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Batch -2 DevOps

Lab Exercise – 1

Docker Fundamental Commands

Objective

Learn and practice the fundamental Docker CLI commands to:

- Manage images and containers

- Understand container lifecycle

- Build and run applications using Docker

1. Setup

Prerequisites

- Docker installed on your system
  (Check using: docker --version)

- Internet access to pull images

2. Basic Docker Commands

Step 1: Verify Installation

docker —version

```
Microsoft Windows [Version 10.0.26200.7623]
(c) Microsoft Corporation. All rights reserved.

Docker version 28.3.0, build 38b7060
```

DOCKER INFO

```
C:\Users\Yash Chaudhary>docker info
Client:
 Version:    28.3.0
 Context:    desktop-linux
 Debug Mode: false
 Plugins:
  ai: Docker AI Agent - Ask Gordon (Docker Inc.)
    Version:  v1.6.0
    Path:     C:\Program Files\Docker\cli-plugins\docker-ai.exe
  buildx: Docker Buildx (Docker Inc.)
    Version:  v0.25.0-desktop.1
    Path:     C:\Program Files\Docker\cli-plugins\docker-buildx.exe
  cloud: Docker Cloud (Docker Inc.)
    Version:  v0.4.2
    Path:     C:\Program Files\Docker\cli-plugins\docker-cloud.exe
  compose: Docker Compose (Docker Inc.)
    Version:  v2.38.1-desktop.1
    Path:     C:\Program Files\Docker\cli-plugins\docker-compose.exe
  debug: Get a shell into any image or container (Docker Inc.)
    Version:  0.0.41
    Path:     C:\Program Files\Docker\cli-plugins\docker-debug.exe
  desktop: Docker Desktop commands (Docker Inc.)
    Version:  v0.1.11
    Path:     C:\Program Files\Docker\cli-plugins\docker-desktop.exe
  extension: Manages Docker extensions (Docker Inc.)
    Version:  v0.2.29
    Path:     C:\Program Files\Docker\cli-plugins\docker-extension.exe
  init: Creates Docker-related starter files for your project (Docker Inc.)
    Version:  v1.4.0
    Path:     C:\Program Files\Docker\cli-plugins\docker-init.exe
  mcp: Docker MCP Plugin (Docker Inc.)
    Version:  v0.9.3
    Path:     C:\Program Files\Docker\cli-plugins\docker-mcp.exe
  model: Docker Model Runner (EXPERIMENTAL) (Docker Inc.)
    Version:  v0.1.32
    Path:     C:\Program Files\Docker\cli-plugins\docker-model.exe
  sbom: View the packaged-based Software Bill Of Materials (SBOM) for an image (Anchore Inc.)
    Version:  0.6.0
    Path:     C:\Program Files\Docker\cli-plugins\docker-sbom.exe
  scout: Docker Scout (Docker Inc.)
    Version:  v1.18.1
    Path:     C:\Program Files\Docker\cli-plugins\docker-scout.exe

Server:
error during connect: Get "http://%2F%2F.%2Fpipe%2FdockerDesktopLinuxEngine/v1.51/info": open //./pipe/dockerDesktopLinuxEngine: The system cannot find the file specified.
```

EXPECTED OUTPUT: DOCKER VERSION AND SYSTEM DETAILS.

STEP 2: PULL AN IMAGE FROM DOCKER HUB

DOCKER PULL UBUNTU:LATEST

```
latest: Pulling from library/ubuntu
a3629ac5b9f4: Pull complete
Digest: sha256:cd1dba651b3080c3686ecf4e3c4220f026b521fb76978881737d24f200828b2b
Status: Downloaded newer image for ubuntu:latest
docker.io/library/ubuntu:latest
```

EXPLANATION: DOWNLOADS THE LATEST UBUNTU IMAGE FROM DOCKER HUB.

CHECK AVAILABLE IMAGES:

DOCKER IMAGES:

```
REPOSITORY    TAG        IMAGE ID        CREATED        SIZE
ubuntu        latest     cd1dba651b30    6 days ago     117MB
```

STEP 3: RUN A CONTAINER

RUN UBUNTU INTERACTIVELY:

```
C:\Users Gourav_docker run -it --name myubuntus ba
root@22af9bf73046:/#
```

DOCKER RUN -IT --NAME MYUBUNTU UBUNTU BASH

NOW YOU'RE INSIDE A RUNNING CONTAINER (PROMPT WILL CHANGE).

EXIT:

EXIT

```
C:/\UsersGouarv>docker run -it --name myubuntu
)bf73046:/#222afbf73046:/# exit
root@2af99:/# exit
exit
```

STEP 4: LIST CONTAINERS

- SHOW RUNNING CONTAINERS:

DOCKER PS

- SHOW ALL CONTAINERS (INCLUDING STOPPED):

DOCKER PS -A

CONTAINER ID	IMAGE	COMMAND	CREATED	STATUS	PORTS	NAMES

CONTAINER ID	IMAGE	COMMAND	CREATED	STATUS	PORTS	NAMES
22af9bf73046	ubuntu	"bash"	2 minutes ago	Exited (0) 56 seconds ago		myubuntu

Step 5: Start / Stop / Remove Containers

Start a stopped container

docker start <container_id>

Stop a running container

docker stop <container_id>

Remove a container

docker rm <container_id>

Step 6: Remove Images

docker rmi ubuntu:latest

```
Untagged: ubuntu:latest
Deleted: sha256:cd1dba651b3080c3686ecf4e3c4220f026b521fb76978881737d24f200828b2b
```