Programming with Python

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About me

- Got first computer in 1995 with Norton Commander (Used every windows version from Win 1995 – Win 11)
- Breaking that poor computer time to time – due the learning process
- Finished some programming courses
- Finished University of Derby, Bsc (Honors) Information Technology, UK
- 10+ years experience in IT
- Started from Customer Support -> was Head of QA
- Currently Software Developer in Test

Content

- Why Python?
- What can be done with Python?
- What IDE we will use?
- Installing Python

Why Python?

- Easy to use, but hard to master
- Easy to remember
- Good for most stuff
- Faster than most languages

Class & Inheritance in Java :

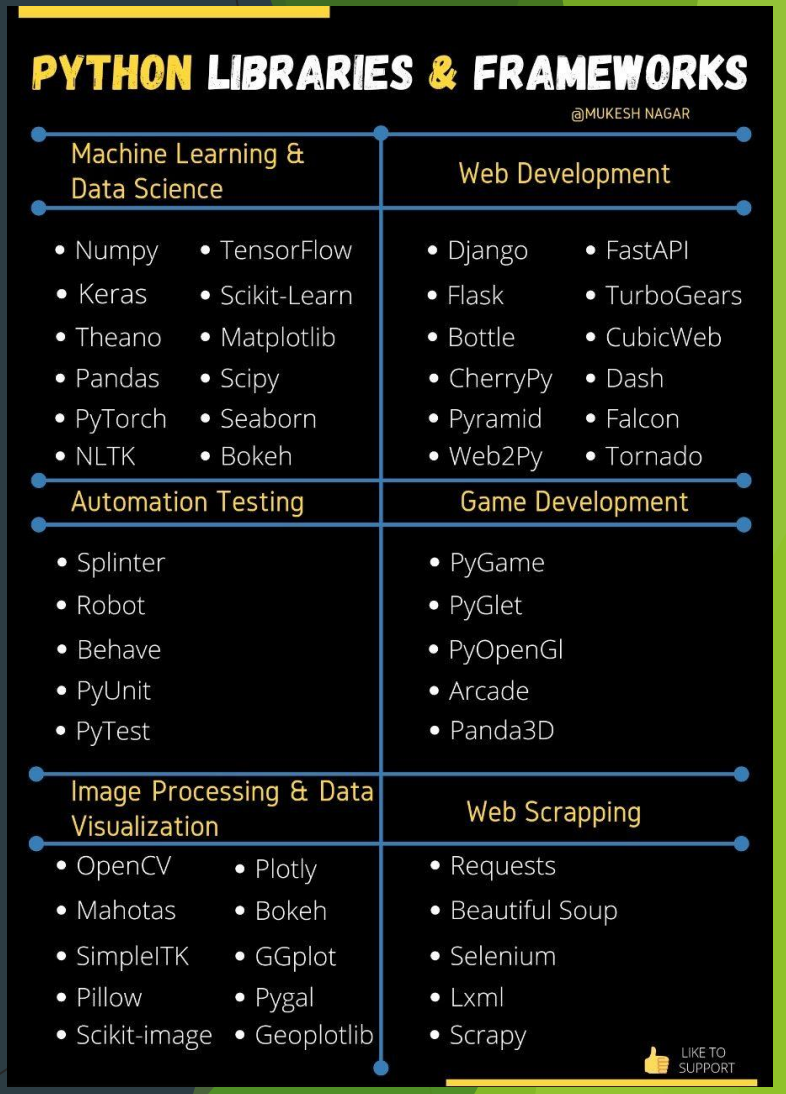
```java
class Animal{
    private String name;
    public Animal(String name){
        this.name = name;
    }
    public void saySomething(){
    System.out.println("I am" + name);
    }
}

class Dog extends Animal{
    public Dog(String name) {
        super(name);
    }
    public void saySomething(){
    System.out.println("I can bark");
    }
}

public class Main {
public static void main(String[] args)
    {
    Dog dog = new Dog("Chiwawa");
        dog.saySomething();
    }
}
```

Class & Inheritance in Python :

```python
class Animal():

    def __init__(self, name):
        self.name = name

    def saySomething(self):
        print "I am " + self.name

class Dog(Animal):
    def saySomething(self):
        print "I am "+ self.name\
        + ", and I can bark"

dog = Dog("Chiwawa")
dog.saySomething()
```

Why Python?

