DAY 32 — Daily Assessment

Theme: CI/CD – Jenkins, Docker, Docker Compose, Scripting Automation

Time: 120 minutes
Marks: 50**(self evaluating)

Automate Build & Containerize MetroRide API

MetroRide now wants a **CI/CD pipeline** and **containerization** for the Java API.
 You are responsible for:

- Setting up Jenkins pipeline

- Writing automation scripts

- Containerizing the application

- Using Docker Compose for local orchestration

User Stories & Tasks

User Story 1 — Jenkins CI Pipeline

As a DevOps engineer, I want the Java project to build automatically in Jenkins.

Task 1 (10 Marks)

- Install Jenkins locally or use existing server

- Create a Pipeline Job

- Pipeline stages required:

    ○ Checkout code

    ○ Maven build

    ○ Archive JAR

- Provide pipeline screenshot

- Provide full Jenkinsfile

User Story 2 — Scripting Automation

As an automation engineer, I want a script that performs basic system checks.

Task 2 (7 Marks)

Create a shell script health_check.sh that prints:

- Disk usage

- Memory usage

- Running Java processes
  Add execution screenshot

User Story 3 — Docker Containerization

As a DevOps engineer, I want the API containerized for deployment consistency.

Task 3 (10 Marks)

- Write a Dockerfile

- Build the image

- Run container

- Provide container run screenshot

User Story 4 — Docker Compose Setup

As an engineer, I want multiple service orchestration for future scaling.

Task 4 (8 Marks)

Create docker-compose.yml with services:

- app (your built image)

- monitor (use a simple container like busybox running ping)
  Run docker-compose up and capture screenshot

User Story 5 — Basic CI/CD Integration

As a team lead, I want Jenkins to trigger Docker build on every commit.

Task 5 (10 Marks)

Modify Jenkinsfile to include:

- Docker login (mock allowed)

- Docker build

- Docker push (dummy registry allowed)

Provide updated pipeline screenshot

User Story 6 — Documentation

Task 6 (5 Marks)

Add a README section explaining:

- Jenkinsfile stages

- Docker commands used

- How to run Compose

Rubrics (50 Marks)

Section	Criteria	Marks
Jenkins Pipeline	Full Build Pipeline	10
Shell Script	Functional + Clean	7
Dockerfile	Builds + Container Runs	10
Docker Compose	Multi-Service Setup	8
Jenkins + Docker Stages	Docker Build & Push	10
Documentation	Clarity	5
Total		**50**