

CIS 40 - Assignment 10

You can work with a partner in this assignment.

If you choose to work with a partner, please make sure that both people have time to work together. If one person does all the work, the non-participating partner will not be prepared for the exam.

In a script, write a Python class called Transcript that contains a student's list of classes for one quarter and calculates the GPA from the grades received.

The script is started at Assignment10.py and has test driver code that will:

- create 2 Transcript objects, each with a list of classes
- print each transcript: the quarter, the list of classes, and the resulting GPA

Without modifying the test driver code, write the Transcript class that will let the test driver code runs successfully.

The Transcript class contains 5 methods:

1. `__init__`:
 - accepts 2 input:
 - a string that is the name of the quarter (i.e. Winter 2017)
 - a list of classes:
 - Each element of the list of classes is another list representing a class
 - The list representing a class has 3 elements: class name, number of units, and letter grade
 - initializes the class list and quarter attributes with the input values
2. `__str__`:
 - returns a string to identify that the object is a transcript for a specific quarter
3. `print`:
 - prints the quarter on the first line
 - for each class in the class list, print the class name on the first line, then print the units and the letter grade on the second line
 - prints the total number of classes
 - prints the GPA
4. `calcGPA`:
 - calculates the GPA from the data in the class list and returns the gpa
 - To calculate the GPA:
 - multiply the number of units and the numeric grade for each class
 - sum up all the results of the previous step, then divide by the total number of units

5. getNumericGrade:

- returns an equivalent numeric grade for the input letter grade
- use the following grade equivalence:

A+	4.0
A	4.0
A-	3.7
B+	3.3
B	3.0
B-	2.7
C+	2.3
C	2.0
D+	1.3
D	1.0
D-	0.7
F	0.0

Sample program output:

```
Transcript for Winter 17
    Winter 17
Class name: CIS 40
Units: 4.5      Grade: A

Class name: Math 10
Units: 5        Grade: B+

Class name: Econ 1
Units: 4        Grade: B

Total number of course: 3
GPA: 3.44

Transcript for Fall 16
    Fall 16
Class name: Math 114
Units: 5        Grade: C+

Class name: PE 32
Units: 2        Grade: A

Total number of course: 2
GPA: 2.79
```

Note: The sample output is for you to check your calculation. When you run your program for me, I will ask you to change the class list. Therefore, make sure you test your program with different values.