

## Data Systems Asg 1

1. What type of company or organization could use a database with the data that is stored here?

This would be a furniture manufacturing company

2. Identify two different user groups that an organization may have, and what those two different groups would be able to view from this database.

Manufacturers and Shipping are two groups I can see from the data.

3. Considering two different tables identify two informal queries and update operations that you would expect to apply to this database.

4. What tables would be impacted by the two update operations that you have specified in question 3?

5. In your own words describe the following Database Management System Architectures:

- a. Centralized

Is a database that is stored in a single area for easy accessibility from the network.

b. Client / Server

Is a database that splits the tasks between the servers and the clients

c. Three-Tier and n-Tier Architectures for Web Applications

Is a database that splits the process logic, data access, and data storage, and user interface.

6. If you were designing an application for a user to access the database shown in the figure, what type of architecture would you choose? Why? Explain why you would not choose one of the other architectures.

I would choose the Three-Tier and n-Tier Architecture it seems like the best to maintain or upgrade allowing work to be distributed across the tiers.

7. Create the data catalogs for the remaining three tables of this database.

Customer\_T

Column name	Data type	Length	Description	Source
Customer ID	Integer	2	ID of customer	Customer_T
Customer Name	String	25	Name of customer	Customer_T
Customer Address	String	20	Street Address of customer	Customer_T

Customer City	String	11	City location of customer	Customer_T
Customer State	String	2	State of customer	Customer_T
Customer Postal Code	String	10	Postal Code of customer	Customer_T

Order\_T

Column name	Data type	Length	Description	Source
Order ID	Integer	4	ID of Order	OrderLine_T
Order Date	String	10	Date of Order	Order_T
Customer ID	Integer	2	ID of customer	Customer_T

Product\_T

Column name	Data type	Length	Description	Source
Product ID	Integer	2	ID of Product	Product_T
Product Description	String	20	Name of Product	Product_T
Product Finish	String	13	Type of finish of product	Product_T
Product Standard Price	VarChar and Float	7	Price of product	Product_T
Product Line ID	Integer	1	ID of Product Line	Product_T

8. In addition to constraints related the values of columns in one table to columns in another table, there are also constraints that impose restrictions on values in a column or a combination of columns within a table. One such constraint dictates that a column or a group of columns must be unique across all rows in the table. Identify the column or the group of columns in the

other tables that must be unique across all rows in the table on the database instance found below.

Order\_T

OrderID must be unique

OrderLine\_T

None must be unique

Product\_T

ProductID must be unique