National College of Ireland

Business Intelligence & Business Analytics

Project Specification Report

MSc in Data Analytics

Project Submitted by

1. Ganesh More (x18180451)
2. Ameya Dalal (x18184430)
3. Shirish Sonavane (x19164165)
4. Sumit Singh (x19193190)

Contents

1 Objective:

For studying the structure of the company as a business consultant of Swiggy, we need to analyse many factors and then we can implement a proposal of expandable solution, simple implementation and cost effective by using Business Analytics system.

2 History of Swiggy and its market place:

Swiggy: It is a company based on food ordering and delivery system established in Bangalore, India. It is a one window platform from which people can order number of food stuffs with one click. Swiggy is used for ordering the food online by looking at the review of the restaurant, customer can also mention their review. It all started in back 2014 when BITS pilani graduates were determined that they want to create an easier life by changing the online delivery system with just one click. It also provides exclusive doorstep delivery or pick up orders from restaurant and deliver to customers. The founders were Sriharsha Majety, Nandan Reddy and Rahul Jaimini. Swiggy is now operational around 200 cities around India. Some insights about the company:

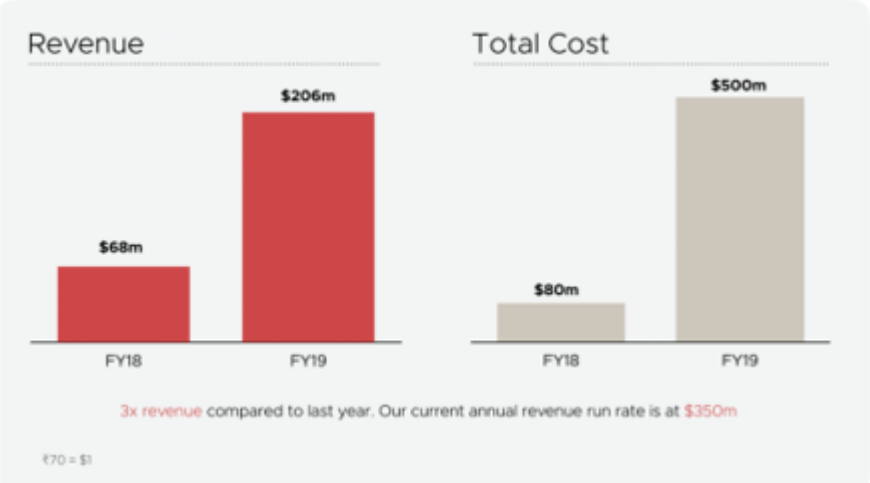
- In 2014 the company was established and in 2019 it was operating in almost 100 cities.
- In 2014 company launched its Android and IOS app.
- At beginning there were only 6 delivery employees and 25 restaurants registered on platform. In 3 years, it has scaled up over 6000 restaurants all over India in more than 10 cities like Mumbai, Bangalore, Pune, Hyderabad, Kolkata, Chennai, Delhi.
- Currently there are around 140,000 restaurants across India.
- Customers can view the website and view the list of restaurants and their menu, offers, rating and finally can place a limit-less order for themselves at their address or for other with a different address.
- Swiggy is now used more for online food delivery and providing service in India.
- There are many competitors for Swiggy but some are like Food panda India, Fresh Menu, Grofers, Zomato and Uber eats.

- The difference between Swiggy and other companies are like:
  1) It has its own team of delivery agents who are carrying their smartphones and the Swiggy app with them.
  2) Can order in any quantity.
  3) More dependable.
  4) Faster delivery.
- The targets for Swiggy are maximum people between the age of 20 to 30 years, college students, working professionals, Crowd which is living far from their hometown.
- Swiggy has also launched super Swiggy whose aims is to give more discounts to people with free delivery from all the restaurants from the city.

3 Implementation of Business Intelligence and Business Analytic system

- The company is to reach more cities across India and for this need to happen it require a strong Application or a great web platform.
- It minimises the delivery and completes the expectations of user.
- Technology is upgraded on daily basis in order to repair the technical glitches as soon as possible.
- It is trying to help to reach to out many people from different cities, to make their life easy.

