/\*\* =======================================================================

\* Class:Timed\_Test\_4 ExTT.4 Pg.#.# Author: Yin Linhai

\* Version:001Date:Oct 22, 2013

\*

\* A program that green/amber/red lights a mark based on a benchmark, and gives the overall average

\*

\* Course:Computer Science 201Teacher:Mr Blakey

\* School:Sir Winston Churchill High School, Calgary, Alberta, Canada

\* Language: Java SE 7.0Target Operating System: Java Virtual Machine

\* System:Intel Celeron 3GHz running under Windows 7 IDE: Eclipse 4.2

\*========================================================================\*/

**Timed Test Class**

**package** test\_4;

**import** java.util.Scanner;

**public** **class** Timed\_Test\_4 {

**public** **static** **void** main(String[] args) {

//variable initialization

String cont = "yes";

**int** count = 0;

**double** average, marks = 0;

**double**[] mark = **new** **double**[count];

//scanner construction

Scanner scan = **new** Scanner(System.*in*);

//ask for the benchmark

System.*out*.println("Enter the Benchmark value:");

//construct class using benchmark

Calc calc = **new** Calc(scan.nextDouble());

//loop for adding marks

**do** {

//adding to student count

++count;

//make a new temp array

**double**[] markTemp = **new** **double**[count];

//fill temp array with actual array variables

**for**(**int** x = 0; x<(count-1); x++) {

markTemp[x] = mark[x];

}

//make actual array larger

mark = **new** **double**[count];

//refill actual array

**for**(**int** x = 0; x<count; x++){

mark[x] = markTemp[x];

}

//ask for student mark

System.*out*.println("Enter student mark:");

mark[(count-1)] = scan.nextDouble();

//send the mark to the calc class to process

calc.traffic\_Light(mark[(count-1)]);

//ask if you'd like to add marks for another student

System.*out*.println("Do you have another student to enter marks for? (type yes to continue)");

cont = scan.next();

//check if they want to continue

} **while**(cont.equalsIgnoreCase("yes"));

//add the marks together

**for**(**int** x = 0; x<count; x++) {

marks += mark[x];

}

//get the average of the marks

average = (marks/(**double**)(count\*100))\*100;

//print the average for the class

System.*out*.println("The average mark for the 5 students is: " + String.*format*("%5.0f", average) + "%");

}

}

**Calc Class**

**package** test\_4;

**public** **class** Calc {

//constructer class

**public** Calc(**double** x) {

benchmark = x;

}

//processing for traffic light

**public** **void** traffic\_Light(**double** x) {

**if** ((benchmark + 10)<=x) {

System.*out*.println("Green!!: the student has scored 10% above the benchmark.");

} **else** {

**if**((benchmark-10)<=x) {

System.*out*.println("Amber!!: the student has scored within 10% of the benchmark.");

} **else** {

System.*out*.println("Red!!: the student has scored less than 10% of the benchmark.");

}

}

}

//static variables

**private** **double** benchmark;

}

**Output**

Enter the Benchmark value:

75

Enter student mark:

86

Green!!: the student has scored 10% above the benchmark.

Do you have another student to enter marks for? (type yes to continue)

yes

Enter student mark:

85

Green!!: the student has scored 10% above the benchmark.

Do you have another student to enter marks for? (type yes to continue)

yes

Enter student mark:

75

Amber!!: the student has scored within 10% of the benchmark.

Do you have another student to enter marks for? (type yes to continue)

yes

Enter student mark:

65

Amber!!: the student has scored within 10% of the benchmark.

Do you have another student to enter marks for? (type yes to continue)

yes

Enter student mark:

64

Red!!: the student has scored less than 10% of the benchmark.

Do you have another student to enter marks for? (type yes to continue)

no

The average mark for the 5 students is: 75%========================================================================