

Database Concepts

Exercise 9

1. Express following queries in SQL!

- (a) Get the names of all costumers.
- (b) Get all orders of customer Meier.
- (c) List all products that have not been sold on 13.05.2003.
- (d) List all products that dealer Meier sold to customer Schulze.
- (e) Get all products that dealer Meier sold and customer Schulze bought.

Cid	Name
13	M.Mueller
17	A.Meier
23	I.Schulze

Did	Name
5	G.Hals
7	P.Schmidt
11	E.Meier
13	E.Mueller

Pid	Label
45	Power adapter
57	Cat5 cable
67	Mainboard

Did	Pid
5	45
5	57
7	67
7	45
11	57
5	67
11	67

Oid	Did	Date	Cid
3	7	01.12.2002	17
5	11	27.04.2003	23
7	5	13.05.2003	17
10	5	01.09.2003	13

Oid	Pid	Amount
3	45	1
3	67	5
5	67	1
7	57	3
7	67	2
10	45	2
10	57	5
10	67	3

2. Convert the SQL schema from task 1 into an ER-schema.

3. Given following tables:

Name	Pid
Meier	1586
Mueller	1001
Schmidt	905

Pid	Salary
1586	4000
1235	2500
905	1000
512	1575

Join the tables using a

- (a) Natural-Join
- (b) Left-Outer-Join
- (c) Right-Outer-Join
- (d) Full-Outer-Join

4. Given following tables:

Date	Orders
02.09.03	Furniture
23.06.04	Vegetables
01.12.05	Pots
15.01.06	Cutlery

Date	Value
02.09.03	4000€
23.06.04	100€
01.12.05	500€

Join the tables using

- (a) Equi-Join ($\bowtie_{Date=Date}$)
- (b) Theta-Join ($\bowtie_{Date>Date}$)
- (c) Semi-Join (\ltimes)

5. To solve this task, use recursive SQL as it is defined by Oracle (and lecture):

Id	Name	Manager
1	Amy Teipist	3
2	Tom Owner	NULL
3	Tim Managor	7
4	John Clerk	3
5	Juli Sal	2
6	Paul Meier	3
7	Don Boss	2
8	Rob Marketor	5

- (a) When and why is recursive SQL necessary?
- (b) Create an SQL query that returns all direct managers of Paul Meier!
- (c) Create an SQL query that returns all direct and indirect managers of Paul Meier.

Good Luck!