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Data Manager App for a Food Delivery Service: Description

**App:**<http://students.engr.scu.edu/~tharnlas/FoodRun/home.html>

In today’s world, there is an increasing amount of innovation that centers on delivering goods to a person’s doorstep, whether that may be groceries, clothes, furniture, etc. Hence, we decided to build a web application for a food delivery service company to help them analyze data about their business transactions. The app serves “FoodRun”, a made-up food delivery company like GrubHub or DoorDash that allows customers to order food from a restaurant through FoodRun’s ordering app and then have it delivered to them by a FoodRun driver. Our own app, however, is focused on helping FoodRun be “data smart”: it provides a UI where the company can view information about customers (including their names, phone numbers, and addresses), employees (their names and job positions), and restaurants participating in the service (their addresses and menu items). As such, the app’s intended clients are the managers at FoodRun since they will likely be responsible for keeping track of current employees, customers, and restaurant data. For example, they can query each customer’s order history and the number of orders fulfilled within a given time period. These queries will assist managers in making decisions about employee bonuses, customer discounts (e.g. after spending $500, they would get a 20% discount on the next order), restaurant incentives, etc.

The economic benefit of a successful solution will be helping FoodRun build a loyal customer base and incentivize employees to pitch in more work hours. For instance, by using the app to view the hours worked by all employees, FoodRun could use the data to offer bonuses to the delivery drivers who work the most hours. This would help motivate drivers to work a larger but still reasonable number of hours which would help FoodRun ensure that there are enough drivers to fulfill all orders and stay profitable. Likewise, the app would facilitate the process of rewarding customers who use the delivery service most often. The company would be able to use transactions (such as “Show all customers who spent over $250 in the past three months”) to find which customers they should send deals and discounts to, to retain their loyalty.

For overall functionality of the application, we would have to be able to query how many hours each employee have worked, be able to create a contract with a new restaurant to join the delivery program, and be able to view the order histories of individual customers (more functionalities are listed below). We would also take into consideration limitations such as how many hours an employee can work per day and that drivers in a particular region can only deliver food from restaurant from that region to customers in the same region (constraints listed below).

**Functionalities**

**a) Transactions:**

**Employee transactions:**

1. Generate a list of all the employees.
2. Show all the employees who work in a given region
3. Generate a list of supervisors and the drivers they supervise.
4. Generate a list of employees ordered by the numbers of hours worked per day.
5. Increase the wages of the drivers who work at least a given number of hours per day.
6. Create a new employee contract (input employee name, phone number, region, etc).

**Restaurant transactions:**

1. Generate a list of all restaurants that have partnered with the delivery service.
2. Generate a list of restaurants located in a given region.
3. Generate a list of menu items and their prices from a given restaurant.
4. Show the restaurant who received the most number of orders this month.
5. Create a contract with a restaurant that will participate in the delivery program.

**Customer transactions:**

1. [Show all customers ordered by region.](http://students.engr.scu.edu/~tharnlas/FoodRun/customerTransactions.php?showCust=true)
2. Show the order history of a given customer for a given period of time (input two dates).
3. Show all customers who have ordered at least once from a specified restaurant.
4. [Show all customers who spent $250 or more in the past three months.](http://students.engr.scu.edu/~tharnlas/FoodRun/customerTransactions.php?spent250=true)
5. Show the customer name and phone number for the customer who made the most number of orders in a given month in the current year.
6. Show the average price that customers pay on their order for a given region in a specified month.
7. Show the total number of orders fulfilled in a certain time period (input two dates).

**b) Constraints:**

1. There is only one supervisor per region.

Enforced with an insert trigger on the Supervisors table. (check\_spvsr)

1. A customer can only order food from restaurants in his/her region.

Enforced with an insert trigger on the Orders table. (fromSameRegion)

1. Each driver can only complete orders that are in the same region as the restaurant and the customer, and himself/herself.

Enforced with an insert trigger on the Orders table. (fromSameRegion)

1. A driver can only be employed in one region

Enforced through FD empID->empRegion. User of application is also only

allowed to select one option from a given drop-down list of regions.

1. A driver cannot work for more than 8 hours per day.

Enforced with a check() constraint during relation creation.

**c) Would your system offer a menu of choices to the user (where each choice is a transaction that he/she can perform using the system)?**

Yes, in our system, if you click on a particular list of transactions (Employee, Restaurant, Customer), you will be provided a list of transactions that can provide you information based on the data entered into the system.