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RN: 52

Assignment Name: Docker

## Screenshots:

```
C:\Windows\system32\cmd.exe - docker run -it node
C:\Users\Devlldocker run -it ubuntu
docker: request returned Internal Server Error for API route and version http://32f32f.32fpipe32fdocker_engine/v1.24/containers/create, check if the server supports the requested API version.
See 'docker run --help'.

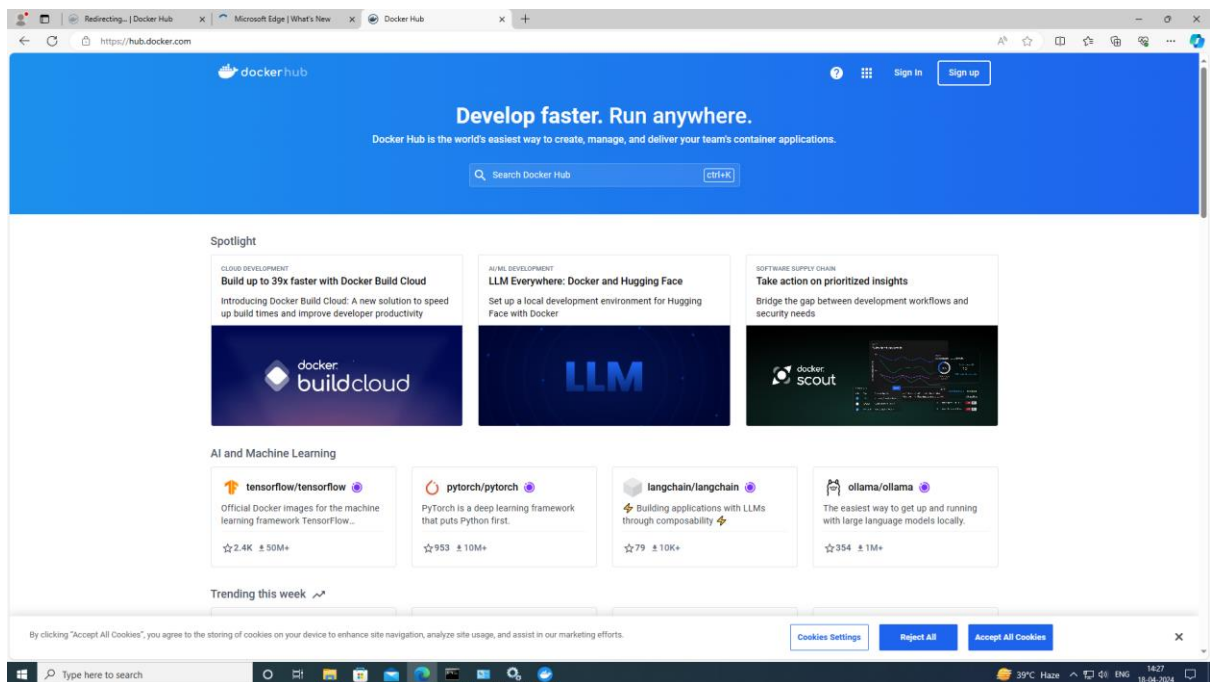
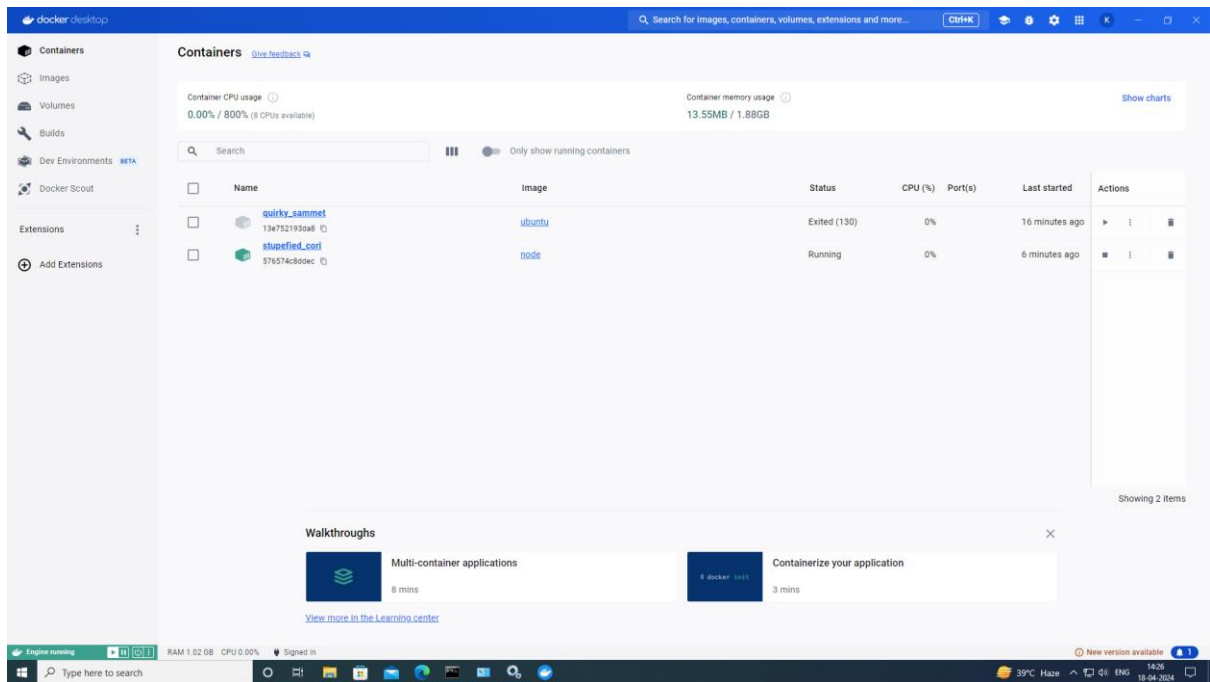
C:\Users\Devlldocker run -it ubuntu
Unable to find image 'ubuntu:latest' locally
latest: Pulling from library/ubuntu
1c645031d629: Pull complete
Digest: sha256:1b0d8ff4777f36f190fe73ee4d01e3a0b789caeff29caa19539ec7c9a57f95
Status: Downloaded newer image for ubuntu:latest
root@13e752193da8:/# ls
bin boot dev etc home lib lib32 lib64 libx32 media mnt opt proc root run/sbin srv sys usr var
root@13e752193da8:/# pwd
/
root@13e752193da8:/# exit
exit

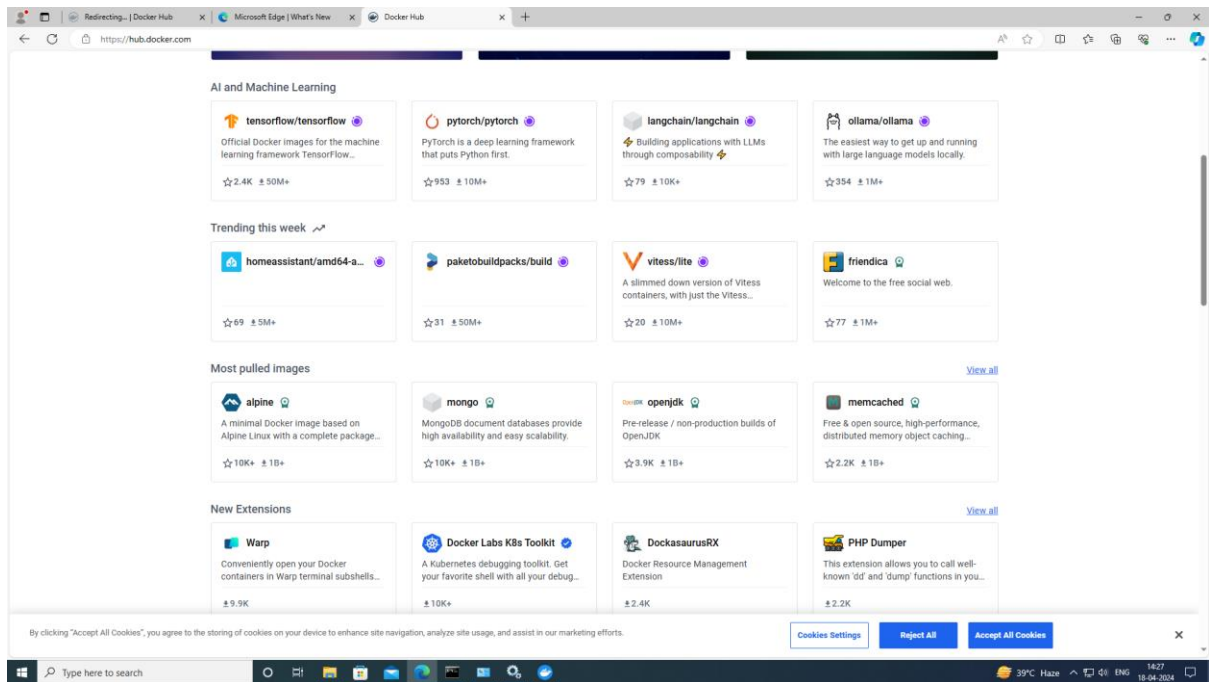
C:\Users\Devlldocker run -it node
Unable to find image 'node:latest' locally
latest: Pulling from library/node
689c73876867: Pull complete
7247ead8d1ed: Pull complete
6e37adeef182: Pull complete
b4580645a8e5: Pull complete
4f6938af885c: Pull complete
467998ba85d7: Pull complete
9513f49817f6: Pull complete
42a1022274c6: Pull complete
Digest: sha256:162d92c5f1467ad77bf6d8a08d9b04d7303879017a2f3644bfb0d1efc88ff0
Status: Downloaded newer image for node:latest
Welcome to Node.js v17.7.1.
Type ".help" for more information.
>
```

```
C:\Windows\system32\cmd.exe - docker run -it node
--platform string          -l for unlimited)
                           Set platform if server is
                           multi-platform capable
--privileged               Give extended privileges to this
