

# **Data Models & Query Languages(CSE560) Project Milestone-1**

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## **Section 1:**

Project Name: Survey Application Database for the products manufactured by a Company

Team Name: Targaryen

Name: ESHWAR N KUMAR

Team Members (Total:1): ESHWAR N KUMAR

UB ID: eshwarna

Email ID: [eshwarna@buffalo.edu](mailto:eshwarna@buffalo.edu)

## **Section 2:**

**Problem Statement:** Develop a Survey Application Database for the products of a company with the below requirements:

1. A user will have to complete the survey after he/she completes purchase of a product from the company.
2. The survey can consist of 3 different types of questions. It can be objective with one answer choice selection, objective with multiple answer choice selection, or it can be subjective where the user types textual answer to the question.
3. The survey should collect company feedback, product/s feedback, company branch outlet from which the product was purchased, and the location where the purchaser resides.
4. The survey should be such that it can be used for multiple products that are manufactured by the company.

Below are the reasons why a database is needed to solve this problem instead of an excel file/spread sheet:

1. Every cell in a excel file has no constraints on the type of data that can be stored in it. Due to this, a string like the product name can be inserted in the place where the product id which is an integer value have to be inserted. This results in lots of erroneous information in the excel file. However, every index in a database has constraints on the type of data which can be stored in it to improve data integrity and avoid erroneous information storage in the database.
2. In a excel file, we can create multiple worksheets(one for each table) and relate one worksheet with the other but such relations will be very limited in spreadsheets. However, there is no limit for the number of relations in a database and a database can store more than a million of records. Hence, using a database over excel file will increase the performance of operations and can store millions of records of data which results in higher speed of manipulation of data in the dataset.
3. In the case of excel file, it is very hard to find who changed what data. Also, we cannot impose user restrictions for an excel file. But with a database, the tables will have a highly stable structure and we can implement access permissions and user restrictions. This drastically improves the security and data consistency of the data stored. In addition, retrieval and updating of data is more easier, and safe using databases than with an excel file.

### **Section 3:**

#### **Target User**

- The survey application database is mainly used by the company to analyze the customers opinion about the products sold by the company and about the company itself. On the other hand, the values to the database will be input by the customers who provide feedback by taking the survey.
- The company using the survey application and the people who want to see the customer's feedback (like engineers, HRs, etc) will administer the database.

Below is a real-life scenario to explain the above:

Let's consider a Company by name Rubix use the survey application that uses our survey application database for storing the data. A purchaser buys a new product named X manufactured by Rubix at Buff Branch. Post his purchase, he/she will complete the survey about his purchase of product X and the company Rubix. The company after few days makes use of the database that stores the customers feedback and makes necessary improvements with respect to both product and the company to reach a higher position.

### **Section 4:**

#### **Tasks 1-4**

##### **Task 1:**

- Initially based on the database schema described below, the tables are created with necessary constraints like primary key, foreign key, etc. using Data Definition Language (DDL) commands.
- According to the real-life scenario described in the above section 3, the survey data from the customer feedback is inserted into the respective database relations using SQL INSERT commands. In this way, we update data into the tables.
- In order to view/insert/modify the data stored in the database tables, we can use SQL Data Manipulation Language (DML) commands like INSERT/DELETE/JOIN to perform data manipulation according to our needs.
- Since we are using Databases, there is typically no limit for the number of tuples that can be stored for each relation. In addition, the databases support update of data and the queries can be performed without any limitation.

##### **Task 2:**

#### **Below is the database schema for the problem statement:**

Product(id, name, category, companyid)

#### **Constraints:**

Id: Primary Key, companyid: Foreign Key, name: not null, category: not null

Product table contains details of all the products manufactured by company Rubix.

id is the Primary Key because it is unique for every Product.

companyid is the Foreign key that references to the id in the Company table. It indicates the company that has manufactured the product. If the company is deleted in the company table, then all the products associated with the company must also be deleted. Hence, companyid is associated with 'on delete cascade'.

name is the name of the product and it should not be a null value.

category is the category to which the product belongs to and its will also must be not null.

Company(id, name)

#### **Constraints:**

id: Primary Key, name: not null

Company relation contains the company name and id. Please note that for this project, we are considering only one company and surveying all the products manufactured by that company. However, the same database schema can be extended to more than one company with some additional modifications.

id is the primary key.

name is the name of the company and it should not be null.

