Exposure CS 2021 for CS1

Chapter 8 Section 6 Slides

Combining Repetition with Traditional Graphics

PowerPoint Presentation
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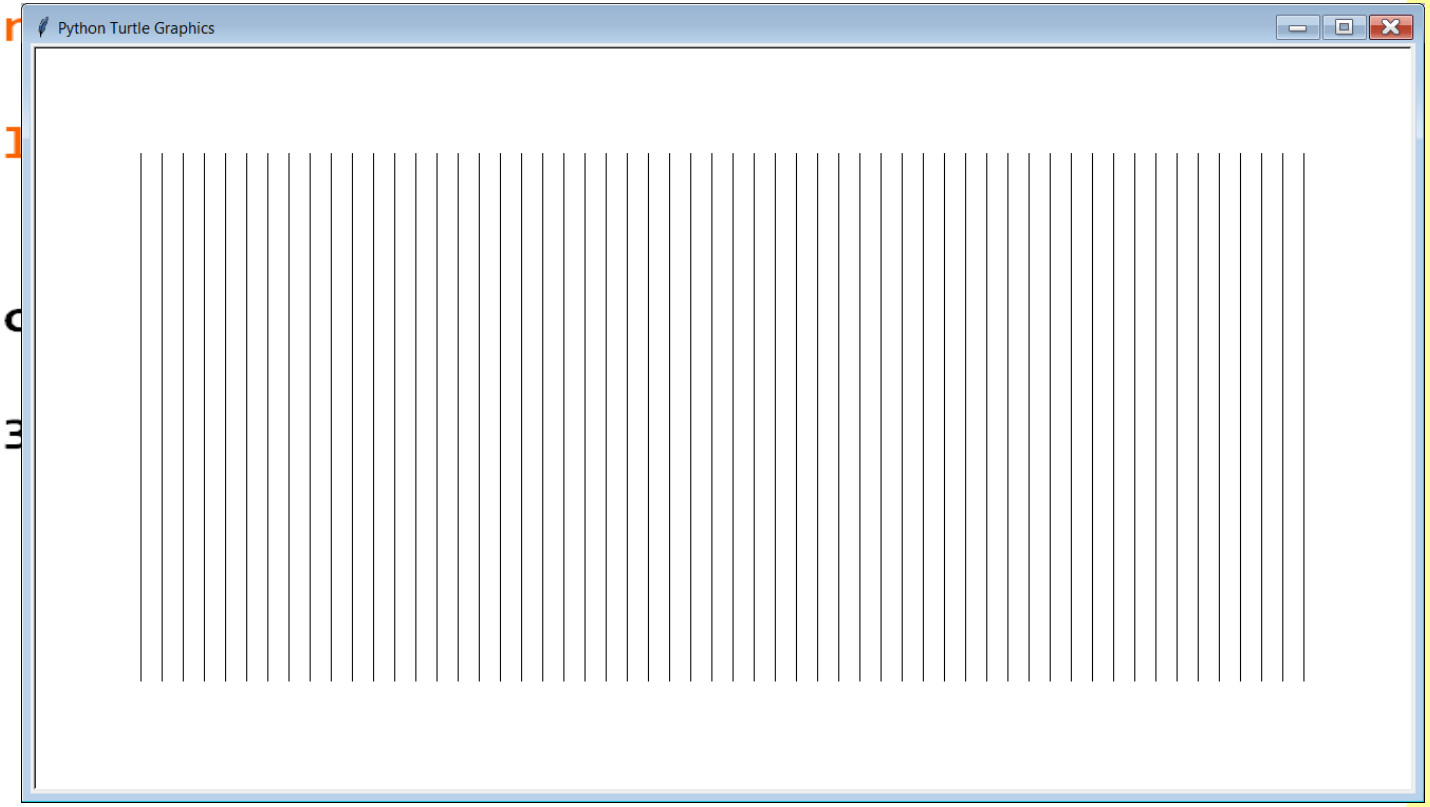
Computer Science

