BUSINESS INTELLIGENCE AND BUSINESS ANALYSIS

PROJECT IMPLEMENTATION REPORT

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Contents

## Development Process:

Data Creation

Based on our specification document we started implementation phase of this project. Initially we identified the core tables and its relationship with the derived tables (Please refer ER diagram mentioned in project specification doc)

Post that data were mocked , using various techniques :-

- mockaroo.com :- Data like Id , Date, Names, Locations were replicated, which are random in nature .
- Python Pandas :- Logically connected data were explored and data is replicated as per the inferences
- Excel :- Final modelling of the data was performed in Excel . before loading the same in Power BI .
- Power BI :- New measure , formulas , columns were created , wherever necessary .

Implementation:-
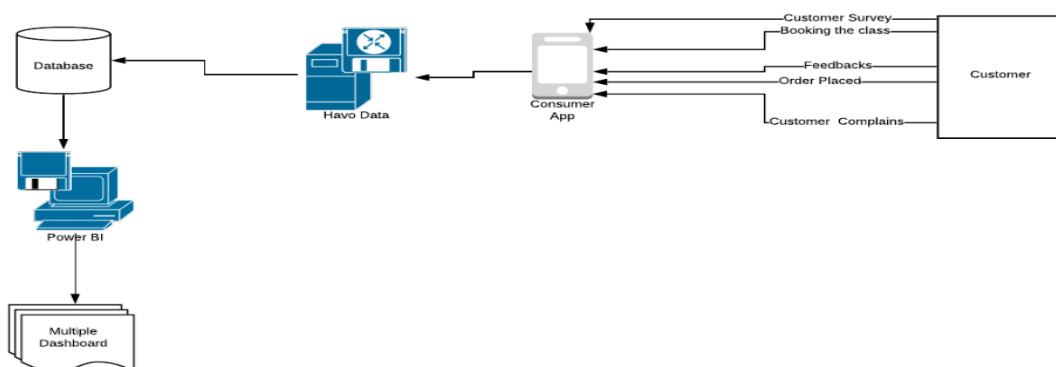
Cure fit already have many platforms which are capturing and managing their raw data and updating it in data repository.

Mobile Application: Mobile app is primary data capturing tool. It has few predefined data (details are captured in "system Design" section of Project specification report) And few are generated once customer is acquired by company (details are captured in "data Capture "section of Project specification report).

Other data are also captured such as, various marketing campaigns and surveys.
These data are collected into central Data Warehouse through an ETL tool. Our data analytics tool will get usable data in the form of excel/csv format on which different reports and dashboard are built.

Cult fit uses Amazon Redshift as Data Warehouse and Hevo-data as ETL tool, so our designed system collects data from this warehouse and do the required analysis and publish it on power BI.

Benefits of Solution :

Under performing products :- This can be nightmare for the sales team as a lot of money is already been spent on sourcing , buying and marketing of the product and still it's not fetching any output . BI can help us in easily identifying these products quickly , so that other optimization can be performed to boost the sales , profit and reduce negative customer reviews .

Overcrowding class :- Managing an overcrowded slot can be too difficult , as it can result space issue , equipment's to customer ratio , claustrophobic experience to customers etc . BI helps in checking the maximum capacity of the class against total number of customers registered for it .

False class booking :- Customers often register for their favourite class and skip the same , due to laziness or other prior commitments . Since their slots are already booked , other users cannot attend the same class , even if the slots are available . Through BI we can identify, if this kind of trend is seen in a class/customer and prevent the same .

Improving Inventory management :- Inventory is lifeblood in supply chain . Maintaining a balance between Supply and Demand is the key for any Institution . Little inventory can cause 'out of stock' while excess of inventory is can cause more cost in transportation , storage and labour . Through BI we achieve a perfect balance of storage , supply and demand .

Addressing to Customer complaints :- A customer raises a complaint , if their purchase doesn't meet the expected level . These complaints are usually genuine, critical and must be heard to . Through BI we are capturing the type of complaints and its frequency , so that the issues can be rectified with minimal turnaround time and baselined in the upcoming products .

Listening to feedbacks :- Feedbacks are invaluable for any company to measure the satisfaction level of the customer . This helps in keeping the customer retention percentage high with increase in customer turnover . Through BI , we are tracking the feedbacks and mitigating the same with proper measures

Type of Object Used :-

Name	Type	Remarks
Scarce_Flag	Measure	Sum of Scarcity Flag
Availability_Flag	Measure	Sum of Availability Flag
	Matrix	For viewing Inventory availability via pivot
	Filter	For viewing top 5 used products
Count_product_code	Count	Count the total products available
Gross_sales	Measure	Total Sales of all product Types
Age_category	Measure	Converting age into bins
Sale_Consultancy	Measure	Sum of sales in Consultancy products
Sale_services	Measure	Sum of sales of various services
sale_workout	Measure	Sum of workout sales
sale_food	Measure	same of food and supplement products
	Lookup value	VLOOKUP to find the match in the main tables

