Lab compendium Lab 1

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Contents

Lab 1 SQL-Queries and Views

1) List all employees, i.e. all tuples in the jbemployee relation.

```
Select *
from jbemployee;
```

	id	name	salary	manager	birthyear	startyear
1	10	Ross, Stanley	15908	199	1927	1945
2	11	Ross, Stuart	12067	<null>	1931	1932
3	13	Edwards, Peter	9000	199	1928	1958
4	26	Thompson, Bob	13000	199	1930	1970
5	32	Smythe, Carol	9050	199	1929	1967
6	33	Hayes, Evelyn	10100	199	1931	1963
7	35	Evans, Michael	5000	32	1952	1974
8	37	Raveen, Lemont	11985	26	1950	1974
9	55	James, Mary	12000	199	1920	1969
10	98	Williams, Judy	9000	199	1935	1969
11	129	Thomas, Tom	10000	199	1941	1962
12	157	Jones, Tim	12000	199	1940	1960
13	199	Bullock, J.D.	27000	<null>	1920	1920
14	215	Collins, Joanne	7000	10	1950	1971
15	430	Brunet, Paul C.	17674	129	1938	1959
16	843	Schmidt, Herman	11204	26	1936	1956
17	994	Iwano, Masahiro	15641	129	1944	1970
18	1110	Smith, Paul	6000	33	1952	1973
19	1330	Onstad, Richard	8779	13	1952	1971
20	1523	Zugnoni, Arthur A.	19868	129	1928	1949
21	1639	Choy, Wanda	11160	55	1947	1970
22	2398	Wallace, Maggie J.	7880	26	1940	1959
23	4901	Bailey, Chas M.	8377	32	1956	1975
24	5119	Bono, Sonny	13621	55	1939	1963
25	5219	Schwarz, Jason B.	13374	33	1944	1959

2) List the name of all departments in alphabetical order. Note: by “name”" we mean the name attribute for all tuples in the jbdept relation.

```
select name
from jbdept
order by name;
```

	name
1	Bargain
2	Book
3	Candy
4	Children's
5	Children's
6	Furniture
7	Giftwrap
8	Jewelry
9	Junior Miss
10	Junior's
11	Linens
12	Major Appliances
13	Men's
14	Sportswear
15	Stationary
16	Toys
17	Women's
18	Women's
19	Women's

3) What parts are not in store, i.e. qoh = 0? (qoh = Quantity On Hand)

```
select name
from jbparts
where qoh =0;
```

	name
1	card reader
2	card punch
3	paper tape reader
4	paper tape punch

4) Which employees have a salary between 9000 (included) and 10000 (included)?

```
select name
from jbemployee
where salary >= 9000
and salary <= 10000;
```

	name
1	Edwards, Peter
2	Smythe, Carol
3	Williams, Judy
4	Thomas, Tom

5) What was the age of each employee when they started working (startyear)?

```
select name,  startyear-birthyear as age_started
from jbemployee;
```

	name	age_started
1	Ross, Stanley	18
2	Ross, Stuart	1
3	Edwards, Peter	30
4	Thompson, Bob	40
5	Smythe, Carol	38
6	Hayes, Evelyn	32
7	Evans, Michael	22
8	Raveen, Lemont	24
9	James, Mary	49
10	Williams, Judy	34
11	Thomas, Tom	21
12	Jones, Tim	20
13	Bullock, J.D.	0
14	Collins, Joanne	21
15	Brunet, Paul C.	21
16	Schmidt, Herman	20
17	Iwano, Masahiro	26
18	Smith, Paul	21
19	Onstad, Richard	19
20	Zugnoni, Arthur A.	21
21	Choy, Wanda	23
22	Wallace, Maggie J.	19
23	Bailey, Chas M.	19
24	Bono, Sonny	24
25	Schwarz, Jason B.	15

6) Which employees have a last name ending with “son”

```
select name
from jbemployee
where name like "%son,%";
```

	name
1	Thompson, Bob

7) Which items (note items, not parts) have been delivered by a supplier called Fisher-Price?

