Programming in Python for Beginners

Marie Dedikova & Ines Guett

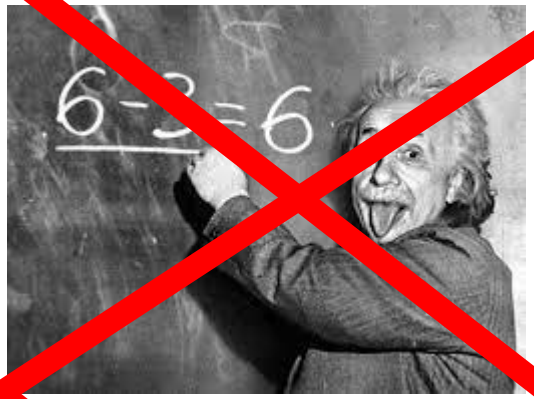
Plan for the day

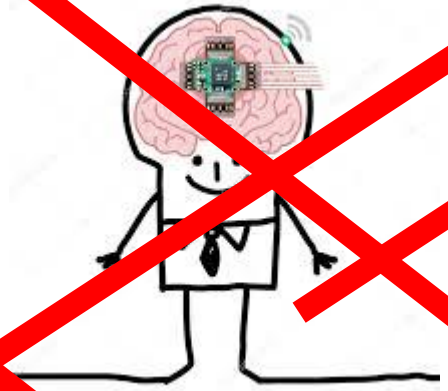
1. Intro
2. First Steps in Python
3. Write your own game

Lunch!

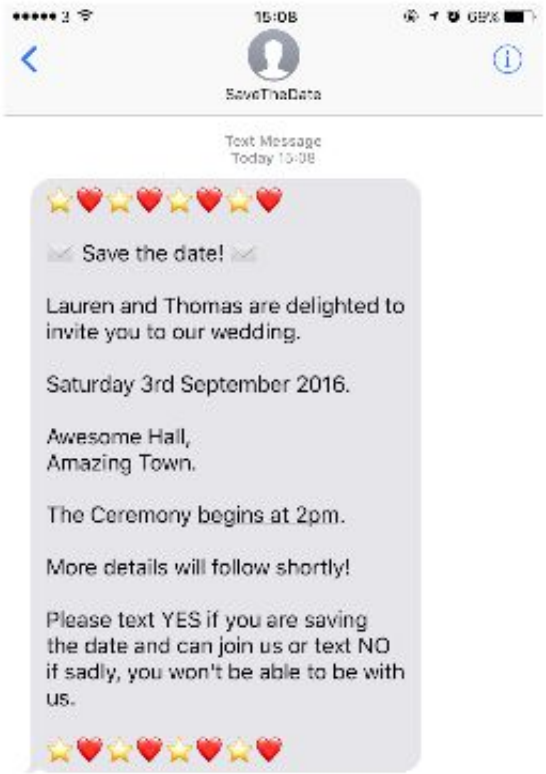
4. Some more basics
5. Improve your game
6. What’s next

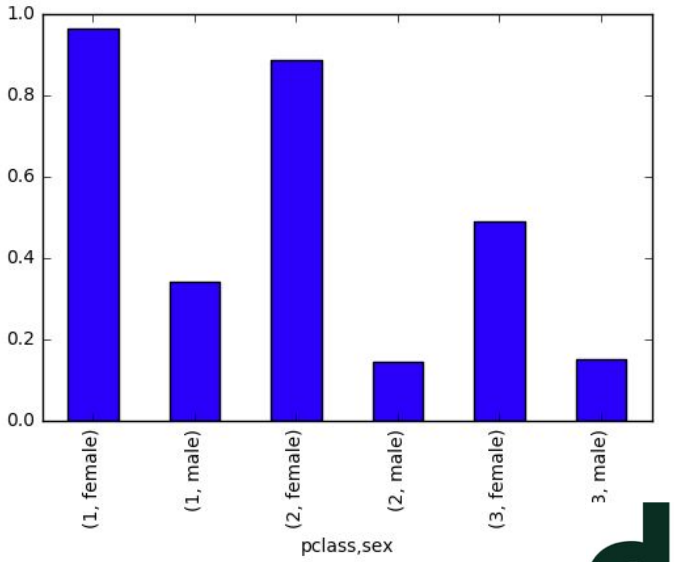
Prerequisites





What is Python Good for





django

Do not copy - paste!!!