Customer(id, name, age, gender, branch, email, country)

Constraints:

id: Primary Key, name: not null, age: not null, gender: not null, branch: not null, country: not null

Customer relation stores all the details of the customer who has purchased one or more products of manufactured by Rubix.

id is the Primary Key.

name is the name of the customer and it must not be null.

age is the age of the customer which is int value and should not be null

gender indicates the gender identity of the customer and should not be null

branch is the branch name from which the customer has purchased the product and should not be null

country is the country from which the customer has purchased the product and should not be null.

Survey(id, title)

Constraints:

Id: Primary Key, title: not null

Survey relation stores the names of all the surveys that is provided to different customers based on different requirements.

id is the Primary key.

title is the title of the survey. For example, Product Survey, Company Survey, Branch Survey. This attribute must not be null. In addition, there can be more than one survey with the same name. Since the questions asked in the survey changes by time, we can add/delete the questions in each survey and create a new survey tuple in this table.

Questions(id, type, question, surveyid)

Constraints:

id: Primary Key, surveyid: Foreign key, type, question: not null

Questions table stores the list of all questions that are associated with any of the survey present in the survey table.

id is the primary key.

type is the kind of question and it should not be a null value. In this relation, we use only three types of questions which are objective\_single\_choice which means the customer has to choose only one option among the list of options, objective\_multiple\_choice which means customer can choose one or more option from the list of options, and subjective which means customer has to manually type the answer for the question.

surveyid is the foreign key that references to a particular survey present in survey table. If a survey is deleted from the survey table, still the same question can be utilized for other surveys. Hence, surveyid is associated with 'on delete set null'.

question is the actual question that is asked to the customer in the survey. It should not be a null value.

Answer(id, text, questionid)

Constraints:

id: Primary Key, questionid: foreign key

Answer relation stores the options for every objective question present in the questions relation.

id is the Primary Key

text is the answer options for every objective question present in the questions relation. If the question in the questions relation is subjective, then corresponding tuple in the Answer relation will be filled by null. So, the text field can be null.

questionid is the foreign key attribute that references to the primary key in the questions relation. If there is no questionid, then the corresponding tuple in the answer relation must be deleted. Hence this attribute is set to 'on delete cascade'.

Responder(id, customerid, productid, surveyid)

Constraints:

id: Primary Key, customerid, productid, surveyid: Foreign Key

Responder relation stores the data about the customer who is answering various questions in different surveys. It indicates which user is responding for a survey brought for a particular product.

id is the primary key for the responder relation.

customerid is the foreign key that references to the primary key in the Customer relation.

productid is the foreign key that references to the primary key in the Product relation.

surveyid is the foreign key that references to the primary key in the Survey relation.

If a customerid or productid or customerid is deleted, still the data provided by the customer in a survey about a product the customer purchased before getting deleted can be used by Rubix for analysis. Hence, customerid, productid, and surveyid are set to 'on delete set null'.

Response(id, questionid, answerid, responsetext, responderid)

Constraints:

Id: Primary key, questionid, answerid, responderid: Foreign Key

Response is the relation that stores the data about the responses provided by customers in the survey.

id is the primary key.

questionid is the foreign key that references to the primary key in the Questions table.

answerid is the foreign key that references to the primary key in the Answer table.

responsetext is the attribute that stores the option/options chosen by the customer for an objective question and the answer typed by the customer for a subjective question in the survey. In this survey application, it is mandatory for every customer who takes the survey to provide answers to all the questions in the survey. Hence, responsetext field must not be null value.

responderid is the foreign key that references to the primary key in the Responder table which provides details about the customers who have taken the survey for a product. If the id in the responder table is deleted, still the data record can be used by the company for data analysis. Hence, this attribute is set to 'on delete set null'.

