THADOMAL SHAHANI TSEC ENGINEERING COLLEGE

#SEPM
Assignment NO:- 2

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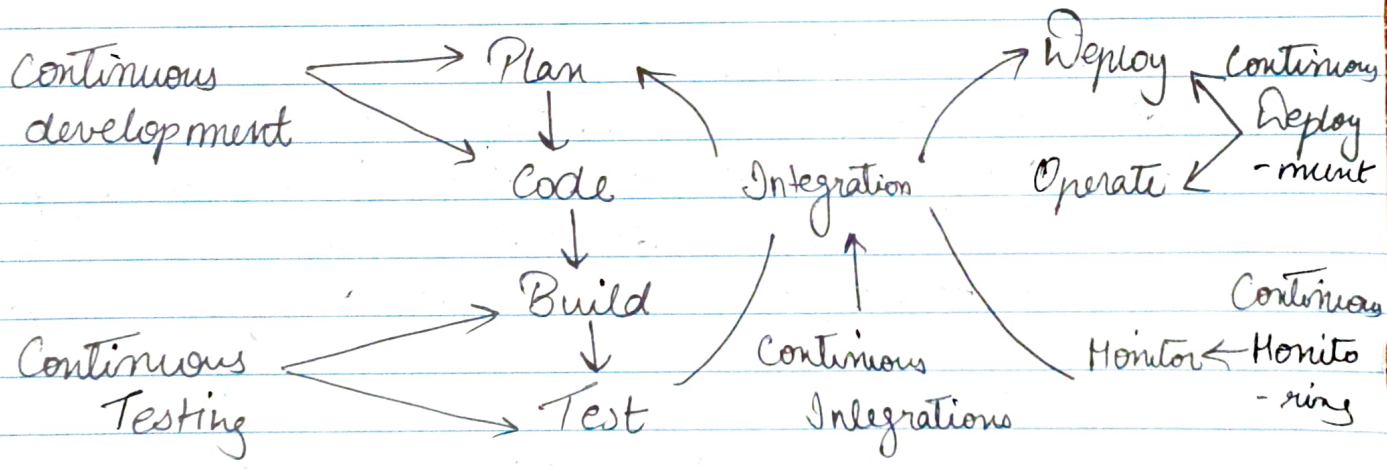
Q. What is DevOps?

→ Devops is a collaborative approach where teams work together to build and deliver secure software efficiently. It combines software development (dev) & operations (ops) to decide new to accelerate delivery through automation, collaboration, fast feedback, and improvement. Built on agile methodology, devops creates a culture of accountability, collaboration and shared responsibilities.

Core principles :-

- Develop and test in production like environments.
- Deploy & builds frequently.
- Continuously validate operational quality.

Devops Practices :-



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Continuous Development :-
This is the place that involves planning & coding, versioning & manging build of the software appl"
Ex :- Git, Github , maven, etc.

Continuous Testing :-
Continuous testing is executing automated tests, continuously and repeatedly against the code base and the various deployment env. It is a software testing methodology which focuses on achieving continuous quality in improvement.
Ex :- Bamboo, appium.

Continuous Integrations :-
Continuous Integration refers to the build & unit testing stages of the software releases process. Every revision that is committed triggers are automated build & test.
Ex :- Jenkins, Travis CI, etc.

Continuous Delivery & Deployment :-
It originates from continuous integrations, a method to develop, build, and test new code rapidly with automation so that only code that is known to be good becomes part of the software.

Infrastructure management :-
Without automation, building & maintaining large scale modern IT systems can be a resource undertaking & can lead to increased risk due to manual error

configuration & resource management is an accounted method for maintaining computer systems & software in a known current state.

Configuration Management :-
Infrastructure as code is the process of describing all software runtime env. and networking setting & parameters in simple format, that can be stored in your Version Control System (VCS) & versioned are request, there files are called manifest and are used by devops tools to automatically provision & configure build server, testing & production environment.

Micro service Architecture :-
Docker is a tool designed to make it easir to create, deploy, & run applications by using container. Container allows a developer to package up an application with all of the parts it needs, which is libraries & other dependencies and deploy it one package by doing so, thanks to the container the developers can rest assured that the application will run on any other linux machine & regrdless of any customised setting.

Cloud Based DevOps :-
Devops automation is becoming cloud centric. Most public & private cloud computing provider support devops. Systematically on thier platform, including continuous integration & deployment tools.

DevOps Engineering Role :-

A devops engineer manages a company's IT infrastructure, bridging deployment and operation key responsibilites include :-

Technical Reponsibilities :-

- Implement development, testing & automation tools
- Set up infrastructure & tests.
- Code review & responsibilites.
- Bug fixing & trouble shooting
- Build & maintain CI/CD Pipelines,

Management Responsibilites :-

- Understand customer requirements & KPI's
- Manage Stakeholders.
- Define development & operational process.
- Coordinate team communication
- Monitor customer experience
- Mentor team members.