COSC 3380

Name: Paola Garibay_____   **Seat # F1**

Project 1 ERD - WHAT:
(50 points)

Project 1 with Line Numbers
TEXTUAL ANALYSIS for
ERD Modeling

1. _____ ☐ 15 points
2. _____ ☐ 15 points
3. _____ ☐ 5 points
4. _____ ☐ 5 points
5. _____ ☐ 10 points

PLEASE ENTER YOUR GRADE IN THIS BOX & ALSO on the CHECK SHEET:

of *E*s: 7

Table of *E*s:

E #	E Name
1	Product
2	Product Line
3	Customer
4	Order
5	Territory
6	Sales Person
7	PriceUpdates

# of Attributes: 30
Table of Attributes:

Attribute #	E# & Name	Attribute Name
1	E1: Product	Product_ID
2	E1: Product	P_Name
3	E1 Product	Finish
4	E1: Product	Standard_Price
5	E1: Product	Photo
1	E2: Product Line	ProductLine_ID
2	E2: Product Line	PL_Name
1	E3: Customer	Customer_ID
2	E3: Customer	C_Name
3	E3: Customer	Address
4	E3: Customer	City
5	E3: Customer	State
6	E3: Customer	Postal_Code
7	E3: Customer	C_Email
8	E3: Customer	C_Username
9	E3: Customer	C_Password

1	*E4: Order*	*Order_ID*
2	*E4: Order*	*O_Date*
1	*E5: Territory*	*Territory_ID*
2	*E5: Territory*	*T_Name*
1	*E6: Sales Person*	*SalesPerson_ID*
2	*E6: Sales Person*	*SP_Name*
3	*E6: Sales Person*	*Telephone*
4	*E6: Sales Person*	*SP_Email*
5	*E6: Sales Person*	*SP_Username*
6	*E6: Sales Person*	*SP_Password*
1	*E7: PriceUpdates*	*Updated_Name*
2	*E7: PriceUpdates*	*Changed_Date*
3	*E7: PriceUpdates*	*Old_Price*
4	*E7: PriceUpdates*	*New_Price*

# of R s : 5

Table of Rs

R #	R Name	Connecting Es# & Name & Cardinality
1	BelongTo	M E1: Product "BelongTo" 1 E2: Product Line
2	Submit	1 E3: Customer "Submit" M E4: Order
3	OrderLine	M E4: Order "OrderLine" M E1: Product
4	DoBusinessIn	M E3: Customer "DoBusinessIn" M E5: Territory
5	Serve	M E6: Sales Person "Serve" 1 E5: Territory

# of Descriptive Attributes: 1
Table of Descriptive Attributes

Attribute #	R# & Name	Attribute Name
1	R5: OrderLine	Quantity

Total # of Attributes (Attributes + Descriptive Attributes): 31

3. (5 points)

# of Vs: 6

Table of Vs: V #   V Name

V #	V Name
1	Comparison
2	Total Values
3	Customer Data
4	Shipment
5	Purchase History
6	Ordered

Table of Attributes:

V #	V Name	E# Attributes Input or Output
1	Comparison	E2: Product Line - A1: ProductLine_ID
1	Comparison	E1: Product – A1:Product_ID
1	Comparison	E1: Product – A4: Standard_Price
1	Comparison	R3: OrderLine – A1:Quantity
2	Total Value	E1: Product – A1: Product_ID
2	Total Value	R3: OrderLine – A1: Quantity
2	Total Value	E1: Product – A4: Standard_Price
3	Customer Data	E1: Product – A1: Product_ID
3	Customer Data	E1: Product – A2: P_Name
3	Customer Data	E1: Product – A4: Standard_Price
4	Shipment	E3: Customer – A1: Customer_ID
4	Shipment	E3: Customer – A3: Address
4	Shipment	E3: Customer – A5: State

5	Purchase History	E4: Order – A1: Order_ID
5	Purchase History	E4: Order – A2: O_Date
5	Purchase History	R3: OrderLine – A1: Quantity
5	Purchase History	E1: Product – A4: Standard_Price
5	Purchase History	E1: Product – A2: P_Name
6	Ordered	E4: Order – A1: Order_ID
6	Ordered	E4: Order – A2: O_Date
6	Ordered	E3: Customer – A1: Customer_ID

4. (5 points)

# of Ts: 1

Table of Ts:

T #	T Name
1	StandardPriceUpdates

Table of Attributes:

T #	T Name	E# Attributes Input or Output
1	StandardPriceUpdate	E7: PriceUpdates – A1: Updated_Name
1	StandardPriceUpdate	E7: PriceUpdates – A2: Changed_Date
1	StandardPriceUpdate	E7: PriceUpdates – A3: Old_Price
1	StandardPriceUpdate	E7: PriceUpdates – A4: New_Price

5. (10 points)

TA and ERD

1   The DBMS allows users to share the data and query, access, and update the stored data.

2   These are some of the **COSC3380** data models:

3

4   Customers are a person or an organization that buys or may potentially buy products from

5   **COSC3380**.