Screenshots of reports :-

Sales Report : -
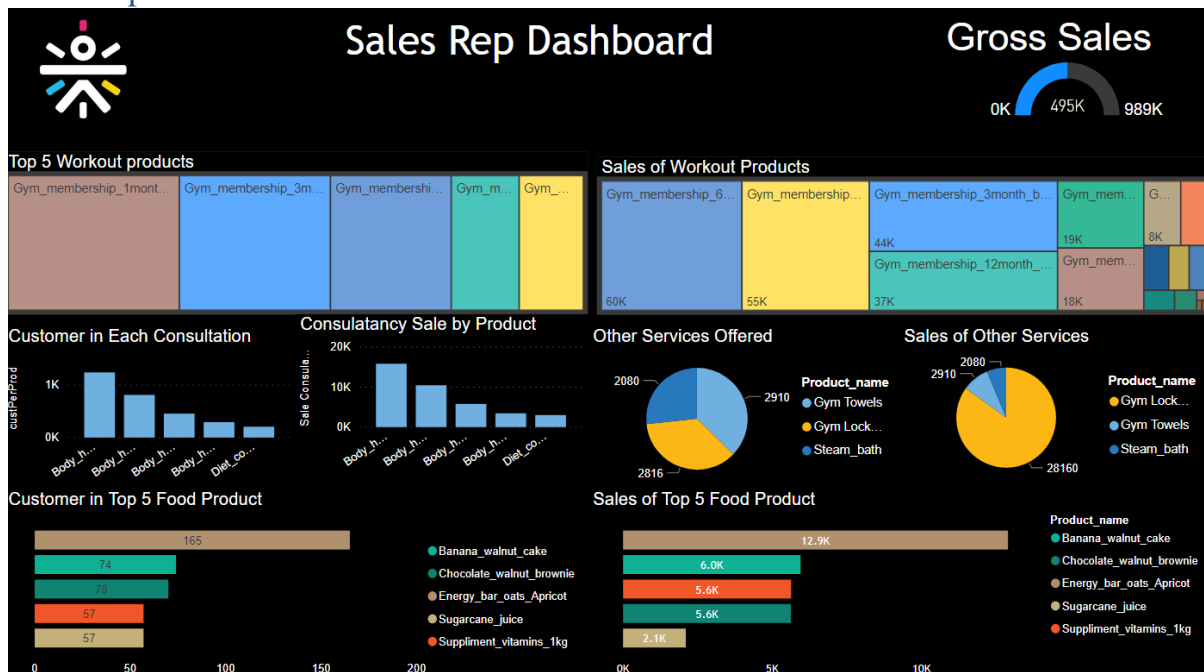
Above is a Sales Representative dashboard , which shows the products that are being used and the sales associated with it .

There are four type of products that are being offered y the company are as follows :-

