Dockerfile:-

Dockerfile is a simple text file with instructions to build a Docker image. As shown below dockerfile is a simple text file where we give some instructions to build an image. And when we run docker build command a file image gets created.

If you want to create your own image you can use a dockerfile. So dockerfile is basically automation of docker image creation and there are some basic instructions that you use in the docker file.

STEPS TO CREATE DOCKERFILE

- Create a file named Dockerfile .
- Add instructions in Dockerfile .
- Build Dockerfile to create image.
- Run image to create container.

.dockerignore file: by creating .dockerignore file we will mention file names and folder names and file starting with letter or symbols get ignored while building then docker image.

Example: For Angular project

Dist

Node_modules

git

_* (this ignores files starts with underscore _)

FROM:

The FROM instruction initializes a new build stage and sets the *Base Image* for subsequent instructions. As such, a valid Dockerfile must start with a FROM instruction. The image can be any valid image – it is especially easy to start by **pulling an image** from the *Public Repositories*.

Ex:

FROM node:8.11.2-alpine as node or FROM ubuntu:latest or FROM python:3.8

ARG:

it is the only instruction that may precede FROM in the Dockerfile. And

Using ARG we mentions users.

EX:

ARG VERSION=latest

FROM ubuntu:$VERSION

ENV:

Here we will give user name and passwords,access key id. It provides inputs to container

ENV website=www.kanc.com --->(Environment)using this command user can provide username,website,password

EX:

ENV username=kanchana

ENV ACCEPT_EULA =Y

ENV SA_PASSWORD=kanc123

LABEL:

We give contact details and owner details .

EX:

LABEL owner = owner@gmail.com

WORKDIR:

Using workdir we can specify dir path in container.

EX:

WORKDIR /app

RUN:

With the help of run command we run the linux commands.

EX:

RUN apt-get update –y ---> execute the any command(apt,mkdir)

RUN apt install python3 -y && apt install vim -y && apt install git -y

COPY:

TO copy files and folders within pwd .

EX:

COPY index.html /usr/local/apache2/htdocs/

Copy . .

ADD:

Add will copy files and folders in pwd and it will download files from internet

EX:

ADD https://wordpress.org/latest.zip .

EXPOSE:

We give the port number of container where this application is running.

The main purpose of a CMD is to provide defaults for an executing container.

EX:

EXPOSE 8080

CMD:

CMD is executed when you create a container out of the image.

```
CMD ["echo","Hello world ...! from my first docker image"]
```

```
If we give another instruction, it will be overridden
```

ENTRYPOINT:

An ENTRYPOINT helps you to configure a container that you can run as an executable.It can't be overridden.

ENTRYPOINT ping www.fb.com

If we try to ping other sites .it will ping fb only

- **`CMD echo "Hello World"`** (shell form)
- **`CMD ["echo", "Hello World"]`** (exec form)
- **`ENTRYPOINT echo "Hello World"`** (shell form)
- **`ENTRYPOINT ["echo", "Hello World"]`** (exec form)

Dockerfile practices:

#FROM ubuntu:latest --> base images

FROM httpd:2.4

LABEL owner="kanchana@stlr.com"

ENV website=www.kanc.com --->(Environment)using this command user can provide username,website,password

ENV username=kanchana

ENV ACCEPT_EULA =Y

ENV SA_PASSWORD=kanc123

ARG users=2 -->(argument) this command defines parameter(number of users can access) values and default values

RUN apt-get update –y ---> execute the any command(apt,mkdir)

RUN apt install python3 -y && apt install vim -y && apt install git -y

COPY index.html /usr/local/apache2/htdocs/

RUN mkdir /app

WORKDIR /app -->define the working directory of a docker container at any given time and if the project directory not exit it will created

COPY . . ---> first . Use for copy the file content and second . For copy the file same directory

EXPOSE 8090

ARG VERSION=latest

FROM nginx:$VERSION

COPY index.html /usr/share/nginx/html/

RUN MKDIR /app

WORKDIR /app

Copy . .

FROM nginx:latest

RUN mkdir /app

WORKDIR /app

RUN apt-get update -y

COPY . .

ADD https://wordpress.org/latest.zip . --->using add we can copy the files and copy the files in same directory and mainly we can download the files form web (internet).

```
FROM nginx:latest

RUN mkdir /app

WORKDIR /app

 RUN apt-get update -y

  ADD index.html .

  COPY https://wordpress.org/latest.zip .--> if we use the copy we get ERROR: failed to solve: source can't be a URL for COPY
```