**Learning**

**Docker and Kubernetes**

**Through the Lens**

**of**

**Python Development**

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# General Introduction

# Glossary

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  |  |
|  | Docker image |  |  |
|  | Docker container |  |  |
|  | Virtualization |  |  |
|  | Hyper-V |  |  |
|  | Layer |  |  |
|  | Linux Containers |  |  |
|  | Container Orchestration |  |  |
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# Docker

## Introduction

## Use Cases that illustrate the importance of using Docker

## Alternatives to Docker

# Kubernetes

## Introduction

## Use Cases that illustrate the importance of using Kubernetes

# Docker and Kubernetes together

# Why Docker and Kubernetes with Python development

# A complete CI/CD example using Docker, Kubernetes and Python

# Using Docker to learn LINUX on Windows

| **MAIN TOPIC** | **SUB TOPIC** | **DETAILS**  **/**  **(LINKS FOR FURTHER STUDY)**  **/**  **(FEEDBACK)**  **/**  **(SAMPLE PROGRAMS)** | **(CLASSROOM EXERCISES)**  **/**  **(ASSIGNMENTS)** | **TRACKING DATA** |
| --- | --- | --- | --- | --- |
| **OVERALL CONTEXT** | WHAT ARE YOU EXPECTING ? | <Update after feedback from the students> | **N/A** | DAY 1  (<=15 mins) |
|  | MY EXPECTATIONS FROM THE STUDENTS/YOU | * Be aware of the course content (*Have all of you gone through the course details [separate doc] ?)* * Do the class room exercises * Complete your assignments * Make notes *(I do it and it helps me)* * Don’t just nod your head to what I say. Digest it slowly. Stop me if I am going too fast | **N/A** | DAY 1  (<= 15 mins) |
|  |  | #  # Docker Images, Containers, docker files, layers , docker build  #  # Use this command to search the repository  docker search <>  ##  ## Launch a container  docker run -t -i ubuntu /bin/bash  ##  docker ps -all  ##  docker ps  ##  1. docker ps -all (use this to get the container id) 2. docker start <container ID> 3. docker attach <container id>  ## Listing all containers running or otherwise  docker container ls -a  ## Removing a container  docker container rm |  |  |

# Ubuntu

|  |
| --- |
| docker container run --interactive --tty --rm ubuntu bash |
|  |
| (sudo) apt-get update |
| (sudo) apt-get install apt-utils |
| (sudo) apt-get install python3.7 |
| apt install python3-pip |
| # difference between apt-get and apt |
| python3/3.7 -m pip install --upgrade pip |
| # for virtual environments  apt-get install python3.7-venv |
|  |
| python3.7 -m venv /home/workspaces/my-python-sandpit/muttli  / |
| Source activate  Deactivate  From the bin folder that resides within your virtual environment |
|  |
| Apt install nginx |
|  |
| apt install docker.io  systemctl start docker  systemctl enable docker |
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