**44-542 Object-Oriented Programming**

**More on Control Structures and the Scanner Class**

Create a project named **ScannerAndStrings** with class **Student** in package **students**. The **Student** class has the following private instance variables.

**private String stuID; // student id**

**private String classification; // freshman, sophomore, etc.**

**private String name; // full name of student**

**private double gpa; // grade point average**

Method descriptions can be found in the Javadoc files provided to you.

Input will be provided from a text file named **students.txt**. Here is a sample input file. Note that id and classification are on one line, followed by the full name on a second line, followed by the gpa on a third line.

**111 Freshman**

**Bruce Willis**

**3.54**

**333 Sophomore**

**Billy Bob Thornton**

**3.9**

**222 Freshman**

**Meryl Streep**

**4.0**

**555 Senior**

**Mary Margaret Myrtle May Miller**

**3.05**

**444 Graduate**

**Madonna**

**3.7**

Must include this throws clause

Create a driver following the outline given below:

**public class StudentDriver**

**{**

**public static void main(String[] args) throws FileNotFoundException**

**{**

**// Create a Scanner class that reads from a file**

**// named students.txt.**

**// Use a while loop to read in data as long as the data exists.**

**// Inside the while loop, read the data for one student, and create**

**// the corresponding student object.**

**// Note that you can use next() to read a single string with**

**// no blanks**

**// (such as id);**

**// use nextLine to read the remaining part of an entire line;**

**// nextLine() can also be used to dispose of the line feed**

**// at the end of a line;**

**// use nextDouble() to read a double (such as the gpa).**

**// After reading in the data for one student and creating the**

**// student, print the following. Note that these print statements**

**// will also be inside the while loop.**

**// Print the student, using the toString method. Use print, not**

**// println so a line feed is not produced.**

**// Use appropriate method calls and printf to print the following**

**// (widths are approximate; there should be at least one space**

**// between any two output fields):**

**// first name, left justified in a field of width 10**

**// name count, right justified in a field of width 2**

**// the word in the name at position 0, left justified in a**

**// field of width 10**

**// the word in the name at position 2, left justified in a field**

**// of width 10**

**// the word in the name at position 5, left justified in a field**

**// of width 10**

**// the first name, reversed**

**// All of this information should be on a single line; follow with**

**// a println so that information for the next student will be on**

**// a new line.**

**// end of while loop**

**} // end of method main**

**} // end of class Student Driver**

**OUTPUT (for the given input; must work for any valid input file)**

**111 3.54 Freshman Bruce Willis Bruce 2 Bruce NONE NONE ecurB**

**333 3.90 Sophomore Billy Bob Thornton Billy 3 Billy Thornton NONE ylliB**

**222 4.00 Freshman Meryl Streep Meryl 2 Meryl NONE NONE lyreM**

**555 3.05 Senior Mary Margaret Myrtle May Miller Mary 5 Mary Myrtle NONE yraM**

**444 3.70 Graduate Madonna Madonna 1 Madonna NONE NONE annodaM**