Installing Python 3

Windows

Get the latest Python 3 release from Python.org (https://www.python.org/downloads/windows/) (3.8.5 at the time of writing). Download and execute the Windows x86 or Windows x86-64 executable installer depending on your platform.

Execute the installer and check *Install launcher for all users* and *Add Python 3.x to PATH* and finish installation. Refer to Using Python on Windows (https://docs.python.org/3/using/windows.html) for advanced installation settings.

Open a command prompt or PowerShell and type `py -3 --version`. It should output `Python 3.8` or greater. Note that python installer already comes with `pip` package manager.

Alternatively, you can use Windows Subsystem for Linux (https://docs.microsoft.com/en-us/windows/wsl/install-win10) and follow the Ubuntu 20.04 installation.

OSX

Install Homebrew (http://brew.sh/)

Open a terminal and type

```
/usr/bin/ruby -e "$(curl -fsSL
https://raw.githubusercontent.com/Homebrew/install/master/install)"
```

Install python and pip (python package manager)

```
brew install python3
```

Check version with `python3 --version`. It should output `Python 3.8` or greater. Note that *Homebrew*'s python package already comes with `pip` package manager.

Ubuntu 20.04

Install pip (python package manager)

```
sudo apt-get install python3-pip
```

Install dependencies (aiohttp)

```
pip3 install aiohttp
```

Alternatively, you can install dependencies for a specific project according to *requirements.txt* with `pip3 install -r /path/to/requirements.txt`.

Note that *pip* install packages globally by default unless `--user` is specified on Ubuntu < 20.04. If you have several Python projects with different package versions, you might want to use a tool like virtualenv (https://virtualenv.pypa.io/en/stable/) to create isolated Python environments.

Your first web application

aiohttp

Create a `hello.py` file containing the following code (modified from *aiohttp* documentation (http://aiohttp.readthedocs.io)) and run it with `python3 hello.py`.

```
from aiohttp import web

async def handle(request):
    name = request.match_info.get('name', "Anonymous")
    text = "Hello, " + name
    return web.Response(text=text)

app = web.Application()
app.router.add_get('/', handle)
app.router.add_get('/{name}', handle)
web.run_app(app, host="127.0.0.1", port=8080)
```

Open a browser and navigate to http://localhost:8080. Alternatively, open a terminal and make a request using HTTPie (https://github.com/jakubroztocil/httpie) with `http http://localhost:8080/john`. It should display *Hello, john*.

Resources

If your are completely new to the Python programming language, we recommend reading the Welcome to Python for you and me (http://pymbook.readthedocs.io/en/latest/). According to its authors, it is *a fast paced Python book for students* and is available for free. On top of that, you should get familiar with asyncio (https://docs.python.org/3/library/asyncio.html).

If you want to dive more deeply into Python and *aiohttp*, here is a list of resources for beginners:

- Python:
    - https://www.fullstackpython.com/best-python-resources.html
    - http://docs.python-guide.org/en/latest/intro/learning/
- asyncio:
    - https://pymotw.com/3/asyncio/
- aiohttp:
    - http://justanr.github.io/getting-start-with-aiohttpweb-a-todo-tutorial