

# **PROPOSAL**

## **Fundamentals and Benefits of CI/CD To Achieve, Build and Deploy Automation for Udapeople's Cloud-Based Software Products**

### **Introduction:**

CI/CD stands for Continuous Integration/Continuous Delivery and Deployment. It is a method used to frequently deliver applications to customers by introducing automation into the stages of application development. CI/CD is a solution to the problems integrating new code can cause for development and operations teams.

Specifically, CI/CD introduces ongoing automation and continuous monitoring throughout the lifecycle of applications, from integration and testing phases to delivery and deployment.

### **The Problem:**

CI/CD tries to solve the problem of Inefficient Software Development Processes

1. Long development cycles
2. Error-prone manual deployments
3. Slow time-to-market for new features
4. Difficulty in tracking and fixing bugs

### **The Solution:**

Benefits of Introducing Continuous Integration and Continuous Deployment (CI/CD)

1. **Faster Time-to-Market:** CI/CD enables businesses to release new products and updates faster and more frequently, giving them a competitive advantage and increased revenue potential.
2. **Catches Unit Test Failure:** This means less bugs in production and less time spent on testing, and it can perform series of test in a matter of seconds. This will reduce cost.
3. **Improved Quality:** By automating the testing and deployment process, CI/CD helps ensure consistent and reliable software releases, reducing the risk of errors and downtime.
4. **Better Collaboration:** CI/CD allows teams to work together more effectively, breaking down silos and improving communication, leading to increased efficiency and faster problem resolution.
5. **Increased Agility:** The ability to quickly adapt to changing market conditions and customer needs is key to success in today's fast-paced business environment. CI/CD

enables organizations to respond quickly to new opportunities and changing market conditions.

6. **Cost Savings:** By reducing the manual effort required to release software and reducing the risk of errors, CI/CD saves organizations time and money. This is especially important for organizations with limited IT budgets and resources.
7. **Deploy to Production Without Manual Checks:** This will make the application to get to the consumers faster thereby increasing revenue within short periods of time.
8. **Better Customer Experience:** By delivering high-quality software updates more frequently, businesses can provide a better user experience for their customers, increasing customer satisfaction and loyalty.