CI/CD Fundamentals & Benefits

Continuous Integration (CI):

❑ **CI is the practice of automating the integration of code changes from different developers into the same repository.**

❑ **the key benefits of integrating regularly is that you can detect errors quickly and locate them more easily.**

❑ **CI handles everything that has to be done with the code itself, building, testing, analysing, creating artifacts.**

Continuous Deployment (CD):

❏ **CD is a software engineering practice in which teams deliver value frequently through an automated deployments.**

❏ **CD handles everything related to deployment, creating infra, configuring servers, deploying artifacts, smoke testing, promotion to production, rollbacks.**

Continuous Delivery:

❏ **Continuous delivery is an engineering practice in which teams produce and release value in short cycles.**

❏ **Continuous delivery contains and enhances the processes of Continuous Integration & Continuous Deployment to help delivering the needed value in short time with minimum Errors.**

CI/CD Benefits

❑ **Detect compiling errors quickly**: will help in reducing cost by reducing the time a developer might take to trace the errors in new code of other developers.

❑ **Detect the unit test failures**: will avoid cost by providing a trusted product to customers with less bugs and reduce time compared if it will be done from testing team.

❑ **Detect vulnerability**: will help us to reduce the cost that we might face from customer due to security holes.

CI/CD Benefits

❏ **<u>Automate Deployment to Prod</u>: will increase revenue as it will take less time to be available to market.**

❏ **<u>Automate Smoke testing</u>: will protect revenue as it will reduce the downtime in case facing any major bug or crash.**

❏ **<u>Automate Rollbacks</u>: will protect revenue as it will help in reverting changes back and bring the application to the initial working state.**