* SEPM ASSIGNMENT :- 1 *

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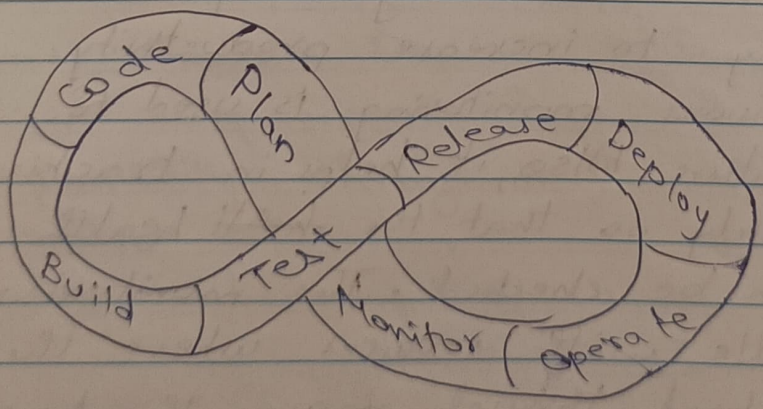
Aim :- To understand DevOps, principles, practices & DevOps roles and responsibilities.

Theory :- Definition :-

- DevOps is the combination of two words, one is Development and other is Operations. It is a culture to promote the development & operation process collectively.
- DevOps helps to increase organisation speed to deliver applications and services. It also allows organization to serve their customers better and compete more strongly in the market.
- DevOps can also be defined as a sequence of development and IT operations with better communications & collaboration.
- DevOps has become one of the most valuable ~~bris~~ business disciplines for enterprises or organizations. With the help of DevOps, quality & speed of the application delivery has improved to a great extent.

Architecture :-



(i) 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 independent upon

the user's need, which is a mechanism to control the usage of resources 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 & the expected output, and if necessary reverting to the original code developed.

(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 for production can be reduced as automating the running the scripts will remove many manual steps.

(4) Plan :- DevOps uses Agile methodology to plan the development. With the operations and development team in sync, it helps in organizing 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~~ health of the applications can be checked. The monitoring becomes more comfortable with services where the log data may get monitored 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 separately. The teams operate in a collaborative way where both the teams actively participate throughout the service lifecycle. The operation team interacts with developers and they come up with a monitoring plan which serves the IT and business requirements.

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

Principles

(i) Collaboration.
(ii) Data-based Decision Making.
(iii) Customer-Centric Decision Making
(iv) Constant Improvement.
(v) Responsibility Throughout the Lifecycle.
(vi) Automation
(vii) Failure as a learning Opportunity.

Advantages :-

(i) DevOps is an excellent approach for quick development and deployment of applications.
(ii) It responds faster to the market changes to improve business growth.

(iii) DevOps escalate business profit by decreasing software delivery time and transportation costs.
(iv) DevOps clear the descriptive process, which gives clarity on product development and delivery.
(v) It improves customer experience & satisfaction
(vi) DevOps simplifies collaboration and places all tools in the cloud for customers to access.
(vii) DevOps means collective responsibility, which leads to better team engagement & productivity.

Disadvantages.
(i) DevOps professional or experts developers are less available.
(ii) Developing with DevOps is so expensive.
(iii) Adopting new DevOps technology into the industries is hard to manage in a short time.
(iv) Lack of DevOps knowledge can be problem in the continuous integration of automation projects.

Conclusion :-
Hence, we have known what DevOps is and its advantages & disadvantages.