1. Workout Products
2. Consultation product
3. Other services
4. Food and supplement products

- Under the Gross sales section , we are capturing the total sales made by the company over the time period . From the dashboard , it is evident that the company has made a total sale of 495KEuro .
- In the next section , we can view "Top five workout products" -Gym membership 1 month basic , Gym membership 3 month basic, Gym membership 6 month basic, Gym membership 12 month corporate, Gym membership 12 months pro . On to its right , we can view its corresponding sales associated with it .
- Under "Customer in each consultation" , we can view the number of people subscribing for each consultation like "body health check-up above 40yrs Male", "health check-up below 40 Female", "Overall diet check-up" .And to its right , we can view the sales associated to each of this consultations , in terms of numbers .
- Under "Other services offered" , and "Sales of Other Services" , we care capturing the number of customers opting for the other basic services like Gym towels, Lockers, Steam baths and the sale collected from these services respectively .
- The company also offers a lot of nutritious Food product , the consumption of top 5 frequently sold products are captured in the bottom left . On the bottom right, we are capturing the sales associated to these top 5 products in numbers .
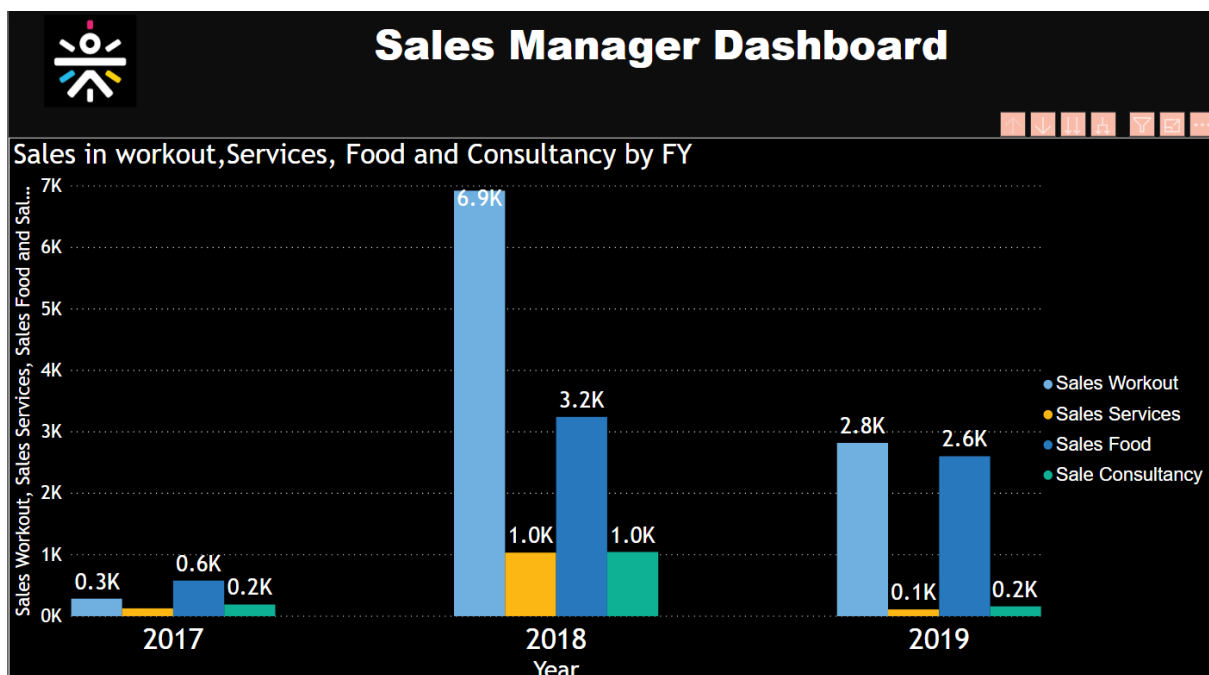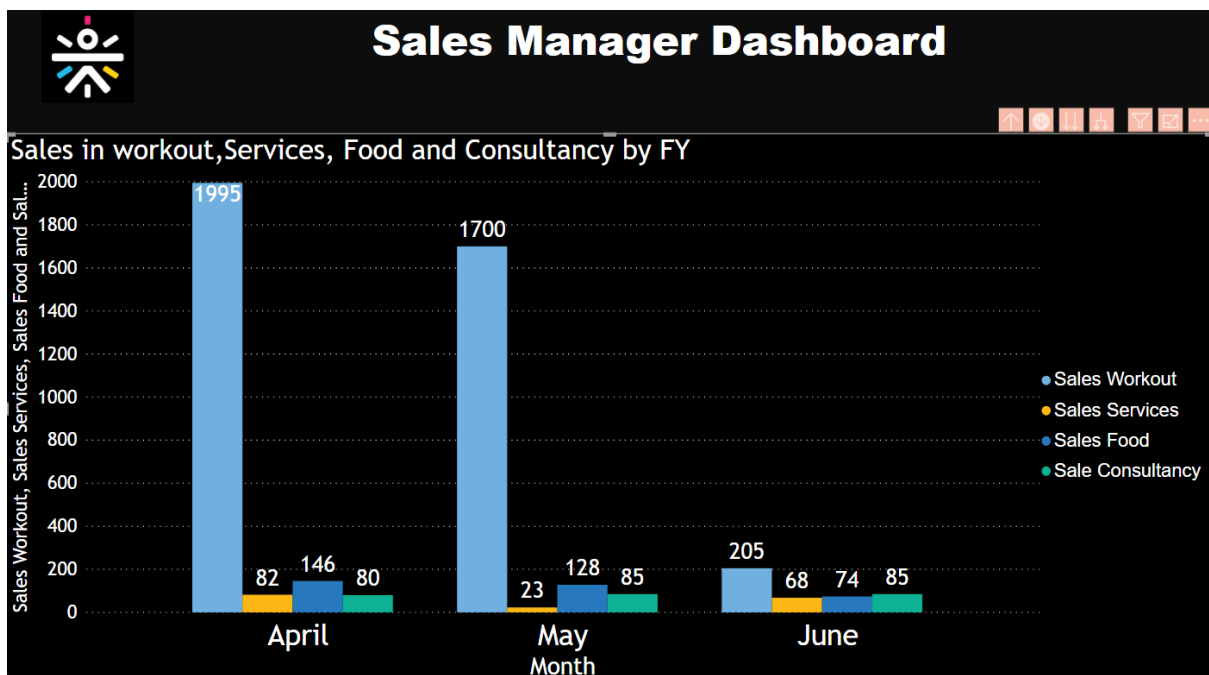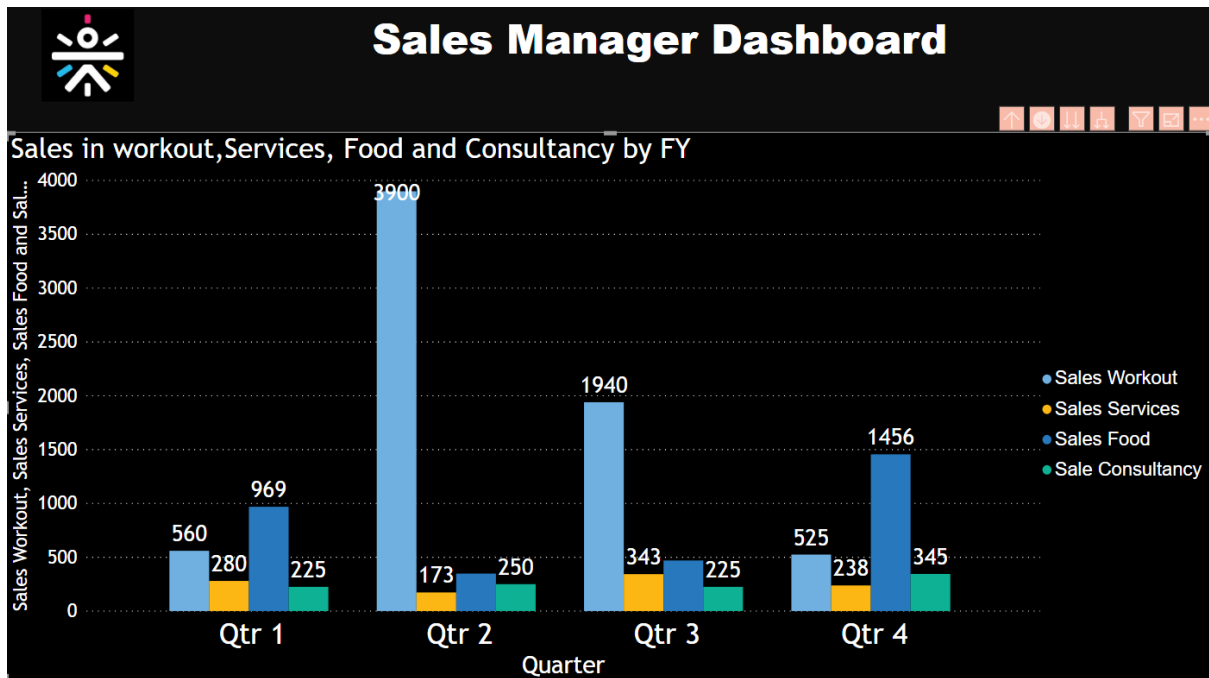
- In this Dashboard , we have captured the data sales from the last quarter 2017 to the first quarter of 2019. The time frame chosen is as per the European financial year (Jan-Dec) .
- In other words, sales for Workout, Consultancy , Food and supplement , Other services were separately collected and are shown on yearly basis .
- The same has a **drilldown** feature , which enables a user to drill down on a particular year to check the sales in each quarter , month and days . The snapshots are provided above .

