Day 18

####Set operators

set--> A set is nothing but collection of elements...

s1={1,3,4,5,5,3}

s2={3,2,1,7}

1)s1 union all s2

--> {1,3,4,5,5,3,3,2,1,7}

2)s1 union s2

-->{1,3,4,5,2,7}

3)s1 intersect s2

-->{1,3}

4)s1 minus s2

-->{4,5}

Types of set operators in sql

1)Union

It returns/combine result from all the participating queries

after eliminating duplicates

syntax-->

select \* from tab1

union

select \* from tab2

union

select \* from tab3

..............

Input

un1

First\_name last\_name

karan patil

ajay wadile

vishal wagh

un2

First\_name last\_name

karan patil

nitin visave

shubham patil

>select \* from un1

union

select \* from un2;

Output

-->

ajay wadile

karan patil

nitin visave

shubham patil

vishal wagh

2)Union all

It returns/combine result from all the participating queries

including the duplicate rows

>select \* from un1

union all

select \* from un2;

-->

First\_name last\_name

karan patil

ajay wadile

vishal wagh

karan patil

nitin visave

shubham patil

Rules

1)Number of columns should be same in both queries

ex

>select first\_name,last\_name from un1

union all

select first\_name from un2;

--> error

>select first\_name,last\_name from un1

union all

select first\_name ,'Patel' as last\_name from un2;

or

>select first\_name,last\_name from un1

union all

select first\_name ,null as last\_name from un2;

>select job\_id,ename,salary,comm,'India' as country from employ;

2)data type of all the columns should be same in both the

queries

ex-> if 1st table contains string salary columns

& 2nd table contains number(datatype) salary column

>select emp\_name,salary from un3

union all

select emp\_name,salary from un4;

-->error

But still i want to execute the query

then need to do type casting of salary column

cast--->

>select emp\_name,cast(salary as number) as salary from un3

union all

select emp\_name,salary from un4;

3)order of columns should be same , otherwise wrong output

>select first\_name,last\_name from un1

union all

select last\_name,first\_name from un2;

3)Intersect

It returns the rows that are common in both the queries.

>select first\_name,last\_name from un1

intersect

select first\_name,last\_name from un2;

--> karan patil

4)Minus

It returns the rows of the first query that are not present

in second query

>select first\_name,last\_name from un1

minus

select first\_name,last\_name from un2;

--->

first\_name last\_name

ajay wadile

vishal wagh

1)

Input

name amount1 amount2 amount3

vishal 5000 6800 4300

Rahul 3500 1000 2200

Simran 9800 9999 9990

Sukarn 5600 7757 8897

Vijay 6647 9898 10000

output

name max\_amount

vishal 6800

Sukarn 8897

Simran 9999

Rahul 3500

Vijay 10000

>select name,max(amount1) as max\_amount from(

select name, amount1 from maxrows

union all

select name,amount2 from maxrows

union all

select name,amount3 from maxrows)

group by name;

>select name,greatest(amount1,amount2,amount3) as max\_amount from maxrows;

>select name,least(amount1,amount2,amount3) as min\_amount from maxrows;

2)

Input

studentname English Maths Science

David 85 90 88

John 75 85 80

Tom 83 80 92

output

studentname Subject Marks

David English 85

David Maths 90

David Science 88

John English 75

John Maths 85

John Science 80

Tom English 83

Tom Maths 80

Tom Science 92

>select studentname,'English' as subject ,english as marks from studentinfo

union all

select studentname,'Maths' as subject,maths as marks from studentinfo

union all

select studentname,'Science' as subject ,science as marks from studentinfo

order by studentname;

3)

Input

student\_id subject marks

1001 English 88

1001 Science 90

1001 Maths 85

1002 English 70

1002 Science 80

1002 Maths 83

Output

studentid English Science Maths

1001 88 90 85

1002 70 80 83

>select student\_id,max(english) as English,max(Science) as science,max(maths) as maths

from(

select student\_id,

case when subject='English' then marks else 0 end as English,

case when subject='Science' then marks else 0 end as Science,

case when subject='Maths' then marks else 0 end as Maths from marks\_data)

group by student\_id;

>select \* from marks\_data

pivot(max(marks) for subject in ('English','Science','Maths'));

4)--Find number of male & female employees in each department

Input

empid name dept\_name sal deptno sex

102 prakash admin 5000 10 F

101 mohan admin 4000 10 M

107 preet admin 9000 30 M

105 vijay finance 7000 10 F

113 karan hr 5000 30 F

103 raj hr 9000 30 M

106 rajesh hr 6000 30 F

108 karan hr 9000 40 F

109 vishal it 7000 10 F

112 nitin it 7300 40 M

104 ajay it 4000 40 M

114 akshay production 9999 40 M

>

selectdept\_name,sum(males) as no\_of\_males,sum(females) as no\_of\_females from(

select dept\_name,sex,

case when sex='M' then 1 else 0 end as males,

case when sex='F' then 1 else 0 end as females from emp order by dept\_name)

group by dept\_name;