MOVING BEYOND TRADITIONAL ANALYTICS

Project report submitted in partial fulfilment of the requirement for the degree of Bachelor of Technology

in

INFORMATION TECHNOLOGY

By

Divyansh Piplani -151468

Under the supervision of

(Ms. Kriti Singh, Product Sales Head ,ClickLabs Pvt/ Ltd.)

to

Department of Computer Science & Engineering and Information Technology

Jaypee University of Information Technology Waknaghat, Solan-173234, Himachal Pradesh

CERTIFICATE

I hereby declare that the work presented in this report entitled **"MOVING BEYOND TRADITIONAL ANALYTICS"** in partial fulfilment of the requirements for the award of the degree of **Bachelor of Technology** in **Computer Science and Engineering/Information Technology** submitted in the department of Computer Science & Engineering and Information Technology**,** Jaypee University of Information Technology Waknaghat is an authentic record of my own work carried out over a period from February to May 2019 under the supervision of **Ms. kriti Singh, Product Sales Head (Clicklabs Pvt. Ltd).**

The matter embodied in the report has not been submitted for the award of any other degree or diploma.

Divyansh Piplani, 151468

This is to certify that the above statement made by the candidate is true to the best of my knowledge.

Ms. Kriti Singh	Mr. Tushar Bansal
Product Sales Head	General Manager
Clicklabs Pvt. Ltd	ClickLabs Pvt Ltd
Dated-21/05/2019	Dated-21/05/2019

ACKNOWLEDGEMENT

It is with profound gratitude that I express our deep indebtedness to our supervisors,**Ms. Kriti Singh (Product Sales Head, ClickLabs, Pvt. Ltd.) and Mr. Tushar Bansal (General Manager, ClickLabs Pvt. Ltd.)** without whose support and guidance it would not have been possible for us to successfully implement the project. Their readiness for consultation at all the times, their educative comments, their concern and assistance even with practical things have been invaluable to us.

I am also highly grateful to all other staff members of the firm, ClickLabs Pvt. Ltd. for providing us the necessary opportunities for the completion of our project and owe our debt to them for their invaluable help and guidance.

Divyansh Piplani

Intern | Team-KATO

+91 8629010553

Table of contents

ABSTRACT

JUNGLEWORKS-KATO is an Advanced Analytics Platform that offers Data Analytics and generates Business Intelligence Reports.The Tool is capable of blending data from multiple data sources , provides innumerable type of data visualizations and allows the user to generate reports themselves or pick already existing ones as per demand.

KATO assists businesses of any model to gain a visual paradigm of various Key Performance Indicators and monitor performance metrics to achieve **Customer Retention** & **Business Intelligence**.

Section 1: Introduction & Background

About JungleWorks

JungleWorks is a power-packed platform to help businesses on the move. We are market leaders with 8 years of investment in delivering mobility solutions to entrepreneurs and enterprises looking to provide an omnichannel experience to their customers. Our products have been designed to simplify technology for you while you focus on expanding your business. During the course, we have also created significant IP - code blocks, processes, etc that help us put together winning value propositions for engagements in specific domains. We are an ISO 9001-2015 certified and ISO 20000 /SEI CMM level 3 certified company.

To give a bird's eye view of JungleWorks, we are organized as follows:

Juggernaut - On-Demand App Development

Tookan - Delivery Management

Fugu - Simplify communication for efficient teamwork

Yelo - Taking your Businesses Online

Kato - A powerful GeoSpatial Analytics Platform

Hippo - Smart Customer Communication Platform

Bulbul - AI Powered Intelligent Sales CRM

Flightmap - Smart Route Planner

SECTION 2

Moving Beyond Traditional Analytics

In a recent global survey by PWC, more than 2,100 executives shared their next big decision and how decision-making needs to improve by 2020. About 61% of the survey audience said that they would rely on data analysis more and less on intuition. Also, the companies that are not data-driven are at the risk of being left behind by competitors who are analytics-driven. Highly data-driven companies are significantly changing how they make decisions, improve operations, or use analytics to deliver products and services.

This article will delve into the importance of becoming a data-driven organization. The aspect in focus is understanding how it can be adopted by a “Medium and Small Scale Enterprise” (MSME) for increasing revenue.

Although data analytics can be used to resolve the biggest queries of this planet, however, in this article we would take you through understanding the relevance of analytics in day to day handling of business

1. **How to accomplish more with less?**
2. **Is discount a random figure or a well thought out strategy?**
3. **How to transform the worst days of my business into days for driving smart sales?**
4. **Who are my best customers? Where are they based? What is the best way to reach them out?**
5. **How to know what is working for me and what is not?**
6. **How can I drive customer acquisition and retention on my terms?**

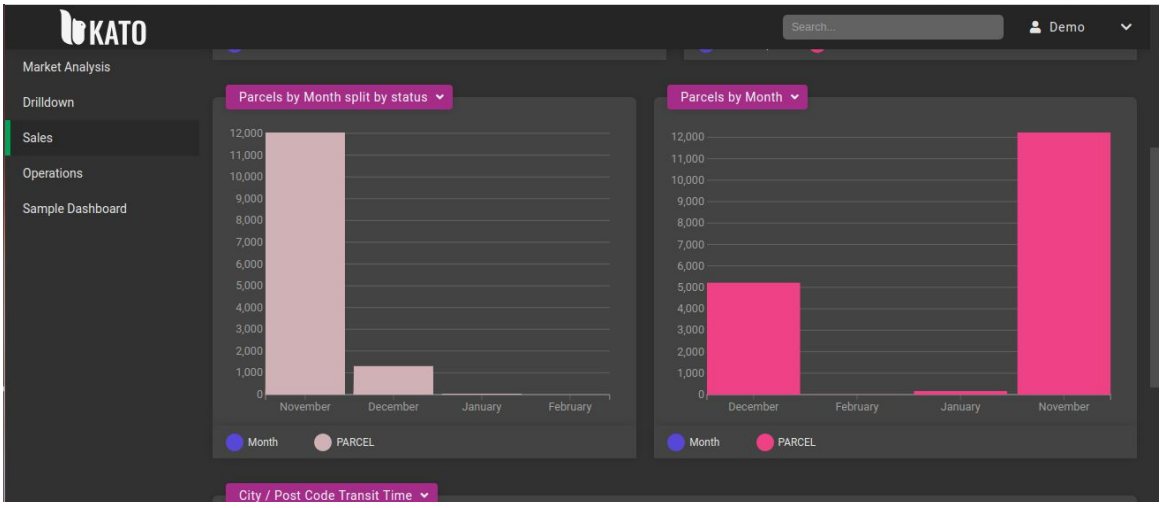
Also, food for thought, “ How a company as old as Coca-Cola stays relevant and drive its customer loyalty? How a company as new as Netflix, is at the top of its game in providing the best consumer experience? Why KFC offers it’s best discounts on Wednesday? Is it a coincidence that Uber allocates the nearest available driver for your every trip ?” Believe it or not, behind every possible scenario, Big Data is in the background playing its role.

Data Analytics play a very important role in determining the KPIs (Key Performance Indicators) for any business. Every fragment of data we generate as an organization is significant and when we are able to collate all the data we have in one frame, it opens the door for endless opportunities! When you see your KPIs changing on a real-time basis on a dashboard, you know what is working and probably what may not work for you tomorrow. The term KPI denotes not only the financial performance of an organization but also could be used to evaluate the efficiency of employees. For instance, total distance traveled by an insurance agent could be one of the parameters to evaluate his or her performance. A senior admin might be interested in evaluating the collective performance of a team or a department. *With data analytics, you can collate all the information you have, to generate what you really want to know about your employees, strategies, campaigns or sales.*

Analytics as a tool is powerful enough to determine how to mobilize your best resources to achieve the maximum output. As a business one could determine, location customers are and design marketing campaigns in different regions to increase my customer base. A simple delivery business could be more smart about placing its drivers to save on fuel and maximize efficiency. A not so vintage restaurant could know how to attract customers on non-festive days. This is just the tip of the iceberg of possibilities with modern data analytics.

Traditional analytics dealt with complicated graphs and figures understood by few and the rest agreed with them with no insights. Now analytics is more about insights which you gain from the data and not the huge piles of data itself which is simplified for every user based on his use.

However, we also understand that it may sound all dreamy and easy on paper, it might be overwhelming for 95% of the business owners and stakeholders to understand the complicity of Data analytics.



Section 3: Introduction to KATO

KATO | Advanced Analytics Platform | Jungleworks | A Brief Overview

1) **We can sell Kato to our clients as a product or service.**

   i) Kato Product- This implies that we onboard the client for Kato only. They sign up on the platform. Either they can write their own queries or our team will write the queries for the client.
   Currently, we charge $50/ hr for writing the queries, so the total cost, in this case, will depend on the KPI they are interested in or they simply pay a monthly MRR, if they write their own queries.

   ii) Kato Services- Here, we are actually selling **'Advanced Analytics'** to our clients on our existing platforms- **Tookan, Yelo or Jugnoo.** We actually have a big advantage in this segment, if we are able to convince the client that he may require a few additional KPIs for better performance management.
   *My personal recommendation would be to not to pitch Kato as an additional product in case of Kato services, but emphasize on the term '**Advanced Analytics'**.*

2) What to pitch?

I am sharing a list of a few KPIs(Key Performance Indicators) for our first level sales pitch*(many more are possible depending on the business model and client's requirements)*.