                           container
--p, --publish list        Publish a container's port(s) to
                           the host
--P, --publish-all        Publish all exposed ports to
                           random ports
--pull string              Pull image before running
                           ("always", "missing", "never")
                           (default "missing")
-q, --quiet                Suppress the pull output
--read-only                Mount the container's root
                           filesystem as read only
--restart string           Restart policy to apply when a
                           container exits (default "no")
--rm                       Automatically remove the
                           container when it exits
--runtime string           Runtime to use for this container
--security-opt list        Security Options
--shm-size bytes           Size of /dev/shm
--sig-proxy                Proxy received signals to the
                           process (default true)
--stop-signal string       Signal to stop the container
--stop-timeout int         Timeout (in seconds) to stop a
                           container
--storage-opt list         Storage driver options for the
                           container
--sysctl map               Sysctl options (default map[])
--tmpfs list               Mount a tmpfs directory
--tty                     Allocate a pseudo-TTY
--ulimit ulimit            Ulimit options (default [])
-u, --user string          Username or UID (format:
                           channelid[:group][:gid])
--usersns string           User namespace to use
--uts string              UTS namespace to use
-v, --volume list         Bind mount a volume
--volume-driver string     Optional volume driver for the
                           container
--volumes-from list       Mount volumes from the specified
                           container(s)
-w, --workdir string       Working directory inside the
                           container

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## Theory:

Docker is a platform designed to make it easier to create, deploy, and run applications by using containers. Containers allow a developer to package up an application with all of its parts (such as libraries and other dependencies), ensuring that it will run consistently on any environment. With Docker, developers can build, ship, and run applications anywhere, whether it's on a developer's laptop, on a physical server, or in the cloud.

Docker uses containerization technology, which packages an application and its dependencies together into a single unit called a container. These containers are lightweight, portable, and isolated from each other, allowing multiple containers to run on the same machine without conflicts.

### **Some key components of Docker include:**

**Docker Engine:** The core of Docker, responsible for creating and managing containers.

**Dockerfile:** A text file that contains instructions for building a Docker image.

**Docker Image:** A lightweight, standalone, executable package that includes everything needed to run a piece of software, including the code, runtime, libraries, and dependencies.  
**Docker Hub:** A cloud-based repository where Docker images can be stored, shared, and distributed.

**Docker Compose:** A tool for defining and running multi-container Docker applications using a YAML file.

Overall, Docker simplifies the process of building, deploying, and managing applications, making it a popular choice among developers and DevOps teams.