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# Python

Now is the time for all good men to come to the aid of their country.

Now is the time for all good men to come to the aid of their country.

## Install Python

Download from python.org

Verify:

python --version

If version 2.x is reported. Try python3 --version.

### Get Absolute Path of Python

The value of sys.executable is the absolute path to the Python interpreter. This is useful when you are using someone else’s machine and need to know where Python is installed. On some systems, this command will fail and it will return an empty string or None. Here’s how to use it:

>>> import sys  
>> sys.executable  
'C:\\Python27\\pythonw.exe'

Test

#### Heading 4

Test test

## Install PIPENV

PIPENV is for managing python virtual environments.

To install PIPENV:

pip install pipenv

### Install PIPENV Errors

You may get the following error after installing PIPENV.

#### Could Not Install Packages…

PS C:\> pip install pipenv

Collecting pipenv

Downloading https://files.pythonhosted.org/packages/13/b4/3ffa55f77161cff9a5220f162670f7c5eb00df52e00939e203f601b0f579/pipenv-2018.11.26-py3-none-any.whl (5.2MB)

100% |████████████████████████████████| 5.2MB 4.1MB/s

Requirement already satisfied: pip>=9.0.1 in c:\program files\python37\lib\site-packages (from pipenv) (18.1)

Requirement already satisfied: setuptools>=36.2.1 in c:\program files\python37\lib\site-packages (from pipenv) (40.6.2)

Collecting certifi (from pipenv)

Downloading https://files.pythonhosted.org/packages/9f/e0/accfc1b56b57e9750eba272e24c4dddeac86852c2bebd1236674d7887e8a/certifi-2018.11.29-py2.py3-none-any.whl (154kB)

100% |████████████████████████████████| 163kB 7.3MB/s

Collecting virtualenv (from pipenv)

Downloading https://files.pythonhosted.org/packages/7e/1b/6c00d57127608793e16e8b7f813e64d58a1938505c42fe190d1386ab41e1/virtualenv-16.4.0-py2.py3-none-any.whl (2.0MB)

100% |████████████████████████████████| 2.0MB 6.4MB/s

Collecting virtualenv-clone>=0.2.5 (from pipenv)

Downloading https://files.pythonhosted.org/packages/e3/d9/d9c56deb483c4d3289a00b12046e41428be64e8236fa210111a1f57cc42d/virtualenv\_clone-0.5.1-py2.py3-none-any.whl

Installing collected packages: certifi, virtualenv, virtualenv-clone, pipenv

Could not install packages due to an EnvironmentError: [WinError 5] Access is denied: 'c:\\program files\\python37\\Lib\\site-packages\\certifi'

Consider using the `--user` option or check the permissions.

You are using pip version 18.1, however version 19.0.2 is available.

You should consider upgrading via the 'python -m pip install --upgrade pip' command.

PS C:\>

#### The script virtualenv.exe is installed in … which is not on PATH

PS C:\> pip install --user pipenv

Collecting pipenv

Using cached https://files.pythonhosted.org/packages/13/b4/3ffa55f77161cff9a5220f162670f7c5eb00df52e00939e203f601b0f579/pipenv-2018.11.26-py3-none-any.whl

Collecting certifi (from pipenv)

Using cached https://files.pythonhosted.org/packages/9f/e0/accfc1b56b57e9750eba272e24c4dddeac86852c2bebd1236674d7887e8a/certifi-2018.11.29-py2.py3-none-any.whl

Collecting virtualenv (from pipenv)

Using cached https://files.pythonhosted.org/packages/7e/1b/6c00d57127608793e16e8b7f813e64d58a1938505c42fe190d1386ab41e1/virtualenv-16.4.0-py2.py3-none-any.whl

Requirement already satisfied: setuptools>=36.2.1 in c:\program files\python37\lib\site-packages (from pipenv) (40.6.2)

Collecting virtualenv-clone>=0.2.5 (from pipenv)

Using cached https://files.pythonhosted.org/packages/e3/d9/d9c56deb483c4d3289a00b12046e41428be64e8236fa210111a1f57cc42d/virtualenv\_clone-0.5.1-py2.py3-none-any.whl

Requirement already satisfied: pip>=9.0.1 in c:\program files\python37\lib\site-packages (from pipenv) (18.1)

Installing collected packages: certifi, virtualenv, virtualenv-clone, pipenv

The script virtualenv.exe is installed in 'C:\Users\Jesse\AppData\Roaming\Python\Python37\Scripts' which is not on PATH.