Formulate this query using a subquery in the where-clause.

```
select name
from jbitem
where supplier in (select id
from jbsupplier
where name = "Fisher-Price");
```

	name
1	Maze
2	The 'Feel' Book
3	Squeeze Ball

8) Formulate the same query as above, but without a subquery.

```
select jbitem.name as item, jbsupplier.name as supplier
from jbitem
join jbsupplier
on jbitem.supplier = jbsupplier.id
where jbsupplier.name = "Fisher-Price";
```

	item	supplier
1	Maze	Fisher-Price
2	The 'Feel' Book	Fisher-Price
3	Squeeze Ball	Fisher-Price

9) Show all cities that have suppliers located in them. Formulate this query using a subquery in the where-clause.

```
select name
from jbcity
where id in (select city
            from jbstore);
```

	name
1	San Francisco
2	El Cerrito
3	Oakland

10) What is the name and color of the parts that are heavier than a card reader?

Formulate this query using a subquery in the where-clause. (The SQL query must not contain the weight as a constant.)

```
select name, color
from jbparts
where weight > (select weight
                from jbparts
                where name = "card reader");
```

	name	color
1	disk drive	black
2	tape drive	black
3	line printer	yellow
4	card punch	gray

11) Formulate the same query as above, but without a subquery.

(The query must not contain the weight as a constant.)

```
select *
from jbparts
order by weight DESC
limit 4;
```

	id	name	color	weight	qoh
1	3	disk drive	black	685	2
2	6	line printer	yellow	578	3
3	4	tape drive	black	450	4
4	12	card punch	gray	427	0

12) What is the average weight of black parts?

```
select avg(weight) as "avg of weight"
from jbparts
where color = "black";
```

	`avg of weight`
1	347.2500

13) What is the total weight of all parts that each supplier in Massachusetts ("Mass"") has delivered?

Retrieve the name and the total weight for each of these suppliers. Do not forget to take the quantity of delivered parts into account. Note that one row should be returned for each supplier.

```
select jbsupplier.name as supplier,  sum(quan * weight) as weight_totalsum
from jbsupplier
join jbcity on jbsupplier.city = jbcity.id
join jbsupply on jbsupplier.id = jbsupply.supplier
join jbparts on jbparts.id = jbsupply.part
where state = "MASS"
group by jbsupplier.name;
```

	supplier	weight_totalsum
1	DEC	3120
2	Fisher-Price	1135000

14) Create a new relation (a table), with the same attributes as the table items using the CREATE TABLE

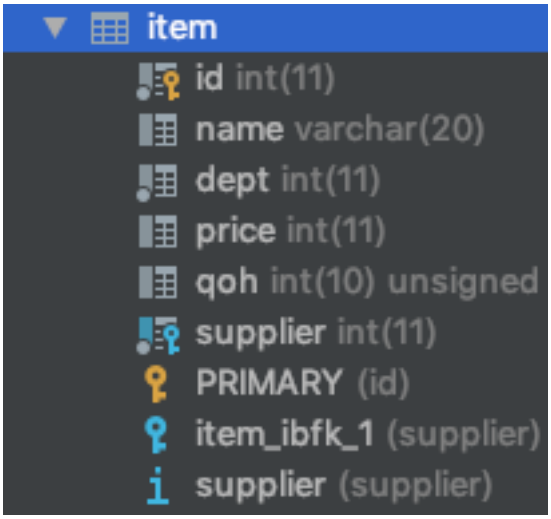
syntax where you define every attribute explicitly (i.e. not as a copy of another table). Then fill the table with all items that cost less than the average price for items. Remember to define primary and foreign keys in your table!

```
create table item as
select *
from jbitem
where price < (select avg(price)
                  from jbitem);

ALTER TABLE item
ADD PRIMARY KEY (id);

ALTER TABLE item
ADD FOREIGN KEY (supplier) REFERENCES jbitem(supplier);
```

	id	name	dept	price	qoh	supplier
1	11	Wash Cloth	1	75	575	213
2	19	Bellbottoms	43	450	600	33
3	21	ABC Blocks	1	198	405	125
4	23	1 lb Box	10	215	100	42
5	25	2 lb Box, Mix	10	450	75	42
6	26	Earrings	14	1000	20	199
7	43	Maze	49	325	200	89
8	106	Clock Book	49	198	150	125
9	107	The 'Feel' Book	35	225	225	89
10	118	Towels, Bath	26	250	1000	213
11	119	Squeeze Ball	49	250	400	89
12	120	Twin Sheet	26	800	750	213
13	165	Jean	65	825	500	33
14	258	Shirt	58	650	1200	33


item
id int(11)
name varchar(20)
dept int(11)
price int(11)
qoh int(10) unsigned
supplier int(11)
PRIMARY (id)
item_ibfk_1 (supplier)
supplier (supplier)