Lab0 RDB

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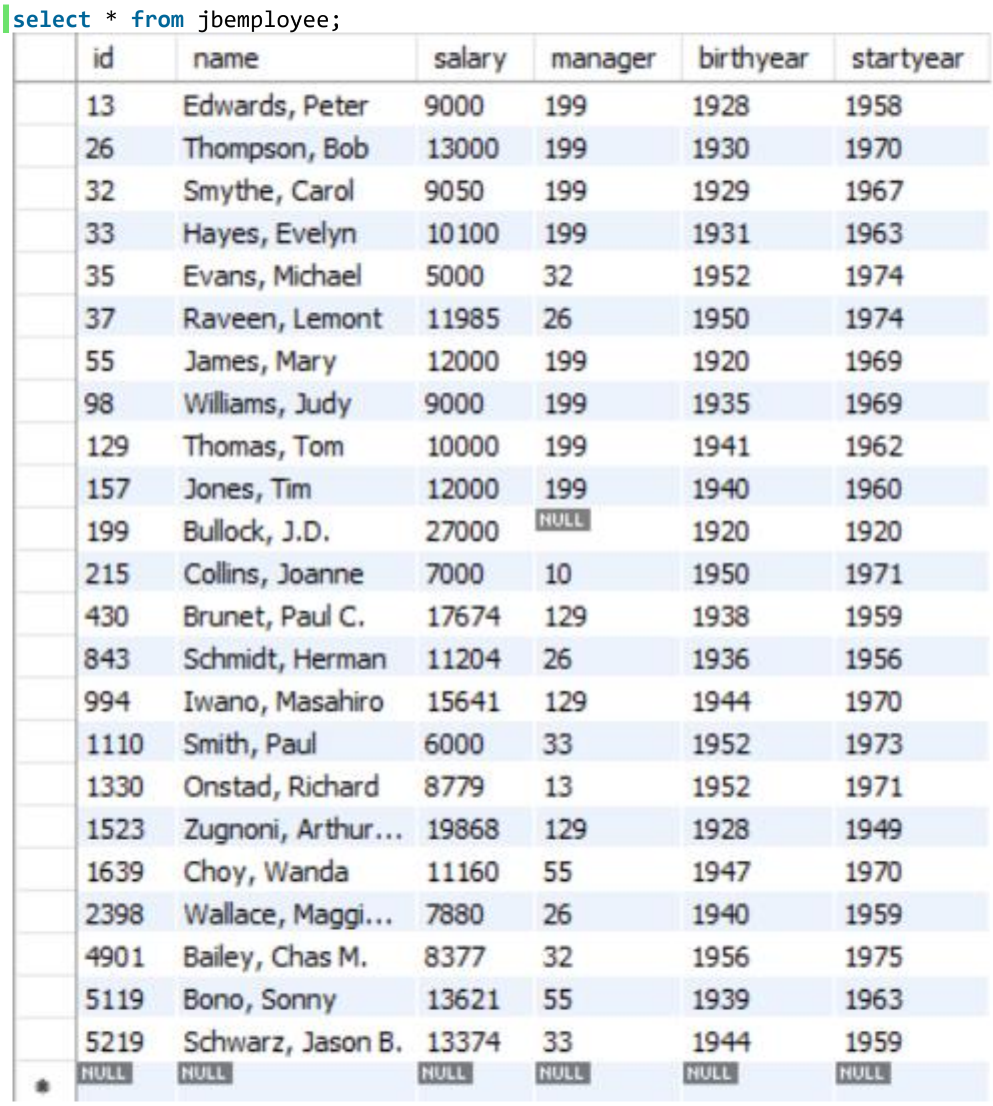
1) List all employees, i.e. all tuples in the ***jbemployee*** relation

