CI/CD

CI/CD: is efficient way to deliver your product to market faster and qualified.

Continuous Integration(CI)

- Continuous integration (CI) is the practice of automating the integration of code changes from multiple contributors into a single software project

- *Goal of CI: a high quality, deployable artifact.*

- *Common CI-related phases might include:*
  - ➢ Compile
  - ➢ Unit Test
  - ➢ Static Analysis
  - ➢ Dependency vulnerability testing
  - ➢ Store artifact

Continuous Deployment(CD)

- Continuous deployment (CD) is a strategy in software development where code changes to an application are released automatically into the production environment.

- Goal OF CD is "Moving" the artifact from the shelf to the spotlight automatic without human effort

- CD-related phases might include:
  - Creating infrastructure
  - Provisioning servers
  - Copying files
  - Promoting to production
  - Smoke Testing (aka Verify)
  - Rollbacks

Benefits of CI/CD

•Before implementation of CI/CD almost *everything* requires human intervention but with CI/CD we reduce that and reduce or avoid the cost through the following:

- ➢ •Less bugs and less time of testing in production
- ➢ •More reliable tests
- ➢ •Fast deployment without human error
- ➢ •Prevent embarrassing or costly security holes
- ➢ •Less infrastructure costs from unused resources
- ➢ •New value-generating features released more quickly
- ➢ •Easy maintenance and updates

The CI/CD Pipeline

011010
110011
010101

Build   Test   Analyze   Deploy   Verify   Promote

Revert
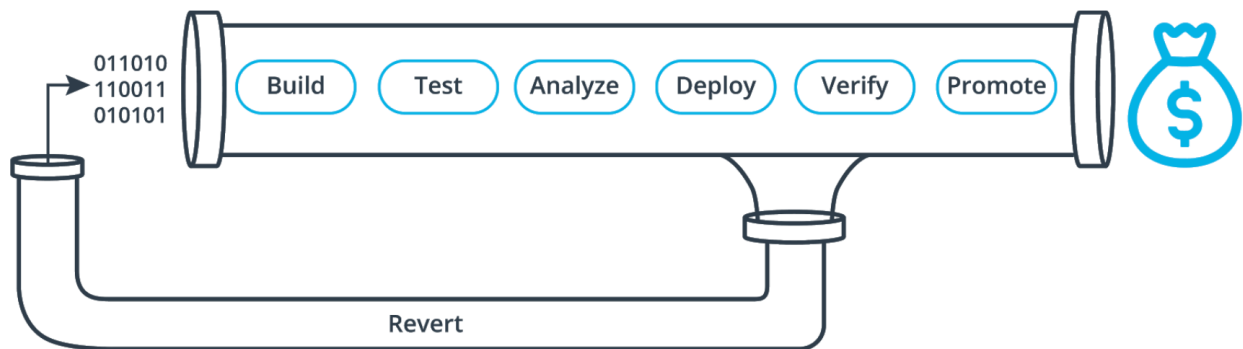
Benefits of CI/CD

➢ •implementation of CI/CD will increase Revenue through the following :

➢ •New value-generating features released more quickly

➢ •Less time to market

➢ •Reduced downtime from a deploy-related crash or major bug

➢ •Quick undo to return production to working stat

➢ •Customer satisfaction.

Code Repository root folder:

https://github.com/mostafaashourr/udapeople-cicd