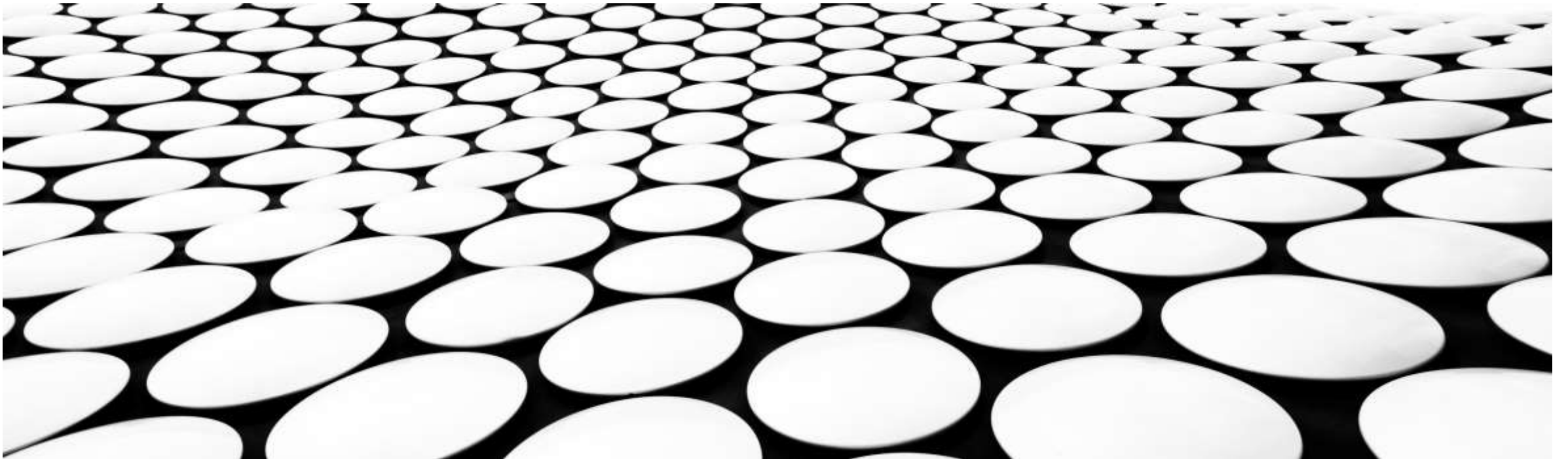# WELCOME TO YOUR DEVOPS LEARNING JOURNEY

MODERN DEVOPS • TOOLCHAIN-DRIVEN • END-TO-END FLOW

CAPSTONE IDEAS

- # 1. Microservice or Front END Application with End-to-End CI/CD

- **What:** Build a small microservice-based app (e.g., a task manager or e-commerce cart).. If you are a front end developer, you can use local APIs using JSON as data store

- **Pipeline:**

  - Code compilation with **Maven (JDK 17) or NPM (angular/react)**

  - Unit & integration tests with **JUnit/Testcontainers (or Jasmine/Karma for Angular/React)**

  - Static analysis (SonarQube/Checkstyle) if

  - Docker image build & push to registry

  - Deploy to Kubernetes/Minikube with YAML files. Helm integration is optional.

- **Artifact Management:** Store JARs (for Maven/Java) and Docker images in **Nexus/Artifactory**.

- **Release Management:** Automated versioning with Git tags → pipeline triggers release notes.

SUBMISSION

- You will need a public github account.

- Add your work to https://github.com/<yourusername>/capstone.git

- A Readme that details the steps to build and run the application.

- Submit the repository link in the "My Assignment" menu as a PDF document and click the "Submit Assignment" button. (Copy and Paste github link in the document)

THE FINAL CAPSTONE PROJECT

Otional

| Developer (GitHub Repo) | CI/CD (Jenkins / GitHub Actions) | Artifact & Image Registry |

| Docker Build | Kubernetes (EKS) | AWS Cloud (VPC, EC2, S3) |

| Terraform (IaC) | Prometheus Grafana | DevSecOps Gates |