



10/30/07

>>> Overview

- * boolean
- * randomness
- * while
- * tuples



>>> boolean

Just like Java, there are boolean values.
These values are True and False.

True
False

<
>
<=
>=
==
!=
or
and
not
in

```
>>> True
True
>>> False
False
>>> 2==3
False
>>> "this"=="this"
True
>>> 2==3 and 4==4
False
>>> "milk" in ["milk","cookies"]
True
>>> x = not 1 == 2
>>> x
True
```



>>> random

Just like in Java, python also has random object. Here is an example:

```
>>> import random
>>> random.randint(0,9)
1
>>> random.choice(range(10))
7
>>> x = [1,2,3,4]
>>> x
[1, 2, 3, 4]
>>> random.shuffle(x)
>>> x
[2, 3, 4, 1]
```

random.randint(a,b)

returns an int between a and b inclusive

random.choice(seq)

returns a random element of the sequence

random.shuffle(seq)

shuffles a sequence in place (doesn't return it)



>>> while

Loops in python are easy. The while loop translates easily from Java to python.

sentinel.py

```
1 sum = 0
2 input_number = 1
3 while input_number != 1:
4     input_number = input("Number? ")
5     sum += input_number
6 print "The total was " + str(sum)
7
8
9
10
```

Sentinel.java

```
1 Scanner console = new Scanner(System.in);
2 int sum = 0;
3 int inputNumber = 1;
4 while (inputNumber != -1) {
5     System.out.print("Enter a number (-1 to quit): ");
6     inputNumber = console.nextInt();
7     sum += inputNumber;
8 }
9 System.out.println("The total was " + sum);
10
```



>>> dictionaries as points

One of the biggest challenges with coding points is that two values need to be bundled together. The best type for this is the `dict`, short for dictionary, which is also known as a map or hash. While it is not a point it can hold our values with names. However, because it is not a point we cannot call `.distance` or `.translate`. In your port to Python you'll have to write functions of your own to do this.

A whaa?

dictionary - an object which stores a value under a unique key

dicts.py

```
1 p = {"x":2, "y":3}
2 # {<key>:<value>, ...}
3
4 p["x"]+=1
5 print p
6 # {'y': 3, 'x': 3}
7
8 def distance(p1,p2):
9     # ???
10    pass
```



>>> while random boolean

```
scott @ yossarian ~ $ python rps.py
```

```
Welcome to Scott's rock-paper-scissors trainer. You can enter r, p or s for rock, paper and scissors appropriately. If you slip up and type anything else though you'll lose. How many games will it take you to get three in a row?
```

```
Attack? r
```

```
Loss: paper beats rock
```

```
Attack?
```

```
Attack? p
```

```
Win: paper beats rock
```

```
Attack? s
```

```
Tie
```

```
Attack? s
```

```
Win: scissors beats paper
```

```
Attack? r
```

```
Tie
```

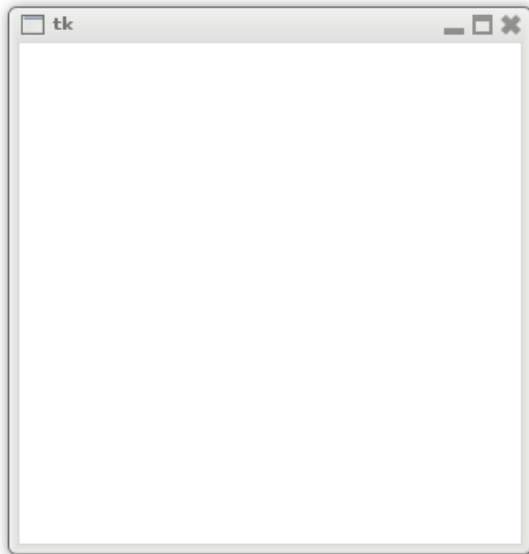
```
Attack? r
```

```
Win: rock beats scissors
```

```
Congrats it took you 6 games.
```



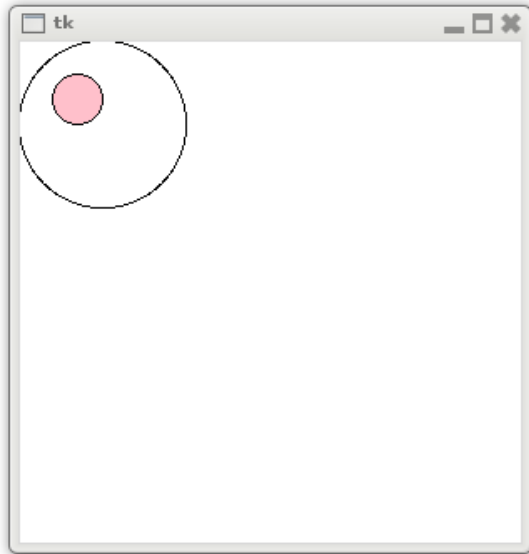
>>> graphics review



graphics.py

```
1 from drawingpanel import *
2
3 p = DrawingPanel(300,300)
4 g = p.getGraphics()
5 # draw stuff here
6
7
8 p.show()
9
10
```

