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CS443- Lab 1

**Questions:**

1. **Just by observing the tables below, what would you choose the primary key of each table?**

* For the Salesreps table I would choose the primary key to be Empl\_Num. I chose Empl\_Num to be the primary key for Salesreps table, because all employees have their own employee ID and will not be the same as other employees. It is a unique ID.
* For the Orders table I would choose the primary key to be Order\_Num. I chose Order\_Num to be the primary key, because each order should have its own order number and is unique from order to order.

* For the Products table I would make a composite primary key of Mfr\_ID & Product\_ID, however there is still only **one** primary key however it is composed of two columns to make a **composite** primary key. The reason I chose a composite primary key for the Products table composed of Mfr\_ID and Product\_ID, because each manufacturer will have a unique Product\_ID local to its own company. The reason we **didn’t** choose just the Product\_ID to be the primary key is because, if we chose Product\_ID to be primary key we could have conflict between two manufacturers having the same product ID.

* For the Customers table I would make Cust\_Num be the primary key. I chose Cust\_Num to be the primary key for the Customers Table, because each customer has a different id/customer number.
* For the Offices table I would make Office be the primary key. I chose Office to be the primary key for the Offices table, because each office would have a different id/number.

**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 in Salesreps table 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.**

* Manager in Salesreps table is a foreign key in the Salesreps table, because it refers to the primary key (Empl\_Num attribute) of the Salesreps table.
* Mfr and Product in Orders table is a composite foreign key in the Orders table, because it refers to the composite primary key (Mfr\_ID and Product\_ID attributes) of the Products table.
* Rep\_Office in the Salesrep table is the foreign key in the Salesreps table, because it refers to the primary key (office attribute) of the Offices table.
* Rep in the Orders table is a foreign key in the Orders table, because it refers to the primary key (Empl\_Num attribute) of the Salesreps table.
* Cust in the Orders table is a foreign key in the Orders table, because it refers to the primary key (Cust\_Num attribute) of the Customers table.
* Cust\_Rep in the Customers table is a foreign key in the Customers table, because it refers to the primary key (Empl\_Num attribute) of the Salesreps table.
* Mgr in the Offices table is a foreign key in the Offices table, because it refers to the primary key (Empl\_Num attribute) in the Salesreps table.

1. **Without looking at the product table, can the “Price” column in the products table be used as the primary key?**

* Without looking at the product table “Price” can be a primary key in the products table.

**Why? Why not?**

* Price **can** be a primary key for the products table, because we have a price column in the products table and it is fine to make it a primary key under certain conditions that I will answer in the question below.

**What assumption do you need to make for the price to be the primary key?**

* The assumption we would need to make to have “Price” be the primary key for the Products table is that each item **must** have a different price.

**Is your assumption realistic?**

* The assumption of having each item have a different price is **not** realistic, because if we have a store with millions of items, we cannot have them all have different prices.

1. **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?**

* If I were to use city as the primary key in the Offices table, the restriction I would have to put is that each city can at **max** have one office. This means that there could only be one office per city, and you cannot have a city with multiple offices.