

CS160 Computer Science I

Program 5b:

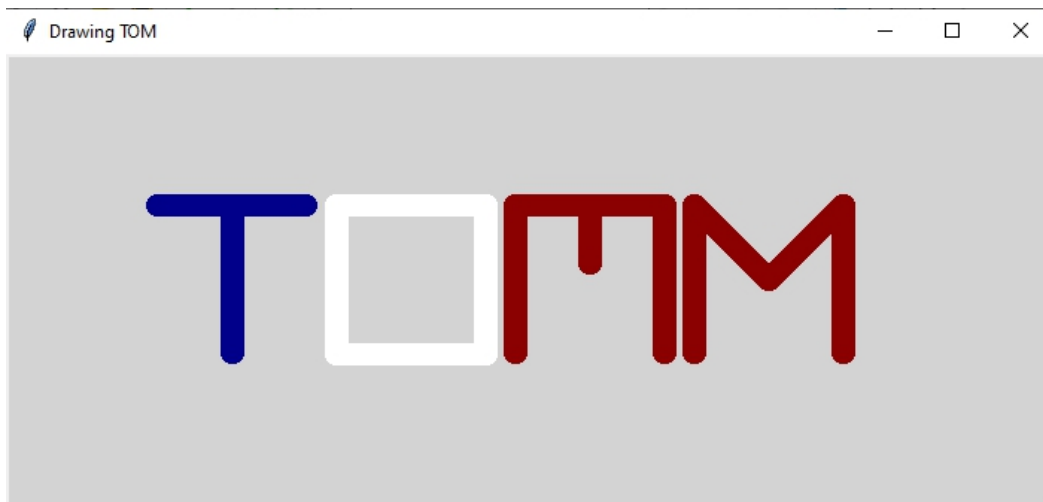
Objective

Work with loops

Work with graphics

Assignment

This assignment will have you create an image that will show your initials in the display. As a demonstration, I've including my initials, with a variation on how I could draw the M. In order to ensure practice using loops, the only graphics command that can be used to draw in the display is `point`. You CANNOT use the `line` command, or any other command other than `point`. This will require a loop in conjunction with the `point` command to draw each line in each letter.



Specifics

Write your initials, or any other combination of 3 unique letters, to the display. Before starting *each letter*, write a comment stating the letter to be displayed and then give the variables `startX` and `startY` a value. The `startX` and `startY` variables will be the upper left hand corner of the letter. These variables do not have to be called `startX` and `startY`, the point is to have variables which store the starting location of that letter.

Use relative locations, using the `startX` and `startY` variables, to create your letter using the `point` command. ALL commands used to draw the letter MUST use `startX` and/or `startY` or distances from `startX` or `startY`, such as `startX + 100` or `startY + 60`.

To simplify the drawing of the letters, set the width of the line from the default of 1 to something larger using `setLineWidth()`. I set the width in my example to 15. You can draw block letters, as I did with the leftmost M, or figure out how to include the slope to draw angled lines. Either approach is valid, you will not be graded on artistic style. However, each letter must include at least 2 lines/for loops.

I decided to make each letter 100 pixels by 100 pixels. You do not have to use these dimensions. I think it will be easier if all of your letters have the same width and the same height. I would also draw the letters by hand on a graph, noting the starting and ending points of each line, and how they relate to the starting x and y.

Challenge

If you look at the letter “O” you will find 4 lines. In the simplest solution you will have 4 for loops. However, the letter can be created with less than 4 loops, since several of the loops will have some of their coordinates in common. Nothing says that two lines (parallel lines) can’t be draw with a single loop. I was also able to use a single loop to draw the diagonal lines in the second M.

Starter code

```
from SimpleGraphics import *

setSize (700, 300)

setBackground ("light gray")
setOutline ("dark blue")
setLineWidth (15)
setWindowTitle ("Drawing TOM")

#drawing T
startX = 100
startY = 100
#I'll give you the top line of the T
for x in range (startX, startX + 100):
    point (x, startY)
...

#drawing O
setOutline ("white")
startX = 220
startY = 100
#now draw the lines for the O
...

#drawing M - approach 1
setOutline ("dark red")
startX = 340
startY = 100
#now draw the lines for the first M
...

#drawing M - approach 2
startX = 460
startY = 100
#now draw the lines for the second M
...
```