Generic KPIs for any on-demand business-

I. Number of times app opens
II. Online clients
III. Transacting clients
IV. Recurring clients
V. Recurring transactions
VI. New customer registrations
VII. Customer churn rate

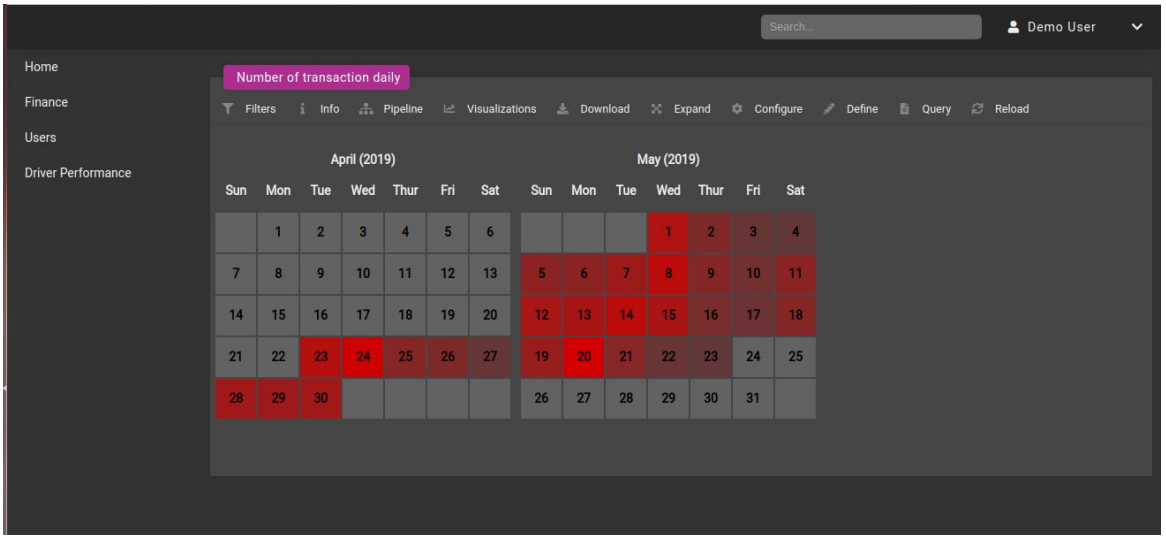
VIII. **Revenue-** The admin will also be able to see the split between **cash, credit and wallet.**

IX. **Average basket size-** refers to the number of items getting sold in a single purchase.

X. **Average ticket size or average transaction size-** refers to a customer's average purchase amount in the store.

XI. **Customer satisfaction-** The admin will be able to track the customer satisfaction (average ratings).

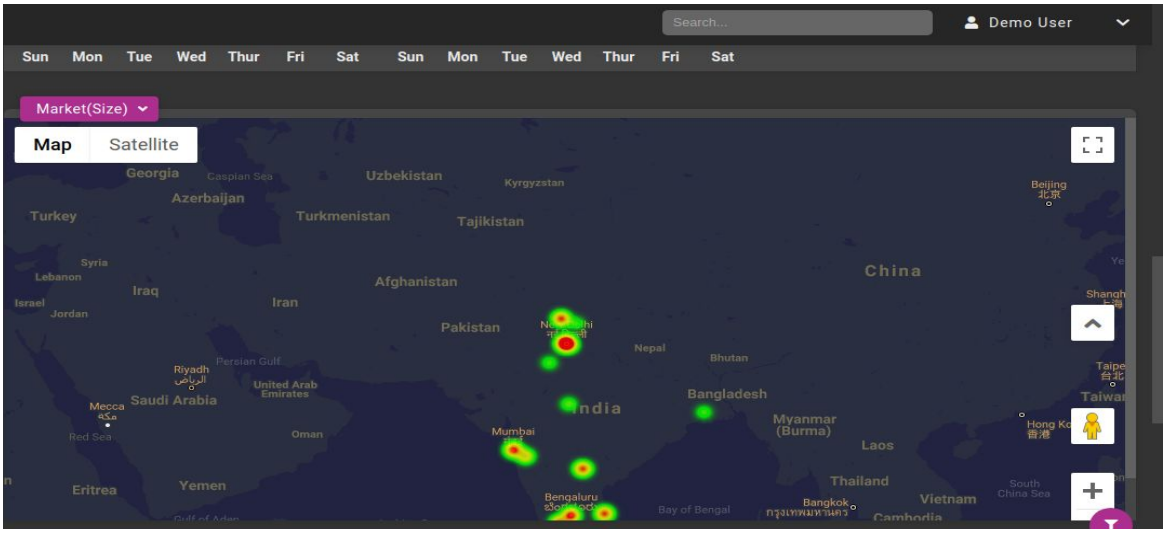
XII. Everyday Orders



XIII. **Cohorts-** Cohorts may be used to calculate retention rate- For instance, if I had 100 paying users in January, how many of those 100, were still with me in February?

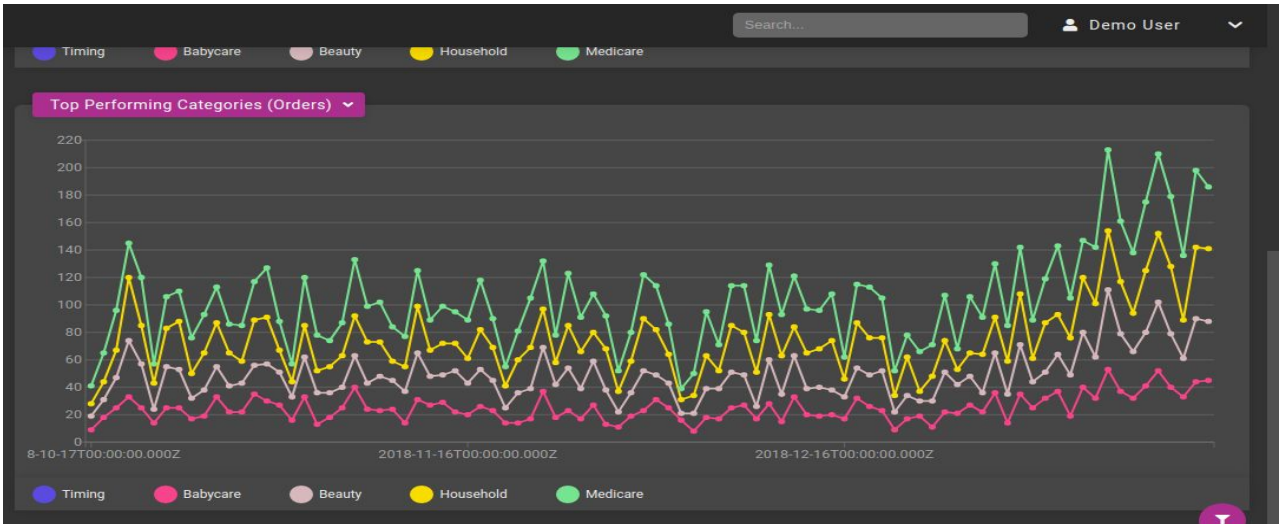
XI. **Market Analysis-**

- Where are my best customers located?
- Size of market
- Performance of any ad campaign based on geography and demographics of the target audience
- Decide marketing budget based on market size



XII. **Product Performance-**

- Top performing products
- Branch performance(If a client has multiple branches in different cities or countries)
- Non performing products
- Top performing categories



XIII. **Marketing-**

Promotions- The admin can track the number of times the promo code has been used. The admin will also track the expense of promotion
Actual cost versus Discounted cost- The amount spent on a campaign and the actual revenue generated from the campaign.
Referrals- The admin will be able to track the number of customers using the referral code for signing up on the platform.

Key Features -

1) We can integrate with following data sources-
    - MySQL
    - PostgreSQL
    - MSSQL
    - API
    - MongoDb
    - CSV(Excel)
    - Google Big Query
    - Google Big Query Legacy
    - Oracle
    - Amazon Redshift

2) The reporting interface include many features like:
- Column Search (Contains, Not Contains, Equals, >, <, etc)
- Grouping date based data sets to their nearest week and month.
- Calculate Rolling Average and Rolling Sum for date based data.
- See day-of-week based trends with the weekday filter.
- Sorting by columns.
- Aggregation Functions (Sum, Average, Min, Max, etc)
- Download the data as CSV.

3) The add-on includes visualisations like:

- Tabular Reports
- Spatial Maps
- Cohorts
- Line Graph
- Funnels
- Bar Graph
- Stacked Column Graph
- Area Chart

Section 4

KATO | Advanced Analytics Documentation | Consultancy Firm

Objectives:

- Discover and visualize all data across the enterprise
- Break down silos between functions to foster collaboration and improve results
- Provide an effective and engaging user experience across roles and devices

Solution:

- Data discovery, planning, and predictive analysis capability
- In-context social collaboration
- Support for the mobile workforce and the boardroom of the future
- Integration with existing on-premise applications

Benefits:

- More enjoyable user experience and greater productivity
- Better business results from deep collaboration and smart decisions
- Freedom from operating system constraints, download requirements, and setup tasks

A. Customer Behavior Analysis

I. Recurring clients
II. Recurring transactions
III. New customers
IV. Customer churn rate
V. **Average ticket size or average transaction size-** refers to a customer's average purchase amount.
VI. **Customer satisfaction-** The admin will be able to track the customer satisfaction (average ratings)

VII. **Cohorts-** Cohorts may be used to calculate retention rate- For instance, if I had 100 paying users in January, how many of those 100, were still with me in February?

