

# GitHub Actions - CI/CD Pipelines

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GitHub Actions is a powerful automation tool provided by GitHub that enables developers to automate tasks related to their software development workflows. It allows for the creation of custom workflows, which can be triggered by various events, such as pushes to a repository, pull requests, or scheduled events. These workflows can be used for various purposes, including **Continuous Integration (CI)**, **Continuous Deployment (CD)**, testing, and more.



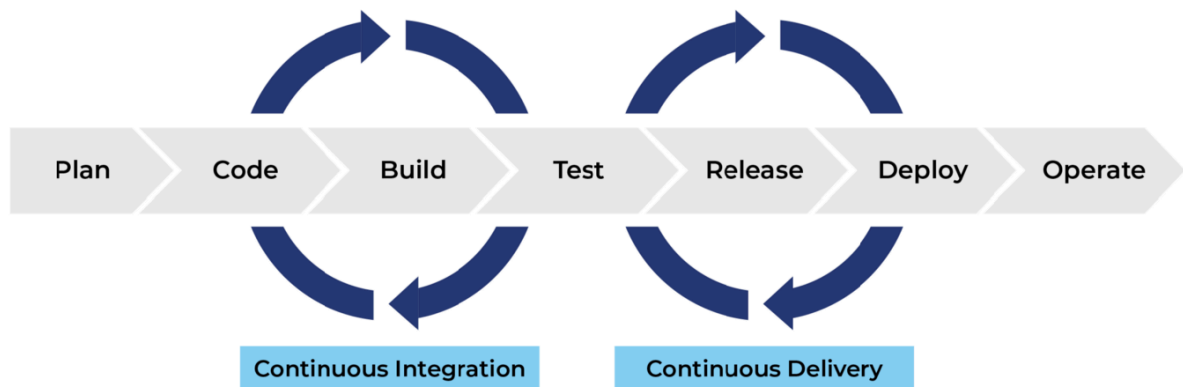
## GitHub Actions

GitHub Actions is a continuous integration and continuous delivery (**CI/CD**) **platform** that enables you to automate software development workflows directly within your GitHub repository.

## Continuous Integration & Continuous Deployment (CI/CD)

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Continuous Integration & Continuous Deployment are two key practices in both modern software development, and GitHub Actions can facilitate both:



### ***Continuous Integration (CI):***

CI is a practice where developers frequently merge their code changes into a shared repository. Each merge triggers an automated build and testing process to ensure the changes do not break the existing functionality. With GitHub Actions, developers can set up workflows to automatically build and test their code every time they push changes to the repository or create a pull request.

### ***Continuous Deployment (CD):***

CD extends the concept of CI by automating the deployment of code to production environments after it passes all required tests. GitHub actions can be configured to automatically deploy applications to various environments, such as staging or production, once the code passes CI checks. This practice reduces the time between development and deployment, allowing for faster delivery of features and updates.