SQL Question 1

Given a table of transactions (date, product\_id, user\_id), write a sql query that creates a histogram of number of users per number of different products.

Users that bought 10 or more different products should be grouped to one label: 10+ .

Output should look like this:

|  |  |
| --- | --- |
| Number of products | Number of users |
| 1 | 25 |
| 2 | 13 |
| ... |  |
| 10+ | 8 |

**Solution:**

|  |
| --- |
| Lena Cola  Lena Coffee  Adi Coffee  Lena 2  Adi 1  2 1  1 1  With cte\_A  (  Select  count(product) as count\_prod,  user  From table  Group by user)  Lena 2  Adi 1  Select  count(user) as num\_of\_users,  Case when count\_prod>10 then ‘10+’ else count\_prod end as ,  From cte\_A  Group by count\_prod |

SQL Question 2

Given the following table:

|  |  |  |  |
| --- | --- | --- | --- |
| **Employee Name** | **Employee ID** | **Manager Name** | **Manager ID** |
| Keren | 456 | Dani | 333 |
| Sharon | 789 | Keren | 456 |
| Avi | 999 | Sharon | 789 |
| Noa | 123 | Avi | 999 |

Write Sql that shows all employees that their 3rd manager is the CEO (have exactly 3 managers in their management hierarchy).

Example:

CEO Dani -> Employee Keren (1 manager: Dani) -> Employee Sharon (2 managers: Keren and Dani) -> **Employee** **Avi (3 managers: Sharon, Keren, Dani)->** Employee Noa (4 managers: Avi, Sharon, Keren, Dani).

Output should look like this:

|  |  |  |
| --- | --- | --- |
| **CEO name** | **Direct Manager Name** | **Employee Name** |
| Dani | Sharon | Avi |

**Solution**

* Table creation

create table Empmng(

emp\_name varchar(40),

emp\_id int,

mng\_name varchar(40),

mng\_id int

);

insert into Empmng (emp\_name,emp\_id,mng\_name,mng\_id) values ('Keren', 456, 'Dani', 333);

insert into Empmng (emp\_name,emp\_id,mng\_name,mng\_id) values ('Sharon', 789, 'Keren', 456);

insert into Empmng (emp\_name,emp\_id,mng\_name,mng\_id) values ('Avi', 999, 'Sharon', 789);

insert into Empmng (emp\_name,emp\_id,mng\_name,mng\_id) values ('Noa', 123, 'Avi', 999)

**Solution:**

with recursive tempa AS (

SELECT emp\_name,

emp\_id,

mng\_id,

1 AS Levela

FROM D

where mng\_id is null

UNION ALL

SELECT

D.emp\_name,

D.emp\_id,

D.mng\_id,

Levela+1

from D inner join tempa

on

D.mng\_id=tempa.emp\_id

),

A as

(

select

emp\_name,

emp\_id,

mng\_id

from Empmng

Union all

select

mng\_name,

mng\_id,

mng\_id

from Empmng

),

B as

(

select emp\_name,

emp\_id,

mng\_id,

count(emp\_name) over (partition by emp\_id) as num\_of\_records

from A

),

C as (

select

emp\_name,

emp\_id,

mng\_id

from B

where ((num\_of\_records=2 and emp\_id<>mng\_id)

or num\_of\_records=1)),

D as

(

select emp\_name,

emp\_id,

case when emp\_id=mng\_id then NULL else mng\_id end as mng\_id

from C

),

E as

(

select

emp.emp\_name as Employee\_Name,

DirectBoss.emp\_name as Direct\_Manager\_Name

from tempa emp join tempa DirectBoss

on emp.mng\_id = DirectBoss.emp\_id

where emp.Levela=4

--right join D Biggest

--on emp.emp\_id=Biggest.emp\_id

--where Biggest.mng\_id is null and emp.Levela=4

)

select Employee\_Name, Direct\_Manager\_Name,

(select D.emp\_name as "CEO" from D where D.mng\_id is null)

from E