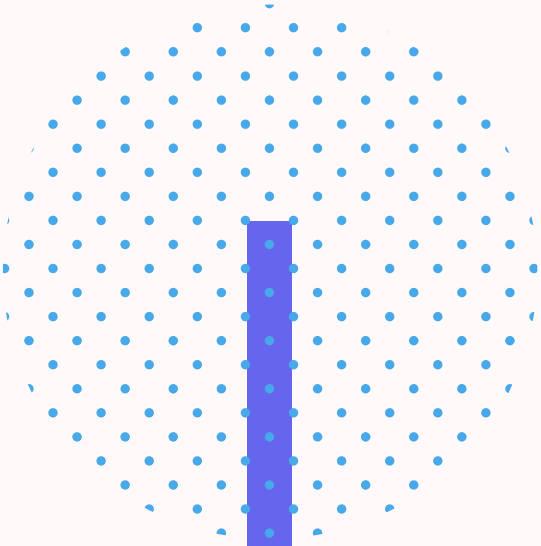
ASSIGNMENT - 2

Designing the E-R model and Relational Schema for web application/ mobile application.



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PROBLEM STATEMENT

Description:

ER stands for entity relationship that helps in organizing and storing the data in a database. The stored data is in the form of different entities that define the relationship between each entity. The entity-relationship model serves as the foundation of various system analysis, repository systems, and computer-aided software engineering tools. Data models are easy to understand and it is a means of visualising how information produced by a system is related to each other.

IMPLEMENTATION GUIDELINE

For the system of your choice, complete the following tasks:

Part I:

- Write the functional requirements of your system.

- Identify all the entities from your system.
- Identify the attributes for all the entities identified in step 2.
- Identify the relationship among all the entities.
- Identify the unique attributes of each entity.
- Find the cardinality constraint for every relationship existing among different pairs of entities.
- Identify the participation constraints as per the requirements.
- Identify if any EER features can be included in the database design.

Once completing all the above steps, draw the ER model using all the necessary notations and symbols discussed in the class and mentioned in the reading material. Students can use any design tool of their choice to draw the ER diagram.

Part II:

Apply all the important rules for mapping the ER model into a Relational Schema.
Draw the Relational Schema using any design tool of your choice (E-Draw, LUCID Chart, etc)

Expected Input:

Set of functional requirements

Expected Outcome:

- Entity-Relationship Model
- Relational Schema

Assessment Guidelines:

Strictly follow the rubrics attached to the assignment document. Assessment will be done on the basis of the rubrics. The assignment carries a weight of 20% in the final assessment.

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FUNCTIONAL REQUIREMENT

The canteen management system is divided in separate sections, each section has a unique ID and and not all sections are accessible.

Symbols used in the ER Diagram :

Entity -
Rectangle shape.
The entity will be our database table of Canteen Management System later on.

Attribute -
The oval shape.
This will be the columns or fields of each table in the Canteen Management System.

Relationship -
Diamond shape.
This will determine the relationships among entities. This is usually in a form of primary key to foreign key connection.

ENTITY : USER
ATTRIBUTES :

- ID – primary key represented with underline
- Full name
- Contact
- Email address
- Username
- password

ENTITY : WEBSITE
ATTRIBUTES :

- ID – primary key represented with underline
- Name
- Description
- Contact_info
- User_ID – foreign key
- Last_Update

ENTITY : PAYMENT
ATTRIBUTES :

- ID – primary key
- Order_ID – foreign key
- Amount
- Payment_By
- Date

ENTITY : ORDER
ATTRIBUTES :

- ID – primary key represented with underline
- Customer_ID – foreign key
- Order_Time
- Total_amount
- Order_Status

ENTITY : ORDER DETAILS
ATTRIBUTES :

- ID – primary key represented with underline
- Order_ID – foreign key
- Menu_ID – foreign key
- Amount
- Quantity

ENTITY : CUSTOMERS
ATTRIBUTES :

- ID – primary key represented with underline
- First_Name
- Last_Name
- User_email_ID
- User_contact_Number
- User_Profile
- Username
- Password
- Acc_Status

