Design a Database System for an E-Commerce Site named FNF Online Shop

By

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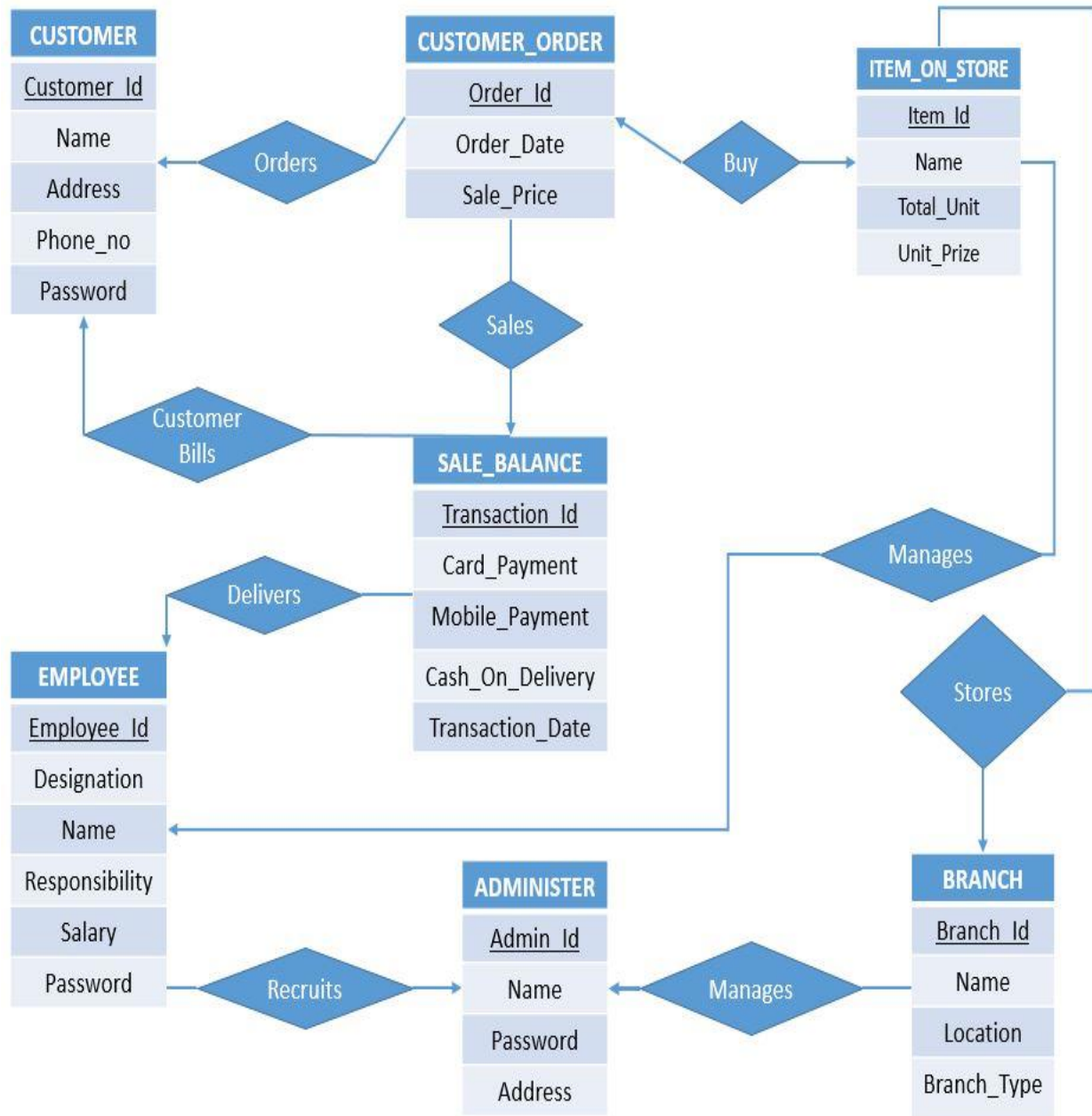
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ER Diagram of FNF Online Shop

CUSTOMER
- Customer_Id
- Name
- Address
- Phone_no
- Password

CUSTOMER_ORDER
- Order_Id
- Order_Date
- Sale_Price

ITEM_ON_STORE
- Item_Id
- Name
- Total_Unit
- Unit_Prize

Orders

Buy

Sales

Customer Bills

SALE_BALANCE
- Transaction_Id
- Card_Payment
- Mobile_Payment
- Cash_On_Delivery
- Transaction_Date

