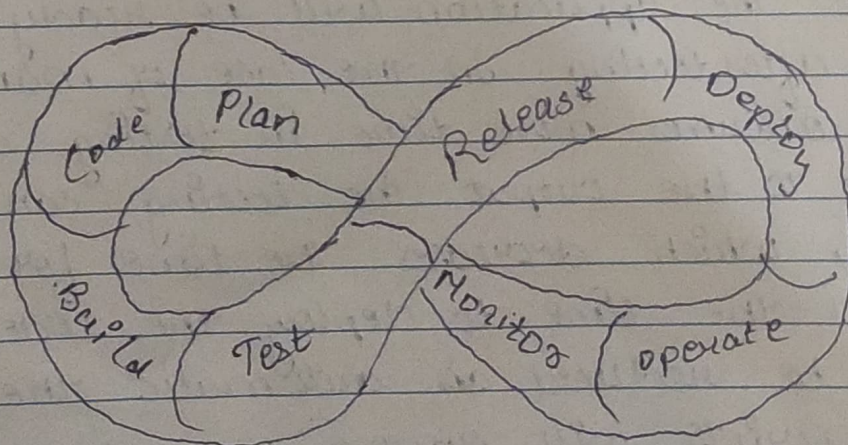# Experiment No 1

Aim : To understand DevOps, principles, practices and DevOps roles and responsibilities.

Theory :

Definition :- Devops is the combination of 2 words one is development and other is operations. It is a culture to promote the development and operation process collectively.

• DevOps helps to increase organisation speed to deliver applications and services. It also allows organisations to server their customers better and complete more strongly in the market.

• DevOps can also be defined as a sequence of development and IT operations with better communication and collaboration.

• DevOps has become one of the most valuable business disciplines for enterprises or organisations. With the help of DevOps, quality and speed of the application delivery has improved to a great extent.

1. Build - Without DevOps, the cost of the consumption of the resources was evaluated based on the pre-defined Individual usage with fixed hardware allocation. And with DevOps, the usage of cloud, sharing of resources comes into the picture, and the build is dependent upon the user's need, which is a mechanism to control the usage or resource or capacity.

2. Code - Many good practices such as Git enables the code to be used, which ensures writing the code for business, helps to track changes, getting notified about the reason behind the difference in the actual and the expected output, and if necessary reverting to the original code developed. The code can be appropriately arranged in files, folders, etc. And they can be reused.

3. Test - The application will be ready for production after testing. In the case of manual testing it consumes more time in testing and moving the code to the output. The testing can be automated, which decreases the time for testing so that the time to deploy the code to production can be reduced as automatic the running of scripts will remove many manual steps.

4. Plan - DevOps use Agile methodology to plan the development. With the operations and development team in sync, it helps in organising the work to plan accordingly to increase productivity.

5. Monitor - Continuous monitoring is used to identify any risk of failure. Also, it helps in tracking the system accurately so that the health of the application can be checked. The monitoring becomes more comfortable with services where the log data may get monitored becomes through many third-party tools such as Splunk.

6. Deploy - Many systems can support the scheduler for automated deployment. The cloud management platform enables users to capture accurate insights and view the optimization scenario, analytics on trends by the deployment of dashboards.

7. Operate - DevOps changes the traditional approach of developing and testing seperately. The teams operate in a collaborative way here where both the teams actively participate throughout the service life cycle. The operation team interacts with developers, and they come up with a monitoring plan which serves the IT and business requirement.

8. Release- Deployment to an environment can be done he automation. But when the deployment is made to the production environment it is done by manul triggering. Many processes involved in release management commonly used to do the deploymont in the production environment manually to lessen the impact on the customers

Principles
- Collaboration
- Data- Based Decision Making
- Customer- Centric Decision Making
- Constant Improvement
- Responsibility Throughout the Life cycle
- Automatic
- Failure as a learning Opportunity

Advantages

- Devops is an excellent approach for quick development and deployment of applications
- It responds faster to the market changes to improve business
- DevOps escalate business profit by decreasing software delivery time and transportaion costs
- DevOps clears the descriptive process, which gives clority on product development and delivery.

- It improves customer experine and satisfaction
- DevOps simplifies collaboration and places all tools in the cloud for customers to access
- DevOps means collective responsibility, which leads to better team engagement and productivity.

Disadvantages

- DevOps professional or experts developer are less available.
- Developing with DevOps is so expensive
- Adopting new DevOps technology into the industries is hard to manage in a short time.
- Lack of DevOps knowledge can be a problem in the continuous integration of automa the projects.

Conculsion : Hence, we have known what DevOps is and it's advantages and disadvantages.