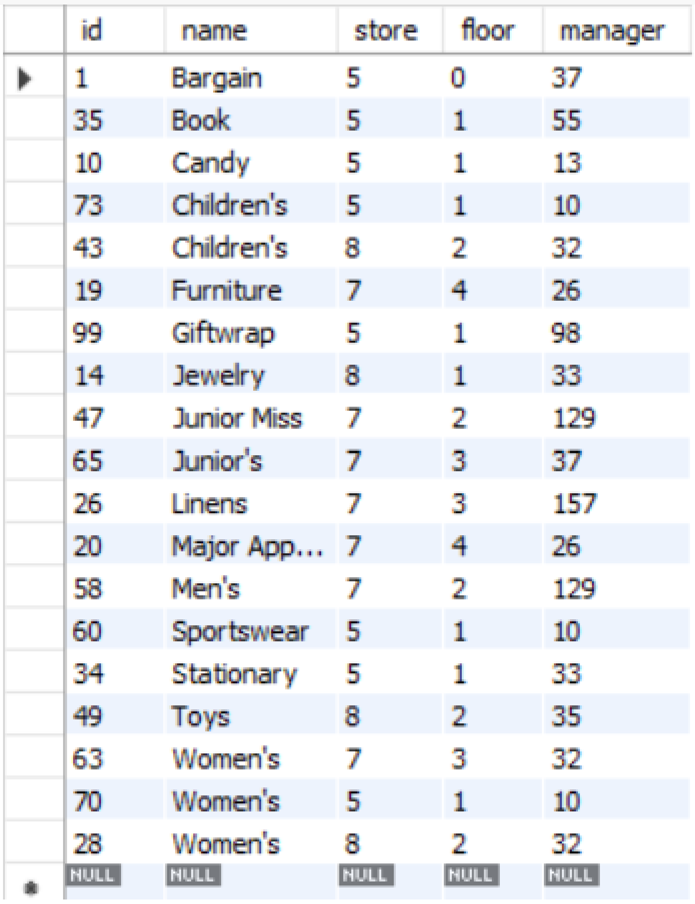


```
select * from jbemployee;
```

	id	name	salary	manager	birthyear	startyear
	13	Edwards, Peter	9000	199	1928	1958
	26	Thompson, Bob	13000	199	1930	1970
	32	Smythe, Carol	9050	199	1929	1967
	33	Hayes, Evelyn	10100	199	1931	1963
	35	Evans, Michael	5000	32	1952	1974
	37	Raveen, Lemont	11985	26	1950	1974
	55	James, Mary	12000	199	1920	1969
	98	Williams, Judy	9000	199	1935	1969
	129	Thomas, Tom	10000	199	1941	1962
	157	Jones, Tim	12000	199	1940	1960
	199	Bullock, J.D.	27000	NULL	1920	1920
	215	Collins, Joanne	7000	10	1950	1971
	430	Brunet, Paul C.	17674	129	1938	1959
	843	Schmidt, Herman	11204	26	1936	1956
	994	Iwano, Masahiro	15641	129	1944	1970
	1110	Smith, Paul	6000	33	1952	1973
	1330	Onstad, Richard	8779	13	1952	1971
	1523	Zugnoni, Arthur...	19868	129	1928	1949
	1639	Choy, Wanda	11160	55	1947	1970
	2398	Wallace, Maggi...	7880	26	1940	1959
	4901	Bailey, Chas M.	8377	32	1956	1975
	5119	Bono, Sonny	13621	55	1939	1963
	5219	Schwarz, Jason B.	13374	33	1944	1959
*	NULL	NULL	NULL	NULL	NULL	NULL

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.

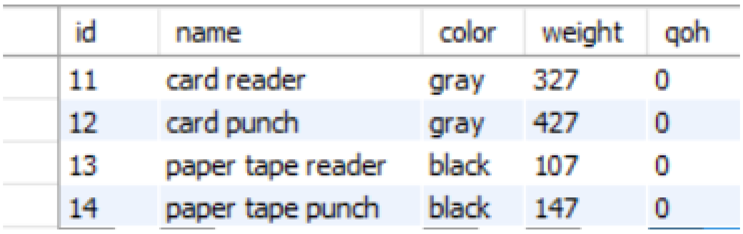
```
select * from jbdept
order by name
```



id	name	store	floor	manager
1	Bargain	5	0	37
35	Book	5	1	55
10	Candy	5	1	13
73	Children's	5	1	10
43	Children's	8	2	32
19	Furniture	7	4	26
99	Giftwrap	5	1	98
14	Jewelry	8	1	33
47	Junior Miss	7	2	129
65	Junior's	7	3	37
26	Linens	7	3	157
20	Major App...	7	4	26
58	Men's	7	2	129
60	Sportswear	5	1	10
34	Stationary	5	1	33
49	Toys	8	2	35
63	Women's	7	3	32
70	Women's	5	1	10
28	Women's	8	2	32
NULL	NULL	NULL	NULL	NULL

