מערכות בסיסי נתונים / תרגיל בית 1#

ודים סטוטלנד
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Q1

```
select distinct city
from locations
```

Output:

CITY
Beijing
Bern
Bombay
Geneva
Hiroshima
London
Mexico City
Munich
Oxford
Roma
Sao Paulo
Seattle
Singapore
South Brunswick
South San Francisco
Southlake
Stretford
Sydney
Tokyo
Toronto
Utrecht
Venice
Whitehorse

Q2

```
select distinct location_id, street_address
from locations
where street_address like '%Rd%'
```

Output:

LOCATION_ID	STREET_ADDRESS
1400	2014 Jabberwocky Rd
1700	2004 Charade Rd

Q3:

```
select distinct first_name, last_name, salary
from employees
where salary > 7000
order by salary
```

Output:

FIRST_NAME	LAST_NAME	SALARY
Mattea	Marvins	7200
Elizabeth	Bates	7300

William	Smith	7400
Nanette	Cambrault	7500
Louise	Doran	7500
Ismael	Sciarra	7700
Jose Manuel	Urman	7800
Payam	Kaufling	7900
Christopher	Olsen	8000
Lindsey	Smith	8000
Matthew	Weiss	8000
John	Chen	8200
Adam	Fripp	8200
William	Gietz	8300
Jack	Livingston	8400
Jonathon	Taylor	8600
Alyssa	Hutton	8800
Daniel	Faviet	9000
Peter	Hall	9000
Alexander	Hunold	9000
Allan	McEwen	9000
David	Bernstein	9500
Danielle	Greene	9500
Patrick	Sully	9500
Tayler	Fox	9600
Hermann	Baer	10000
Harrison	Bloom	10000
Janette	King	10000
Peter	Tucker	10000
Clara	Vishney	10500
Eleni	Zlotkey	10500
Ellen	Abel	11000
Gerald	Cambrault	11000
Den	Raphaely	11000
Lisa	Ozer	11500
Alberto	Errazuriz	12000
Nancy	Greenberg	12000
Shelley	Higgins	12000
Michael	Hartstein	13000
Karen	Partners	13500
John	Russell	14000
Lex	De Haan	17000
Neena	Kochhar	17000
Steven	King	24000

Q4:

```
select distinct region_name, country_name, city, department_name
from countries, departments, locations, regions
where (regions.region_id=countries.region_id)
      and (countries.country_id=locations.country_id)
      and (locations.location_id=departments.location_id)
      and(region_name != 'Europe')
      and (region_name != 'Asia')
order by department_name
```

Output:

REGION_NAME	COUNTRY_NAME	CITY	DEPARTMENT_NAME
Americas	United States of America	Seattle	Accounting

Americas	United States of America	Seattle	Administration
Americas	United States of America	Seattle	Benefits
Americas	United States of America	Seattle	Construction
Americas	United States of America	Seattle	Contracting
Americas	United States of America	Seattle	Control And Credit
Americas	United States of America	Seattle	Corporate Tax
Americas	United States of America	Seattle	Executive
Americas	United States of America	Seattle	Finance
Americas	United States of America	Seattle	Government Sales
Americas	United States of America	Southlake	IT
Americas	United States of America	Seattle	IT Helpdesk
Americas	United States of America	Seattle	IT Support
Americas	United States of America	Seattle	Manufacturing
Americas	Canada	Toronto	Marketing
Americas	United States of America	Seattle	NOC
Americas	United States of America	Seattle	Operations
Americas	United States of America	Seattle	Payroll
Americas	United States of America	Seattle	Purchasing
Americas	United States of America	Seattle	Recruiting
Americas	United States of America	Seattle	Retail Sales
Americas	United States of America	Seattle	Shareholder Services
Americas	United States of America	South San Francisco	Shipping
Americas	United States of America	Seattle	Treasury

Q5:

```
select count(location_id)
from regions, countries, locations
where (regions.region_id=countries.region_id)
      and (countries.country_id=locations.country_id)
      and (region_name='Asia')
```

Output:

COUNT(LOCATION_ID)
6

Q6:

```
select department_name, count(employee_id) as employee_count
from departments, employees
where departments.department_id=employees.department_id
group by department_name
order by employee_count
```

Output:

DEPARTMENT_NAME	EMPLOYEE_COUNT
Administration	1
Public Relations	1
Human Resources	1
Marketing	2
Accounting	2
Executive	3
IT	5
Finance	6
Purchasing	6
Sales	34
Shipping	45

Q7:

```
select distinct department_name, salary
from departments, employees
where (departments.department_id=employees.department_id)
      and (salary >= all(select salary from employees));
```

Output:

DEPARTMENT_NAME	SALARY
Executive	24000

Q8:

```
/* every manager has a different first and last name combination */
select distinct man_info.first_name, man_info.last_name, count(emp_info.employee_id) as
emp_count
from employees man_info, employees emp_info
where emp_info.manager_id=man_info.employee_id
      and man_info.employee_id in (select distinct employee_id
                                   from employees
                                   where employees.employee_id in (select manager_id from
employees)
                                   and employees.employee_id in (select manager_id from
departments))
group by man_info.first_name, man_info.last_name
order by emp_count
```

Output:

FIRST_NAME	LAST_NAME	EMP_COUNT
Michael	Hartstein	1
Shelley	Higgins	1
Alexander	Hunold	4
Nancy	Greenberg	5
Den	Raphaely	5
John	Russell	6
Adam	Fripp	8
Steven	King	14

Q9:

```
/* assupmtion: by saying "NOT department manager" it doesn't disqualify managers
who manage both departments and employees, but we should write the query looking
at employees.manager_id */
select min(salary)
from employees
where manager_id in (select distinct man_info.employee_id
                     from employees emp_info, employees man_info
                     where (emp_info.manager_id=man_info.employee_id)
                            and man_info.salary >= all(select distinct man.salary
                                                       from employees emp, employees man
                                                       where
emp.manager_id=man.employee_id))
```

Output:

MIN(SALARY)
5800

Q10:

בחירת כל הערים, שמות המחלקות וסך משכורות כל העובדים באותה מחלקה עבור כל המחלקות בהם סך משכורות כל העובדים באותה מחלקה גדול מ-10000 מסודר לפי סך המשכורות.

```
select city, dep.department_name, dep.total_salary
from locations join ((select departments.department_name, location_id, sum(salary) as
total_salary
                     from employees join departments on
                     employees.department_id=departments.department_id
                     group by departments.department_name, location_id
                     having sum(salary)>10000) dep) on
     locations.location_id=dep.location_id
order by dep.total_salary
```

Output:

CITY	DEPARTMENT_NAME	TOTAL_SALARY
Toronto	Marketing	19000
Seattle	Accounting	20300
Seattle	Purchasing	24900
Southlake	IT	28800
Seattle	Finance	51600
Seattle	Executive	58000
South San Francisco	Shipping	156400
Oxford	Sales	304500