

Computer Science 1	Lab 08A
	Multi-Day Major Python Assignment
Repetition with Turtle Graphics	50 <i>through</i> 110 Point Versions
Assignment Purpose: The purpose of this lab assignment is to gain understanding of repetition control structures, like the for loop, visually using <i>Turtle Graphics</i> .	

This assignment is similar to Lab 5A in that it uses *Turtle Graphics* and requires you to create a series of shapes and designs. The difference is now the shapes and designs are more complicated and require the use of a **for** loop.

You will start with a grade of **50** and earn **5** points for each shape/design completed. Completing any 10 out of 12 will earn a grade of 100. Completing all 12 will earn the maximum grade of **110**.

A *skeleton* for the program has been written for you. If you look at the provided code, you see the proper libraries have been imported and the dimensions of the Turtle Graphics window have been “set up”. Then there are 12 different sections, one for each shape/design. Each section begins with a comment showing its name and ends with 4 commands. These commands are commented out for now. In-between is where you write the code for that particular shape/design. Once you do, you need to uncomment the **update**, **sleep**, **reset** and **tracer** commands so that after the computer draws the shape/design, it will update the screen, wait one second, and reset the window and speed up the turtle for the next shape/design.

NOTE: If you need more space to write your code, you can just press the <enter> key and insert as many blank lines as you wish.

Lab 08A Student Version	Do not copy this file, which is provided.
<pre> 1 # Lab08Ast.py 2 # "Repetition with Turtle Graphics" 3 # This is the student, starting version of Lab 08A. 4 # After completing each shape, student need to "un-comment" 5 # the 4 commands which follow before they start the next shape. 6 7 8 from turtle import * 9 from time import sleep 10 11 setup(1300,700) 12 tracer(0,0) 13 14 15 ##### 16 # Solid Red Octagon # 17 ##### 18 </pre>	

```
19
20
21
22
23
24 #update()
25 #sleep(1)
26 #reset()
27 #tracer(0,0)
28
29
30 #####
31 # 12 Point Star #
32 #####
33
34
35
36
37
38
39 #update()
40 #sleep(1)
41 #reset()
42 #tracer(0,0)
43
44
45 #####
46 # Plus Sign #
47 #####
48
49
50
51
52
53
54 #update()
55 #sleep(1)
56 #reset()
57 #tracer(0,0)
58
59
60 #####
61 # Snowflake #
62 #####
63
64
65
66
67
68
69 #update()
70 #sleep(1)
71 #reset()
72 #tracer(0,0)
73
```

```

74
75 #####
76 #   Circle   #
77 #####
78
79
80
81
82
83
84 #update()
85 #sleep(1)
86 #reset()
87 #tracer(0,0)
88
89
90 #####
91 #   Zig-Zag   #
92 #####
93
94
95
96
97
98
99 #update()
100 #sleep(1)
101 #reset()
102 #tracer(0,0)
103
104
105 #####
106 #   Cool Pattern   #
107 #####
108
109
110
111
112
113
114 #update()
115 #sleep(1)
116 #reset()
117 #tracer(0,0)
118
119
120 #####
121 #   Flower of 10 Squares   #
122 #####
123
124
125
126
127
128

```

```

129 #update()
130 #sleep(1)
131 #reset()
132 #tracer(0,0)
133
134
135 #####
136 #   Flower of 12 Circles   #
137 #####
138
139
140
141
142
143
144 #update()
145 #sleep(1)
146 #reset()
147 #tracer(0,0)
148
149
150 #####
151 #   Comet a.k.a. Thickening Line   #
152 #####
153
154
155
156
157
158
159 #update()
160 #sleep(1)
161 #reset()
162 #tracer(0,0)
163
164
165 #####
166 #   Box Spiral   #
167 #####
168
169
170
171
172
173
174 #update()
175 #sleep(1)
176 #reset()
177 #tracer(0,0)
178
179
180 #####
181 #   Round Spiral   #
182 #####
183

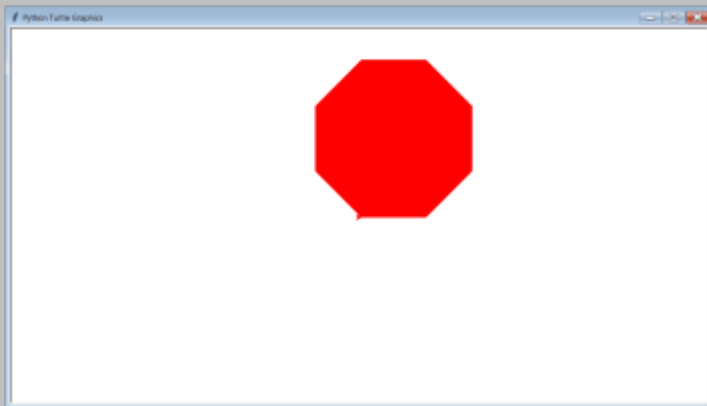
```

```
184
185
186
187
188
189
190
191
192
193 update ()
194 done ()
195
```