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ENTITY : RATING
ATTRIBUTES :

- ID – primary key represented with underline
- Menu_ID – foreign key
- Points
- Feedback
- Date & Time
- Use_ID

ENTITY : MENU
ATTRIBUTES :

- ID – primary key represented with underline
- Name
- Price
- Type_ID
- Dish_Image
- Ingredients
- Availability_ Status

ENTITY : MENU TYPE
ATTRIBUTES :

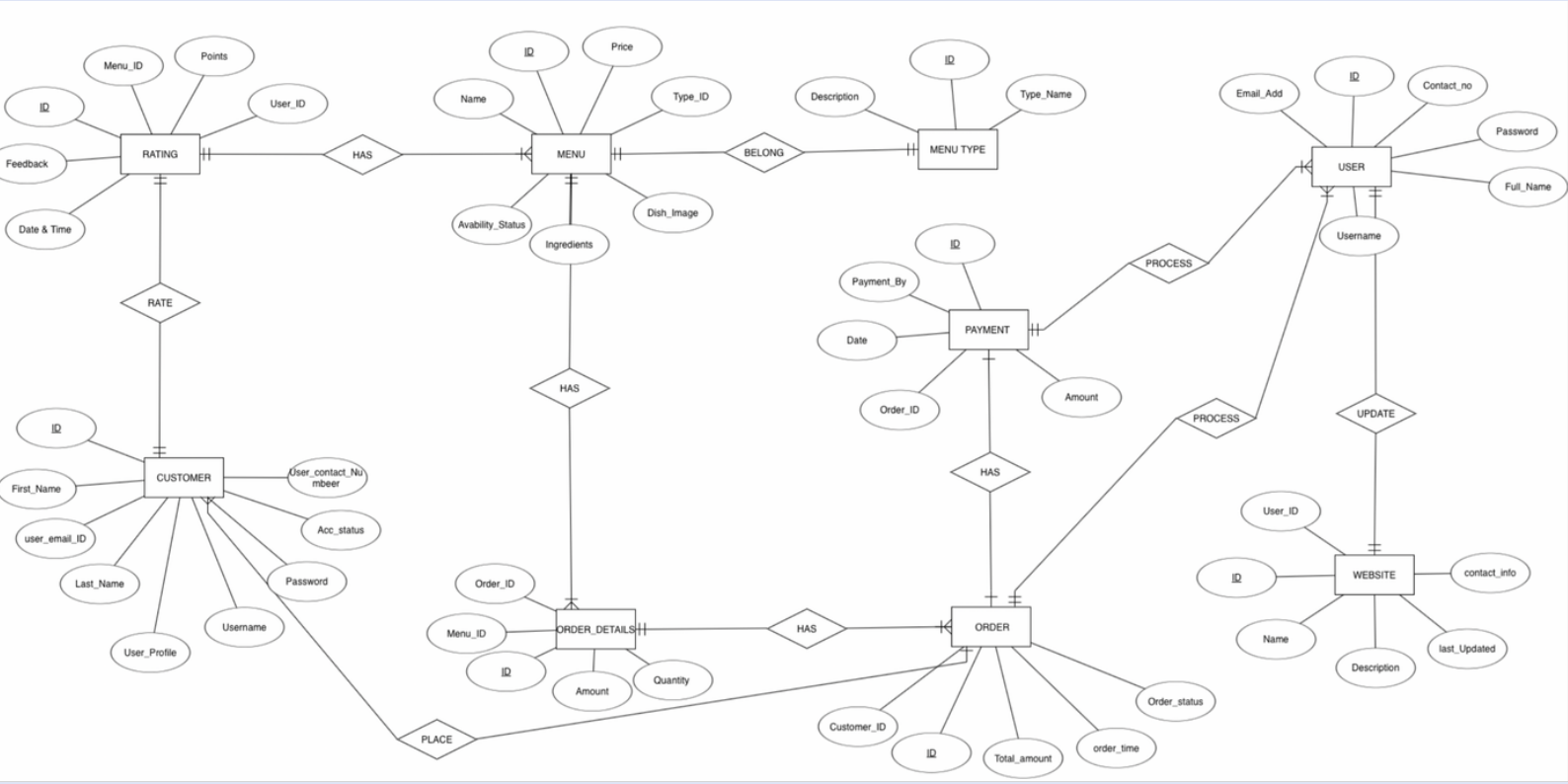
- ID – primary key represented with underline
- Type_Name
- Description