Survey Report : -
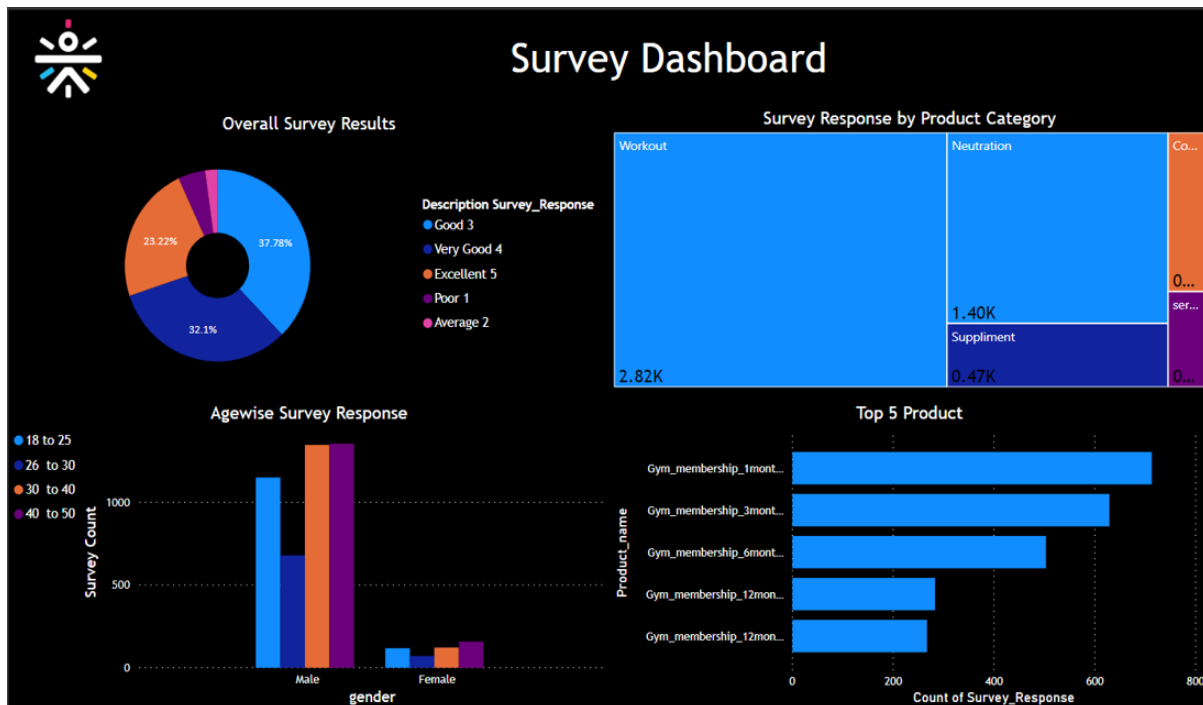
Provided dashboard explains the Survey analysis of the company, this chart depicts the inclusive survey which is provided by the existing customers.

