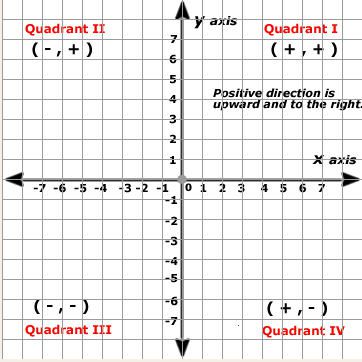
# Instructions: 50 points total. Due by 11:59 pm on date specified via the Blackboard submission area in the module. Late submissions are docked 10% per day late.

* The name of each Python file you send me should be of the form “Lab2\_probX.py”. Example: Lab2\_prob1.py for problem 1, Lab2\_prob2.py for problem 2, etc.
* Follow variable naming rules (pick one) as described on pages 43-44.
* Comment frequently in your code using the “# comment” convention described on pages 39-40. At a minimum, you should have a comment line at the beginning of the program with your name and what the program will do. Comments are for the programmer to see.
* Display 1-2 print statements to the user on the purpose of the program before asking for any information. This is for the user to see.
* Check the accuracy of the output you get out of your code. In other words, how do you know that the output is correct?

1. **Problem 1 – Maryland House of Representatives (15 points):** 
   * Write a program that asks the user for the U.S. House Maryland District number and return the name of the Representative. Example: 1 = Andrew Harris, 2 = Dutch Ruppersberger, etc. You will need to do a little extra research here. The program should display an error message if the user enters a number that is **outside** the range of the district numbers.
   * Use an if…elif…else statement in your code as your decision structure.
   * Follow the bulleted items above (comments, display purpose to the user, etc).
2. **Problem 2 – Microalbumin test (15 points):** 
   * According to the [Mayo Clinic](https://www.mayoclinic.org/tests-procedures/microalbumin/about/pac-20384640), the “urine microalbumin test is a test to detect very small levels of a blood protein (albumin) in your urine.” Write a program that asks the user the milligrams (mg) of protein leakage over 24 hours and returns one of three statuses:
     1. If less than 30 mg, then this person’s protein leakage is normal and needs no additional follow-up.
     2. If the protein leakage is between 30 mg and 300 mg inclusive, then this person may have early kidney disease and will need a follow-up with his/her physician.
     3. If the protein leakage is over 300 mg, then this person may have more advanced kidney disease and will need a follow-up with his/her physician.
   * Use an if…elif…else statement in your code as your decision structure. Use a logical operator (and/or/not) to code the interval of values in part B above.
   * Follow the bulleted items above (comments, display purpose to the user, etc).
3. **Problem 3 – Points in the Cartesian Plane (20 points):**
   * You may recall (with fondness) that points plotted in the Cartesian Plane (*xy* plane) are located in a quadrant of the plane, at the origin, or on an axis line.
   * Write a program that asks the user for the (x,y) coordinates of a point and then tell the user if the point is the origin, is located on one of the axes, or is in one of the 4 quadrants (and identify which quadrant).
   * Follow the bulleted items above (comments, display purpose to the user, etc).  
       
     
   * Image and description can be found at <https://www.thoughtco.com/cartesian-plane-coordinate-plane-2312339>.
4. **Problem 1 – Maryland House of Representatives (15 points):**
   * \_\_\_\_\_ (3) Comments in the code/Tell user purpose of the program.
   * \_\_\_\_\_ (2) Ask the user for a District number between 1-8. Store in a variable.
   * \_\_\_\_\_ (7) Use if…elif…else statement to correlate each number in 1-8 with the corresponding U.S. Maryland House Representative or provide the error message if the number is outside of 1-8. Deduct 1 point for each incorrect pairing of district number and Representative names. Deduct 5 points if response does not use if…elif…else statement but a series of if statements correctly.
   * \_\_\_\_\_ (3) Tell the user the name of their Representative or give error message.
5. **Problem 2 – Microalbumin test (15 points):**
   * \_\_\_\_\_ (3) Comments in the code/Tell user purpose of the program.
   * \_\_\_\_\_ (2) Ask the user for the mg of protein leakage. Store in a variable.
   * \_\_\_\_\_ (4) Use if…elif…else statement to correlate a protein leakage number to the correct response for the patient.
   * \_\_\_\_\_ (3) Coded the interval for part B correctly using the appropriate logical operator (and/or/not).
   * \_\_\_\_\_ (3) Display to the user the correct response of normal, early kidney disease, or advanced kidney disease and which ones should follow-up with a physician.
6. **Problem 3 – Points in the Cartesian Plane (20 points):**
   * \_\_\_\_\_ (3) Comments in the code/Tell user purpose of the program.
   * \_\_\_\_\_ (4) Ask the user for the coefficients of x and y and store in variables.
   * \_\_\_\_\_ (10) Use if…elif…else statement or nested if…else statements to determine if the point is the origin, on an axis, or in a specific quadrant (I, II, III, IV) and use logical operators in the condition statement. Deduct 7 points if serious attempt is made however there are multiple errors in the code or there are major errors in logic. Deduct 3 points only if the logic is essentially correct however there are minor errors with distinguishing points on the axes/origin but the quadrants are correct.
   * \_\_\_\_\_ (3) Display to the user if the point is the origin, on the x-axis, on the y-axis, or in a specific quadrant (I, II, III, IV).

**Lab 2 Total = \_\_\_\_\_\_\_\_\_\_\_\_\_ / 50 points**