CARDINALITY

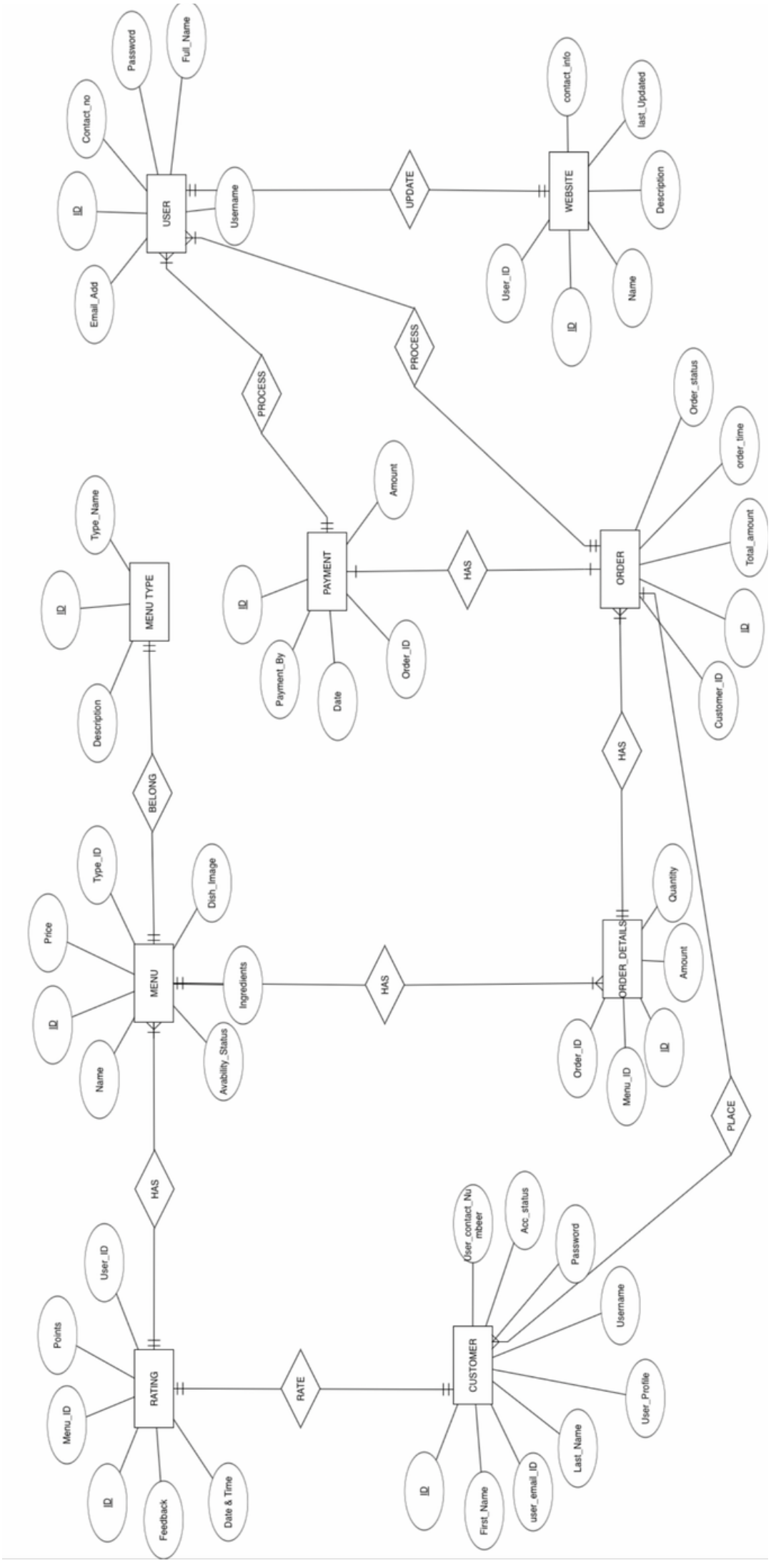
- The users manage/update the Website (1 to 1 relationship).
- The user processes the orders of the customers (1 to many relationship).
- The user processes the payment of the customers (1 to many relationship).
- The customer places their orders (1 to many relationship).
- Order information can contain 1 or more items (1 to many relationship).
- An order detail contains 1 or more menu (1 to many relationship).
- The order information will be linked to the payment module (1 to 1 relationship).
- The customer gives their rating on a menu (1 to 1 relationship).
- A menu has multiple ratings from the customers (1 to many relationship).
- A menu belongs to a specific menu type (1 to 1 relationship).

