UNIVERSITY OF LAYYAH

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LAB 3

Title: Operators in SQL

Objective:

- To be familiar with different operators in SQL
- To be familiar with DISTINCT, AS, aggregate functions, ORDER BY,GROUP BY AND HAVING CLAUSE, subquery

Theory: (This portion is left for student) **Problem:**

☞ **Create any database and in such database create a table named employee with the following columns by considering employee_id as primary key employee(empoyee_id,first_name,last_name,age,address, department,postion,salary)**

```
create table employee(employee_id int PRIMARY KEY,first_name varchar(20),last_name
varchar(20),age int,address varchar(30),department varchar(30), position varchar(30),salary
decimal(10,2));
```

☞ **Now insert at least any 10 records of employee.**

employee_id	first_name	last_name	age	Addresss	department	Position	salary
1	Anish	sharma	26	Kathmandu	Finance	Manager	80000.25
2	roshan	pokhrel	28	Pokhara	Sales	Analyst	60000.45
3	aakriti	bagale	30	Butwal	Purchase	Manager	95000.52
4	rojina	karki	25	Pokhara	Marketing	Manager	85000.55
5	Keshav	ghimire	35	Kathmandu	Purchase	Analyst	65000.35
6	roshan	pandey	38	Chitwan	Operations	Analyst	70000.12
7	Sita	pokhrel	23	Laltipur	Marketing	Analyst	68000.85
8	srijana	bhattrai	29	Butwal	Finance	Analyst	62000.65
9	Niraj	acharya	40	Kathmandu	Sales	Manager	90000.54
10	Nikita	Giri	15	Pokhara	Purchase	Secretary	25000.86

```
insert into employee
values(1,'anish','sharma',26,'kathmandu','finance','manager',80000.25); insert into
employee values(2,'roshan','pokhrel',28,'pokhara','sales','analyst',60000.45); insert into
employee values(3,'aakriti','bagale',30,'butwal','purchase','manager',95000.52); insert into
employee values(4,'rojina','karki',25,'pokhara','marketing','manager',85000.55); insert into
employee values(5,'keshav','ghimire',35,'kathmandu','purchase','analyst',65000.35); insert
```

```
into employee values(6,'roshan','pandey',38,'chitwan','operations','analyst',70000.12);

insert into employee values(7,'sita','pokhrel',23,'lalitpur','marketing','analyst',68000.85);

insert into employee values(8,'srijana','bhattrai',29,'butwal','finance','analyst',62000.65);

insert into employee values(9,'niraj','acharya',40,'kathmandu','sales','manager',90000.54);

insert into employee values(10,'nikita','giri',15,'pokhara','purchase','secretary',25000.86);
```

Now, Write a query to perform the following operations

Arithmetic, logical and relational operators

1. **Display the first_name and last_name of employee whose deparment is finance**

   select first_name,last_name from employee where department='finance';

2. **Display all the information of employee in employee table whose address is not kathmandu**

   select * from employee where address!='kathmandu';

3. **Increment the salary of all employees by 15%**

   update employee set salary=salary*1.15;

4. **Decrease the salary of manager by 5%**

   update employee set salary=salary*0.95 where position='manager';

5. **Delete information of employee whose age is less than 18** delete from employee where age<18;

6. **Display the position of employee whose salary is** greater **than or equals to 50000**

   select distinct position from employee where salary >=50000;

7. **Display information of employee whose position is manager and address is kathmandu**

   select * from employee where position='manager' and address='kathmandu';

8. **Display information of employee whose positon is manager or address is kathmandu**

select * from employee where position='manager' or address='kathmandu';

9. Display information of employee who either live in pokhara or kathmandu but age is greater than 25

select * from employee where (address='kathmandu' or address='pokhara') and age>25;

10. Display first_name,last_name and position of employee whose salary is in the range of 70000 to 80000

select first_name,last_name,position from employee where salary between 70000 and 80000;

11. Display first_name,last_name and position of employee whose salary is not in the range of 70000 to 80000

select first_name,last_name,position from employee where salary not between 70000 and 80000;

12. Display the information of employee whose salary is equal to 69000,30000,35000,40000,71300,80500

select * from employee where salary in (69000,30000,35000,40000,71300,80500);

13. Display information of employee whose department is (sales, purchase) but not salary equal to (69000,71300,80500)

select * from employee where department in ('sales','purchase') and salary not in (69000,71300,80500);