**Task 3:**

**Below SQL commands can be used for creating the database according to the Task2 database schema:**

```
Create Table Company(  
    id int,  
    name varchar(20),  
    Primary key (id)  
);  
Create Table Product (  
    id int,  
    name varchar(20) not null,  
    category varchar(20) not null,  
    companyid int,  
    primary key (id),  
    foreign key (companyid) references company(id) on delete cascade  
);  
Create Table Customer (  
    id int,  
    name varchar(20),  
    age int not null,  
    gender varchar(20) not null,  
    branch varchar(20) not null,  
    country varchar(20) not null,  
    primary key (id)  
);  
Create Table Survey (  
    id int,  
    title varchar(100) not null,  
    primary key (id)  
);  
Create Table Questions(  
    id int,  
    type varchar(50) not null,  
    question varchar(500) not null,  
    surveyid int,  
    primary key(id),  
    foreign key(surveyid) references Survey(id) on delete set null  
);  
Create Table Answer(  
    id int,  
    text varchar(1000),  
    questionid int,  
    primary key(id),  
    foreign key(questionid) references Questions(id) on delete cascade  
);  
Create Table Responder(  
    id int,  
    customerid int,  
    productid int,
```

```

        surveyid int,
        primary key(id),
        foreign key (customerid) references Customer(id) on delete set null,
        foreign key (productid) references Product(id) on delete set null,
        foreign key (surveyid) references Survey(id) on delete set null
    );
Create Table Response (
    id int,
    questionid int,
    answerid int,
    responsetext varchar(1000),
    responderid int,
    primary key (id),
    foreign key (questionid) references Questions(id) on delete set null,
    foreign key (answerid) references Answer(id) on delete set null,
    foreign key (responderid) references Responder(id) on delete set null
);

```

**Below are the data insertion commands with the necessary data:**

**Company Table**

```

INSERT INTO Company (id, name)
VALUES (1, 'Rubix');

```

**Product Table**

```

INSERT INTO Product (id, name, category, companyid)
VALUES (1, 'Coconut oil', 'Grocery', 1);
INSERT INTO Product (id, name, category, companyid)
VALUES (2, 'Tomato Ketchup', 'Sauces', 1);
INSERT INTO Product (id, name, category, companyid)
VALUES (3, 'Maggi', 'Instant Food', 1);
INSERT INTO Product (id, name, category, companyid)
VALUES (4, 'Poha', 'Grocery', 1);
INSERT INTO Product (id, name, category, companyid)
VALUES (5, 'Corn Flakes', 'Instant Food', 1);
INSERT INTO Product (id, name, category, companyid)
VALUES (6, 'Bread-sticks', 'Milk Products', 1);
INSERT INTO Product (id, name, category, companyid)
VALUES (7, 'Paneer', 'Milk Products', 1);
INSERT INTO Product (id, name, category, companyid)
VALUES (8, 'pasta', 'Instant Food', 1);
INSERT INTO Product (id, name, category, companyid)
VALUES (9, 'Basmati Rice', 'Grocery', 1);
INSERT INTO Product (id, name, category, companyid)
VALUES (10, 'Choco Flakes', 'Instant Food', 1);
INSERT INTO Product (id, name, category, companyid)
VALUES (11, 'Chana Dal', 'Grocery', 1);
INSERT INTO Product (id, name, category, companyid)
VALUES (12, 'Wheat Atta', 'Food', 1);
INSERT INTO Product (id, name, category, companyid)

```

```

VALUES (13, 'Rava Idly Mix', 'Instant Food', 1);
INSERT INTO Product (id, name, category, companyid)
VALUES (14, 'Rubix Biscuits', 'Instant Food', 1);
INSERT INTO Product (id, name, category, companyid)
VALUES (15, 'Shampoo', 'Personal Care', 1);
INSERT INTO Product (id, name, category, companyid)
VALUES (16, 'Detergent Liquid', 'Cleaning', 1);
INSERT INTO Product (id, name, category, companyid)
VALUES (17, 'Sensitive toothpaste', 'Personal Care', 1);
INSERT INTO Product (id, name, category, companyid)
VALUES (18, 'Honey', 'Food', 1);
INSERT INTO Product (id, name, category, companyid)
VALUES (19, 'Peanuts', 'Grocery', 1);
INSERT INTO Product (id, name, category, companyid)
VALUES (20, 'Cheese', 'Milk Products', 1);

