Habib University CS355 – Databases, Fall 2020

Assignment 2 – Data Modelling

Objective:

The purpose of this assignment is to enable students to analyze real-world business specifications and construct their data model. This skill helps them building data management system of any business entity.

You have to build database systems for the business domains mentioned in Q1-Q2. Draw data model of each scenario. Your model diagram should contain the following information:

Entities, Attributes, primary keys & foreign keys Relationship, Cardinalities

Note:

Models can be developed in DB Designer or any Database Diagram tool which can generate a schema.

If you take any assumption regarding the scenario, clearly state them in a document which should be named "Assumptions". Your assumptions should not contradict the actual scenario.

The marks distribution for each question are as follows:

Q1: Broadway Pizza Scenario	60%
Q2. Business Scenario + Data Model	40%

Q 1 – Broadway Pizza Scenario

You are building a database system for Broadway pizza. There are different categories of items that they have such as 'Apetizers', 'Pizzas','Pasta' 'Desserts' etc. (as shown in left bar in the image below). Each category contains multiple items. Some items (such as pizzas) are available in multiple sizes and their prices vary depending upon the size. Different pizza flavors may also have different prices.

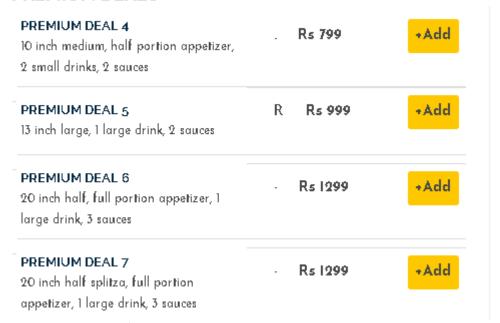
MENU	APPETIZER				PASTA	
Appetizer	4PCS STUFFED PEPPERS	4PCS F	ls 299	+Add	CHEDDAR MUSHROOM PASTA chicken sausage, mushroom, stuffed	Rs 429
Pizza Flavors	5PCS GARLIC BREADS	5 PCS	Rs 199	+Add	cheddar sauce, mozzarella cheese	
Pasta	PIZZA FLAVORS				GARLIC RANCH PASTA chicken fajita,jalapenos,garlic mayo ra	Rs 429
Oven Baked	SULTAN (KING OF PIZZA)	6 INCH FLÅT	Rs 249	+Add	sauce,mozzarella cheese	
Sandwiches	chicken kebab, tomatoes, onions, mozzarella &	20 INCH HÅLF	Rs 1049	+Add	DESSERT	
Wing	ert .	13 INCH LÄRGE	Rs 1399	+Add	CHOCOLATE MALT CAKE SLICE double chocolate malt	Rs 199
Dessert Beverages		20 INCH FULL	Rs 1999	+Add	CHOCOLATE MALT FULL CAKE	Rs 1399
		6 INCH FLÅT	Rs 249	+Add	double chocolate malt full cake MOLTEN LAVA CAKE	STÁNDÁRD Rs 24
		20 INCH HÅLF	Rs 1099	+Add	0,000	
		13 INCH LÄRGE	Rs 1399	+Add		
		20 INCH FULL	Rs	+Add		

When adding a pizza to the order, the following dialog appears that asks for more details about the crust, topping and sauces.

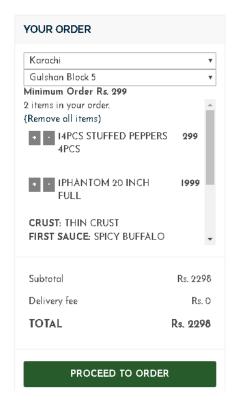


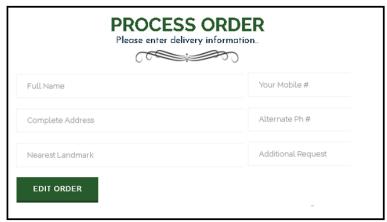
Deals are announced that contains multiple items in different quantities. Deals are valid for a given date range.

PREMIUM DEALS



The customer can add multiple items/deals to the order and specify the city and to calculate delivery charges. Delivery fee will vary depending upon the city and location. Certain locations nearby a Broadway outlet will have no delivery fee.





Draw an ERD for the above-mentioned scenario, your diagram must include:

- All Entities
- Attributes and Primary Key for each Entity
- Relationships between Entities
- Cardinalities of Relationships
- Foreign Keys

Note: Don't forget to clearly mention any assumptions you have taken, if you have taken an assumption which conflicts with the scenario you will lose marks. Also, if you forget to mention your assumption you might lose marks as you might not have the same logic as your instructor.

Rubric:

Entities correctly identified	25%
All Attributes mentioned	15%
Relationships drawn and resolved correctly	20%
Correct Cardinalities	15%
PK, FK identified and FK is placed in appropriate Entity table	25%

Q 2- A BUSINESS SCENARIO AND DATA MODEL

You need to give a detailed description of a real-world business system of your own choice and then construct its data model. The specifications must be clear enough so that its data model can be developed. Moreover, the details should also be supplemented with relevant screenshots, sample data or forms used in the business system. Some examples of real-life systems can be:

Library Management System, Hospital Management System, E-Shopping Applications, Online Taxi booking (Uber/Careem), People soft etc.

Note: The scenario has to be clearly mentioned in a document, which you will submit along with your diagram.

Rubric for Q2:

Detailed description of the scenario with assumptions	25%
Entities correctly identified	20%
All Attributes mentioned	10%
Cardinalities are correct	15%
Relationships drawn correctly	20%
Primary and Foreign keys correctly identified	10%