Manages

Stores

Delivers

EMPLOYEE
- Employee_Id
- Designation
- Name
- Responsibility
- Salary
- Password

ADMINISTER
- Admin_Id
- Name
- Password
- Address

BRANCH
- Branch_Id
- Name
- Location
- Branch_Type

Recruits

Manages

SQL Command and Tables

create database onlineshop;

use onlineshop;

create table CUSTOMER

(Customer_Id numeric(9),

Name varchar(20),

Address varchar(100),

Phone_no numeric(12),

Password varchar(15),

primary key(Customer_Id));

insert into CUSTOMER values(10101, 'Samad', 'Baridhara, Dhaka', 01623333333, 'csv6y5dfb');

insert into CUSTOMER values(10102, 'Salam', 'Banani, Dhaka', 01628883333, 'bnn6y5dfb');

insert into CUSTOMER values(10201, 'Aamad', 'Badda, Dhaka', 01723333333, 'csv6y5dhi');

insert into CUSTOMER values(10202, 'Bamad', 'Dhara, Dhaka', 01923333333, 'csvuiodfb');

insert into CUSTOMER values(10103, 'Ali', 'Mirpur, Dhaka', 01823333333, '8888y5dfb');

insert into CUSTOMER values(10301, 'Sadia', 'Nobinogor, Savar', 01629993333, 'cppppdfb');

insert into CUSTOMER values(10401, 'Kamal', 'Gourigong, Barisal', 01829933333, 'kkk6y5dfb');

insert into CUSTOMER values(10501, 'LaLad', 'Colapara, Cumilla', 01623222333, 'csooo5dfb');

insert into CUSTOMER values(10601, 'Zahid', 'Nodibari, Brammanbaria', 01623000333, 'csddd5dfb');

insert into CUSTOMER values(10701, 'Yasid', 'chalchal, Sylhet', 01623777333, 'csjjj5dfb');

```
mysql> select * from CUSTOMER;
+-------------+-------+-----------------------+------------+-----------+
| Customer_Id | Name  | Address               | Phone_no   | Password  |
+-------------+-------+-----------------------+------------+-----------+
|       10101 | Samad | Baridhara, Dhaka      | 1623333333 | csv6y5dfb |
|       10102 | Salam | Banani, Dhaka         | 1628883333 | bnn6y5dfb |
|       10103 | Ali   | Mirpur, Dhaka         | 1823333333 | 8888y5dfb |
|       10201 | Aamad | Badda, Dhaka          | 1723333333 | csv6y5dhi |
|       10202 | Bamad | Dhara, Dhaka          | 1923333333 | csvuiodfb |
|       10301 | Sadia | Nobinogor, Savar      | 1629993333 | cppppdfb  |
|       10401 | Kamal | Gourigong, Barisal    | 1829933333 | kkk6y5dfb |
|       10501 | LaLad | Colapara, Cumilla     | 1623222333 | csooo5dfb |
|       10601 | Zahid | Nodibari, Brammanbaria| 1623000333 | csddd5dfb |
|       10701 | Yasid | chalchal, Sylhet      | 1623777333 | csjjj5dfb |
+-------------+-------+-----------------------+------------+-----------+
10 rows in set (0.07 sec)
```

create table EMPLOYEE

(Employee_Id numeric(9),

Designation varchar(20),

Name varchar(20),

Responsibility varchar(50),

Salary numeric(9),

Password varchar(15),

primary key(Employee_Id));

insert into EMPLOYEE values(20101, 'Manager', 'Abdul Karim', 'Update/Add item and its sell and purchase prize', 100000, 'gvhnhgv');

insert into EMPLOYEE values(20201, 'Supervisor', 'Rahamat Ullah', 'Maintain order system', 50000, 'gvkkkhgv');

insert into EMPLOYEE values(20301, 'Delivery Boy', 'Taskin', 'Delivar items', 10000, 'gvlllgv');

insert into EMPLOYEE values(20302, 'Delivery Boy', 'Rubel', 'Delivar items', 10000, 'gvhhhgv');