```

### **Customer Table**

```

INSERT INTO Customer (id, name, age, gender, branch, country)
VALUES (1, 'Alex', 25, 'Male', 'Texas branch', 'United States');
INSERT INTO Customer (id, name, age, gender, branch, country)
VALUES (2, 'Raju', 32, 'Male', 'London branch', 'United Kingdom');
INSERT INTO Customer (id, name, age, gender, branch, country)
VALUES (3, 'Mary', 48, 'Female', 'Buffalo branch', 'United States');
INSERT INTO Customer (id, name, age, gender, branch, country)
VALUES (4, 'Romeo', 28, 'Male', 'Delhi branch', 'India');
INSERT INTO Customer (id, name, age, gender, branch, country)
VALUES (5, 'Sara', 29, 'Female', 'Mumbai branch', 'India');
INSERT INTO Customer (id, name, age, gender, branch, country)
VALUES (6, 'Alen', 35, 'Male', 'Texas branch', 'United States');
INSERT INTO Customer (id, name, age, gender, branch, country)
VALUES (7, 'Sandhu', 42, 'Male', 'London branch', 'United Kingdom');
INSERT INTO Customer (id, name, age, gender, branch, country)
VALUES (8, 'Mira', 58, 'Female', 'Buffalo branch', 'United States');
INSERT INTO Customer (id, name, age, gender, branch, country)
VALUES (9, 'Rambo', 38, 'Male', 'Delhi branch', 'India');
INSERT INTO Customer (id, name, age, gender, branch, country)
VALUES (10, 'Sirah', 39, 'Female', 'Mumbai branch', 'India');
INSERT INTO Customer (id, name, age, gender, branch, country)
VALUES (11, 'Alice', 27, 'Male', 'Texas branch', 'United States');
INSERT INTO Customer (id, name, age, gender, branch, country)
VALUES (12, 'Saro', 35, 'Male', 'London branch', 'United Kingdom');
INSERT INTO Customer (id, name, age, gender, branch, country)
VALUES (13, 'Cary', 49, 'Female', 'Buffalo branch', 'United States');
INSERT INTO Customer (id, name, age, gender, branch, country)
VALUES (14, 'Roni', 24, 'Male', 'Delhi branch', 'India');
INSERT INTO Customer (id, name, age, gender, branch, country)
VALUES (15, 'Seema', 28, 'Female', 'Mumbai branch', 'India');
INSERT INTO Customer (id, name, age, gender, branch, country)

```

```
VALUES (16, 'James', 45, 'Male', 'Texas branch', 'United States');
INSERT INTO Customer (id, name, age, gender, branch, country)
VALUES (17, 'Sanga', 37, 'Male', 'London branch', 'United Kingdom');
INSERT INTO Customer (id, name, age, gender, branch, country)
VALUES (18, 'Judy', 32, 'Female', 'Buffalo branch', 'United States');
INSERT INTO Customer (id, name, age, gender, branch, country)
VALUES (19, 'Henry', 26, 'Male', 'Delhi branch', 'India');
INSERT INTO Customer (id, name, age, gender, branch, country)
VALUES (20, 'Sama', 39, 'Female', 'Mumbai branch', 'India');
```

### **Survey Table**

```
INSERT INTO Survey (id, title)
VALUES (1, 'Product Survey');
INSERT INTO Survey (id, title)
VALUES (2, 'Company Survey');
INSERT INTO Survey (id, title)
VALUES (3, 'Branch Survey');
INSERT INTO Survey (id, title)
VALUES (4, 'Product Survey');
INSERT INTO Survey (id, title)
VALUES (5, 'Company Survey');
INSERT INTO Survey (id, title)
VALUES (6, 'Branch Survey');
INSERT INTO Survey (id, title)
VALUES (7, 'Product Survey');
INSERT INTO Survey (id, title)
VALUES (8, 'Company Survey');
INSERT INTO Survey (id, title)
VALUES (9, 'Branch Survey');
```

