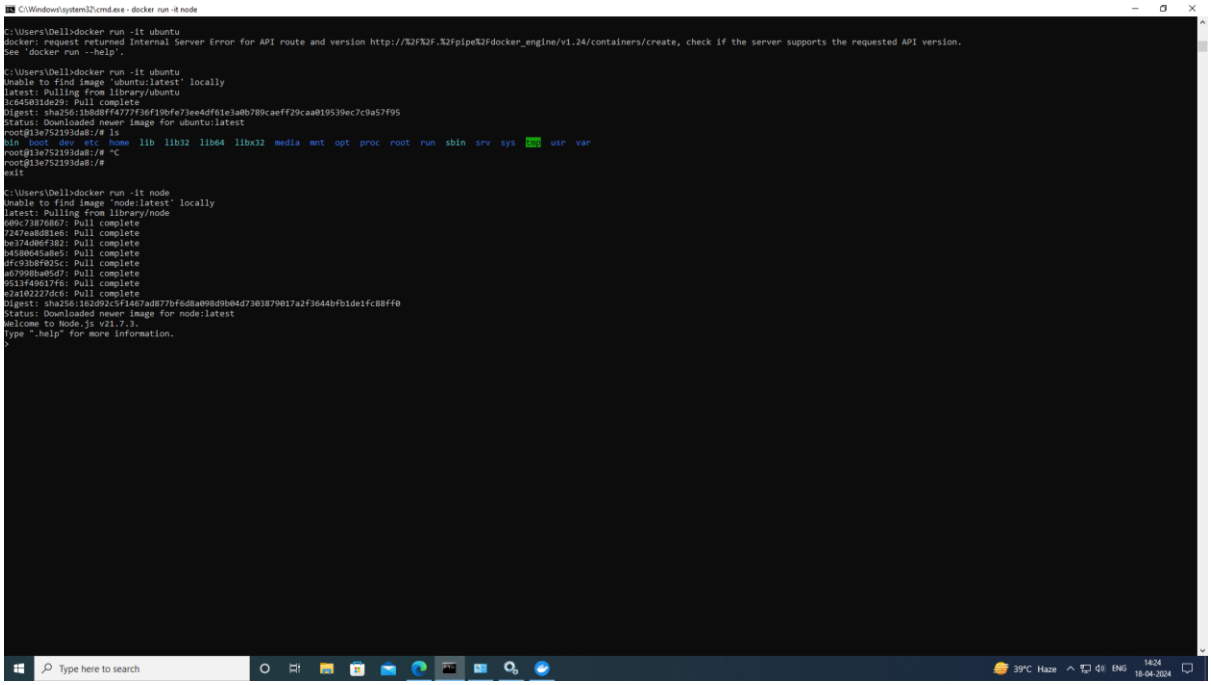
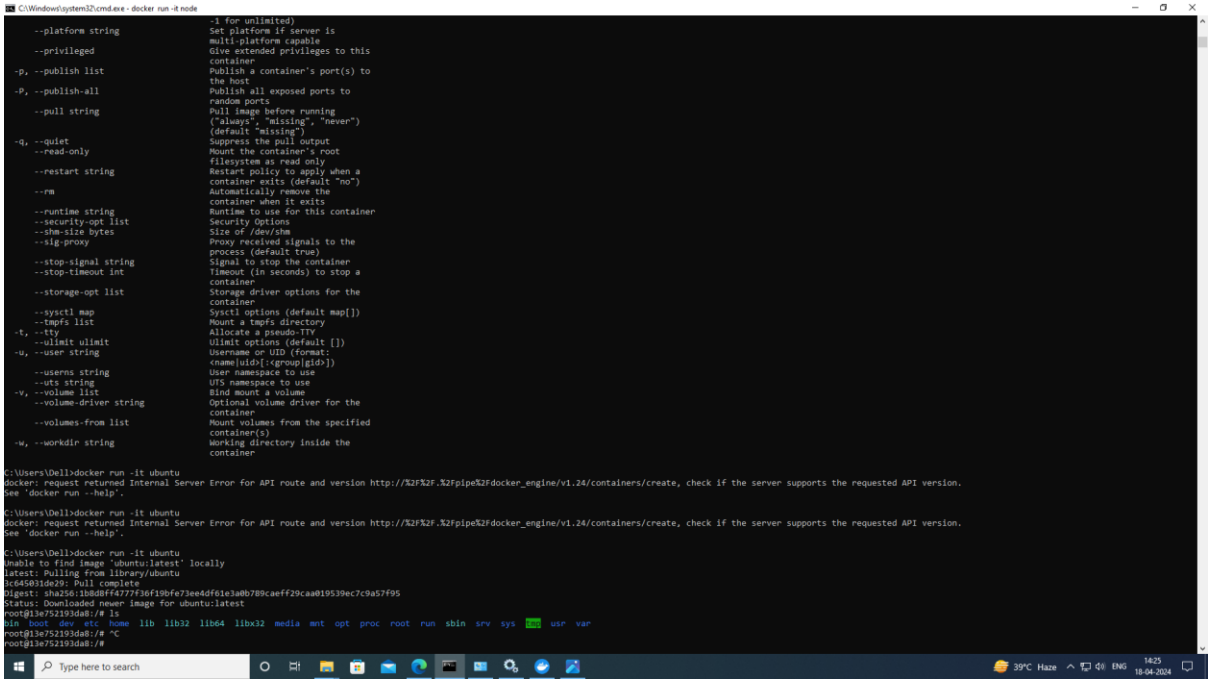
**Name: Patil Yogeshwar Jitendra**

