**Devops day-1**

**1.what is cloud?**

Cloud is a processes of the data and uses the application like Install linux, window, Jenkins, Mysql.

**2. What is cloud computing?**

**Cloud computing**: Cloud that can access servers over the internet including databases networking etc.

Cloud computing have different service.

1. Service mode classified into types.

* **Saas** (Software as a Services).
* **Paas** (Platform as a Services)**.**
* **Iaas** (Infrastructure as a Service).
* **Faas** (Function as a Service).

1. Deployment mode classified into

* Private cloud.
* Public cloud.
* Hybrid cloud.
* Community cloud.

**Private cloud:** Private cloud is provides for only one organization like company, banks,

For examples who are register the specific organization that members only eligible for registers

* It will provide security and privacy for application.
* The organization need to high controlled.
* It will predictable workloads .

EX. VMware, Microsoft Azure Stack, IBM Cloud Private.

**Public cloud:** public cloud accesses the multiple organizations and multiple users.

* Applications are unpredictable workloads.
* It are speed development, testing, and scaling.

EX:Amazon Web Services , Google Cloud Platform , Microsoft Azure

**Hybrid cloud:** Hybrid cloud is combines both private cloud and public cloud are called Hybrid cloud.

* It allows data and application share between them.

EX:OCI, IBM cloud, AWS outposts.

**Community cloud:**

A **community cloud** is a type of cloud computing where a group of organizations with similar needs share the same infrastructure. These organizations work together to build and maintain a cloud environment that meets their shared goals, such as security, compliance.

Ex: Healthcare, Education, Financial Sector.

1. **What is Aws?**

**AWS ( Amazon web service)**

* This is top most/best cloud provider
* First cloud which id interoduced in the Market.
* In deployment mode have two types

1. Saas

2. Paas

* Without any physical space this AWS allows people to store the data.
* Pay as you go

1. **What is Devops?**

**Devops:** it is an combination of development team and operation team.

* It is the way software development.
* It is methodology
* It is set of tools.
* It is way to automate things.

**(OR)**

**Devops** is the process of delivering the product/ project by ensuring automatic in place, ensuring, the quality with continuous monitoring , continuous testing, continuous release**.**

1. **Why devops?**

* To deliver the software or project or product on time.
* Devops uses CI/CD.
* Devops has main culture of devops is collaboration between development team and operation team.
* We achieve the our goal fast and reliably.
* To understand devops culture try to understand previous.

1. **What is SDLC?**

**SDLC (Software Development life Cycle):** it has follow the SDLC and it will deliver the high-quality software and meet the requirements of users.

**SDLC have two methodologies: Day-2**

1. **Water fall:** it has step by step process.

* The customer need to change in product we cannot change in water fall
* The test will happens after completed product build.
* It is old methodology.
* It has fixed structure.
* In water fall customer will see product at the end.

**1. Requirement Analysis:** first prepare the document based on client requirement and software require ment.

**2. System design:** Design means planning tasks to the team. We will use based on requirement high level coding and low level coding, Coding will be done with implementation.

**3.** **Implementation:** Write code for application develop the based on client requirement

* Integrates all the coding done in the previous step.
* Starts testing

**4. Deployment:** complete software will be moved/shifted to global server from local server.

* It is deliver the finished products to the client.

**5. Maintenance:** it will handle update after deployment

**Advantages of water fall model:**

* It has step by step process.
* It will provide quality of product.
* It will completed with the time only.

**Disadvantages of water fall model:**

* Client need any change we can not do.
* In water fall slow testing.
* In water fall customer will see product at the end.

**Agile Model:** Agile means the ability to respond to the changes from requirements, technology and people.

* Agile model is incremental and iterative to develop a software or application.
* It has small cycle with continuously update and improvement.
* In agile has adapted nature client any change we do at any time.
* Testing is happen throughout project.
* In agile teams are work combine to work.
* It has flexibility and rapid.

**1. Requirement Analysis: :** first prepare the document based on client requirement and software requirement.

**2. System design:** Design means planning tasks to the team. We will use based on requirement high level coding and low level coding, Coding will be done with implementation.

**3. Development:** Write code for application develop the based on client requirement**.**

**4. Testing:** Tester do the testing find the bugs and defect ,errors and Improve quality of code and product to client.

**5. Deployment:** complete software will be moved/shifted to global server from local server.

* It is deliver the finished products to the client.

**6. Review:** Review will give customer it good or bad application it is meet client requirement**.**

**7. Delivery:** Tester is check the based on client requirement.

**8. Feedback:** Feedback expect from the client and users it is ok or not**.**

**Advantages of Agile Model**

* Testing is done throughout project.
* Customer give regular feedback.
* It has very good understanding between them.
* It very easy and adopt.

**Disadvantages of Agile Model**

* Agile need experienced team.
* It is having less focus design and documentation.

**7.What are top 10 cloud providers?**

1. Amazon Web Services (AWS) ---- 36%.

2. Microsoft Azure. ----- 27%.

3. Google Cloud Platform ------- 15%.

4. IBM Cloud ------------- 10%.

5. Oracle Cloud----------------- 3%

6. Alibaba Cloud ------------- 10%.

7. Salesforce -----------------11%

8. Tencent Cloud -------------- 7%

9. Digital Ocean -------- Nothing.

10. VMware Cloud ------------- Nothing.

8. What is testing?

**Testing:** It is part of software development and testing do find the defect and errors.

It has different types of testing.

1. **White box testing.**
2. **Black box testing.**
3. **Grey testing.**
4. **White box testing:**  White box testing is also called clear box testing, glass box testing.

* Developer will test each every line of code.
* We need programming skills to design test cases.
* Developers fixes bugs.

1. **Block box testing**

Black box testing is testing you do not source code, just the executable code in hands and testing will done without internal knowledge of the product.

Block testing have two types

* Functional testing.
* Non-functional testing.

**Functional testing:**  functional testing ensuring that a software application works as expected and meets its requirement.

There are different types of functional testing.

1. Unit testing: Unit testing is a individual testing of software and the main purpose of testing to check the each module. It will focus on small modules.
2. Integration testing: It will combine the individual unit testing then it will check group wise.

Top-down.

Bottom-Up.

Sandwich.

Big-Bang.

1. System testing: System testing means testing done by tester whole application.

**Non-functional testing:** It will focus on the quality product and it doesn’t test on specific behaviors.

There are different types like

1. Load testing.
2. Reliability testing.
3. The redness testing.
4. Usability testing.

**Grey Box testing:** It is combines elements of white box testing and black box testing is called grey box testing.

**9. What is fixing Bugs?**

**Fixing Bugs:** It is processes of identifying errors in software application.

**Bug:** If tester is testing some application & if they find some mismatch in application between the actual result and the expected result that leads to bug.

**Error:** Mistakes done in the program by developer while run the code or compile code. That is called error.

**Defect:** Error accepted by the developer.

Human made changes and corrected in the development phase itself that is called defect.

**Failure:** Once is software is ready it tested and verified by our tester and finally enduser they are facing some issue in the production it is called as failure.

10. what is v- Shape Model?

1. Spiral Model.

2. Prototypes.

3. Incremental.

**Tools required**

1. Planning/coding/SCM: Git, Jira.

2. Building code: Maven,

3. Testing: Selenium testing with python.

4. Integration: JenKins (CI/CD).

5. Deployment : Dockers, Kubernetes.

6. Operation: Ansible.

7. Monitoring: teraform