B. Employee Performance Management

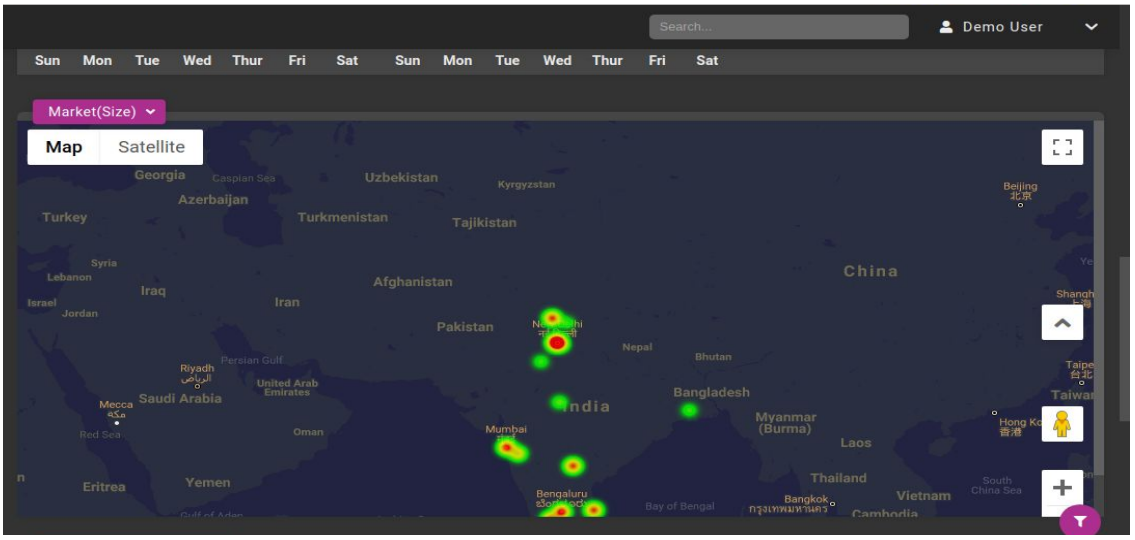
- Revenue per employee
- Profit per employee
- Employee billable percentage = (Total weekly billable hours logged/total weekly hours logged) x 100
- Average task completion rate
- Overtime per employee
- Employee capacity = weekly capacity - total hours logged

C. Financial Performance Analysis-

- Working Capital
- Operating Cash Flow
- Payroll Headcount Ratio
- Accounts Payable
- Accounts Receivable
- Net Profit Margin
- Gross Profit Margin
- Budget Variance

D. Marketing Performance Analysis-

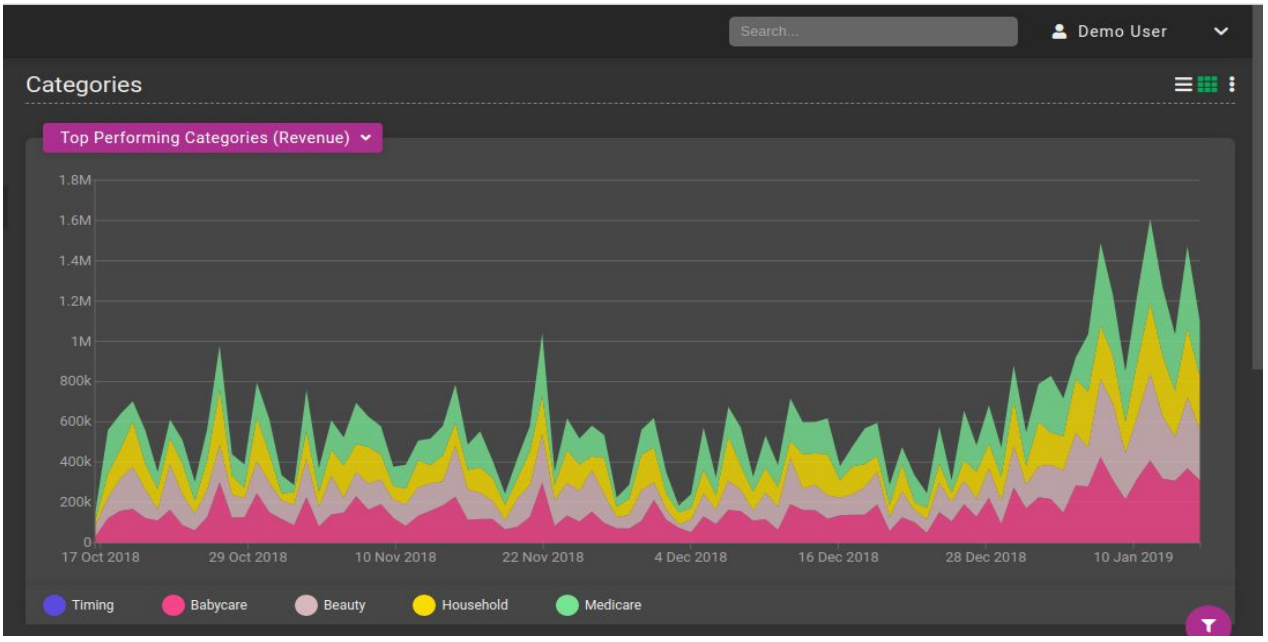
- Where are my best customers located?
- Size of market
- Performance of all the ad campaigns based on geography and demographics of the target audience
- Decide the marketing budget based on market size



- **Promotions-** The admin can track the number of times the promo code has been used. The admin will also track the expense of promotion
- **Actual cost versus Discounted cost-** The amount spent on a campaign and the actual revenue generated from the campaign.

E. Product / Category Performance

- Top performing products
- Branch performance(If a client has multiple branches in different cities or countries)
- Non-performing products
- Top performing categories



Section 5

KATO | Advanced Analytics Documentation | Marketing Agency

Objectives:

- Discover and visualize all data across the enterprise
- Break down silos between functions to foster collaboration and improve results
- Provide an effective and engaging user experience across roles and devices

Solution:

- Data discovery, planning, and predictive analysis capability
- In-context social collaboration
- Support for the mobile workforce and the boardroom of the future
- Integration with existing on-premise applications

Benefits:

- More enjoyable user experience and greater productivity
- Better business results from deep collaboration and smart decisions
- Freedom from operating system constraints, download requirements, and setup tasks

Marketing Agency's

Performance Metrics / Key Performance Indicators to be Incorporated for Analytics

A. Social Media Management Analysis

- Signups and Login requests via different Social Media Campaigns- Google adwords and Facebook
- New customer registrations and recurring transactions
- Customer churn rate
- **Performance metrics** for **Google Analytics**
- Cohorts may be used to calculate retention rate- For instance, if I had 100 paying users signing up in January, how many of those 100, was still with me in February?

Month	Cohort Size	Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	Month 7	Month 8	Month 9	Month 10	Month 11	Month 12
1 Jan 2018	637	100%	89.32%	82.57%	78.81%	77.24%	74.88%	71.59%	61.22%	59.34%	57.3%	55.73%	54.16%
1 Feb 2018	662	100%	90.48%	85.5%	83.38%	80.06%	76.13%	64.95%	62.54%	60.57%	59.67%	57.4%	
1 Mar 2018	661	100%	92.28%	88.8%	84.27%	81.39%	69.29%	66.26%	64.6%	63.09%	60.97%		
1 Apr 2018	692	100%	93.79%	88.58%	85.4%	72.25%	68.79%	66.33%	64.88%	63.01%			
1 May 2018	728	100%	92.86%	88.46%	75.27%	70.88%	67.99%	66.9%	64.7%				
1 Jun 2018	750	100%	93.54%	80.34%	74.8%	71.64%	69.79%	67.41%					
1 Jul 2018	796	100%	83.54%	77.64%	74.5%	71.86%	70.23%						
1 Aug 2018	766	100%	89.82%	86.03%	82.11%	79.11%							
1 Sep 2018	828	100%	90.58%	86.71%	82.25%								
1 Oct 2018	869	100%	91.6%	85.16%									
1 Nov 2018	937	100%	91.25%										
1 Dec 2018	1,009	100%											

B. Digital Marketing Strategy Analysis

- Profit per marketing strategy
- Strategy Conversion Percentage= (Authentic Visits on Website/ Total Visits) x 100
- Average SEO, SCO, PPC completion rate
- Rank Improvisation Rate = (Previous Website Rank/ Latest Website Ranking after SEO)

C. Paid Advertisement Financial Performance Analysis

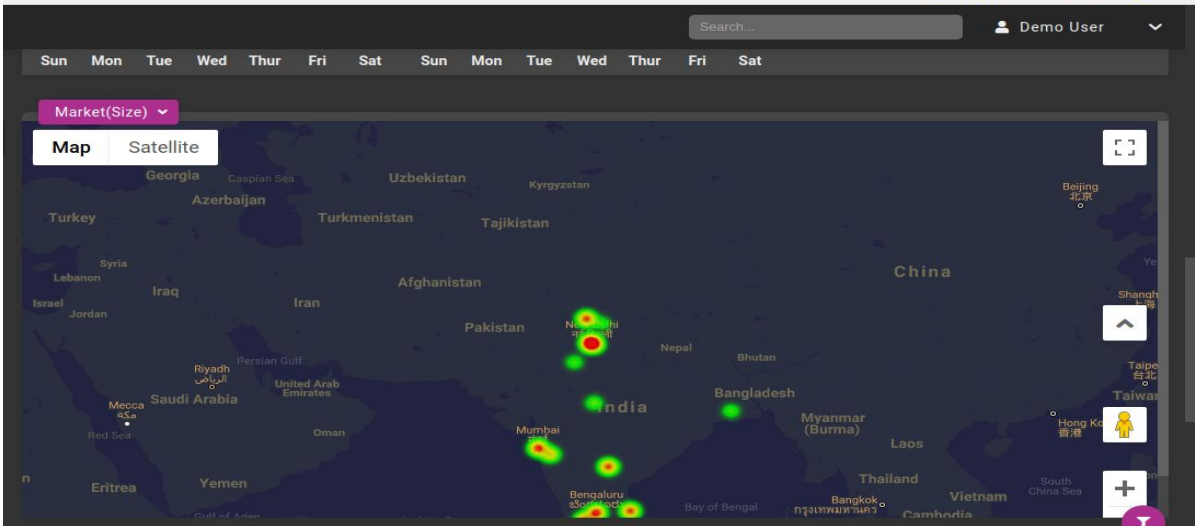
- Working Capital Investment
- Operating Cash Flow
- Payroll Headcount Ratio
- Accounts Payable
- Accounts Receivable
- Net Profit Margin
- Gross Profit Margin
- Budget Variance

D. E-Commerce Optimization Analysis

- Brand Name Searches
- Average Customer Acquisition Cost (CAC)
- Audience Reach: shows how far your message is getting.
- Daily On-Site Engagement :[Sessions, users, New Bounce rates, etc.]
- E-commerce Retention Metrics : [Purchase frequency, Repeat Purchases, Time Lapse etc.]

E. Market Performance Analysis-

- Where are my best customers located?
- Size of market
- Performance of all the ad campaigns based on geography and demographics of the target audience
- Decide the marketing budget based on market size



- **Promotions-** The admin can track the number of times the promo code has been used. The admin will also track the expense of promotion
- **Actual cost versus Discounted cost-** The amount spent on a campaign and the actual revenue generated from the campaign.