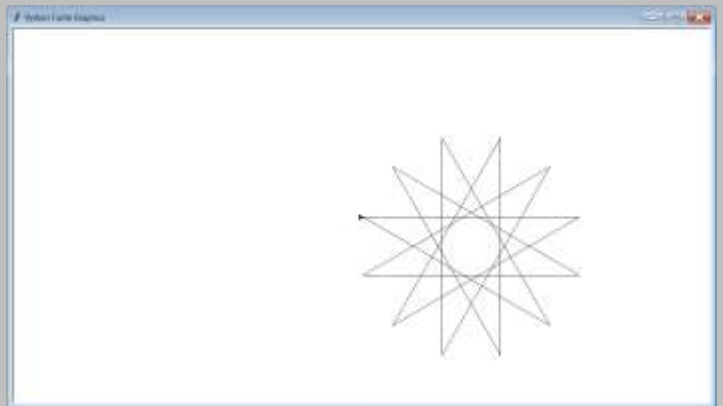
110 Point Version Specifics and Output

You need to display each of the shapes/designs below, one at a time. Remember uncomment the 4 commands after each shape/design that you finish.

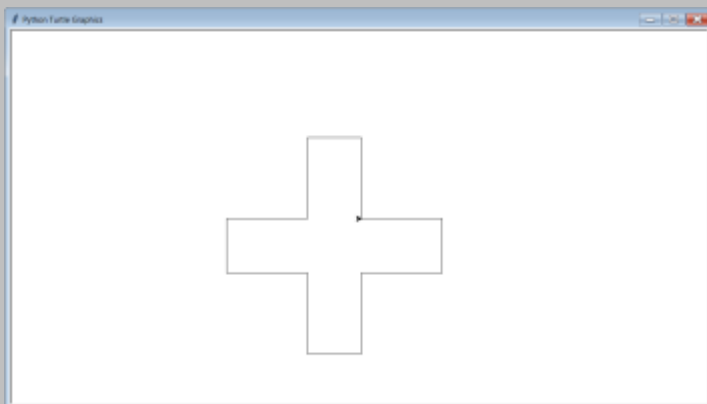
Solid Red Octagon



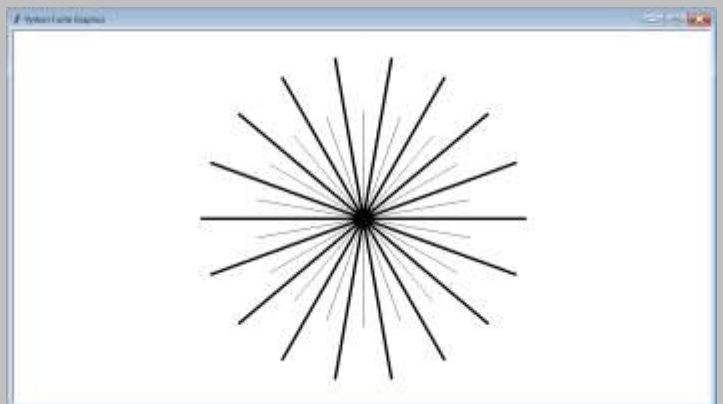
12-Point Star



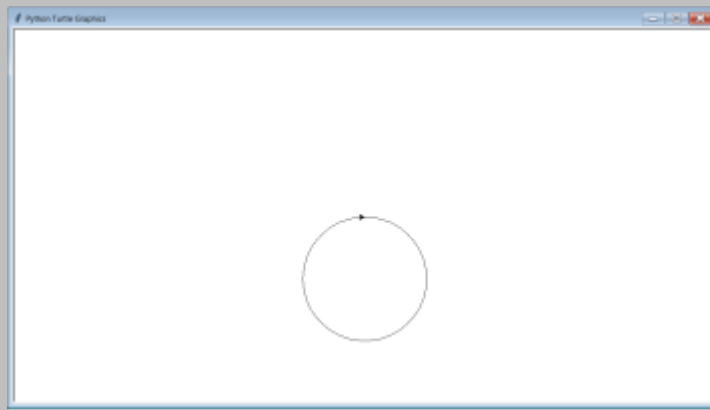
Plus Sign



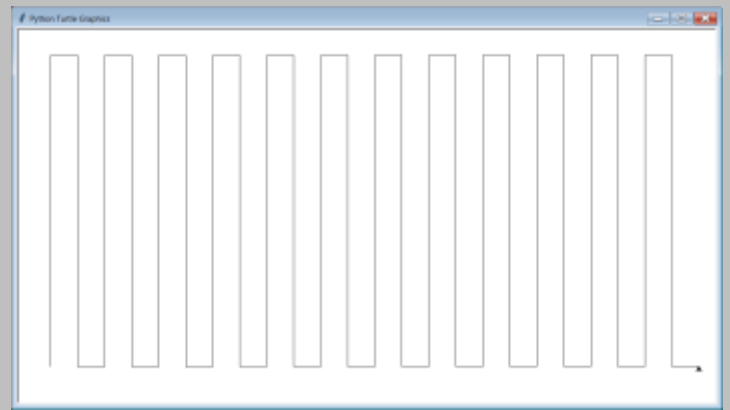
Snowflake



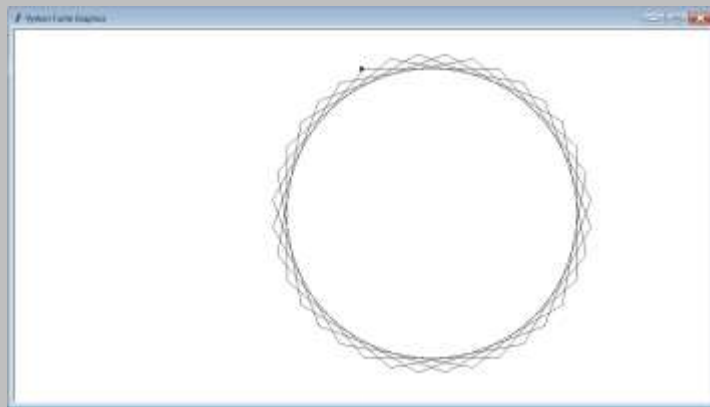
Circle



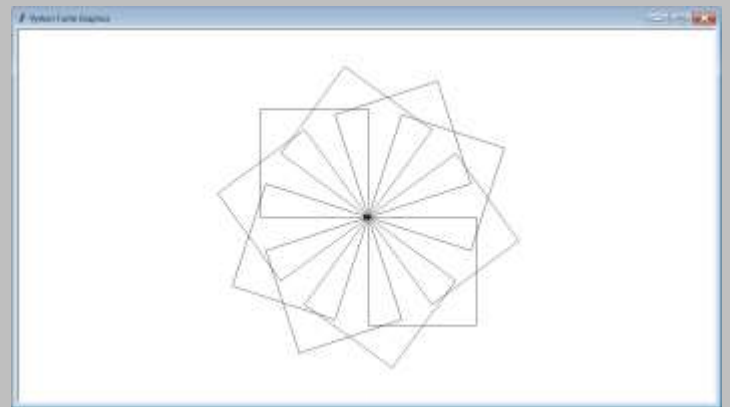
Zig-Zag



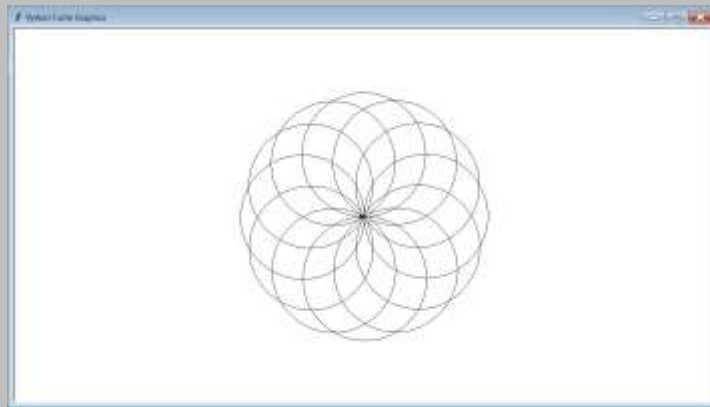
Cool Pattern



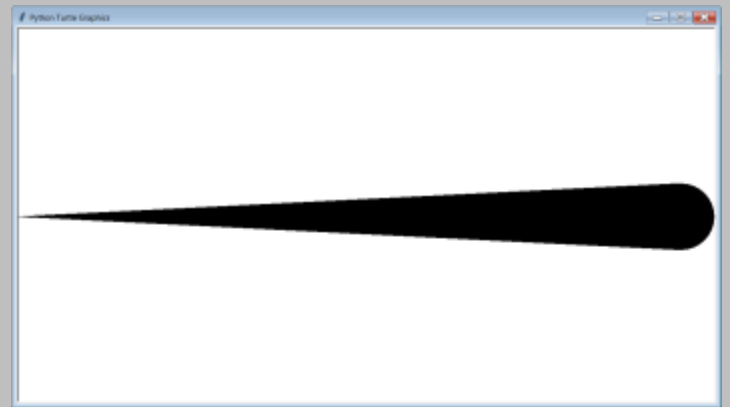
