Practical No. 10: Define a class WordExample having the following description:

Data members/instance variables:

private String strdata : to store a sentence.
Parameterized Constructor
WordExample(String) : Accept a sentence which may be terminated by either'.', '? 'or '!' only. The words may be separated by more than one blank space and are in UPPER CASE.
Member Methods:
void countWord(): Find the number of words beginning and ending with a vowel.
void placeWord(): Place the words which begin and end with a vowel at the beginning, followed by the remaining words as they occur in the sentence.

Source Code:

```
package CODES.Java.Himanshu_Raturi;

import java.util.Scanner;

public class Q10_word_example {

 private String strdata;

 public Q10_word_example(String str)

 {

  int l = str.length();

  if(str.charAt(l - 1) == '.' || str.charAt(l - 1) == '?' || str.charAt(l - 1) == '!')

  {

     strdata = str;

  }else

  {

     System.out.println("Enter a valid string ending with ? , . , !.");

  }

 }

 boolean isVowel(String word)

 {

  if ((word.charAt(0) == 'A' || word.charAt(0) == 'E' || word.charAt(0) == 'I'

   || word.charAt(0) == 'O' || word.charAt(0) == 'U')

  &&

  (word.charAt(word.length() - 1) == 'A' || word.charAt(word.length() - 1) == 'E'
```

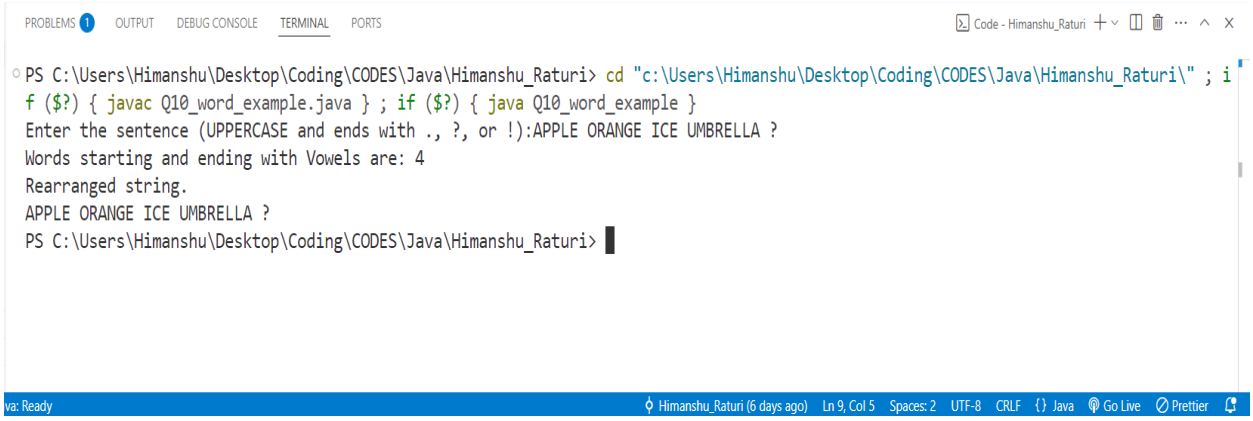
```
   || word.charAt(word.length() - 1) == 'I' || word.charAt(word.length() - 1) == 'O'
   || word.charAt(word.length() - 1) == 'U'))
  {
     return true;
  }else
  {
     return false;
  }
}
 void countword()
{
  int count = 0;
  String[] token = strdata.trim().split("\\s+");
  for(String word : token)
  {
     if (isVowel(word))
     {
        count++;
     }

  }
  System.out.println("Words starting and ending with Vowels are: " + count);
}
 void placeWord()
{
  String[] token = strdata.trim().split("\\s+");
  StringBuilder vowelWords = new StringBuilder();
  StringBuilder otherWords = new StringBuilder();
  for(String word : token)
```

```
    {
        if (isVowel(word))
        {
            vowelWords.append(word + " ");
        }else
        {
            otherWords.append(word + " ");
        }
    }
    System.out.println("Rearranged string.");
    System.out.print(vowelWords);
    System.out.println(otherWords + " ");

  }
  public static void main(String args[])
  {
    Scanner sc = new Scanner(System.in);
    System.out.print("Enter the sentence (UPPERCASE and ends with ., ?, or !):");
    String str;
    str = sc.nextLine();
    Q10_word_example obj = new Q10_word_example(str);
    obj.countword();
    obj.placeWord();
    sc.close();
  }
}
```