F. Campaign / Advertisement Performance Analysis

- Top performing Campaigns
- Advertisement performance(In case there are multiple Advertisement running in different cities or countries)
- Non-performing Campaigns.
- Top performing Advertisements.

G. Employee Performance Management

- Revenue per employee
- Profit per employee
- Employee billable percentage = (Total weekly billable hours logged/total weekly hours logged) x 100
- Average task completion rate
- Overtime per employee
- Employee capacity = weekly capacity - total hours logged

Why KATO for Marketing Analysis ?:

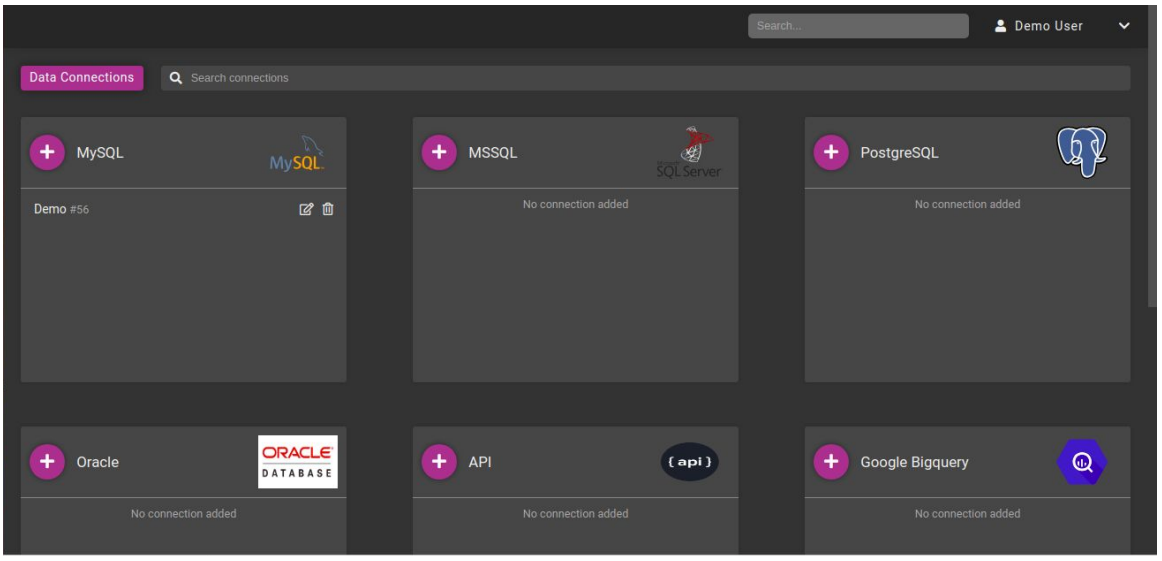
1) We can integrate with following **data sources**-
    - MySQL
    - PostgreSQL
    - MSSQL
    - API
    - MongoDb
    - CSV(Excel)
    - Google Big Query
    - Google Big Query Legacy
    - Oracle
    - Amazon Redshift

2) The **reporting interface** include many features like:

- Column Search (Contains, Not Contains, Equals, >, <, etc)
- Grouping date based data sets to their nearest week and month.
- Calculate Rolling Average and Rolling Sum for date based data.
- See day-of-week based trends with the weekday filter.
- Sorting by columns.
- Aggregation Functions (Sum, Average, Min, Max, etc)
- Download the data as CSV.

3) The **add-on** includes visualizations like:

- Tabular Reports
- Spatial Maps
- Cohorts
- Line Graph
- Funnels
- Bar Graph
- Stacked Column Graph
- Area Chart



Section 6

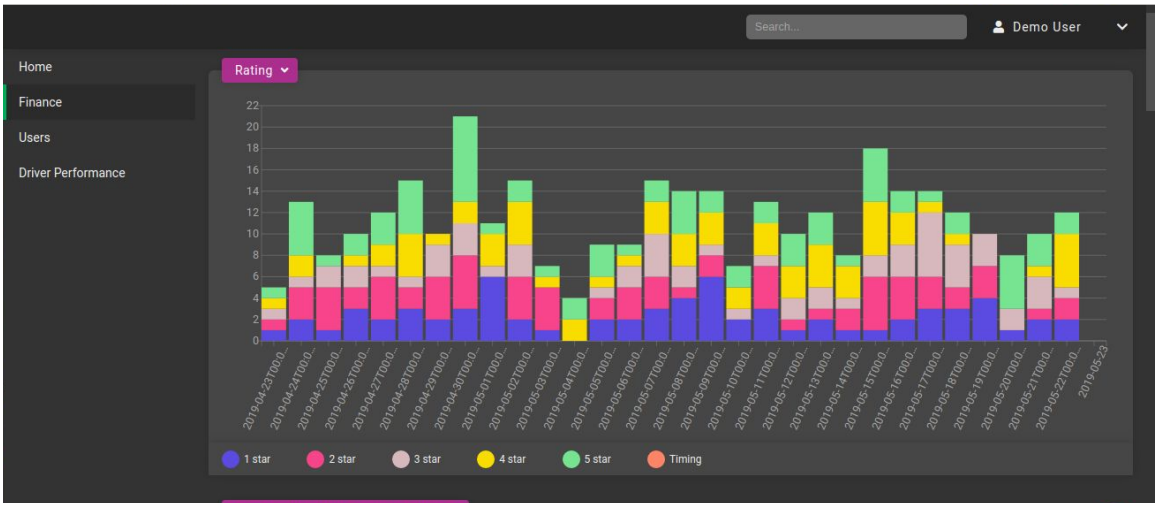
KATO | Advanced Analytics Documentation | Food Marketplace

A. Customer Behavior Analysis

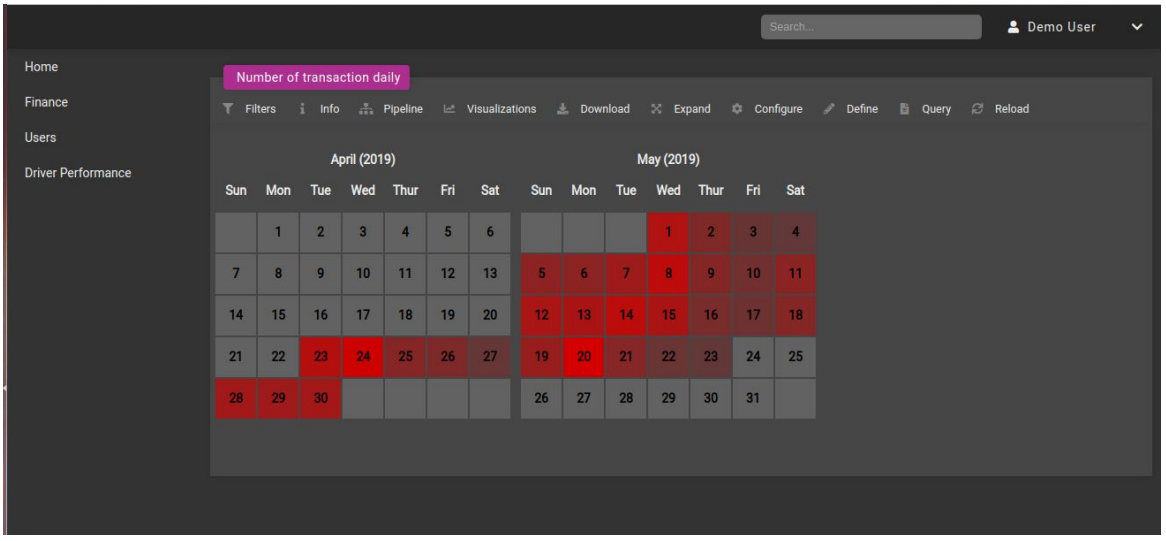
I. New customer registrations
II. Recurring clients
III. Recurring transactions
IV. Customer churn rate

V. **Revenue-** Each restaurant owner will also be able to see the split between **cash, credit, and wallet**

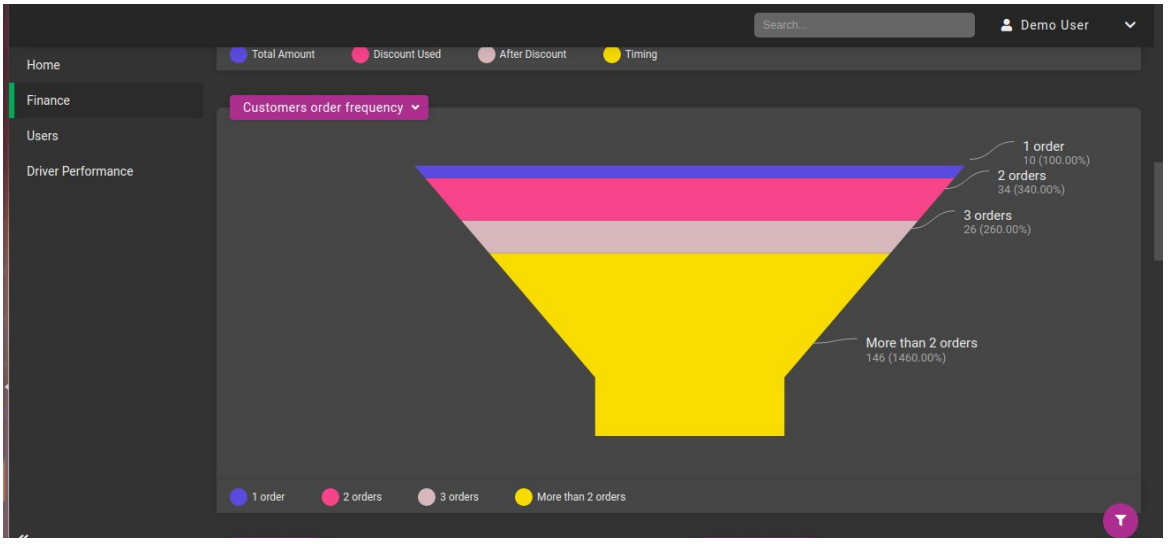
VI. **Customer satisfaction-** Each restaurant owner will be able to track customer satisfaction (average ratings) for their restaurant.