- Draw like in paint only using commands
- Can do minimal Gamedev
- Automation of common IT process (send/receive mail, launch scripts etc.)
- Web Development and Microservices - Django, Flask
- Web scraping – getting data from website
- Visual image recognitions systems
- Big data – solution for analyzing billions of transactions/entities
- Ethical and not Ethical Hacking
- Electronic programming – Arduino, Raspberry Pi
- Drone programming
- AI
- Machine Learning
- And many more



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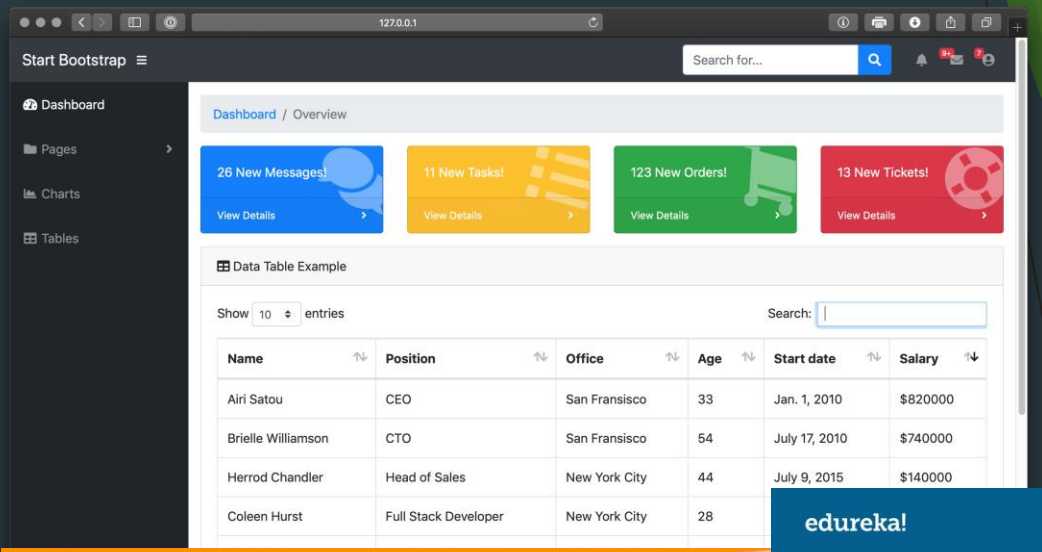
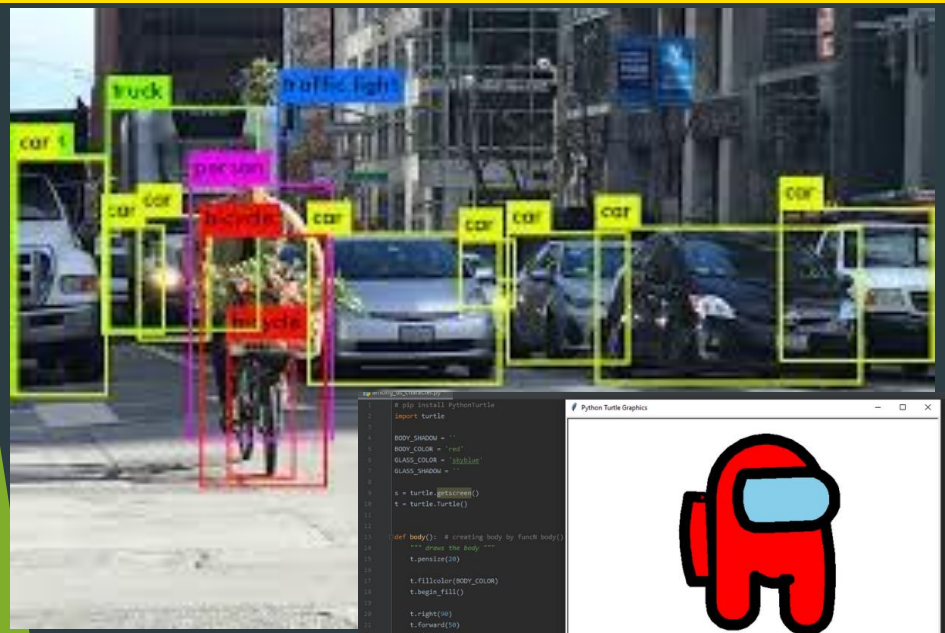
What can be done with Python?





What can be done with Python?

