

Python on Trinket – Lesson 2

Review

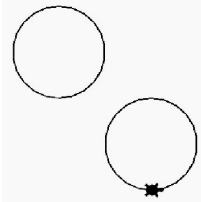
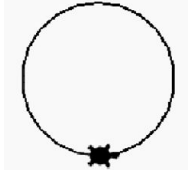
- X/Y axes & coordinates
- Pen up, pen down
- Begin fill, end fill

Discussion

- **import turtle**
 - Allows us to use the turtle library, with its various functions to help us create shapes.
- **Functions**
 - A block of organized, reusable code that is used to perform a certain action
 - Built-in functions: written within the Python library
 - Sometimes calling a function is all that is needed.
 - i.e. turtle.penup()
 - Sometimes functions need additional information passed in by the user (input)
 - i.e. turtle.color("color")
 - User-defined functions (later): written by the programmer
- **Comments**
 - `# this is a single-line comment`
 - `''' this is a
Multi-line
Comment '''`
 - Code that is not run by the program
 - Use comments according to your own programming style. Comments are less for the user, and more about providing helpful information to you as the programmer. For example,
 - Comments may be used above a block of code to remind yourself what that code does. Now when you review your program, you will not need to read every line to remember its purpose.

```
# this function creates a snowman  
Lines of code to make a snowman...  
Lines of code to make a snowman...
```

- If there is a line of code that you want to keep, but you would like to test the program without that line being run by the program, you may comment out that line. When you want to bring the line back to be run by the program, remove the #.

<pre>turtle.circle(50) turtle.penup() turtle.goto(100, -100) turtle.pendown() turtle.circle(50)</pre>	
<p>Let's see what happens if we don't change our x and y positions...</p>	
<pre>turtle.circle(50) turtle.penup() #turtle.goto(100, -100) turtle.pendown() turtle.circle(50)</pre>	

- **Errors**

- o Python does its best to tell you what is wrong with your code by providing error statements.
- o It is the programmer's job to debug (find the problem and fix it)
- o i.e.

<pre>11 noexist.penup()</pre>
<pre>NameError: name 'noexist' is not defined on line 11 in main.py</pre>

Common Commands

<pre>import turtle</pre>	<pre>turtle.circle(size)</pre>
<pre>x = turtle.Turtle() / import turtle as x</pre>	<pre>turtle.right(degrees) / turtle.left(degrees)</pre>

<code>turtle.shape("shape")</code>	<code>turtle.forward(length) / turtle.backward(length)</code>
<code>turtle.penup() / turtle.pendown()</code>	<code>turtle.speed(speed)</code>
<code>turtle.pencolor("color") / turtle.fillcolor("color") / turtle.pencolor(r,g,b)</code>	<code>turtle.width(width)</code>
<code>turtle.goto(x,y)</code>	<code>turtle.begin_fill() / turtle.end_fill()</code>

Initialize program

<code>import turtle</code>
<code>import random</code>
<code>t = turtle.Turtle()</code>
<code>t.shape("turtle")</code>
<code>t.speed(speed)</code>

Practice

- Create a snowflake arm

Snowflake Arm	
<pre> turtle.shape("turtle") turtle.pendown() turtle.forward(50) turtle.left(45) turtle.forward(50) turtle.backward(50) turtle.right(45) turtle.forward(50) turtle.backward(50) turtle.right(45) turtle.forward(50) turtle.backward(50) turtle.right(135) turtle.forward(50) </pre>	