**Computer Science 111**

Computer Science with Java I Fall, 2016

Lab Report – Week 5 - Methods and Modularity assignment

Abraham Schultz CSI 111 0900 Fall 2016

**Assignment Analysis and Design**

The problem to be solved was to create a program that collected the score, as input, from 6 judges for an international gymnastics competition. The program was to display each individual judges score then display the average score. This was to all be accomplished using three methods. The main method then a method for calculating the average score and printing the score, and a method for inputting the individual judges score and printing that score. I created a loop in my main method where I define all my variables. At first I used a Boolean operator of if next input equals 1 then ask for next judges scores. But that seemed repetitive, so I used a counter variable that incremented after each score was entered, then stopped after it reached a value of 6. The main method just lists the variables, while the other two methods do the calculation and print output.

Below is a copy of my pseudocode (note that my final code changed from what I originally thought I would need).

/\*methods and modularity.java

\*Console I/O dialog for calculating average score from judges in gym competition

\*for CSCI 111

\*last edited september 12 10:14pm

@author Abraham Schultz

\*/

// public class gym score calculator

//\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

// Main method

// begin loop that asks for input until 6 differnt judges input has been given.

// Calls a method asking for a score of 1-10 from a single judge, and prints each judges individual score

//return value of individual score and add to total score

//end loop

// calls a method that finds average score from total score and prints it

//

//\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

//public static double method for asking for input from judges( string judge, string/double score )

//\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

//public static double method for calculating average score(double total score, double number of judges, string judge )

// judge1 score + judge2 score ..... judge 6 score / 6 = average score



**Assignment Code**

/\*methods and modularity.java

\*Console I/O dialog for calculating average score from judges in gym competition

\*for CSCI 111

\*last edited october 10th 5:09pm

@author Abraham Schultz

\*/

package methods.and.modularity.assignment;

import java.util.Scanner;

public class MethodsAndModularityAssignment {

/\*\*

\*

\* @param args the command line arguments

\*/

public static void main(String[] args) {

// Main method inputs score from judges and returns to total score value

// declare variables

double score1, score2, score3, score4, score5, score6;

int counter = 1;

// begin loop that asks for input until 6 differnt judges input has been given.

do {

score1 = inscore("Judge", counter);

counter++;

score2 = inscore("Judge", counter);

counter++;

score3 = inscore("Judge", counter);

counter++;

score4 = inscore("Judge", counter);

counter++;

score5 = inscore("Judge", counter);

counter++;

score6 = inscore("Judge", counter);

counter++;

/\*1. calls a method asking for the score from a single judge,

The method prints the judge number and score and return the judges score

\*/

} while (counter <= 6);

//end loop

double totalscore = score1 + score2 + score3 + score4 + score5 + score6;

// adds the returned score to a total score

double avgScore = getavg(totalscore, 6);// calls a method that finds average score from total score and prints it

//

}

//\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

//Method gets average score and prints to console.

public static double getavg(double totalscore, double numberjudges) {

double avgScore;

avgScore = totalscore / numberjudges;

System.out.printf("%30s%8.2f%n", "The average score is:", avgScore);

return avgScore;

}

// judge1 score + judge2 score ..... judge 6 score / 6 = average score

//\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

public static double inscore(String judge, int judgenumber) {

// method for getting score for each judge

Scanner kb = new Scanner(System.in);

//instance of scanner declared

// get score for judges double score = kb.nextDouble();

System.out.print("Please enter the score on a scale of 1-10 for " + judge + " " + judgenumber + " : ");

double score = kb.nextDouble();

System.out.println("The score for " + judge + " " + judgenumber + " is " + score);

return score;

}

}

**Assignment Testing**

During the development of my code I continually checked that the values being entered as scores were actually being averaged correctly. That is that my getavg method was doing its job. I would use my own calculator to accomplish this. To ensure that my inscore method was behaving properly I made sure to print out the judges score right after input, this was the first task I tackled. I realize that my code does not do anything to handle values outside the expected input of 1-10. I was not sure if this was expected to be in this assignment. Additionally, that might have required an additional method that included if else statements, and because the assignment explicitly asked for 3 methods I decided against including it.



**Assignment Evaluation**

The biggest thing I learned from this assignment was how to pass values from one variable to another in between methods. The biggest part of the project that I struggled with was organizing my code so that my output printed correctly, I was not sure if my output should have been identical to what was on the assignment page. At first I created identical output, but that required me to create a unique println line of code for each message in the main method. This seem repetitive and not in line with the objective of the project. Adding line 73 to the inscore method allowed for less lines of code but prints the judges number directly after the input is received by the user. So I decided that displaying each of the judges score after receiving the input worked nicely. Also getting the methods to behave the way that I wanted them to was more of a challenge then I expected. The easiest part of the assignment I would say was printing individual output lines. I really did enjoy this project as it required me to think a lot about how I organize my code. I started to create if else statements that printed out messages if the user put in an invalid number in for the scores. But I decided against including them in the assignment mostly because I did not get them to work the way I wanted them to, also because I thought it was beyond the scope of this current assignment. In the future I would like to learn about how to handle unexpected input as to make programs that will not break when something I did not explain occurs.