Mohammed Al Madhi

CIS 310 – Database Design

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ASSIGNMENT 1

Assignment from Chapter 1 (pages 32 & 33):

Please complete problems 1 through 5(p.32) and problem 11 completing actions a,b, and c.

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

- The file contains seven records from 21-5z to 31-7p, and there are five fields PROJECT\_CODE through 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?

- Since the City names are included in the MANGAER\_ADDRESS it will be complicated searching by the city since this will require us to do some query search by string of city name. it is the best if we create a separate attribute for the city.

3. If you want to produce a listing of the file contents by last name, area code, city, state, or zip code how would you solve this problem?

- The best way to solve this problem is to dividing the each field, for example MANAGER\_ADDRESS if we divide those into address, city, state zip code we would have a better ability to find what we need.

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

- This table has many redundancies for example the manager Holly B. Parker is on the list three time, so her address, phone number, are also list multiple times if we need to edit her address or phone number we will have to change all and if we miss one we could have some issues. Same thing with George F. Dorts.

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

- The file has unnecessary record repetition for example for the JOB\_CODE EE if the amount changes we will have to make the changes multiple times. Also if we delete an employee name that means we could create cost losses, since job charge hour, project hours will also be deleted.

11.

A and B)

C) Given the file's poor structure, the stage is set for multiple anomalies. For example STU\_ID is repeated four times and it is unnecessary since if for some reason students ID are changed I will have to edit all these records and If I missed one I would cause some data issues if went unnoticed for long time. Also if I want to view students by last name it would require so query search, we could create a first and last name record for better structure.