insert into EMPLOYEE values(20303, 'Delivery Girl', 'Naila', 'Delivar items', 10000, 'gvggggv');

```
mysql> select * from EMPLOYEE;
+-------------+--------------+--------------+-----------------------------------------+--------+-----------+
| Employee_Id | Designation  | Name         | Responsibility                          | Salary | Password  |
+-------------+--------------+--------------+-----------------------------------------+--------+-----------+
|       20101 | Manager      | Abdul Karim  | Update/Add item and its sell and purchase prize | 100000 | gvhnhgv   |
|       20201 | Supervisor   | Rahamat Ullah| Maintain order system                   |  50000 | gvkkkhgv  |
|       20301 | Delivary Boy | Taskin       | Delivar items                           |  10000 | gvlllgv   |
|       20302 | Delivary Boy | Rubel        | Delivar items                           |  10000 | gvhhhgv   |
|       20303 | Delivary Girl| Naila        | Delivar items                           |  10000 | gvggggv   |
+-------------+--------------+--------------+-----------------------------------------+--------+-----------+
5 rows in set (0.00 sec)
```

create table BRANCH

(Branch_Id numeric(9),

Name varchar(20),

Location varchar(20),

Branch_Type varchar(20),

primary key(Branch_Id));

insert into BRANCH values(301, 'FNF Dhaka', 'Dhaka', 'Main Branch');

insert into BRANCH values(302, 'FNF Barisal', 'Barisal', 'Sub Branch');

insert into BRANCH values(303, 'FNF Cumilla', 'Cumilla', 'Sub Branch');

insert into BRANCH values(304, 'FNF Sylhet', 'Sylhet', 'Sub Branch');

```
mysql> select * from BRANCH;
+-----------+-------------+----------+-------------+
| Branch_Id | Name        | Location | Branch_Type |
+-----------+-------------+----------+-------------+
|       301 | FNF Dhaka   | Dhaka    | Main Branch |
|       302 | FNF Barisal | Barisal  | Sub Branch  |
|       303 | FNF Cumilla | Cumilla  | Sub Branch  |
|       304 | FNF Sylhet  | Sylhet   | Sub Branch  |
+-----------+-------------+----------+-------------+
4 rows in set (0.13 sec)
```

create table ADMINSTER

(Admin_Id numeric(9),

Name varchar(20),

Password varchar(15),

Address varchar(100),

Branch_Id numeric(9),

primary key(Admin_Id),

foreign key (Branch_Id) references BRANCH(Branch_Id));

insert into ADMINSTER values(5001, 'Mi Sakib', 'lalaahahah', 'Dhaka', 301);

insert into ADMINSTER values(5002, 'Sifat Khan', 'laleeeehah', 'Cumilla', 303);

insert into ADMINSTER values(5003, 'Sifat Khan', 'laleeeeccc', 'Cumilla', 304);

insert into ADMINSTER values(5004, 'Abu Sayed', 'Babamaahah', 'Barisal', 302);

```
mysql> select * from ADMINSTER;
+----------+------------+------------+----------+-----------+
| Admin_Id | Name       | Password   | Address  | Branch_Id |
+----------+------------+------------+----------+-----------+
|     5001 | Mi Sakib   | lalaahahah | Dhaka    |       301 |
|     5002 | Sifat Khan | laleeeehah | Cumilla  |       303 |
|     5003 | Sifat Khan | laleeeeccc | Cumilla  |       304 |
|     5004 | Abu Sayed  | Babamaahah | Barisal  |       302 |
+----------+------------+------------+----------+-----------+
4 rows in set (0.00 sec)
```

create table ITEM_ON_STORE

(Item_Id numeric(10),

Name varchar(20),

Total_Unit numeric(20),

Unit_Prize numeric(10),

Branch_Id numeric(9),

Employee_Id numeric(9),

primary key(Item_Id),

foreign key (Branch_Id) references BRANCH(Branch_Id),

foreign key (Employee_Id) references EMPLOYEE(Employee_Id));

insert into ITEM_ON_STORE values(301001, 'Rice', 100000, 40, 301, 20101);

insert into ITEM_ON_STORE values(302001, 'Rice', 10000, 40, 302, 20101);

insert into ITEM_ON_STORE values(303001, 'Rice', 10000, 40, 303, 20101);

insert into ITEM_ON_STORE values(304001, 'Rice', 10000, 40, 304, 20101);

insert into ITEM_ON_STORE values(301002, 'Dal', 10000, 80, 301, 20101);

insert into ITEM_ON_STORE values(302002, 'Dal', 5000, 80, 302, 20101);

insert into ITEM_ON_STORE values(303002, 'Dal', 5000, 80, 303, 20101);

insert into ITEM_ON_STORE values(304002, 'Dal', 5000, 80, 304, 20101);

insert into ITEM_ON_STORE values(301003, 'Ata',70000, 50, 301, 20101);

