



Devops Assignment

THE CHALLENGE:

In this technical assessment, you will be required to demonstrate your proficiency in deploying two different types of projects: a MERN (MongoDB, Express.js, React, Node.js) stack application and a Python project.

Project 1: Deploy a MERN Stack Application

For the MERN stack project, we will be provided with a simple web application consisting of a React frontend, an Express.js backend, and a MongoDB database. Your task is to deploy this application to a cloud environment of your choice (e.g., AWS, Azure, GCP) using best practices for containerization and orchestration.

REQUIREMENTS

1. Containerization: Dockerize the application components (frontend, backend, database) using appropriate Docker images.
2. Orchestration: Use a container orchestration tool (e.g., Kubernetes) to manage the deployment, scaling, and monitoring of the application.
3. CI/CD: Implement a CI/CD pipeline using a tool such as Jenkins, GitLab CI/CD, or GitHub Actions. The pipeline should automate the building, testing, and deployment of the application.
4. Logging and Alerts: Implement logging for the utility and configure alerts or notifications for critical events.

Assessment Guidelines:

1. You are free to choose the cloud platforms, tools, and technologies you are most comfortable with, keeping in mind best practices and industry standards.

2. Provide clear documentation detailing the deployment process, infrastructure setup, and any configuration steps.
3. Your solution should be scalable, maintainable, and well-organized.
4. Pay attention to security considerations and follow DevOps best practices.

SUBMISSION

Provide a GitHub repository containing the following:

1. Dockerfiles for the MERN stack components.
2. Kubernetes configuration files for orchestrating the MERN stack.
3. CI/CD pipeline configuration files for both projects.
4. Infrastructure as Code scripts (e.g., Terraform, CloudFormation) for setting up cloud resources.
5. Documentation outlining the deployment process, architecture, and any challenges faced.

You will be evaluated based on the completeness of your solution, adherence to best practices, and the overall quality of your deployment process.