**Test on 20-12-2024**

**1. What is devops ?**

DevOps is the process of delivering the product/project by ensuring automation in place, ensuring the quality with continuous monitoring and continuous testing.

🡪It is a combination of developers team and operational team.

🡪There is a good communication across the team.

**2. Why devops?**

🡪 To deliver the product or project on time.

🡪DevOps is a methodology it bridges the gap between software development (Dev) and IT operations (Ops).

🡪It is cost effective.

🡪It helps organizations deliver software faster, with higher quality and less risk.

**3. What is need of devOps?**

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

1. **What are the devOps tools?**

1. Planning/Coding -------- Git, Jira

2. Building ---------- Maven, Gradle, Apache, ANT

3. Testing --------- Selenium testing with python

4. Integration ---------- Jenkins (CI/CD)

5. Deployment --------------Dockers, Kubernetes

6. Operation ------------- Ansible (managing)

7. Monitoring -------------- Terraform

**5. Difference b/w break continue and pass?**

Break, continue and pass are control flow statements used to manage the execution of loops or blocks of code.

1. Break:Break is used to terminate a loop and skip to the next code after the loop.

Ex: for i in range(5):

if i == 3:

break # Exit the loop when i is 3

print(i)

1. Continue: Continue is used to end the current iteration in a loop, and continue to the next iteration.

Ex: for i in range(5):

if i == 3:

continue # Skip the rest of the code for i == 3

print(i)

1. Pass: Pass is used as a placeholder for future code.Does nothing; it's a placeholder for code that hasn't been written yet.

Ex: for i in range(5):

if i == 3:

pass # Placeholder; does nothing

print(i)

1. **d/w remove , delete, pop and write an example program in python to demonstrate 3 of them.?**

In Python, remove(), delete(), and pop() are used to remove elements from a list, but they work differently.

1. Remove():It is used to remove the first occurrence of a given element from the list.It doesn’t return any value.

Ex: numbers = [1, 2, 3, 2, 4]

numbers.remove(2) # Removes the first occurrence of 2

print(numbers)

# Output: [1, 3, 2, 4]

1. Delete():It is used to delete variables, lists, or parts of a list.Works on indices or slices.

Ex: numbers = [1, 2, 3, 4, 5]

del numbers[2] # Removes the element at index 2

print(numbers)

# Output: [1, 2, 4, 5]

1. Pop():It removes and returns the last element from a list.

Ex: numbers = [1, 2, 3, 4]

removed = numbers.pop(2) # Removes and returns the

element at index 2

print(removed) # Output: 3

print(numbers) # Output: [1, 2, 4]

1. **D/w append and extend..?**

append() and extend() are methods used to add elements to a list, but they work differently.

1. Append(): Append is used to add a single element to the end of the list.

Ex: # Adding a single element

numbers = [1, 2, 3]

numbers.append(4)

print(numbers)

# Output: [1, 2, 3, 4]

1. Extend(): Extend is used to add multiple elements to the list.

Ex: # Adding elements from another list

numbers = [1, 2, 3]

numbers.extend([4, 5])

print(numbers)

# Output: [1, 2, 3, 4, 5]

1. **Write a python program to print the element in the array with negative elements (ex : print the element which is present  in -2 positions) ..?**

array=[1,2,3,4,5,6,7]

neg\_ele=array[-2]

print(neg\_ele)

1. **Explain about LAMDA function?**

* A **lambda function** is also known as an **anonymous function.**
* **It** is a small, nameless function in Python.
* It is defined using the lambda keyword and is often used for short, simple operations.
* Lambda functions are particularly useful when you need a quick, throwaway function for a specific task, like passing a function as an argument to higher-order functions such as map(), filter(), or reduce().

**10.What is cloud  ..? explain top 10 cloud providers ..?**

Cloud:It is the process of accessing the data and storing the data via internet.

There are 10 cloud providers:

1. AWS
2. Microsoft Azure
3. IBM Cloud
4. Google Cloud
5. Oracle Cloud
6. Alibaba Cloud
7. Salesforce
8. Digital Ocean
9. VMware Cloud

10.Tencent Cloud

**11. What is cloud computing and explain types ..?**

**Cloud Computing:** Cloud Computing is the delivery of computing services-such as servers, storage, databases, software and more over the internet (the cloud).

🡪We can access the data from anywhere.

🡪It can be divided into two modes:

**1.Service Mode:** It is a way for organizations to create, test, and scale the design of whole service.

In server mode we have

* SAAS (Software as a service)
* PAAS (Platform as a service)
* IAAS (Infrastructure as a service)
* FAAS (Function as a service)

**2.Deployment Mode:** It describes how the resources of a system are employed to execute the application function.

There are four types of deployment modes:

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

**12. What are the different levels of cloud storages ..?**

**13. Explain the architecture of service model with real time examples?**

Service Model:It is a way for organizations to create, test, and scale the design of whole service.

In service mode we have SAAS, PAAS, IAAS, FAAS.

* IAAS: (Infrastructure as a service)

Infrastructure will be provided for us we can have to build our own applications.

* PAAS: (Platform as a service)

This service will provide platform where can deploy our own application.

* SAAS: (Software as a service)

Using the service which is already maintain by someone.

* FAAS: (Function as a service)

It allows developers to build, compute, run, and manage applications packages as functions without having to maintain their own infrastructure.

**14. Explain deployment model?**

**Deployment Mode:** It describes how the resources of a system are employed to execute the application function.

There are four types of deployment modes:

1.Private cloud:

* It has limited access.
* It is mainly used for security purpose.
* It is only for particular organization or institute.

2. Public cloud:

* It is publicly accessible cloud environment.
* It is owned by third-party cloud providers.

3. Hybrid cloud:

* We can maintain the hybrid cloud for both the private and public.

4.Community cloud:

* It is similar to the public cloud expect that its access is limited to a specific community of cloud consumers.

**15. Mention few differences b/w AWS , MICROSOFT AZURE , AND GCP?**

**16. Write a python program to print your name , designation, technology 100 times ?**

name=”lakshmi”

Designation=”Software Developer”

technology=”IT”

for i in range(100):

Print(f”Name: {name}, Designation: {designation}, Technology: {technology}”)

1. **d/w agile and waterfall models..?**
2. **Waterfall Model:-**

* It can be used for small product.
* It is also called as linear sequential development model.
* It is non-iterative model.
* Every phase is depend on previous phase.
* Requirement changes are not allowed.
* Testing will start after the coding.

1. **Agile Model: -**

* It can be used for large product.
* Agile means “the ability to respond to the changes from requirements, technology and people”.
* It is an incremental model and iterative to develop a software or an application.
* It will be completed in couple weeks only.

1. **Explain about arithmetic and relational operators with example..?**

**Arithmetic Operators:** Used to perform mathematical operations.

* Addition: +
* Subtraction: -
* Multiplication: \*
* Division: /
* Modulus: %
* Floor Division: //
* Exponentiation: \*\*

a = 5

b = 3

# Arithmetic Operators

print(a + b) # 8

print(a - b) # 2

print(a \* b) # 15

print(a / b) # 1.6667

print(a % b) # 2

print(a \*\* b) # 125

print(a // b) # 1

**Relational operators:** (also known as comparison operators) are used to compare two values and return a boolean result.

* Greater than: >
* Less than: <
* Equal to: ==
* Not equal to: !=
* Greater than or equal to: >=
* Less or equal to: <=

# Relational Operators

a=5

b=3

print(a == b) # False

print(a != b) # True

print(a > b) # True

print(a < b) # False

print(a >= b) # True

print(a <= b) # False

1. **Compares b/w set, list, tuple and dictionary ?**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Features** | **List** | **Tuple** | **Set** | **Dictionary** |
| **Order** | Ordered collection of elements | Ordered collection of elements | Unordered collection of unique elements | Unordered collection of key-value elements |
| **Syntax** | [] | () | Set() | {key: value} |
| **Mutable** | Mutable | Immutable | Mutable | Mutable |
| **Duplicates** | Allows duplicates | Allows duplicates | Doesn’t allows duplicates | Keys must be unique (values can be duplicated). |
| **Indexing** | Yes (indexable) | Yes (indexable) | Yes (indexable) | Yes (indexable) |
| **Example** | list = [1, 2, 3, 2] | tuple = (1, 2, 3,2) | set = {1, 2, 3, 2} | dict={'a': 1, 'b' 2} |

1. **Explain the phases involved in software development life cycle..?**

🡪SDLC stands for Software Development Life Cycle.

🡪SDLC is a process used by the software industry to design, develop and test high quality software.

🡪It is a step by step procedure to developing a new software is called software development life cycle.

🡪There are seven phases in SDLC

1.Requirement

* In this we can gather the requirements, what the client need for the project.

2.Analysis

* It means understanding the client's needs and identifying their problems.

3.Design

There are two types of design:

* High level design means designing the architecture of the application.
* Low level design means how the each and every modules will look like.

4.Coding

* In this developer will start writing the code by seeing the low level design and the requirement.
* Business Analyst is the bridge between the customer and developers.

5.Testing

* Once the testing is done, then software is working perfect.

6.Deployment

* We can send the document to the client, to check the document for their requirement or not.

7.Maintenance

* The last phase of software development life cycle is called as Maintenance.
* While using the software, if customer is facing any problem, then developer can develop it and tester will testing it then we will give the new software to the customer.

1. **What is database ..? what is DBMS and explain types of DBMS ..?**

**Database:**

🡪 A database is an organized collection of data, so that it can be easily accessed and managed.

🡪We can organize data into tables, rows, columns, and index it to make it easier to relevant information.

**DBMS:**

🡪DBMS stands for Database Management System.

🡪It is a software used to manage database.

🡪We can store the data in the form of tables.

🡪It is an interface between user and database.

USER----------------------DBMA---------------------DB

**Database is mainly of two types:**

1. RDBMS

RDBMS features :-

* Easy to access and manipulate data.
* Less redundency (duplication of data).
* More security.
* Supports data sharing.
* Supports transactions.

2.Non-RDBMS

🡪It is database, which stores the data in the form of key values.

🡪A non relational database (NoSQL) is a database that doesn’t use the tabular structure of rows and columns found in the most traditional relational database management system.

🡪NoSQL database examples include MongoDB, BigTable, Redis, Cassandra and CouchDB.

1. **What are DDL and DML commands mention example of each one ..?**

**DDL Commands: Data Defination Language**

1. Create- to create a database, tables.

create table tablename

1. Alter- update-add a row/column.

alter table tablename

Add colname datatype(size)

1. Drop- delete the records from the database.

drop table tablename

1. Truncate- remove the record from the table.

Truncate table tablename

**DML Commands: Data Maniculation Language**

1. Insert- inserts data into a table.

insert into tablename (col1, col2, col3) values (n1,n2,n3);

1. Update- updates the existing data within a table.

update tablename set col1=val1, col2=val2, where condition;

1. Delete- delete the records from the database of a table.

Delete from tablename set col=val where con;

**23. What are clauses and explain with example..?**

1. Where clause:It is used for the filtering purpose.

🡪Mainly used for particular record in the clause.

Syntax: select colname from tablename where condition

Example:select emp\_name from employee where emp\_id=’101’;

1. Select clause: To display/to obtain the data from particular table.

Syntax:select \* from tablename;

1. Orderby:sorting the records(ascending order/descending order)

Syntax:select col1, col2 from tablename order by col1, col2, desc;

1. Groupby: It groups the data which is present in the rows with same values.

GROUP BY clause converts detailed data to summarized data which is useful for analysis.

Syntax:select colname from tablename where condition group by colname order by colname;

**24. Explain the concept of joins with examples..?**

**Joins:**

🡪Joins are used with select statement.

🡪Combining data from two or more tables based on related columns.

🡪It is used to retrieve the data from multiple tables from same database.

🡪Fetching the records from different tables will be very easy.

🡪There are three types of MySQL joins:

1.Inner Join

2.Outer Join

3.Right Join

1.Inner Join (Simple Join)

* Returns only rows where there is a match in both tables being joined.

Syntax: select columns from table1 inner join table2 on table1.col1=table2.col1;

2.Outer left join:

* Returns all rows from the left hand side table and all the from right hand side table by satisfying the join condition.

Syntax: select cols from table1 left outer join table2 on table1.col=table2.col;

1. Right join:

* Return all rows from the right hand table rows on to the right table by satisfying the join condition.

Syntax: select cols from table1 right join table2 on table1.col=table.col;

1. Self Join:

* It is the basic join.
* The data/rows in the table are combined/joined with the same data/rows in the same table.

Syntax: select col\_name from table1, table2 where condition;

1. Cross Join:

* It will return all the records from both the tables (table1 & table2).

Syntax: select col\_name from table1 cross join table2;

**25. Create a trigger and explain..?**