

Question 1

Ename	Pname
James	DataBase
Mary	DataBase

1. Null value. There is no employee who has a salary less than 80,000
2. Null value. There is no pname that is both 'DataMining' and 'DataBase' at the same time

ename
James
Mary
Mary
Patricia

4.

ename
james
Mary

5.

ename	pname
James	DataMining
Mary	DataMining
John	DataMining

6.

ename
Mary
John
Patricia

7.

ename
Robert

8.

ename
James
Mary

9.

ename
Mary

10.

Question 2

- 1) Find the names and prices of products supplied by at least one supplier.
 - a. $\pi P.pname, P.price (C \bowtie P)$
- 2) Find the names and addresses of suppliers who supply a product which price is between \$100 and \$200.
 - a. $\pi sname, address (S \bowtie C \bowtie (\sigma price < 100 P)) - \pi sname, address (S \bowtie C \bowtie (\sigma price > 200 P))$
- 3) Find the sids of supplier who supply both "memory" and "cpu".
 - a. $\pi sid(C \bowtie (\sigma pname < "cpu" P)) \cap \pi sid(C \bowtie (\sigma pname < "memory" P))$
- 4) Find the sids of supplier who supply both "memory" or "cpu".

- a. $\pi_{sid}(C \bowtie (\sigma_{pname < "cpu"} P)) \cup \pi_{sid}(C \bowtie (\sigma_{pname < "memory"} P))$
- 5) Find the names of products supplied by all suppliers.
 - a. $\pi_{pname}(C / P)$

LAB

1. SELECT E.first_name, E.last_name

FROM titles T, employees E

WHERE T.emp_no = E.emp_no AND T.title = 'Manager';

2. SELECT E.first_name, E.last_name

FROM salaries S, employees E

WHERE S.emp_no = E.emp_no AND S.salary < 39000;

3. SELECT E.first_name, E.last_name

FROM employees E, departments D, dept_manager DM

WHERE D.dept_no = DM.dept_no AND DM.emp_no = E.emp_no

AND (D.dept_name = 'Research' OR D.dept_name = 'Finance');

4. SELECT DISTINCT E.first_name, E.last_name

FROM employees E, salaries S, dept_manager DM, departments D

WHERE D.dept_no = DM.dept_no AND DM.emp_no = E.emp_no

AND S.emp_no = E.emp_no AND S.salary < 65000

AND D.dept_name = 'Finance';

5. SELECT DE.emp_no

FROM dept_emp DE

WHERE DE.emp_no IN ((SELECT DE2.emp_no

```
FROM departments D1, dept_emp DE2
WHERE D1.dept_no = DE2.dept_no AND D1.dept_name = 'Research')
INTERSECT
(SELECT DE3.emp_no
FROM departments D2, dept_emp DE3
WHERE D2.dept_no = DE3.dept_no AND D2.dept_name = 'Finance'));
```