CS443- Lab 1

Questions:

1) **Just by observing the tables below, what would you choose the primary key of each table? Based on base the explanation of the attributes of the given below, write down all the foreign keys. For example, if you think that Rep_Office is a foreign key in the Salesreps table, you should write:**
   - **Rep_Office is a foreign key in the Salesreps table because it refers to the primary key (office attribute) of the offices table.**
   Do the same for every foreign key that you find in the entire database.

2) **Without looking at the product table, can the "Price" column in the products table be used as the primary key? Why? Why not? What assumption do you need to make for the price to be the primary key? Is your assumption realistic?**

3) **Without looking at the Office table, if you were obligated to use "City" as the primary key of the offices table, what restrictions would you have to put in this column to make it work?**

Salesreps

Empl_Num	Name	Age	Rep_Office	Title	Hire_Date	Manager	Quota	Sales
105	Bill Adams	37	13	Sales Rep	12-FEB-88	104	350000	367911
109	Mary Jones	31	11	Sales Rep	12-OCT-89	106	300000	392725
102	Sue Smith	48	21	Sales Rep	10-DEC-86	108	350000	474050
106	Sam Clark	52	11	VP Sales	14-JUN-88		275000	299912
104	Bob Smith	33	12	Sales Mgr	19-MAY-87	106	200000	142594
101	Dan Roberts	45	12	Sales Rep	20-OCT-86	104	300000	305673
110	Tom Synder	41		Sales Rep	13-JAN-90	101		75985
108	Larry Fitch	62	21	Sales Mgr	12-OCT-89	106	350000	361865
103	Paul Cruz	29	12	Sales Rep	01-MAR-87	104	275000	286775

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Orders

Order_Num	Order_Date	Cust	Rep	Mfr	Product	QTY	Amount
112961	17-DEC-89	2117	106	REI	2A44L	7	31500
113012	11-JAN-90	2111	105	ACI	41003	35	3745
112989	03-JAN-90	2101	106	FEA	114	6	1458
113051	10-FEB-90	2118	108	QSA	K47	4	1420
112968	12-OCT-89	2102	101	ACI	41004	34	3978
113036	30-JAN-90	2107	110	ACI	4100Z	9	22500
113045	02-FEB-90	2112	108	REI	2A44R	10	45000

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Products

Mfr_ID	Product_ID	Description	Price	Qty_On_Hand
REI	2A45C	RATCHET LINK	79	210
ACI	4100Y	WIDGET REMOVER	2750	25
QSA	XK47	REDUCER	355	38
BIC	41672	PLATE	180	0
IMM	779C	900-LB BRACE	1875	9
ACI	41003	SIZE 3 WIDGET	107	207

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Customers

Cust_Num	Company	Cust_Rep	Credit_Limit
2111	JCP Inc	103	50000
2102	First Corp.	101	65000
2103	Acme Mfg.	105	50000
2123	Carter and Sons	102	40000
2107	Ace International	110	35000
2115	Smithson Corp.	101	20000
2117	J.P. Sinclair	106	35000

Offices

Office	City	Region	Mgr	Target	Sales	
22	Denver	Western	108	300000	186042	
11	New York	Eastern	106	575000	692637	
12	Chicago	Eastern	104	800000	735042	
13	Atlanta	Eastern	105	350000	367911	
21	Los Angeles	Western	108	725000	835915	

Description of the database:

Salesreps table:

Empl_Num: Employee Id of the sales person. Each sales rep (employee) is given a different
                        employee id
Name: Name of the sales person
Age: Age of the of the sales person
Rep_Office: It is the id of the office where sales person is working
Title: Title of the sales person
Hire_Date: The date when the salesperson was hired
Manager: The employee id of the his/her boss
Sales: Total sales made by the sales person since he/she has been hired

Example:

Empl_Num	Name	Age	Rep_Office	Title	Hire_Date	Manager	Quota	Sales
105	Bill Adams	37	13	Sales Rep	12-FEB-88	104	350000	367911

This indicates that Bill Adams is a 37 years sales Rep, with the employee id 105. He was hired on Feb 12, 1988 and work in office 13 (office 13 is in Atlanta – see offices table). The employee id of his boss is 104 (employee id 104 is Bob Smith – see Salesreps table). Bill Adams's sales Quota is $350000 and his total sales is $367911.

Products table:

Mfr_Id: It is the manufacturer id of the product
Product_Id: It is the Product id of the product
Description: It is the description of this product
Price: Price per unit
Qty_On_Hand: number of this product available in stock

Example:

Mfr_Id	Product_Id	Description	Price	Qty_On_Hand
REI	2A45C	RATCHET LINK	79	210

This indicates that "RATCHET LINK" is a product with product Id 2A45C made by manufacturer REI (where REI is the three letters code for the manufacturer). The price of "RATCHET LINK" is $79.00 per unit. There are 210 pieces are currently available. It is important to note that manufacturer may make the same product. Clearly, a manufacturer may make more than one product.

Orders table:

Order_Num: Order number of a particular order. Each order is given a different order number
Order_Date: It is the date that order was made
Cust: It is the customer id of the customer who makes the order
Rep: It is the id of the sales rep who takes care of the order
Mfr: It is the manufacturer code associated with the product that the customer orders
Product: It is the product id of the product the customer orders
QTY: It is the quantity of the product the customer orders
Amount: It is the total amount of money (Quantity ordered * price per unit) the customer pays for
                        the product

Order_Num	Order_Date	Cust	Rep	MFR	Product	QTY	Amount
112961	17-DEC-89	2117	106	REI	2A45C	7	31500

This indicates that sales rep 106 (who is Sam Clark – see salesreps table) took order 112961 for customer 2117 (who is "J.P. Sinclair" – see customer table) on Dec 17, 1989. Customer 2117 ordered 7 piece of the product REI 2A45C (which is "RATCHET LINK" – see products table). Customer 2117 paid total of $31500. This amount also refers to one of the sales (not all the sales) made by sales rep 106 (who is "Sam Clark")

Customer table:

Cust_Num: It is the id of the customer. Each customer has a different id
Company: It is the name of the company (the name of the customer)
Cust_Rep: It is the sales person who represents this customer
Credit_Limit: It is the credit limit of the customer (company) associated with each order the customer requests (not with all the orders the customer has requested). For example, if the Credit_Limit of a customer is $50,000. Based on this Credit Limit, the customer makes an order. Then this credit Limit is reset back to $50, 000 for the next order the customer makes.

Cust_Num	Company	Cust_Rep	Credit_Limit
2111	JCP Inc	103	50000

This indicates customer id 2111, known as "JCP Inc" is represented by the sales person 103 (who is "Paul Cruz" – see salesreps table). "JCP Inc's" credit limit for every specific order is $50,000.

Offices table:

Office: id of each office. Each office has a different office id
City   It is the city where the office is located
Region: It is the region (western or eastern) where the office is located
Mgr: It is the id of the sales person who is the manager of that office
Target: It is the target sale of that office
Sales: It is the total sales made in that office up to now

Office	City	Region	Mgr	Target	Sales
22	Denver	Western	108	300000	186042

This indicates office 22 is in "Denver". Denver is in Western region of North America. The target sale of this office is $300,000. The total sale made in this office is $186, 042 up to now.