Recap 1: JOIN

Find the total number of unique sailors who have reserved each boat (ordered the number of sailors in descending order).

Display the count, boat name, and boat id

```
Boats (bid, bname, color)
Sailors (sid, sname, rating, age)
Reserves (sid, bid, day)
```

Recap 2: JOIN

Find the average age of sailors who have reserved each boat. Show boat name, boat id, and the average age.

Order results by boat id.

```
Boats (bid, bname, color)
Sailors (sid, sname, rating, age)
Reserves (sid, bid, day)
```

Recap 3: JOIN

Find the average age of sailors who have reserved each boat? Show boat name, bid, and the average age. Order results by bid. (*from Recap 2*)

In addition, only show the boat info where the average age of sailors who have reserved that boat is > 35 years old.

```
Boats (bid, bname, color)
Sailors (sid, sname, rating, age)
Reserves (sid, bid, day)
```

Recap 4: Self Join

Find the average salary for each job that is greater than the average salary of all employees

practice_emp

empno	ename	job	sal
7369	Smith	Clerk	1200
7499	Allen	Salesman	2000
7521	Ward	Salesman	1650
7566	Jones	Manager	3375
7654	Martin	Salesman	1650
7698	Blake	Manager	3250
7782	Clark	Manager	2850
7788	Scott	Analyst	3500
7839	King	President	6500
7844	Turner	Salesman	1900
7876	Adams	Clerk	1500
7900	James	Clerk	1350
7902	Ford	Analyst	3500
7934	Miller	Clerk	1700

(Note: The table shows sample data, not a complete set of data,

Recap 5: Self Join

Find all students (sid) who live in the same city and on the same street as their mentor

```
Mentorship (mentee_sid, mentor_sid)
   -- mentor_sid is a mentor of another student mentee_sid
Study (sid, credits)  -- credits the student has taken
Enrollment (dept_id, sid) -- dept the student is enrolled in
Student (sid, street, city) -- street, city the student lives
```

Let's Try 1: Self Join

For each person, find the average salary of their job (assume we will display empno, ename, and average salary of the person's job)

practice_emp

empno	ename	job	sal
7369	Smith	Clerk	1200
7499	Allen	Salesman	2000
7521	Ward	Salesman	1650
7566	Jones	Manager	3375
7654	Martin	Salesman	1650
7698	Blake	Manager	3250
7782	Clark	Manager	2850
7788	Scott	Analyst	3500
7839	King	President	6500
7844	Turner	Salesman	1900
7876	Adams	Clerk	1500
7900	James	Clerk	1350
7902	Ford	Analyst	3500
7934	Miller	Clerk	1700

(Note: The table shows sample data, not a complete set of data, refer to https://www.cs.virginia.edu/~up3f/cs4750/assigns/employees.sql)

Let's Try 1: Subqueries in SELECT

For each person, find the average salary of their job (assume we will display empno, ename, and average salary of the person's job)

practice_emp

empno	ename	job	sal
7369	Smith	Clerk	1200
7499	Allen	Salesman	2000
7521	Ward	Salesman	1650
7566	Jones	Manager	3375
7654	Martin	Salesman	1650
7698	Blake	Manager	3250
7782	Clark	Manager	2850
7788	Scott	Analyst	3500
7839	King	President	6500
7844	Turner	Salesman	1900
7876	Adams	Clerk	1500
7900	James	Clerk	1350
7902	Ford	Analyst	3500
7934	Miller	Clerk	1700

Step 1: Find each person's empno and ename

Step 2: Given the job of the person, find the average salary of that job

(Note: The table shows sample data, not a complete set of data, refer to https://www.cs.virginia.edu/~up3f/cs4750/assigns/employees.sql)

Let's Try 1: Subqueries in FROM

For each person, find the average salary of their job (assume we will display empno, ename, and average salary of the person's job)

practice_emp

empno	ename	job	sal
7369	Smith	Clerk	1200
7499	Allen	Salesman	2000
7521	Ward	Salesman	1650
7566	Jones	Manager	3375
7654	Martin	Salesman	1650
7698	Blake	Manager	3250
7782	Clark	Manager	2850
7788	Scott	Analyst	3500
7839	King	President	6500
7844	Turner	Salesman	1900
7876	Adams	Clerk	1500
7900	James	Clerk	1350
7902	Ford	Analyst	3500
7934	Miller	Clerk	1700

Step 1: Find average salary of each job

Step 2: For each person, find the average salary of that the person's job

(Note: The table shows sample data, not a complete set of data, refer to https://www.cs.virginia.edu/~up3f/cs4750/assigns/employees.sql)
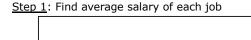
Let's Try 1: Subqueries in WITH

For each person, find the average salary of their job (assume we will display empno, name, and average salary of the person's job)

practice_emp

empno	ename	job	sal
7369	Smith	Clerk	1200
7499	Allen	Salesman	2000
7521	Ward	Salesman	1650
7566	Jones	Manager	3375
7654	Martin	Salesman	1650
7698	Blake	Manager	3250
7782	Clark	Manager	2850
7788	Scott	Analyst	3500
7839	King	President	6500
7844	Turner	Salesman	1900
7876	Adams	Clerk	1500
7900	James	Clerk	1350
7902	Ford	Analyst	3500
7934	Miller	Clerk	1700

<u>Step 1</u>: Find average salary of each job

<u>Step 2</u>: For each person, find the average salary of that the person's job

(Note: The table shows sample data, not a complete set of data, refer to https://www.cs.virginia.edu/~up3f/cs4750/assigns/employees.sql)

Let's Try 2: Join (1)

For each sailor, find the number of boats they have reserved (assume we will display sname and the number of boats)

Sailors

sid	sname	rating	age
22	Yuppy	9	35
31	Lubber	8	55.5
44	Guppy	5	35
48	Ole Red	8	92.3
58	Rusty	10	40

Reserves

sid	bid	day
22	101	2003-06-05
22	104	2003-06-15
44	102	2003-06-05
48	105	2003-06-14
58	103	2003-06-07

(Note: The table shows sample data, not a complete set of data, refer to http://www.cs.virginia.edu/~up3f/cs4750/inclass/alldbs.sql)

Let's Try 2: Join (2)

For each sailor, find the number of boats they have reserved (assume we will display sname and the number of boats)

Sailors

sid	sname	rating	age
22	Yuppy	9	35
31	Lubber	8	55.5
44	Guppy	5	35
48	Ole Red	8	92.3
58	Rusty	10	40

Reserves

sid	bid	day
22	101	2003-06-05
22	104	2003-06-15
44	102	2003-06-05
48	105	2003-06-14
58	103	2003-06-07

(Note: The table shows sample data, not a complete set of data, refer to http://www.cs.virginia.edu/~up3f/cs4750/inclass/alldbs.sql)

Let's Try 2: Subqueries in SELECT

For each sailor, find the number of boats they have reserved (assume we will display sname and the number of boats)

Sailors

sid	sname	rating	age
22	Yuppy	9	35
31	Lubber	8	55.5
44	Guppy	5	35
48	Ole Red	8	92.3
58	Rusty	10	40

Reserves

sid	bid	day
22	101	2003-06-05
22	104	2003-06-15
44	102	2003-06-05
48	105	2003-06-14
58	103	2003-06-07

(Note: The table shows sample data, not a complete set of data, refer to http://www.cs.virginia.edu/~up3f/cs4750/inclass/alldbs.sql)