- The survey response taken for all product provided by the company.
- This dashboard explains four different part of the survey like, 'Overall Survey', 'Age wise Survey Response', 'Survey Response by product category' and 'Top 5 Product'.
- These four different charts give the outlook on which bases the survey was conducted, what are the response of that survey, which products are good in customers perspective, which product need improvement, which product is popular among different age group, what is the count of survey per product.
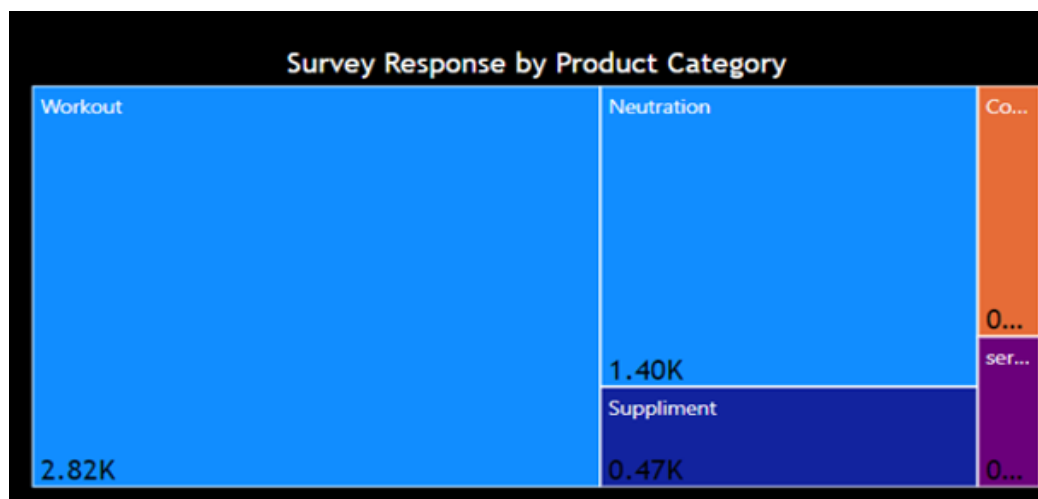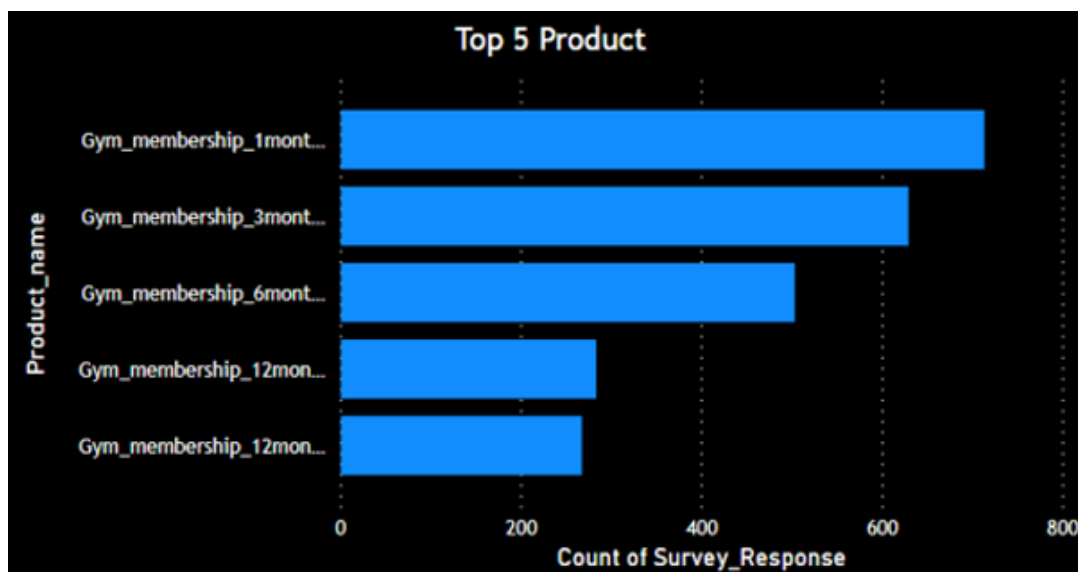

- The above chart provides the count of survey on different product category. The service provided on different categories like Workout, Nutrition, Supplement, Consultation.
- By this report we can analyse that 'Workout' product got large number of surveys followed by 'Nutrition' and 'Supplement'.