6   An order is the purchase of one or more products by a customer.

7   A product is an item that **COSC3380** makes and sells.

8   An order line is details about each product sold on a particular customer order (such as

9   quantity and price).

10

11   Each customer can place any number of orders. Conversely, each order is placed by

12   exactly one customer. Each order contains any number of order lines. Conversely, each

13   order line is contained in exactly one order.

14   Each product has any number of order lines. Conversely, each order line is for exactly

15   one product.

16

17   From a study of the business processes at **COSC3380**, the following data needs to be

18   stored in the database:

19

20   • **COSC3380** sells a number of different furniture products. These products are grouped

E1: Product   **E1: Product – A1: Product_ID**

21   into several product lines. The identifier for a product is Product ID, whereas the

E2: Product Line   **E2: Product Line – A1: ProductLine_ID**

22   identifier for a product line is Product Line ID. **COSC3380** identified the following

E1: Product – A3: Finish

23   additional attributes for product: Product Name, Product Finish, Product Standard Price,

E1: Product – A2: P_Name   **E1: Product – A4: Standard_Price**

24   and photo. Another attribute for product line is Product Line Name. A product line may

E1: Product – A5: Photo   **E2: Product Line – A2: PL_Name**

25   group any number of products but must group at least one product. Each product must

R1: BelongTo

26   belong to exactly one product line.

(M **E1: Product** "BelongTo" 1 **E2: ProductLine**)

27

E3: Customer   **E4: Order**

28   Customers submit orders for products. The identifier for an order is Order ID, and

E4: Order – A2: O_Date   **E4: Order – A1: Order_ID**

29   another attribute is Order Date. A customer may submit any number of orders but need

R2: Submit   (1 **E3: Customer** "Submit" M **E4: Order**)

30   not submit any orders. Each order is submitted by exactly one customer. The identifier for

E3: Customer – A1: Customer_ID   **E3: Customer – A3: Address**

31   a customer is Customer ID. Other attributes include Customer Name, Customer Address.

E3: Customer – A2: C_Name

E3: Customer – A4: City

E3: Customer – A6: Postal_Code

32   Customer City, Customer State, Customer Postal Code, Customer Email, Customer

E3: Customer – A5: State   **E3: Customer – A7: C_Email**

33   Username, and Customer Password (to store the login information).

E3: Customer – A8: C_Username **E3: Customer – A9: C_Password**
34

35   • A given customer order must request at least one product and only one product per

R3: OrderLine

36   order line item. Any product sold by **COSC3380** may not appear on any order line item

(M E4: Order "OrderLine" M E1: Product)

37   or may appear on one or more order line items. An attribute associated with each order

R3: OrderLine – A1: Quantity

38   line item is Ordered Quantity.

39

40   • **COSC3380** has established sales territories for its customers. Each customer may do

R4: DoBusinessIn
           (M E3: Customer "DoBusinessIn" M E5: Territory)
41   business in any number of these sales territories or may not do business in any territory. A

E5: Territory

42   sales territory has one to many customers. The identifier for a sales territory is Territory ID

E5: Territory – A2: T_Name   **E5: Territory – A1: Territory_ID**

43   and an attribute is Territory Name.

44

E6: Sales Person – A1: SalesPerson_ID
           E6: Sales Person
45   • **COSC3380** has several Sales Persons. The identifier for a Sales Person is Sales Person ID.

E6: Sales Person – A2: SP_Name   **E6: Sales Person – A4: SP_Email**
46   Other attributes include Sales Person Name, Sales Person Telephone, Sales Person Email.

E6: Sales Person – A3: Telephone

47   Sales Person Username, and Sales Person Password (to store the login information).

E6: Sales Person – A5: SP_Username   **E6: Sales Person – A6: SP_Password**

R5: Serve

48 A Sales Person serves exactly one sales territory. Each sales territory is served by one or

(M **E6: Sales Person "Serve"** 1 **E5: Territory**)

49 more Sales Persons.

50 **COSC3380 Product Manager** Support:

51 This is a list of attributes a **Product Manager** wants access to:

52   Customer   Customer Identifier
53   Customer Name
54   Customer Zip Code
55

56   Product   Product Identifier
57   Product Name
58   Product Finish
59   Product Price
60   Product Line Name
61

62   Product Line Product Line Name

V6: View Ordered [Ordered Product REPORT] –

63   Order   Order Number
64   Order Placement Date

Inputs: **1. E4: Order**   – **A1:Order_ID**

65   Customer Identifier   **Outputs: 1. E4: Order**   – **A2:O_Date**

66   **2. E3: Customer**   – **A1:Customer_ID**

67   Ordered Product (Order Line)   Order Number
68   Product Identifier
69   Order Quantity
70

71 These are the reports that a **Product Manager** will need so far:

72

73   -   Product Line Sales Comparison Report (a list of each of the products in the

74   **COSC3380** product line showing each product's total sales to date.)

