# **Lab 5\_2 Assignment (Loops and Files)**

1. Create a Java project called **Lab5\_2A** and a class named **Lab5\_2A**.
2. Create a second new class named **StudentGrades** with the following:
   1. Instance variables:
      1. studentID (String)
      2. totalClasses(int) // total nbr of classes taken so far
      3. totalCreditHours(int) // total nbr of credit hours taken so far
      4. totalGradePoints (double) // total grade points earned so far
      5. currentGPA(double)
   2. A constructor that accepts one String parameter and puts it into the studentID instance variable. It should set all other instance variables to 0.
   3. A void method that accepts an integer parameter for class hours, a String class name, and a character value for the grade in the class. It should do the following:
      1. Assess a point value for the class based on the following list:

‘A’ – 4.0

‘B’ – 3.0

‘C’ – 2.0

‘D’ – 1.0

‘F’ – 0

* + 1. Multiply the point value by the class hours and add the result to totalGradePoints
    2. Add class hours to totalCreditHours
    3. Add 1 to totalClasses
    4. Call the computeGPA method
    5. Print a statement with the studentID, class name, class hours (for this single class), the letter grade, and currentGPA (Don’t forget labels.)
  1. A void method named computeGPA (no parameters) that computes the currentGPA by dividing the totalGradePoints by totalCreditHours
  2. A String method named toString (no parameters) that will return a string with all the instance variables, with a label for each.

1. In the main method of the **Lab5\_2A** class:
   1. Read the student ID (String) from the first line of the text file **Lab5\_2A.txt**
   2. Create a new **StudentGrades** object, sending the student ID as a parameter.
   3. Set up a loop to read the following items from the text file. Stop when you reach the end of the text file.
      1. Class Name (String) – this will be one word
      2. Class Hours (int)
      3. Class Grade (char) - possible values: ‘A’, ‘B’, ‘C’, ‘D’, ‘F’

As you read each line of data, call the method for your StudentGrades object that will update the values in the object and recompute the GPA

* 1. After the loop has completed, print the object information, using your toString method shortcut.