insert into ITEM_ON_STORE values(302003, 'Ata', 7000, 50, 302, 20101);

insert into ITEM_ON_STORE values(303003, 'Ata', 7000, 50, 303, 20101);

insert into ITEM_ON_STORE values(304003, 'Ata', 7000, 50, 304, 20101);

insert into ITEM_ON_STORE values(301004, 'Moyda', 60000, 70, 301, 20101);

insert into ITEM_ON_STORE values(302004, 'Moyda', 6000, 70, 302, 20101);

insert into ITEM_ON_STORE values(303004, 'Moyda', 6000, 70, 303, 20101);

```
mysql> select * from ITEM_ON_STORE;
+---------+-------+------------+------------+-----------+-------------+
| Item_Id | Name  | Total_Unit | Unit_Prize | Branch_Id | Employee_Id |
+---------+-------+------------+------------+-----------+-------------+
|  301001 | Rice  |     100000 |         40 |       301 |       20101 |
|  301002 | Dal   |      10000 |         80 |       301 |       20101 |
|  301003 | Ata   |      70000 |         50 |       301 |       20101 |
|  301004 | Moyda |      60000 |         70 |       301 |       20101 |
|  302001 | Rice  |      10000 |         40 |       302 |       20101 |
|  302002 | Dal   |       5000 |         80 |       302 |       20101 |
|  302003 | Ata   |       7000 |         50 |       302 |       20101 |
|  302004 | Moyda |       6000 |         70 |       302 |       20101 |
|  303001 | Rice  |      10000 |         40 |       303 |       20101 |
|  303002 | Dal   |       5000 |         80 |       303 |       20101 |
|  303003 | Ata   |       7000 |         50 |       303 |       20101 |
|  303004 | Moyda |       6000 |         70 |       303 |       20101 |
|  304001 | Rice  |      10000 |         40 |       304 |       20101 |
|  304002 | Dal   |       5000 |         80 |       304 |       20101 |
|  304003 | Ata   |       7000 |         50 |       304 |       20101 |
+---------+-------+------------+------------+-----------+-------------+
15 rows in set (0.00 sec)
```

create table SALE_BALANCE

(Transaction_Id numeric(9),

Card_Payment numeric(9),

Mobile_Payment numeric(9),

Cash_On_Delivery numeric(9),

Transaction_Date date,

Employee_Id numeric(9),

Customer_Id numeric(9),

primary key(Transaction_Id),

foreign key (Employee_Id) references EMPLOYEE(Employee_Id),

foreign key (Customer_Id) references CUSTOMER(Customer_Id));

insert into SALE_BALANCE values(789001, 170, 0, 0, '2018-09-21', 20301, 10101);

insert into SALE_BALANCE values(789002, 0, 200, 0, '2018-09-22', 20301, 10102);

insert into SALE_BALANCE values(789003, 0, 0, 700, '2018-09-23', 20302, 10501);

insert into SALE_BALANCE values(789004, 120, 0, 0, '2018-09-24', 20303, 10401);

```
mysql> select * from SALE_BALANCE;
+----------------+--------------+----------------+-----------------+------------------+-------------+-------------+
| Transaction_Id | Card_Payment | Mobile_Payment | Cash_On_Delivery | Transaction_Date | Employee_Id | Customer_Id |
+----------------+--------------+----------------+-----------------+------------------+-------------+-------------+
|         789001 |          170 |              0 |               0 | 2018-09-21       |       20301 |       10101 |
|         789002 |            0 |            200 |               0 | 2018-09-22       |       20301 |       10102 |
|         789003 |            0 |              0 |             700 | 2018-09-23       |       20302 |       10501 |
|         789004 |          130 |              0 |               0 | 2018-09-24       |       20303 |       10401 |
+----------------+--------------+----------------+-----------------+------------------+-------------+-------------+
4 rows in set (0.07 sec)
```

create table CUSTOMER_ORDER

(Order_Id numeric(10),

Order_Date date,

Sale_Price numeric(9),

Item_Id numeric(10),

Transaction_Id numeric(9),

Customer_Id numeric(9),

primary key(Order_Id),

foreign key (Customer_Id) references CUSTOMER(Customer_Id),

foreign key (Item_Id) references ITEM_ON_STORE(Item_Id),

foreign key (Transaction_Id) references SALE_BALANCE(Transaction_Id));

insert into CUSTOMER_ORDER values(1100001, '2018-09-21', 40, 301001, 789001, 10101);

insert into CUSTOMER_ORDER values(1100002, '2018-09-21', 80, 301002, 789001, 10101);