Section 8.6

Using Repetition with Traditional Graphics

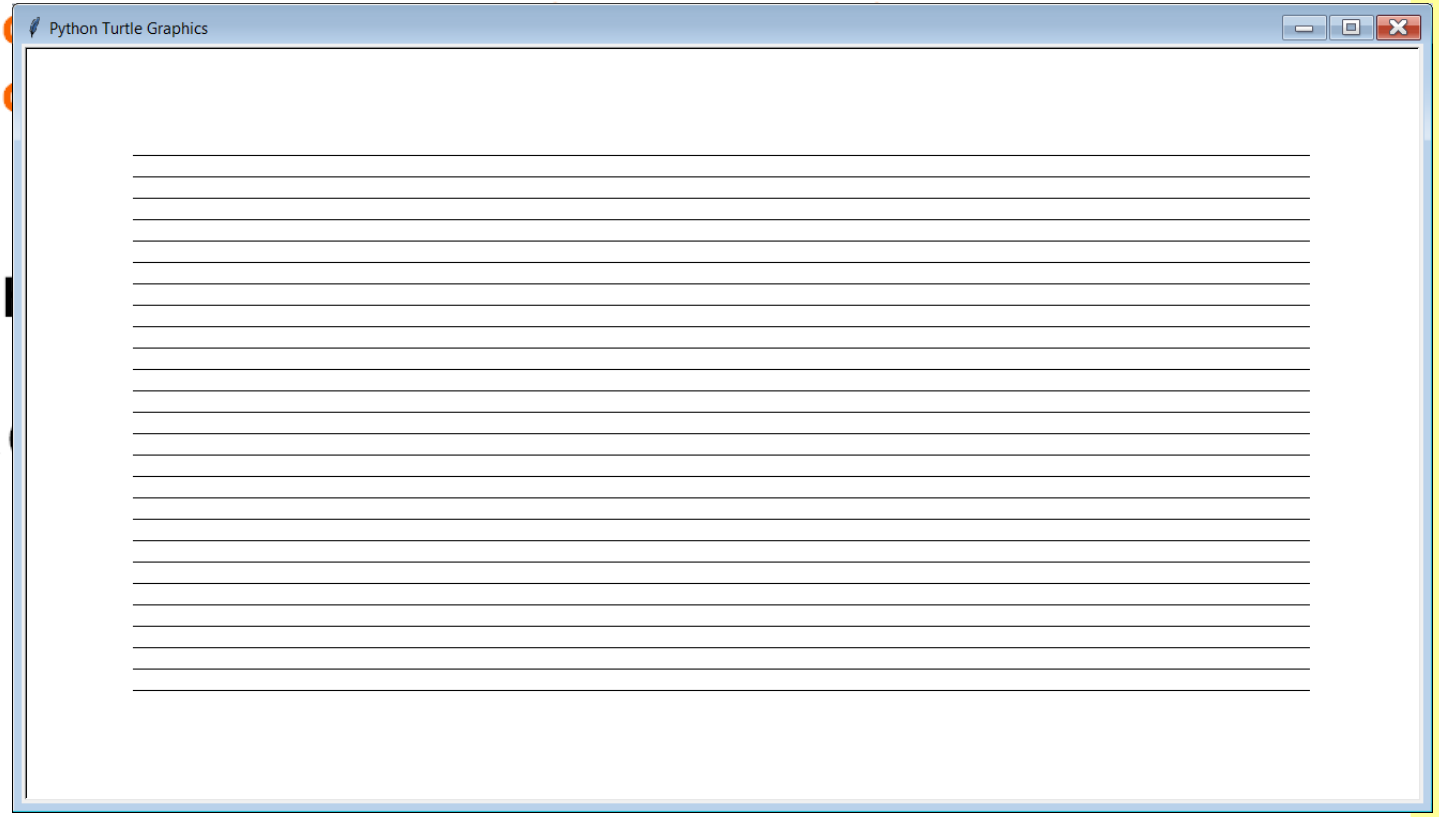
```
1  # RepetitionWithGraphics04.py
2  # This program shows how a <for> loop can also be
3  # used with traditional graphics. This program draws
4  # vertical lines because <x1> and <x2> are always equal.
5
6
7  from Graphics import *
8
9  beginGrfx(1300,700)
10
11 x1 = 100
12 y1 = 100
13 x2 = 100
14 y2 = 600
15
16 for k in range(56):
17     drawLine(x1,y1,x2,y2)
18     x1 += 20
19     x2 += 20
20
21 endGrfx()
```

```
1  # RepetitionWithGraphics04.py
2  # This progr
3  # used with
4  # vertical l
5
6
7  from Graphic
8
9  beginGrfx(13
10
11 x1 = 100
12 y1 = 100
13 x2 = 100
14 y2 = 600
15
16 for k in range(56):
17     drawLine(x1,y1,x2,y2)
18     x1 += 20
19     x2 += 20
20
21 endGrfx()
```



