

## HW 4

## Question 2:

A)

Insertion: An example of an insertion anomaly would be if a new patients data needs to be inserted but they have not made an appointment with the dentist, the staff number becomes null which then violates the entity constraints. Also, the primary key cannot be null.

Deletion: An example of a deletion anomaly would be if the dentist were to leave the job, his data is then deleted from the table. The dentist also had a patient or patients, and that data would also be deleted.

Update: An example of an update anomaly would be if the dentist was female and is in the process of getting married. After she's officially married her surname will change. Following that the data on the table is updated to match her new surname.

B)

The functional dependencies represented by the attributes shown in the table are:

Staff No and Pat No = Appointment date and Appointment time (1NF --- All attributes are atomic)

Staff No = Dentist Name

Pat No = Pat Name

StaffNo, AppointmentDate, AppointmentTime = Surgery No.

C) This is how I would categorized foreign and primary keys based off the information given from the table.

Primary Keys:

a. Appointment – StaffNo, PatNo

b. Surgery – StaffNo, AppDate, AppTime

Foreign Keys:

a. Appointment – AppDate, AppTime

b. Surgery – SurgeryNo

## Question 3:

A.

Product ID	Product Description	Finish	Quantity	Unit Price	Extended Price	Customer ID	Customer Name	Address	Order ID	Order Date	Total
7	Dining Table	Natural Ash	2	\$800.00	\$1,600.00						
5	Writer's Desk	Cherry	2	\$325.00	\$650.00						
4	Entertainment Center	Natural Maple	1	\$650.00	\$650.00						
						2	Value Furniture	15145 S.W. 17th St. Plano TX 75022	1006	10/24/2015	\$2,900.00

## B. 1NF:

Product ID	Product Description	Finish	Quantity	Unit Price	Extended Price	Customer ID	Customer Name	Address	Order ID	Order Date	Total
7	Dining Table	Natural Ash	2	\$800.00	\$1,600.00	2	Value Furniture	15145 S.W. 17th St. Plano TX 75022	1006	10/24/2015	\$2,900.00
5	Writer's Desk	Cherry	2	\$325.00	\$650.00	2	Value Furniture	15145 S.W. 17th St. Plano TX 75022	1006	10/24/2015	\$2,900.00
4	Entertainment Center	Natural Maple	1	\$650.00	\$650.00	2	Value Furniture	15145 S.W. 17th St. Plano TX 75022	1006	10/24/2015	\$2,900.00

## 2NF:

Product ID	Order ID	Quantity	Extended Price
7	1006	2	\$1,600.00
5	1006	2	\$650.00
4	1006	1	\$650.00

Product ID	Product Description	Finish	Unit Price
7	Dining Table	Natural Ash	\$800.00
5	Writer's Desk	Cherry	\$325.00
4	Entertainment Center	Natural Maple	\$650.00

Customer ID	Customer Name	Address	Order ID	Order Date	Total
2	Value Furniture	15145 S.W. 17th St. Plano TX 75022	1006	10/24/2015	\$2,900.00

3NF:

Product ID	Order ID	Extended Price	Quantity
7	1006	\$1,600.00	2
5	1006	\$650.00	2
4	1006	\$650.00	1

Product ID	Product Description	Finish	Unit Price
7	Dining Table	Natural Ash	\$800.00
5	Writer's Desk	Cherry	\$325.00
4	Entertainment Center	Natural Maple	\$650.00

Customer ID	Customer Name	Address
2	Value Furniture	15145 S.W. 17th St. Plano TX 75022

Customer ID	Order ID	Order Date	Total
2	1006	10/24/2015	\$2,900.00