Docker “FROM scratch”

```
Title : Docker "FROM scratch"
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Date :
KSU IS
```

Course Introduction

- What is Docker ? ## Installation and Configuration:
- Linux (Ubuntu, Debian, CentOS, Fedora, Raspbian ... etc) https://docs.docker.com/engine/install/
- MacOS got to https://hub.docker.com/editions/community/docker-ce-desktop-mac/
- Windows go to https://hub.docker.com/editions/community/docker-ce-desktop-windows/

Docker Hub Basics

- https://hub.docker.com/ ## Docker Images
- Standardize our development environment (i.e. ubuntu LTS 16.04 using python 2.7) from development to production.
- Secure our environment .

```
docker pull ubuntu:16.04
```

The Dockerfile * Create a file named Dockerfile and add the following docker commands

```
FROM ubuntu:16.04
LABEL maintaner="Meshari Alnaim <malnaim@safedecision.com.sa>"
LABEL name="dev"
LABEL version="v1"
RUN apt-get update && apt-get -y upgrade
RUN apt install -y python
```

- Save the Dockerfile and run the following command to build the Dockerfile in the corrent directory

```
docker build .
```

- Check the images

```
# Legacy command
docker images
# updated command
docker image ls
```

Running Containers

- list all the images

```
dokcer image ls
```

- Now lets run the container

```
# we run ubuntu 16.04 docker container name is_dev
docker run -it --name is_dev ubuntu:16.04
```

- install python and nano in the container

```
apt update
apt install -y nano python nginx
# Nginx example
nano nano /var/www/html/index.nginx-debian.html
service nginx start
nginx -s reload
service nginx reload
# Python example
nano hello.py
# add the two lines in to the python script
#####
#!/usr/bin/env python
print("Hello IS Students !")
#####
# now exit and make the script executable
chmod +x hello.py
python hello.py
```

The Container Lifecycle

```
docker images
docker container ls
docker container ls -a
docker container start is_dev
docker attach is_dev
```

Container and Image Management

```
docker container ls -a
docker images
docker push malnaim/ksu_is:v1
docker container rm is_dev
docker rmi <image_name>
```

Docker Container Ports

```
docker run -itp 8080:80 --name is_dev ubuntu:16.04
```

Docker Container Volumes

```
docker run -itp 8080:80 --volume /home/USER/Code/KSU_IS/html:/var/www/html:ro --name is_de
```

Resources

Docker remove commands

```
docker stop (docker ps -a -q)
docker rm (docker ps -aq)
docker rmi (docker images -aq)
```

- https://labs.play-with-docker.com/
- https://code.visualstudio.com/docs/containers/quickstart-node
- https://www.docker.com/101-tutorial