Flower of 10 Squares



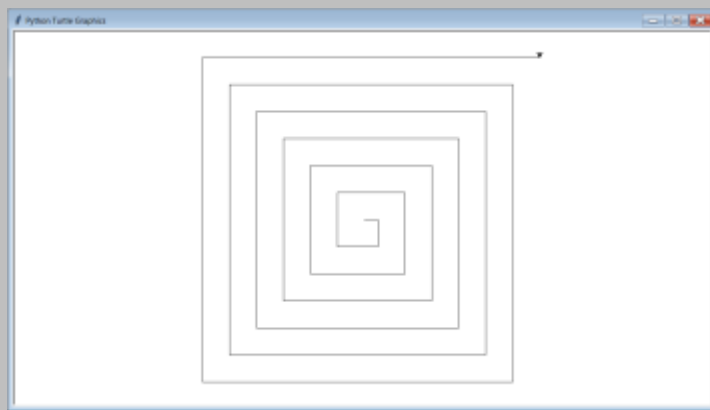
Flower of 12 Circles



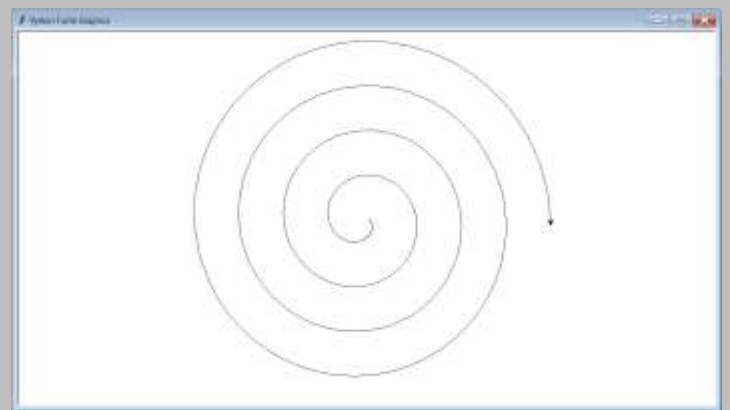
Comet a.k.a. Thickening Line



Box Spiral



Round Spiral



The following needs to be understood when doing this assignment:

1. This project will take more than one class period. You must save your work so you can continue to work on it later. It may be necessary that you work on your project at home as well.
2. You do the shapes/designs of this assignment in any order. Just make sure you put each in its proper location in the program. Regardless of the order in which you created the different shapes and designs, it will still execute in the same order (Solid Red Octagon, 12-Point Star, Plus Sign, etc.)
3. Your drawings should be similar to the drawings shown in the provided output, but they do not have to match exactly:
 - a. Your pictures may be bigger or smaller.
 - b. Your pictures may be in a different part of the screen.
 - c. Your “turtle” may have a different final resting position.
 - d. However, one thing that must match is the *orientation*. Your drawings must be rotated the same way as the drawings shown in the provided output.
4. You will only receive credit for a shape/design that is completely drawn. There is no partial credit for partially drawn shapes or designs.