OUTPUT:


PROBLEMS 1
OUTPUT
DEBUG CONSOLE
TERMINAL
PORTS
Code - Himanshu_Raturi
PS C:\Users\Himanshu\Desktop\Coding\CODES\Java\Himanshu_Raturi> cd "c:\Users\Himanshu\Desktop\Coding\CODES\Java\Himanshu_Raturi\" ; if ($?) { javac Q10_word_example.java } ; if ($?) { java Q10_word_example }
Enter the sentence (UPPERCASE and ends with ., ?, or !):APPLE ORANGE ICE UMBRELLA ?
Words starting and ending with Vowels are: 4
Rearranged string.
APPLE ORANGE ICE UMBRELLA ?
PS C:\Users\Himanshu\Desktop\Coding\CODES\Java\Himanshu_Raturi>
va: Ready
Himanshu_Raturi (6 days ago)
Ln 9, Col 5
Spaces: 2
UTF-8
CRLF
{} Java
Go Live
Prettier

Practical No. 11: Write a Java program to create a class called ArrayDemo and overload arrayFunc() function.

void arrayFunc(int [], int) ➔To find all pairs of elements in an Array whose sum is equal to a given number .

void arrayFunc(int A[], int p, int B[], int q)➔Given two sorted arrays A and B of size p and q, Overload method arrayFunc() to merge elements of A with B by maintaining the sorted order i.e. fill A with first p smallest elements and fill B with remaining elements.

Source Code:

```
package CODES.Java.Himanshu_Raturi;

import java.util.Scanner;

public class Q11_ArrayDemo  {

    void arrayFunc(int arr[] , int key)

    {

       int l = arr.length;

       System.out.println("Pair of element whose sum is " + key + " are:");

       for(int i = 0 ; i < l ; i++)

       {

          for(int j = i+1 ; j < l ; j++)

          {

             int sum = arr[i] + arr[j];

             if(sum == key)

             {

                System.out.println((arr[i]) +  " + " + (arr[j]) + " = " + key);

             }

          }

       }

    }

    void arrayFunc(int A[] , int p , int B[] , int q)

    {

       int temp[] = new int[p+q];
```

