**Topic: DevOps**

**Team Members**

Muhammad Raees 19F-0963

Muhammad Ahmad 19F-1011

Sohaib Hassan 19F-0930

**Meeting Agenda:**

Discussion on DevOps tools and pipeline creation.

**Tool Explored:**

* **GitHub action:** GitHub Actions is a fundamental tool in DevOps, automating tasks such as Continuous Integration (CI) for code validation, Continuous Deployment (CD) for efficient releases, and Infrastructure as Code (IaC) for automating infrastructure provisioning. This integration streamlines development workflows, enhances code quality, and accelerates the deployment process, aligning perfectly with the principles of DevOps.
* **GitLab:** GitLab is a widely used tool in the field of DevOps. It provides a comprehensive platform for managing source code, version control, continuous integration, and continuous deployment. With GitLab, teams can collaborate effectively, automate their workflows, and ensure the smooth delivery of software applications. It offers features such as code repositories, issue tracking, pipelines, and project management tools. GitLab's integration with other DevOps tools makes it a popular choice for organizations looking to streamline their software development processes.
* **Jenkins:** Jenkins is an open source continuous integration/continuous delivery and deployment (CI/CD) automation software DevOps tool written in the Java programming language. It is used to implement CI/CD workflows, called pipelines.

**Pipeline Created:**

* **M. Ahmad:** I started GitHub and committed a code file to the GitHub repository. Then I moved in the actions tab and explored that there are many tools showing to be configured. On the top it is showing me the tools it suggests me to configure according to the nature of the file I committed on GitHub repository. I configured a tool and it opened me a yml file which I explored and committed to GitHub. I refreshed the page and again moved to actions tab and explored that it was showing me that file and when I clicked that file it gave me an option to build that specific file. When I clicked on build, it gave me options to set up job, run, some other options and complete job. In this way, I created the pipeline and explored GitHub Actions.
* **Sohaib Hassan:** Integrating GitHub with GitLab and orchestrating a CI/CD pipeline through a YAML project file was a powerful combination that greatly enhanced my development workflow. The access token ensured secure communication between the two platforms, and the successful completion of each pipeline stage validated the effectiveness of this setup in maintaining a robust and reliable codebase.
* **M.Raees:** As I continue my exploration of Jenkins, I'll likely see how it enables me to create personalized automation pipelines, enforce code quality standards, and orchestrate deployments across different environments. This hands-on experience will provide me with valuable insights into optimizing CI/CD workflows to suit my project's unique demands.