

## Homework 4

Prepare your answers using either a word processor or by neatly sketching diagrams and then scanning them into a single digital document (e.g., scan them into a word processing document and then create a pdf file of the word processing document). When the two normal form problems say “describe and illustrate the process of normalizing”, I want to see three sets of relations--the 1<sup>st</sup> NF, 2<sup>nd</sup> NF, and 3<sup>rd</sup> NF relations--**and the functional dependencies you used to go from 1<sup>st</sup> NF to 2<sup>nd</sup> NF and then from 2<sup>nd</sup> NF to 3<sup>rd</sup> NF.**

1. 14.14. You may need to read parts of the Wellmeadows Hospital case study in Appendix B. You may make the following assumptions:
  - a. A drug’s dosage and method of administration is determined by its drug no
  - b. Each ward has unique bed numbers, but they may not be unique throughout the hospital (i.e., the bed number may be replicated in another ward).
  - c. The relation only stores patients currently registered at the hospital and hence each patient will be in at most one bed and one wardUse reasonable assumptions about the remaining fields on the form. Make sure that you look at the fields at the top of the form, such as full name and patient number, and not just at the fields in the table.
  
2. 14.15. Assume that this appointments relation not only contains information about the appointments, but is also the only repository of information about the dentists in the practice, and the patients in the practice. Assume that surgeries has another relation which is referenced by the surgery number and contains information about the surgeries. You may make the following assumptions:
  - a. When the book says "assigned to a surgery" the book is talking about the location (e.g., such as a building or clinic) in which the operation is to be performed, not the operation itself.
  - b. a patient can be registered for only one surgery (i.e., clinic). You will note that patients may have multiple appointments but are registered for the same surgery at each appointment. The book makes this assumption as well in its solution.
  - c. a patient may have multiple appointments on the same day.