- In the other hand, chart explains 'Consultation' and 'Service' got a smaller number of survey when compared to other three product categories.
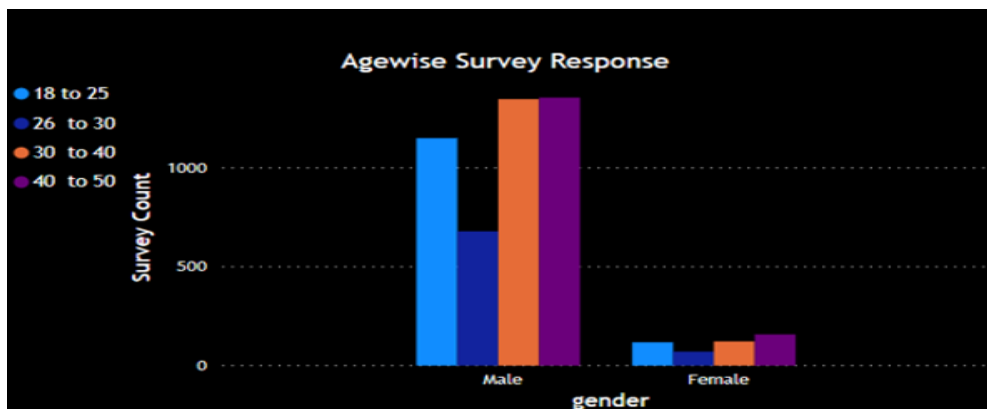
- This is bar chart depict the survey response based on different age group. This chart explains three main things
  - Gender wise survey
  - Age group survey
  - Survey given for different product categories
- By analysing the chart, we can say that large number of surveys is given from male when compared to female customers.
- In male, the age group of 30-40 and 40- 50 gave more survey on provided products and age group of 26-30 gave comparatively less survey than other age groups.
- In female, the survey provided by all age group people is slightly similar.

- This chart provides the information regarding the most popular product among the customers. The chart is displaying the 'Top 5 Product'.

- The products are arranged in decreasing order based on count of survey provided by the existing customer.
- The top products are Gym_membership_1month_basic, Gym_membership_3month_basic, Gym_membership_6month_basic, Gym_membership_12month_coporate, Gym_membership_12month_pro.
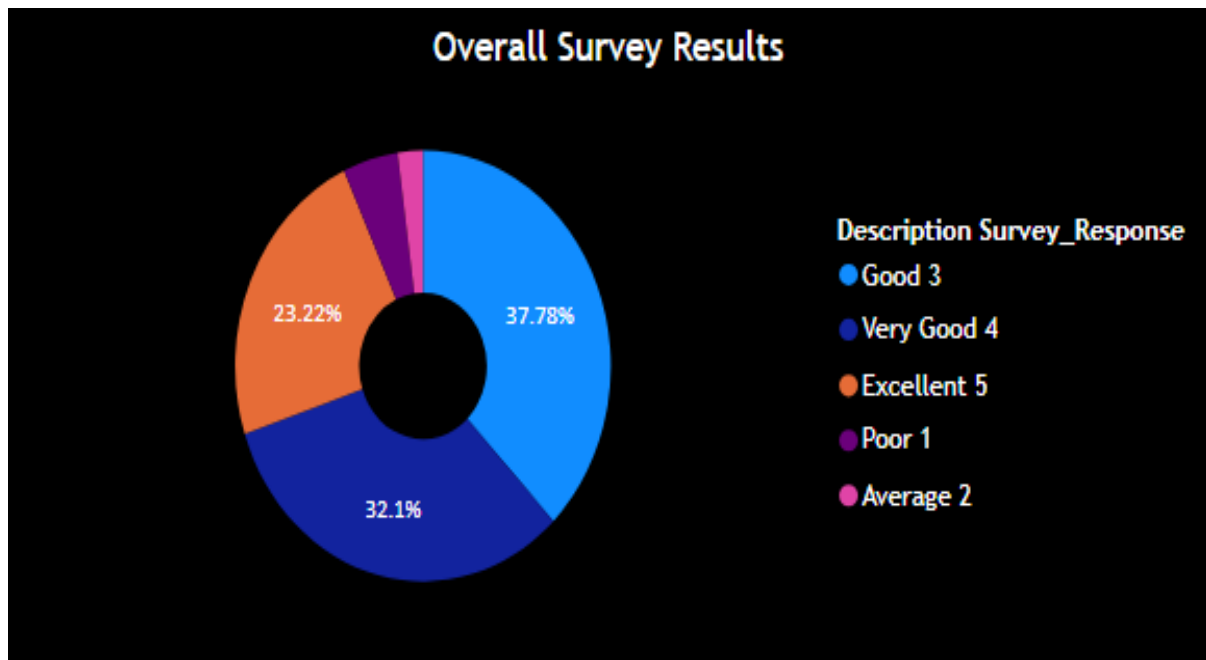
- This graph explains the complete survey, according to this pie chart we can say large proportion of the people gave 'good' and 'Very good' survey for the different products.

 In the other side, the percentage of customers gave 'poor' survey of the product is very less.

Inventory Report:

Our Proposed Inventory Report will cover every centre and every product that needs an inventory backup.

As a business rule, this report will be generated on weekly basis, which will assess the current stock and provide the conclusion in term of whether current number needs to be increased or decreased or it should remain same as previous week.

It will ensure that there is no spill over and scarcity of any stock.

