Week02

Relational Database Systems

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Student Exercise

As part of codebase “full stack” course, you will need to complete the following exercise.

CASE STUDY: FBN

Scenario

You have been asked to design a database for a food franchise called **FastBurgersNow** which currently has 10 outlets scattered across Scotland. The database proposed is one to cover a specific part of their ordering and employee systems.

So, it must importantly contain a list of the orders taken, this is based on the customers placing an order, however only registered customers are able to make an order either one telephone or app connection. The order is then passed to the kitchen area (i.e., cooks) who will make the various items and package them ready for delivery. Finally, the drivers will deliver these orders to the customer's home address. The franchise is unique in that it does not take over the counter orders, and only concentrates on deliveries to its current database of customers.

When first registering the customer needs to provide the usual amount of personal information (e.g., name, address, email, mobile number etc.). Customers are also able to receive various promotional information via an email shot by the company that occurs every 2-3 months, this is based on a special menu that is devised by the local manager.

The staff that work for FBN also provide a similar amount of information when they start at the franchise, along with the various training courses they have completed, and skill set they possess. Certain information concerning the staff employment status is also kept e.g., the National Insurance number, scanned copy of their passport and a scanned copy of their driving licence (for drivers). The various employees can be either given a role as a driver, cook, order staff or shift-leader, these are entered into the system and updated when necessary. Also, some details about the basic pay rate for each member of staff will be kept on the system.

The order system should keep track of the following:

- Which customer places which order.
- All items on that order.
- Customer paid by card of cash.
- Which member of staff took that order?
- Shifts for all staff members.
- Each item should relate to a food/drink product.
- The manager is responsible for keeping the stock up to date.
- The cooks do not take orders directly from customers.

Naturally NO CASE STUDY can capture all the details of the operations of the franchise; you are permitted to make any assumptions (provided you write these down).

Development

Use database development strategy to decide the main elements of the database – this will include nominating the:

Fields (also INDICATING the primary keys and foreign keys)

Tables

Links and Cardinalities between the respective tables

Task 2A. Propose an Entity - Relationship diagram that matches the information provided in the case study. Use the appropriate formalism and structure as explained in the theory.

Note: Use io.draw or Microsoft Visio or similar product to develop your ERD

Task 2B. Produce a Data Dictionary – which contains the following information: table, field type, field size and field description.

Note: Use Microsoft Excel or similar product to develop your data dictionary