Benefits of CI/CD

- The "CD" in CI/CD refers to continuous delivery and/or continuous deployment, which are related concepts that sometimes get used interchangeably.

- The "CI" in CI/CD always refers to continuous integration, which 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. It's a solution to the problem of having too many branches of an app in development at once that might conflict with each other.

- CI/CD can be considered amongst one of the top benefits of the CI/CD pipeline as it allows you to monitor the health, performance, and reliability of an app. Monitoring these metrics help in creating actionable insight and taking necessary actions to improve the product.

o **Faster Release Rate**

- Failures are detected faster and as such, can be repaired faster, leading to increasing release rates. However, frequent releases are possible only if the code is developed in a continuously moving system.

o CI/CD support

- CI/CD tools help store the environment-specific parameters that must be packaged with each delivery. CI/CD automation then performs any necessary service calls to web servers, databases, and other services that may need to be restarted or follow other procedures when applications are deployed.

o **Reduce Costs**

- Automation in the CI/CD pipeline reduces the number of errors that can take place in the many repetitive steps of CI and CD. Doing so also frees up developer time that could be spent on product development as there aren't as many code changes to fix down the road if the error is caught quickly. Another thing to keep in mind: increasing code quality.

- Catch compile error After merge Because Less Time Spent On Issues from new Developer Code and Reduce Cost.

- Catch Unit Test Failures Because Less bugs in production and less time in testing and Avoid Cost.

- Smoke Test After deploy .It will automatic rollback in case failure this will decrease downtime and reduce cost.

- Detect Security Vulnerabilities Prevent embarrassing or costly security holes and Avoid Cost.