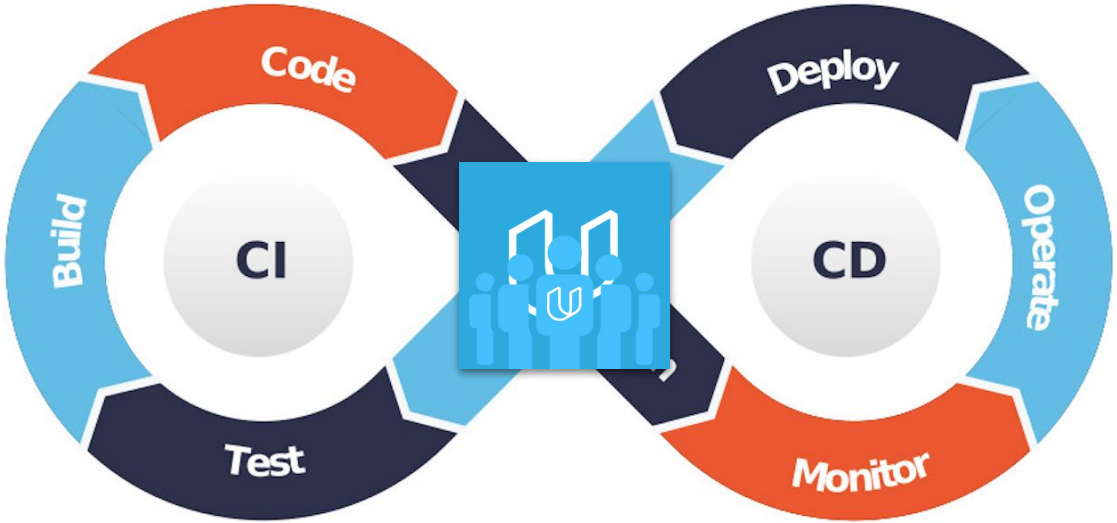
CONTINUOUS INTEGRATION(CI) - CONTINUOUS DELIVERY(CD) PROCESS

UDA-PEOPLE

- What is CI/CD?
- What does CI/CD cost?
- What are the benefits of investing in CI/CD?
- Does it align with our leadership values/principles?



What is CI/CD and what are its benefits?

- **Continuous Integration** is breaking our work up into small pieces, sharing our work with our peers, and QA-ing frequently.It is what compels the organization to focus integrating the work from each developer into the main repository multiple numbers of times in a day to gauge any integration bugs and speed up collaborative development.
- **Continuous Delivery** reduces friction in the release process and automates the steps that are required to deploy a build to release a code safely at any point in time. Continuous Deployment, on the other hand, is used to automate the delivery whenever a code is changed.

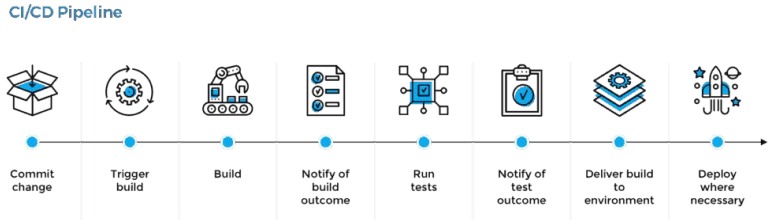
1. **Reduced Lead Time:** Implementing CI/CD helps organizations to reduce the time it takes to deliver new features and products to customers. This leads to a competitive advantage in the market.
   KPI: Lead Time
2. **Reduced Time to Detect and Fix Issues:** CI/CD helps in early detection of issues and quick resolution, resulting in reduced time to fix issues. This helps organizations to reduce the time and costs associated with resolving issues.
   KPI: Mean Time to Detect (MTTD), Mean Time to Resolve (MTTR)
3. **Improved Collaboration:** Implementing CI/CD helps in improving collaboration between teams, resulting in better communication and faster issue resolution.
   KPI: Number of cross-functional teams
4. I**ncreased Efficiency:** CI/CD helps in reducing manual processes, automating tasks, and improving workflow, resulting in increased efficiency.
   KPI: Time to deployment, Time to market
5. **Improved Customer Satisfaction:** CI/CD helps in delivering new features and bug fixes faster, resulting in improved customer satisfaction.
   KPI: Net Promoter Score (NPS), Customer Retention Rate
6. **Cost Reduction:** CI/CD helps in reducing the time and costs associated with manual processes, reducing the number of defects and rework, and improving resource utilization.
   KPI: Cost per feature, Cost of quality, Resource utilization.

What are the business benefits of investing in CI/CD?

Yes, CI/CD is a great investment because it makes your developer's job more enjoyable, but engineer happiness is simply a side-effect of a great business decision.

There are also many benefits of CI/CD that go beyond engineer happiness and truly justify the investment:

- **Bring Products to Market Faster**
- **enables organizations to respond to consumer needs as they evolve.**
- **plays a crucial role in shortening time to value.**
- **supports customer outcomes from a technical standpoint.**
- **Boosts DevOps efficiency**
- **CI/CD Improves App Quality**
- **Supports Cloud-Based App Development**
- **Reduce Costs and Boost Profits**
- **Gain Real-Time Visibility of the Development Process**



What does CI-CD cost?

- The cost to move to CI/CD depends on how much we are willing to invest in great automated testing.
- In case of UdaPeople, we have a rich suite of automated tests including end-to-end tests rather than manual testing.Running automated tests on a CI tool costs far less and is more reliable than paying an engineer to do the same thing.
- It reduces the chances of manual error during testing

Business Success Stories

1. **Amazon:** Amazon reduced the time between committing a change to their code and deploying it to production from months to minutes by implementing a continuous deployment model. They were able to increase the frequency of releases, reduce the time spent on manual testing and deployment, and increase the quality of their software. This led to a significant increase in revenue for the company.
2. **Google:** Google implemented continuous delivery for its Google Maps application, which resulted in a **50% reduction** in the time it takes to release new features. This allowed them to deliver new features and bug fixes to their customers faster, which led to increased customer satisfaction and retention.
3. **Etsy:** Etsy implemented continuous deployment, which allowed them to deploy code to production as often as **50 times a day**. This helped them to quickly identify and fix bugs, leading to a reduction in support requests and an increase in customer satisfaction.
4. **Netflix:** Netflix implemented a continuous delivery model, which allowed them to release new features and bug fixes to their customers faster. They were able to reduce the time it takes to deploy code to production from weeks to minutes, resulting in a significant reduction in costs and increased revenue.
5. **Capital One:** Capital One implemented a DevOps culture, which allowed them to reduce the time it takes to deploy code to production from weeks to hours. This helped them to quickly respond to customer needs and stay ahead of their competitors, resulting in increased revenue and market share.

Does it align with our leadership values/principles?

- CUSTOMER SATISFACTION: Since code quality is higher and features are delivered faster, customers can generate value right from the first feature deployment.
- Since all the repetitive tasks are taken care by the CI process, employees can spend their time learning new technologies and generating value for the organization. This also develops a healthy work culture.