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

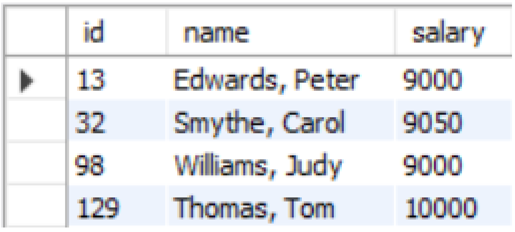
```
select * from jbparts
where qoh = 0
```



id	name	color	weight	qoh
11	card reader	gray	327	0
12	card punch	gray	427	0
13	paper tape reader	black	107	0
14	paper tape punch	black	147	0

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

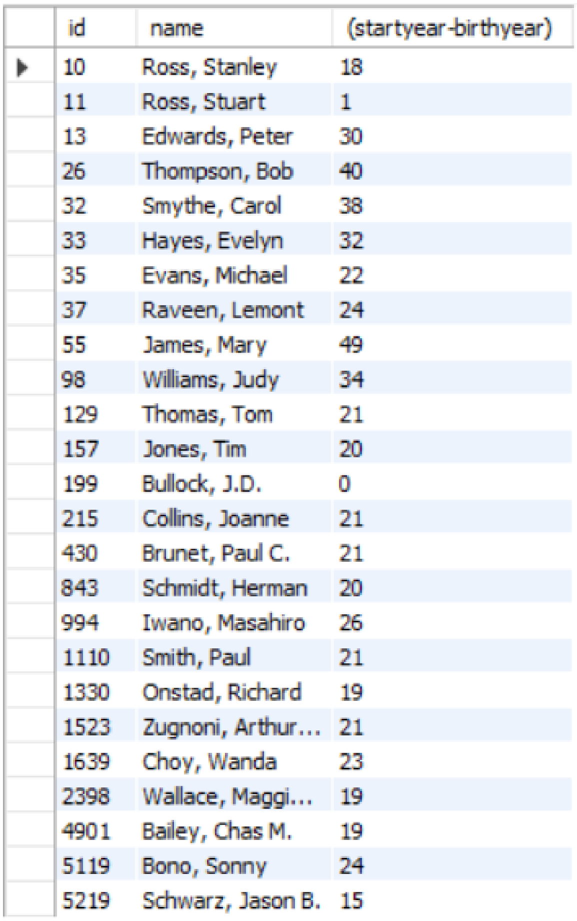
```
select id,name,salary from jbemployee
where salary between 9000 and 10000
```



	id	name	salary
▶	13	Edwards, Peter	9000
	32	Smythe, Carol	9050
	98	Williams, Judy	9000
	129	Thomas, Tom	10000

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

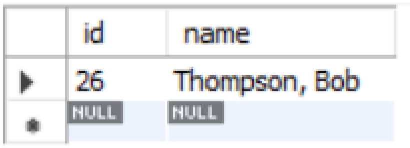
```
select id,name,(startyear - birthyear ) from jbemployee
```



	id	name	(startyear-birthyear)
▶	10	Ross, Stanley	18
	11	Ross, Stuart	1
	13	Edwards, Peter	30
	26	Thompson, Bob	40
	32	Smythe, Carol	38
	33	Hayes, Evelyn	32
	35	Evans, Michael	22
	37	Raveen, Lemont	24
	55	James, Mary	49
	98	Williams, Judy	34
	129	Thomas, Tom	21
	157	Jones, Tim	20
	199	Bullock, J.D.	0
	215	Collins, Joanne	21
	430	Brunet, Paul C.	21
	843	Schmidt, Herman	20
	994	Iwano, Masahiro	26
	1110	Smith, Paul	21
	1330	Onstad, Richard	19
	1523	Zugnoni, Arthur...	21
	1639	Choy, Wanda	23
	2398	Wallace, Maggi...	19
	4901	Bailey, Chas M.	19
	5119	Bono, Sonny	24
	5219	Schwarz, Jason B.	15

