1) Overview of Syllabus
2) What is Waterfall Model in Software Development?
3) What is Agile Model in Software Development?
4) What is DevOps?
5) Why we need DevOps?
6) Tools used in DevOps

Getting Started with DevOps

Overview of Syllabus

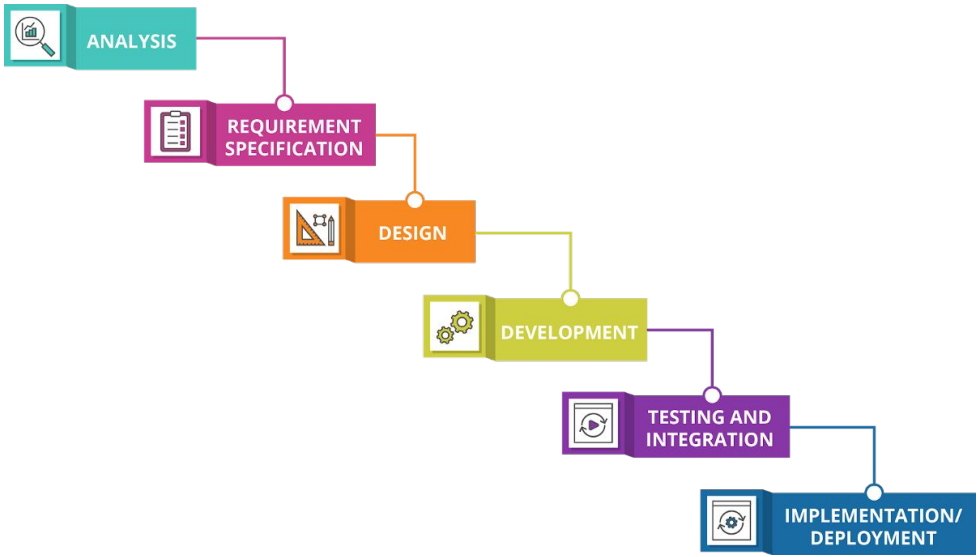
https://hackmd.io/@WjOdIG6eQkKK8RhnwE2Dyw/BkBmpoFXK

Three Software Development Methodologies

1. Waterfall Model (*Very Old*)
2. Agile Model (*Old*)
3. Lean Model (*Old*)
4. DevOps(*Latest*)

What is Waterfall Model?

The Waterfall Model was first Process Model to be introduced. It is also referred to as a **linear-sequential life cycle model**. It is very simple to understand and use. In a waterfall model, each phase must be completed fully before the next phase can begin. This type of **software development model** is basically used for the project which is small and there are no uncertain requirements.



Pros and Cons of Waterfall Model

Pros

- This model is simple and easy to understand and use.
- It is easy to manage due to the rigidity of the model – each phase has specific deliverables and a review process.
- In this model phases are processed and completed one at a time. Phases do not overlap.
- Waterfall model works well for smaller projects where requirements are clearly defined and very well understood.

Cons

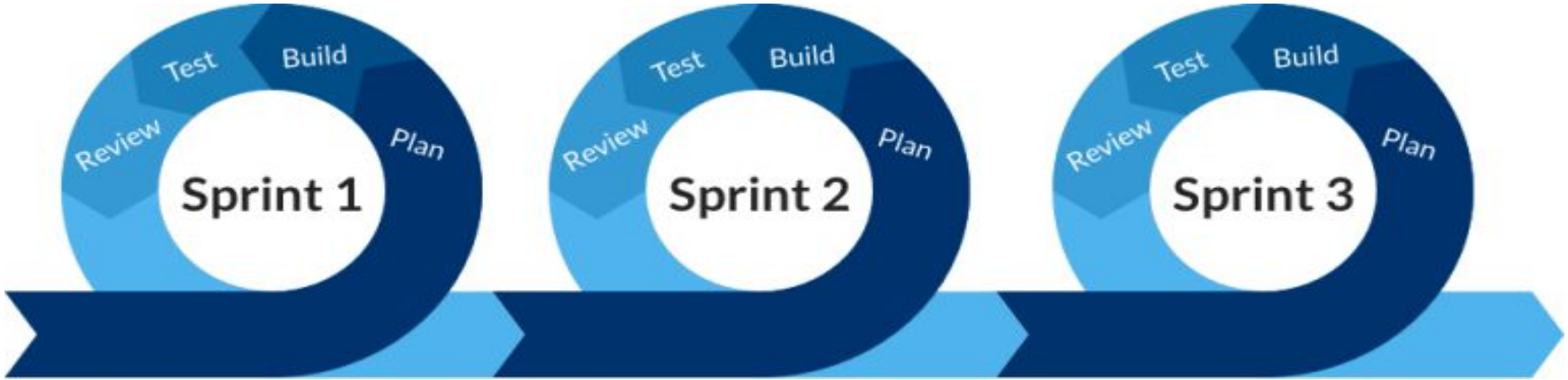
- Once an application is in the testing stage, it is very difficult to go back and change something that was not well-thought out in the concept stage.
- No working software is produced until late during the life cycle.
- High amounts of risk and uncertainty.
- Not a good model for complex and object-oriented projects.
- Poor model for long and ongoing projects.
- Not suitable for the projects where requirements are at a moderate to high risk of changing.

