

a) Retrieve the names of all employees in the department whose name is Administrator

```
EMP_W_D ← (s DNAME='Administration' (DEPARTMENT)) J (DNO),(DNUMBER) (EMPLOYEE)
```

```
RESULT ← P Fname, Mname, Lname (EMP_W_D)
```

Result:

Fname, Minit, Lname

'Alicia','J','Zelaya'

'Jennifer','S','Wallace'

b) Retrieve the names of all employees in the departments which are located in Houston

```
Dept_LOCATION ← DEPARTMENT J (Dnumber)(Dnumber)(DEPT_LOCATIONS)
```

```
EMP_W_D ← (s Dlocation='Houston' (Dept_LOCATION )) J (Dno),(Dnumber) (EMPLOYEE)
```

```
RESULT ← P Fname, Mname, Lname (EMP_W_D)
```

Result:

Fname, Minit, Lname

'John','B','Smith'

'Franklin','T','Wong'

'Ramesh','K','Narayan'

'Joyce','A','English'

'James','E','Borg'

c) List the names of all employees who have a dependent with the same first name as themselves

```
E_AND_DEPENDENT<-- (EMPLOYEE) J (Ssn,Fname),(Essn,Dependent_name) (DEPENDENT)
```

```
RESULT <-- P Fname, Minit, Lname (E_AND_DEPENDENT)
```

Fname, Minit, Lname(empty)

d) For each project, calculate the total number of employees who work for it, and the total number of hours that these employees work for the project.

```
RESULT(Pno, num_of_emp, total_hours)← (Pno f COUNT Essn, COUNT Hours(WORKS_ON))
```

Pno num_of_emp total_hours

Pno	num_of_emp	total_hours
1	3	52.5
2	3	37.5
3	2	50

10	3	55
20	3	41
30	3	55

the symbol s for SELECT, P for PROJECT, J for EQUIJOIN, $$ for NATURAL JOIN, and f for FUNCTION.*