### **Questions Table**

```
INSERT INTO Questions (id, type, question, surveyid)
VALUES (1, 'objective_single_choice', 'How do you think is the price of the Product?', 1);
INSERT INTO Questions (id, type, question, surveyid)
VALUES (2, 'objective_single_choice', 'How is the quality of the Product?', 1);
INSERT INTO Questions (id, type, question, surveyid)
VALUES (3, 'objective_single_choice', 'How is the packaging of the Product?', 1);
INSERT INTO Questions (id, type, question, surveyid)
VALUES (4, 'objective_single_choice', 'How often do you use the product?', 1);
INSERT INTO Questions (id, type, question, surveyid)
VALUES (5, 'objective_single_choice', 'How do you rate the value for money of the product?', 1);
INSERT INTO Questions (id, type, question, surveyid)
VALUES (6, 'objective_single_choice', 'How long have you been using this product?', 1);
INSERT INTO Questions (id, type, question, surveyid)
VALUES (7, 'objective_single_choice', 'Will you purchase the product again?', 1);
INSERT INTO Questions (id, type, question, surveyid)
VALUES (8, 'objective_multiple_choice', 'Features of the product that needs improvment?', 1);
INSERT INTO Questions (id, type, question, surveyid)
```



```

VALUES (9, 'subjective', 'What is the main benefit you receive from this product?', 1);
INSERT INTO Questions (id, type, question, surveyid)
VALUES (10, 'subjective', 'What are the top 3 benefits you receive from this product?', 1);
INSERT INTO Questions (id, type, question, surveyid)
VALUES (11, 'objective_single_choice', 'How many products of Rubix do you use?', 2);
INSERT INTO Questions (id, type, question, surveyid)
VALUES (12, 'objective_single_choice', 'Since how long have you been using Rubix products?', 2);
INSERT INTO Questions (id, type, question, surveyid)
VALUES (13, 'subjective', 'What are the main qualities of Rubix products that you like?', 2);
INSERT INTO Questions (id, type, question, surveyid)
VALUES (14, 'subjective', 'What are the main qualities of Rubix products that you dont like?', 2);
INSERT INTO Questions (id, type, question, surveyid)
VALUES (15, 'objective_single_choice', 'Do you recommend Rubix Products to others?', 2);
INSERT INTO Questions (id, type, question, surveyid)
VALUES (16, 'objective_multiple_choice', 'What alternative brands would you choose when Rubix
products are not available?', 2);
INSERT INTO Questions (id, type, question, surveyid)
VALUES (17, 'objective_single_choice', 'Was the branch you visited nearby to your home?', 3);
INSERT INTO Questions (id, type, question, surveyid)
VALUES (18, 'objective_single_choice', 'What is the distance of the branch you visited from your home?',
3);
INSERT INTO Questions (id, type, question, surveyid)
VALUES (19, 'objective_single_choice', 'How was the customer service at the branch you visited?', 3);
INSERT INTO Questions (id, type, question, surveyid)
VALUES (20, 'subjective', 'What recommendations do you offer to improve our products or service', 3);

```

### **Answer Table**

```

INSERT INTO Answer (id, text, questionid)
VALUES (1, 'Low, Medium, High', 1);
INSERT INTO Answer (id, text, questionid)
VALUES (2, 'Low, Medium, High', 2);
INSERT INTO Answer (id, text, questionid)
VALUES (3, 'Low, Medium, High', 3);
INSERT INTO Answer (id, text, questionid)
VALUES (4, '1 month, 3 months, 6 months, I do not use it', 4);
INSERT INTO Answer (id, text, questionid)
VALUES (5, '1 star, 2 stars, 3 stars, 4 stars, 5 stars', 5);
INSERT INTO Answer (id, text, questionid)
VALUES (6, '1 month, 3 months, 6 months, 12 months, More than 12 months', 6);
INSERT INTO Answer (id, text, questionid)
VALUES (7, 'Never, Probably, Sure, Not Sure', 7);
INSERT INTO Answer (id, text, questionid)
VALUES (8, 'Packaging, Taste, Freebies, Ingredients, Availability', 8);
INSERT INTO Answer (id, text, questionid)
VALUES (9, "", 9);
INSERT INTO Answer (id, text, questionid)
VALUES (10, "", 10);
INSERT INTO Answer (id, text, questionid)

