**PROJECT PROPOSAL**

**1. Title:**

We are developing an e-commerce platform which will be a web-based application developed using the React JS library, with MongoDB serving as the database and Node JS functioning as the backend of the application. The app will enable users to browse items displayed on the platform and add their selected items to their shopping cart. The main objective of this project will be to design and develop an application with a highly flexible Continuous Integration/Continuous Deployment (CI/CD) pipeline using GitLab and Docker.

**2. Team Members:**

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| Abha Kamble | N01607054 |
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**3. Goal:**

What am I going to do?

* The goal is to design and implement a user-friendly ecommerce website with a flexible CI/CD (Continuous Integration/Continuous Deployment) pipeline using GitLab and Docker.

Who would benefit?

* Development teams, organizations, and businesses looking to automate their software development and deployment processes will benefit from this project.

**4. Scope:**

What are the things that will be covered?

* Build a web-based application developed using the React JS library, with MongoDB serving as the database and Node JS.
* Setting up GitLab for CI/CD.
* Creating Dockerized build environments.
* Configuring automated testing and deployment.
* Implementing version control and release management.

**5. Approach:**

What approach am I going to try?

* We will adopt an Agile development approach, focusing on iterative development and continuous improvement. Our approach will be to start with a minimal viable CI/CD pipeline and gradually enhance it as we progress.

**6. Methodology:**

What method will you use to address your topic?

* We will use a combination of the following methods:

1. Agile project management methodologies.
2. GitLab for version control, CI/CD, and issue tracking.
3. Docker for containerization.
4. Scripting and automation for pipeline configuration.

* Resources Needed:

1. Cloud platform – AWS.
2. GitLab account.
3. Docker and Docker Compose.
4. CI/CD pipeline scripting - GitLab CI/CD.
5. Monitoring and logging tools – AWS CloudWatch.

* Tasks to be Implemented:

Task 1: Setup GitLab project and repository.

Task 2: Configure GitLab CI/CD for building and testing.

Task 3: Dockerize the application.

Task 4: Create a staging and production environment.

Task 5: Implement automated testing and deployment.

Task 6: Integrate monitoring and logging.

Task 7: Implement infrastructure as code for scaling.

**7. Summary:**

What will I learn by doing this project?

* By undertaking this project, we will gain hands-on experience in designing and implementing a flexible CI/CD pipeline using GitLab and Docker. We will learn how to automate software development and deployment, manage infrastructure as code, and improve the overall efficiency and reliability of software delivery.
* This project will provide valuable insights into DevOps practices and tools.