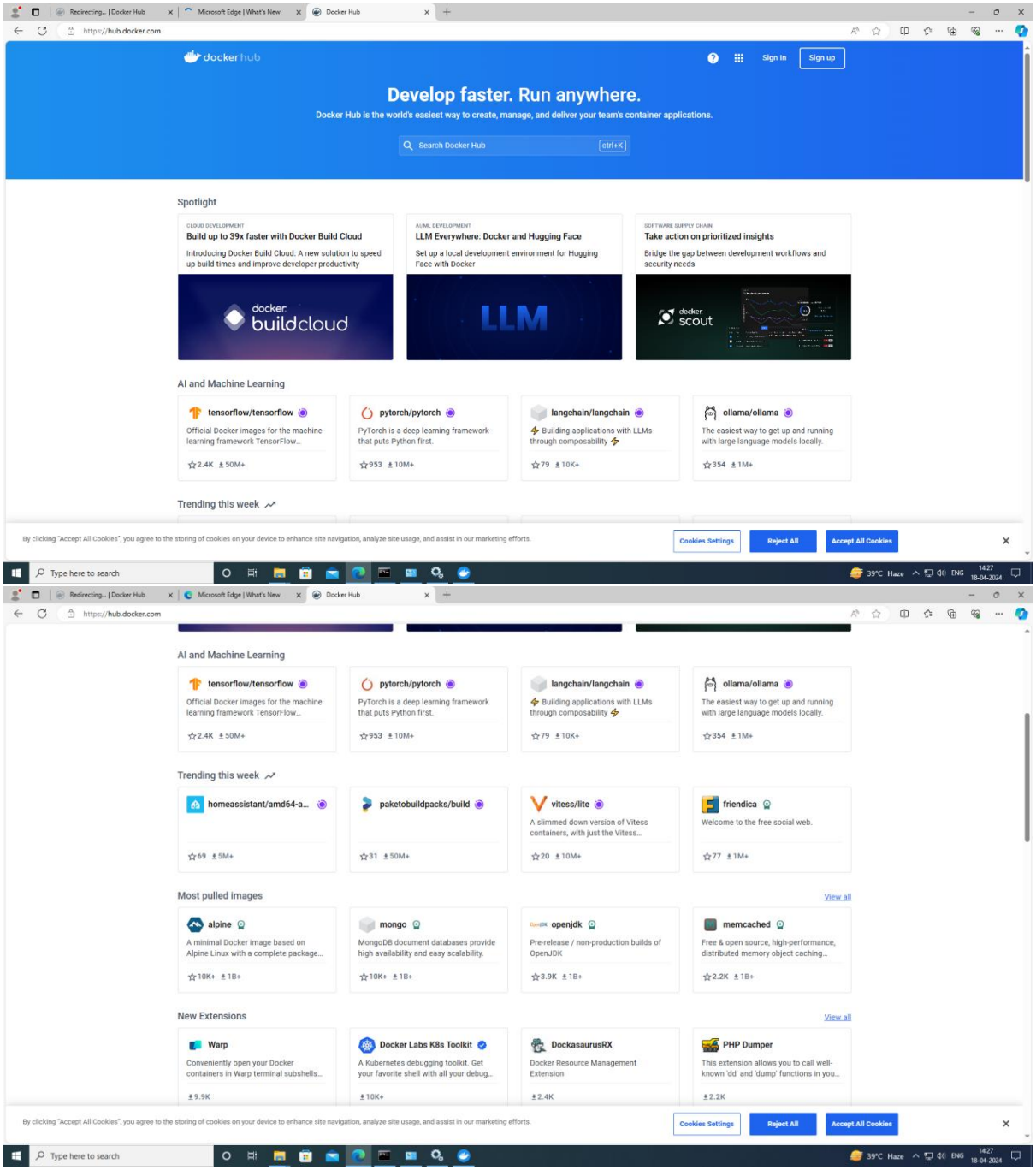
**Roll No: 48**

**Docker**

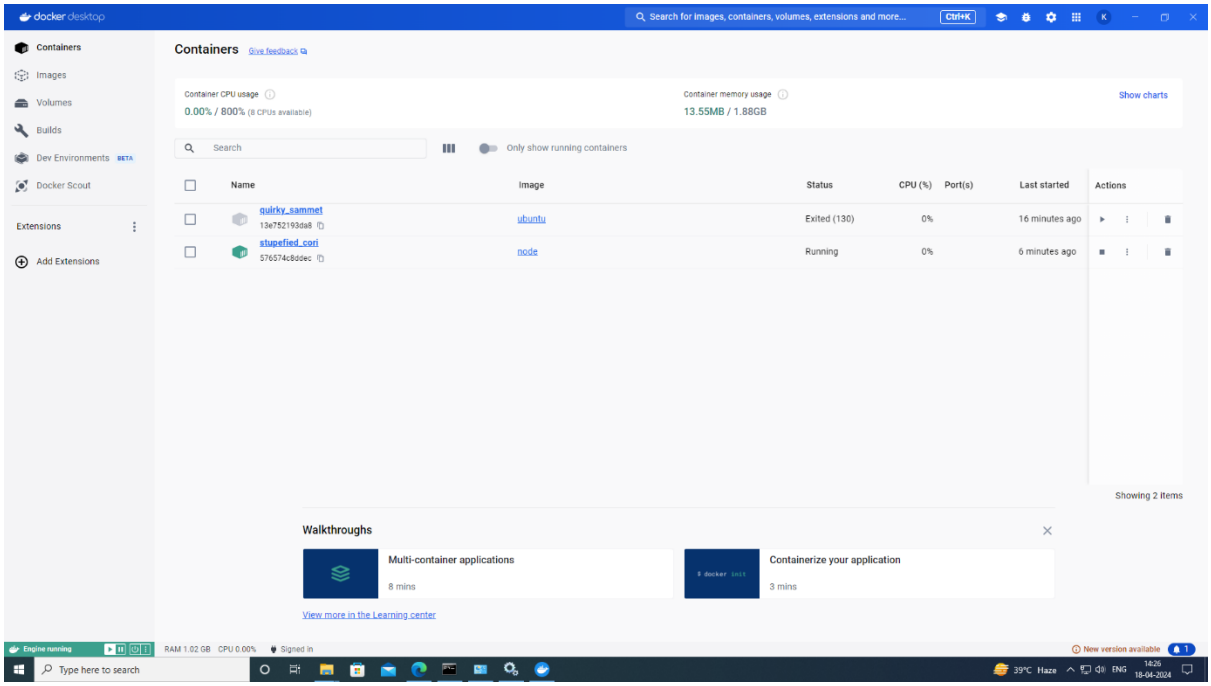
**Screenshots:**




Redirecting... | Docker Hub
Microsoft Edge | What's New
Docker Hub
https://hub.docker.com
dockerhub
Sign In
Sign up
Develop faster. Run anywhere.
Docker Hub is the world's easiest way to create, manage, and deliver your team's container applications.
Search Docker Hub
ctrl+K
Spotlight
CLOUD DEVELOPMENT
Build up to 39x faster with Docker Build Cloud
Introducing Docker Build Cloud: A new solution to speed up build times and improve developer productivity
docker build cloud
AI/ML DEVELOPMENT
LLM Everywhere: Docker and Hugging Face
Set up a local development environment for Hugging Face with Docker
LLM
SOFTWARE SUPPLY CHAIN
Take action on prioritized insights
Bridge the gap between development workflows and security needs
docker scout
AI and Machine Learning
tensorflow/tensorflow
Official Docker images for the machine learning framework TensorFlow...
☆2.4K ⭳50M+
pytorch/pytorch
PyTorch is a deep learning framework that puts Python first.
☆953 ⭳10M+
langchain/langchain
Building applications with LLMs through composability
☆79 ⭳10K+
ollama/ollama
The easiest way to get up and running with large language models locally.
☆354 ⭳1M+
Trending this week
By clicking "Accept All Cookies", you agree to the storing of cookies on your device to enhance site navigation, analyze site usage, and assist in our marketing efforts.
Cookies Settings
Reject All
Accept All Cookies
Type here to search
39°C Haze
ENG
14:27
18-04-2024


