THADOMAL SHAHANI TSEC ENGINEERING COLLEGE

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Exp-01

Aim:- To understand Devops, principles, practices and Devops roules and responsibilities.

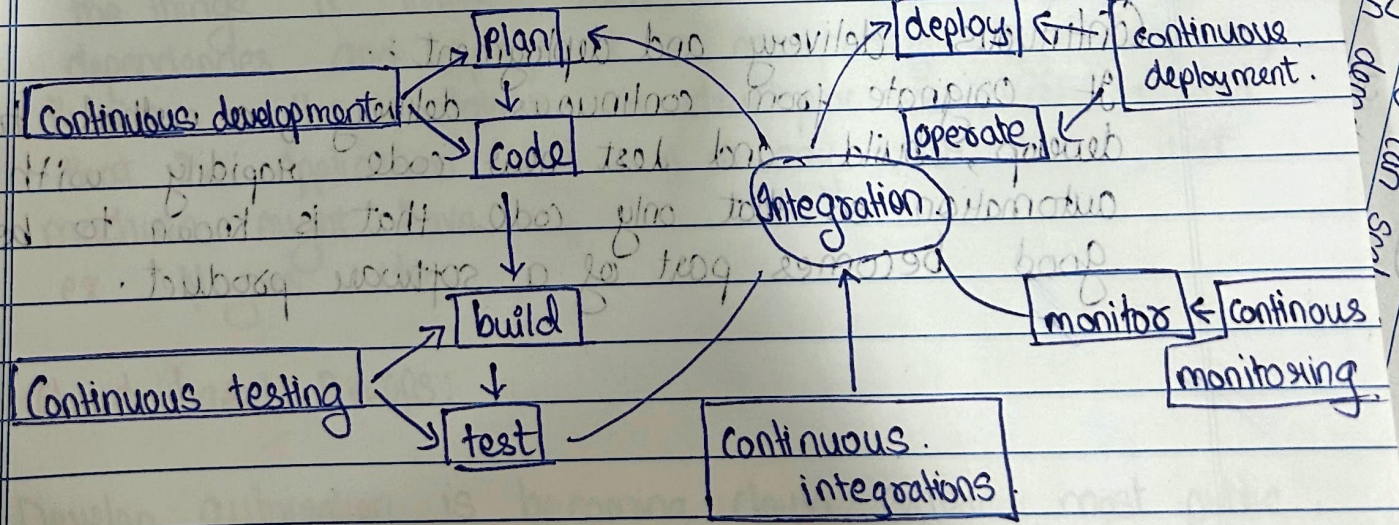
Theory :- What is Devops ::

Devops is a collaborative approach where teams work together to build and deliver secure software efficiently. It combines software development and operations to decide how to accelerate delivery through automation, collaboration, fast and feedback and iterative improvement. Built an agile methadology, devops a culture of accountability, collaboration, and shared responsibility for business outcomes.

Core principles.

1. develop and test in production like environments.
2. Deploy builds frequently.
3. Continuously validate operational quality.

Devops Practices.



Continuous development.
This is the phase that involves planning and coding versioning and managing build of the software applications functionally.
ex :- git, github, maven etc.

Continuous testing :-
Continuous testing is, executing automated tests, continuously and repeatedly again the code base and the various deployment environments. It is a software testing methodology which focuses on achieving continuous quality and improvement.
ex :- Bamboo, appium.

Continuous integration :-
Continuous integration refers to the build and unit testing stages of the software releases process every revision that is committed an automated build and test.
ex :- Jenkins, Travis CI, circle ci

Continuous delivery and deployment :-
It originate from continuous delivery, 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 a software product.

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Infrastructure management:
Without automation, building and maintaining large scale modern IT systems can be a resource intensive undertaking one can lead to increased risk due to manual method for computer software is a known consistent state.

Configuration management
Infrastructure as code is the practise of describing all software runtime environment and networking settings and parameters in simple format that can be stored in your version control system (VCS) and reasoned request text files are called manifest and are used by Devops tools to automationcaly provision and configure built server testing and production environment.

Microservice architecture
Docker is a tool designed to make it easier to create, deploy and run appln by using containers. It allows developers to package up an application with all of the things it needs, such as libraries and other dependencies and deploy it as one package. By doing so, thanks to the container the developer can rest, assured that the application will run on any other linux that machine might have
ex Nugus, etc.

Cloud based Devops:

Develop automation is becoming clould centric most public

and private cloud computing provide support. Devops systematically on their platform, including continuous integeration and continuous development tools
ex:- amazon web services.

Devops Engineer roles & responsibilites:
1. Develop and manage CI/CD pipeline.
2. Monitor system performance and deployments.
4. Ensure application and infrastruture security.
5. Collaborate with development and operations teams.
6. Manage cloud resources and scalability.
7. Respond to system incidents and reduces downtime.