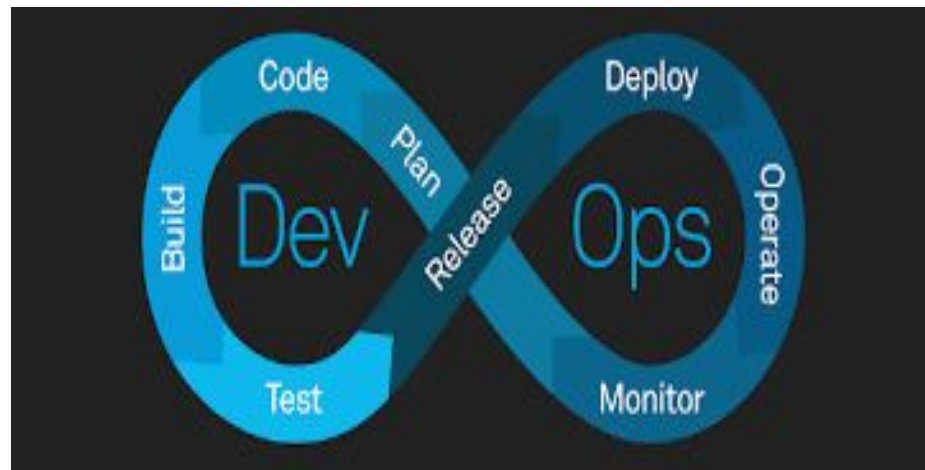# CI/CD Fundamentals and Benefits

CI/CD is the combination of Continuous Integration and Continuous Deployment. In a bid to automate most of the tasks that comes after shipping of code, CI/CD processes and tools were born. This processes involve includes creating infrastructure, building code, testing code, deploying, monitoring, rollbacks, etc. All this processes can be automated so it can repeated with ease.

*Research on companies using CI/CD points towards **time-saving** of as much as 20%, which in turn **cuts costs** of development.*

CI/CD = PRODUCTIVITY + RELIABILITY + SUSTAINABILITY

The **Benefits**

Faster Deployment

Though CI/CD may take some time to setup but when completed, subsequent deployment will be a bliss. Which will eventually lead to more

Automate Infrastructure

This enables servers and networks to be provisioned with reduced human assistance which reduces chances for human errors and therefore saves cost in the process

Fault Detection

CI/CD makes it easier to detect faults in the system. This prevents having unresolved or undetected problems which might later cause the total breakdown of the system.

Test Reliability

CI/CD improves the reliability of test and making sure things works both locally and in production. By adding more tests like smoke tests, unit tests, your test become more reliable and therefore reduces bugs in production which eventually saves cost

Automated Rollback

This ensures that the application can go back to the last stable state when there is a job failure. It ensures that the app never goes down and therefore prevents loss of revenue