CSI 32. HW 9. Prof. Luis Fernandez. Spring 2020.
Deadline: Friday April 24th

To upload:

1. Define a class `Point` whose objects are points in the plane with integer x and y coordinates ranging from 0 to 40. It has a function that draws them in the screen output using the character "*".

   Its data members are the x-coordinate `int xCoor` and the y-coordinate `int yCoor`.

   Its function members are:
   - The constructor. Should check that the coordinates are within the limits given above; if not, it should default to the point $(0,0)$ and print a message "Invalid input. Defaulting to $(0, 0)$.".
   - `void setPoint(int x, int y)` that sets `xCoor` and `yCoor` to x and y. It should check for validity and default as in the constructor.
   - `int getXcoor()` and `int getYcoor()` that returns the x and y coordinates of the point.
   - `void plotPoint()` that prints out the point in the terminal using "*".
     You do not have to print the axes (as below), but it is not hard and you will ge **extra credit** for it!

   HINT FOR FUNCTION `plotPoint()`
   (read after you have thought about how to it and only if you do not know what to do).
   The pseudocode would be like this: Write two nested `for` loops:

   > for j from 40 to 0 (y coordinate going down)
   > for i from 0 to 40 (x coordinate going right)
   > if i and j are equal to the x and y coordinates of the point, cout "*";
   > else cout " ".
   > Then cout an endl after the end of the inner loop.

   For example, the output for the point $(4, 12)$ could be:

   ```
   20
   19
   18
   17
   16
   15
   14
   13
   12
   11
   10
    9
    8
    7
    6
    5
    4                         *
    3
    2
    1
    0
      0 1 2 3 4 5 6 7 8 910111213141516171819 20
   ```

2. Read the list of projects at the course webpage
   https://fsw01.bcc.cuny.edu/luis.fernandez01/web/teaching/classes/csi32/csi322020-1.html,
   decide which project you want to do, and write a few lines with the basic steps you plan to use to complete the project.

   To do but not upload:

3. Exercises 9.13, 9.6, 9.5 from the textbook.