

# Python Boot-camp

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## Python Boot-camp

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## Overview

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### Workshop Video

[\\bjg.cn.ao.ericsson.se\Usertmp\\$\\pyCamp\\Video](\\bjg.cn.ao.ericsson.se\Usertmp$\\pyCamp\\Video)

### Workshop Keynotes and Codes

<\\drive.swdp.me\\learning\\pyCamp\\codesAndKeynotes>

Time	Task	Outcome	Reference
W0	Prepare environment, join the slack channel for discussion or learn from historical discussion.	A ready to use python environment.	This document
W1	Task 0, build a cli tool	Learn basic concept, build a command line tool, run it.	
	Task 1, build a web application.	Reach more python concepts, build a website, build a webapp with same function of task	
	Task 2, build a blockchain.	Start building your first OOP python project, organize a bigger flask project.	
W2	Task 3, build a microservice project	TBD	
	Task 4, build an openstack project	TBD	

## Preparation

Slack channel: [#py-camp](#)

## Environment setup

a Linux VM (Ubuntu) will do, reference: <https://askubuntu.com/questions/142549/how-to-install-ubuntu-on-virtualbox>

- 3G ram
- 1-2 CPU

## A just working editor

Sublime text / Atom / VS code will do the job, I was using Sublime Text 3

reference: <http://tipsonubuntu.com/2017/05/30/install-sublime-text-3-ubuntu-16-04-official-way/>

## How to run your python code?

### Preparation:

to avoid anything stops you from the beginning let's just use python3 directly, if you know how to use `virtualenv`, use it instead, if you don't know `virtualenv` do it as below.

- install pip for python3, upgrade it then:

```
$ sudo apt-get install python3-pip -y
$ sudo pip3 install --upgrade pip
```

- install `ipython` as your python playground console

```
$ sudo pip3 install ipython
```

## Hello world! from ipython

You could use it in one terminal for debugging for always, it's better than the python console in some ways.

```
$ ipython3
Python 3.5.2 (default, Nov 23 2017, 16:37:01)
Type 'copyright', 'credits' or 'license' for more information
IPython 6.2.1 -- An enhanced Interactive Python. Type '?' for help.

In [1]: print ("hello world!")
hello world!
In [2]: exit
$
```

## Hello world! from your first python script

```
$ cat hello_world.py
print ("Hello world!")

$ python3 hello_world.py
Hello world!
```

Congratulations! One more step left:

## Go through the tutor

reference: <https://docs.python.org/3/tutorial/>

or: <http://www.pythondoc.com/pythontutorial3/>

## Tasks

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### Task 0, create a cli tool

Let's create tool to parse a `nova/nova.conf` file in order to get expected values, like `my_ip` , if what `virt_type` etc..

What needs to be done?

- A function to handle the actual input.
- make it handle arguments from command line
- Let's make it professional
- Use `docopt` to simplify it! reference: <http://docopt.org>

Further study:

- Shebang ref: [https://en.wikipedia.org/wiki/Shebang\\_%28Unix%293](https://en.wikipedia.org/wiki/Shebang_%28Unix%293)
- `virtualenv`
- parse from or write to json, excel, xml, csv etc ?

- built-in library: <https://docs.python.org/3/library/index.html>
- Awesome Python: <https://github.com/vinta/awesome-python>
- Doing things for servers? paramiko / ansible
- exceptions: <http://www.runoob.com/python/python-exceptions.html>

#### After class task:

- create a cli tool

## Task 1, create a website

This task is to create a web app with flask, following the [flask-mega-tutorial](#) first three chapters.

reference:

- innoSearch project: <https://github.com/littlewey/yet-another-GSC-C-lighthouse>
- Idif-compare: <https://github.com/littlewey/ldif-compare>

#### After class task:

- create a web tool, which could reuse the main function of Task 0.

## Task 2, create a **blockchain** (ICO yourself)

Our task demo is highly reusing code and even some words in <https://hackernoon.com/learn-blockchains-by-building-one-117428612f46> (many thanks to the owner of that blog), but enhancements were added on top of that here.

In this task, we will create a simple part of blockchain application like **bitcoin**.

Things we will go through:

- Some object-oriented programming (not just call class from a python module)
- http request
- flask as http api endpoints

#### After class task::

- create the blockchain app following the tutorial, study the code (as explained in class), if possible improve it.

## Task 3, create a big project(micro service enabled)

haproxy, etcd, k8s etc...

To be continued in next presenting week.

## Task 4, create a tool based on oslo

Openstack related

To be continued in next presenting week.