VII. Number of customers placing orders every day-



VIII. List of customers, who have signed up but never done any transaction



IX. Demographics of customers-

- Male and Female
- Age Group- Teenagers, Middle-aged, Senior Citizen
- Region
- Students, Professional, House-wife, Retired

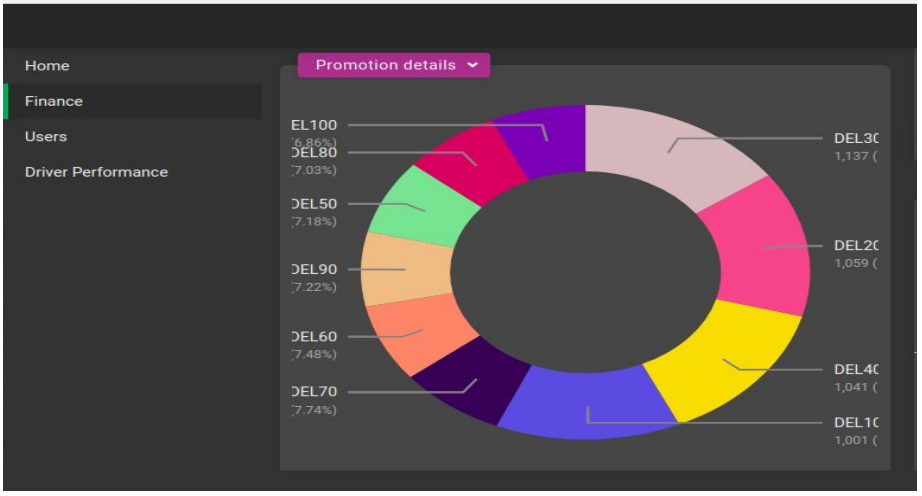
XI. Customer retention rate- Cohorts may be used to calculate retention rate- For instance, if I had 100 paying users in January, how many of those 100, were still with me in February?

Month	Cohort Size	Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	Month 7	Month 8	Month 9	Month 10	Month 11	Month 12
1 Jan 2018	637	100%	89.32%	82.57%	78.81%	77.24%	74.88%	71.59%	61.22%	59.34%	57.3%	55.73%	54.16%
1 Feb 2018	662	100%	90.48%	85.5%	83.38%	80.06%	76.13%	64.95%	62.54%	60.57%	59.67%	57.4%	
1 Mar 2018	661	100%	92.28%	88.8%	84.27%	81.39%	69.29%	66.26%	64.6%	63.09%	60.97%		
1 Apr 2018	692	100%	93.79%	88.58%	85.4%	72.25%	68.79%	66.33%	64.88%	63.01%			
1 May 2018	728	100%	92.86%	88.46%	75.27%	70.88%	67.99%	66.9%	64.7%				
1 Jun 2018	758	100%	93.54%	80.34%	74.8%	71.64%	69.79%	67.41%					
1 Jul 2018	796	100%	83.54%	77.64%	74.5%	71.86%	70.23%						
1 Aug 2018	766	100%	89.82%	86.03%	82.11%	79.11%							
1 Sep 2018	828	100%	90.58%	86.71%	82.25%								
1 Oct 2018	869	100%	91.6%	85.16%									
1 Nov 2018	937	100%	91.25%										
1 Dec 2018	1,009	100%											

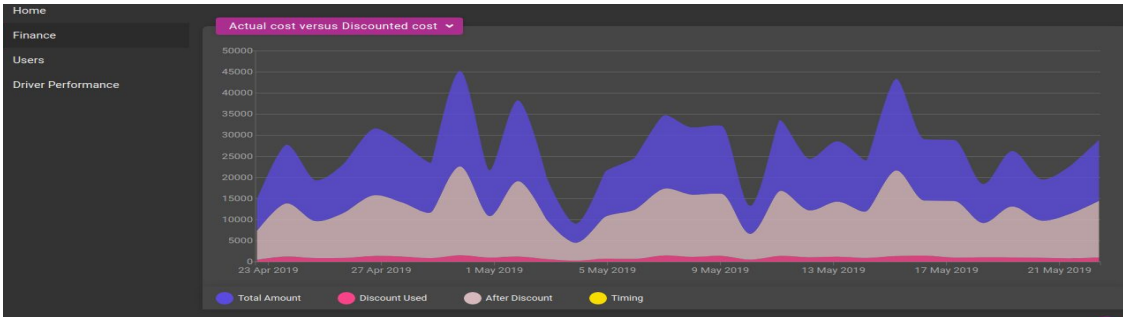
Data Timing Size

B. Promotional Campaign Analysis

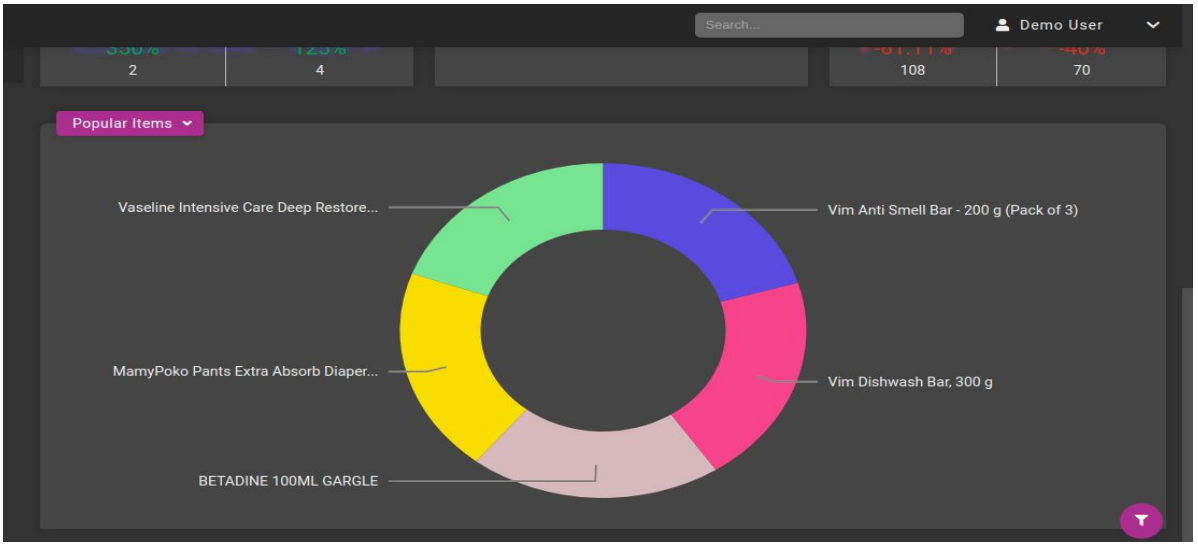
1) Number of times a Promo code has been used by customers



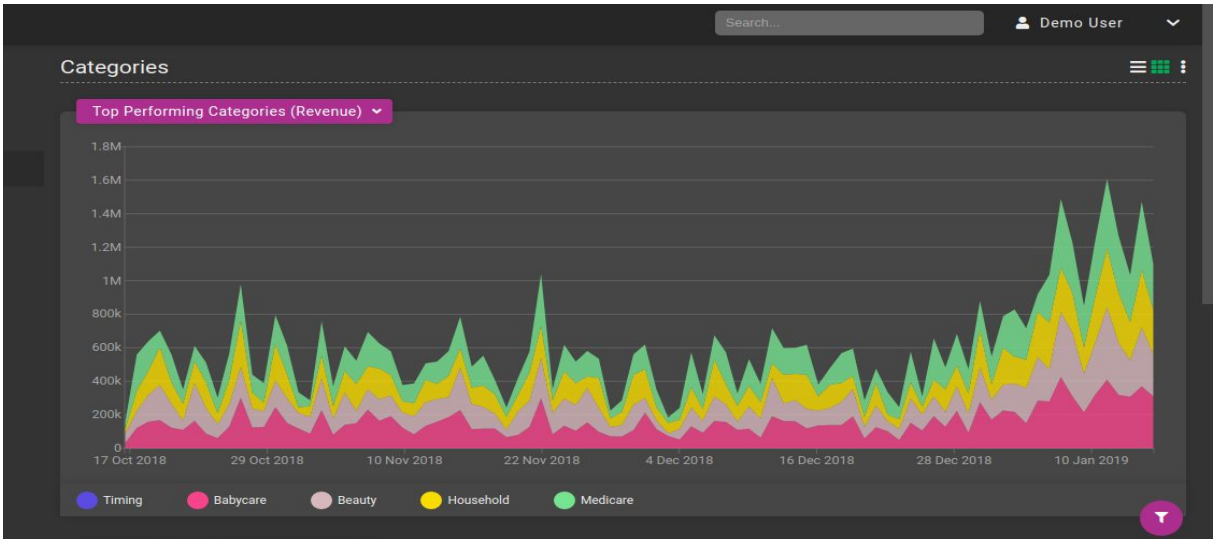
2) **Actual Cost versus Discounted Cost -** The amount spent on discount and the revenue generated by that discount.