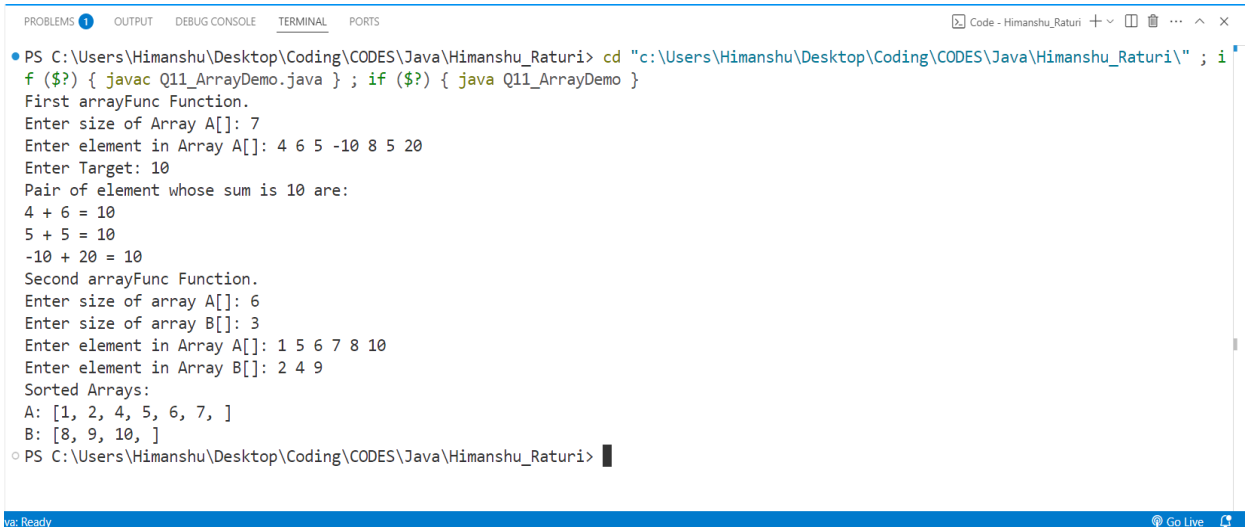
```
int i = 0 , j = 0 , k = 0;
while(i < p && j < q)
{
   if(A[i] < B[j])
   {
      temp[k++] = A[i++];
   }else
   {
      temp[k++] = B[j++];
   }
}
while(i < p)
{
   temp[k++] = A[i++];
}
while(j < q)
{
   temp[k++] = A[i++];
}
k=0;
for(int x = 0 ; x < p ; x++)
{
   A[x] = temp[k++];
}
for(int y = 0 ; y < q ; y++)
{
   B[y] = temp[k++];
}
System.out.println("Sorted Arrays: ");
```

```
        System.out.print("A: [");
        for(int x = 0 ; x < p ; x++)
        {
            System.out.print(A[x] + ", ");
            if(x == p-1)
            {
                System.out.println("]" + "");
            }
        }
        System.out.print("B: [");
        for(int y = 0 ; y < q ; y++)
        {
            System.out.print(B[y] + ", ");
            if(y == q-1)
            {
                System.out.println("]" + "");
            }
        }

    }
  public static void main(String args[])
  {
    Scanner sc = new Scanner(System.in);
    int p , q ;
    Q11_ArrayDemo obj = new Q11_ArrayDemo();
    System.out.println("First arrayFunc Function.");
    System.out.print("Enter size of Array A[]: ");
    p = sc.nextInt();
    int A[] = new int[p];
```

```
        System.out.print("Enter element in Array A[]: ");
        for(int i = 0 ; i < p ; i++)
        {
           A[i] = sc.nextInt();
        }
        System.out.print("Enter Target: ");
        int key = sc.nextInt();
        obj.arrayFunc(A, key);
        System.out.println("Second arrayFunc Function.");
        System.out.print("Enter size of array A[]: ");
        int pa = sc.nextInt();
        System.out.print("Enter size of array B[]: ");
        q = sc.nextInt();
        int Aa[] = new int[pa];
        int B[] = new int[q];
        System.out.print("Enter element in Array A[]: ");
        for(int i = 0 ; i < pa ; i++)
        {
           Aa[i] = sc.nextInt();
        }
        System.out.print("Enter element in Array B[]: ");
        for(int i = 0 ; i < q ; i++)
        {
           B[i] = sc.nextInt();
        }
        obj.arrayFunc(Aa, pa , B , q);
        sc.close();
    }
}
```

OUTPUT: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Code - Himanshu_Raturi
PS C:\Users\Himanshu\Desktop\Coding\CODES\Java\Himanshu_Raturi> cd "c:\Users\Himanshu\Desktop\Coding\CODES\Java\Himanshu_Raturi\" ; if ($?) { javac Q11_ArrayDemo.java } ; if ($?) { java Q11_ArrayDemo }
First arrayFunc Function.
Enter size of Array A[]: 7
Enter element in Array A[]: 4 6 5 -10 8 5 20
Enter Target: 10
Pair of element whose sum is 10 are:
4 + 6 = 10
5 + 5 = 10
-10 + 20 = 10
Second arrayFunc Function.
Enter size of array A[]: 6
Enter size of array B[]: 3
Enter element in Array A[]: 1 5 6 7 8 10
Enter element in Array B[]: 2 4 9
Sorted Arrays:
A: [1, 2, 4, 5, 6, 7,]
B: [8, 9, 10,]
PS C:\Users\Himanshu\Desktop\Coding\CODES\Java\Himanshu_Raturi>
Go Live