Consider adding this directory to PATH or, if you prefer to suppress this warning, use --no-warn-script-location.

The script virtualenv-clone.exe is installed in 'C:\Users\Jesse\AppData\Roaming\Python\Python37\Scripts' which is not on PATH.

Consider adding this directory to PATH or, if you prefer to suppress this warning, use --no-warn-script-location.

The scripts pipenv-resolver.exe and pipenv.exe are installed in 'C:\Users\Jesse\AppData\Roaming\Python\Python37\Scripts' which is not on PATH.

Consider adding this directory to PATH or, if you prefer to suppress this warning, use --no-warn-script-location.

Successfully installed certifi-2018.11.29 pipenv-2018.11.26 virtualenv-16.4.0 virtualenv-clone-0.5.1

You are using pip version 18.1, however version 19.0.2 is available.

You should consider upgrading via the 'python -m pip install --upgrade pip' command.

PS C:\>

=-=-=-=-=-=-=-=-=-=-=-=-=-=-

NOTE: For the above error I added “C:\Users\Jesse\AppData\Roaming\Python\Python37\Scripts” to the User environment variables (in this case the User ID is “Jesse”) and not the System environment variables.

## Ubuntu Pipenv Setup



Follow the instructions above to install PIP3 on Ubuntu Server, sudo apt install python3-pip

Install PIP3 for Python3, because on Ubuntu it does not exist by default. You can check with pip3 –version.

To install Pipenv:

### Sudo pip3 install --user pipenv DO NOT USE

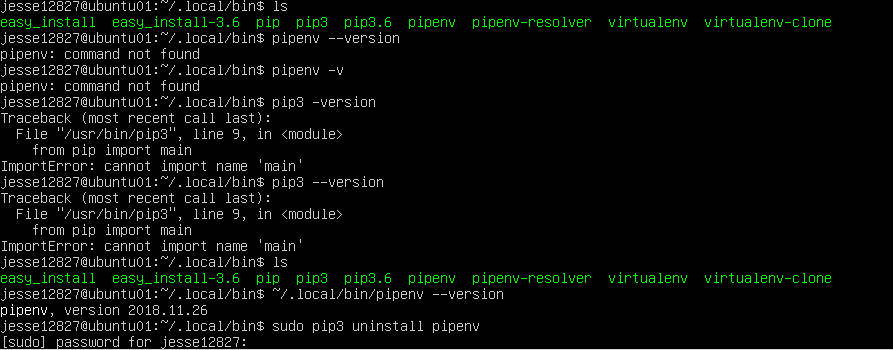
DO NOT USE “sudo pip3 install --user pipenv”. Instead use “pip3 install --user pipenv”.

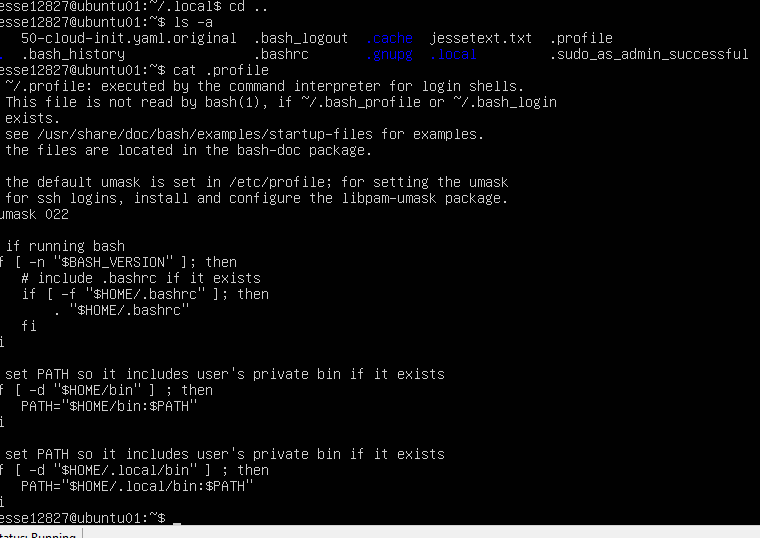
The “sudo pip3 install --user pipenv” will create a .local directory that will be owned by the “root” user and access by the logged on user, such as jesse12827, will not be allowed “Permission denied”.