Redirecting... | Docker Hub
Microsoft Edge | What's New
Docker Hub
https://hub.docker.com
AI and Machine Learning
tensorflow/tensorflow
Official Docker images for the machine learning framework TensorFlow...
☆2.4K ⭳50M+
pytorch/pytorch
PyTorch is a deep learning framework that puts Python first.
☆953 ⭳10M+
langchain/langchain
Building applications with LLMs through composability
☆79 ⭳10K+
ollama/ollama
The easiest way to get up and running with large language models locally.
☆354 ⭳1M+
Trending this week
homeassistant/amd64-a...
☆69 ⭳5M+
paketobuildpacks/build
☆31 ⭳50M+
vitess/lite
A slimmed down version of Vitess containers, with just the Vitess...
☆20 ⭳10M+
friendica
Welcome to the free social web.
☆77 ⭳1M+
Most pulled images
View all
alpine
A minimal Docker image based on Alpine Linux with a complete package...
☆10K+ ⭳1B+
mongo
MongoDB document databases provide high availability and easy scalability.
☆10K+ ⭳1B+
openjdk
Pre-release / non-production builds of OpenJDK
☆3.9K ⭳1B+
memcached
Free & open source, high-performance, distributed memory object caching...
☆2.2K ⭳1B+
New Extensions
View all
Warp
Conveniently open your Docker containers in Warp terminal subshells...
⭳9.9K
Docker Labs K8s Toolkit
A Kubernetes debugging toolkit. Get your favorite shell with all your debug...
⭳10K+
DockasaurusRX
Docker Resource Management Extension
⭳2.4K
PHP Dumper
This extension allows you to call well-known 'dd' and 'dump' functions in you...
⭳2.2K
By clicking "Accept All Cookies", you agree to the storing of cookies on your device to enhance site navigation, analyze site usage, and assist in our marketing efforts.
Cookies Settings
Reject All
Accept All Cookies
Type here to search
39°C Haze
ENG
14:27
18-04-2024


docker desktop
Search for images, containers, volumes, extensions and more...
Ctrl+K
Containers
Images
Volumes
Builds
Dev Environments BETA
Docker Scout
Extensions
Add Extensions
Containers
Give feedback
Container CPU usage
0.00% / 800% (8 CPUs available)
Container memory usage
13.55MB / 1.88GB
Show charts
Search
Only show running containers
Name
Image
Status
CPU (%)
Port(s)
Last started
Actions
quirky_sammet
13e752193da8
ubuntu
Exited (130)
0%
16 minutes ago
stupefied_cori
576574c8ddec
node
Running
0%
6 minutes ago
Showing 2 items
Walkthroughs
Multi-container applications
8 mins
Containerize your application
3 mins
View more in the Learning center
Engine running
RAM 1.02 GB
CPU 0.00%
Signed in
New version available
Type here to search
39°C Haze
ENG
14:26
18-04-2024

# Theory:

Docker is an open-source software platform used for creating, deploying, and managing virtualized application containers. It was launched in 2013 and has since revolutionized application development by democratizing software containers. Docker containers are standard units of software that package code and all its dependencies, ensuring that the application runs quickly and reliably from one computing environment to another.

Containers are an abstraction at the application layer that packages code and dependencies together. They share the operating system kernel with other containers, running as isolated processes in user space. This design makes containers more portable and efficient than virtual machines (VMs), which abstract physical hardware and include a full copy of an operating system for each VM.

Docker containers run on Docker Engine, which was initially launched as an open-source Docker Engine and later extended to support Microsoft Windows and Apple OS X. Docker Engine includes a server-side daemon process that handles images, containers, networks, and storage volumes. The engine also provides a client-side command-line interface (CLI) for users to interact with the daemon.

Docker has several components and tools that help create, verify, and manage containers. Dockerfiles define the composition of components in a Docker container, while Docker Compose files define the composition of multi-container Docker applications. Docker Engine is the underlying technology that handles the tasks and workflows involved in building container-based applications.

Docker has several benefits, including efficient containerized application development, portability, and the ability to scale and manage containers across Docker hosts. However, there are potential challenges with Docker, particularly in terms of security. Despite excellent logical isolation, containers share the host's operating system, which can potentially compromise all the containers running on top of the OS if there is a flaw or attack in the underlying OS. Docker has regularly added security enhancements to the platform, and various container security scanning tools have emerged to help address these concerns.

In recent years, Kubernetes has become the de facto standard for container orchestration, with most Kubernetes offerings running Docker behind the scenes. However, security remains a concern, and organizations can take steps to mitigate potential security risks, such as using containers within a VM, lower-profile VMs, or ensuring that container hosts are not exposed to the internet and only using container images from known sources.