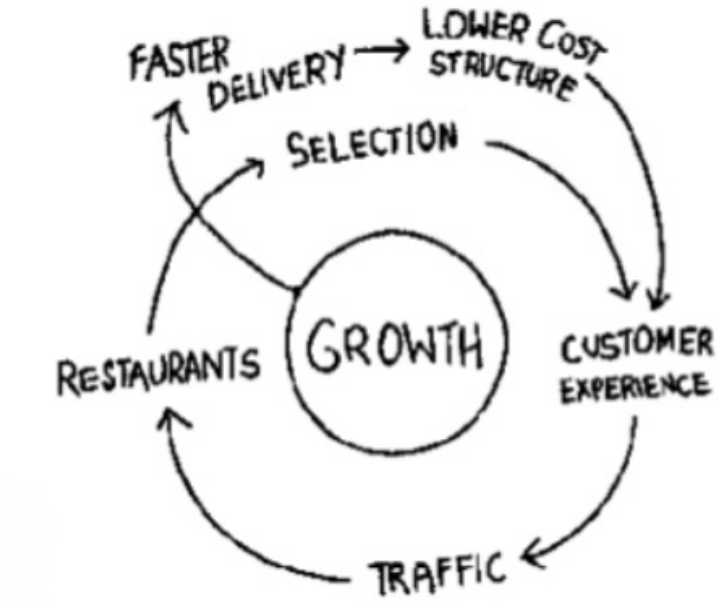
Current details as per the year



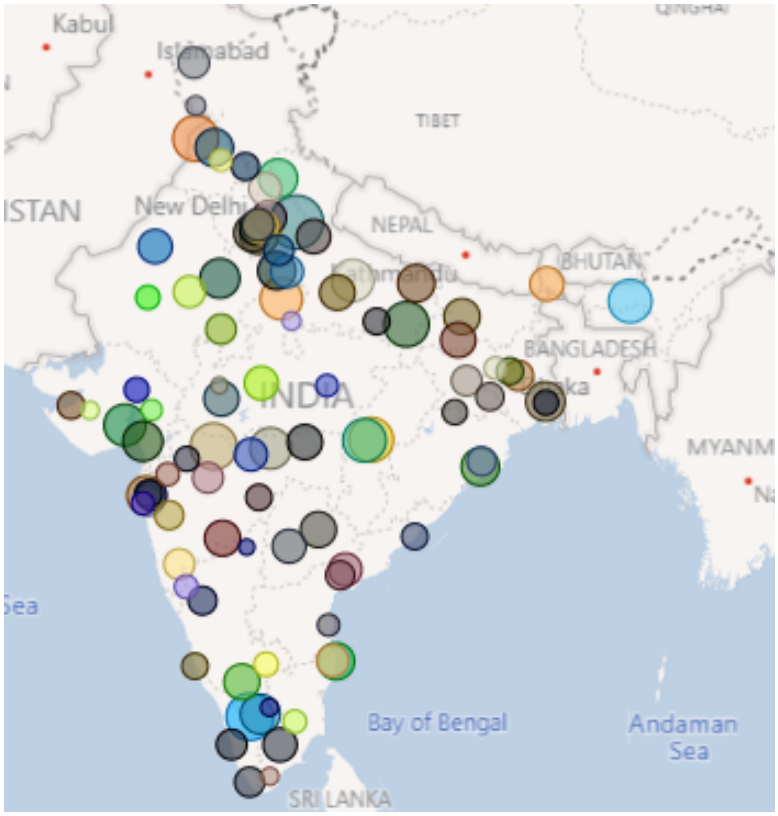
Business in 2019

Delivery		Dining Out		Sustainability	
REVENUE		REVENUE		REVENUE	
FY19	$155m	FY19	$49m	FY19	$2m
FY18	$38m	FY18	$30m	FY18	$0

Swiggy Business Model



City covered by Swiggy in India



4 Balance Scorecard:

Balance scorecard is planning performance measure mainly managed by the managers of the company to keep an eye on the task performed by the employee within his circle and to understand reactions of their task. This report is being used by the management of that company, mostly this management team is responsible for the implementation of the strategies that they have decided and to retrieve some useful insights which eventually going to help in growth of the business.