C. Product Performance



D. Top Categories

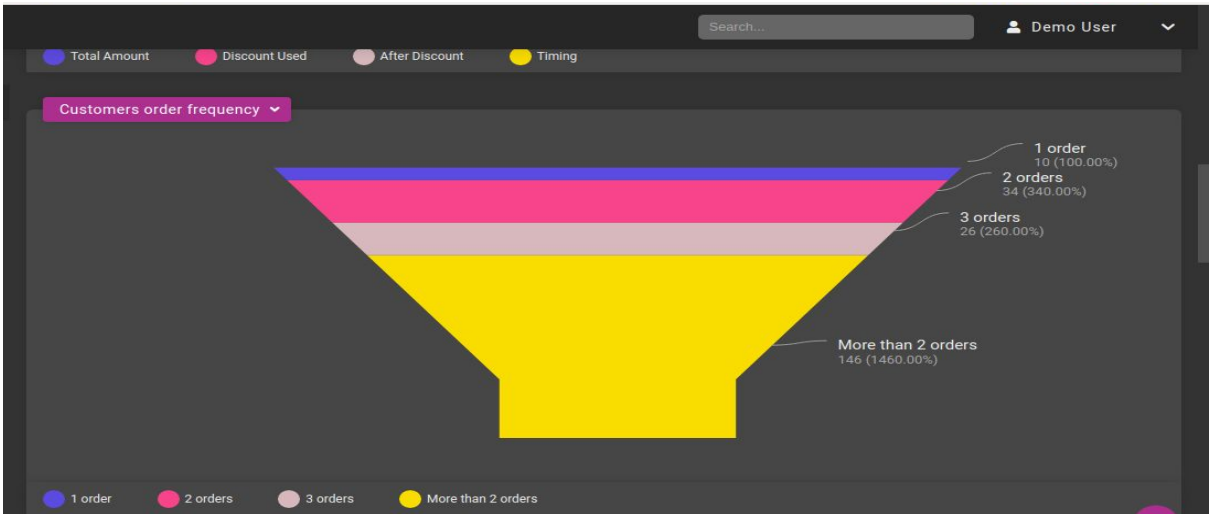


Key Performance Indicators(KPIs) for the Admin-

Please note all the KPIs mentioned above can be built for the admin to have an overview of the entire platform. I am hereby, sharing some more KPIs specific to the admin-

I. **Marketing Funnel / Table-**
   a. **Number of customer visiting website**
   b. **Number of customer signing up**
   c. **Total orders**
   d. **Successful orders**

Adwords to conversion funnel



II. Online clients
III. Number of times app opens
IV. Transacting clients
V. Recurring clients
VI. Recurring transactions
VII. New customer registrations
VIII. Customer churn rate

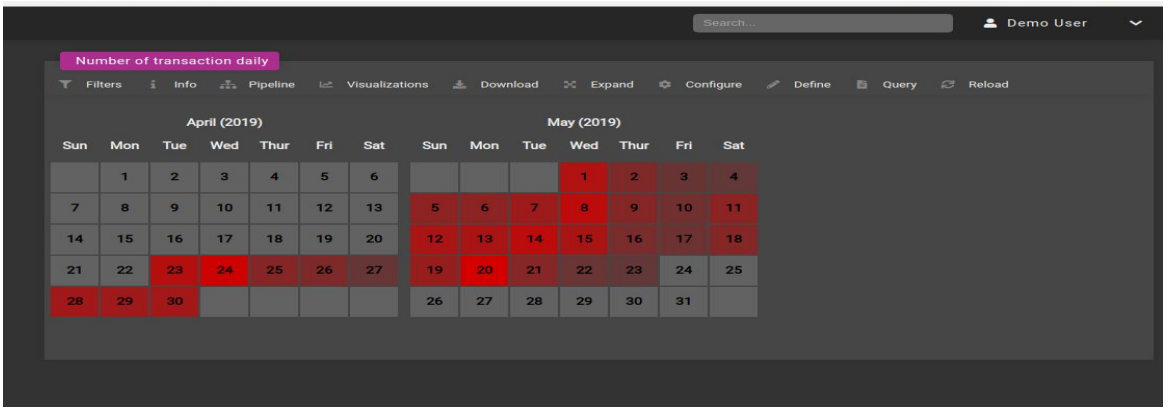
IX. **Revenue-** The admin will also be able to see the split between **cash, credit and wallet.- Hourly, Daily, Monthly, Yearly**

X. **Average basket size-** refers to the number of items getting sold in a single purchase.

XI. **Average ticket size or average transaction size-** refers to a customer's average purchase amount in the store

XII. **Customer satisfaction-** The admin will be able to track customer satisfaction (average ratings).

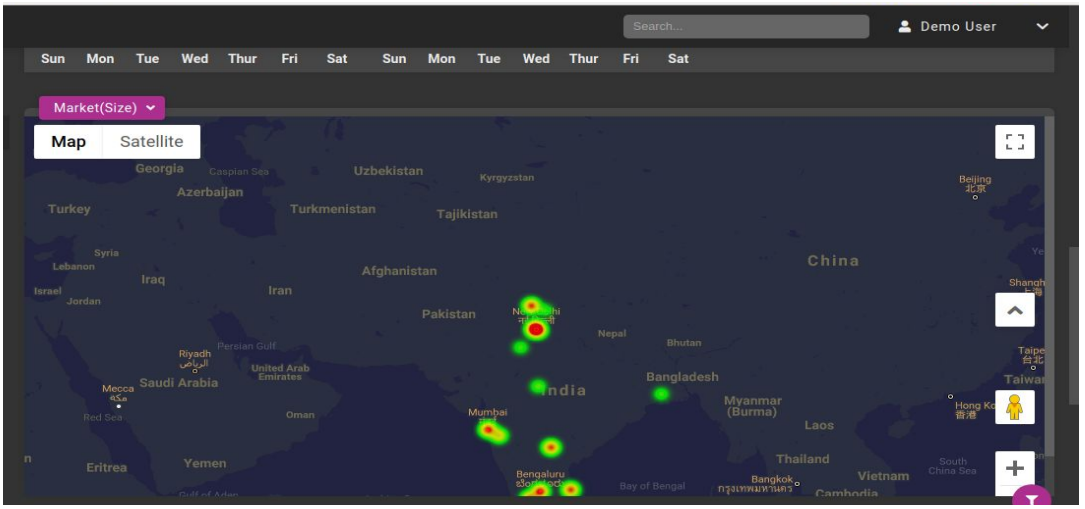
XIII. Everyday Orders



XIV. **Cohorts-** Cohorts may be used to calculate retention rate- For instance, if I had 100 paying users in January, how many of those 100, were still with me in February?

XI. Market Analysis-

- Where are my best customers located?
- Size of market
- Performance of all the ad campaigns based on geography and demographics of the target audience
- Decide the marketing budget based on market size



- **Promotions-** The admin can track the number of times the promo code has been used. The admin will also track the expense of promotion
- **Actual cost versus Discounted cost-** The amount spent on a campaign and the actual revenue generated from the campaign.

Key Features -

1) We can integrate with the following data sources-
    - MySQL
    - PostgreSQL
    - MSSQL
    - APIs
    - MongoDb
    - CSV(Excel)
    - Google Big Query
    - Google Big Query Legacy
    - Oracle
    - Amazon Redshift

2) The reporting interface includes many features like:

- Column Search (Contains, Not Contains, Equals, >, <, etc)
- Grouping date based data sets to their nearest week and month.
- Calculate Rolling Average and Rolling Sum for data-based data.
- See day-of-week based trends with the weekday filter.
- Sorting by columns.
- Aggregation Functions (Sum, Average, Min, Max, etc)
- Download the data as CSV.

3) The add-on includes visualizations like:

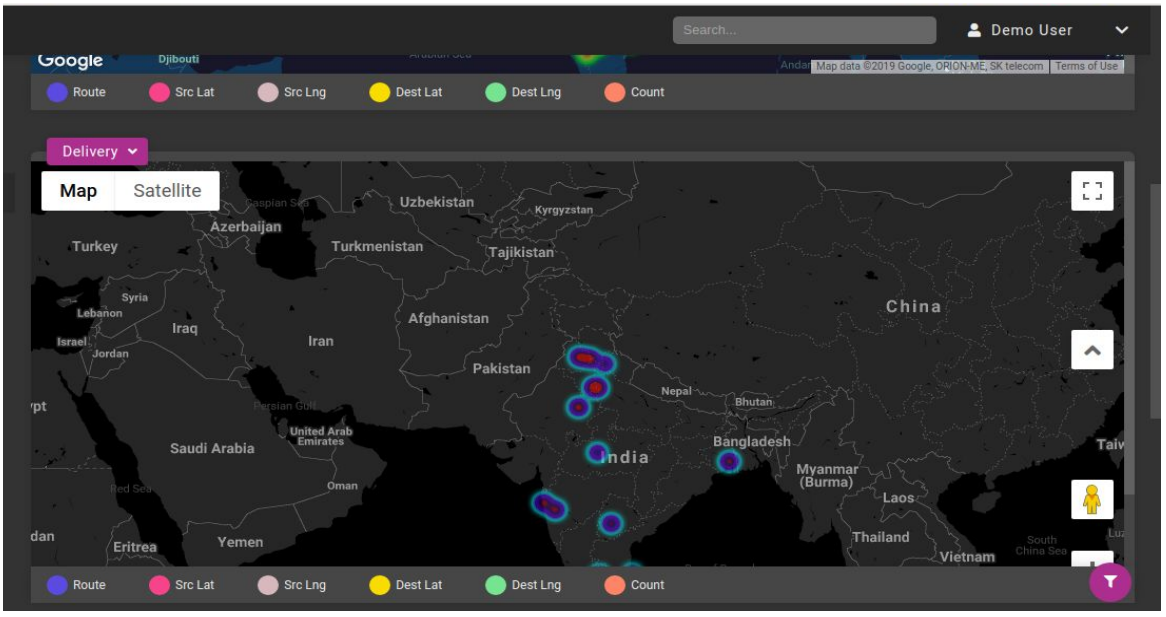
- Tabular Reports
- Spatial Maps
- Cohorts
- Line Graph
- Funnels

Section 7

KATO | Advanced Analytics Documentation | Taxi Services

I. **Hotspots [Filters- City, Date Range, Vehicle Type, Driver Name]**

i) Popular pickup locations
ii) Popular drop locations
iii) Region wise revenue- based on total fare



iv) Region wise tolls
v) Cash, credit, wallet split on the heatmaps

II. **Missed Rides Details**(location city etc) due to unavailability of drivers

III. **Drivers Online Hours**

IV. **City Wise Details**(Rides , users, drivers, income, etc)

V. **Recurring clients-** Clients who have placed more than 1 ride or some other parameter like clients who have more than 5 rides in a month, etc

VI. **Customer churn rate-** Customer who have not placed any ride request for last 1 month or 3 months etc.

VII. Apps open

VIII. **Average transaction size-** refers to a customer's average purchase amount. - It is possible on **Customer, Driver or Daily level.**

IX. **Customer satisfaction-** The admin will be able to track customer satisfaction (average ratings- daily, monthly or yearly).