Writing CODE is understanding!

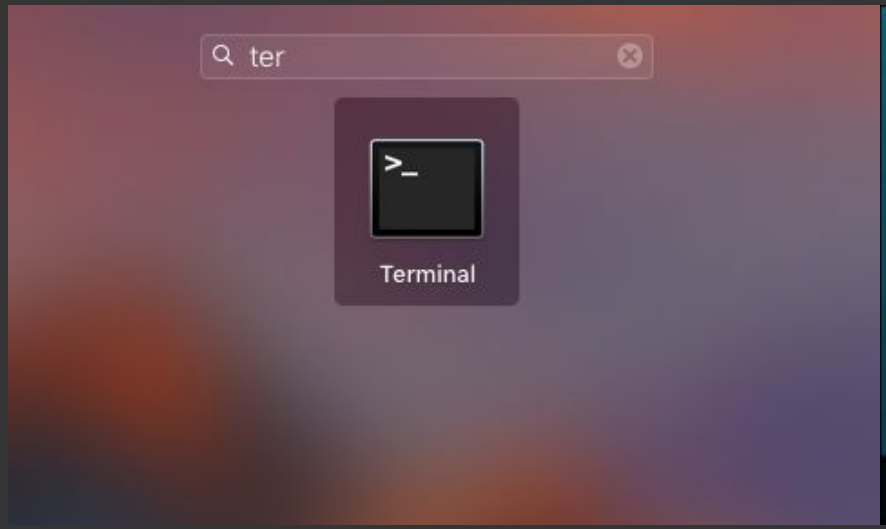
It is ok not to understand!

1. You will understand later
2. Most programmers do not know too.

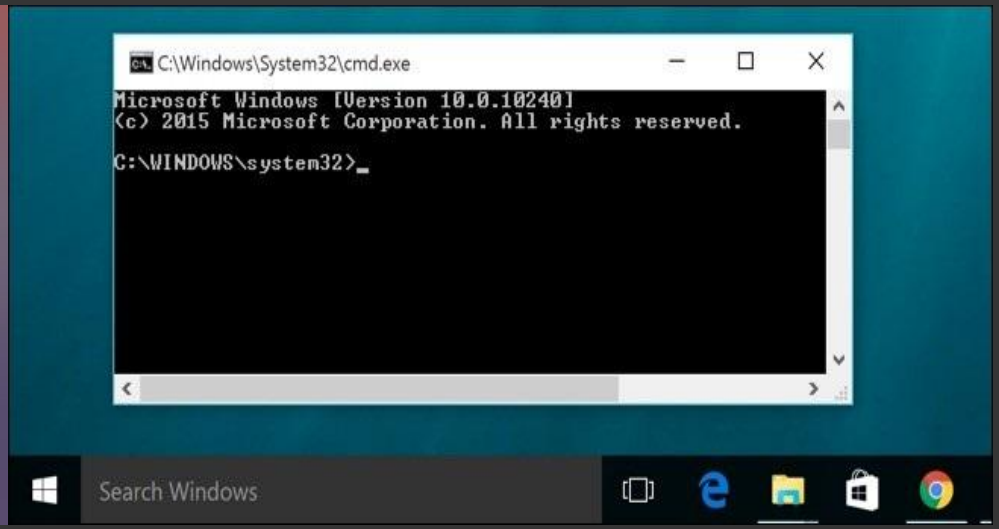
Let's write some code!