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

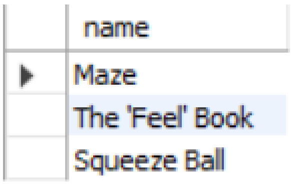
```
select id,name from jbemployee
where name like '%son,%'
```



	id	name
▶	26	Thompson, Bob
*	NULL	NULL

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.

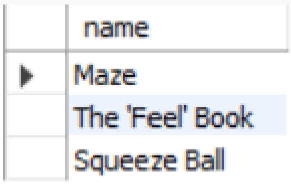
```
select name from jbitem
where supplier =
(select id from jbsupplier where name = 'Fisher-Price')
```



	name
▶	Maze
	The 'Feel' Book
	Squeeze Ball

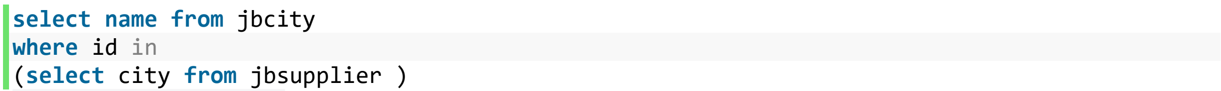
8) Formulate the same query as above, but without a subquery.

```
select JBI.name from jbitem JBI, jbsupplier JBS
where JBS.name = 'Fisher-Price' and JBI.supplier=JBS.id
```

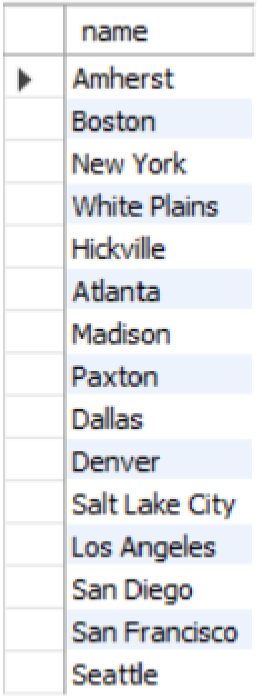


	name
▶	Maze
	The 'Feel' Book
	Squeeze Ball

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

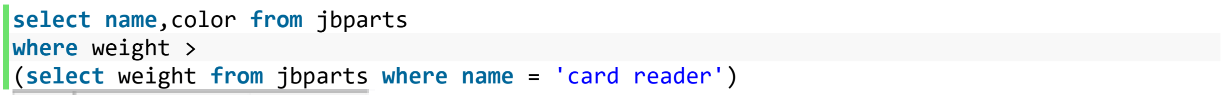


```
select name from jbcity
where id in
(select city from jbsupplier )
```

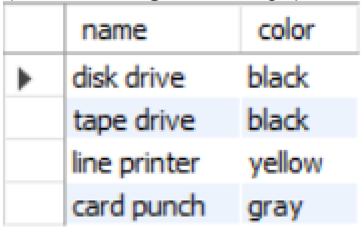


name
Amherst
Boston
New York
White Plains
Hickville
Atlanta
Madison
Paxton
Dallas
Denver
Salt Lake City
Los Angeles
San Diego
San Francisco
Seattle

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.)

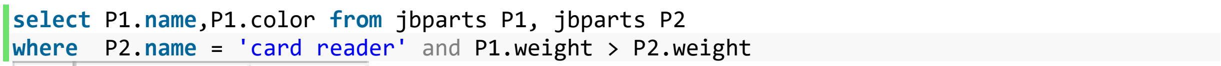


```
select name,color from jbparts
where weight >
(select weight from jbparts where name = 'card reader')
```

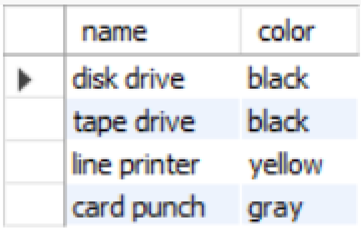


name	color
disk drive	black
tape drive	black
line printer	yellow
card punch	gray

11) Formulate the same query as above, but without a subquery. (The query must not contain the weight as a constant.)



