| **Track(s): DevOps Engieer** |
| --- |
| **Project ID:** |
| **Project Title:THE ULTIMATE CI/CD DEVOPS PIPELINE PROJECT** |
| **Group ID: 2** |
| **Project Short Description:**  This project aims to create a comprehensive CI/CD pipeline that automates the software development lifecycle using Terraform for infrastructure as code, enhancing collaboration, reducing deployment times, and increasing the overall efficiency of the development process. |
| **Project Context (third party interfaces, APIs, or other third party tools that will interact with your proposed design):**   * **Third Party Interfaces**:   + Integration with cloud services (AWS)   + Use of monitoring tools (like Prometheus, Grafana)   + Interaction with container orchestration platforms (Kubernetes) * **APIs**:   + GitHub API for source code management   + Terraform Cloud API for infrastructure management   + Jenkins API for CI/CD processes   + Webhooks for notifications and triggers |
| **Example Application of the Proposed Project:**  A web application that allows users to register and log in, featuring a dashboard displaying user statistics. The CI/CD pipeline will automate testing, building, and deploying updates to the application, with Terraform managing the infrastructure. |
| **Tools (Hardware and Software needed for the project / needed to build a prototype):**   * **Hardware:**   + Servers for hosting CI/CD tools (virtual machines and cloud instances) * **Software:**   + Version control (Git, GitHub)   + CI/CD tools (Jenkins)   + Containerization (Docker)   + Orchestration (Kubernetes)   + Infrastructure as Code (Terraform)   + Monitoring tools (Prometheus, Grafana) |
| **Deliverables:**   * **A fully functional CI/CD pipeline demonstrating:**   + Automated code integration   + Continuous testing and quality assurance   + Infrastructure provisioning and management using Terraform   + Deployment automation   + Monitoring and feedback loops * **Documentation detailing the setup, configuration, and usage of the pipeline and Terraform scripts** * **A presentation showcasing the project outcome and its benefits** |
| **Project Notes (Background, Data, references…..etc):**  **References :**  **THE ULTIMATE CI/CD DEVOPS PIPELINE PROJECT**  **https://github.com/MohamedHalim2812/UltimateCICD/edit/main/README.md** |