

DAY 1 Tasks – Worked in docker for images creation and container creation with Nginx, Tomcat, Ubuntu images, creating react images

Docker:

Docker is a platform that provides virtual containers on which an application can be deployed independent of the underlying OS of the server. Further the container can be created from a replica called docker image which contains all the dependencies and can run on any OS that has docker engine, with similar results.

VIRTUALIZATION:

Virtualization is the process of sharing hardware resources across several virtually isolated and mutually independent systems. It is achieved by using a hypervisor which acts as a bridge between the Operating System of each of the virtual machines and the underlying hardware.

Applications in virtual environments run on a host operating system on top of the hypervisor.

Day 1

Docker Commands

To check currently running containers

- docker ps

To check images

- docker images

To run the image

- docker run -d -p 8085:8080 --name <name-of-the-container> <image-id>(need to assign both name and port)

- docker run -itd -p 8085:8080 <image-id> (-p represents we need to specify the port)

- docker run -itd -p 8085:8080 <image-id> (-p represents we need to specify the port)

- docker run -itd -P <image-id> (-P automatically assigns the port and name for the container)

To check the inside containers

- docker exec -it <Container-id> /bin/bash (tomcat)

- docker exec -it <Container-id> /bin/sh (nginx)

For manipulate html,

Traverse into the path,

- usr/share/nginx/html

need to install nano || vim,

- apt update && apt install -y nano
- apt update && apt install -y vim

manipulate html file using,

- nano index.html || vi index.html

DockerFile:

```
FROM tomcat:9
COPY **/*.war /usr/local/tomcat/webapps/maven-web-app.war

# Use the official Nginx image
FROM nginx:alpine

# Copy the WAR file (converted to static content or built into HTML/CSS/JS) into the Nginx container
COPY **/*.war /usr/share/nginx/html/

# Expose port 80 (default for HTTP)
EXPOSE 80

# Start Nginx
CMD ["nginx", "-g", "daemon off;"]

# Use Ubuntu as the base image
FROM ubuntu:latest

# Install Apache (lightweight web server)
RUN apt update && apt install -y apache2 && apt clean

# Set the working directory
WORKDIR /var/www/html

COPY . /var/www/html/
# Copy your HTML file into the container
# COPY index.html /var/www/html/index.html

# Expose port 80 for web traffic
EXPOSE 80

# Start Apache in the foreground
CMD ["apachectl", "-D", "FOREGROUND"]
```

ScreenShots:

Docker:

```
Windows PowerShell
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Install the latest PowerShell for new features and improvements! https://aka.ms/PSWindows

PS C:\Users\Wavin M> docker images
REPOSITORY    TAG       IMAGE ID       CREATED        SIZE
jar-image1    latest   49cb11078242   35 minutes ago 408MB
jar-image     latest   49cb11078242   35 minutes ago 408MB
my-app        latest   49cb11078242   35 minutes ago 408MB
app-app-jar   latest   49cb11078242   35 minutes ago 408MB
web-app-war   latest   9296630d4c18   45 minutes ago 520MB
my-web        latest   9296630d4c18   45 minutes ago 520MB
war-app       latest   9296630d4c18   45 minutes ago 520MB
tomcat        9.0       148e4169bela   10 days ago    520MB
hello-world   latest   74cc54e27dc4   7 weeks ago    10.1kB

PS C:\Users\Wavin M> docker ps
CONTAINER ID   IMAGE          COMMAND                  CREATED        STATUS        PORTS                    NAMES
5c842c1c95ce   web-app-war:latest "catalina.sh run"       7 minutes ago Up 7 minutes   8080/tcp                nervous_tesla
61d71687e5a1   9296630d4c18   "catalina.sh run"       7 minutes ago Up 7 minutes   0.0.0.0:8086->8080/tcp   warapp1
7c7c630e82b6   9296630d4c18   "catalina.sh run"       15 minutes ago Up 15 minutes  0.0.0.0:8085->8080/tcp   demoapp
d483b1817073   my-web:latest    "catalina.sh run"       20 minutes ago Up 20 minutes   8080/tcp                stoic_chatelet

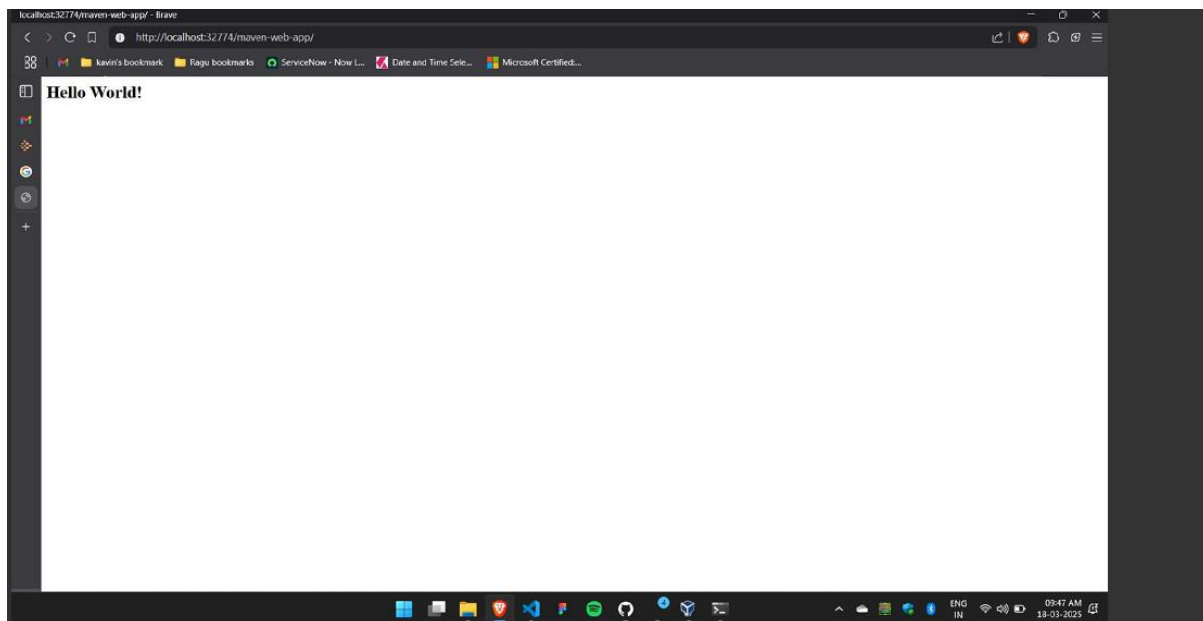
PS C:\Users\Wavin M> docker kill 5c842c1c95ce
5c842c1c95ce
PS C:\Users\Wavin M> docker kill 61d71687e5a1
61d71687e5a1

PS C:\Users\Wavin M> docker ps
CONTAINER ID   IMAGE          COMMAND                  CREATED        STATUS        PORTS                    NAMES
7c7c630e82b6   9296630d4c18   "catalina.sh run"       16 minutes ago Up 16 minutes  0.0.0.0:8085->8080/tcp   demoapp
d483b1817073   my-web:latest    "catalina.sh run"       21 minutes ago Up 21 minutes   8080/tcp                stoic_chatelet

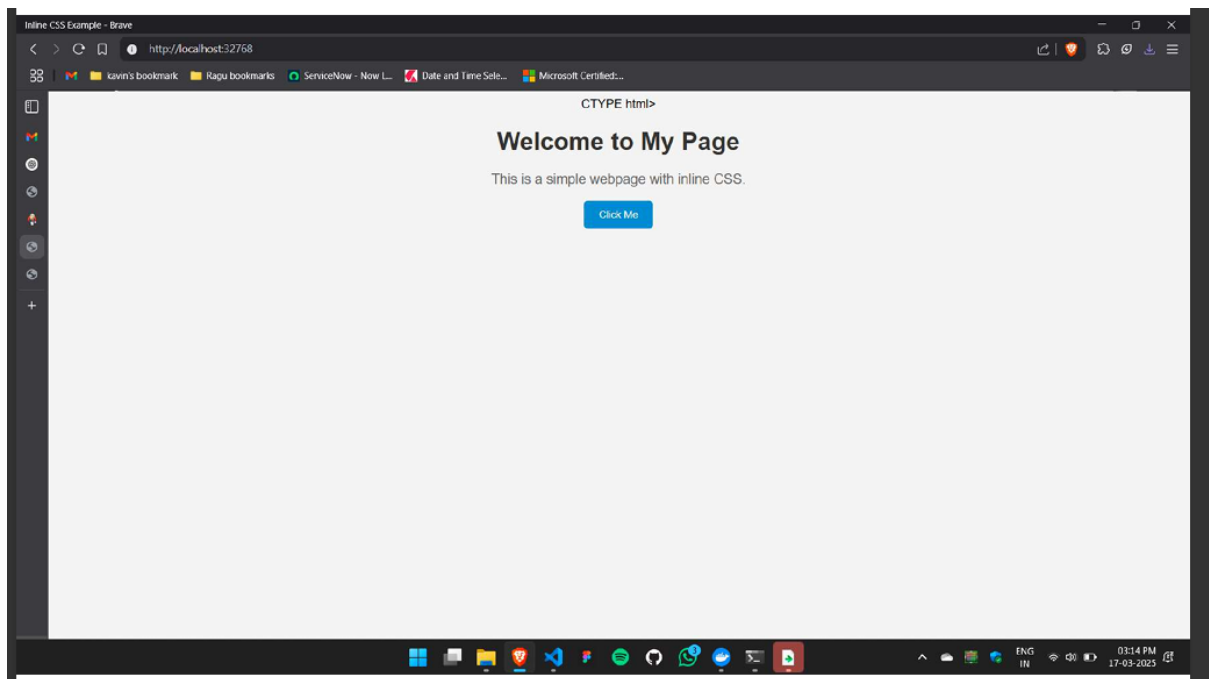
PS C:\Users\Wavin M> docker kill d483b1817073
d483b1817073

PS C:\Users\Wavin M> docker ps
CONTAINER ID   IMAGE          COMMAND                  CREATED        STATUS        PORTS                    NAMES
PS C:\Users\Wavin M> docker exec -it 61d71687e5a1 /bin/bash
```

