

732A54 - Database Lab 1

SQL Queries and Views

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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
10	Ross, Stanley	15908	199	1927	1945
11	Ross, Stuart	12067	NULL	1931	1932
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 A.	19868	129	1928	1949
1639	Choy, Wanda	11160	55	1947	1970
2398	Wallace, Maggie J.	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

25 rows in set (0,00 sec)

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 jbdept.name AS dept_name
FROM jbdept
ORDER BY dept_name;
```

```

+-----+
| dept_name |
+-----+
| Bargain   |
| Book      |
| Candy     |
| Children's |
| Children's |
| Furniture |
| Giftwrap  |
| Jewelry   |
| Junior Miss |
| Junior's  |
| Linens    |
| Major Appliances |
| Men's     |
| Sportswear |
| Stationary |
| Toys      |
| Women's   |
| Women's   |
| Women's   |
+-----+
19 rows in set (0,00 sec)

```

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

```

SELECT *
FROM jbparts
WHERE jbparts.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 rows in set (0,00 sec)

```

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

```

SELECT * FROM jbemployee
WHERE jbemployee.salary BETWEEN 9000 AND 10000;

```

```

+-----+-----+-----+-----+-----+-----+
| id | name           | salary | manager | birthyear | startyear |
+-----+-----+-----+-----+-----+-----+
| 13 | Edwards, Peter | 9000   | 199     | 1928      | 1958      |
| 32 | Smythe, Carol  | 9050   | 199     | 1929      | 1967      |
| 98 | Williams, Judy | 9000   | 199     | 1935      | 1969      |

```

129	Thomas, Tom	10000	199	1941	1962
-----	-------------	-------	-----	------	------

4 rows in set (0,00 sec)

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

```
SELECT emp.id, emp.name, (emp.startyear-emp.birthyear) AS age
FROM jbemployee AS emp;
```

id	name	age
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 A.	21
1639	Choy, Wanda	23
2398	Wallace, Maggie J.	19
4901	Bailey, Chas M.	19
5119	Bono, Sonny	24
5219	Schwarz, Jason B.	15

25 rows in set (0,00 sec)

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

```
SELECT *
FROM jbemployee AS emp
WHERE emp.name LIKE '%son';
```

id	name	salary	manager	birthyear	startyear
5219	Schwarz, Jason	13374	33	1944	1959

1 row in set (0,00 sec)

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 *
FROM jbitem AS itm
WHERE itm.supplier = (SELECT sup.id
                      FROM jbsupplier as sup
                      WHERE sup.name = 'Fisher-Price');
```

id	name	dept	price	qoh	supplier
43	Maze	49	325	200	89
107	The 'Feel' Book	35	225	225	89
119	Squeeze Ball	49	250	400	89

3 rows in set (0,00 sec)

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

```
SELECT itm.id, itm.name, itm.dept, itm.price, itm.qoh, itm.supplier
FROM jbitem AS itm, jbsupplier AS sup
WHERE itm.supplier = sup.id AND sup.name = 'Fisher-Price';
```

id	name	dept	price	qoh	supplier
43	Maze	49	325	200	89
107	The 'Feel' Book	35	225	225	89
119	Squeeze Ball	49	250	400	89

3 rows in set (0,16 sec)

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

```
SELECT * FROM jbcity AS cty
WHERE cty.id IN (SELECT sup.city
                 FROM jbsupplier AS sup);
```

id	name	state
10	Amherst	Mass
21	Boston	Mass
100	New York	NY
106	White Plains	Neb
118	Hickville	Okla
303	Atlanta	Ga
537	Madison	Wisc
609	Paxton	Ill
752	Dallas	Tex

802	Denver	Colo
841	Salt Lake City	Utah
900	Los Angeles	Calif
921	San Diego	Calif
941	San Francisco	Calif
981	Seattle	Wash

```

+-----+-----+-----+
15 rows in set (0,00 sec)

```

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 prts.name, prts.color
FROM jbparts AS prts
WHERE prts.weight > (SELECT prts.weight
                     FROM jbparts AS prts
                     WHERE prts.name = 'card reader');

```

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

```

+-----+-----+
4 rows in set (0,00 sec)

```

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

```

SELECT prts.name, prts.color
FROM jbparts AS prts, jbparts AS prts2
WHERE prts2.name = 'card reader' AND prts.weight > prts2.weight;

```

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

```

+-----+-----+
4 rows in set (0,00 sec)

```

12. What is the average weight of black parts?

```

SELECT avg(prts.weight) AS avg_weight
FROM jbparts AS prts WHERE prts.color = 'black';

```

```

+-----+
| avg_weight |
+-----+
| 347.2500 |
+-----+
1 row in set (0,00 sec)

```

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 sup.name, SUM(prts.weight*sp.quan) AS total_weight
FROM jb.jbparts AS prts, jbsupplier AS sup, jbsupply AS sp, jbcity AS cty
WHERE prts.id = sp.part AND sup.id = sp.supplier
AND sup.city = cty.id AND cty.state = 'Mass'
GROUP BY sup.id;

```

```

+-----+-----+
| name      | total_weight |
+-----+-----+
| Fisher-Price | 1135000 |
| DEC       | 3120 |
+-----+-----+
2 rows in set (0,00 sec)

```

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 jbbitem_replica
(
  `id` INT(11),
  `name` VARCHAR(20),
  `price` INT(11),
  `qoh` INT(10) UNSIGNED,
  `dept` INT(11),
  `supplier` INT(11),
  PRIMARY KEY (`id`),
  FOREIGN KEY (`dept`) REFERENCES `jbdept`(`id`),
  FOREIGN KEY (`supplier`) REFERENCES `jbsupplier`(`id`)
);

```

Query OK, 0 rows affected (0,47 sec)

```

INSERT INTO jb.jbbitem_replica(`id`, `name`, `price`, `qoh`, `dept`, `supplier`)
SELECT itm.id, itm.name, itm.price, itm.qoh, itm.dept, itm.supplier
FROM jb.jbbitem AS itm
WHERE (itm.price) < (SELECT AVG(jb.jbbitem.price) FROM jb.jbbitem);

```

Query OK, 14 rows affected (0,14 sec)
Records: 14 Duplicates: 0 Warnings: 0

```
SELECT *
FROM jb.jbitem_replica;
```

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

14 rows in set (0,00 sec)