Fundamentals of CI/CD

Fundamentals and Benefits of CI/CD to Achieve, Build, and Deploy Automation for Our Products.

Continuous Integration

- Continuous Integration (CI) is the practice of merging all developers' working copies to a shared mainline several times a day in order to avoid future code conflicts.
- Developers are practicing CI to merge their changes back to the main branch as frequently as possible. The changes made by the developers are validated by creating a build and running automated tests against it. This avoids the integration issues that can arise when waiting for release day to merge changes into the release branch.

Continuous Delivery

- Continuous Delivery (CD) is a software engineering approach in which the value is delivered frequently through automated deployments as soon as they are ready.
- Continuous Delivery is an extension of Continuous Integration in that it automatically deploys all code changes to a testing and/or production environment following the build stage.
- This means that, in addition to automated testing, you have an automated release process and can deploy your application at any time by clicking a button.

Benefits of CI/CD

Benefits of CI

- Less bugs get shipped to production.
- Building the release is easier.
- The cost of testing is drastically reduced.
- Your QA team can spend less time testing and more time improving the quality culture.

Benefits of CD

- Your team no longer needs to spend days preparing for a release.
- You can release more frequently, which will help to shorten the feedback loop with your customers.
- There is less pressure on decisions for minor changes, which encourages faster iteration.