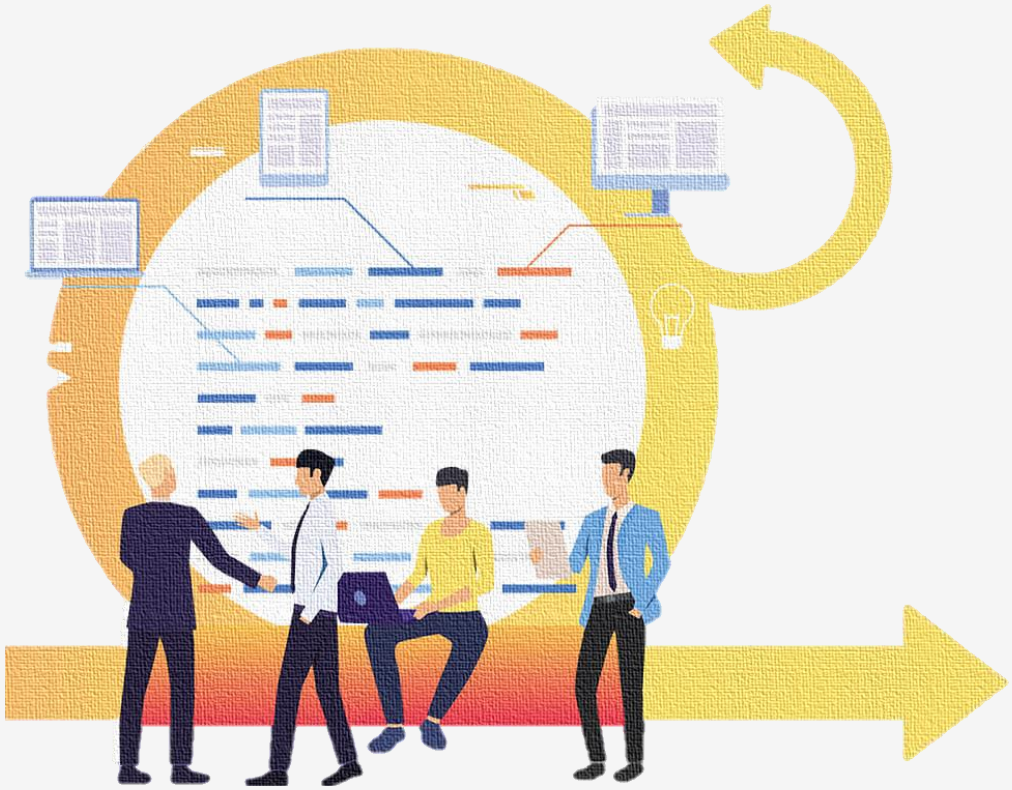
CI/CD

- doesn't replace anything, but rather it enhances everything -

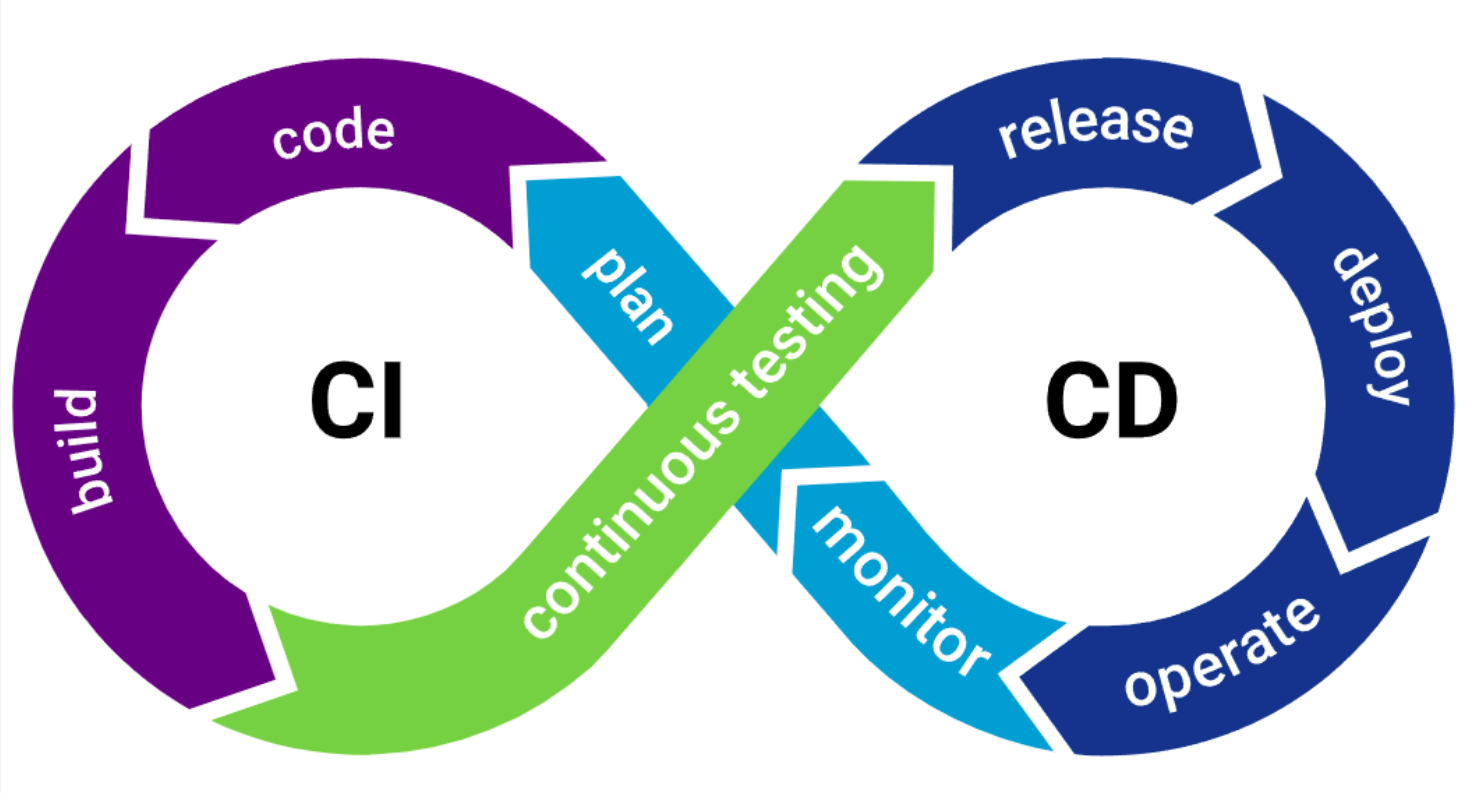
Why is CI/CD important?

CI/CD allows organizations to ship software quickly and efficiently. CI/CD facilitates an effective process for getting products to market faster than ever before, continuously delivering code into production, and ensuring an ongoing flow of new features and bug fixes via the most efficient delivery method.



Fundamentals of CI/CD

- ***Continuous Integration*** is the automated delivery of completed code to environments like testing and development. CD provides an automated and consistent way for code to be delivered to these environments.
- ***Continuous* Deployment** is the next step of continuous delivery. Every change that passes the automated tests is automatically placed in production, resulting in many production deployments.



Best Practices for CI/CD

1. **Fail Fast**
   Set up your CI/CD pipeline to find and reveal failures as fast as possible. The faster you can bring your code failures to light, the faster you can fix them

2. **Measure Quality**
   Measure your code quality so that you can see the positive effects of your improvement work (or the negative effects of technical debt)

3. **Only Road to Production**
   Once CI/CD is deploying to production on your behalf, it must be the only way to deploy. Any other person or process that meddles with production after CI/CD is running will inevitably cause CI/CD to become inconsistent and fail

4. **Maximum Automation**
   Once CI/CD is deploying to production on your behalf, it must be the only way to deploy. Any other person or process that meddles with production after CI/CD is running will inevitably cause CI/CD to become inconsistent and fail

5. **Config in Code**
   All configuration code must be in code and versioned alongside your production code. This includes the CI/CD configuration files

Benefits of CI/CD

Shorter time-to-market of new features

Improved customer satisfaction

Improved code quality

Automation to reduce costs and labor

Streamlined communication

The benefits of rapid feedback

Gathering metrics about application performance