Centre_id	Item_type	Item_Name	Count	scarce_Flag	Count of Availability_Flag	Count	scarce_Flag	Count of Availability_Flag	Count	scarce_Flag	Count of Avail...
104	Nutritions	Banana_walnut_cake	425	0	5	350	0	5	3475	0	40
		Chocolate_walnut_brownie	425	0	5	350	0	5	3475	0	40
		Cinnamon_coconut_cake	425	0	5	350	0	5	3475	0	40
		dark_chocolate_brownie	425	0	5	350	0	5	3475	0	40
		dark_truffle_tea_cake	425	0	5	350	0	5	3475	0	40
		Dates_tea_cake	425	0	5	350	0	5	3475	0	40
		Fruit_pop_oatmeal_bowl	425	0	5	350	0	5	3475	1	40
		Greek Yogart	425	0	5	350	0	5	3475	0	40
		Greek_yogart_strawberry	425	0	5	350	0	5	3475	0	40
		Lemon_tea_cake	425	0	5	350	0	5	3475	1	40
		Nutty_chocolate_brownie	425	0	5	350	0	5	3475	0	40
		Nutty_dates_pudding	425	0	5	350	0	5	3475	0	40
		Protein_Peanut_brownie	425	0	5	350	0	5	3475	0	40
		Total	5525	0	65	4550	0	65	45175	2	520
	Toiletries	Body Wash	40	1	5	30	0	5	330	1	40
		Brush	15	0	5	15	0	5	120	0	40
		Cleaner	25	0	5	25	0	5	200	0	40
		Hand Towel	85	0	5	75	0	5	705	0	40
		Hand Wash	25	0	5	15	0	5	180	14	40
		Mop	25	0	5	25	0	5	200	0	40
		Mop Bucket	25	0	5	25	0	5	200	0	40
		Room Freshner	25	0	5	15	0	5	180	0	40
		Sanitizer	60	0	5	50	0	5	505	2	40
		Shampoo	40	0	5	30	0	5	330	2	40
		Tissue	85	0	5	75	0	5	705	16	40
		Urinal Cakes	40	1	5	35	0	5	340	2	40
		Urinal Cleaner	25	0	5	15	0	5	180	0	40

Various visualization can be done on this, we have built following Dashboard for Centre–104


- Availability Flag- When current stock is finished but can be refilled from centre's existing stock.
- Scarce Flag- when product stock hit the Scarce flag that means amount is not enough to continue smooth functioning of facility.
- From this one can find which item are in more demand and if there is any trend according to timeslots. In our case Slot 1,2,3 have received the maximum flags this can be interpreted that at center-104 morning batches are in more demand.
- Product wise Toiletries item have more flags mean in next week we must increase these items stock at center-104 from current week and central inventory will be notified for the same.
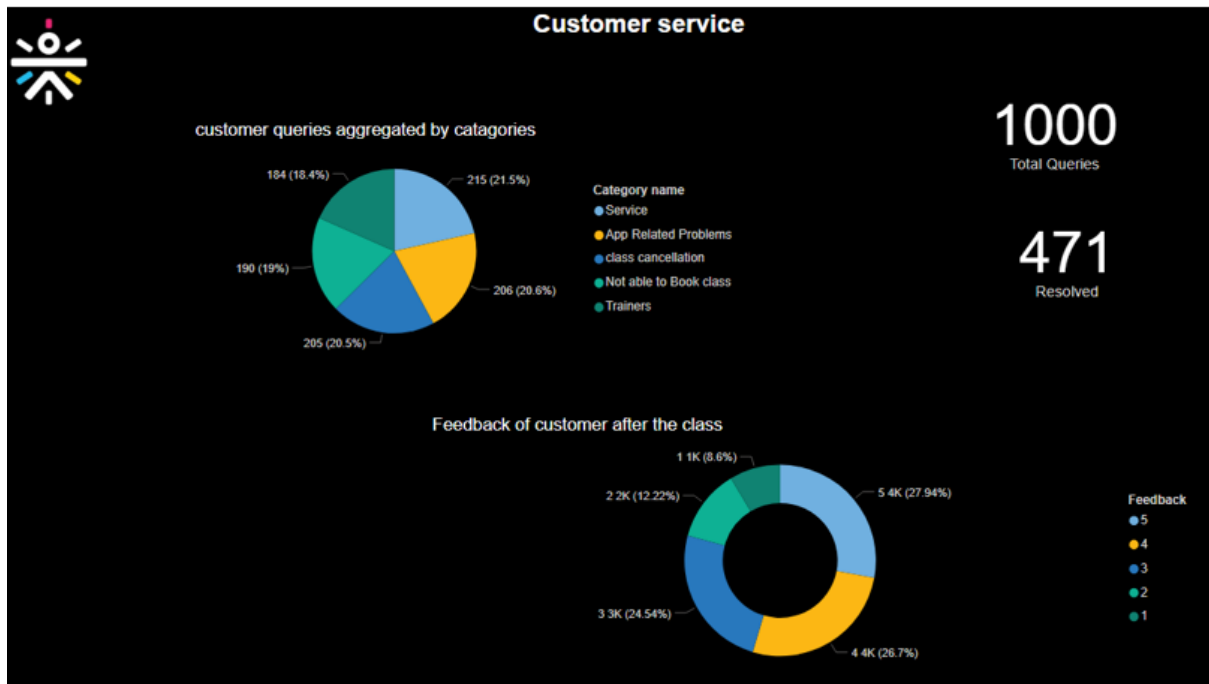
Customer Service Report : -
One of the most important aspect of any service-based industry is customer service and being a fitness company, all the revenue is directly associated to the customer base. Customer service portray an important role when it comes the customer acquisition and customer retention. The members which are pleased with the service will ask their friends, family and co-workers to take up the membership.

