Fundamentals and Benefits of CI/CD

Overview

▶ CI/CD is a method to frequently deliver applications to customers by introducing automation into the stages of app development.

▶ CI/CD introduces ongoing automation and continuous monitoring throughout the lifecycle of apps, from integration and testing phases to delivery and deployment. Taken together, these connected practices are often referred to as a "CI/CD pipeline".

Continuous Integration:

Is an automation process for developers. Successful CI means new code changes to an app are regularly built, tested, and merged to a shared repository.

Continuous delivery:

Means a developer's changes to an application are automatically bug tested and uploaded to a repository (like GitHub or a container registry), where they can then be deployed to a live production environment by the operations team.

Continuous deployment (the other possible "CD"):

Refer to automatically releasing a developer's changes from the repository to production, where it is usable by customers.

Benefits of CI/CD

1-Faster time to market:

The primary goal of a CI/CD pipeline is to deliver working software to users quickly and frequently.

2-Reduced risk

Having a shorter time to market doesn't just help you keep up with the competition

3-Shorter review time

With continuous integration, developers are encouraged to commit their code changes more frequently – at least once a day as a rule of thumb.

Benefits of CI/CD

4-Better code quality:

Testing your code's behavior is an essential step in the software release process but doing it thoroughly can also be extremely time consuming.

5-Smoother path to production

As we all know, practice makes perfect, and what's true of shooting hoops or mastering scales also applies to software releases.

6-Faster bug fixes

Even with improved code quality thanks to automated testing, bugs will still occasionally sneak their way through to production.