```

```

VALUES (11, 'One, One to Five, More than Five',11);
INSERT INTO Answer (id, text, questionid)
VALUES (12, '1 month, 3 months, 6 months, 1 year, More than 1 year',12);
INSERT INTO Answer (id, text, questionid)
VALUES (13, '',13);
INSERT INTO Answer (id, text, questionid)
VALUES (14, '',14);
INSERT INTO Answer (id, text, questionid)
VALUES (15, 'Yes, No',15);
INSERT INTO Answer (id, text, questionid)
VALUES (16, 'Chubix, Zento, Zest',16);
INSERT INTO Answer (id, text, questionid)
VALUES (17, 'Yes, No',17);
INSERT INTO Answer (id, text, questionid)
VALUES (18, 'less than 1 mile, between 1 to 5 miles, more than 5 miles', 18);
INSERT INTO Answer (id, text, questionid)
VALUES (19, 'Not good, Good, Excellent', 19);
INSERT INTO Answer (id, text, questionid)
VALUES (20, '',20);

```

#### **Responder Table**

```

INSERT INTO Responder (id, customerid, productid, surveyid)
VALUES (1, 1, 1, 1);
INSERT INTO Responder (id, customerid, productid, surveyid)
VALUES (2, 1, 1, 2);
INSERT INTO Responder (id, customerid, productid, surveyid)
VALUES (3, 1, 1, 3);
INSERT INTO Responder (id, customerid, productid, surveyid)
VALUES (4, 2, 1, 1);
INSERT INTO Responder (id, customerid, productid, surveyid)
VALUES (5, 2, 2, 1);
INSERT INTO Responder (id, customerid, productid, surveyid)
VALUES (6, 2, 4, 1);
INSERT INTO Responder (id, customerid, productid, surveyid)
VALUES (7, 2, 11, 1);
INSERT INTO Responder (id, customerid, productid, surveyid)
VALUES (8, 2, 11, 2);
INSERT INTO Responder (id, customerid, productid, surveyid)
VALUES (9, 2, 11, 3);
INSERT INTO Responder (id, customerid, productid, surveyid)
VALUES (10, 5, 3, 1);
INSERT INTO Responder (id, customerid, productid, surveyid)
VALUES (11, 5, 4, 1);
INSERT INTO Responder (id, customerid, productid, surveyid)
VALUES (12, 5, 4, 2);
INSERT INTO Responder (id, customerid, productid, surveyid)
VALUES (13, 5, 4, 3);
INSERT INTO Responder (id, customerid, productid, surveyid)

```

```

VALUES (14, 7, 12, 1);
INSERT INTO Responder (id, customerid, productid, surveyid)
VALUES (15, 7, 13, 1);
INSERT INTO Responder (id, customerid, productid, surveyid)
VALUES (16, 7, 13, 2);
INSERT INTO Responder (id, customerid, productid, surveyid)
VALUES (17, 7, 13, 3);
INSERT INTO Responder (id, customerid, productid, surveyid)
VALUES (18, 20, 13, 1);
INSERT INTO Responder (id, customerid, productid, surveyid)
VALUES (19, 20, 13, 2);
INSERT INTO Responder (id, customerid, productid, surveyid)
VALUES (20, 20, 13, 3);

```

### **Response Table**

```

INSERT INTO Response (id, questionid, answerid, responsetext, responderid)
VALUES (1, 1, 1, 'Medium', 1);
INSERT INTO Response (id, questionid, answerid, responsetext, responderid)
VALUES (2, 2, 2, 'High', 1);
INSERT INTO Response (id, questionid, answerid, responsetext, responderid)
VALUES (3, 3, 3, 'High', 1);
INSERT INTO Response (id, questionid, answerid, responsetext, responderid)
VALUES (4, 4, 4, '6 months', 1);
INSERT INTO Response (id, questionid, answerid, responsetext, responderid)
VALUES (5, 5, 5, '5 stars', 1);
INSERT INTO Response (id, questionid, answerid, responsetext, responderid)
VALUES (6, 6, 6, 'More than 12 months', 1);
INSERT INTO Response (id, questionid, answerid, responsetext, responderid)
VALUES (7, 7, 7, 'Sure', 1);
INSERT INTO Response (id, questionid, answerid, responsetext, responderid)
VALUES (8, 8, 8, 'Availability', 1);
INSERT INTO Response (id, questionid, answerid, responsetext, responderid)
VALUES (9, 9, 9, 'Oil is good for health', 1);
INSERT INTO Response (id, questionid, answerid, responsetext, responderid)
VALUES (10, 10, 10, 'Oil mixes with rice properly, good health, low cholestrol', 1);
INSERT INTO Response (id, questionid, answerid, responsetext, responderid)
VALUES (11, 11, 11, 'One to Five', 2);
INSERT INTO Response (id, questionid, answerid, responsetext, responderid)
VALUES (12, 12, 12, '1 year', 2);
INSERT INTO Response (id, questionid, answerid, responsetext, responderid)
VALUES (13, 14, 14, 'Unavailability of products at all times', 2);
INSERT INTO Response (id, questionid, answerid, responsetext, responderid)
VALUES (14, 13, 13, 'Good packaging and quality of products', 2);
INSERT INTO Response (id, questionid, answerid, responsetext, responderid)
VALUES (15, 15, 15, 'Yes', 2);
INSERT INTO Response (id, questionid, answerid, responsetext, responderid)
VALUES (16, 16, 16, 'Zento', 2);
INSERT INTO Response (id, questionid, answerid, responsetext, responderid)

