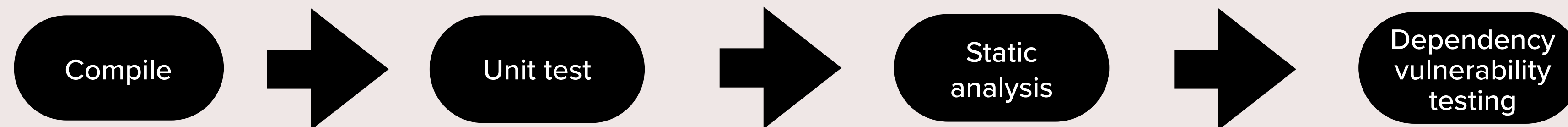# CI/CD

Continuous Integration and Continuous Deployment

UdaPeople

Continuous integration

- The practice of merging all developers working copies to a shared mainline (copy) several times a day

CI consists of 4 main parts

Compile → Unit test → Static analysis → Dependency vulnerability testing

Everything related to code, testing each module, looking for vulnerability and documentation for maintaining the code in the future.

Continuous Deployment

- The practice of frequent deployment through automated process.

- Instead of deploying the a big upgrade, we deploy our feature small chunks at a time so that we reduce downtime as much as possible.

- Continuous deployment is a continuous process that repeats along with continuous integration. Developers checks in small changes into mainline and deployment teams through automated tools deploys to make sure there are no bugs or vulnerability being introduced.

- This allows quicker turn around time when something is broken

Benefits of ci/cd

Reduce Cost

- Catching failures more often
- Detect security vulnerability
- Automated infrastructure creation
- Automated clean up

Increase Revenue

- Faster and more frequent deployment
- Automated smoke test
- Auto rollback when things don't workout
- Automated deployment instead of manual steps
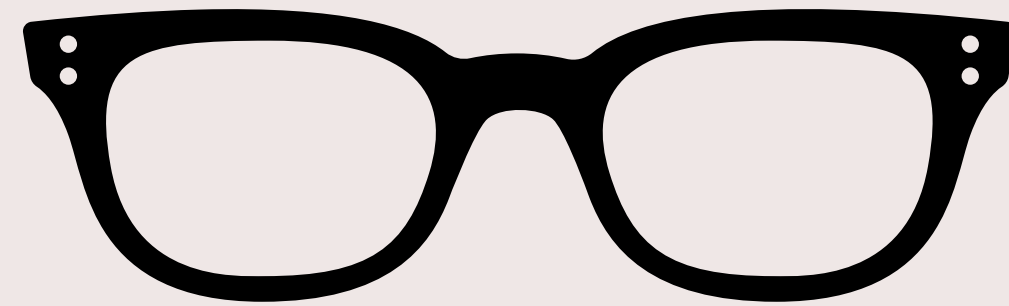
- Continuous integration and deployment is an ongoing process that leads to higher quality product, reduced cost when things break and faster delivery.

- Because its a well defined process it leads to less confusion and miscommunication between teams and less burnout among engineers

- Automated process will eliminate mistakes during infrastructure creation and human errors when following long detailed deployment procedure.

- Configuration in code, which is version controlled along side production.