4.1 **Learning and Growth** is related to new training and how one can get the new knowledge to improve themselves round the clock. This includes sometimes research and development in order to keep their growth. Also, it is important to transfer the knowledge from one team or person to others.

4.2 **Internal Process** is related to how one can increase performance within the organization. How one can evaluate their product. To get hands on lasted technology, giving quick reply to users queries operations within the organization gets examined.

4.3 **Customers** and their view are collected to examine their satisfaction. In our business, customer satisfaction should have utmost priority. and its like they are everything for any business. They have to satisfy with our price, time of delivery and etc. Here in Swiggy, we take their feedback regularly on each order to understand how we are doing and where we can improve our selves.

4.4 **Financial** objective is managing all financial metrices, such as sales, estimated cost, additional expenditure, venture capital etc. Need to communicate with the stakeholder's time to time in order to keep them posted. This is phase of the balance scorecard is very important in to make business successful.

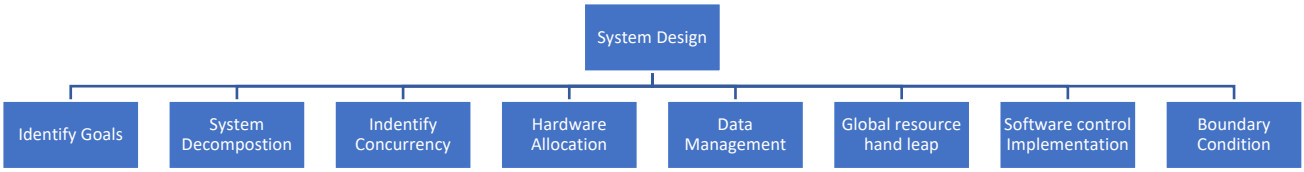
5 System Design :

Few system design features of Swiggy would be

- Web or App service.
- Dashboard is used to analyse overall performance of the system.
- Data is collected by using Analytics and reporting of customers, delivery professional, probablity, performance calculations etc.
- Delivery professional: - This system is specially designed for the delivery executives where they will get information about the trip, navigation, shortest route for delivery, ability to contact user or restaurant and option to start/end the trip.
- Some characteristics are added for the customer like registering an account using their account and the user can search the option through which he/she can select the restaurant.

design is a process which is used for determining the architecture, data of the system, the interfaces which is used, and the specific content. It is also known as a period of development which is decided that how the system will be implemented. System design can also be observed as application of system theory to development. In this period, the implementation of the solution and the use of the system in future are perfectly documented according to the requirements. However, the complete problem statement is divided into small modules and then the solution of the small modules is integrated separately as a complete solution.

System design layout



5.1 System Design Input:

- Statement of work
- Requirement of plan
- Situation Analysis
- Proposed System

5.2 System Design Output:

- Infrastructure changes
- Data Schema
- Metadata to define the tables
- A prototype for the proposed system

5.3 Types of design systems:

5.3.1 Logical Design:

Input, Output and the abstract representation is so related to the Logical Design of the system. Databases, input and output is explained in all format which meet the requirements. The user needs in detail determines the information model in and out of system which is specified by the system analyst while preparing the logical design of the system.

5.3.2 Physical Design:

The input and the output of the system is relatable to the physical design. The focus of the data is mostly on the data which is entered in the system, processed and the output. This model helps in producing the system which defines the specification exactly what the system does. It is mostly focused on the process design, data design and the interface design. Following are the steps carried out in the physical design process:

- Designing the database
- Implementing the planning the system
- Specifying new software and hardware
- Observing the costs, benefits

5.3.3 Architectural Design:

The design of this system architecture which is focused by a method also known as high level design. The behaviour and the structure are described by this design. It also explains the relationship between various development process.

