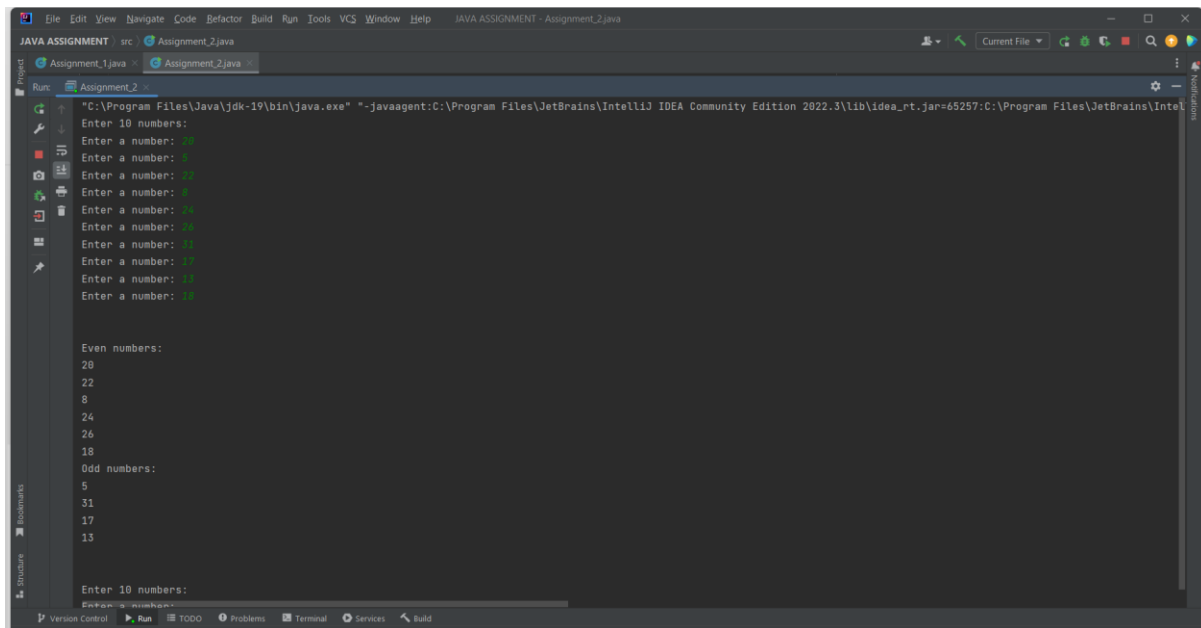
```java
                  1 usage
 25         void accept()
 26         {
 27             Scanner obj = new Scanner(System.in);
 28             System.out.println("Enter 10 numbers: ");
 29             for(i = 0; i < 10; i++)
 30             {
 31                 System.out.print("Enter a number: ");
 32                 int a = obj.nextInt();
 33                 if(a % 2 == 0)
 34                 {
 35                     even[j] = a;
 36                     j++;
 37                 }
 38                 else
 39                 {
 40                     odd[k] = a;
 41                     k++;
 42                 }
 43             }
 44             System.out.println("\n");
 45         }
 46
                  1 usage
 47         void display()
 48         {
 49             System.out.println("Even numbers: ");
 50             for (i = 0; i < j; i++)
 51             {
 52                 System.out.println(even[i]);
 53             }
```

```java
 53             }
 54             System.out.println("Odd numbers: ");
 55             for (i = 0; i < k; i++)
 56             {
 57                 System.out.println(odd[i]);
 58             }
 59             System.out.println("\n");
 60         }
 61     }
 62
        2 usages
 63     class distance
 64     {
            1 usage
 65         void smallest_distance()
 66         {
 67             Scanner obj = new Scanner(System.in);
 68             int a[] = new int[10];
 69             System.out.println("Enter 10 numbers: ");
 70             for (int i = 0; i < 10; i++)
 71             {
 72                 System.out.print("Enter a number: ");
 73                 a[i] = obj.nextInt();
 74             }
 75             int i, j, min = 1000, index1 = 0, index2 = 0;
 76             for (i = 0; i < 10; i++)
 77             {
 78                 for (j = i + 1; j < 10; j++)
 79                 {
 80                     if (Math.abs(a[i] - a[j]) < min)
 81                     {
```

```java
                    {
                        min = Math.abs(a[i] - a[j]);
                        index1 = i;
                        index2 = j;
                    }
                }
            }
            System.out.println("The 2 numbers with the smallest distance are: " + a[index1] + " and " + a[index2]);
            System.out.println("The index of the first number is: " + index1);
            System.out.println("\n");
        }
    }

    //2 usages
    class convert
    {
        //1 usage
        void array_list()
        {
            System.out.println("Converting array to array list");
            int a[] = {1, 2, 3, 4, 5};
            ArrayList<Integer> ar = new ArrayList<~>();
            for(int i = 0; i < a.length; i++)
            {
                ar.add(a[i]);
            }
            System.out.println("Array list: "+ ar);
            System.out.println("\n");

        }
```

```java
        }

        //1 usage
        void array_list_2()
        {
            // array list into array
            ArrayList<Integer> ar = new ArrayList<~>();
            for (int i = 0; i < 5; i++)
            {
                ar.add(i);
            }
            int a[] = new int[ar.size()];
            for (int i = 0; i < ar.size(); i++)
            {
                a[i] = ar.get(i);
            }
            System.out.println("Converting array list to array");
            System.out.println("Array: ");
            for (int i = 0; i < a.length; i++)
            {
                System.out.print(a[i] + " ");
            }
        }
    }
```

OUTPUT :

GITHUB LINK : https://github.com/ananya2285/Java-Assignment-
/blob/20a2f9af0f0dc69d6fa7b6c9864e699eb3d063bc/Assignment_2.java