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1. What is CI/CD?

CI/CD is a method to frequently deliver apps to customers by introducing automation into the stages of app development. The main concepts attributed to CI/CD are continuous integration, continuous delivery, and continuous deployment. CI/CD is a solution to the problems integrating new code can cause for development and operations teams (AKA "integration hell").

The "CD" in CI/CD refers to continuous delivery and/or continuous deployment, which are related concepts that sometimes get used interchangeably. Both are about automating further stages of the pipeline, but they're sometimes used separately to illustrate just how much automation is happening.

2. What are feature flags and how it is used?

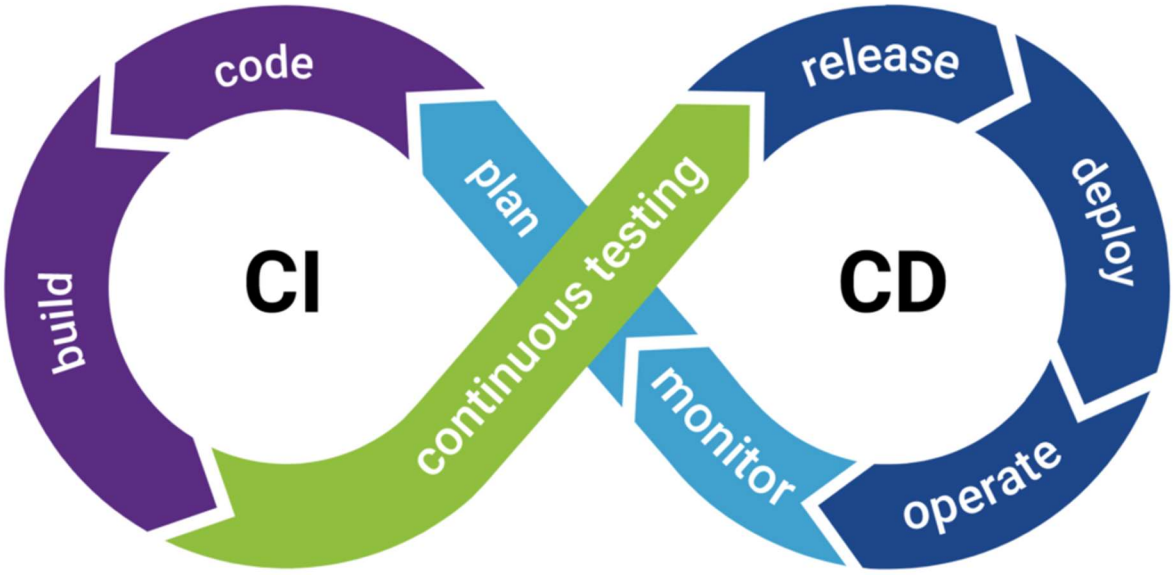
Feature flags (also known as feature toggles or feature switches) are a software development technique that turns certain functionality on and off during runtime, without deploying new code. This allows for better control and more experimentation over the full lifecycle of features.

Feature flags are a software development concept that allow you to enable or disable a feature without modifying the source code or requiring a redeploy. They are also commonly referred to as feature toggles, release toggles or feature flippers. Feature flags determine at runtime which portions of code are executed. This allows new features to be deployed without making them visible to users or, even more importantly, you can make them visible to only a specific subset of users.

3. Explain CI/CD pipeline with block diagram?

The code will progress from code check-in through the test, build, deploy, and production stages. Engineers over the years have automated the steps for this process. The automation led to two primary processes known as **Continuous Integration** and **Continuous Delivery**.

Standard Definition: A CI/CD pipeline is defined as a series of interconnected steps that include stages from code commit, testing, staging, deployment testing, and finally, deployment into the production servers. We automate most of these stages to create a seamless software delivery.




For a CI CD pipeline to work, we require a series of sub-processes or stages that need to continuously check and verify the code updates. These sub-stages are as follows-

## Continuous Integration:

- Code Commit
- Static Code Analysis
- Build, and
- Test stages/scenarios

## Continuous Delivery:

- Bake
- Deploy
- Deployment Testing and Verification
- Monitoring, and
- Feedback