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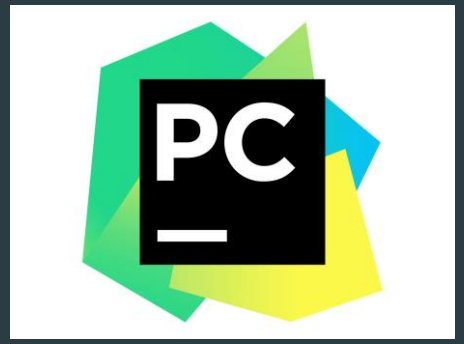
What IDE we will use?

- Jupyter notebook
- PyCharm Community – similar to Intelij



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Installing Python

- Install Python - https://www.python.org/downloads/
- Pip install - https://pip.pypa.io/en/stable/installation/
- Jupyter notebook install easy - https://www.anaconda.com/products/distribution
- Jupyter notebook install hard - https://jupyter.org/install
- Download – PyCharm - https://www.jetbrains.com/pycharm/download/#section=windows

PIP

What is PIP?

PIP is a package manager for Python packages, or modules if you like.

What is a Package?

A package contains all the files you need for a module.

Modules are Python code libraries you can include in your project.

Download a Package

Downloading a package is very easy.

Open the command line interface and tell PIP to download the package you want.

Using a Package

Once the package is installed, it is ready to use.

Import the "camelcase" package into your project.

Example

Import and use "camelcase":

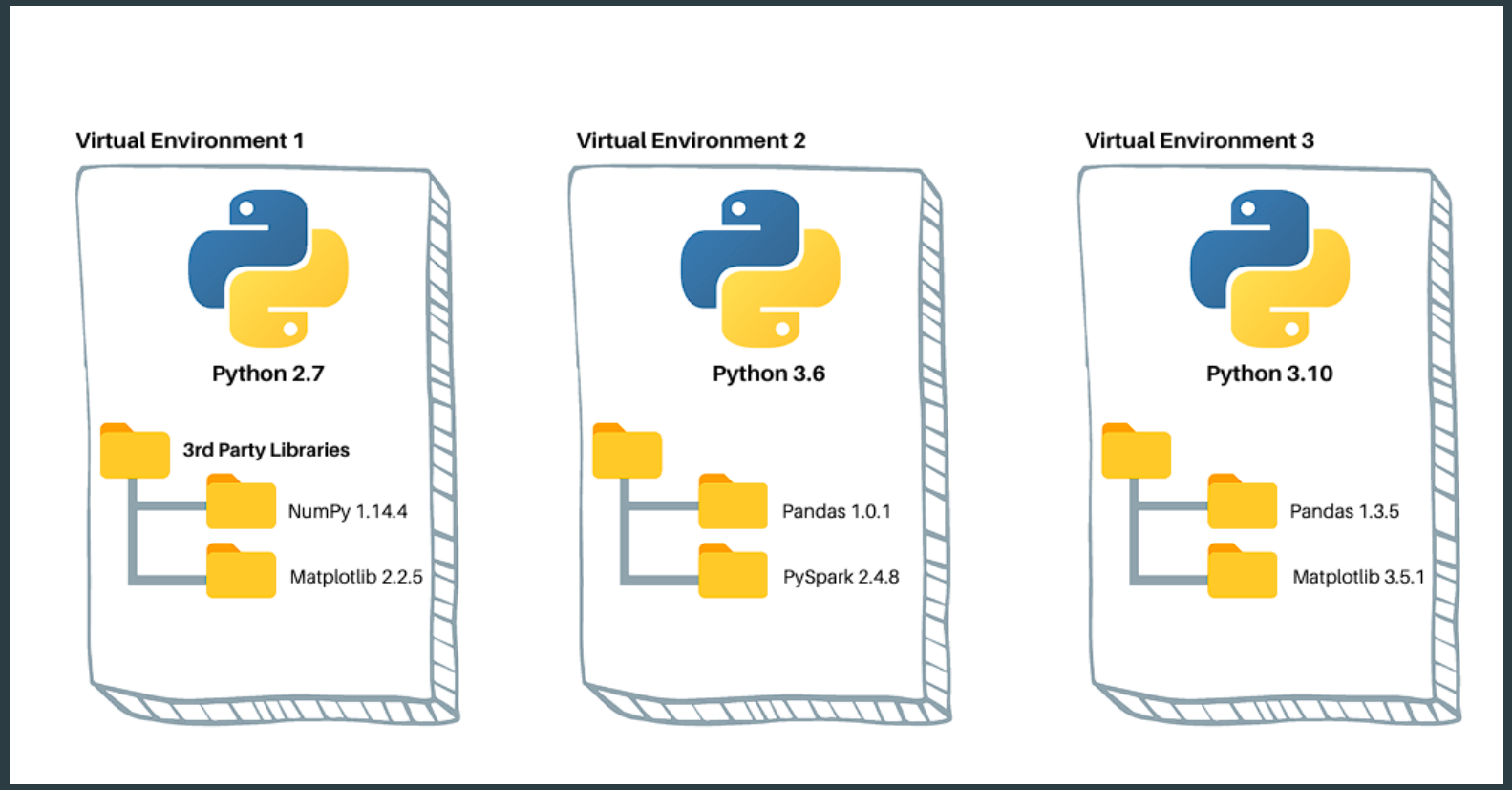
```
import camelcase

c = camelcase.CamelCase()

txt = "hello world"

print(c.hump(txt))
```

