# Assignment 4

Christina Lam

# Weak vs Strong Entity Set

- **Weak:**
  - Dependent on a strong entity to ensure its existence
  - Does not have any primary key
  - Ex. A room can only exist in a building

- **Strong:**
  - Always has a primary key
  - Not dependent on any other entity in the schema
  - Ex. A wheel can exist without being attached to a car

# Consider the Query

```
select course_id, semester, year, sec_id, avg (tot_cred)
from takes natural join student
where year = 2017
group by course_id, semester, year, sec_id
having count (ID) >= 2;
```

- The appending natural join will not change the results because it is a simpler way for a SQL programmer to show information from 2 or more relations joined together
- It operates on 2 relationships and produces a relation
- Considering this query, both the tuple from takes and the tuples from students have the same value on common attributes
- This is the same as stating from takes student

# Consider the Query

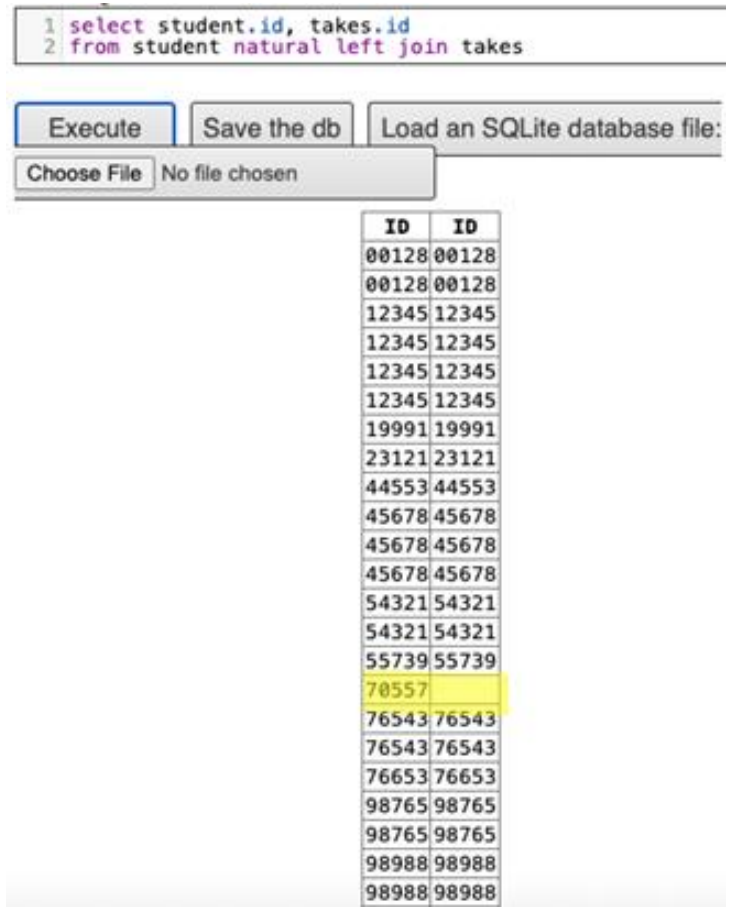
Enter SQL commands here

```
1 select student.id
2 from student natural left join takes
3 where takes.id is null
```

Execute | Save the db | Load an SQLite database file:

Choose File | No file chosen

| ID |
|---|
| 70557 |




| ID | ID |
|---|---|
| 00128 | 00128 |
| 00128 | 00128 |
| 12345 | 12345 |
| 12345 | 12345 |
| 12345 | 12345 |
| 12345 | 12345 |
| 19991 | 19991 |
| 23121 | 23121 |
| 44553 | 44553 |
| 45678 | 45678 |
| 45678 | 45678 |
| 45678 | 45678 |
| 54321 | 54321 |
| 54321 | 54321 |
| 55739 | 55739 |
| 70557 | |
| 76543 | 76543 |
| 76543 | 76543 |
| 76653 | 76653 |
| 98765 | 98765 |
| 98765 | 98765 |
| 98988 | 98988 |
| 98988 | 98988 |

# Consider the Database

*employee* (*ID*, *person_name*, *street*, *city*)
*works* (*ID*, *company_name*, *salary*)
*company* (*company_name*, *city*)
*manages* (*ID*, *manager_id*)

- Select employee.id From employee natural left outer join manages Where manages.id is null

- Select employee.id From employee natural left outer join manager