**Cadin Marohl 9/2/2022**

**Relationships:**

Given the table below:



Which column is most likely the primary key for the table? \_\_\_\_\_\_Rental\_Num\_\_\_\_\_\_\_\_\_\_\_

Which column(s) are most likely foreign Keys? \_\_\_\_Cust\_Num and Emp\_Num\_\_\_\_\_

What is the relationship between the **rental** table and the **customer** table? \_\_\_\_\_1:1\_\_\_\_\_\_

What is the relationship between the **customer** table and the **rental** table? \_\_\_\_\_\_1:M\_\_\_\_\_\_

What is the *overall relationship* between the **customer** and **rental** tables? \_\_\_1:M\_\_\_\_\_\_\_\_

Based on the following table:



In the above example what is the primary key? \_\_\_\_\_\_\_\_\_\_\_\_\_Employee\_ID\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

In the above example what is the foreign Key? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Employee\_Manager\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

This is an example of what kind of relationship? \_\_\_\_\_\_\_\_\_\_\_Recursive\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Given the table below:



What is the primary key? \_\_\_\_\_\_\_\_\_\_Emp\_ID and Job\_Code\_\_\_\_\_\_

What is/are the foreign key(s)? \_\_\_\_\_\_\_\_\_\_\_\_\_Job\_Code and Emp\_ID\_\_\_\_\_\_\_\_\_\_

What is the overall relationship to the **Employees** table? \_\_\_\_\_\_\_\_\_\_1:M\_\_\_\_\_\_\_\_\_\_\_\_\_

What is the overall relationship to the **Jobs** table? \_\_\_\_\_\_\_\_\_\_\_1:M\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

This table is likely what kind of special table? \_\_\_\_\_\_\_\_\_\_\_\_\_\_Junction Table\_\_\_\_\_\_\_\_\_\_\_\_\_

What is the direct relationship between the **Jobs** and **Employees** tables? \_\_\_\_\_M:M\_\_\_\_\_\_\_\_

**ERDs:**

Given the list of Entities below:



**List the entity’s primary and foreign keys:**

**Book Entity:**

Primary Key \_\_\_Book\_Code\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Foreign Keys \_\_\_\_\_\_\_\_\_None\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Copy Entity:**

Primary Key \_\_\_\_\_\_\_\_\_\_Book\_Code and Copy\_Num\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Foreign Keys \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Book\_Code\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Loan Entity:**

Primary Key \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Loan\_Num\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Foreign Keys \_\_\_\_\_\_\_\_\_\_\_\_\_\_Book\_Code, Copy\_Num, Cus\_Num, and Emp\_Num\_\_\_\_\_

**Employee Entity:**

Primary Key \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Emp\_Num\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Foreign Keys \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_None\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Customer Entity:**

Primary Key \_\_\_\_\_\_\_\_\_\_\_\_\_\_Cus\_Num\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Foreign Keys \_\_\_\_\_\_\_\_\_\_\_\_\_\_None\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Describe the *overall* relationships between:**

Book and Copy \_\_\_\_\_\_\_\_1:M\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Book and Loan \_\_\_\_\_\_\_\_\_\_\_\_1:M\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Employee and Loan \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_1:M\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Customer and Loan \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_1:M\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Identify the M-M (Many to Many) relationships implied by the design:**

* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Customer and Book\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Book and Employee\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Employee and Customer\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**In regards to loans, what Business Rules can you imply by the design?**

**One loan can be given to one book, which is approved by one employee. One customer can buy multiple books but they can only have one loan per copy they buy.**