CSE 5330 - Fall 2018 - Project Phase 1 Version 2 09/11/2018

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Initial Project Problem Statement
Online Food Delivery System

In the present day, online food ordering in India has gained lot of prominence, leading to an increase in the number of companies that have partnered with various restaurants to provide food delivery services at several locations across multiple cities in India. We want to create a system for such a company that collects food orders, through mobile application or website and provides with delivery executives for the orders received, in certain areas (in each city they are operational).

The firm generates income mainly through the commissions from the associated restaurants (15% - 20%, the commission is decided during the start of the association with the restaurant, if a restaurant is relatively new, i.e, less than an year of establishment, the commission for this firm would be 15% of its online orders, else it would be 20%) on online orders through their website or mobile application and the promotions (promotions of restaurants: the enterprise takes certain amount to promote a particular restaurant, that is, this restaurant will be on the top of the lists on their application and website).

The **objective** is to handle the huge volumes of data that are captured and use them to better the functioning of the firm, by giving out relevant and better offers to customers, expanding the associations (making connections with new restaurants), and ultimately grow as a company. (This can be done by incorporating better methods by using the reports generated according to the listed business goals.)

Data Description:

Branches:

- The firm is operational across **25 cities** in India, Bangalore being the headquarters. Additionally, each city has at least one operational branch (each city has different number of branches ranging **between 1 to 12).**
- **Basic details** of each branch are to be captured, such as:
  Branch ID, Address, City.
- Each branch would have various employees working, these details would have to be captured additionally.

Restaurants:

- Each partner restaurant would be in association with a particular (nearest) delivery hub.
- We capture the hours the restaurant is opened and operational (Say a restaurant, Black pearl is open from 8AM - 3:30PM and 7:00PM - 11:00PM).
- We would have to capture certain **basic data** of these restaurants, such as:
  Restaurant ID, Name, Cuisine it is most popular for (sometimes a single restaurant has multiple cuisines to deal with), *Address, Locality, City, Commission percentage offered, Average delivery time* (this would be an average of the total time taken to prepare the food and the delivery time required to for the delivery executive to reach the restaurant, pick-up the food and deliver it to the customer), *Delivery charge* (Delivery charge ranges from

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Rs.30 - 65, for a distance **within 5Kms**, if the distance exceeds upto a maximum of **7Kms**, the charges would increase by **Rs.15**), *Restaurant open time, Restaurant close time, Menu.*

Commissions:

- In order to keep track of commissions received from various restaurants, we need the following details:
  Commission ID, Restaurant ID, Amount received, Date and Time received.

Promotions:

- Every restaurant might not opt for promotion. For the ones that want to appear at the top, in the list shown to the user at a particular location, would have to pay some amount in order to be displayed on top of the list.
- The following are the details required to deal with the promoted restaurants:
  Promotion ID, Restaurant ID, Amount for the promotion, Date and Time received.

Customers:

- We require certain **basic information** regarding the customers, such as:
  Customer ID, Name, E-mail ID, Phone number, Location, Address (based on the pincode entered, the nearest hotels are mapped).
- Customers can choose to make use of the app either as guests (no need to create an account, in this case we keep track of the address and the items ordered) or not(in which case the personal details of the customer such as name, phone number etc., will be captured)

Employees:

- The following **basic data** of all the employees would be required:
  Employee ID, First name, Last name, Date of birth, Date of joining, Branch ID, Proof of Identity, Home address, Mobile number, Emergency contact, Designation.

Orders:

- Each **order** between the customer and the hotel is captured with following details:
  Order ID, Customer ID, Restaurant ID, Order received date and time, Order Amount, Payment mode (payment is either done by credit card, debit card, paytm, mobikwik or phonepay, (the later three categories are online money wallets, vastly used in India)).

Transactions:

- We would like to capture certain details that might be involved in the transaction that takes place from the time order is placed till the delivery is received.
- Each of the **required transaction details** are captured as the following:
  Transaction ID, Order ID, Expected delivery time, Actual delivery time, Total bill amount, Items ordered, Cuisines involved, Customer delivery feedback, Customer food feedback, Included offers or discounts on the bill (Offer code), Delivery amount charged, Delivery executive ID.