5.3.4 Conceptual Data Modelling:

All major entities and the relationship are included in the organizational data which is represented by the data modelling. This data model is developed by the system analyst for the system which is used to support scope and the requirement.

Capturing the meaning of the data is the aim of the conceptual data modelling. In the current period, mostly all the organization today use this model by using E-R model for representing the meaning the data.

6 Database Design:

For building the completely working business analysis system for Swiggy Organisation. The available data is extracted from the official company website. All the different dataset is united with the help of columns as:

6.1 Customer Details:

This dataset contains numerous customer details of the order on which it is going to be delivered. This dataset has columns like first name, last name, age, street address, email address, postal code, contact number. This data can be visualised to observe the greatest number of the order are been placed from which region.

6.2 Delivery Table:

This dataset consists of the data which is related to the order received by the customer, deliveries completed successfully and the rating of the delivery. It contains columns like address, food cost, restaurant name, restaurant Id, region and most ordered food. This dataset is used to show the visualisation of the rating of delivery, price of food and the statistics of the food ordered.

6.3 Sales:

This dataset contains various sales results for the financial record about the payment done by the customers and the gross income of the organisation. The columns mentioned in

this data consists of customer Id, gross income, payment method, order price, restaurant Id, invoice Id. This data can also be used to visualise gross margin which will be used for showing the organisation's progress and performance.

6.4 Delivery Data:

This Dataset contains information which is related to the regions and the restaurant. This data can be visualised by looking at the regions and the food which is ordered from the restaurant depending on the area. It consists of columns delivery Id, delivery name, cancelled delivery, completed delivery, regions. From this dataset we can also analyse the number of ordered cancelled and completed depending on the area and restaurant.

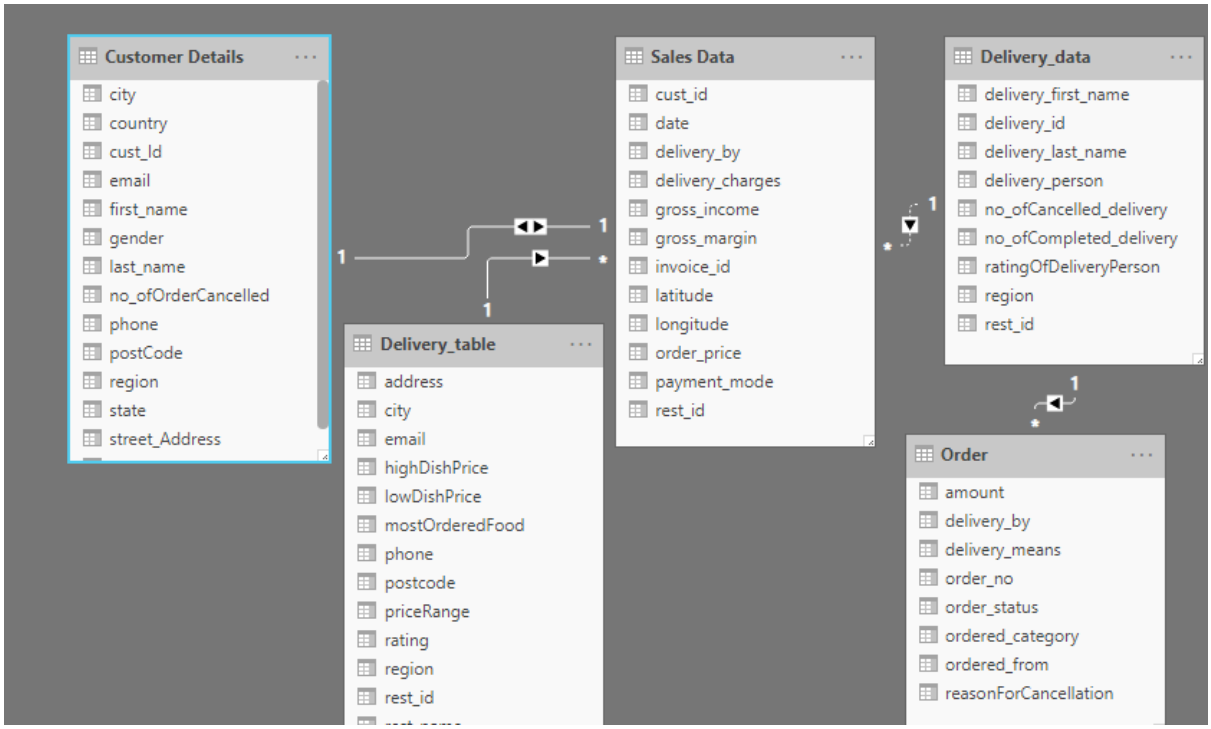
6.5 Orders:

This dataset includes the medium of the delivery which is related to the time of delivery and reason for cancellation. It contains columns like amount of orders, delivery means, order number, order category and reason of cancellation. On this dataset we can do visualisation depending on the amount of order placed and the category of the order placed.

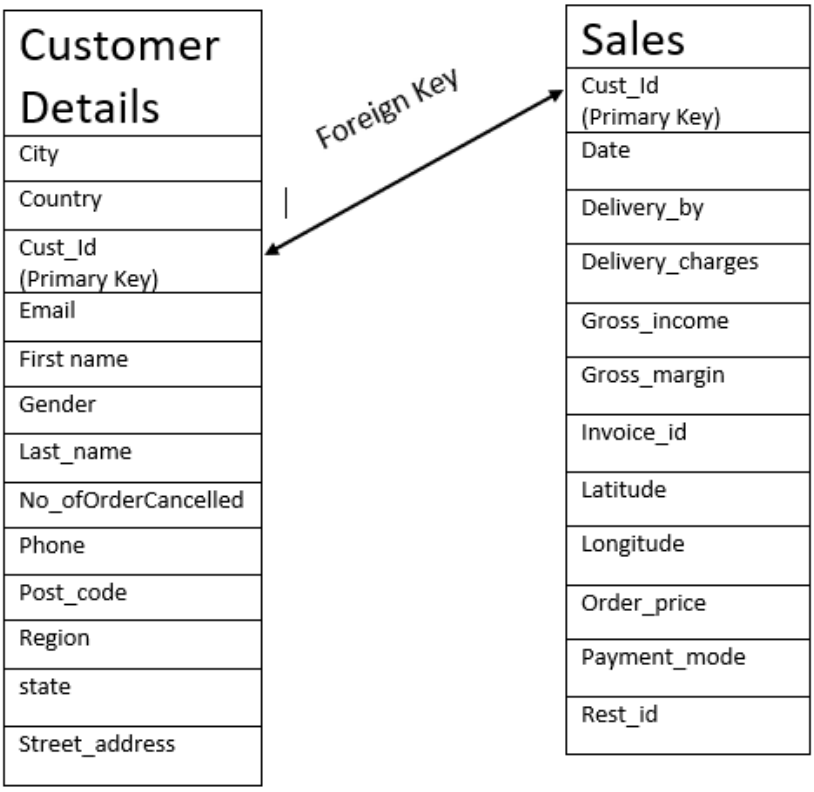
7 Entity Relationship Diagram:

An entity can be considered as a single object, a person, any place or an item which is in database administration. A data administrator is able to view all the relationship between several entities which is allowed by a design tool which is known as entity relationship diagram (ERD). In database administration, specifically particular things are considered for which we can store and capture data. There is no point in creating an entity, if the data is not stored in the database.

We can say that there are multiple number of reasons for business entity concept, which consist of business entity that are separated by tax. It can used for calculating performance of finance and financial position of an entity. It is more important for an organisation to determine the different amount of payment to multiple owners.

