

STSCI 5060 HW1

Assigned on 9/19/2018

Due on 9/26/2018 at 11:59PM

General instruction:

- Please note: The code of Cornell academic integrity is strictly enforced. Violators will be prosecuted by the rules stated in the syllabus.
- For all the ERDs you draw, you are required to use the book (or HRT) notation by following the conventions introduced in the class, e.g., the entity names must be capitalized, etc. You may just manually draw the ERDs (of course, you are welcome to use a drawing tool like PowerPoint to draw the ERDs, or you may hand in an ERD that was partially drawn by your hand and partially done with a drawing tool). If a textbook question mentions using a commercial drawing tool, just ignore it. The following textbook questions are based on the 12th US edition (a copy of the book is reserved in the Math Library in Malott Hall).
- Combine your answers to Questions 1 to 7 into a PDF file (make sure it is legible with enough resolution), named Last Name_First Name_5060HW1_Q1-7, e.g., Smith_John_5060HW1_Q1-7.
- Combine the above PDF file with the file from Question 8 with 7-Zip (available at <http://www.7-zip.org/>) or a similar tool into a single file (named Last Name_First Name_5060HW1) to the course website on Blackboard.

1. Problems and Exercises (P&E) 1-20 on Page 44. For the diagrams, you just need to include the entities, relationships and cardinalities to represent your ideas. (10 points)
2. P&E 1-25 on Page 44. (7 points)
3. Suppose you as a customer of a bank own several bank accounts in the bank. These accounts incur different types of transactions, which are processed by the employees who are employed by a branch of the bank. At the enterprise data model level, design a data model to describe this scenario of business. (11 points)
4. P&E 2-32 on Page 101. (10 points)
5. P&E 2-42 on Page 104. (14 points)
6. P&E 3-19 on Page 145. (18 points)
7. P&E 3-33 on Page 146. You should use the EER notation (HRT) for this homework. (Hint: The business scenario of this question should be familiar to you, but the EER model may be more complicated than it appears to be. You will need to create an associative entity "SCHEDULE," which has relationships with multiple (>2) entities. You should consider creating a weak entity; in addition to the relationship to its identifying owner, the weak entity also has more than one relationship with other entities.) (30 points)
8. Record your name pronunciation and save it as a voice file, named Last_Name_First_Name_Full_Chinese_character_name (e.g., Chen_Dahai_陈大海) if you have a Chinese character name, or just Last_Name_First_Name if you do not have a Chinese character name. (Bonus: 10 points)