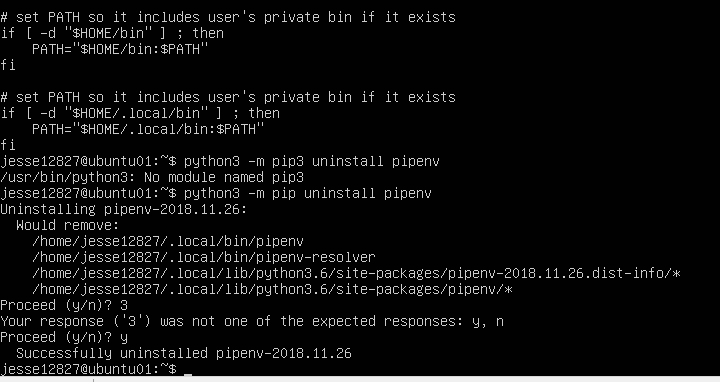
To remove:

Sudo apt remove python3-pip

PIPENV not found problem

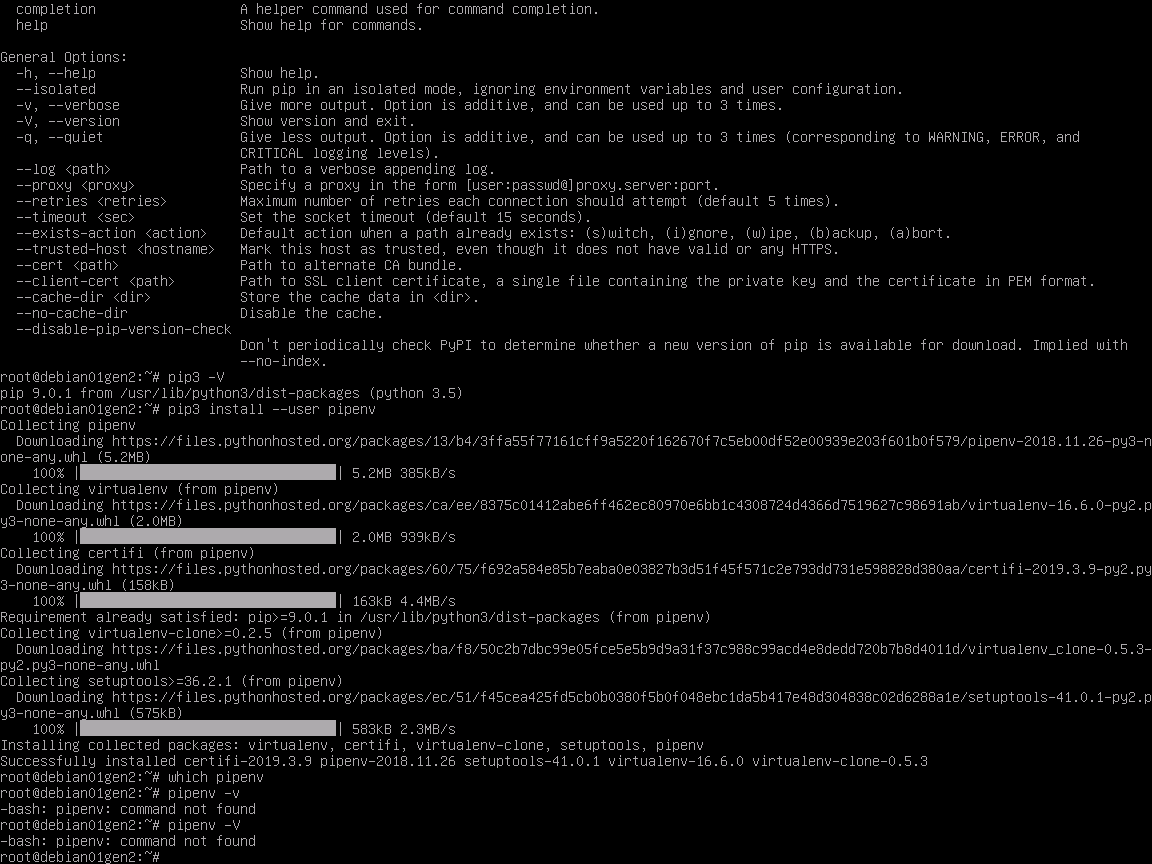




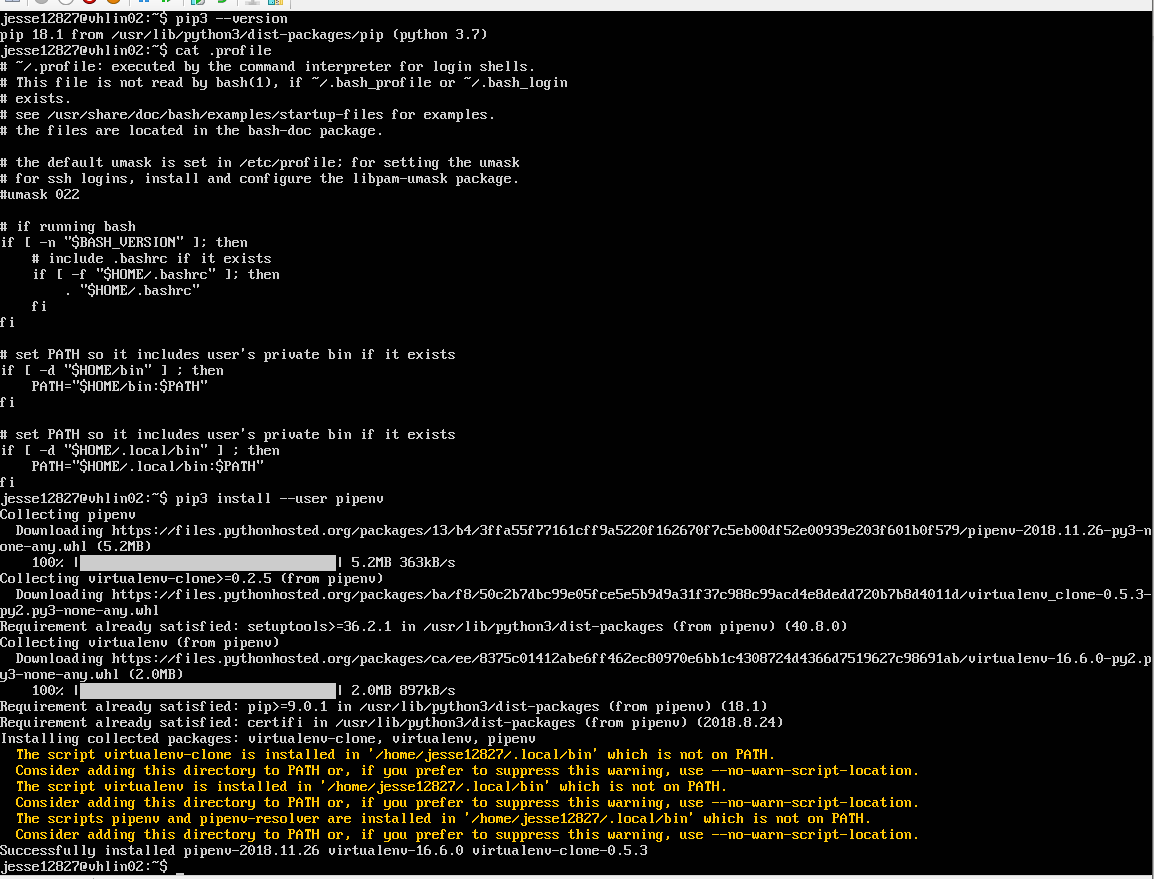




Below is screenshot of pip3 install –user pipenv



### Ran pip3 install –user pipenv



## Install a new version of Python into the PIPENV virtual environment

After making a directory, then run:

Pipenv shell

The above will create a virtual environment in the current working directory.

After the above, then install a new instance of python that will be unique to the virtual environment.

Pipenv install –python 3

Source for above: https://www.youtube.com/watch?v=rMVoBC16VmM

### Which Python

This will tell you the path of the current python, so it will tell you if it is in a virtual environment path.

Source: https://www.youtube.com/watch?v=RKL0K99gf1g

## Uninstall Python

First get a list of what applications are installed.

apt list --installed

Then type in the exact name as it shows in the list generated above.

For example, if “python3.6-minimal” was listed then to unistall to:

sudo apt-get remove python3.6-minimal

NOTE: You could also use just sudo apt remove python3.6-minimal

## Cheat Sheet

|  |  |
| --- | --- |
| Command | Description |
| Pipenv –venv | Virtual environment path |
| Pipenv –where | Project home path |
| Pipenv check | Check for security vulnerabilities |
| Pipenv uninstall <packagename> | Uninstall a package |
| Pipenv uninstall –all | Uninstall all packages |
| Pipenv uninstall –all-dev | Uninstall dev packages only |
| Pipenv run <command> | You can run a command in the virtual environment without launching a shell |
| Pipenv install <package> | Install package |
| Pipenv shell | This will create a virtual environment if one doesn’t already exist. Type 'exit' or 'Ctrl+D' to return. |
| Python -m <package name> --version | Get package version info |
|  |  |
| Python manage.py runserver | Starts web server for Django project. Make sure you are in directory where the manage.py file exists. |
| Python manage.py startapp blog | Start a new “app” in the current project |
|  |  |

