Today's class: relational design theory; dependencies. §§3.{1,2}.
Next class: schema design §§3.{4,5}.

1. List the members of your group below. Underline your name.

2. Refer to our running example of a student-course-enrollment database. Provide, with brief explanation, the smallest possible instance of the `Students` relation that *violates* the functional dependency id→name, year.

3. Provide, with brief explanation, the smallest possible instance of the `Courses` relation that *violates* both the functional dependencies id→title and ta, title→id.

4. Provide simple English descriptions of the dependencies in Questions 2 and 3.

5. List *all* superkeys and *all* keys of `Courses`, given the dependencies in Question 3.

6. Compute $\{\texttt{title}\}^+$ and $\{\texttt{id}, \texttt{ta}\}^+$ given the dependencies of Question 3.

7. Consider $R(A, B, C, D, E)$ with dependencies

$$
\begin{aligned}
AB &\to C \\
BC &\to A \\
D &\to E \\
CE &\to B
\end{aligned}
$$

List all keys of R

8. Project the dependencies of Question 7 onto the relation $R'(A, B, C)$.