

CSCI 4125/5125
Data Models and Database Systems
Spring 2022
Course Project
Phase1: E-R Modeling (1/31)

Due: Tuesday, 2/15 @ 11:59pm

Reading: Silberschatz Chapters 1 & 6

Submission Guidelines:

1. This assignment is worth 100 points for all students.
2. All answers in the form of images or screenshots must be readable. Any additional files must be clearly referenced and labeled.
3. It is your responsibility to make sure all files are readable and submitted on time.
4. If you work with a team member, make sure you state this at the top of your submission. Each group member is still required to submit all required work and files.

Submission:

- Part A requires you to submit a Java source file and an output text file worth 30 points.
- Part B requires you to submit a single E-R diagram worth 60 points.

Part A. Short Answer (30 points)

We will use Java throughout the project. Your task for right now is to write a Java program that does a simple evaluation for the data types of values in a file. Your Java program will eventually be able to automatically generate SQL insert statements for all of the data we will use rather than you having to repetitively write many SQL insert statements. This will make your life a lot easier!!!

1. Read in the attached csv file, phase1.csv, line-by-line.
2. For each line, do the following:
 - a. Use the split() method (Ex. String[] values = line.split(",");) to store the values, which are separated by commas in an array.
 - b. Then for each value in the array, determine if the value can be converted to an integer or if it is a text value. *Hint*: Integer.parseInt(value) is one way you can determine if a value can be converted to an integer.
3. Write your results for the data types to a text file. If the value can be converted to an integer, write "Integer". Otherwise, write "Text". For example, if my input is the following:

```
Hello, 100, World
Hello, World, 100, 2
```

My output file should look like:

```
Text, Integer, Text
Text, Text, Integer, Integer
```

Note that this program should work for a csv containing records with any number of values. Don't hardcode line numbers or field positions.

Submit both your Java source file and your output text file to Moodle.

Part B. E-R Modeling (70 points).

UNO Hospital Database. The University of New Orleans wants to build a new hospital to service the local community. For this hospital to work, we must design and build a database to manage all of the data. Below is the verbal description of the data to be modeled. Your task is to draw an E-R diagram containing the entities discussed below, their attributes and keys (underlined), and the relationships (including cardinality and participation) among them. You can use software (e.g., PowerPoint or Visio) or draw a legible, free-hand diagram. Submit an image of your E-R diagram below.

For each patient, we record a unique patient number, his/her name, and age. A given patient may or may not be assigned to a bed in the hospital (some are outpatients only). Each bed may or may not be assigned to a patient. Each bed has a unique bed number in our system, and we also keep track of the room number and which unit it is on.

For each of our nurses, we record a unique ID number, his/her Name, and a salary. Each nurse may monitor many beds or may not monitor any. Each bed has at most one nurse monitoring it (the beds that are not occupied don't have to be monitored). Some nurses act as unit supervisors, supervising one or more other nurses. Every nurse has at most one supervisor.

Each patient is referred to the hospital by his/her physician. A physician may refer any number of patients or may not refer any patients. We record a unique ID number, his/her name, and a specialty for each physician. To track each physician's activity in the hospital, each day that a physician visits the hospital to see patients, he/she submits a daily timecard that records the date and the number of hours he/she spent at the hospital.