## Validating IP Address

https://www.tutorialspoint.com/python/python\_ip\_address.htm

## Get Public IP Address Programmatically

https://www.ipify.org/

### Python: Accessing and Printing your IP Address and Location!

https://www.youtube.com/watch?v=SU6cMoEHdvs

https://pypi.org/project/sanic-ipware/

<https://www.youtube.com/watch?v=AcVN_PYYc0g>

https://docs.djangoproject.com/en/1.11/ref/contrib/gis/geoip/#geoip-methods

https://stackoverflow.com/questions/3759981/get-ip-address-of-visitors-using-flask-for-python

## HTTP For Humans

http://docs.python-requests.org/en/master/

## Simple Python Web Server

https://www.youtube.com/watch?v=hFNZ6kdBgO0

# Django

Verify Python is installed.

Create a “master” folder for all python projects.

Mkdir django

Cd django

Mkdir corey1

Cd corey1

Create the Virtual environment with pipenv

Pipenv install requests

django/corey1 will be for a specific Django project that will be in a Python virtual environment that will be setup with pipenv.

## Django Install

Cd Django/corey1

NOTE: Make sure, on Ubuntu, that you have installed pipenv.

To install Django:

NOTE: Make sure you are in the folder and virtual environment for your project.

pipenv install Django

Now start the virtual environment

pipenv shell

Verify:

python -m django –version

## Start New Django Project

Start new Django project by:

django-admin startproject djangocorey\_1

Note: This will create a folder called “djangocorey\_1” which is just a container for the entire project (this folder can actually be renamed without any consequences. A subfolder of “djangocorey\_1” will also be created which is where the “python package” will live.

## Create New App

Create new Django app.

CD to root of project folder, which is where manage.py is located.

python manage.py startapp <app\_name>

Go to the settings.py in the package folder and add the “app\_name” to the “INSTALLED\_APPS” section.

INSTALLED\_APPS = [

'blog.apps.BlogConfig',  
 'django.contrib.admin',  
 'django.contrib.auth',  
 'django.contrib.contenttypes',  
 'django.contrib.sessions',  
 'django.contrib.messages',  
 'django.contrib.staticfiles',  
 ‘app\_name’,

]

Now add a View

Goto the “app\_name” folder and edit the view.py file.

Add the following to render a basic “Hello, this is a view”.

from django.shortcuts import render  
from django.http import HttpResponse  
def app\_nameView(request):

return HttpResponse(‘Hello, this is a view’)

## Migration

|  |  |  |  |
| --- | --- | --- | --- |
| Step | Command | Description | Comments |
| 1 | Python manage.py makemigrations | Detects changes and prepares Django to update the database. Will reply with “No changes detected” if this is first setup |  |
| 2 | Python manage.py migrate | Applies previous migration. |  |
| 3 | Python manage.py createsuperuser | Create new superuser to logon to admin page | Username: jessedjango  Email: [jesse12827@outlook.com](mailto:jesse12827@outlook.com)  Pass: WRsfxv@$24 |
|  |  |  |  |
|  |  |  |  |

## Deployment Checklist

https://docs.djangoproject.com/en/2.1/howto/deployment/checklist/

https://djangobook.com/deploying-django/

## Docker a Django Webb App

https://semaphoreci.com/community/tutorials/dockerizing-a-python-django-web-application

# Docker

Refer to the link below to docker basics.

<https://docs.docker.com/docker-for-windows/>

https://docker-curriculum.com/

## Docker Commands

Basic Commands

|  |  |
| --- | --- |
| Command | Description |
| Docker version | Docker Server and Client Engine versions |
| Docker –v | Docker version |
| Docker info | # of containers, images, # of CPUs, Memory |
|  |  |
|  |  |

Image Commands

|  |  |
| --- | --- |
| Command | Description |
| Docker images | List images |
| Docker pull | Download an image |
|  | Remove an image. -f is used to force removal |
|  |  |

Container Commands

|  |  |
| --- | --- |
| Command | Description |
| Docker ps |  |
| Docker run |  |
| Docker ps -a |  |
| Docker start |  |
| Docker stop |  |
|  |  |