V1: View Comparison [Product Line Sales Comparison REPORT] –

75
          Inputs: 1. **E2: Product Line**   – **A1:ProductLine_ID**
          Outputs: 1. **E1: Product**   – **A1:Product_ID**
76   2. **E1: Product**   – **A4:Standard_Price**
                        3. **R3: OrderLine**   – **A1:Quantity**

77   -   Total Value for Products Report (what is the total value of orders placed for each

V2: View Total Value [Total Value for Products REPORT] –

78   furniture product).
                        Inputs: 1. **E1: Product**   – **A1:Product_ID**
                        Outputs: 1. **R3: OrderLine**   – **A1:Quantity**
79   2. **E1: Product**   – **A4:Standard_Price**

80   **COSC3380 Sales** Support

81   These are the reports that **Sales People** at **COSC3380** will need so far:

82

83   -   Data for Customer Report (for each customer in his territory produce the list of

84   products and their prices).

V3: View Customer Data [Data for Customer REPORT] –

85
          Inputs: 1. **E1: Product**   – **A1:Product_ID**
          Outputs: 1. **E1: Product**   – **A2:P_Name**
86   2. **E1: Product**   – **A4:Standard_Price**

87   **COSC3380 Inventory Manager** Support

88   These are the reports that **Inventory Manager** at **COSC3380** will need so far:

89

90

91   - Customer by States Shipment Report (Count the number of customers with

92   addresses in each state to which we ship).

93   **V4: View Shipment [Customer by States Shipment REPORT]** –

94   **Inputs: 1. E3: Customer   – A1:Customer_ID**
                Outputs: 1. E3: Customer   – A3:Address
95   **2. E3: Customer   – A5:State**

96

97   The **Inventory Manager** needs to know (the action of being informed) when an

98   inventory item's standard price is updated in the Product table (the event). After creating a

                E7: PriceUpdates

99   new table, PriceUpdates, write a trigger StandardPriceUpdate that enters each product

            E7: PriceUpdates– A1: Updated_Name   E7: PriceUpdates– A3: Old_Price

100   name when it is updated, the date that the change was made, the old price and the new

                        E7: PriceUpdates– A2: Changed_Date   E7: PriceUpdates– A4: New_Price

101   standard price that was entered.

                T1: StandardPriceUpdate – Event: E1: Product – A4:Standard_Price on UPDATE
102   **Condition: Standard_Price Changed**
                                        Action: Enter E7: PriceUpdates – A1: Updated_Name
                                                        Enter E7: PriceUpdates – A2: Changed_Date
103   **COSC3380 Customer** Support   **Enter E7: PriceUpdates – A3: Old_Price**
                                                    Enter E7: PriceUpdates – A4: New_Price

104   These are the reports that **Customers** at **COSC3380** will need so far:

13

V5: **View Purchase History** **[Past Purchase History REPORT]** –

105   **Inputs:** **1. E4: Order** – **A1:Order_ID**
             Outputs: 1. E4: Order – **A2:O_Date**
106   **2. R3: OrderLine** – **A1:Quantity**
                   3. E1: Product – **A4:Standard_Price**
                   4. E1: Product – **A2:P_Name**
107   – Past Purchase History Report (lists the customer's purchase history displaying the

108   order date, the quantity, the price, and the name of the product).

109

110   **Data about customers, products, employees, etc. will be given to you in Project 2.**

ERD Model: (10 points)

A2: P_Name

A1: Product_ID

A3: Finish

A1: ProductLine_ID

A2: PL_Name

A5: Photo

E1: Product

(M **E1: Product "BelongTo" 1 E2: ProductLine**)

E2: Product Line

A4: Standard_Price

R1: BelongTo

R3: OrderLine

A1: Quantity

A1: Customer_ID

A2: C_Name

A8: C_Username

A3: Address

(M **E4: Order "OrderLine" M E1: Product**) **A4: City**

A1: Order_ID

A9: C_Password

E3: Customer

A4: City

E4: Order

A5: State

A2: O_Date

A6: Postal_Code

(**1 E3: Customer "Submit" M E4: Order**)

R2: Submit

A7: C_Email

(M **E3: Customer "DoBusinessIn" M E5: Territory**)

A2: T_Name

A1: Territory_ID

R4: DoBusinessIn

E5: Territory

M **E6: Sales Person "Serve" 1 E5: Territory**)

R5: Serve

A3: Telephone

A1: Updated_Name

A2: SP_Name

E6: Sales Person

A4: SP_Email

A3: Old_Price

A1: SalesPerson_ID

A6: SP_Password

E7: PriceUpdates

A5: SP_Username

A4: New_Price

A2: Changed_Date