X. **Marketing-**

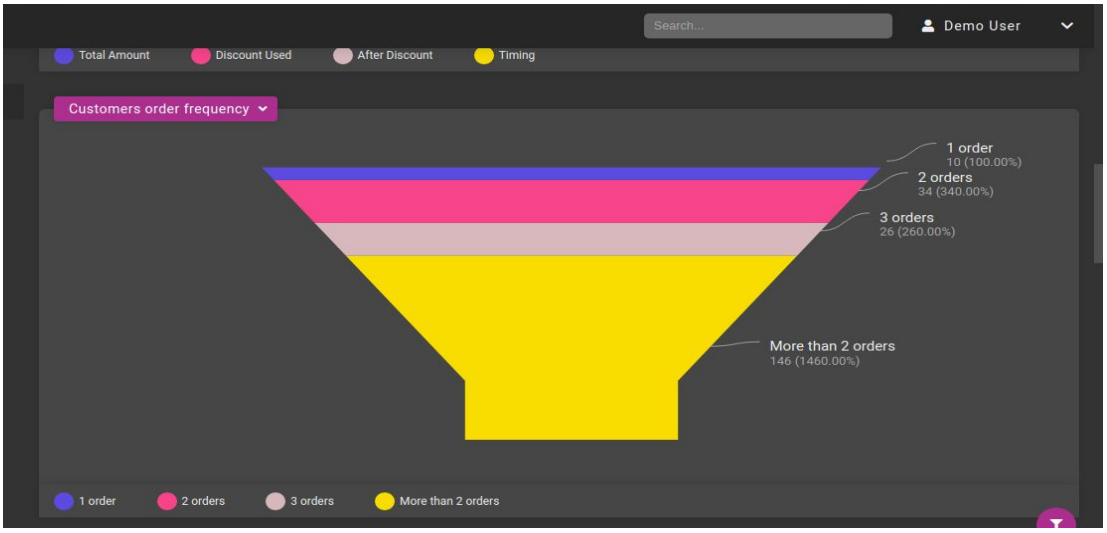
- **Promotions-** The admin can track the number of times the promo code has been used. The admin will also track the expense of promotion
- **Actual cost versus Discounted cost-** The amount spent on a campaign and the actual revenue generated from the campaign.
- **Referrals-** The admin will be able to track the number of customers using the referral code for signing up on the platform.

IX. **Cash and Card ride count**

XII.**Daily income**

XIII.**Top Drivers and Top Users**

XIV.**User registered till now**



Section 8

KATO | Advanced Analytics Documentation | Logistics

1) **Introduction-**

i) Kato Product- This implies that we onboard the client for Kato only. They sign up on the platform. Either they can write their own queries or our team will write the queries for the client.

ii) Kato Services- Here, we are actually selling **'Advanced Analytics'** to our clients on our existing platforms- **Tookan, Yelo or Jugnoo.** We actually have a big advantage in this segment, if we are able to convince the client that he may require a few additional KPIs for better performance management.

iii) Advanced Analytics- This is for our clients, who have a specific business model and they define the exact KPIs and visualizations, with our data scientist.

2) Few KPIs for reference for Logistics-

I am sharing a list of a few KPIs(Key Performance Indicators)*(many more are possible depending on the business model and client's requirements)*.

I. Number of times app opens
II. Online clients
III. Transacting clients
IV. Recurring clients
V. Recurring transactions
VI. New customer registrations
VII. Customer churn rate

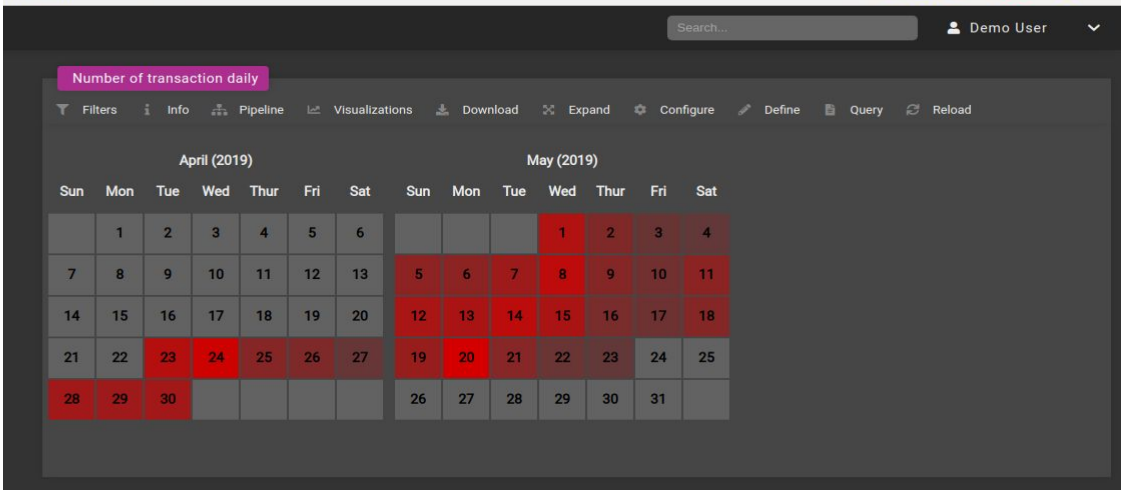
VIII. **Revenue-** The admin will also be able to see the split between **cash, credit, and wallet.**

IX. **Average basket size-** refers to the number of items getting sold in a single purchase.

X. **Average ticket size or average transaction size-** refers to a customer's average purchase amount in the store.

XI. **Customer satisfaction-** The admin will be able to track customer satisfaction (average ratings).

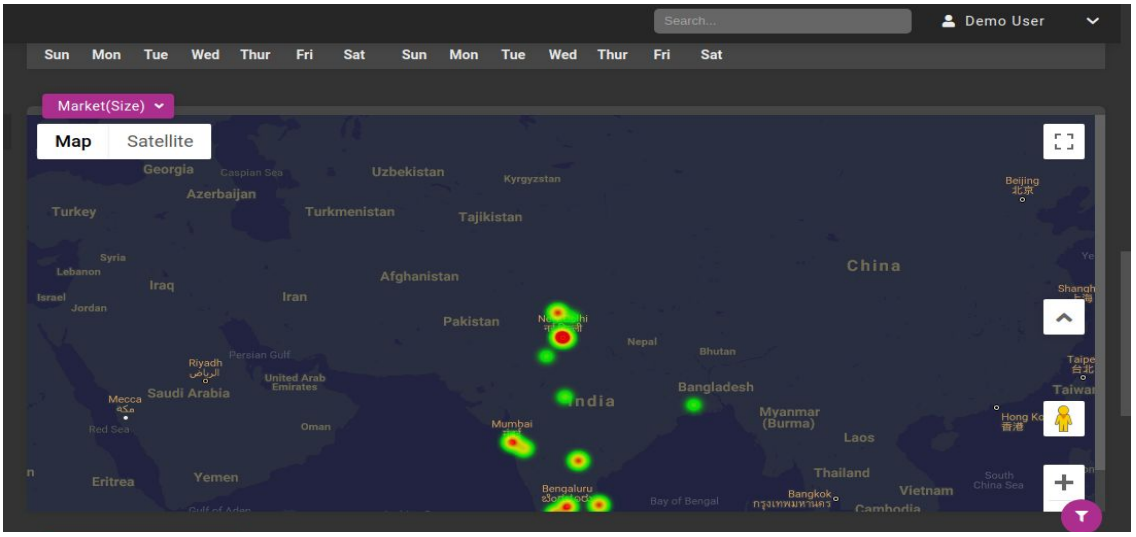
XII. Everyday Orders



XIII. **Cohorts-** Cohorts may be used to calculate retention rate- For instance, if I had 100 paying users in January, how many of those 100, were still with me in February?

XI. **Market Analysis-**

- Where are my best customers located?
- Size of market
- Performance of an ad campaign based on the geography and demographics of the target audience
- Decide the marketing budget based on market size

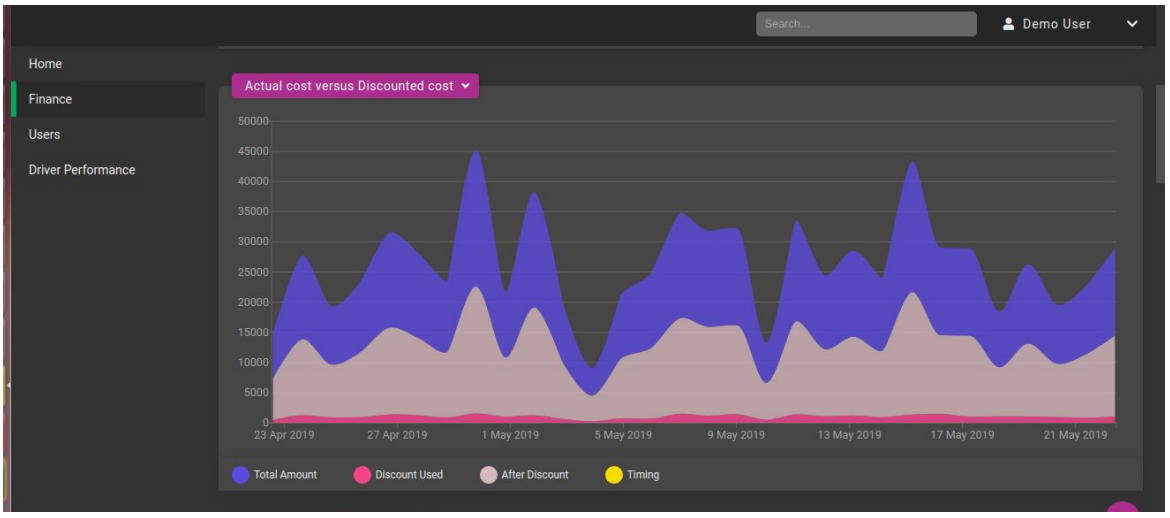


XII. **Product Performance-**

- Top performing products
- Branch performance(If a client has multiple branches in different cities or countries)
- Non performing products
- Top performing categories