What is Agile Model?

The **Agile software development** methodology is one of the simplest and effective processes to turn a vision for a business need into software solutions. Agile is a term used to describe software development approaches that employ continual planning, learning, improvement, team collaboration, evolutionary development, and early delivery. It encourages flexible responses to change.

Agile is the most frequently used and hot cake model model in Software Development.

- Agile means fast
- It include SCRUM , which is a agile based model.
- It is a non-linear sequential model.
- Total software product will be developed increment by increment and each increment is called ***Sprint***


Test
Build
Review
Plan
Sprint 1
Test
Build
Review
Plan
Sprint 2
Test
Build
Review
Plan
Sprint 3

Pros and Cons of Agile Model

Pros

- Continuous Delivery
- Continuous Feedback
- Requirement change in the middle
- Customer Satisfaction is High
- Less Development Time

Cons

- Don’t have operation(Ops) team, which cause a lot of conflict between Dev and Ops team

What is DevOps?

DevOps is a software development methodology bringing Development and Operation team together under a roof, so that they can work together and take a better decision.

#Google definition

DevOps is the **combination of cultural philosophies, practices, and tools** that increases an organization's ability to deliver applications and services at high velocity: evolving and improving products at a faster pace than organizations using traditional software development and infrastructure management processes.

NETFLIX

amazon

Plan: Initially plan yourself regarding the type of application you need to develop. Make the rough picture regarding the development process

Code: Code the application as per the client requirement. with the plan, you have made in the initial step.

Build: Build the application by performing the integration of various codes you have done in the previous step.

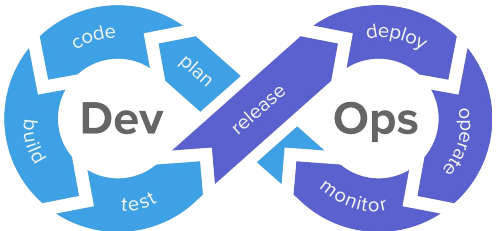
Test: This is the heart of the application. Test the application that you have built so far. And the rebuilt the application if necessary.

