

```
select 'Q1' as ' ' ;
-- (1) Find all info about managers who are 26 or younger and live in CA
```

```
SELECT E.* FROM Employee E, Manages M
WHERE E.eid = M.eid and E.age <= 26 and E.residenceState = 'CA';
```

```
# +-----+-----+-----+-----+-----+-----+
# | eid | name      | age | salary | residenceState | startDate |
# +-----+-----+-----+-----+-----+-----+
# | 85  | Sally85   | 21  | 41759  | CA             | 2021-09-14 |
# | 411 | Sally411  | 26  | 76422  | CA             | 2021-03-26 |
# | 545 | Sally545  | 26  | 79069  | CA             | 2021-12-17 |
# +-----+-----+-----+-----+-----+-----+
```

```
select 'Q2' as ' ' ;
-- (2) Find the name and salary of managers who earn less than 35000
SELECT E.name, E.salary FROM Employee E, Manages M
WHERE E.eid = M.eid and E.salary < 35000;
```

```
# +-----+-----+
# | name      | salary |
# +-----+-----+
# | Sally204  | 23408  |
# | Sally284  | 28465  |
# | Sally321  | 29538  |
# | Sally439  | 22562  |
# | Sally669  | 31113  |
# | Sally728  | 27451  |
# | Sally939  | 33751  |
# +-----+-----+
# 7 rows in set (0.00 sec)
```

```
select 'Q3' as ' ' ;
-- (3) Find the eid and startDate of managers who started working before Feb 1,
2021
-- i.e., startDate < "20121-02-01"
```

```
SELECT E.eid, E.startDate from Employee E
join Manages M on E.eid = M.eid # Thought I'd try it with a join instead for fun
where E.startDate < '2021-02-01';
```

```
# +-----+-----+
# | eid | startDate |
# +-----+-----+
# | 157 | 2021-01-02 |
# | 329 | 2021-01-19 |
# +-----+-----+
# 2 rows in set (0.00 sec)
```

```
select 'Q4' as ' ' ;
-- (4) Find the name of the employee who manages the "department40" department
```

```
SELECT E.name from Employee E
JOIN Manages M on E.eid = M.eid
where M.did = 40; # Could have joined with department to get it explicitly, but
this is faster
```

```
# +-----+
# | name   |
# +-----+
# | Sally948 |
# +-----+
# 1 row in set (0.00 sec)
```

```
select 'Q5' as ' ' ;
-- (5) Find the eid of employees who work in exactly 3 departments
-- Hint: use aggregates/group by/having
SELECT E.eid from Employee E
join WorksFor WF on E.eid = WF.eid
group by E.eid
having count(*) >= 3;
```

```
# +-----+
# | eid |
# +-----+
# | 94 |
# | 123 |
# | 146 |
# | 262 |
# | 293 |
# | 684 |
# | 922 |
# | 971 |
# +-----+
# 8 rows in set (0.00 sec)
```

```
select 'Q6' as ' ' ;
-- (6) Find the eid, residenceState, and did for all those 20 year old
-- employees that work in a department located in the same state that they live in.
SELECT E.eid, E.residenceState, D.did FROM Employee E
join WorksFor WF on E.eid = WF.eid
join Department D on WF.did = D.did
WHERE E.age = 20 and E.residenceState = D.stateLocated;
```

```
# +-----+-----+-----+
# | eid | residenceState | did |
# +-----+-----+-----+
# | 678 | HI | 35 |
# +-----+-----+-----+
# 1 row in set (0.00 sec)
```

```
select 'Q7' as ' ' ;
-- (7) Find the eid, residence state, did, and department state
-- for every managers who manages a department located in AK
```

```
SELECT E.eid, E.residenceState, D.did, D.stateLocated
FROM Employee E
join Manages M on E.eid = M.eid
join Department D on M.did = D.did
where D.stateLocated = 'AK';
```

```
# +-----+-----+-----+-----+
# | eid | residenceState | did | stateLocated |
# +-----+-----+-----+-----+
# | 247 | AZ | 16 | AK |
```

```
# | 618 | AZ | 24 | AK |
# | 46 | KY | 44 | AK |
# +-----+-----+-----+-----+
# 3 rows in set (0.00 sec)
```

```
select 'Q8' as ' ';
