

I Mo Danthuluru declare that I have completed this assignment completely and entirely on my own, without any consultation with others. I understand that any breach of the UAB Academic Honor Code may result in severe penalties.

Question:

	A	B	C	D
1	Employee	Hire Date	Manager	Manager Salary
2	Mary	11101990	Alice	80,000
3	John	10182000	Alice	80,000
4	David	5302004	Tony	90,000
5				
6				

Identify the data redundancy from the following spreadsheet and provide examples of Update Anomaly, Insert Anomaly, and Delete Anomaly. Neither 'Employee' nor 'Manager' can be null/empty. The unique identifier of a record in this table is Employee (name.) Manager name is also a unique identifier of a manager and serves as a foreign key in this table (which we shall learn later ...). For any key or foreign key attribute - we don't expect to change its value. For example, we don't expect an employee/manager to change his/her name which is the ID of that employee/manager (of course you can see that using name as the ID is not a good idea - more will be covered on the key choice later.) Therefore, in your answer, do NOT use examples such as updating a manager's name (which is different from changing the manager of an employee.)

Answer:

The data redundancy from the spreadsheet is the manager salary, which lists the manager's salary every time a manager is assigned to an employee, especially in Alice's case, where her name is brought up twice with her salary. So, we can see that even though Alice's salary has been mentioned once, it is mentioned every time her name is shown, which leads to inconsistencies and unnecessary storage consumption.

Update Anomaly

	A	B	C	D	E
1	Employee	Hire Date	Manager	Manager Salary	
2	Mary	11101990	Alice	80,000	
3	John	10182000	Alice	85,000	
4	David	5302004	Tony	90,000	
5					
6					
7					

Here, we see an example of an update anomaly where the salary of Alice is updated to 85,000 in cell D3, which causes an inconsistency of data as in cell D2, her salary is still 80,000 as before.

Insert Anomaly

	A	B	C	D
1	Employee	Hire Date	Manager	Manager Salary
2	Mary	11101990	Alice	80,000
3	John	10182000	Alice	80,000
4	David	5302004	Tony	90,000
5			Jay	100,000
6				

Here, we see an example of an insert anomaly where a new manager is added to the cell C5 of the spreadsheet, which causes inconsistency in the data as the manager is not assigned to any employee and hence it cannot be inserted into the spreadsheet.

Delete Anomaly

	A	B	C	D
1	Employee	Hire Date	Manager	Manager Salary
2	Mary	11101990	Alice	80,000
3	John	10182000	Alice	80,000
4				
5				
6				
7				

Here we see an example of the delete anomaly where the row that consisted of the manager Tony at row 4 is removed from the database, which causes inconsistencies as per the database Tony does not exist anymore even though he is still there.

Reference Page

None