Like operator with wildcard characters

14. Display information of employees whose first_name starts with letter 'a'

select * from employee where first_name like 'a%';

15. Display information of employees whose first_name starts with letter 'ro'

select * from employee where first_name like 'ro%';

16. Display information of employees whose last_name ends with letter 'el'

select * from employee where last_name like '%el'**;**

17. Display information of employees whose first_name has exactly six characters

```
select * from employee where first_name like '_ _ _ _ _ _';
```

18. Display information of employees whose first_name starts with r and has exactly six characters

```
select * from employee where first_name like 'r_ _ _ _ _';
```

19. Display the information of employees which contains substring of first_name as ‘sha’

```
select * from employee where first_name like '%sha%';
```

20. Display information of employees whose second position of first_name contains letter ‘o’

```
select * from employee where first_name like '_o%';
```

21. Display the information of employees whose third postion of first_name contains the letter ‘s’

```
select * from employee where first_name like '_ _s%';
```

22. Display information of employees which have first_name of at least six characters

```
select * from employee where first_name like '_ _ _ _ _ _%';
```

23. Display the information of employees whose first_name begins with a,k,m,s,r .

```
select * from employee where first_name like'[akmsr]%' ;
```

24. Display information of employees whose first_name begins with [a-s] and ends with l

```
select * from employee where first_name like'[a-s]%l';
```

25. Display information of employees whose first_name does not start with d but ends with h

```
select * from employee where first_name like '[^d]%h' ;
```

DISTINCT

26. Display the different position available for employee

```
select distinct position from employee;
```

27. List out the unique address available for employee table

select distinct address from employee;

28. List out the employee who have unique first_name and address

select distinct first_name,address from employee;

AS

29. Write a query to get first_name,last_name , ssf of all employees .ssf is calculated as 31% of salary select first_name,last_name, salary*0.31 as ssf from employee;

30. write a query to get the employee _id, name (first_name, last_name), location (address) from employee

select employee_id ,concat(first_name,' ',last_name) as name ,address as location from employee;

ORDER BY

31. Display the information of employees in ascending order by address select

* from employee order by address ;

or

select * from employee order by address asc;

32. Display the information of employees in descending order by address

select * from employee order by address desc**;**

33. Display the information of employees in ascending order by address and department

select * from employee order by address,department;

Aggregate functions

34. Count the number of employees

select count(*) from employee;

35. Count the number of unique first_name of employees

select count(distinct first_name) from employee;

36. To get the number of different number of positions available for employees table

select count(distinct position) from employee;

37.To get the total salaries payable to employees.

select sum(salary) from employee;

38. Find the average salary of employess

select avg(salary) from employee;

39. Find the minimum salary of employess

select min(salary) from employee;

40. Display first_name, last_name of employees with highest salary select

first_name,last_name from employee where salary=(select max(salary) from employee);

41. Display first_name,last_name,department,postion whose salary is less than average salary of all employees

select first_name,last_name,department,position from employee where salary<(select avg(salary) from employee);

GROUP BY and HAVING clause

42. Find the average salary of employees in each department select

department,avg(salary) as average_salary from employee group by department;

43.Find the average salary of employees for each position select

position,avg(salary) as average_salary from employee group by position;

44.Find the department with their average salary is greater than 60000

select department ,avg(salary) from employee group by department having

avg(salary)>60000;

45. Find the position of the employee in which average salary of position is greater than 60000

select position from employee group by position having avg(salary)>60000;

Subquery

46. Display information of employee whose salary is greater than average salary of all employees

select *

from employee

where salary > (select avg(salary) from employee);

47. Display information of employee whose salary is greater than at least one employee of finance department.

select *

from employee

where salary > some (select distinct salary from employee where department = 'finance');

48. **Display information of employee whose salary is greater than that of all employees of finance department.** select*

from employee

where salary > all (select salary from employee where department = 'finance');

49. Increase the salary of employees by 10% whose salary is greater than the average salary of all employees.

update employee

set salary = salary * 1.1 where salary > (select

avg(salary) from employee);

50. Delete the information of employees whose salary is less than average salary of all

employees. delete from employee where salary < (select avg(salary) from employee);

Discussion: (This portion is left for student)

Conclusion: (This portion is left for student)

*******THE END*******