Virtual Environments

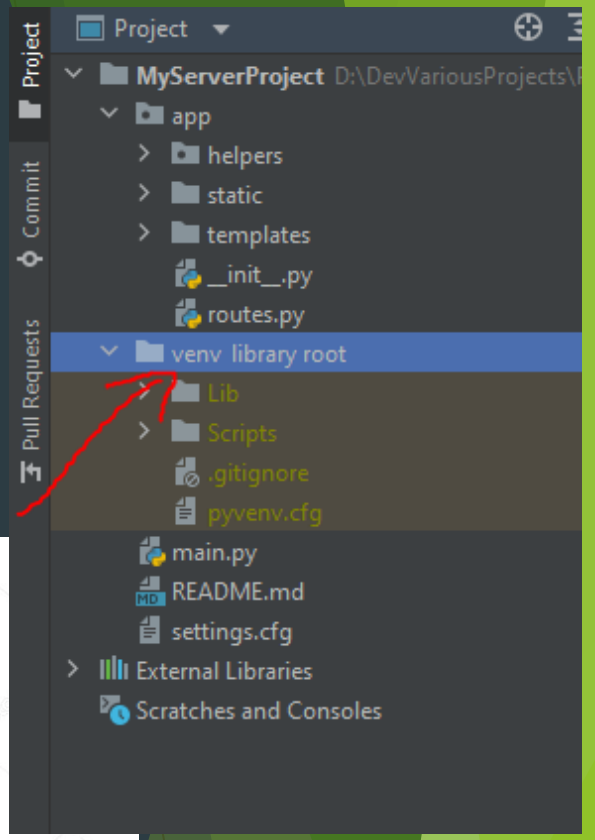


How to create it

Install first

```
pip install virtualenv
```

But DON'T WORRY - about it as Jupyter notebook and PyCharm will create virtual environment separately for each project/notebook we will create



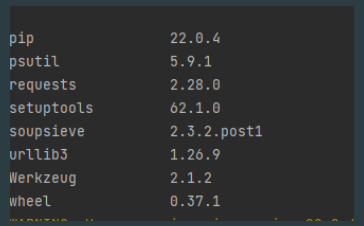
Command:

```
python<version> -m venv <virtual-environment-name>
```

Full Sample:

```
mkdir projectA
cd projectA
python3.8 -m venv env
```

Some Console commands to learn



```
pip              22.0.4
psutil           5.9.1
requests         2.28.0
setuptools       62.1.0
soupsieve        2.3.2.post1
urllib3          1.26.9
Werkzeug         2.1.2
wheel            0.37.1
```

- Pip list - check all installed packages
- jupyter notebook – to launch Jupyter notebook from console

How to launch Python scripts from console

1. ***cd*** D:\DevVariousProjects\Python\SomeTestProject\webscraper – go to specific folder cd + path_of_your_project
2. python launcher.py – python + script_name – python means execute python language script

- To start up automatically such files – you can use bat files for windows
- Console Commands for windows - https://www.thomas-krenn.com/en/wiki/Cmd_commands_under_Windows
- Full description of Python script usage - https://peps.python.org/pep-0338/

- https://py.checkio.org/

Reference

- Python - https://www.python.org/
- Anaconda - https://www.anaconda.com/products/distribution
- Jupyter Notebook - https://jupyter.org/
- PyCharm - https://www.jetbrains.com/pycharm/
- Python Virtual environment - https://docs.python.org/3/library/venv.html#:~:text=A%20virtual%20environment%20is%20a,part%20of%20your%20operating%20system.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