SE
Assignment-5

1812401160001 Vishwas Acharya

Page No.: 1
Date: / /

1) Explain Devops, it's importance & benefits, 7 c's of devops lifecycle for business agility.

Ans ↳ The Devops is the combination of two words, one is Development and other is operation.

↳ It is a culture to promote the development and operation process collectively

↳ This allows a single team to handle the entire application lifecycle, from development to testing, deployment, and operations.

- Importance :

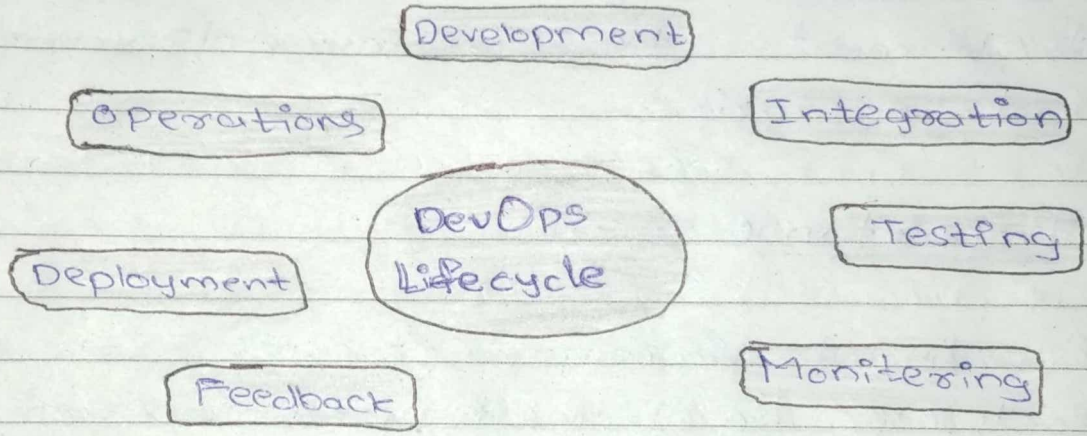
↳ DevOps is important because it's a software development and operations approach that enables faster development of new products and easier maintenance of existing deployments.

- Benefits :

↳ Maximizes Efficiency with Automation
↳ Optimizes the Entire Business
↳ Improves Speed and Stability of software Development and deployment
↳ It gets you to focus on what matters most : People

- **Life cycle :**

↳ It defines an agile relationship b/w operations and development.
↳ It is a process that is practiced by the development team and operational engineers together from beginning to the final stage of the product.



1) Continuous Development
↳ It involves planning and coding of the software.

2) Continuous Integration
↳ It is the heart of the entire devOps lifecycle. It includes unit testing, integration testing, code review and packaging.

3) Continuous Testing
↳ Here, the developed software is

continuously testings for bugs. and tools (testing tools) such as TestNG, JUnit, Selenium, etc are used.

4. Continuous Monitoring
↳ Here, important information about the use of the software is recorded and carefully processed to find out trends and identify problem areas.

5. Continuous Feedback
↳ The application development is consistently improved by analyzing the results from the operations of the software.

6. Continuous Deployment
↳ Here, the code is deployed to the production servers, also it is essential to ensure that the code is correctly used on all the servers.

7. Continuous Operations
↳ All devops operations are based on the continuity with complete automation of the release process and allow the organization to accelerate the overall time to market continuigly.

2) Explain CBSE

Ans ↳ CBSE = Component Based Software Engineering

↳ It is a process that focuses on the design and development of computer based systems with the use of reusable software components.

- **CBSE Framework Activities**

↳ Framework activities of component based software engineering are as follows:-

1) Component Qualification:

↳ This activity ensures that the system architecture define the requirements of the components for becoming a reusable component.

2) Component Adaptation:

↳ This activity ensures that the architecture defines the design conditions for all component and identifying their modes of connection.

3) Component Composition:

↳ This activity ensures that the architectural style of the system integrates the software components and form a working system.

4) Component Update:

↳ This activity ensures the updation of Reusable components. Sometimes, upadets are complicated due to indusion of third party.

3) Explain Case-tool Taxonomy.

Ans ↳ CASE = Computer Aided Software Engineering

↳ It is the implementation of computer facilitated tools and methods in software development.

↳ It is used to ensure a high-quality and defect-free software.

↳ It ensures a check-pointed and disciplined approach and helps designers, developers, testers, managers and others to see the project milestones during development.

- CASE Tools:

↳ The essential idea of CASE tools is that in-built programs can help to analyze developing systems in order to enhance quality and provide better outcomes.

↳ Throughout the 1990, CASE tool became part of the software lexicon, and big companies like IBM were using these kinds of tools to help create software.

↳ Various tools are incorporated in CASE and are called CASE tools, which are used to support different stages and milestones in a software development life cycle.

- **Types of CASE Tools:**

1) **Diagramming Tools:**
↳ It helps in diagrammatic and graphical representations of the data and system processes.
↳ It represents system elements, control flow and data flow among different software components and system structure in a pictorial form.

2) **Computer Display and Report Generators:**
↳ It helps in understanding the data requirements and the relationships involved.

3) **Analysis Tools:**
↳ It focuses on inconsistent, incorrect specifications involed in the diagram and data flow.

4) **Central Repository:**
↳ It provides the single point of storage for data diagrams, reports and documents related to project management.

5) Documentation Generators:

↳ It helps in generating user and technical documentation as per standards.

↳ It creates documents for technical users and end users.

6) Code Generators:

↳ It aids in the auto generation of code, including definitions, with the help of the designs, documents and diagrams.

- Advantages

↳ The overall quality of the product is improved as an organized approach is undertaken during the process of development.

↳ Chances to meet real-world requirements are more likely and easier with a computer-aided software engineering approach.

- Disadvantages

↳ Cost: Using case tool is very costly

↳ Learning Curve: programmers productivity may fall in the initial phase of implementation.

↳ Tool mix