Go to your Terminal

Mac

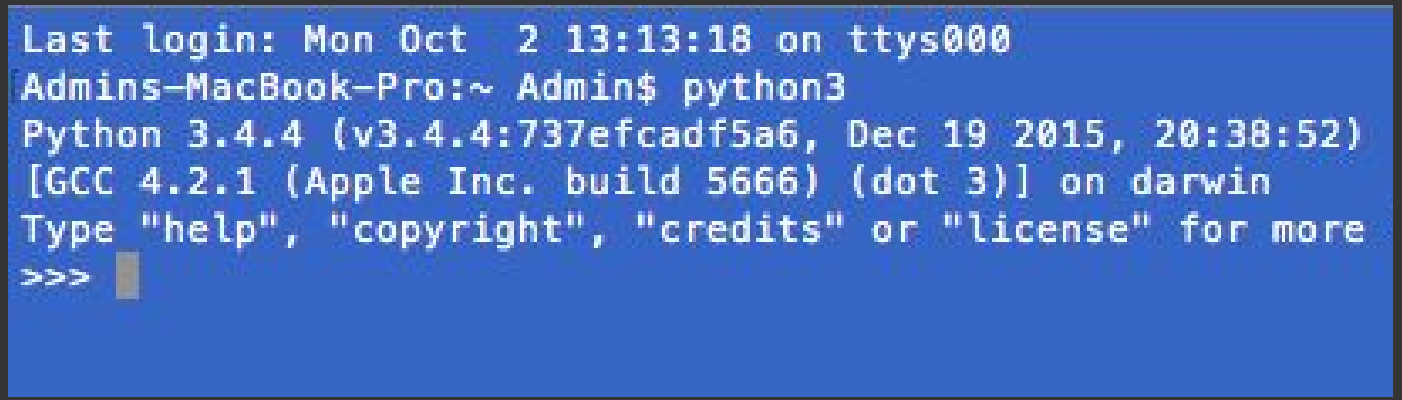


Win



Type python3/python

Mac & Win



Printing & Strings

```
print(“Hello World”)
```

```
name = "Marie"
print("Hello %s" % (name))
```

Variables

```
my_variable = “coffee”
print(my_variable)


my_variable * 4
my_variable.upper()
```

Simple Math

```
dogs = 4
cats = 3
snakes = 2

total = dogs + cats + snakes
print(total)


# But the weather was weird and 3x more snakes were born.
snakes = 3 * snakes
dogs = dogs - 3
```

Compare Things

```
4 > 2
5 < 1
1 == 1
5 != 2

6 >= 12 / 2
5 <= 6

6 > 2 and 2 < 3
6 > 2 and 2 > 3
6 > 2 or 2 > 3
```

Boolean - True or False

```
a = True
a
```

```
b = 2 > 5
b
```

```
True and True
False and True
True or 1 != 1
```

Errors are friends! :)

```
len(23493)

city = “Tokyo”
print(ctyi)

print(flower)
3 > “Python”
```

IF Statements

```
people = 20
cats = 5

# Try this:
if people > cats:
print("The world is boring!")
# Do you get an error? Why?
```

ELSE Condition

```
cats += 20


if people > cats:
    print("The world is boring!")
else:
    print(“Ohh, way too many cats!”)
```

ELIF Condition

```
volume = 38

if volume < 20:
    print("It's kinda quiet.")
elif 20 <= volume < 40:
    print("It's nice for background music")
else:
    print("My ears are hurting! :(")
```

Let's use a code editor!