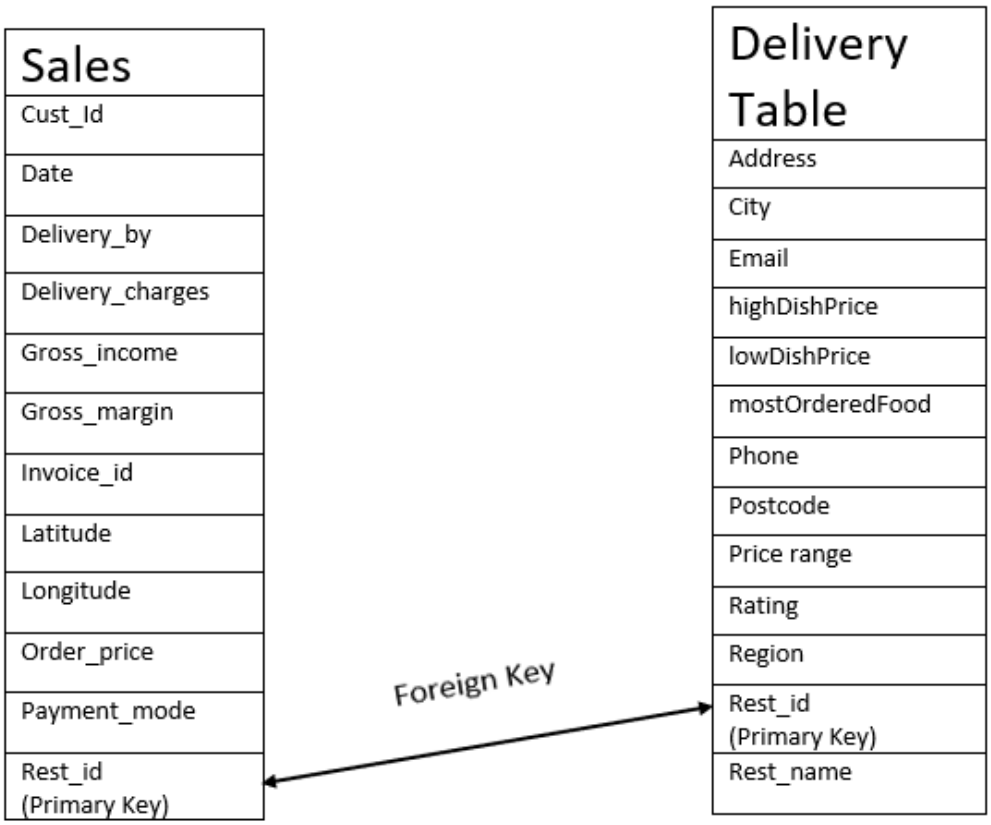


The above entity diagram describes the entity relationship of Swiggy dataset. In this various entity are linked together by considering the method of Relational Database management. By looking at our design, we have used Primary and Foreign key with five different datasets.

