DevOps Cloud Optimization Challenge

Job Position: DevOps Engineer

Objective:

Design and implement a scalable infrastructure solution for an enterprise application that manages customer orders and inventory, focusing on optimization strategies utilizing Kubernetes.

Scenario:

You are tasked with creating a comprehensive infrastructure management plan for a fictional company experiencing rapid growth. The company aims to implement an infrastructure that includes the following components:

- **Kubernetes cluster:** 2 nodes—one with a GPU and one without—running a basic web application for managing customer orders and inventory. Deploy the microservices on the GPU node and the other on the non-GPU node.
- **PostgreSQL Database:** Hosting data for the order management system.
- **File Storage:** Local storage for product images and documents.
- **Observability Tools:** Implement observability solutions (monitoring, logging, tracing).
- **Ingress:** Configure an ingress (exposing it to HTTPS is optional).
- **Additional Services:** Any additional service needed to manage, for example, the network or security.

Requirements:

1. Include the suggested components (Additional components like networking and security will be evaluated).
2. Prepare an observability solution.
3. Implement CI/CD pipelines.

Notes: The infrastructure can be set up locally

Timeframe:

The challenge is to be completed within one week. If time is insufficient, documentation of what would be done to complete the task is acceptable.

Submission:

Submit your solution via email, including:

- A report documenting:
    - Technical decisions.
    - A detailed architecture diagram.
    - A plan to manage high availability, scalability, and disaster recovery in your design.
    - How the infrastructure and the pipelines are prepared to manage different environments.
- A public GitHub repository with all the code created.