

Student.java

```

1 package basic;
2
3 /**
4  * Continue Student class (add several instance variables).
5  * @author Sara Mathieson
6  * @version January 28, 2020
7  */
8 public class Student {
9
10     /** store the possible grade options in an enum */
11     public enum StudentGrade { FIRSTYEAR, SOPHOMORE, JUNIOR, SENIOR };
12
13     /**
14      * instance variables for the Student
15      */
16     private String name;           // the name of the student
17     private StudentGrade grade;    // one of the values of the enum StudentGrade
18     private double libraryFine;    // example of a variable that we don't pass to the constructor
19     private static String semester; // example of a static variable
20
21     /**
22      * Constructor for the student class
23      * @param inputName: the name of the student (String)
24      * @param inputGrade: the grade of the student (StudentGrade)
25      */
26     public Student(String inputName, StudentGrade inputGrade) {
27         this.name = inputName;
28         this.grade = inputGrade;
29
30         // all students start with no library fines
31         this.libraryFine = 0.0;
32
33         // access static variables in a static way (for entire class, not an individual Student)
34         Student.semester = "Spring 2020";
35     }
36
37     /**
38      * Getter for the Student's name
39      * @return the name (String)
40      */
41     public String getName() {
42         return this.name;
43     }
44
45     /**
46      * Getter for the current semester (static method)
47      * @return the current semester (String)
48      */
49     public static String getSemester() {
50         return Student.semester;
51     }
52
53     /**
54      * Getter for the library fine
55      * @return the current library fine (double)
56      */
57     public double getLibraryFine() {
58         return this.libraryFine;
59     }
60
61     /**
62      * Based on the grade, return the graduation year
63      * @return the graduation year of the student (int)
64      */
65     public int getYear() {
66
67         // set up a switch to handle all cases
68         // note the use of return instead of break here
69         switch (this.grade) {
70             case FIRSTYEAR:
71                 return 2023;
72             case SOPHOMORE:

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73         return 2022;
74     case JUNIOR:
75         return 2021;
76     case SENIOR:
77         return 2020;
78     // we need to include a default, even if we don't anticipate its use
79     default:
80         return -1;
81     }
82 }
83
84 /** main method for brief testing */
85 public static void main(String[] args) {
86
87     // use the constructor to make a new student
88     Student emile = new Student("Emile Givental", StudentGrade.SENIOR);
89     Student.getSemester();
90
91     System.out.println("Hello " + emile.getName() + "!");
92     System.out.println("You will graduate in " + emile.getYear() + "!");
93 }
94 }
95
96
97
```