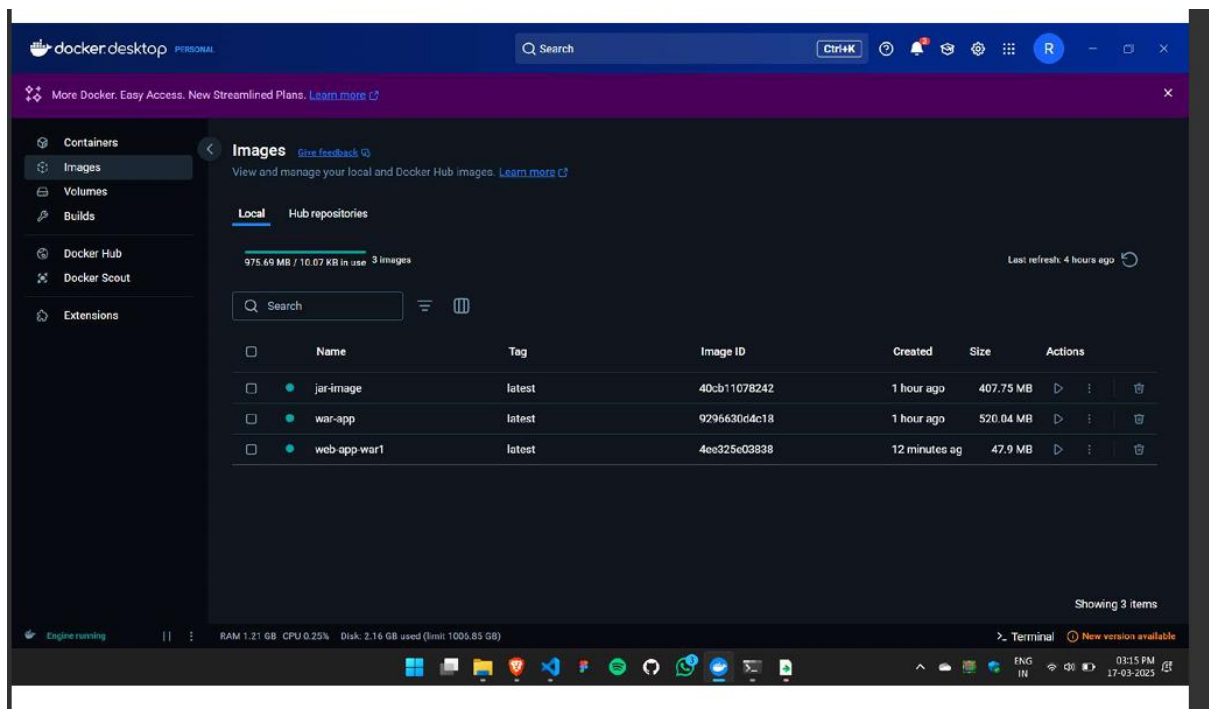
Tomcat:



Nginx:



Docker Desktop:



Nginx With Ubuntu:

