**Assignment**

**1. What is devops?**

**Ans:** It is the process of delivering the project or product.by ensuring the automation in place, ensuring the quality with continuous. monitoring and continuous testing. Devops is not a tool or not a programming language it is a culture.

**2. Why devops?**

**Ans**: Devops is the methodology that combines development and operation team.to deliver the software project or product on time.it focus on collaboration automation and continues improvement. And to bridge a gap between operations team and development team.

**3. what is the need of devops?**

**Ans:** The need of devops is raised from the traditional software development. In traditional software development there were two teams involved one is development team and operations team.

So using this method raises more issues to solve this problems developer team and operations team have to work together .so develops came into picture.

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

**Ans:**

1. **Plaining/coding:**Git
2. **Building the code**: Maven
3. **Testing:**selinuem
4. **Integration:** Jenkins(CI/CD)
5. **Deployment:** Dockers,Kubernates
6. **Operations:** Ansible
7. **Monitoring:** terraform

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

**Ans:**

**Break :-** break statement will tunicate the loop if the condition is satisfied.

**Continue :-** continue will skip the current iteration and moves to the next iteration

**Pass :-** It does nothing used to maintain the syntax

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

**Ans:**

**Pop:** pop will remove the last item from the list.

**Delete:** delete a specific position in a list or delete the list entirely

**Remove:** remove will remove the first occurrence of a specific item.

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

**Ans:**

**Append:** adds the single element at the end of the list

**Code:**

li\_1 = [1,20,'akhil',2.3]  
li\_1.append([20,30])  
print(li\_1)

output:

[1, 20, 'akhil', 2.3, [20, 30]]

**Extend:** Adds each element of an iterable to the end of the list.

**Code1:**

li\_2 = [10,20,2.3]  
li\_2.extend((10,20,30))  
print(li\_2)

**code2:**

li\_1 = [1,20,'akhil',2.3]  
li\_1.extend ([20,30])  
print(li\_1)

**output:**

[10, 20, 2.3, 10, 20, 30]

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

**Code:**

list\_1 = [10,2.3,'gopi',-40]  
print(list\_1[-2])

output:

gopi

**9.Explain about LAMDA function?**

Lambda function is a anonymous function.

We can take any number of arguments but can have one expression.

Syntax:

Lambda arguments:expression

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

**Ans:**

The **cloud** refers to servers and services accessed over the internet instead of on a local computer or physical device. It allows you to store data, run applications, and access resources remotely from anywhere with an internet connection.

**Top 10 cloud providers are:**

* **IBM cloud**
* **Azure cloud**
* **Google cloud**
* **Alibaba**
* **Sales force**
* **Oracle cloud**
* **AWS**

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

1. Public cloud
2. Private cloud
3. Hybrid cloud
4. Community Cloud

**1.Public cloud**

A public cloud is a cloud service offered over the internet to anyone who wants to use it. It is shared by multiple users (businesses, organizations, individuals).

**2.Private cloud**

Private cloud is a cloud service offered over the internet. Private cloud is accessed by a single organization

**3.Hybrid cloud**

Hybrid cloud is the combination of both private cloud and public cloud.

**4.Community cloud:**

Community cloud is a cloud which is shared among different orginizations who are with similar goals and requirements.

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

1. **Block storage**

Breaking data into individual blocks, and then stored as individual pieces and stored in different locations can be modified, accessed and deleted without affecting the other blocks.

1. **Object storage**

Data is stored as objects in a flat structure, with each object containing data, metadata, and a unique identifier.

1. **File storage**

File storage is one of the oldest and most commonly used storage systems.File storage is a method of storing data in a hierarchical file system, where data is stored in files and organized into directories or folders.

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

**Ans:**

**Infrastructure as a service:**

It provides resources virtually through internet such as virtual machines storage networking and processing power we can rent instead of owning it.

**Software as a service:**

Software as a service provides fully managed software through the internet these applications are provided by the cloud providers users need not to install any manage and maintain every thing is provided by the cloud providers.

**Platform as a service:**

Provides a platform that allows developers to build, deploy, and manage applications without managing the underlying infrastructure**.**

**14. explain deployment model?**

**Ans**: in deployment model complete software will be moved from the local server to the global server.

**1.Public cloud**

A public cloud is a cloud service offered over the internet to anyone who wants to use it. It is shared by multiple users (businesses, organizations, individuals).

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Private cloud is a cloud service offered over the internet. Private cloud is accessed by a single organization

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

**Ans:**

**AWS:** Aws was presented byamazon.

Introduced in the year of 2006.

It uses pay as u go mode.

It is with the services like EC2.and simple storage.

**MICROSOFT Azure:** Microsoft Azure was presented byMicrosoft.

Introduced in the year of 2009.

Uses pay as u go model.

It provides infrastructure as a service, platform as a service, software as a service.

Computing services like Virtual Machines (VMs)

**GCP:** GCP was presented by google.

Introduced in the year of 2008.

Computing service like Compute Engine.

Pay as u go model.

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

**Code:**

dict\_1 = {"name":"gopinadh", "destination":"khammam","technology":"DevOps"}  
for i in dict\_1:  
 print((str(dict\_1[i])+" ")\*100)

**17. d/w agile and waterfall models..?**

**Ans:**

**Waterfall model:**

Waterfall model is well suited for small size projects

It takes 6months to 12 months to develop a software using this model.

We cannot add changes b/w the development of the project

Waterfall model is the linear sequential model.

Testing will be done after the completion of developing the project

**Agile model:**

Agile model is well suited for large size projects

Every week we can expect one release.

It is the combination of the iterative model and incremental model.

Agile means ability to respond to the changes

We can test the code before the completion of the whole project.

**18. explain about arithmetic an relational operators with example..?**

**Ans:**

**Arithmetic operators:**

Arithmetic operators are used to do some mathematical calculations like addition, subtraction, multiplication, division.

**Relational operators:**

Relational operators are used to find the relation between operators it returns the output as true or false.

**19. compares b/w set, list, tuple and dictionary ?**

**Ans:**

Set,tuple,list,dictionary are the built-in datatypes in python.

**Set**: set is an unordered collection of items which are enclosed in curly brackets sets does not allow duplicate values, set is mutable.

**Tuple**: tuple is an ordered collection of items. enclosed in parentheses. tuple is immutable.

**List:** Set is an ordered collection of items enclosed in square brackets, each value is separated by comma. List is mutable.

**Dictionary:** In dictionary values are stored in the from of key value pairs each key value pair is called as item. Keys should be unique but values is not unique.

**20. Explain the phases involved in software development lifecycle..?**

**Ans:**

We have different phases in sdlc:

**Requirements/analysis:** In this phase talk to the customer business analysist they develop SRC document according to the specification.

**System Design:**

**We have two phases:**

**First phase:**

Based on the requirements of the client Src designing will be done and assigning work to the team we have two levels in this

1. Low level
2. High level

**Second phase:**

In the second level coding will be done with implementation.

**Coding:**

In this phase integrates all the coding done in the previous step. and starts testing also in implementation stage only.

**Deployment:** complete software will be moved from local server to the local server

**support:** monitoring the software or application this waterfall is also called as linear sequential development model.

**21. what is database ..? what is DBMS and explain types of DBMS ..?**

**Ans:**

It is an application which stores the collection of data. each database has one or more distinct Api’s for creation of data,managing,searching & replicating the data.

DBMS: Database management system

Store the data in the form of tables.

We have two types of databases:

1.Relational database

2.Non-relational database

**Relational database:**

In relational database we store the data In the form of tables. And we can map them from locations.

**Non -relational database:**

Store the data in the form of Json format key-value pairs.

**22. what are DDL and DML commands mention example of each one ..?**

**Ans:**

**DDL:** Defines and manages the structure of database objects.

CREATE: Used to create database objects like tables, views, indexes, etc.

ALTER: Alter is used to add new column to the database.

DROP: delete records from the database.

TRUNCATE: is used to remove all the records from the table.

RENAME: is used to rename the table or records.

**DML:** Manages the data inside the database.

SELECT: used to retrieve data from the tables

INSERT: inserts the data into the table

UPDATE: to update the existing data in the table.

DELETE: deletes the records from the database of a table.

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

**Ans:**

**Select:** with the select clause is used to retrieve the data from the database. With the select clause you can specify which columns you want to query and display from a table.

Example:

SELECT name, age FROM employees

**From:** from clause specifies from which the data is to be retrieved.

**Example:**

SELECT \* FROM customers

**Where:** where clause in sql is used to filter records based on specified conditions. And returns only those satisfy the condition.

**Example:**

**SELECT \* FROM Employees**

**WHERE age > 30;**

**Group by:** It is used to group the rows with the same values in specified columns.it is often used with aggregate functions line

Count(),Sum(),Avg(),Max(),Min()

**Example:**

**SELECT department, COUNT(\*) AS employee\_count**

**FROM Employees**

**GROUP BY department;**

**Having**: having clause is same as where clause it is used after using the group by clause

**Example:**

SELECT department, COUNT(\*) AS employee\_count

FROM Employees

GROUP BY department

HAVING COUNT(\*) > 1;

**Order by:** order by clause in sql is used to sort the rows in the result set by default it will sort in ASC order.

**Example:**

SELECT name, age

FROM employees

ORDER BY age DESC

**Limit:** limit clause is used to specify number of rows should be fetched from the table.

**Example:**

SELECT \* FROM employee LIMIT 2

**Join**: join is used to combine two are more tables based on the related column between them.

**Example:**

**SELECT employees.name, departments.department\_name**

**FROM employees**

**INNER JOIN departments**

**ON employees.department = department\_name;**

**Union:** it is used to combine the two result sets

**Example:**

**select name from employees**

**union**

**select department\_name from departments;**

**Insert:** insert is used to insert the values into the table.

**Example:**

**INSERT INTO Employees (id, name, age, department)**

**VALUES**

**(1, 'gopi', 28, 'HR'),**

**(2, 'mani', 35, 'Engineering'),**

**(3, 'santosh', 32, 'Marketing'),**

**(4, 'jeevan', 25, 'Engineering'),**

**(5, 'hari', 40, 'Sales');**

**Update:** update clause is used to update the values in the table based on the specified condition.

**Example:**

**UPDATE employees**

**SET age = 21 WHERE name = 'gopi';**

**Delete:** delete is used to delete the values form the table based on the given condition.

**Example:**

**DELETE FROM employees WHERE age < 35;**

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

**Ans**: joins are used to combine two or more tables based on related column between them. Joins are used with select statement only. Used to retrive the data from multiple tables.data should be in a single database only. fetching records from the different database very very hard.

**We have 3 types of joins:**

1.inner join

2.outer join

3.self join

4.cross join

**Inner join:**

Inner join is the most commonly used in sql inner join is used to fetch the records which have matching values in both tables.

Example:

SELECT Employees1.name, Departments\_table.department\_name

FROM Employees1

INNER JOIN Departments\_table

ON Employees1.department\_id = Departments\_table.department\_id;

**Outer join:**

**In outer join we have 3 types:**

1. **left join**

It returns all the records from the left table and from right it returns which have common values in both the tables and remaining records it returns null.

Example:

**SELECT Employees1.name, Departments\_table.department\_name**

**FROM Employees1**

**LEFT JOIN Departments\_table**

**ON Employees1.department\_id = Departments\_table.department\_id;**

1. **right join**

opposite to left join

example:

**SELECT Employees1.name, Departments\_table.department\_name**

**FROM Employees1**

**Right JOIN Departments\_table**

**ON Employees1.department\_id = Departments\_table.department\_id;**

1. **full join**

full join is the combination of left join and right join

example:

**SELECT Employees1.name, Departments\_table.department\_name**

**FROM Employees1**

**LEFT JOIN Departments\_table**

**ON Employees1.department\_id = Departments\_table.department\_id**

**UNION**

**SELECT Employees1.name, Departments\_table.department\_name**

**FROM Employees1**

**RIGHT JOIN Departments\_table**

**ON Employees1.department\_id = Departments\_table.department\_id;**

**Cross join:**

Cross join is used to combine every row with the all rows in the table2

Example:

**SELECT Employees1.name, Departments\_table.department\_name**

**FROM Employees1**

**CROSS JOIN Departments\_table;**

**Self join:**

The data or rows in a table are combined with the same table.

**Example:**

**SELECT E1.name AS employee\_name\_1, E2.name AS employee\_name\_2, E1.department\_id**

**FROM Employees1 E1**

**INNER JOIN Employees1 E2**

**ON E1.department\_id = E2.department\_id;**

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

Trigger is an event.

When a new event is updated on a table then it will check the condition and it will store the data.

We have two types of events in triggers

**1.Before event**

**2.After event**

**Syntax:**

Create trigger trigger\_name

[Before|After]

[insert |update|delete] on [table\_name]

[for each row | for each column]

[trigger\_body]

**Example:**

Delimiter //

create trigger update\_a

before

update on newjoinee

for each row

if new.joinee\_age > 23 then set new.joinee\_age = 25;

end if //

here we are using delemeter to ignore the manual mistakes

oi have created a trigger update\_a

we are using before event

preforming on newjoinee table

creating trigger on each row

so is the given joinee age is less than 23 the age will be entered in table as 25

we use this triggers to automate the work.