IT 340 ⎯ Project

Final Phase: E-R Diagram and Database Schema (50 points)

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Due Date: Monday, April 30, by 11:59 PM

Do steps 1 through 5.

Download the document from D2L and change the file name using your MNSU usernames.

Keep the following instructions and type your work below.

You must follow the given style. You could lose up to five points on the style.

Upload your document to D2L by the due time.

Everyone is required to create GitHub repository for this course, but I need only one GitHub submission for this project. Add the link of GitHub in the D2L Dropbox description box.

Each group is required to use Microsoft Teams for communication while working on the project.

Restaurant Data Requirements

The restaurant is organized into different city. Each city has a unique number, a name, and a particular employee who manages it.

The restaurant makes money by selling to customers. Each customer has a name and a unique number to identify it.

The foundation of the restaurant is its employees. Each employee has a name, age, role, Address, City, Zip Code, Hire Date and a unique number.

An employee can work for one restaurant at a time, and each restaurant will be managed by one of the employees that work there. We’ll also want to keep track of when the current employees and their personal documents.

An employee can act as a unique role for the employee at the particular city restaurant, an employee can also act as a chasier or bouncer for employees at other restaurant. An employee can have at most one position.

A restaurant may handle a number of customers. With each customer having a name and a unique number to identify it. Each customer should be handled by one employee at any time.

Employees can work with customers controlled by the city restaurant belong to take orders and serve them. If necessary multiple employees can work with the same customer. We’ll want to keep track of how many checkouts the employee does by login in their passcode in a POS machine during each customer check out.

Many restaurants will need to work with supplies to buy inventory. For each supplier we will keep track of the name and the type of product they are selling the restaurant. A single supplier may supply products to multiple branches.

Identifying all entity types with brief description:

Restaurant: The restaurant which provide food service through dine in and take out

Employee: All staff who work in a restaurant

Customer: All the people who order food and do the payment

Order: All the Orders placed from the menu by the customer

Payment: Customer payment of their orders through card, cash or check

Supplier: All suppliers who provide any supplies

Supply: All supplies, that is needed for a restaurant to run which includes furniture as well

Visit: Bridge table to resolve Customer and Restaurant’s to resolve many to many relation.

Identifying all relationship types with attributes and indicating the multiplicity:

Restaurant(1) Has Employee(1..\*)

Multiple Employee are assigned to a Restaurant

Customer(1) Places Order(1..\*)

One customer can place multiple order

Employee(1) Takes Order(0..\*)

Each order is taken by one Employee

Employee(1) DeliversTo Customer(1..\*)

One Employee can have multiple customer

Payment(0..\*) PaidTo Employee(1)

Each employee may take one payment

Payment(0..\*) PaidBy Customer(1..\*)

One payment can be made by multiple customer

One customer can made multiple payments

Customer(0..\*) Choose Restaurant(1..\*)

One customer can choose multiple Restaurant

One Restaurant can be chosen by multiple Customer

Suppliers(1..\*) Supplies Restaurant(0..\*)

One supply can come from multiple suppliers

One supplier can provide multiple supplies

Supplier(1) Provides Supply(0..\*)

Supplier can provide multiple supplier

Restaurant(1) Receives Supply(1..\*)

Visit(1..\*) Multiple Customer(1)

Each customer can have one or more visit

Restaurant(1) Serve Visit(0..\*)

One restaurant can serve for each Visit

Describing each entity type in detail:

**Restaurant**

RestaurantID

Address: Composite (street, city, state, zip)

City

ZipCode

PhoneNumber

PrimaryKey: RestaurantID

Alternate Key: PhoneNumber

**Employee**

EmployeeID

RestaurantID: Foreign Key

Name: Composite (FirstName, LastName)

DOB

Role

PayRate

Address: Composite(street, city, state, zip)

City

State

ZipCode

Age: Derived Attribute ( Deriverd from DOB)

PhoneNumber

Email

HireDate

PrimaryKey: EmployeeID

Alternate Key: PhoneNumber, Address, HireDate

**Customer**

CustomerID

EmployeeID: Foreign Key

FirstName

LastName

Restrictions

GroupSize

PrimaryKey: CustomerID

Alternate Key:none

**Visit (Multiple Entity)**

VisitID

CustomerID: Foreign Key

RestaurantID: Foreign Key

PrimaryKey: CustRestID

Alternate Key:none

**Order**

OrderID

EmploymentID: Foreign Key

PaymentID: Foreign Key

OrderDate

ItemsList

PrimaryKey: OrderID

Alternate Key:none

**Payment**

PaymentID

CustomerID: Foreign Key

PaymentMethod

Amount

PrimaryKey: PaymentID

Alternate Key: none

**Supplier**

SupplierID

Name: Composite (FirstName, LastName)