ER DIAGRAM :

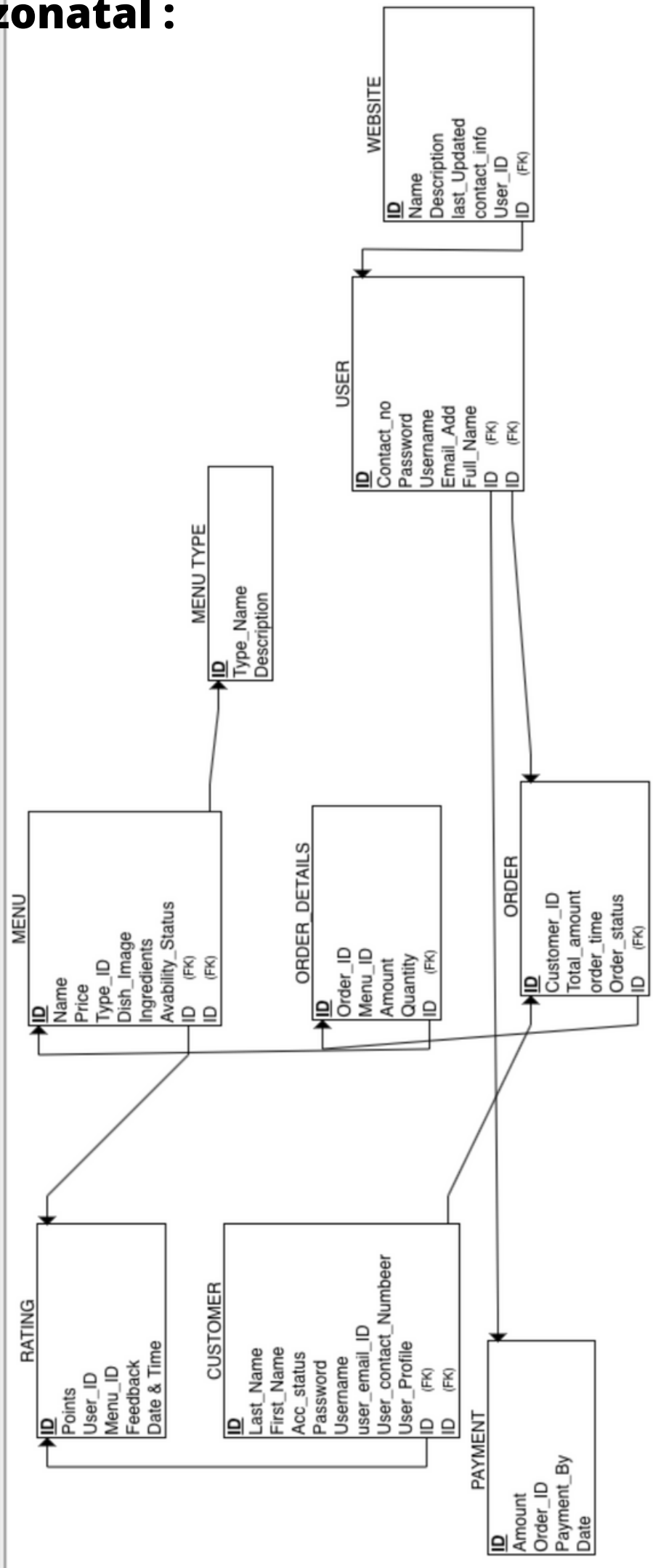
ER Diagram in vertical :