Refunds:

- There are certain cases where in the company has to get some amount refunded to the customer

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- Each **refund** is processed with the following details:
  Refund ID, Order ID, Amount refunded, Items considered for refund, Refund date and Time, Reason for refund (we assume that there are only **4** categories of refunds, namely, *Wrong food item, Spilt food item, Missing food item* and *Items were not delivered*, in a dropdown).

Menu:

- Each restaurant would have an associated menu, with the following details captured:
  Item name, Item ID, Item type (each item breakfast, lunch, dinner - the items would be available in the corresponding times), *Price, Restaurant ID.*
- Additionally, the items are classified as *Veg, Non vegetarian* and *Keto.*

Offers:

- The firm provides its users with various offers, on different occasions, for example on first order would be 30% off, 15 - 20% discounts on festivals, etc.
- The following are the **basic information** required to be captured:
  Offer code, Minimum order amount, Percentage of discount, Fixed price discount.

Note:

- The company has operational hours from 10AM - 10PM (any deliveries before or after these hours would be charged a minimum of Rs.15 extra per delivery). Hence, deliveries between 8AM - 10AM and between 10PM to 11:30PM would be dealt in the following way: by giving offers(and at the same time, keeping a minimum billing amount). [Say, a customer orders something before 9am or after 10pm, the delivery fee increases by Rs.15 per delivery, and offers are given in these hours, having a minimum bill amount].
- The delivery executive gets paid depending on the number of deliveries taken through the month (sum of all the deliveries taken, over a month)
- Different offers(codes) need to be captured.

Lot of inconsistencies in the description. data + relationship between data is not clear!

Functional Requirements

- Determine the average commision percentage offered in a city. — not sure how this is computed!
- Identify the restaurants paying commissions late (on or after the 3rd day of each month). — no data for this
- Identify the restaurants that provided maximum income(to this firm) over the last quarter.
- Identify the restaurants that have not been getting profits for the last two quarters. — cannot be done
- Identify the kind of offers that attract more customers in different locations, in different cities (in order to give similar offers in other regions, also would be useful in case any new associations are made with restaurants in those locations). — How? Have u thought about it?
- Determine the peak hours for delivery, and in which areas (During these hours, the delivery charges would increase).
- Identify customers who purchase only with any discounts (So as to give them further offers specifically, additionally the kind of offers used by the customer could be identified).
- Identify the kind of cuisines a customer orders the most (to make use of this in recommending similar restaurants, i.e restaurants with the same cuisines).

? not possible

Looks like u r making up as you go! not sure we understand this at any level! disconnect between big goals & description!

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- Determine most popular cuisine (most popular would be the one with maximum online sales) in a particular area (in order to make new associations with restaurants serving this cuisine).
- Identify delivery executives with less than 15 deliveries taken, in an average, in a day. Similarly, identify delivery executives with more than 25 deliveries taken, in an average, in a day (to give them a bonus of Rs.1500 per month, if it is equal to or more than 30 a bonus of Rs.1800 would be granted).
- Determine the average number of people using online food ordering through the app in different months (So as to increase or decrease the offers).
- Identify the location, in a city that gets the maximum number of orders over a period of time.
- Determine the number of customers buying just above the minimum billing amount.
- Identify the number of refunds and the type of refunds that took place over the last quarter (To reduce this loss in the future).
- Determine the average number of customers using the app from multiple locations.
- Determine the number of people who claimed the first time discount on app registration and never ordered after that (in order to specifically send offer codes).
- Determine the day of the week with maximum sales. (In order to incorporate similar offers or practices followed on this particular day, on other days). Similarly, the one with lowest number of sales.
- Determine the most preferable mode of payment, in different cities.

Who are they?

What does it convey?

Although I have clearly asked you to NOT include Procedures/apps, most of the goals are about using the app. No focus on underlying data.

Needs to revise thoroughly & write it in terms of data & associate between data.

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