Assignment 2

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TYBTech Comps B

Q1 Ans: What is Devops toolchain and why it is it important in software development

→ Key Devops fundamentals revolve around the concepts of continous integration, continuous delivery, automation and collaboration

→ Since Devops is more of a practice than technology, there's no single tool that can do justice to all stage of software development. Rather, devops forms a series of tools.

→ There are a number of open-source devops tools available. Clubbing them together based on your needs make a devops toolchain.

→ This toolchain is basically a set of various tools that solves a particular problem

→ Devops tool typically includes tools for:

a) version control
b) continuous integration
c) orchestration
d) collaboration
e) continuous deployment
f) containerization
g) Monitoring and logging
h) Infrastructure as code (IaC)

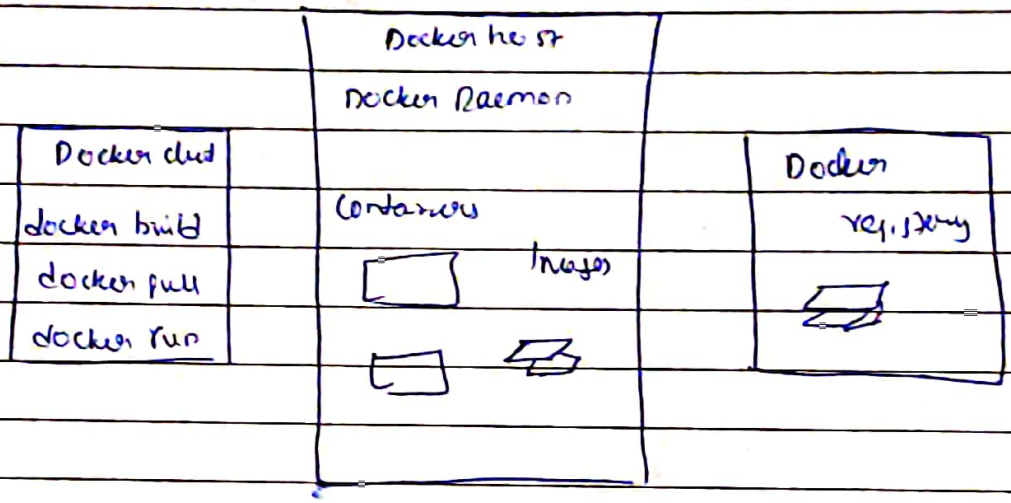
→ Devops toolchain important for various reasons.

a) Automation - It automates repetitive tasks such as building, testing and deploying code changes, reducing manual errors and increasing efficiency.

b) Improved collaboration - Devops promotes collaboration between development, operations and other teams, leads to better communication shared goals and faster problem resolution.

c) cost-effectiveness & high quality software

Q2



① Docker uses a client - server architecture

② The docker client talks to the docker daemon, which does the heavy lifting of building, running and distributing.

3) Docker client -
It uses commands and Rest API's to communicate with the docker daemon.

Docker host - is used to provide an environment to execute and run applications
It contains the docker daemon, images, containers, networks and storage.

4) Docker registry
Manages and stores the docker images. Public registry within the whole world also called Docker hub

Docker Objects.
Docker images are read-only binary templates used to create docker containers.

Explain the concept of containerization and how docker implements it.

1. Containerization is a technology that allows you to package and isolate applications with their dependencies into a single, lightweight and portable window.
2. Each container runs as an isolated process, sharing the same underlying operating system.
3. Docker is a popular platform for implementing containerization.
4. Docker images contain everything needed to run an application.
5. These images are used to create docker containers which can be run on any system that has docker installed making them highly portable.
6. Docker provides tool for building, distributing and running containers, making it easier for developers and operators teams to package, deploy and manage applications in a consistent and efficient manner.