Solution of Problems

Problem#1:

Write a program in Java that reads in text and prints as output the following:

The number of words in the text
The number of sentences in the text
The number of times the letter “e” occurs in the text
The number of times the letter “z” occurs in the text

(**Note:** Use StringTokenizer class)

Solution:

```
import java.io.*;
import java.util.StringTokenizer;

public class P1
{
	public static void main(String[] args) throws IOException
	{
	int countWords, countSentences, countE, countZ;
	String input;
		System.out.println("Please enter text:");
		BufferedReader stdin = new BufferedReader(new
InputStreamReader(System.in));
		input = stdin.readLine().toLowerCase();

		StringTokenizer sentences = new StringTokenizer(input, ".");
		StringTokenizer words = new StringTokenizer(input, ". \t");

		countSentences = sentences.countTokens();
		countWords = words.countTokens();

		countE = 0;
		countZ = 0;

		int i = 0;
		while (i < input.length())
		{
			if (input.substring(i, i+1).equals("e")) countE++;
			if (input.substring(i, i+1).equals("z")) countZ++;
			i++;
		}

		System.out.println();

System.out.println("The Number Of Words is :" +countWords );
System.out.println("The Number Of Sentences is :"+countSentences );
```

```
System.out.println("The Number Of Time E Occurs:"+countE );
System.out.println("The Number Of Time Z Occurs:"+countZ );
}
}
```

Output:

Problem#2:

Implement a **Student** class with the following fields, constructors and methods :

Fields:

- name;
- totalScore;
- numberOfQuizzes;

Constructors:

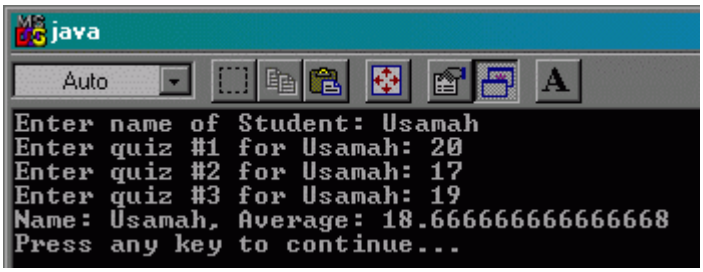
- public Student(String name, double score)
- public Student(double score, String name)
- public Student(String name) {

Methods:

- public String getName()
- public double getAverage() //this should return zero if no quiz has been taken.
- public double getTotalScore()
- public void addQuiz(double score)
- public void printStudent() //this should print the student's name and average score
- public String toString()

Write an application **TestStudent** that reads a student name and use the **Student** class to create a Student object. Then read the scores of the student in three quizzes and add each to the ***totalScore*** of the student using ***addQuiz()*** method and print the student object.

(**Note:** Make use of **this** key word wherever it can be used).

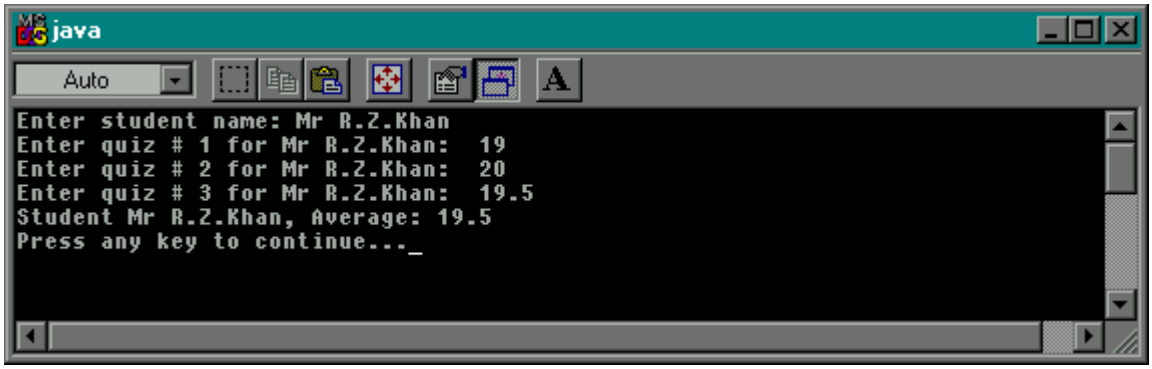


Solution:

```
import java.io.*;
import java.util.*;

public class TestStudent
{
public static void main(String[] args) throws IOException
   {
      InputStreamReader reader = new InputStreamReader(System.in);
      BufferedReader stdin = new BufferedReader(reader);

      // declaring variable "quiz" and object "std"
      Student std;
      double quiz;

      System.out.print("Enter student name: ");
      //assigning a name to the object std
      std = new Student(stdin.readLine());

      // getting input from user for quizes
      System.out.print("Enter quiz # 1 for "+std.getName()+":  ");
      quiz = Double.parseDouble(stdin.readLine());
      std.addQuiz(quiz);

      System.out.print("Enter quiz # 2 for "+std.getName()+":  ");
      quiz = Double.parseDouble(stdin.readLine());
      std.addQuiz(quiz);

      System.out.print("Enter quiz # 3 for "+std.getName()+":  ");
      quiz = Double.parseDouble(stdin.readLine());
      std.addQuiz(quiz);

      System.out.println(std.toString());
   }
}

class Student
{
         private String name;
         private double totalScore = 0;
         private int numberOfQuizes = 3;
```

```
	public Student(String name, double score)
	{
		this.name = name;
		totalScore += score;
	}

	public Student(double score, String name)
	{
	   this( name, score); // use of this

	}

	public Student(String name)
	{
		this.name= name;
	}

	public String getName()
	{
		return name;
	}

	public double getAverage()
	{
		return (totalScore/numberOfQuizes);
	}

	public double getTotalScore()
	{
		return totalScore;
	}

	public void addQuiz(double score)
	{
		totalScore = totalScore + score;
	}

	public void printStudent()
	{
		System.out.println("Student "+name+" has got average of quizes of
"+getAverage());
	}

	public String toString()
	{
		String s = "Student "+name+", Average: "+getAverage();
		return s;
	}
}
```

Output:


java
Auto
Enter student name: Mr R.Z.Khan
Enter quiz # 1 for Mr R.Z.Khan: 19
Enter quiz # 2 for Mr R.Z.Khan: 20
Enter quiz # 3 for Mr R.Z.Khan: 19.5
Student Mr R.Z.Khan, Average: 19.5
Press any key to continue...