Aim :- To study how to install doctor and its commands

Theory :-

- What is Docker?

Docker is an open source platform that enables developers to build, deploy, run, update and manage containers - standardized, executable components that combine application source code with the operating system libraries and dependencies required to run that code in any environment.

Docker is a software platform that allows you to build, test and deploy applications quickly. Docker packages software into standardized units called containers that have everything the software needs to run including libraries, system tools, code and runtime.

- Why use docker?

1) Docker enables you to separate your applications from your infrastructure so you can deliver software quickly
2) With Docker, you can manage your infrastructure in the same ways you manage your application.
3) Docker offers:
   - Improved and seamless container portability
   - Even lighter weight and more granular updates

- Automated container creation
- Container Versioning
- container reuse
- Shared container libraries

- Docker tools and terms
  - DockerFile
  - Docker images
  - Docker Containers
  - Docker Hub
  - Docker Desktop
  - Docker daemon
  - Docker registry

- Steps:-

Step 1 :- Installing Docker

- Update your existing list of packages:
  $ sudo apt update

- $ sudo apt install apt-transport-https ca-certificates curl software-properties common

- Add GPG key for the official Docker repository to your system:
  $ curl -fsSL https://download.docker.com/linux/ubuntu/gpg | sudo apt-key add -

- $ sudo add-apt-repository "deb [arch=amd64] https://download.docker.com/linux/ubuntu focal stable"
- $ apt-cache policy docker-ce
- $ sudo apt install docker-ce
- $ sudo systemctl status docker

Step2 - Executing the Docker command without sudo

- $ sudo usermod -aG docker ${USER}
- $ su - ${USER}
- $ groups
- sudo usermod -aG docker username

Step 3 - Using the Docker command

- $ docker [option] [command] [arguments]
- $ docker
- $ docker docker-subcommand --help
- $ docker info

Step 4 - Working with Docker images

- $ docker run hello-world
- $ docker search ubuntu
- $ docker pull ubuntu
- $ docker images

Step 5 - Running a Docker container

- $ docker run -it ubuntu
- root@d9b100f2f636:/# apt update
- root@d9b100f2f636:/# apt install nodejs
- root@d9b100f2f636:/# node -v

Step 6 - Managing Docker containers

- $ docker ps
- $ docker ps -a
- $ docker ps -l

- To start a stopped container, use docker start, followed by container ID

  $ docker start 1c0897aa0de4

- To stop a running container, use docker-stop, followed by container ID

  $ docker stop quizzical_mcnulty

- Step 7 :- pushing Docker images to a Docker Repository

- $ docker login -u docker-registry-username

- $ docker push docker-registry-username/docker-image-name

- $ docker push sammy/ubuntu-nodejs

Conclusion:-

In this Experiment we have studied how to install Docker, worked with images and containers and pushed a modified image to Docker Hub.