Date __/__/____

Querying using SQL

Aggregate Function (Group Function)

→ पूरे row पे apply होता

① AVG()

def This function compute the average of the given data

Q1) Write a sql cmd to calculate avg salary of all employees in table emp.

→ > Select AVG(sal) "Average"
From emp;

emp

sal	Average
—	
—	
—	

Note: अगर 'Average' ना लिखे तो AVG(sal) नाम से आएगा

Syntax AVG (Distinct / All)

★ ② Count()

def This function count the number of row in a given column

count

Q) To display the no of records in table ~~AB~~ emp.

→ Select count(*) "Total"
from emp;

—	—	Total
—	—	—
—	—	
—	—	

Date __/__/____

Q) Count the number of Jobs in table emp.

Select count (Job) "Total"
from emp;

→ > Select count (DISTINCT Job) "Total"
from emp;

Job	Total
Manager	4
Teacher	
School	
HR	
Manager	
HR	

(iv) Max()

→ [Column का maximum value देता है]

def Return the maximum from the given column

Q) Display maximum salary from table emp.

→ >Select max(sal) "Max salary"
from emp;

Maya col बताते वक्त, अगर 2 word का नाम देना है तो 'quote' ओपेन नहीं तो जरूरी नहीं as optional है (हर case में)

Date __/__/____

① Min()

def This fn return the minimum value from a given column.

Q) Display joining date of senior most employee.

→ > Select min(DOJ) 'senior'
from emp;

② Sum()

def Return the sum of values from a given column

Q) Display salary of all employee

→ >Select sum(sal) 'Total'
from emp;

Q) Calculate Total salary of employee whose grade is A2.

→ Select sum(sal)
from emp
where grade = 'A2';

PYQ ★ Q) To Display Avg salary of employee with grade E1 or A2.

→ Select sum(salary)
from emp
where grade = 'A2' or grade = 'E';

** (vi) Group by

Table: emp

eid	ename	Dept	Salary
1	Ram	HR	10 000
2	Amit	MRKT	20 000
3	Ravi	HR	30 000
4	Nitin	MRKT	40 000
5	Varun	IT	50 000

output

Dept	No of employees
HR	2
MRKT	2
IT	1

Q Find no. of employees in each department

→
```
Select Dept, Count(Dept) as 'No of employees'
From emp
Group by Dept;
```

Def Group by in SQL is used to group all the rows that have the same values by 1 or more column and produce a separate table.

The main purpose of grouping of records of a table based on particular column is to perform calculation on these groups.
∴ The 'group by' clause is used with aggregate functions such as Sum(), count(), avg(), max() or min().

Syntax
```
Select Colum1, Colum2, Column3---
From <Table>
GROUP BY Column a, Colum b..
```

col 1,2,3.. को select करेंगे
col a,b.. से group by लगा करेंगे

Group by → Alphabetical order में output देता है।

Date __/__/____

Q/ Table name: Student

Stud id	Name	Percentage	Grade
1001	Ajay	79	B
1002	Garima	67	B
1003	Atul	87	A
1004	Kundan	63	C
1005	Dheeraj	95	O

Write SQL cmd use Group by clause to count the No of students by the Grade

→ Select Grade, Count(Grade) as "Number of students"
From Student
Group by Grade;

output

Grade	Number of Students
A	1
B	2
C	1
O	1

Q/ Table : order

order_id	items	amt	customer_id
1	Keyboard	400	4
2	Mouse	300	4
3	Monitor	12000	3
4	Keyboard	400	1
5	Mouse pad	250	2

Calculate Total amt spend by each customer

→ > Select customer_id, sum(amt) as Total
From order
Group by customer_id;

Date ___/___/_____

Placing conditions on Group by 'having' clause

Syntax
```
Select Col1, Col2...
From <Table_name>
Group by ColA, ColB...
having condition;
```

def Having clause is used to apply a filter on the result of Group by based on ~~certified~~ the specified condition.

★ Q) What is the difference b/w where clause & having clause of SQL select statement.

→ The difference b/w having & where clause is that where clause conditions are available on individual row whereas having clause are applicable on group of row / multiple row.

Q) Table: emp

emp-id	Name	Gender	Salary	Dept
5	Priya	F	45000	IT
6	Rahul	M	65000	Sales
7	Nisha	F	55000	Marketing
8	Vikram	M	75000	Finance
9	Aarti	F	50000	IT

① Display sum of salary of each department

→
```
Select Dept, sum(salary) 'Total salary'
from emp
Group by Dept;
```

(v) Display department where sum of salary is 60k or more.

→
```
> Select Dept, sum(salary)
  from emp
  Group by Dept
  having sum(salary) >= 60000;
```