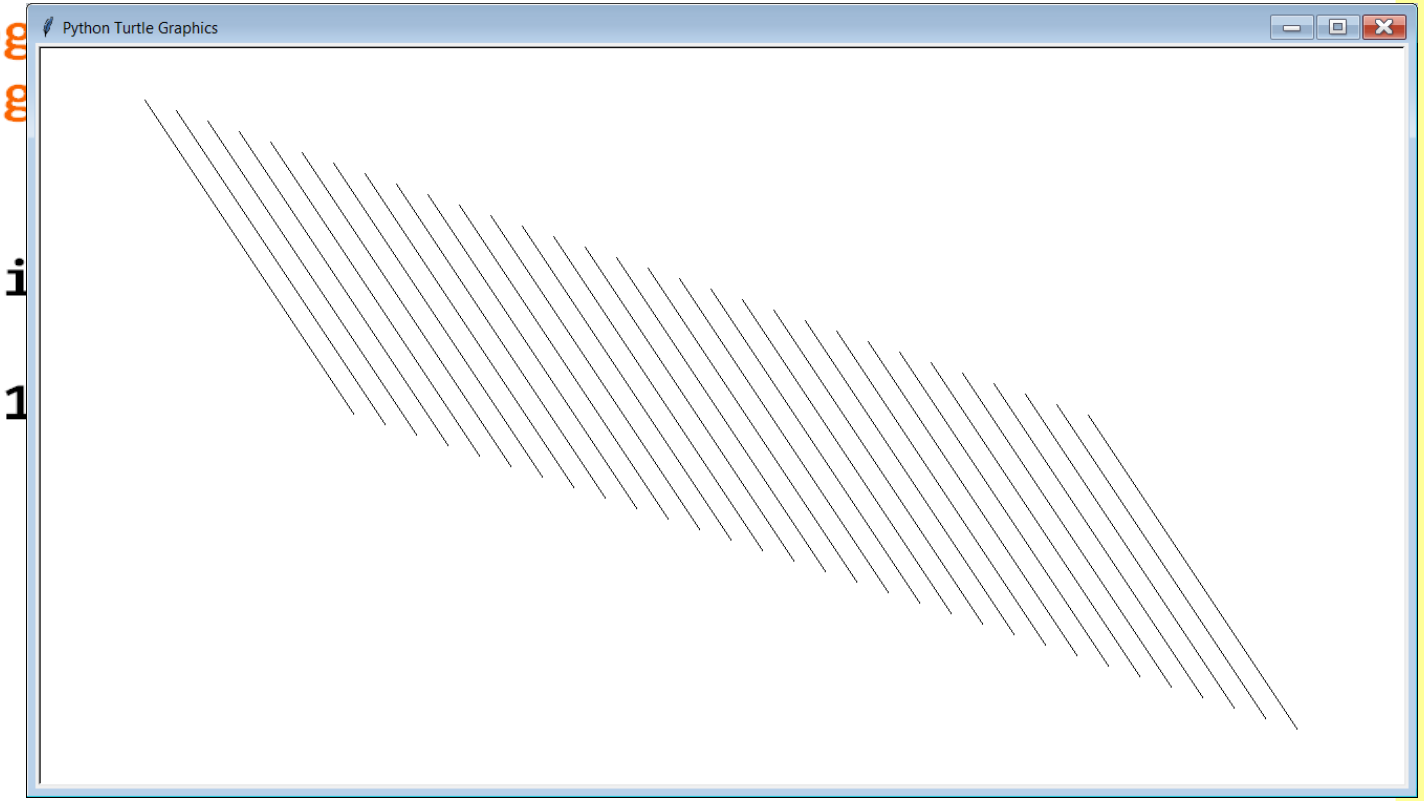
```
 1 # RepetitionWithGraphics05.py
 2 # This program draws horizontal lines because
 3 # <y1> and <y2> are always equal.
 4
 5
 6 from Graphics import *
 7
 8 beginGrfx(1300,700)
 9
10 x1 = 100
11 y1 = 100
12 x2 = 1200
13 y2 = 100
14
15 for k in range(26):
16     drawLine(x1,y1,x2,y2)
17     y1 += 20
18     y2 += 20
19
20 endGrfx()
```

```
1  # RepetitionWithGraphics05.py
2  # This pr
3  # <y1> an
4
5
6  from Grapl
7
8  beginGrfx(
9
10 x1 = 100
11 y1 = 100
12 x2 = 1200
13 y2 = 100
14
15 for k in range(26):
16     drawLine(x1,y1,x2,y2)
17     y1 += 20
18     y2 += 20
19
20 endGrfx()
```