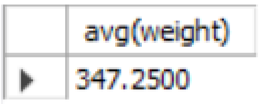
```
select P1.name,P1.color from jbparts P1, jbparts P2
where  P2.name = 'card reader' and P1.weight > P2.weight
```



name	color
disk drive	black
tape drive	black
line printer	yellow
card punch	gray

12) What is the average weight of black parts?

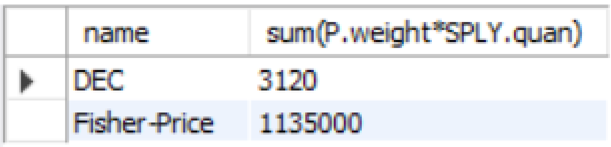
```
select avg(weight) from jbparts
where  color = 'black'
```



	avg(weight)
▶	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 SPLIER.name,sum(SPLY.quan*P.weight) from jbsupplier SPLIER,jbsupply SPLY,jbparts P
where SPLIER.city in (select id from jbcity where state = 'Mass') and
SPLY.supplier = SPLIER.id and
P.id = SPLY.part
group by SPLIER.name
```

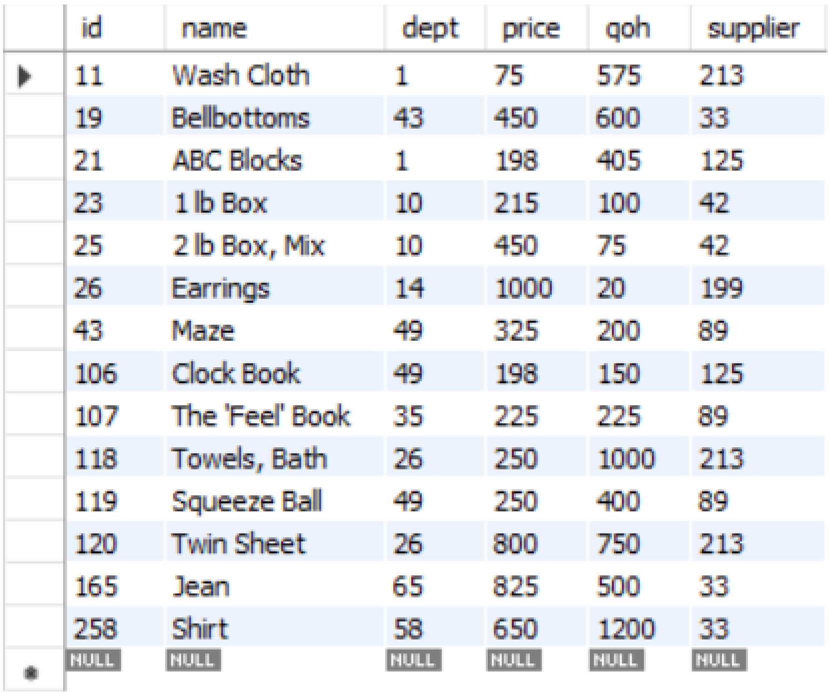


	name	sum(P.weight*SPLY.quan)
▶	DEC	3120
	Fisher-Price	1135000

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!

```sql
CREATE TABLE jb_item_new (
    id INT,
    name VARCHAR(20),
    dept INT NOT NULL,
    price INT,
    qoh INT UNSIGNED /* or, if check constraints were enforced: INT CHECK (qoh >= 0)*/,
    supplier INT NOT NULL,
    CONSTRAINT pk_item PRIMARY KEY(id)) ENGINE=InnoDB;

insert into jb_item_new(id,name,dept,price,qoh,supplier)
select id,name,dept,price,qoh,supplier from jbitem where
price < (select avg(price) from jbitem)
```



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