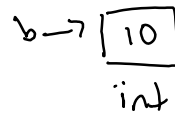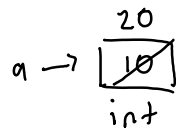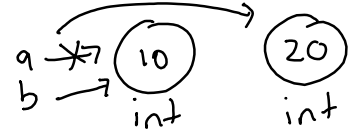## Intro

Sunday, August 27, 2017 4:43 PM

Language: Python (version 3) - python.org
IDE : PyCharm (jetbrains.org) ⟶ IntelliJ (Java)

Python Types:

- In Java - statically typed, e.g. $int\ x = 0;$
- In Python - dynamically type, e.g. $x = 0$

int

```
>>> x = 0
>>> x
0
>>> type(x)
<class 'int'>
>>> a = 10
>>> b = a
>>> a = 20
>>> a
20
>>> b
10
```

Java :

Python

float

```
>>> a = 10.5
>>> a
10.5
>>> type(a)
<class 'float'>
```

string

```
>>> s1 = 'single quote'
>>> s1
'single quote'
>>> s2 = "double quote"
```

```
>>> s2 = "double quote"
>>> s2
'double quote'
>>> 'he said "hello!"'
'he said "hello!"'
>>> s3 = """"""
>>> s3 = """
... line 1
... line 2
... """
>>> s3
'\nline 1\nline 2\n'
```

conversion functions :

```
>>> a = '10.5'
>>> type(a)
<class 'str'>
>>> int(a)
Traceback (most recent call last):
  File "<input>", line 1, in <module>
ValueError: invalid literal for int() with base 10: '10.5'
>>> float(a)
10.5
>>> int('30')
30
>>> str(10.5)
'10.5'
>>> int(10.5)
10
>>> 3 / 2
1.5
```

```
>>> "I am" + 35 + " years old"
Traceback (most recent call last):
  File "<input>", line 1, in <module>
TypeError: Can't convert 'int' object to str implicitly
>>> age = 35
>>> "I am " + str(age)
'I am 35'
```

```
>>> age = input('Enter age: ')
Enter age: >? 43
```
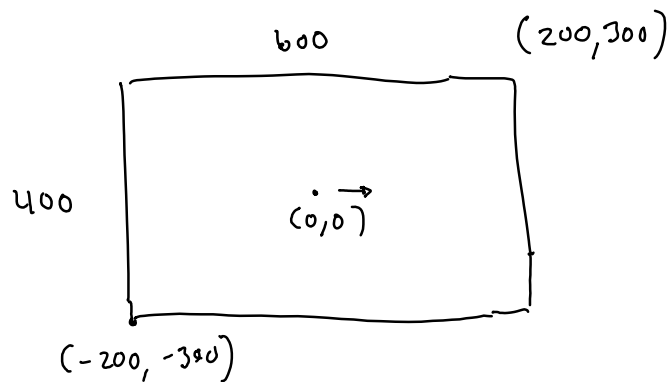
```
>>> age
'43'
>>> age = int(input('Enter age: '))
Enter age: >? 40
>>> age
40
```
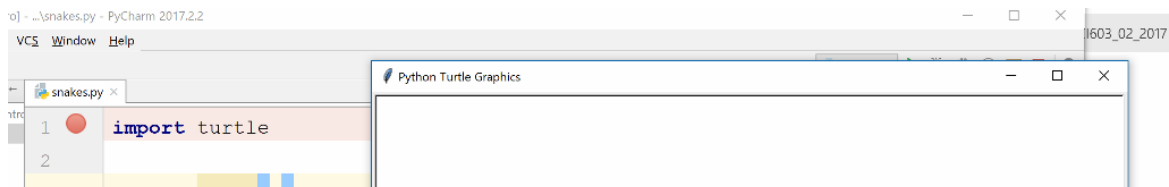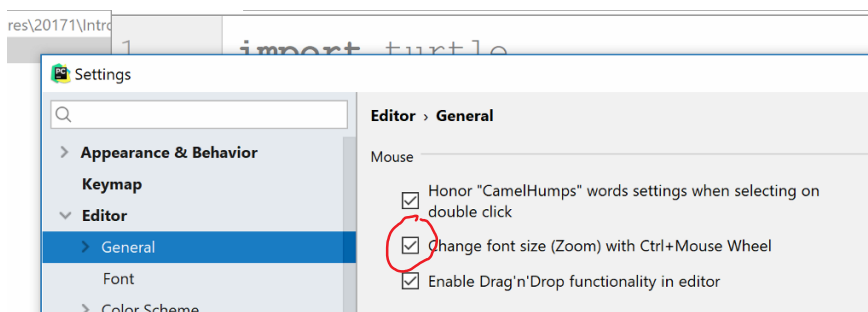
Modules/Packages

```
>>> import math
>>> math.cos(65)
-0.562453851238172
>>> from math import *
>>> cos(10)
-0.8390715290764524
```

Turtle

- simple line drawing, 2-D
- default

600

(200,300)

400

(0,0)

(-200, -300)

x,y
position: (0,0)
heading: ∅ (east)
down

```
 3      turtle.speed(0)
 4      turtle.forward(100)
 5      turtle.left(90)
 6      turtle.forward(100)
 7      turtle.right(180)
 8      turtle.forward(200)
 9      turtle.up()
10      turtle.forward(100)
11      turtle.down()
12      turtle.circle(100)
13
14      turtle.mainloop()
```

.\Local\Programs\Python\Python3