Address: Composite (street, city, state, zip)

City

State

ZipCode

PhoneNumber

PrimaryKey: SupplierID

Alternate Key: PhoneNumber, Address, Name

**Supply**

SupplyID

SupplierID: Foreign Key

Name: Composite (FirstName, LastName)

Description

Weight

DeliveryDate

SupplyHandler

PrimaryKey: SupplyID

Alternate Key: none

A close up of a map

Description automatically generated

DATABASE SCHEMA FROM ER TABLE:

**Restaurant**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| RestaurantID | Address | City | ZipCode | PhoneNumber |

**Employee**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| EmployeeID | RestaurantID | Name | DOB | Role | PayRate | Address | City | State | ZipCode | Age | PhoneNumber | Email | HireDate |

**Customer**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| CustomerID | EmployeeID | FirstName | LastName | Restrictions | GroupSize |

**Order**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| OrderID | EmployeeID | PaymentID | OrderDate | ItemsList |

**Payment**

|  |  |  |  |
| --- | --- | --- | --- |
| PaymentID | CustomerID | PaymentMethod | Amount |

**Visit**

|  |  |  |
| --- | --- | --- |
| VisitID | CustomerID | RestaurantID |

**Supply**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| SupplyID | SupplierID | Name | Description | Weight | DeliveryDate | SupplyHandler | FoodAmount | RestaurantID |

**Supplier**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| SupplierID | Name | Address | City | State | ZipCode | PhoneNumber |

Restaurant:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| RestaurantID | Address | City | ZipCode | PhoneNumber |
| 2201 | 15 W Bringham | Mankato | 6758 | 8015567845 |
| 2202 | 16 W Minnhaha | Crystal | 6432 | 9873456789 |
| 2203 | 17 N Dakota | Sandy | 2345 | 6543425643 |
| 2204 | 33 Street Ogden | Woodbury | 2456 | 6753452342 |
| 2205 | 69th Mt. Kato | Prison | 3567 | 9875436789 |
| 2206 | 4601 Warren | Dendolon | 3568 | 5625647788 |

Employee:

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| EmployeeID | RestaurantID | Name | DOB | Role | PayRate | Address | City | State | ZipCode | Age | PhoneNumber | Email | HireDate |
| 022 | 2201 | Luna | 1995-09-13 | Chef | 28 | 121o Warren | Manchester | Aviation | 5567 | 25 | 7869875678 | swag@gmail.com | 1/15/2019 |
| 023 | 2202 | Lindiya | 1998-05-16 | Host | 15 | 1234 Crystal | Liverpool | Security | 3535 | 22 | 7647973683 | bro@htmail.com | 1/20/2017 |
| 024 | 2203 | Lani | 1993-08-22 | Cashier | 25 | 224 Briagate | Arial | Santamonia | 3566 | 23 | 8283927382 | pro@mnsu.edu | 5/23/2017 |
| 025 | 2204 | Luckson | 2000-02-28 | DishWasher | 25 | 143 Magdi | West Vierg | Asci | 8787 | 24 | 6765667543 | mister@montana.edu | 6/6/2016 |
| 026 | 2205 | Liana | 2000-05-11 | Cleaner | 30 | 78th N. Minneapolis | Camoline | Songophorus | 6867 | 24 | 4534275322 | Unique@gmail.com | 5/6/2020 |

Customer:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| CustomerID | EmployeeID | FirstName | LastName | Restrictions | GroupSize |
| 22 | 022 | Sannie | Vander | none | 2 |
| 23 | 023 | Peep | Lumni | Nuts | 3 |
| 24 | 024 | bytu | Chi | Vegan | 1 |
| 25 | 025 | Ying | Fi | Gluten Free | 5 |
| 26 | 026 | Carol | Henz | Nuts | 6 |
| 27 | 022 | Brenda | Paige | none | 1 |

Order:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| OrderID | EmployeeID | PaymentID | OrderDate | ItemsList |
| 01 | 022 | 55 | 2020-04-07 | Swarmania |
| 02 | 023 | 56 | 2020-08-20 | Chicken Pizza |
| 03 | 024 | 57 | 2020-05-18 | Loli |
| 04 | 025 | 58 | 2020-06-22 | Momo |
| 05 | 026 | 59 | 2019-08-22 | Sausage |
| 06 | 022 | 60 | 2019-09-18 | Pinto |

Payment:

|  |  |  |  |
| --- | --- | --- | --- |
| PaymentID | CustomerID | PaymentMethod | Amount |
| 55 | 22 | VISA | 55 |
| 56 | 23 | VISA | 67 |
| 57 | 24 | Cash | 250 |
| 58 | 25 | VISA | 45 |
| 59 | 26 | Cash | 34 |
| 60 | 27 | Check | 34 |