Ways of Writing </>

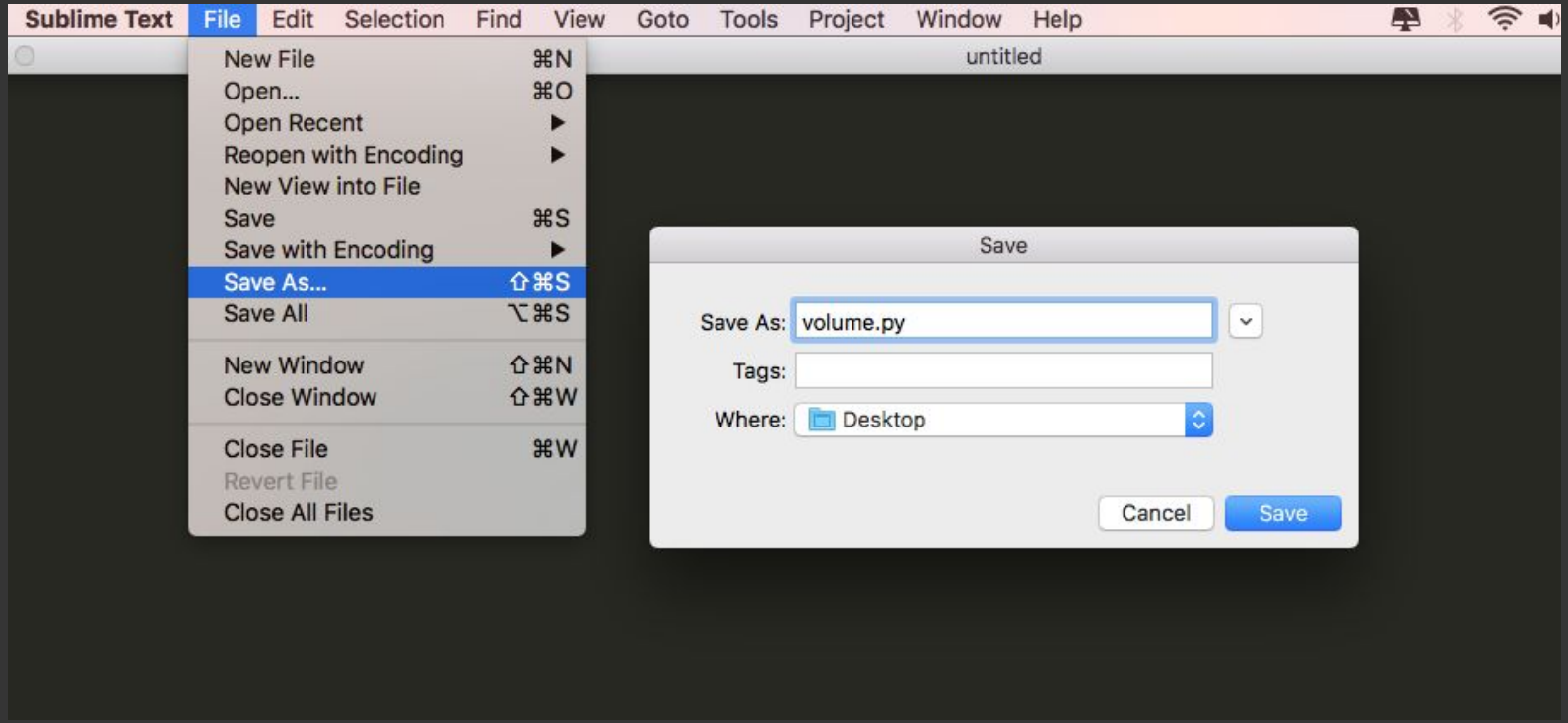
IN TERMINAL:

```
(test-env) MacBook-Air:test mariededikova$ python
Python 3.6.1 (default, Jul  4 2017, 14:32:26)
[GCC 4.2.1 Compatible Apple LLVM 8.0.0 (clang-800.0.42.1)] on darwin
Type "help", "copyright", "credits" or "license" for more information.
>>> print("Hello World!")
Hello World!
>>>
```

IN CODE EDITOR:

```python
from django.db import models


class Role(models.Model):
    name = models.CharField(max_length=30)

    def __str__(self):
        return self.name


class Address(models.Model):
    street = models.CharField(max_length=40)
    house_number = models.CharField(max_length=40)
    post_code = models.IntegerField()
    city = models.CharField(max_length=30)
    country = models.CharField(max_length=20)


class Person(models.Model):
    first_name = models.CharField(max_length=30)
    last_name = models.CharField(max_length=30)
    roles = models.ManyToManyField(Role, related_name="people")
    address = models.ForeignKey(Address, null=True)

    def __str__(self):
        return '{} {}'.format(self.first_name, self.last_name)
```

