Date 14/03/18
Page 32

select * from emp E → emp gets renamed as E 2 copies → (1) emp (2) E

now these 2 tables with same attribute can be joined using self join.

emp

Emp_no	fname	Lname	Mngr_no
E1	Ivan	Bayross	
E2	Amit	Desai	
E3	Maya	Joshi	
E4	Peter	Joseph	E2
E5	Mandhar	Dalvi	
E6	Sonal	Mehta	E1
E7	Anil	Kamble	E5
E8	Seema	Apte	E3
E9	Vikram	Ghosh	E7
E10	Anjali	Joshi	E1

output

emp_fname	mgr_fname
Peter	Amit
Sonal	Mandhar
Anil	Mandhar
Seema	Maya
Vikram	Anil
Anjali	Ivan

renaming/aliasing

Q. Retrieve names of employees and respective managers.

select emp.fname as "emp_fname", mgr.fname as "mgr_fname" from emp e, emp mgr where e.mgr_no = mgr.emp

Sub query

The inner query generates values that are tested in the predicate of the outer query (single value)

classmate
Date
Page 61

Suppose we know the name but not the snum of the ~~sto~~ salesperson xyz and we want to find all his orders.

```
select * from orders where snum = (select snum from
        salesperson where sname like 'xyz');
```

~~Select~~

☆. subquery must select one and only one column and the datatype of this column must match that of the value to which it is being compared in the predicate.

Distinct with subquery

Find all orders credited to the same salesperson whose services are(cnum = 2001)

```
select * from orders where snum = (select distinct snum
from orders where cnum = 2001);
```

Aggregate functions in subqueries

Find all orders that are greater than the average for October 4th.

```
select * from orders where amt > (select avg(amt)
    from Orders where odate = '4-Oct-01';
```

Subqueries that produce multiple rows ('in' clause)

Find all orders attributed to salesperson in London.

```
Select * from orders where snum in (select snum
from salesperson where city like London);
```

Find the commission of all salesperson servicing customers in London.

```
select comm from salesperson where snum in (select snum
        from customer where city like 'London');
```

Subquery always takes a single column.
select * not possible

Expressions in subqueries

Q. Find all customers whose cnum is 1000 above the snum of xyz
select * from customers where cnum = (select snum+1000 from salesperson where sname like 'xyz');

Subqueries using having

These can use their own aggregate functions as long as they do not produce multiple values or use group-by or having themselves.

Q. Count the no. of customers with ratings above London's average.
select rating, count(distinct cnum) from customers group by rating having rating > (select avg(rating) from customers where city like 'London');

Find the total amount in orders for each salesperson for whom this total is greater than the amount of the largest order in the table.
select