Visit:

|  |  |  |
| --- | --- | --- |
| VisitID | CustomerID | RestaurantID |
| 77 | 22 | 2201 |
| 78 | 23 | 2202 |
| 79 | 24 | 2203 |
| 80 | 25 | 2204 |
| 81 | 26 | 2205 |
| 82 | 27 | 2206 |

Supply:

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| SupplyID | SupplierID | Name | Description | Weight | DeliveryDate | SupplyHandler | FoodAmount | RestaurantID |
| 778 | 987 | Bread | Open | 15 | 2020-05-13 | Lani | 23 | 2201 |
| 779 | 986 | Milk | Whole | 45 | 2020-02-18 | Lani | 34 | 2202 |
| 780 | 985 | Dough | Softer | 65 | 2020-02-22 | Lani | 45 | 2203 |
| 781 | 984 | Chicken | Breast | 43 | 2020-03-21 | Lani | 43 | 2204 |
| 782 | 983 | Beef | Loan | 98 | 2020-03-22 | Lani | 2 | 2205 |
| 783 | 982 | Macoroni | BowTie | 65 | 2020-04-20 | Lani | 23 | 2206 |

Supplier:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| SupplierID | Name | Address | City | State | ZipCode | PhoneNumber |
| 987 | Sysco | 14th Street mano | Liam | Kris | 6788 | 8965673456 |
| 986 | HomeDepo | 23 Lilian | Turkey | Tome | 4546 | 7686867898 |
| 985 | RestaurantDepo | 45 West | Mango | Din | 6765 | 9878675675 |
| 984 | TeleSlaughter | 44 North | Prew | Yuop | 4454 | 4557687875 |
| 983 | NonDairy | 1245 Lund | Pearch | Figgie | 8657 | 9989878766 |
| 982 | Sund | 56 N. Board | radina | poker | 5654 | 4343546586 |

CREATING THE TABLE IN MYSQL

CREATE Table Restaurant(

RestaurantID INT NOT NULL,

Address VARCHAR(200),

City VARCHAR(30),

ZipCode INTEGER,

PhoneNumber BIGINT,

PRIMARY KEY (RestaurantID)

);

SELECT \*

FROM Restaurant;

CREATE Table Employee(

EmployeeID INT NOT NULL,

RestaurantID INT,

Name VARCHAR(200),

DOB BIGINT,

Role VARCHAR(80),

PayRate INT,

Address VARCHAR(100),

City VARCHAR(30),

ZipCode INT,

Age INT,

PhoneNumber BIGINT,

Email VARCHAR(80),

HireDate DATE,

PRIMARY KEY (EmployeeID),

FOREIGN KEY (RestaurantID) references Restaurant(RestaurantID)

);

SELECT \*

FROM Employee;

CREATE Table Customer(

CustomerID INT NOT NULL,

FirstName VARCHAR(30),

LastName VARCHAR(30),

Restriction VARCHAR(80),

GroupSize INT,

PRIMARY KEY (CustomerID)

);

SELECT \*

FROM Customer;

CREATE Table Supplier(

SupplierID INT NOT NULL,

RestaurantID INT,

Name VARCHAR(80),

Address VARCHAR(200),

City VARCHAR(30),

ZipCode INTEGER,

PhoneNumber BIGINT,

PRIMARY KEY (SupplierID)

);

CREATE Table Supply(

SupplyID INT NOT NULL,

SupplierID INT,

RestaurantID INT,

Name VARCHAR(80),

Description VARCHAR(150),

Weight INT,

DeliveryDate DATE,

SupplyHandler VARCHAR(80),

FoodAmount BIGINT,

PRIMARY KEY (SupplyID),

FOREIGN KEY (SupplierID) references Supplier(SupplierID),

FOREIGN KEY (RestaurantID) references Restaurant(RestaurantID)

);

CREATE Table Payment(

PaymentID INT NOT NULL,

CustomerID INT,

PaymentMethod VARCHAR(50),

Amount BIGINT,

PRIMARY KEY (PaymentID),

FOREIGN KEY (CustomerID) references Customer(CustomerID)

);

CREATE Table Orders(

OrderID INT NOT NULL,

EmployeeID INT,

PaymentID INT,

OrderDate DATE,

ItemsList VARCHAR(80),

PRIMARY KEY (OrderID),

FOREIGN KEY (PaymentID) references Payment(PaymentID),

FOREIGN KEY (EmployeeID) references Employee(EmployeeID)

);

CREATE Table Visit(

VisitID INT NOT NULL,

CustomerID INT,

RestaurantID INT,

PRIMARY KEY (VisitID),

FOREIGN KEY (RestaurantID) references Restaurant(RestaurantID),

FOREIGN KEY (CustomerID) references Customer(CustomerID)

);