**Docker:**

Docker is a platform for developers and sysadmins to build, run and share applications with customers.

**Containerization**

The use of container to deploy applications is called **containerization.**

**Features of Containerization.**

* Flexible
* Lightweight
* Portable -> we can deploy our app to other system or cloud is easy using docker.
* Loosely coupled -> if we want to change our container in future, we can do it easily without effect our other containers.
* Scalable
* Secure -> environment in each container is isolated mean containers is not dependent to other containers.

**Docker file vs Docker Image:**

**Docker File:**

A **docker file** is test document that contain all the commands a user could call on the command line to assemble an image.

Using docker build users can create an automated build that executes several command-line instructions in succession.

**Docker Image:**

A **Docker-image** is a read only template that contain a set of instructions for **creating** a **container** that can run on the Docker platform.

We can’t change **docker image** after create it

**Docker Container:**

A **Docker Container** is a lightweight, standalone, executable package of software that includes **everything needed to run an application**: code, runtime, system tools, system libraries and settings.

We can make changes in **docker container.** And we also create **docker image** using **docker container.**

**Docker Installation in Windows:**

1: First we need to install Linux Kernel update package.

https://learn.microsoft.com/en-us/windows/wsl/install-manual#step-4---download-the-linux-kernel-update-package

2: Then install Docker Desktop for Windows:

<https://docs.docker.com/desktop/install/windows-install/>

**Start the Docker:**

For start the docker we need to run the docker **as an administrator.**

**First:**

1: Create new docker file with no extension. And with name **Dockerfile.**

**From:**

From mean what is your **Base Image.**

**FROM node:alpine**

Base Image of node.

2: **Docker Image creation:** Open CMD in same folder where **docker file is exist** and then run command.

**docker build -t docker-image-name .**

Here **docker-image-name** is the name of docker image that you want to write.

**Command for get all docker images:**

**docker images**

3: **execute docker image or (Convert Docker Image to Docker Container):**

**docker run –name test\_name file\_name/file\_id**

**Or**

**docker run --it –name test\_container\_name file\_name/file\_id:file\_tag**

Here test\_name mean you can use any name, and file\_name of file\_id mean the name or id of **docker file** which you want to execute.

**CMD:**

CMD in **Dockerfile.**

**CMD** ["npm", "run", "start", "users-auth-manager"]

This is use for automated run the file. Here users-auth-manager run automated.

Command for run this.