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Project: DATABASE DESIGN PROJECT FOR THE RESTAURANT BUSINESS

INTRODUCTION

Here, I would like to choose the restaurant business for the database project. This project contains all the ingredient related to the restaurant business. Similarly, it contains the required business rules and plotted into the entity relationship diagram. The following are the business rules by following twenty tables. The gist purpose of this database project is to figure out the database design of the restaurant business. It stores all the data that are required to maintain the restaurant business.

In this project, the work included is my own and no one else from the course. According to the rule of the project, I have normalized all the tables into the 3rd normal form and stated the primary and the foreign key as per the requirement.

**BUSINESS RULES**

Now, I am going to explain about the Business Rules of the given Restaurant Business.

1. One business can have 0 or many review.
2. Business can have multiple location.
3. One business can have one many sale report.
4. One customer can do 0 to many review.
5. One customer can do 0 to many online order.
6. One customer can get many menu.
7. One department can have one personal assistant.
8. One department can have many employees.
9. One department can have one department chair.
10. Only one employee can become a one personal assistant.
11. One employee can have one time card.
12. One employee can get multiple payment.
13. One time card can get multiple payment.
14. One vendor can have multiple invoice.
15. Type of payment can be either credit or debit.

**NAMING CONVENTION**

1. All the table Name and column name are Capitalized.
2. PK/FK table is also Capitalized.
3. FK reference Table’s first letter is capitalized.
4. In description Table first letter is Capitalized.
5. Word is separated by the “\_” in the table.
6. All the primary key and the foreign key are bold.
7. All the phone Number’s digit are separated by the “-“.
8. BUSINESS

* **BUSI\_NUM(PK)**
* BUSI\_NAME
* TAX\_NUM
* BUSI\_PH\_NO
* BUSI\_EMAIL
* BUSI\_ADDRESS

1. TYPE\_OF\_PAYMENT

* **PAYMENT\_ID(PK)**
* **VEND\_PAYMENT\_ID(FK1)**
* **INV\_NUM(FK2)**
* DEBIT\_AMOUNT
* CREDIT\_AMOUNT
* CASH\_AMOUNT

1. CREDIT

* **CREDIT\_TRAN\_ID(PK)**
* **PAYMENT\_ID(FK)**
* CUS\_FNAME
* CUS\_LNAME
* CARD\_TYPE
* CARD\_COMP\_NAME
* DATE\_OF\_EXP
* TOTAL\_AMT

1. DEBIT

* **DEBIT\_TRAN\_ID(PK)**
* **PAYMENT\_ID(FK)**
* CARD\_TYPE
* CUS\_FNAME
* DATE\_OF\_EXP
* TOTAL\_AMT

1. ONLINE ORDERING SYSTEM

* **ORDER\_NO(PK)**
* **CREDIT\_TRAN\_ID(FK)**
* **DEBIT\_TRAN\_ID(FK1)**
* **CUS\_ID(FK2)**
* ORDER\_DATE
* DATE\_OF\_EXP
* CUS\_FNAME
* CUS\_LNAME
* CARD\_TYPE

1. SALE REPORT/JOURNAL

* **SALE\_ID(PK)**
* **BUS\_NUM(FK)**
* NO\_OF\_ITEMS\_SOLD
* LIST\_OF\_SOLD\_ITEMS

1. EMPLOYEE

* **EMP\_ID(PK)**
* **DEP\_ID (FK)**
* **BUSI\_NUM(FK)**
* EMP­­\_ADDRESS
* EMP\_FNAME
* EMP\_LNAME
* EMP\_EMAIL
* EMP\_PH-NO
* EMP\_DOB
* **GENDER(FK1)**
* EMP\_SSN
* EMP\_TITLE
* EMP\_SALARY
* EMP\_GENDER
* EMP\_HIRE\_DATE

1. TIME\_CARD

* **TIME\_CARD\_NO(PK)**
* **EMP\_ID(FK)**
* TIME\_IN
* TIME\_OUT
* DAYS\_WORK
* HR\_PER\_DAY
* TOT\_HR\_PER\_WEEK
* CHEQ\_PAYMENT\_AMOUNT
* DIRECT\_DEPOSITE\_AMOUNT

1. BONUS

* **BONUS\_ID(PK)**
* **EMP\_ID(PK)**
* EMP\_FNAME
* EMP\_LNAME
* BONUS\_TYPE

1. DEPARTMENT

* **DEPT\_ID(PK)**
* **EMP\_ID(FK)**
* DEPT\_NAME

1. DEPARTMENT\_CHAIR

* **DEPT\_ID(PK)**
* **EMP\_ID(FK)**
* DEPT\_CHAIR\_PH\_NO
* DEPT\_CHAIR\_SSN
* DEPT\_CHAIR\_DOB
* DEPT\_CHAIR\_ADDRESS

1. PERSONAL\_ASSISTANCE

* **DEPT\_ID(PK)**
* **EMP\_ID(FK)**
* EMP\_ADDRESS

1. DEPENDENT

* **DEPND\_ID(PK)**
* **EMP\_ID(FK)**
* DEPND\_FNAME
* DEPND\_LNAME
* DEPND\_PH\_NO
* RELATIONSHIP
* DEPND\_DOB
* DEPND\_ADDRESS

1. GENDER/SEX

* MALE
* FEMALE
* OTHER
* **EMP\_ID(FK)**

1. VENDOR

* **VEND\_ID (PK)**
* **INV\_NUM (FK1)**
* SERVICE\_ID
* VEND\_NAME
* VEND\_ADDRESS
* PAYMENT\_TYPE
* ITEM\_RECEIVE\_DATE
* RECEIVE\_ITEM\_NAME

1. PAYMENT\_TO\_VENDOR

* **VEND\_PAYMENT\_ID(PK)**
* **VEND\_ID(FK)**
* **EMP\_ID(FK1)**
* **INV\_NUM(FK2)**
* PAYMENT\_DATE
* AMOUNT\_PAID
* CASH\_PAYMENT
* CHEQUE\_PAYMENT
* CHEQUE\_NO
* TOTAL\_PAID

1. LOCATION

* **LOCATION\_ID (PK)**
* **BUSI\_NUM (FK1)**
* **VEND\_ID(FK2)**
* NAME\_OF\_PLACE
* LOCATION\_ADDRESS
* ZIP\_CODE

1. CUSTOMER

* **CUS\_ID (PK)**
* **FOOD\_TYPE (FK)**
* **MENU\_NO(FK1)**
* CUS\_FNAME
* CUS\_LNAME
* CUS\_PH-NO
* CUS\_EMAIL

1. INVOICE

* **INV\_NUM(PK)**
* **CUS\_ID(FK)**
* INV\_DATE

1. REVIEW

* **CUS\_REVIEW\_NO (PK)**
* **CUS\_ID(FK)**
* NO\_OF\_REVIEW
* CUS\_NAME
* DATE\_REVIEW

1. MENU

* **MENU\_NO (PK)**
* **CUS\_ID (FK)**
* BREAKFAST\_ITEMS
* APPETIZER\_ITEMS
* LUNCH\_ITEMS
* DINNER\_ITEMS
* DRINKS\_ITEMS

Violation of 3NF

According to my table, there is a column name addresses in both, business, and location table. Here, they share the same table but shows in different tables. So, this is the violation of 3NF because “Addresses” is a non-key attribute and violates 3NF.