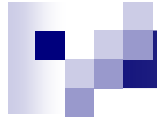




Review Session

Monday, Oct 8

Shipra Agrawal



Announcements

- New Gradiance assignment deadline
Wednesday, Oct 10
- Please read FAQs for assignments



Select-From-Where Statements

SELECT desired attributes

FROM one or more tables

WHERE condition about tuples of
the tables



Exercise

- Consider database

Product(name, price, category)

- Output
 - each product name with its price in cents
 - Also mark the products with price >10\$ and category='beverage' as 'expensive' and others as 'reasonable'



Solution

- `SELECT name, price*100, 'expensive'`
`FROM Product`
`WHERE price >10 AND category =`
`'beverage'`
- UNION
- `SELECT name, price*100, 'reasonable'`
`FROM Product`
`WHERE price <=10 OR category`
`<>'beverage'`



Multirelation queries

- Consider database schema

employee(employee-name, street, city)

works(employee-name, company-name, salary)

company(company-name, city)

manages(employee-name, manager-name)



Exercise 1 (3-way join)

- Find all employees who live in the same cities as the companies for which they work

```
SELECT employee-name
FROM employee, works
WHERE employee.employee-name =
works.employee-name AND works.company-
name = company.company-name AND
employee.city = company.city
```



Exercise 2

- Find all employees in the database who live on the same city and streets as their manager.
- SELECT e1.employee-name
- FROM employee e1,employee e2, manages
- WHERE
e1.employee-name = manages.employee-name AND
e2. employee-name = manages.manager-name AND
e1.street = e2.street AND e1.city = e2.city



Exercise 3

- Find all employees who earn more than average salary of all employees of their company

```
SELECT employee-name
FROM works w1,
      (SELECT AVG(salary) AS avg-salary, company-name
       FROM works
       GROUP BY company-name)w2
WHERE w1.company-name = w2.company-name AND
      w1.salary>w2.avg-salary
```



Exercise 4

- Find those companies whose employees earn a higher salary, on average than the average salary at First Bank Corporation.

```
SELECT company-name
FROM works
GROUP BY company-name
HAVING AVG(salary) >
    (SELECT AVG(salary)
     FROM works
     GROUP BY company-name
     HAVING company-name = 'First Bank Corporation')
```

Exercise 5

- Assume that the companies may be located in several cities. Find all the companies located in every city in which Small Bank corporation is located.

```
SELECT company-name
FROM(
    SELECT c1.company-name,c1.city
    FROM company c1, company c2
    WHERE c1.city=c2.city AND c2.company-name = 'Small Bank
    Corporation'
) R
GROUP BY company-name
HAVING COUNT(DISTINCT city) = (SELECT COUNT(DISTINCT city)
FROM company
GROUP BY company.company-name
HAVING company-name = 'Small Bank
Corporation')
```



Exercise 6

- Find all employees who earn more than each employee of 'Small Bank Corporation'

Select **employee-name**

From **employee**

Where **employee-name** NOT IN (

SELECT employee-name

FROM works w1,works w2

WHERE w1.salary < w2.salary AND w2.company-name = 'Small Bank Corporation'

)



Exercise 6 (contd..)

- Find all employees who earn more than each employee of 'Small Bank Corporation'

Select **employee-name**

From **employee**

Where **name** NOT IN (

 SELECT **employee-name**

 FROM **works** w1, (SELECT **salary**

 FROM **works**

 WHERE **company-name**= 'Small Bank

Corporation) w2

 WHERE **w1.salary** < **w2.salary**

)



Exercise 6

- Find all employees who earn more than each employee of 'Small Bank Corporation'

Select **employee-name**

From **works**

Where **salary** > (

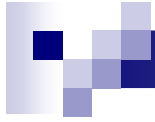
SELECT MAX(salary)

FROM works

GROUP BY company-name

HAVING company-name = 'Small Bank Corporation'

)



Questions?