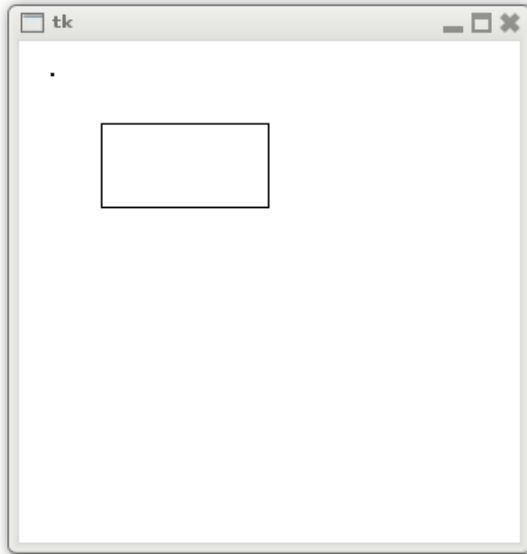

>>> circles



graphics.py

```
1 from drawingpanel import *
2
3 p = DrawingPanel(300,300)
4 g = p.getGraphics()
5
6 g.create_oval(0,0,100,100)
7 g.create_oval(20,20,50,50,fill="pink")
8
9 p.show()
10
```

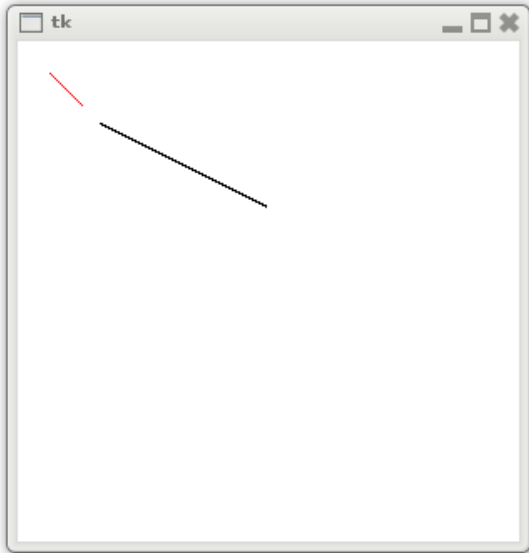
>>> rectangles



graphics.py

```
1 from drawingpanel import *
2
3 p = DrawingPanel(300,300)
4 g = p.getGraphics()
5
6 #             x1,y1,x2 ,y2
7 g.create_rectangle(50,50,150,100)
8 g.create_rectangle(20,20,21,21)
9
10 p.show()
```

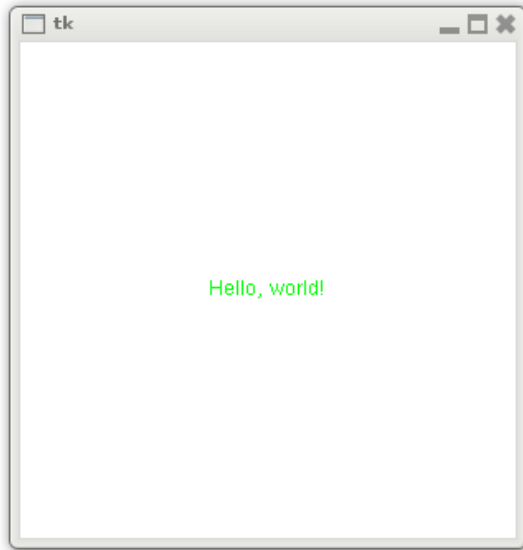
>>> lines



graphics.py

```
1 from drawingpanel import *
2
3 p = DrawingPanel(300,300)
4 g = p.getGraphics()
5
6 #             x1,y1,x2 ,y2
7 g.create_line(50,50,150,100)
8 g.create_line(20,20,40,40,fill="red")
9
10 p.show()
```

>>> text



graphics.py

```
1 from drawingpanel import *
2
3 p = DrawingPanel(300,300)
4 g = p.getGraphics()
5
6 #             x1,y1 (center)
7 g.create_text(150,150,text="Hello,wor
8 ld",fill="green")
9
10 p.show()
```



© 2007 Scott Shawcroft, Some Rights Reserved

Except where otherwise noted, this work is licensed under
<http://creativecommons.org/licenses/by-nc-sa/3.0>

Python® and the Python logo are either a registered trademark or trademark of the Python Software Foundation. Java™ is a trademark or registered trademark of Sun Microsystems, Inc. in the United States and other countries.