# Introduction to Computer Science and Programming 1

# CSCI120

### Chapter11: OOP

Sample Coding

**Note:** This document has been designed and developed as part of an initiative for creating an OER (Open Education Resource) package for the course CSCI 120 at Columbia College.

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# Requirements

* Please use meaningful name for your variables and functions
* Try to reuse your solutions as much as possible.

# Problem0:

# Create a Cricle class and initialize it with radius. Make two instance methods getArea and getCircumference inside this class. Implement the methods.

* No need to write test class or main function for this.

**Problem1:**

* Create a Temprature class. Make two class/static methods :  
  1. convertFahrenheit - It will take Celsius and will convert and print it into Fahrenheit.  
  2. convertCelsius - It will take Fahrenheit and will convert it into Celsius.
* Write a test class for this one and test it (Look at problem 3 and 4 for example)

**Problem2:**

* Create a Student class and initialize it with coursesGrades, name and id number. Make methods to :  
  1. Display - It should display name and id number of the student.  
  2. AddCourseGrade – It adds the grades of the courses to the list of courses.   
  3. getAverage – it calculates the average (GPA) of the student based on the grades of the student.
* No need to write test class or main function for this.

# Problem3:

* Define a class with a static method that receives a list of numbers and calculate the average of the numbers.
* Add another static method the above class that receives a string and returns the reverse of it.

# Problem4:

* Define and design a class that represents the time. (hours and minutes, AM and PM). Also add an instance method called addMinutes, that receives a number which represent a number (that represents a minute) and adds the time to current time the instance is showing. For instance if the object represent 3:31 pm then you call addMinutes(30) then the new time is going to be 3:31 + 30 (minute) = 4:01 PM.

**Good Luck ☺**