insert into CUSTOMER_ORDER values(1100003, '2018-09-21', 50, 301003, 789001, 10101);

insert into CUSTOMER_ORDER values(1100004, '2018-09-22', 200, 301001, 789002, 10102);

insert into CUSTOMER_ORDER values(1100005, '2018-09-23', 700, 303003, 789003, 10501);

insert into CUSTOMER_ORDER values(1100006, '2018-09-24', 70, 302004, 789004, 10401);

insert into CUSTOMER_ORDER values(1100007, '2018-09-24', 50, 302003, 789004, 10401);

```
mysql> select * from CUSTOMER_ORDER;
+----------+------------+------------+--------+----------------+-------------+
| Order_Id | Order_Date | Sale_Price | Item_Id | Transaction_Id | Customer_Id |
+----------+------------+------------+--------+----------------+-------------+
|  1100001 | 2018-09-21 |         40 | 301001 |         789001 |       10101 |
|  1100002 | 2018-09-21 |         80 | 301002 |         789001 |       10101 |
|  1100003 | 2018-09-21 |         50 | 301003 |         789001 |       10101 |
|  1100004 | 2018-09-22 |        200 | 301001 |         789002 |       10102 |
|  1100005 | 2018-09-23 |        700 | 303003 |         789003 |       10501 |
|  1100006 | 2018-09-24 |         70 | 302004 |         789004 |       10401 |
|  1100007 | 2018-09-24 |         50 | 302003 |         789004 |       10401 |
+----------+------------+------------+--------+----------------+-------------+
7 rows in set (0.00 sec)
```

SQL Queries and Results

List of customers that place an order with order total for a date range

select Customer_Id, count(Order_Id) as Order_Total from CUSTOMER_ORDER WHERE `Order_Date` BETWEEN "2018-09-21" AND "2018-09-23" group by Customer_Id;

```
mysql> select Customer_Id, count(Order_Id) as Order_Total from CUSTOMER_ORDER WHERE `Order_Date` BETWEEN "2018-09-21" AN
D "2018-09-23" group by Customer_Id;
+-------------+-------------+
| Customer_Id | Order_Total |
+-------------+-------------+
|       10101 |           3 |
|       10102 |           1 |
|       10501 |           1 |
+-------------+-------------+
3 rows in set (0.00 sec)
```

Date-wise order totals for a date range

select Order_Date, count(Order_Id) as Order_Total from CUSTOMER_ORDER WHERE `Order_Date` BETWEEN "2018-09-22" AND "2018-09-24" group by Order_Date;

```
mysql> select Order_Date, count(Order_Id) as Order_Total from CUSTOMER_ORDER WHERE `Order_Date` BETWEEN "2018-09-22" AND "2018-09-24" group by Order_Date;
+------------+-------------+
| Order_Date | Order_Total |
+------------+-------------+
| 2018-09-22 |           1 |
| 2018-09-23 |           1 |
| 2018-09-24 |           2 |
+------------+-------------+
3 rows in set (0.00 sec)
```

Item with order total for a date range

select Item_Id, count(Order_Id) as Order_Total from CUSTOMER_ORDER WHERE `Order_Date` BETWEEN "2018-09-22" AND "2018-09-24" group by Item_Id;

```
mysql> select Item_Id, count(Order_Id) as Order_Total from CUSTOMER_ORDER WHERE `Order_Date` BETWEEN "2018-09-22" AND "2018-09-24" group by Item_Id;
+---------+-------------+
| Item_Id | Order_Total |
+---------+-------------+
|  301001 |           1 |
|  302003 |           1 |
|  302004 |           1 |
|  303003 |           1 |
+---------+-------------+
4 rows in set (0.00 sec)
```

List of employees with order delivery count

select Employee_Id, count(Transaction_Id) as Order_Delivery_Count from SALE_BALANCE WHERE `Transaction_Date` BETWEEN "2018-09-21" AND "2018-09-24" group by Employee_Id;

Item count in store for all items

select Name, sum(Total_Unit) as Total_Amount from ITEM_ON_STORE group by Name;

```
mysql> select Name, sum(Total_Unit) as Total_Amount from ITEM_ON_STORE group by Name;
+--------+--------------+
| Name   | Total_Amount |
+--------+--------------+
| Rice   |       130000 |
| Dal    |        25000 |
| Ata    |        91000 |
| Moyda  |        72000 |
+--------+--------------+
4 rows in set (0.04 sec)
```

END