Open Sublime



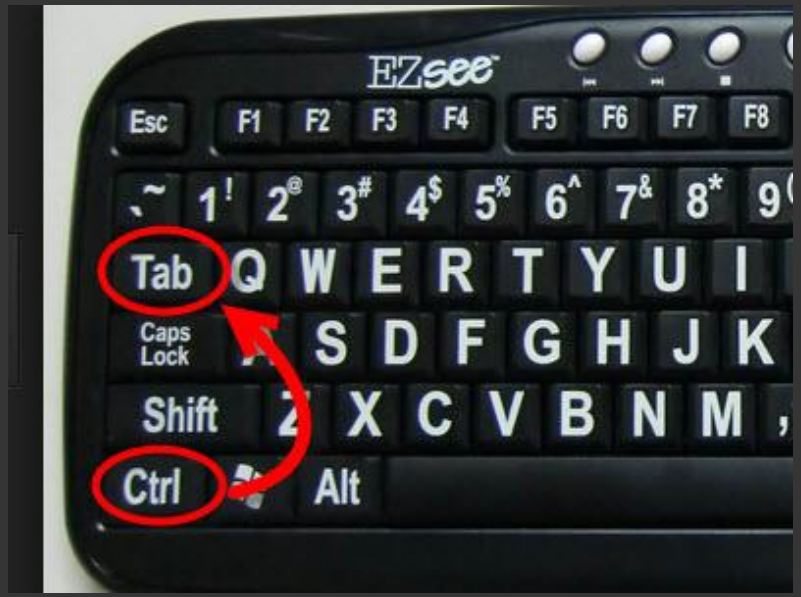
Write This + Save:

```
print("The world is beautiful! Enjoy the sound!")
```

Switch Like a Pro!

Mac

Win



Change Directory

Mac

Change directory: OS X

On a Mac, the command will look something like this:

command-line

```
$ cd ~/Desktop
```

Win

Change directory: Windows Powershell

And on Windows Powershell, it will be like this:

command-line

```
> cd $Home\Desktop
```

Execute the File

Mac

```
$ python3 volume.py
```

Win

```
> python volume.py
```

Write This + Save:

```
print("The world is beautiful! Enjoy the sound!")

input(“What is your favorite song? ”)


song = input(“What is your favorite song? ”)
name = input(“What is your name?”)


print(“Your name is %s and your favorie song is %s.” % (name, song)
```

Build your own text adventure.

With Python and the Shell

Task 1

Type the text adventure and add the door “2”.

Lessons learned:
Conditional Statements & Comparator ‘equal to’

Task 2

Ask the player
for her name and
use it in the game.

Lessons learned:
String replacement with %s and %

Push your files to Github

In Github Desktop:

1. Commit
2. Push

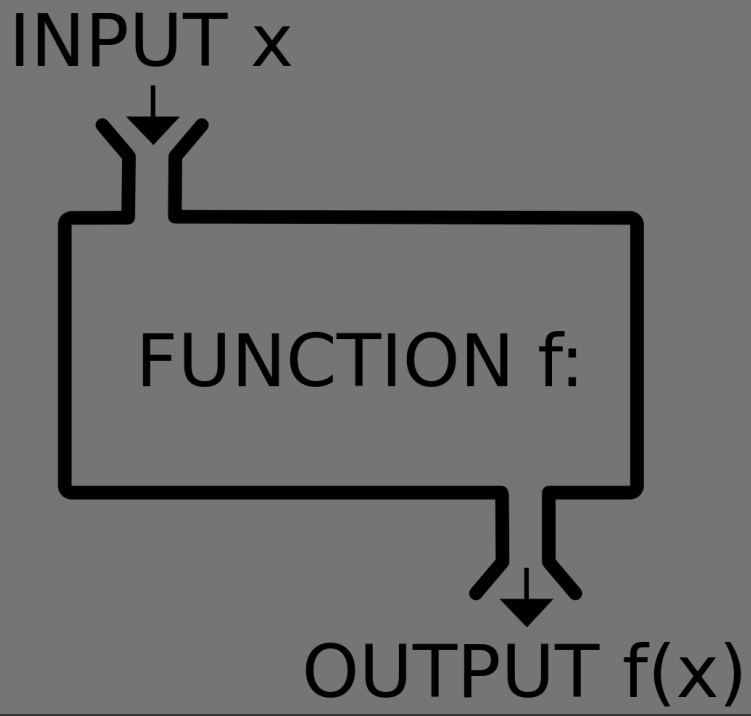
Then check if you find your files on github.com

Green fields!!! Yeay!!

Functions

```
def sound(volume):
    if volume < 20:
        print("It's kinda quiet.")
    elif 20 <= volume < 40:
        print("It's nice for background music")
    else:
        print("My ears are hurting! :(")


sound(42)
```

Create whole world!



