Tutorial 7 (Week 10): Normal Forms.

1. Invent three examples consisting of a relation scheme R (choose the number of attributes and call them A, B, C etc.) and a set F of functional dependencies on R such that, respectively,
   a. R with F is not in 2NF;
   b. R with F is not in 3NF but in 2NF;
   c. R with F is not in BCNF but in 3NF.

   For each example, find a real world application with the same schema and functional dependencies (for instance, A is the matric number of a student, it implies the name, etc.)

2. Create a random example (choose the number of columns, A, B, C, etc. and invent several random functional dependencies, e.g. {A, C} $\rightarrow$ {B}, and check whether it is in 2NF, 3NF and BCNF.
3.

Keep track of the examples for next week…