CI/CD

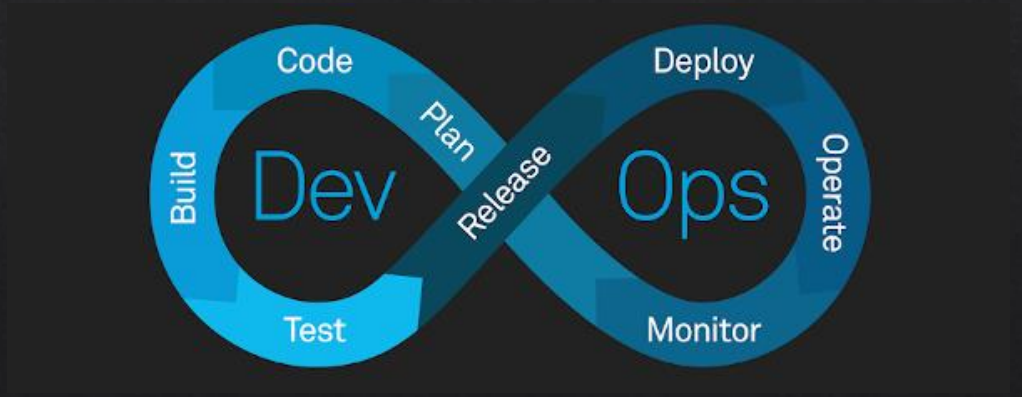
Automated pipelines remove manual errors, provide standardized feedback loops to developers, and enable fast product iterations.

What is CI/CD?

Continuous Integration, is a software development practice in which all developers merge code changes in a central repository multiple times a day.

Continuous Delivery, adds that the software can be released to production at any time, often by automatically pushing changes to a staging system.

Continuous Deployment, goes further and pushes changes to production automatically.



What are the benefits of CI/CD?

- The implementation of the CI/CD in the UdaPeople project will make our company:
  - **Faster time to market**
  - **Reduced risk**
  - **Shorter review time**
  - **Better code quality**
  - **Smoother path to production**
  - **Faster bug fixes**
  - **Efficient infrastructure**
  - **Increase our Revenue**

CI/CD Best Practices

- **Commit early, commit often**
  - Ensuring all your source code, configuration files, scripts, libraries and executables are in source control is an essential first step towards implementing continuous integration, enabling you to keep track of every change.
- **Keep the builds green**
  - By building the solution and running a set of automated tests each time, a change is committed, a CI/CD pipeline provides rapid feedback to developers about their changes.
- **Make it a team effort**
  - Building an effective CI/CD pipeline is as much about team and organizational culture as it is about the processes and tools that you use. Continuous integration, delivery and deployment are DevOps practices. They rely on breaking down the traditional silos between developers, testers and operations, and encouraging collaboration between disciplines.

What are the Business Benefits of CI/CD?

- **Reduce Costs and Boost Profits**
  - CI/CD is also good for the bottom line. It standardizes deployment processes across all projects, and, done right, it enables teams to systematically test every change made to the source code.
- **Gain Real-Time Visibility of the Development Process**
  - CI/CD also brings real-time visibility into the development cycle. Reviewing test results helps everyone on the team identify the project status and immediately understand which code changes caused problems or improved on what came before.
- **Troubleshooting costs**
  - With CI/CD pipeline properly automated, the process of the product deployment and release is more reliable, and developers are not wasting hours on bug-fixing.

Conclusion

Developing a CI/CD pipeline is a standard practice for businesses that frequently improve applications and require a reliable delivery process. Once in place, the CI/CD pipeline lets the team focus more on enhancing applications and less on the details of delivering it to various environments.

The CI/CD and DevOps trends will continue to evolve, leaving space for the market to grow and improve.

The customers who will have a better-structured product and easy deployment.