**ISS4014 – Database Systems and Web Integration**

**Chapter 01 – Activities and Homework**

Name: Logan Strong

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**Chapter 01 Review Questions and Activities (5 points)**

* Respond to the following chapter 01 review questions (you may have discussed some of these questions in class so be sure to include ideas and information you gained from the class discussion).

1. Define each of the following terms:
   1. Data: is ubiquitous and pervasive information in the world that is raw fact
   2. Field: is used to define and store data
   3. Record: A connected set of fields that describes a single thing
   4. File: A collection of related records

4. What is a DBMS, and what are its functions (List at least four)?

* + - Database management systems controls access to data stored in the database.
    - Helps to share data efficiently with end users.
    - Makes the data more secure.
    - Minimizes the amount of inconsistent data.

7. What is the role of a DBMS, and what are its advantages? What are its disadvantages?

The role of a DBMS is to act as an intermediary between the user and the database. It’s advantages are that the users don’t have to do many complex things to manipulate the data because the DBMS does it for them. However, a disadvantage is learning to use the DBMS correctly.

10. What is metadata?

Metadata is data about data, it describes the characteristics and relationships certain data has I the database.

**Chapter 01 Labs and Problems (20 points)**

Reference Figure P1.1 on page 32 of the text to respond to the following questions 1-4. Enter your responses below each question in this word document.

1. How many records does the file contain? How many fields are there per record?

There are 7 records with 5 fields.

1. What problem would you encounter if you wanted to produce a listing by city? How would you solve this problem by altering the file structure?

The cities are in one field with the street addresses as well. The best way to fix this is to make another field named city.

1. If you wanted to produce a listing of the file contents by last name, area code, city, state, or zip code, how would you alter the file structure?

I’d make a field for each and move the corresponding data into each.

1. What data redundancies do you detect? How could those redundancies lead to anomalies?

There are multiple entries for the same person, but some fields are different. This could lead to anomalies by misrepresenting the amount of data that belongs to one individual.

Reference Figure P1.5 on page 33 of the text to respond to the following questions 5-8. Enter your responses below each question in this word document.

1. Identify and discuss the serious data redundancy problems exhibited by the file structure shown in Figure P1.5.

Putting the numbers for the projects and employees in a different field than their names doesn’t benefit anything if it’s always uniform. If Hurricane is always number 1 and Annie R. Ramoras is always 110 then you don’t need to include the number.

1. Looking at the EMP\_NAME and EMP\_PHONE contents in Figure P1.5, what change(s) would you recommend?

Put the fields by each other.

1. Identify the various data sources in the file you examined in Problem 5.

Project ID, Employee ID, Job ID, Job hours, Project hours, and Employee phone number.

1. Given your answer to Problem 7, what new files should you create to help eliminate the data redundancies found in the file shown in Figure P1.5?

One file for Employee records, One for Project Records, and another for Job Records

1. Identify and discuss the serious data redundancy problems exhibited by the file structure shown in Figure P1.9. (The file is meant to be used as a teacher class assignment schedule. One of the many problems with data redundancy is the likely occurrence of data inconsistencies – that two different initials have been entered for the teacher named Maria Cordoza.)

Eliminate the Teacher Initial row to avoid additional redundancies.

Reference Figure P1.9 on page 33 of the text to respond to the following question 10. Enter your responses below each question in this word document.

1. Given the file structure shown in Figure P1.9, what problem(s) might you encounter if building KOM were deleted?

The main problem would be that all the associated rooms would remain even though the data about the building was deleted. Leading to room numbers for a building that no longer exists.

**Chapter 01 Text Database Table Load (5 points)**

* Follow these steps:
  1. Using the MySQL Workbench, create a database (schema) called ch01\_text.
  2. Then use the Ch01\_Text\_MySQL.txt file in the course student files and run the SQL script to create the chapter 01 problem tables and load data.
  3. Verify the script ran with no issues by reviewing the output log. Correct any issues “before continuing.
  4. Display all the rows (and columns) in the “employeeskills” table using the Select Rows function off the pop-up menu in the schema area.
  5. Enter an SQL comment above the Select command in the editor with your name. Comments are created by using a double dash (--) or hash tag (#) For example: -- Justin Case or # Justin Case
  6. **Copy and paste an image containing the SQL code editor and the result grid below.**

A screenshot of a computer

Description automatically generated