

Student.java

```
1 package lab3a;
2 /*
3  * Banh, Alex
4  * CECS 277
5  * Professor Phuong Nguyen
6  * 25 September, 2019
7  */
8 import java.util.ArrayList;
9 /**
10 * Creates a student and that stores a students grade
11 * and GPA along with their first and last name
12 * @author alexb
13 *
14 */
15 public class Student {
16     private double gpa;
17     private ArrayList<Grade> grades;
18     private String firstName;
19     private String lastName;
20     /**
21      * Default student constructor
22      */
23     public Student() {
24         gpa = 0.0;
25         grades = new ArrayList<Grade>(0);
26         firstName = "";
27         lastName = "";
28     }
29     /**
30      * Regular student constructor
31      * @param nGpa Student's GPA
32      * @param nGrades ArrayList of student's classes
33      * @param nFirstName Student's first name
34      * @param nLastName Student's last name
35      */
36     public Student(double nGpa, ArrayList<Grade> nGrades, String nFirstName, String nLastName)
37     {
38         gpa = nGpa;
39         grades = new ArrayList<Grade>();
40         for (Grade g: nGrades)
41             grades.add(g);
42         firstName = nFirstName;
43         lastName = nLastName;
44     }
45     /**
46      * Returns student's GPA
47      * @return Returns GPA
48      */
49     public double getGpa() {
50         return gpa;
51     }
52     /**
53      * Sets a student's GPA
54      * @param nGpa Student's GPA
55      */
56     public void setGpa(double nGpa) {
57         gpa = nGpa;
58     }
59 }
```

Student.java

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57     }
58     /**
59      * Returns all the student's classes
60      * @return Returns classes
61      */
62     public ArrayList<Grade> getGrade() {
63         return grades;
64     }
65     /**
66      * Sets all the student's classes
67      * @param nGrades ArrayList of all the student's classes
68      */
69     public void setGrade(ArrayList<Grade> nGrades) {
70         grades = new ArrayList<Grade>();
71         for (Grade g:nGrades)
72             grades.add(g);
73     }
74     /**
75      * Returns the student's first name
76      * @return Returns first name
77      */
78     public String getFirstName() {
79         return firstName;
80     }
81     /**
82      * Sets the student's first name
83      * @param nFirstName Student's First Name
84      */
85     public void setFirstName(String nFirstName) {
86         firstName = nFirstName;
87     }
88     /**
89      * Returns a student's last name
90      * @return Return's last name
91      */
92     public String getLastName() {
93         return lastName;
94     }
95     /**
96      * Sets the student's last name
97      * @param nLastName Student's Last Name
98      */
99     public void setLastName(String nLastName) {
100         lastName = nLastName;
101     }
102     /**
103      * Calculates and returns a student's GPA
104      * @return Student's GPA
105      */
106     public double calcGPA() {
107         int classes = 0;
108         for (Grade g : grades) {
109             gpa += g.getGradePoint();
110             classes++;
111         }
112         gpa /= classes;
113         return gpa;
```

Student.java

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114     }
115     /**
116      * Prints a student's last name followed by their first name
117      * followed by their GPA then all their classes
118      */
119     public String toString() {
120         String classes = "";
121         for (Grade g: grades)
122         {
123             classes += g.toString() + '\n';
124         }
125         return lastName + ", " + firstName
126             + "\nGPA: " + gpa
127             + "\nClasses: " + classes;
128     }
129 }
130
```