Week 2 Assignment

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Unit : ICT_104 Introduction to Database Design and Management

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

   Answer :

   - There are 7 records from 21-5Z all the way to 31 - 7P.
   - There are 5 different fields which include :
     a. PROJECT_CODE
     b. PROJECT_MANAGER
     c. MANAGER_PHONE
     d. MANAGER_ADDRESS
     e. PROJECT_BID_PRICE.

2. 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?

Answer :

- **Problem:** The street, city, state and postal code are in the same column which makes it a hassle to figure and sort out as per convenience.
- **Solution :** Providing a hassle free breakdown by breaking the address into separate columns for each field of address.

3. 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?

Answer :

- Split Name : I would split the project manager field into “First Name” and “ Last Name” to make it easier to understand.
- Slit the Phone: I would split the manager phone field into “Area Code” and “Phone number” to sort by relevance.
- Break down the Manager address field into separate field like “street”, “city”, “state”, and “postal code” to sort by relevance and make it easier to understand.

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

Answer :

- **Redundancies :** The same manager’s details are repeated for multiple projects because of the change or update in bid price.
- **Anomalies :** If there are changes in the manager's other details like phone number, address, etc, this will increase the chances of mistakes in updating the changes.

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

Answer :

Employee name and phone number have been repeated for multiple different projects. This causes trouble to encounter data of the same employee across different records.

6. Looking at the EMP_NAME and EMP_PHONE contents in Figure P1.5, what change(s) would you recommend?

Answer :

a. Breakdown employee name into fields like “first name”, “ Last name” to help analyze the data better without any confusion and hassle.
b. Breakdown employee phone number in a standardized format with area code to make sure the format is consistent for the same employee.

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

Answer :

a. Employe data : Employee name, employee phone number, employee number.
b. Project data : Project names, hours, number.
c. Job data : job code, job charge hours.

8. 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?

Answer : I would add separate fields for employee phone numbers with area code. I would also add the project name field parallel to ascendant sequenced working hours to avoid confusion. Additionally, i would also add field like Job Assignment to make it convenient for employees to understand their allotments better.

9. 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— two different initials have been entered for the teacher named Maria Cordoza.)
Answer : The same teacher's name like Maria Cordoza has been repeated with variations which can lead to confusion and errors to understand different initials and other allotted data of the same person.

10. Given the file structure shown in Figure P1.9, what problem(s) might you encounter if building KOM were deleted?
Answer : If building KOM is deleted, all the relevant and related data about classes or teachers related to that building would be lost. This will cause a serious impact on records related to the building making it difficult to sort backups and future related data.