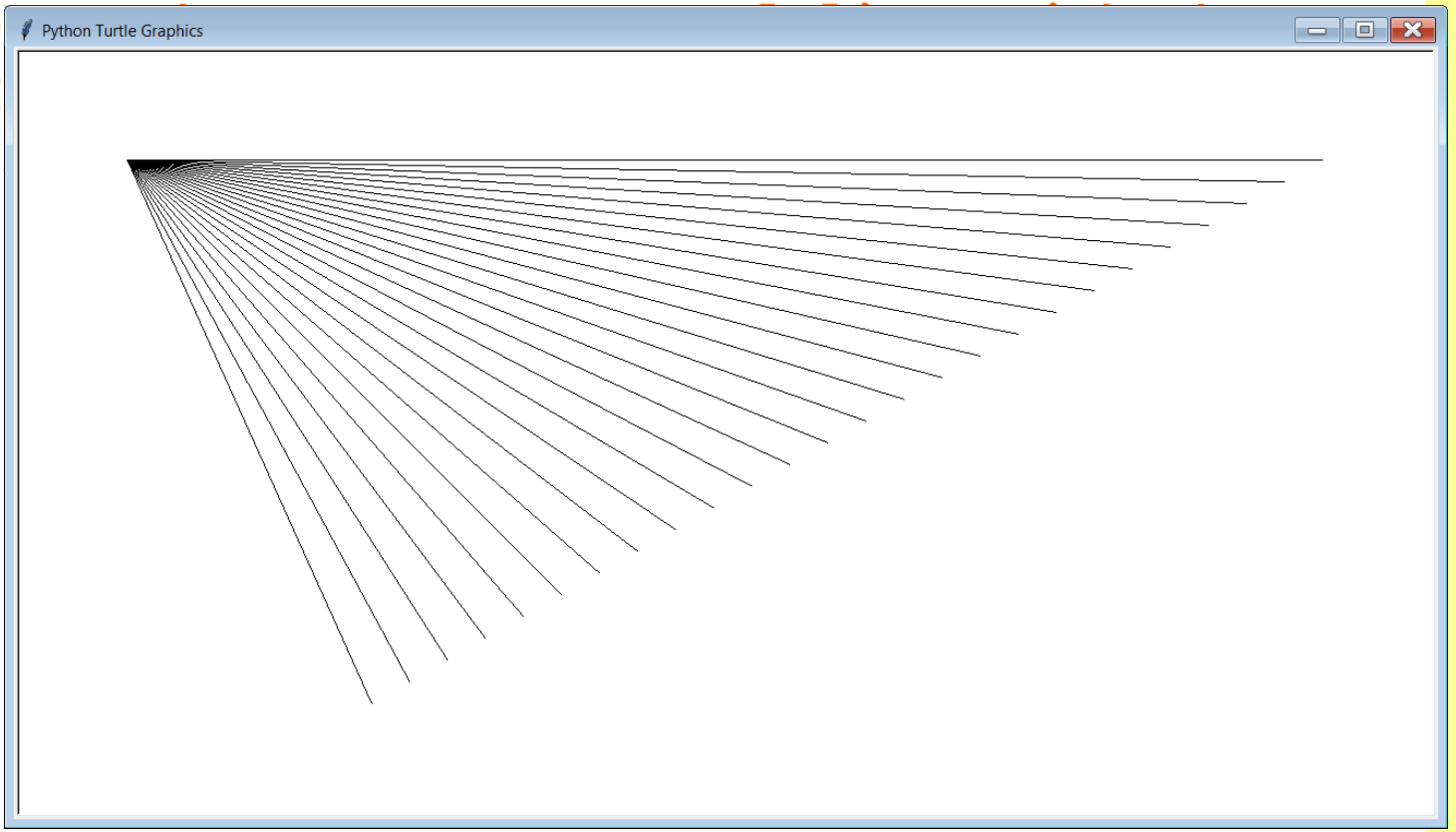
```
 1 # RepetitionWithGraphics06.py
 2 # This program draws parallel diagonal lines
 3 # and changes all 4 variables.
 4
 5
 6 from Graphics import *
 7
 8 beginGrfx(1300,700)
 9
10 x1 = 100
11 y1 = 50
12 x2 = 300
13 y2 = 350
14
15 for k in range(31):
16     drawLine(x1,y1,x2,y2)
17     x1 += 30
18     x2 += 30
19     y1 += 10
20     y2 += 10
21
22 endGrfx()
```

```
 1 # RepetitionWithGraphics06.py
 2 # This prog
 3 # and chang
 4
 5
 6 from Graphi
 7
 8 beginGrfx(1
 9
10 x1 = 100
11 y1 = 50
12 x2 = 300
13 y2 = 350
14
15 for k in range(31):
16     drawLine(x1,y1,x2,y2)
17     x1 += 30
18     x2 += 30
19     y1 += 10
20     y2 += 10
21
22 endGrfx()
```