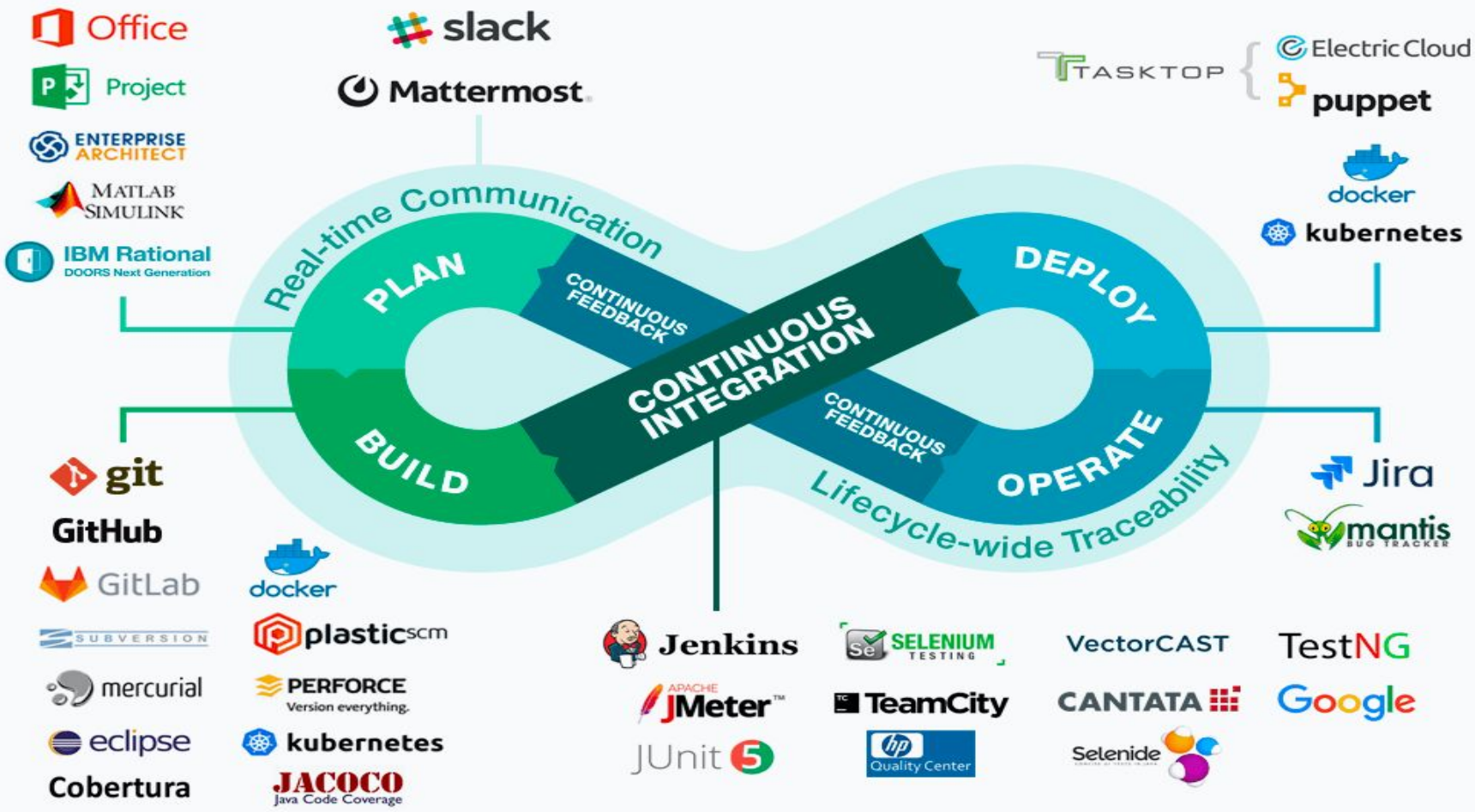
Releases: If you succeed in the Test phase, then it's time to release the application into Live.

Deploy: Deploy the code into a cloud environment for further usage. It is performed in such a manner any changes made should not affect the functioning of high traffic website.

Operate: Perform the operation on the code if any have.

Monitor: Monitor the performance of the application as per the client requirement. Keep a note on the performance of the application. Make modifications if any to satisfy the clients. And if does not reach up to the mark make changes in that particular area to satisfy the client.




Office
Project
ENTERPRISE ARCHITECT
MATLAB SIMULINK
IBM Rational DOORS Next Generation
slack
Mattermost
TASKTOP
Electric Cloud
puppet
docker
kubernetes
Real-time Communication
PLAN
CONTINUOUS FEEDBACK
CONTINUOUS INTEGRATION
DEPLOY
BUILD
CONTINUOUS FEEDBACK
OPERATE
Lifecycle-wide Traceability
git
GitHub
GitLab
SUBVERSION
mercurial
eclipse
Cobertura
docker
plasticscm
PERFORCE Version everything.
kubernetes
JACOCO Java Code Coverage
Jenkins
APACHE JMeter™
JUnit 5
SELENIUM TESTING
TeamCity
hp Quality Center
VectorCAST
CANTATA
Selenide
TestNG
Google
Jira
mantis BUG TRACKER