```

VALUES (17, 18, 18, 'less than 1 mile', 3);  
 INSERT INTO Response (id, questionid, answerid, responsetext, responderid)  
 VALUES (18, 17, 17, 'Yes', 3);  
 INSERT INTO Response (id, questionid, answerid, responsetext, responderid)  
 VALUES (19, 19, 19, 'Excellent', 3);  
 INSERT INTO Response (id, questionid, answerid, responsetext, responderid)  
 VALUES (20, 20, 20, 'Increase the number of branches and availability of products in highly populated locations', 3);

**Below are the screenshots/images of the created database relations in PgAdmin showing the above data:**

#### **Company**

	id [PK] integer	name character varying (20)
1	1	Rubix

#### **Product**

	id [PK] integer	name character varying (20)	category character varying (20)	companyid integer
1	1	Coconut oil	Grocery	1
2	2	Tomato Ketchup	Sauces	1
3	3	Maggi	Instant Food	1
4	4	Poha	Grocery	1
5	5	Corn Flakes	Instant Food	1
6	6	Bread-sticks	Milk Products	1
7	7	Paneer	Milk Products	1
8	8	pasta	Instant Food	1
9	9	Basmati Rice	Grocery	1
10	10	Choco Flakes	Instant Food	1
11	11	Chana Dal	Grocery	1
12	12	Wheat Atta	Food	1
13	13	Rava Idly Mix	Instant Food	1
14	14	Rubix Biscuits	Instant Food	1
15	15	Shampoo	Personal Care	1
16	16	Detergent Liquid	Cleaning	1
17	17	Sensitive toothpaste	Personal Care	1
18	18	Honey	Food	1
19	19	Peanuts	Grocery	1
20	20	Cheese	Milk Products	1





Customer

Data Output								Explain	Messages	Notifications
	id	name	age	gender	branch	country				
	[PK] integer	character varying (20)	integer	character varying (20)	character varying (20)	character varying (20)				
1		1 Alex		23 Male	Texas branch	United States				
2		2 Raju		32 Male	London branch	United Kingdom				
3		3 Mary		48 Female	Buffalo branch	United States				
4		4 Romeo		28 Male	Delhi branch	India				
5		5 Sara		29 Female	Mumbai branch	India				
6		6 Allen		35 Male	Texas branch	United States				
7		7 Sandra		42 Male	London branch	United Kingdom				
8		8 Mira		58 Female	Buffalo branch	United States				
9		9 Rambo		38 Male	Delhi branch	India				
10		10 Sirsh		39 Female	Mumbai branch	India				
11		11 Alice		27 Male	Texas branch	United States				
12		12 Sam		35 Male	London branch	United Kingdom				
13		13 Cary		49 Female	Buffalo branch	United States				
14		14 Roni		34 Male	Delhi branch	India				
15		15 Seema		28 Female	Mumbai branch	India				
16		16 James		45 Male	Texas branch	United States				
17		17 Sanga		37 Male	London branch	United Kingdom				
18		18 Judy		32 Female	Buffalo branch	United States				
19		19 Henry		25 Male	Delhi branch	India				
20		20 Sami		30 Female	Mumbai branch	India				