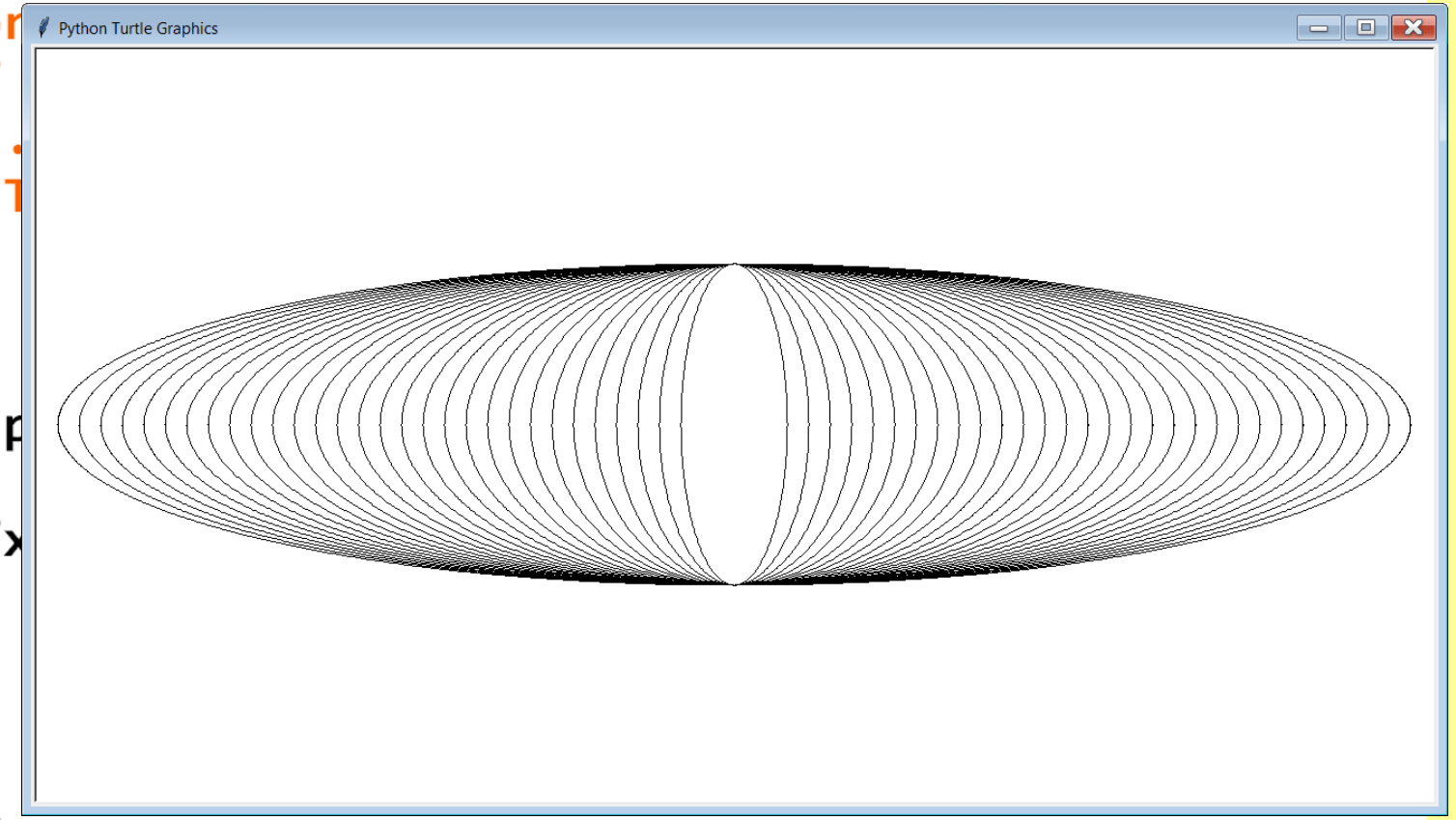
```
 1 # RepetitionWithGraphics07.py
 2 # This program demonstrates several lines with the same
 3 # starting point. In this case the (x1,y1) coordinate
 4 # stays fixed while the (x2,y2) point changes.
 5
 6
 7 from Graphics import *
 8
 9 beginGrfx(1300,700)
10
11 x1 = 100
12 y1 = 100
13 x2 = 1200
14 y2 = 100
15
16 for k in range(26):
17     drawLine(x1,y1,x2,y2)
18     x2 -= 35
19     y2 += 20
20
21 endGrfx()
```

```
 1 # RepetitionWithGraphics07.py
 2 # This pro
 3 # starting
 4 # stays fi
 5
 6
 7 from Graph
 8
 9 beginGrfx(
10
11 x1 = 100
12 y1 = 100
13 x2 = 1200
14 y2 = 100
15
16 for k in range(26):
17     drawLine(x1,y1,x2,y2)
18     x2 -= 35
19     y2 += 20
20
21 endGrfx()
```