Lists & Loops

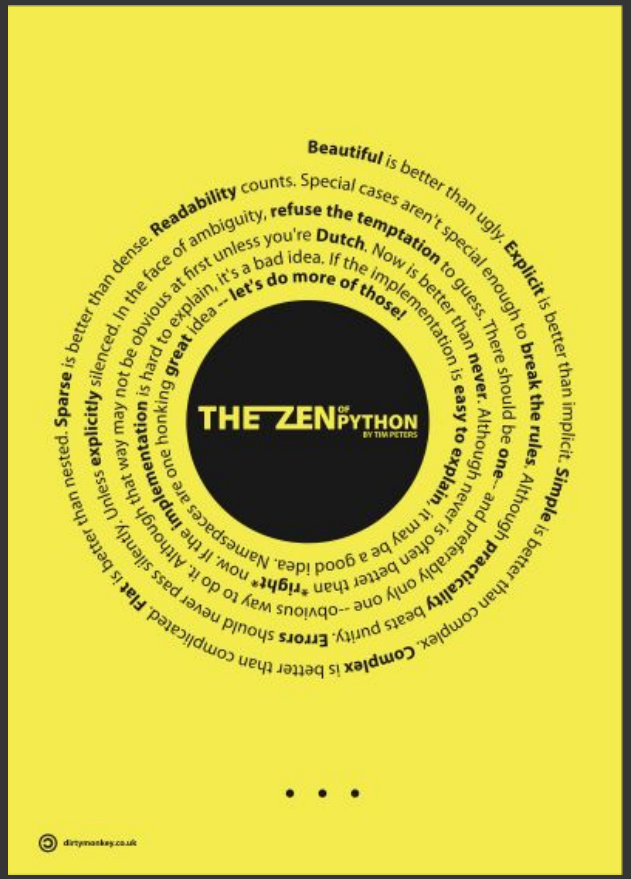
```
corb = [“apple”, “strawberry”, “kiwi”, “grape”]


for fruit in corb:
    print(fruit)
```

Algorithmic thinking!!!

Well done!

Libraries

import this



Build your own text adventure.

Part 2

Additional task 3:

Create a function to avoid to repeating yourself

Lessons learned:
Create functions and use them

Push your files to Github

In Github Desktop:

1. Commit
2. Push

Then check if you find your files on github.com

You did it! Yay!!!

What’s next?

Learning materials

Learn

PYTHON SYNTAX

Variables

Creating web apps, games, and search engines all involve storing and working with different types of data. They do so using **variables**. A **variable** stores a piece of data, and gives it a specific name.

For example:

```
spam = 5
```

The variable `spam` now stores the number `5`.

Instructions

1. Set the variable `my_variable` equal to the value `10`.

   Click the Run button to run your code.

Stuck? Get a hint

Report a Bug

script.py

```
1  # Write your code below!
2  my_variable = 10
```

Run

Secure https://repl.it

repl.it

teacher? start here sign in

repl.it is a cloud coding environment for PHP

join a community of

engineers, teachers, and students

Search for a language, e.g. c++

Rust

QBasic

Python

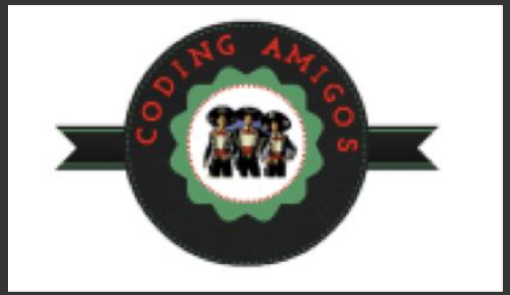
CoffeeScript

browse all languages

Be a Part of Commuity!

That makes learing much more fun!

OpenTechSchool Berlin



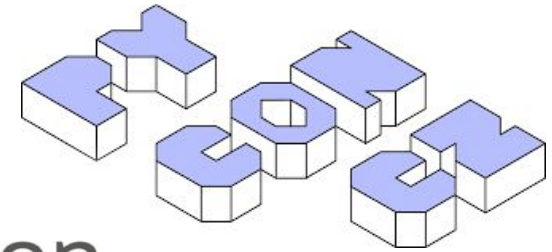
Rails Girls
Summer of Code

django
girls

WOMEN WHO
CODE

Financial Aid as Woman

You get paid for travelling to conferences: LGBT, women ...



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Happy coding!!!

Thanks to: PyLadies, SoundCloud
and all of our great coaches!!!