Survey

Data Output			Explain	Messages	Notifications
	id	title			
	[PK] integer	character varying (100)			
1		1 Product Survey			
2		2 Company Survey			
3		3 Branch Survey			
4		4 Product Survey			
5		5 Company Survey			
6		6 Branch Survey			
7		7 Product Survey			
8		8 Company Survey			
9		9 Branch Survey			






## Questions

Data Output	Explain	Messages	Notifications
 id [PK] integer	 type character varying (50)	 question character varying (500)	 surveyid integer
1	1 objective_single_choice	How do you think is the price ...	1
2	2 objective_single_choice	How is the quality of the Prod...	1
3	3 objective_single_choice	How is the packaging of the P...	1
4	4 objective_single_choice	How often do you use the pro...	1
5	5 objective_single_choice	How do you rate the value for ...	1
6	6 objective_single_choice	How long have you been usin...	1
7	7 objective_single_choice	Will you purchase the product ...	1
8	8 objective_multiple_choice	Features of the product that n...	1
9	9 subjective	What is the main benefit you r...	1
10	10 subjective	What are the top 3 benefits yo...	1
11	11 objective_single_choice	How many products of Rubix ...	2
12	12 objective_single_choice	Since how long have you been...	2
13	13 subjective	What are the main qualities of...	2
14	14 subjective	What are the main qualities of...	2
15	15 objective_single_choice	Do you recommend Rubix Pro...	2
16	16 objective_multiple_choice	What alternative brands woul...	2
17	17 objective_single_choice	Was the branch you visited ne...	3
18	18 objective_single_choice	What is the distance of the br...	3
19	19 objective_single_choice	How was the customer servic...	3
20	20 subjective	What recommendations do yo...	3







## Answer

Data Output	Explain	Messages	Notifications
 id [PK] integer	 text character varying (1000)	 questionid integer	
1	1 Low, Medium, High	1	
2	2 Low, Medium, High	2	
3	3 Low, Medium, High	3	
4	4 1 month, 3 months, 6 months, 1 ...	4	
5	5 1 star, 2 stars, 3 stars, 4 stars, 5...	5	
6	6 1 month, 3 months, 6 months, 1...	6	
7	7 Never, Probably, Sure, Not Sure	7	
8	8 Packaging, Taste, Freebies, Ingr...	8	
9	9	9	
10	10	10	
11	11 One, One to Five, More than Five	11	
12	12 1 month, 3 months, 6 months, 1...	12	
13	13	13	
14	14	14	
15	15 Yes, No	15	
16	16 Chubix, Zento, Zest	16	
17	17 Yes, No	17	
18	18 less than 1 mile, between 1 to 5...	18	
19	19 Not good, Good, Excellent	19	
20	20	20	

## Responder

	Data Output	Explain	Messages	Notifications
	 id [PK] integer 	customerid integer 	productid integer 	surveyid integer 
1	1	1	1	1
2	2	1	1	2
3	3	1	1	3
4	4	2	1	1
5	5	2	2	1
6	6	2	4	1
7	7	2	11	1
8	8	2	11	2
9	9	2	11	3
10	10	5	3	1
11	11	5	4	1
12	12	5	4	2
13	13	5	4	3
14	14	7	12	1
15	15	7	13	1
16	16	7	13	2
17	17	7	13	3
18	18	20	13	1
19	19	20	13	2
20	20	20	13	3

## Response

	Data Output	Explain	Messages	Notifications	
	 id [PK] integer 	questionid integer 	answerid integer 	responsetext character varying (1000) 	responderid integer 
1	1	1	1	Medium	1
2	2	2	2	High	1
3	3	3	3	High	1
4	4	4	4	6 months	1
5	5	5	5	5 stars	1
6	6	6	6	More than 12 months	1
7	7	7	7	Sure	1
8	8	8	8	Availability	1
9	9	9	9	Oil is good for health	1
10	10	10	10	Oil mixes with rice properly, go...	1
11	11	11	11	One to Five	2
12	12	12	12	1 year	2
13	13	14	14	Unavailability of products at all ...	2
14	14	13	13	Good packaging and quality of ...	2
15	15	15	15	Yes	2
16	16	16	16	Zento	2
17	17	18	18	less than 1 mile	3
18	18	17	17	Yes	3
19	19	19	19	Excellent	3
20	20	20	20	Increase the number of branch...	3