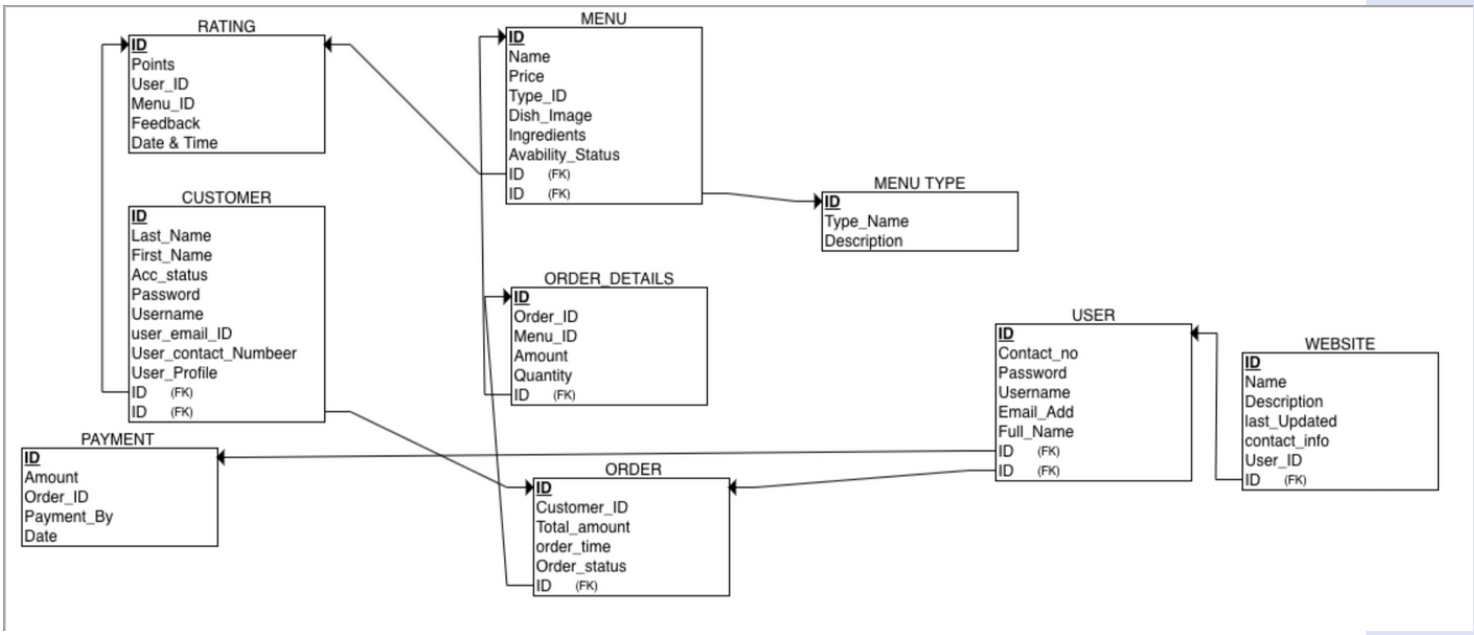
ER Diagram in Horizontal :



SCHEMA in horizonatal :



SCHEMA in vertical:



CONCLUSION

In this assignment I got a deeper understanding of how to make an ER diagram and implement it in real world ,What steps to be followed while making an ER Diagram of a system. Here, I sequenced ERD as means of visualising how the information a system produces is related, also after completion I got an understanding of 5 main components of ER diagram, And how it can be implemented in real world.