-- (8) Find the eid, residence state, did, and deparment state for
-- every employee that works for a department located in CO
```

```
SELECT E.eid, E.residenceState, D.did, D.stateLocated FROM Employee E, Department
D, WorksFor W
WHERE E.eid = W.eid and D.did = W.did and D.stateLocated = 'CO';
```

```
# +-----+-----+-----+-----+
# | eid | residenceState | did | stateLocated |
# +-----+-----+-----+-----+
# | 76 | DE | 41 | CO |
# | 121 | FL | 41 | CO |
# | 168 | AZ | 41 | CO |
# | 254 | DE | 41 | CO |
# | 258 | ME | 41 | CO |
# | 283 | KY | 41 | CO |
# | 341 | HI | 41 | CO |
# | 346 | DE | 41 | CO |
# | 358 | KS | 41 | CO |
# | 367 | KS | 41 | CO |
# | 486 | AZ | 41 | CO |
# | 522 | IN | 41 | CO |
# | 529 | IN | 41 | CO |
# | 569 | FL | 41 | CO |
# | 673 | IA | 41 | CO |
# | 744 | CO | 41 | CO |
# | 815 | ID | 41 | CO |
# | 909 | CO | 41 | CO |
# | 930 | LA | 41 | CO |
# | 956 | IA | 41 | CO |
# | 968 | KY | 41 | CO |
# | 25 | HI | 43 | CO |
# | 67 | AZ | 43 | CO |
# | 98 | CO | 43 | CO |
# | 144 | AL | 43 | CO |
# | 332 | AK | 43 | CO |
# | 335 | LA | 43 | CO |
# | 438 | DE | 43 | CO |
# | 490 | DE | 43 | CO |
# | 510 | FL | 43 | CO |
# | 514 | IN | 43 | CO |
# | 622 | CT | 43 | CO |
# | 640 | CO | 43 | CO |
# | 660 | IA | 43 | CO |
# | 695 | AL | 43 | CO |
# | 732 | DE | 43 | CO |
# | 734 | CO | 43 | CO |
# | 787 | AZ | 43 | CO |
# | 841 | KS | 43 | CO |
# | 910 | ME | 43 | CO |
```

```
# | 978 | AZ | 43 | CO |
# | 995 | AZ | 43 | CO |
# +-----+-----+-----+-----+
# 42 rows in set (0.00 sec)
```

```
select 'Q9' as ' ' ;
-- (Q9) find the eid of employees who are managing two or more departments
SELECT E.eid from Employee E, Manages M
where E.eid = M.eid
group by E.eid
having count(*) >= 2;
```

```
# +-----+
# | eid |
# +-----+
# | 627 |
# | 948 |
# +-----+
# 2 rows in set (0.00 sec)
```

```
select 'Q10' as ' ' ;
-- (Q10) find eid, did, and manging starting date for all employees found in the
previous problem
-- Hint: use "in" and a nested query
```

```
SELECT E.eid, M.did, M.dateStartedManaging
from Employee E
join Manages M on E.eid = M.eid
WHERE E.eid in
(
    SELECT E.eid from Employee E, Manages M
    where E.eid = M.eid
    group by E.eid
    having count(*) >= 2
);
```

```
# +-----+-----+-----+-----+
# | eid | did | dateStartedManaging |
# +-----+-----+-----+-----+
# | 627 | 6 | 2021-11-13 |
# | 627 | 27 | 2021-10-28 |
# | 948 | 36 | 2021-03-03 |
# | 948 | 40 | 2021-01-13 |
# +-----+-----+-----+-----+
# 4 rows in set (0.00 sec)
```

```
select 'Q11' as ' ' ;
-- (11) find the did and number of employees for every department with 14 or fewer
employees
```

```
SELECT WF.did, COUNT(*) from WorksFor WF
group by WF.did
having count(*) <= 14;
```

```
# +-----+-----+
# | did | COUNT(*) |
# +-----+-----+
# | 1 | 11 |
# | 3 | 13 |
# | 8 | 14 |
# | 32 | 13 |
# +-----+-----+
# 4 rows in set (0.00 sec)
```

```
-- (12) Find the average employee salary for each department whose did is < 6.
-- In other words, for each of those departments find the average salary of
employees
-- who work for that department
```

```
Select WF.did, AVG(E.salary) from Employee E
join WorksFor WF on E.eid = WF.eid
where WF.did < 6
group by WF.did;
```

```
# +-----+-----+
# | did | AVG(E.salary) |
# +-----+-----+
# | 1 | 53461.09090909091 |
# | 2 | 50880.28571428572 |
# | 3 | 57662.38461538462 |
# | 4 | 51728.80952380953 |
# | 5 | 51007 |
# +-----+-----+
# 5 rows in set (0.00 sec)
```