What a customer wants is a million-dollar question and the answer to it is, Data. With the help of BI techniques, and understanding the daily patterns of the customer, we could take the customer service one step ahead of the competition.
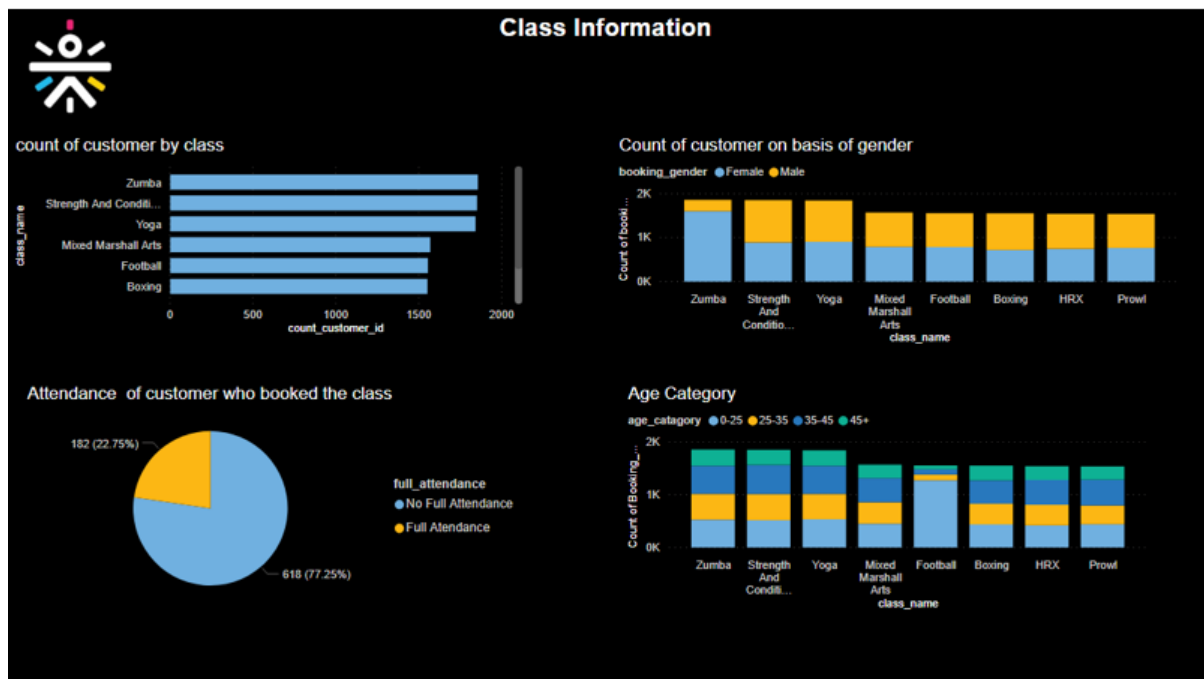
Timeslot table, booking table and customer table data have been visualized in this dashboard, below are the details of the reports used.

- User can have a real time access to check the count of members coming to the different class from **count of customer by class** report, which makes it easier to understand the classes which are popular among the members.
- **Count of customers on basis of gender** would help the users to understand which classes are popular among specific gender, as with above histogram we could infer that Zumba class is more popular amongst the female members in a centre.
- Count of Attendance of customer who booked the class but didn't attended the class could be visualized by the report **attendance of customer who booked the class**.
- Also, the user would be able to see the age category of the customers segregated by the class which they attend. By looking at the report **age category** user can make out that football class is attended by the customers who are in the age group 0-25.

Customer_service and complain_ctg table are used in this dashboard, below are the details.

- User will be able to see the customer queries divided in categories; it would be helpful to understand what the main problems are faced by the customer.
- After the end of every class the customer will be able to give feedback to the trainer who took the class, user will be able to see the feedbacks given by the customer.
- User would also be able to see the total queries and resolved queries in the dashboard.

This dashboard uses customer_profile table for the visualization below are the details:

- User would be able to see how many customers are regular or irregular to the class through **types of customer** report.
- Members who joined the gym have a goal, either they want to lose weight or gain weight(muscles) so, user would be able to see in total how many people want to lose or gain weight from **division of customers on the basis of goals** resolved.
- User would also be able to see the weight and BMI of all the customers through histogram **count of customer on basis of weight** and **division of customer on basis of goal** report.
- when the customer uses the weighing machine in any of the centres. The difference of new weight to the previous weight, is stored and used to check the progress of the customer using **progress of customer taking weight as measure** report.