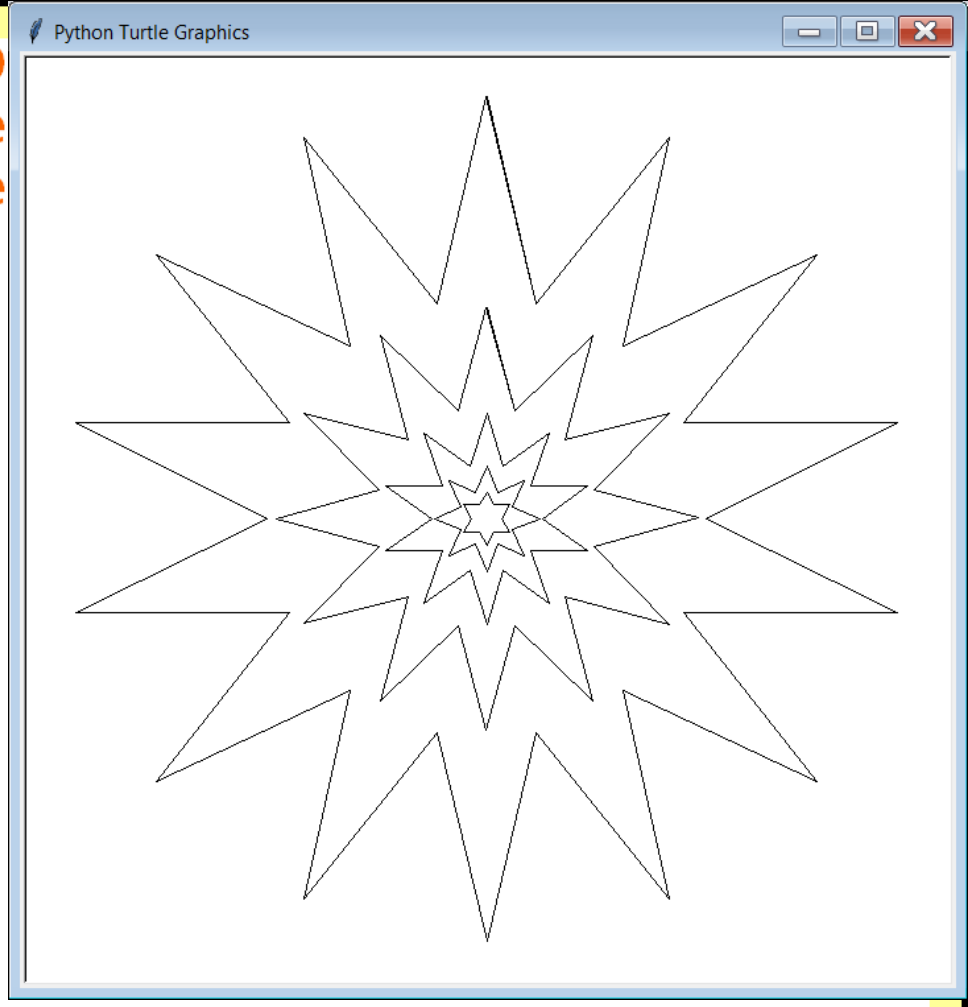
```
 1 # RepetitionWithGraphics08.py
 2 # This program demonstrates several ovals.
 3 # All of the ovals have the same center and vertical
 4 # radius.  The horizontal radius keeps growing.
 5 # NOTE: There may be a little delay in the display
 6 # of the output.
 7
 8
 9 from Graphics import *
10
11 beginGrfx(1300,700)
12
13 x = 650
14 y = 350
15 hr = 50
16 vr = 150
17
18 for k in range(30):
19     drawOval(x,y,hr,vr)
20     hr += 20
21
22 endGrfx()
```

```
 1 # RepetitionWithGraphics08.py
 2 # This pr
 3 # All of
 4 # radius.
 5 # NOTE: T
 6 # of the
 7
 8
 9 from Grap
10
11 beginGrfx
12
13 x = 650
14 y = 350
15 hr = 50
16 vr = 150
17
18 for k in range(30):
19     drawOval(x,y,hr,vr)
20     hr += 20
21
22 endGrfx()
```

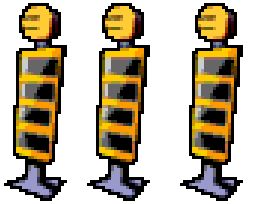


```
 1 # RepetitionWithGraphics09.py
 2 # This program demonstrates several concentric stars.
 3 # Each new star has 2 more points and double the radius
 4 # of the previous star.
 5
 6
 7 from Graphics import *
 8
 9 beginGrfx(700,700)
10
11 x = 350
12 y = 350
13 r = 20
14 p = 6
15
16 for k in range(5):
17     drawStar(x,y,r,p)
18     p += 2
19     r *= 2
20
21 endGrfx()
```

```
 1 # RepetitionWithGraphics09
 2 # This program demonstrate
 3 # Each new star has 2 more
 4 # of the previous star.
 5
 6
 7 from Graphics import *
 8
 9 beginGrfx(700,700)
10
11 x = 350
12 y = 350
13 r = 20
14 p = 6
15
16 for k in range(5):
17     drawStar(x,y,r,p)
18     p += 2
19     r *= 2
20
21 endGrfx()
```



Lab 8B



What you saw in the past 6 program examples relates directly to what you will be doing in Lab 8B.