Introduction to containerization and Docker fundamentals, Basic Commands

Containerization is a way to package applications with all necessary dependencies and configurations.
It is portable artifact easily shared and moved around.
It makes development and deployment more easily.

Containerization is a lightweight form of virtualization that allows you to package and run applications and their dependencies in isolated environments called **containers**.

There are some fundamentals as follows:

Image: A read-only template with instructions to create a container.

Container: A running instance of an image, isolated and lightweight.

Dockerfile: A script with commands to build a Docker image.

Docker Engine: The runtime used to build and run containers.

Docker Fundamentals

Docker is an open platform for developing, shipping, and running applications. Docker is a way to build and run containers, save them into templates.
By using docker, we can create multiple containers of a single image and run them as per need.
Dockerfile is that file that is used to create an docker image as per our need and required dependencies where there are multiple other images.
To create a Dockerfile, we simply create a simple file and import some required images and run commands for which that image is to build.

Basic Commands

docker --version

Download a image from docker hub
docker pull <image_name>

eg: docker pull nginx

List all the images

docker images

List all the running containers

docker ps

List all the present containers

docker ps -a

Run a container

docker run <image_name>

Build an image

docker build -t <image_name> .

Stop a running containers

docker stop <container id or name>

Remove a stopped container

docker rm <container id or name>

Remove an image

docker rmi <image id or name>