

PROJECT ONLINE STORE STARTUP

Coding Ninjas

Consider that you have got an internship in an upcoming unicorn startup. The organization wants to create an online survey feature for the different categories of the products sold by them to help with their business intelligence and make out useful strategies to improve.

Now, you are given the very first task which is to design a database schema for this scenario to store the necessary data.

Few of the requirements for the survey are as follows:

1. The survey can be reused to get feedback for multiple products. It would contain the ratings given by the buyer.
2. A customer is the registered user to whom the shopping account belongs. A customer will take up a survey when he/she will purchase a product.
3. A survey will have multiple questions. These questions are selected from a large dataset containing different types of questions. The questions can be subjective as well as objective types of questions.
4. Customers and buyers (the customers who have made a purchase) are stored separately.
5. Buyers have to answer the questions given in the feedback, some of which are mandatory and some are optional. These answers should also be stored separately so that analysis can be done on all the answers received till date for the products.
6. It should have all the details of the customer and the product bought with its feedback.

Now keeping the above information in mind, design the Survey database schema by answering the following questions step by step:

1. Identify the various entities of the database.

Ans. The various entities of the Online store database would be:

- Customer
 - The entity Customer Stores the details of the customers like name, email id and password for the entry and assigns a unique customer id for the tuples.
- Product
 - The entity Product stores the name of the product, the category in which it belongs, and a price assigned to it both the values of the name and price can not be empty when creating a tuple. Also each product will receive a unique identifier for itself.

- Buyer
 - The entity Buyer stores the details of the customer who purchases a product. Hence as provided by the constraints we can sort out the customers who are needed to fill in the survey forms. We will uniquely identify the buyer with an id and store their customer id and the id of the product that they bought. This entity is created to avoid multivalued attributes in the customer or the product entities.
- Survey
 - The entity Survey stores which survey is needed to assign with each product. The need for the entity comes because there are multiple questions in a survey and providing it in the product table will cause a multivalued attribute in the entity
- Question
 - The entity Question assigns a unique id to each question stores what type of question it is, the question and whether its mandatory or not.
- Survey_Questions
 - The entity Survey_Questions stores the survey id and which all questions are associated with it. The survey id is matched with the question id here however it is not a multi valued attribute and both the attributes are used to uniquely identify a tuple.
- Answer
 - The entity Answer stores the answer and rating given by the buyer for a product and both the product id and buyer id are also stored in the entity

2. Identify the attributes for various entities.

Ans. Attributes for various entities are

- Customer
 - Customer_ID (Primary Key)
 - Name
 - Email
 - Password.
- Product
 - Product_ID (Primary Key)
 - Pname
 - Category
 - price

- Buyer
 - Buyer_ID (Primary Key)
 - C_ID (Foreign Key)
 - P_ID (Foreign Key)
- Survey
 - Survey_ID (Primary Key)
 - P_ID (Foreign Key)
- Survey_Questions
 - S_ID (Foreign Key)
 - Q_ID (Foreign Key)
- Question
 - Question_ID (Primary Key)
 - Qtype
 - Qtext
 - is_Mandatory
- Answer
 - Answer_ID (Primary Key)
 - Q_ID (Foreign Key)
 - B_ID (Foreign Key)
 - Atext
 - Rating

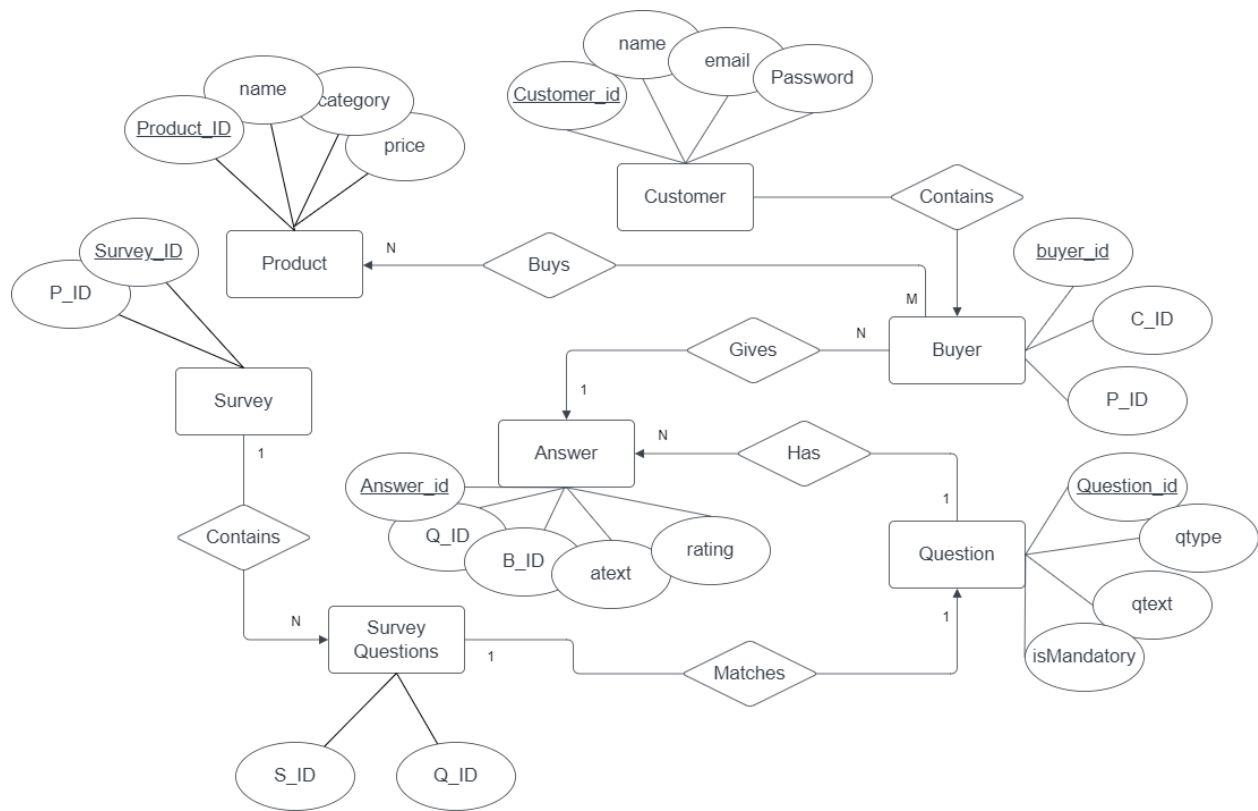
3. Identify the relationships with the cardinalities.

Ans. The different cardinalities in the database schema are:

1. A customer can take part in many surveys, but a survey is taken by only one customer. (1:N)
2. A buyer can purchase many products, but a product can be purchased by many buyers. (M:N)
3. A survey can have multiple questions, and a question can be part of multiple surveys. (M:N)
4. A buyer can give answers to many questions, but an answer is given by only one buyer. (1:N)
5. A question can have multiple answers, and an answer can be part of only one question. (1:N)
6. A product can have multiple surveys, and a survey can be associated with only one product. (1:N)

4. Create the ER Diagram.

Ans.



5. Create the relational Schema.

Ans.

