2.05 Desk Check: Grades.java

The source code for the Grades.java program is shown below. As you start to examine this program, don't focus on the individual lines; look for a structural pattern as you did with the HelloWorld program. You will see some structural similarities including an impression of an outline with indented lines, an upper section of code containing asterisks (*), and a bottom section containing the executable code. Always try to see the big picture before you worry about the details of a program.

```
< 1>  /**
< 2>   * The purpose of this program is to calculate the average
< 3>   * of 4 grades
< 4>   *
< 5>   * ©FLVS 2007
< 6>   * @author B. Jordan
< 7>   * @version 2/20/07
< 8>   */
< 9>  public class Grades_v1
<10>  {
<11>      public static void main(String[] args)
<12>      {
<13>          int test1 = 96;          //test score 1
<14>          int test2 = 78;          //test score 2
<15>          int test3 = 85;          //test score 3
<16>          int test4 = 87;          //test score 4
<17>          double average;          //average of three test scores
<18>
<19>          //calculate the average grade and print the results
<20>          average = (test1 + test2 + test3 + test4) / 4.0;
<21>          System.out.println("Average Score: " + average);
<22>      }//end of main method
<23>  }//end of class
```

Once you have a clear overview of the program, start dissecting the code line by line. There is a specific purpose for every line of code, and each statement must follow Java's syntax rules. The `int` and `double` variables have been highlighted to help you trace through the program.

Lines <1> through <8> are comments, which are ignored by the computer.
Line <9> declares Grades to be the name of the class.
Lines <10> is an opening curly brace that marks the beginning of the class (matches up with Line <23>).
Lines <11> is the header for the **`main()`** method, which is where program execution begins.
Line <12> is the opening curly brace that marks the beginning of the **`main()`** method (matches up with Line<22>).
Lines <13> through <16> declare and initialize the **`int`** variables for the four test scores.
Line <17> declares and initializes a **`double`** variable for the average.
Line <18> is a blank line providing white space to improve readability.
Line <19> is a comment.
Line <20> is an arithmetic statement to calculate the average.

Line <21> is a print statement to concatenate a String literal with a variable.
Line <22> is a closing curly brace marking the end of the main method (matches up with Line <12>).
Line <23> is a closing curly brace marking the end of the class (matches up with Line <10>).

This simple program has now been analyzed inside and out. Twenty-three lines of code to print one message on the screen! Did you think such a simple program would require so much explanation? But now you are actually ready to run it and understand how it works.