

# Assignment: Exploring CI/CD Technologies

## Title: Exploring Continuous Integration and Continuous Deployment (CI/CD) Technologies

### Objective:

The objective of this assignment is to familiarize students with various CI/CD technologies, understand their functionalities, advantages, and application in software development. Each student will explore a different CI/CD technology, prepare an oral presentation with accompanying materials, and demonstrate a working example of a project utilizing the chosen technology.

### Duration:

10-15 minutes per presentation

### Instructions:

#### 1. Technology Selection:

- Each student will select a specific CI/CD technology (e.g., Jenkins, GitLab CI/CD, CircleCI, Travis CI, etc.). No two students can present on the same technology.
- Technologies can include both open-source and commercial solutions.

#### 2. Research and Presentation Preparation:

- Conduct in-depth research on the selected technology, understanding its core concepts, features, architecture, and best practices.
- Prepare a presentation summarizing the key points:
  - Introduction to the chosen technology.
  - Explanation of its core components and functionalities.
  - Comparison with other CI/CD tools (if applicable).
  - Use cases and industries where the technology is commonly applied.
  - Benefits and potential drawbacks.
  - Any unique or standout features.
  - Real-world examples of companies/projects using the technology.

#### 3. Working Example:

- Create a demonstration project that showcases the application of the chosen CI/CD technology.
- The project should include:
  - Source code hosted on a version control system (GitHub, GitLab, etc.).
  - Configuration files for CI/CD pipeline setup (e.g., YAML, Jenkinsfile, etc.).
  - An application or codebase that undergoes automated build, test, and deployment processes.
  - Documentation on how to replicate the CI/CD setup and run the project.

#### 4. Presentation Guidelines:

- Presentations should be clear, engaging, and well-structured.
- Demonstrate the working example during the presentation to showcase the technology in action.
- Encourage discussions and questions from classmates after the presentation.

### Evaluation Criteria:

- Understanding of the chosen CI/CD technology.
- Clarity and coherence of the presentation.
- Effectiveness of the working example and its relevance to the technology.
- Engagement with the audience during the presentation.
- Responses to questions and ability to address queries.

### Submission:

- Presentation materials.

- Documentation of the working example/project.
- Any additional resources used for research.

*Note: Students are encouraged to start early to ensure ample time for research, project development, and presentation preparation. Collaboration with classmates for knowledge sharing is permitted but individual presentations are required.*