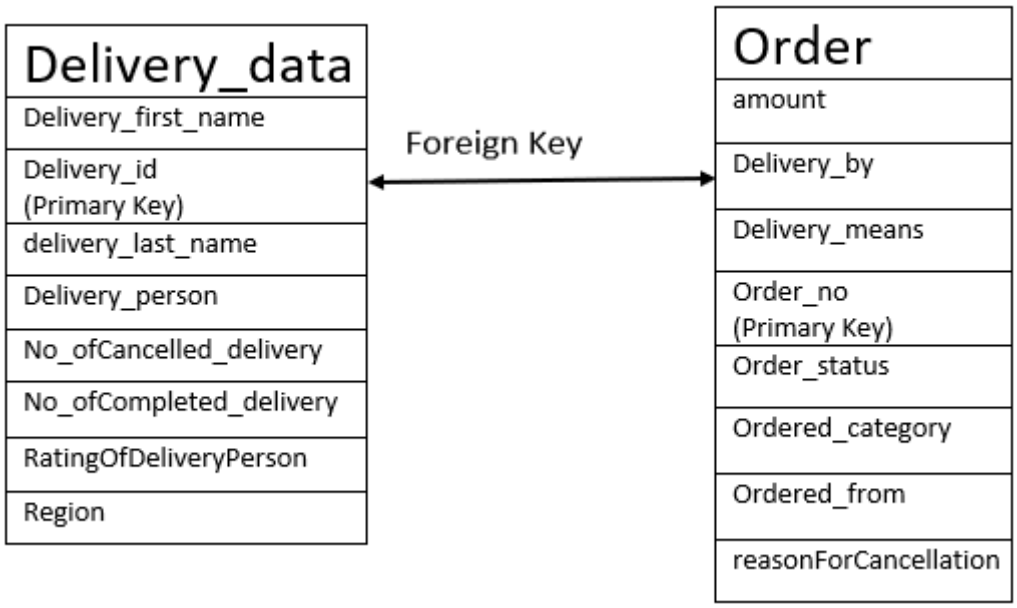


A foreign key is considered as column or group of columns which is used for showing the link between two different tables. While a primary key is used in relational data base which has a unique record. It is also called as 'Primary Keyword'. The unique symbol can be considered as contact number, license number or a building number. There should be one and only one primary key in a relational database.

The primary key of different table is referenced by the foreign key which behaves as a cross-reference among tables. The Customer dataset is related to the Sales dataset by considering a foreign key by name 'Customer_Id'. The primary key for the sales dataset is considered as 'Invoice_Id' but the primary key for the customer dataset will remain the same as 'Customer_Id'. Ideally, there should have been one to many entities present in this data but there is only one to one relation between sales dataset and customer dataset but, the customer dataset also consists of one to one relation.



From above diagram, 'Restaurant _Id' is used showing the link between the Sales diagram and the Restaurant diagram. Restaurant_Id is a primary key for its database but, it is used as a foreign key for the above relationship. As we can see, there is one to many relationships is observed within the sales and the restaurant dataset. By using the Sales record, we can easily fetch the restaurants record and therefore, one to many relationships is present among them.



From the above dataset, we can see that the delivery agent which has a relation with the order dataset from the information as 'Delivery_Id' as a foreign key. If we look carefully at the entity, we can observe that the 'Delivery_id' is the primary key of the delivery dataset and order_no is the primary key for the order dataset.

But, 'Delivery_id' is the Primary Key of Delivery dataset and 'Order_no.' is the Primary Key for the Order dataset.

8 Analytics Requirements:

Reporting is the main part of the process. It is a process which consists of discovery, interpretation and communication of the various patterns observed in data. It allows us to observe and implement the functions present internally for investing the program and performance, to fetch the output and the documents. In other words, the connection within the data and the decision made by the organisation can be interpreted by the analytics. To carry out the analysis from the available data is the most prominent requirement. It is most valuable in the sector where recording of information is done, programming is performed, operations are carried out on research for the quality performance from the available data.

- **Business Requirements:** This is the most important requirement that is collected from the business or from the client side and makes an important deciding the further plan or step of the current project. Stakeholder is also called as business requirements. The specifications explain the characteristics of the system from the point of the system's end. The best way to deliver the project to the client is by products, systems, software and completing the requirements.

For example, Swiggy took a decision to expand its business by delivering orders in different region. The requirement of the business is totally dependent on the market and the customers.

- **Architectural and Design requirements:** Generally, is also called as describing buildings and other different structures. All the requirements of the structure and the design are concerned for implementation for business process.

  For example, the architectural and the design model requirements for Swiggy model consisting of database and ER diagram.

- **System and Integration requirements:** Requirements of this data is related to the description of every requirements. The source of information which gives the detailed information about the business process can be in any form.

  For example, this system consists of CRM and the workflow is a part of system and the business process.

Reference:

[1] Swiggy Food Delivery and Food Tech company Start-up: [Online] https://www.businesswire.com/news/home/20190501005495/en/2019-Success-Case-Study-Swiggy-Food-Delivery

[2] Balance Scorecard [Online] https://www.investopedia.com/terms/b/balancedscorecard.asp