System Commands

|  |  |
| --- | --- |
| Command | Description |
| Docker stats |  |
| Docker system df |  |
| Docker system prune |  |
|  |  |

## Developing with Docker Containers:

.

|  |  |
| --- | --- |
| Command | Description |
| docker create [image] | Create a new container from a particular image. |
| docker login: | Log into the Docker Hub repository. |
| docker pull [image]: | Pull an image from the Docker Hub repository |
| docker push [username/image]: | Push an image to the Docker Hub repository. |
| docker search [term]: | Search the Docker Hub repository for a particular term. |
| docker tag [source] [target]: | Create a target tag or alias that refers to a source image. |
|  |  |
|  |  |

## Image Creation

docker commit user/image: Save a container as an image.

docker save user/image: Save an image to a tar archive.

docker build -t sampleuser/ubuntu .: Builds a Docker image from a Dockerfile

in the current directory.

docker load: Loads an image from file

## Running Docker Containers

docker start [container]: Start a particular container.

docker stop [container]: Stop a particular container.

docker exec -ti [container] [command]: Run a shell command inside a particular container.

docker run -ti — image [image] [container] [command]: Create and start a container at the same time, and then run a command inside it.

docker run -ti — rm — image [image] [container] [command]: Create and start a container at the same time, run a command inside it, and then remove the container after executing the command.

docker pause [container]: Pause all processes running within a particular container.

docker run -p $HOSTPORT:$CONTAINERPORT -d user/image: Run an image in detached mode with port forwarding

ctrl+p then ctrl+q: From within the container’s command prompt, detach and return to the host’s prompt.

docker attach [container name or ID]: Changes the command prompt from the host to a running container.

## Using Docker Utilities:

docker version: Display the version of Docker that is currently installed on the system.

docker history [image]: Display the history of a particular image.

docker images: List all of the images that are currently stored on the system.

docker history user/image: Lists the history of an image

docker inspect [object]: Display low-level information about a particular Docker object.

docker ps: List all of the containers that are currently running.

docker ps -a: List all container instances, with their ID and status.

docker logs [container name or ID]: Displays the logs from a running container.

docker port [container name or ID]: Displays the exposed port of a running container.

docker diff [container name or ID]: Lists the changes made to a container.

docker exec [container name or ID] shell command: Executes a command within a running container.

|  |  |
| --- | --- |
| Command | Description |
| docker info | On Windows 10 Pro, it shows a lot of stuff, like, # of containers, # of images, kernel version, OS, OS Type, # of CPUs, Total memory, Docker Root Directory |
| Docker-machine ssh <machine name> | SSH to docker machine |
|  |  |
|  |  |
|  |  |

## Cleaning Up Your Docker Environment:

docker kill [container]: Kill a particular container.

docker kill $(docker ps -q): Kill all containers that are currently running.

docker rm [container]: Delete a particular container that is not currently running.

docker rm $(docker ps -a -q): Delete all containers that are not currently running.

docker rm -f [container name or ID]: Delete a container.

docker rmi : Delete an image

# References

Now is the time for all good men to come to the aid of their country.

Now is the time for all good men to come to the aid of their country.

## Python

|  |  |  |  |
| --- | --- | --- | --- |
| Description | URL | Type |  |
| Chapters | https://python101.pythonlibrary.org/index.html# | HTML |  |
| Pipenv basic | https://docs.python-guide.org/dev/virtualenvs/ | HTML |  |
|  |  |  |  |

## Django

|  |  |  |  |
| --- | --- | --- | --- |
|  |  | Author |  |
|  | https://www.youtube.com/watch?v=ovql0Ui3n\_I | CS Dojo |  |
|  | https://www.youtube.com/watch?v=UmljXZIypDc | Corey Schafer |  |

## Docker

|  |  |  |  |
| --- | --- | --- | --- |
| Description | URL | Author | Author Home Page |
| How it works | https://www.youtube.com/watch?v=rOTqprHv1YE | Simplilearn | https://www.youtube.com/channel/UCsvqVGtbbyHaMoevxPAq9Fg |
| How it works | https://www.youtube.com/watch?v=wi-MGFhrad0&list=PLhW3qG5bs-L99pQsZ74f-LC-tOEsBp2rK&index=1 | Raghav Pal | https://automationstepbystep.com/ |
|  |  |  |  |
|  |  |  |  |

### Heading 3

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