NORMALIZATION:

CUSTOMER			
Attributes	NULL?	Type	Key
Cust_id	no	Number(10)	PK
First_Name	no	Varchar(20)	
Last_Name		Varchar(20)	
Phone no	no	Number(20)	
Email	no	Varchar(20)	
Password	no	Varchar(20)	
Street	no	Varchar(20)	
City	no	Varchar(20)	
State	no	Varchar(20)	

Functional Dependencies:

- Cust_id->First_name

- Cust_id->Email

- Cust_id->Last_name

- Cust_id->Street

- Cust_id->City

- Cust_id->State

- City->State

Normal Forms:

- 1NF: Customer table has multivalued attribute as "PHONE_NO", so to convert it into 1 N form, it is split as customer and Customer_phoneNo:

CUSTOMER			
Attributes	NULL?	Type	Key
Cust_id	no	Number(10)	PK
First_Name	no	Varchar(20)	
Last_Name		Varchar(20)	
Phone no	no	Number(20)	
Email	no	Varchar(20)	
Street	no	Varchar(20)	
City	no	Varchar(20)	
State	no	Varchar(20)	

CUSTOMER			
Attributes	NULL?	Type	Key

Cust_id	no	Number(10)	PK
Phone no	no	Number(20)	FK,PK

- 2NF: Customer table is already in Second normal form as there is no partial dependency

- 3NF: Transitive dependency exists so the table is split into customer and customer_address

CUSTOMER			
Attributes	NULL?	Type	Key
Cust_id	no	Number(10)	PK
First_Name	no	Varchar(20)	
Last_Name		Varchar(20)	
Phone no	no	Number(20)	
Email	no	Varchar(20)	
Password	no	Varchar(20)	
Street	no	Varchar(20)	

CUSTOMER_ADDRESS			
Attributes	NULL?	Type	Key
Street	no	Varchar(20)	PK
City	no	Varchar(20)	
State	no	Varchar(20)	

DEBIT_CARD			
Attributes	NULL?	Type	Key
Reciept_no	no	Number(10)	PK,FK
Card_no	no	Number(10)	
CVV	no	Number(3)	
Expiry_date	no	Date	

Functional Dependencies:

- Reciept_no->Card_no

- Reciept_no->CVV

- Reciept_no->Expiry_date

Normal Forms:

- 1NF: Debit_Card table is already in first normal form as there are no multivalued attributes.

- 2NF: Debit_Card table is already in second normal form due to lack of partial dependency.

- 3NF: Debit_Card is also in third normal form as there is no transitive dependency.

CREDIT_CARD			
Attributes	NULL?	Type	Key
Reciept_no	no	Number(10)	PK,FK
Card_no	no	Number(10)	
CVV	no	Number(3)	
Expiry_Date	no	Date	

Functional Dependencies:

- Reciept_no->Card_no

- Reciept_no->CVV

- Reciept_no->Expiry_date

Normal Forms:

- 1NF: Credit_Card table is already in first normal form as there are no multivalued attributes.

- 2NF: Credit_Card table is already in second normal form due to lack of partial dependency.

- 3NF: Credit_Card is also in third normal form as there is no transitive dependency.

NET_BANKING			
Attributes	NULL?	Type	Key
Reciept_no	no	Number(10)	PK,FK
Bank	no	Varchar(20)	
Username	no	Varchar(20)	
Password	no	Varchar(20)	

Functional Dependencies:

- Reciept_no->Bank

- Reciept_no->Username

- Reciept_no->Password

ormal Forms:

- 1NF: Net_Banking table is already in first normal form as there are no multivalued attributes.

- 2NF: Net_Banking table is already in second normal form due to lack of partial dependency.

- 3NF: Net_Banking is also in third normal form as there is no transitive dependency.

RESTAURANT			
Attributes	NULL?	Type	Key
Restaurant_id	no	Number(10)	PK
Restaurant_Name	no	Varchar(20)	
Rating		Number(5)	

Street	no	Varchar(20)	
City	no	Varchar(20)	
State	no	Varchar(20)	

Functional Dependencies:

- Restaurant_id->Restaurant_name

- Restaurant_id->Rating

- Restaurant_id->Street

- Restaurant_id->city

- Restaurant_id->state

- Street->City

- City->State

Normal Forms:

- 1NF: Restaurant table is already in first normal form as there are no multivalued attributes.

- 2NF: Restaurant table is already in second normal form due to lack of partial dependency.

- 3NF: Transitive dependency exists and hence the table is split into restaurant1 and Restaurant2.

RESTAURANT1			
Attributes	NULL?	Type	Key
Restaurant_id	no	Number(10)	PK
Restaurant_Name	no	Varchar(20)	
Rating		Number(5)	
Street	no	Varchar(20)	FK

RESTAURANT2			
Attributes	NULL?	Type	Key
Street	no	Varchar(20)	PK
City	no	Varchar(20)	
State	no	Varchar(20)	

MENU			
Attributes	NULL?	Type	Key
Item_id	no	Number(10)	PK
Item_name	no	Number(10)	
Price	no	Number(10)	

Functional Dependencies:

- Item_id->Item_name

- Item_id->Price

- Item_name->price

Normal Forms:

- 1NF: Menu table is already in first normal form as there are no multivalued attributes.

- 2NF: Menu table is already in second normal form due to lack of partial dependency.

- 3NF: Transitive dependency exists and hence the table is split into menu1 and menu2.

MENU1			
Attributes	NULL?	Type	Key
Item_id	no	Number(10)	PK
Item_name	no	Number(10)	FK

MENU2			
Attributes	NULL?	Type	Key
Item_name	no	Number(10)	FK
Item_price	no	Number(10)	

ORDER_DETAILS			
Attributes	NULL?	Type	Key
Order_id	no	Number(10)	PK,FK
Item_id	no	Number(10)	PK,FK
Qty	no	Number(10)	
Price	no	Number	

Functional Dependencies:

- Order_id,Item_id->Item_name

- Order_id,Item_id->Price

- Order_id,Item_id->price

Normal Forms:

- 1NF: Order_details table is already in first normal form as there are no multivalued attributes.

- 2NF: Order_details table is already in second normal form as there is no partial dependency

- 3NF: Transitive dependency does not exists and hence the table is in third normal form.

ORDER			
Attributes	NULL?	Type	Key
Order_id	no	Number(10)	PK
Item_id	no	Number(10)	FK
Restaurant_id	no	Number(10)	FK
Employee_id	no	Number(10)	FK
Order_status	no	Number(10)	
Order_date	no	Number(10)	

Functional Dependencies:

- Order_id->Item_id

- Order_id->Restaurant_id

- Order_id->price

- Order_id->Employee_id

- Order_id->Order_Status

- Order_id->Order_id

Normal Forms:

- 1NF: Order table is already in first normal form as there are no multivalued attributes.

- 2NF: Order table is already in second normal form as there is no partial dependency

- 3NF: Transitive dependency does not exists and hence the table is in third normal form.