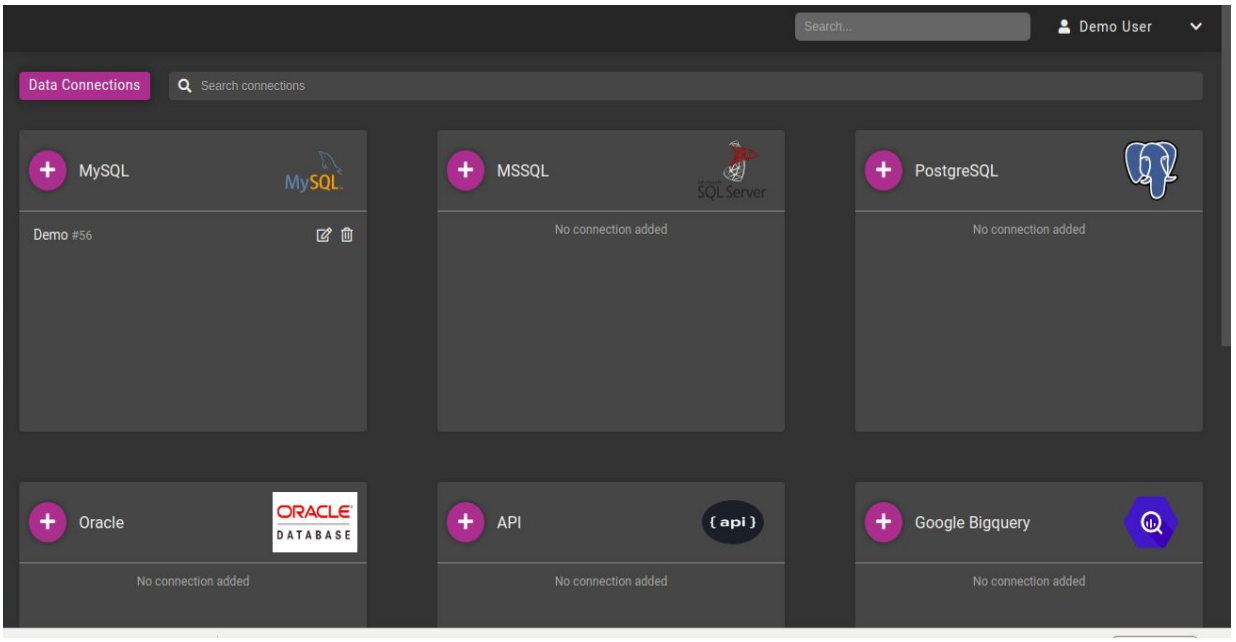
XIII. **Marketing-**

Promotions- The admin can track the number of times the promo code has been used. The admin will also track the expense of promotion
Actual cost versus Discounted cost- The amount spent on a campaign and the actual revenue generated from the campaign.
Referrals- The admin will be able to track the number of customers using the referral code for signing up on the platform.



Advanced features-

- Multiple Dashboards, Multiple Reports/ Visualizations from Multiple Data Sources
- Role & Privilege Management
- Access Control - Public/Private/ Can be shared with specific set of users
- Drill down functionality
- Configure filters (Global and Local)
- Export, share and publish
- In-build filters
- Alert [In-app notifications & email]
- Data sources: MySQL, Oracle, BigQuery, Redshift, CSV, API, PostgreSQL, BigQuery Legacy
- GDPR complaint
- White labelling with your brand name and logo



Section 9

KATO | Advanced Analytics Documentation | Gym Aggregator Business

2.5.1 Key Performance Indicators(KPIs) for Gym Owners-

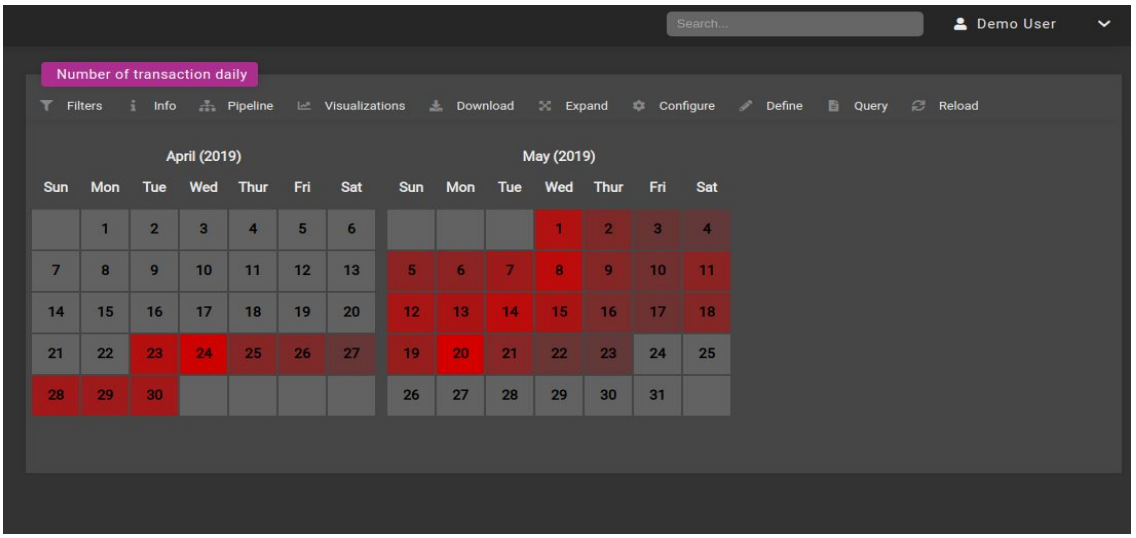
A. Customer Behavior Analysis

I. New customer registrations
II. Recurring clients
III. Recurring transactions
IV. Customer churn rate

V. **Revenue-** The Gym owner will also be able to see the split between **cash, credit, and wallet**

VI. **Customer satisfaction-** Each Gym owner will be able to track customer satisfaction (average ratings) for their gym

VII. Number of customers visiting every day-



VIII. List of customers, who have signed up but never done any transaction

IX. Demographics of customers-

- Male and Female
- Age Group- Teenagers, Middle-aged, Senior Citizen
- Region
- Students, Professional, House-wife, Retired

X. Age group vs Fitness Routine Preference

Age group	Preference	Head Count
Senior Citizen	Yoga	30
Teenagers	Cardio	20
Middle-aged Professional	Zumba	10

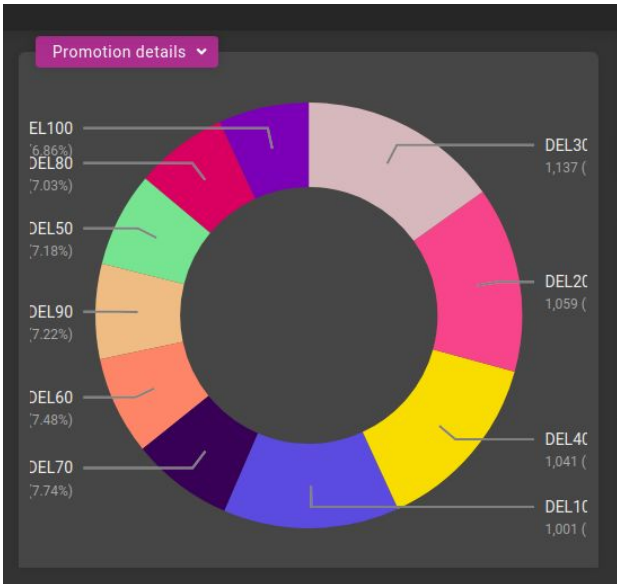
XI. Customer retention rate- Cohorts may be used to calculate retention rate- For instance, if I had 100 paying users in January, how many of those 100, were still with me in February?

Month	Cohort Size	Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	Month 7	Month 8	Month 9	Month 10	Month 11	Month 12
1 Jan 2018	637	100%	89.32%	82.57%	78.81%	77.24%	74.88%	71.59%	61.22%	59.34%	57.3%	55.73%	54.16%
1 Feb 2018	662	100%	90.48%	85.5%	83.38%	80.06%	76.13%	64.95%	62.54%	60.57%	59.67%	57.4%	
1 Mar 2018	661	100%	92.28%	88.8%	84.27%	81.39%	69.29%	66.26%	64.6%	63.09%	60.97%		
1 Apr 2018	692	100%	93.79%	88.58%	85.4%	72.25%	68.79%	66.33%	64.88%	63.01%			
1 May 2018	728	100%	92.86%	88.46%	75.27%	70.88%	67.99%	66.9%	64.7%				
1 Jun 2018	758	100%	93.54%	80.34%	74.8%	71.64%	69.79%	67.41%					
1 Jul 2018	796	100%	83.54%	77.64%	74.5%	71.86%	70.23%						
1 Aug 2018	766	100%	89.82%	86.03%	82.11%	79.11%							
1 Sep 2018	828	100%	90.58%	86.71%	82.25%								
1 Oct 2018	869	100%	91.6%	85.16%									
1 Nov 2018	937	100%	91.25%										
1 Dec 2018	1,009	100%											

Data Timing Size

B. Promotional Campaign Analysis

1) Number of times a Promo code has been used by customers



2) Actual Cost versus Discounted Cost - The amount spent on discount and the revenue generated by that discount.

C. **Top performing Categories**

Preference	Head Count
Yoga	30
Cardio	20
Zumba	10

Key Performance Indicators(KPIs) for the Admin-

Please note all the KPIs mentioned above can be built for the admin to have an overview of the entire platform. I am hereby, sharing some more KPIs specific to the admin-

I. Number of times app opens
II. Online clients
III. Transacting clients
IV. Recurring clients
V. Recurring transactions
VI. New customer registrations
VII. Customer churn rate

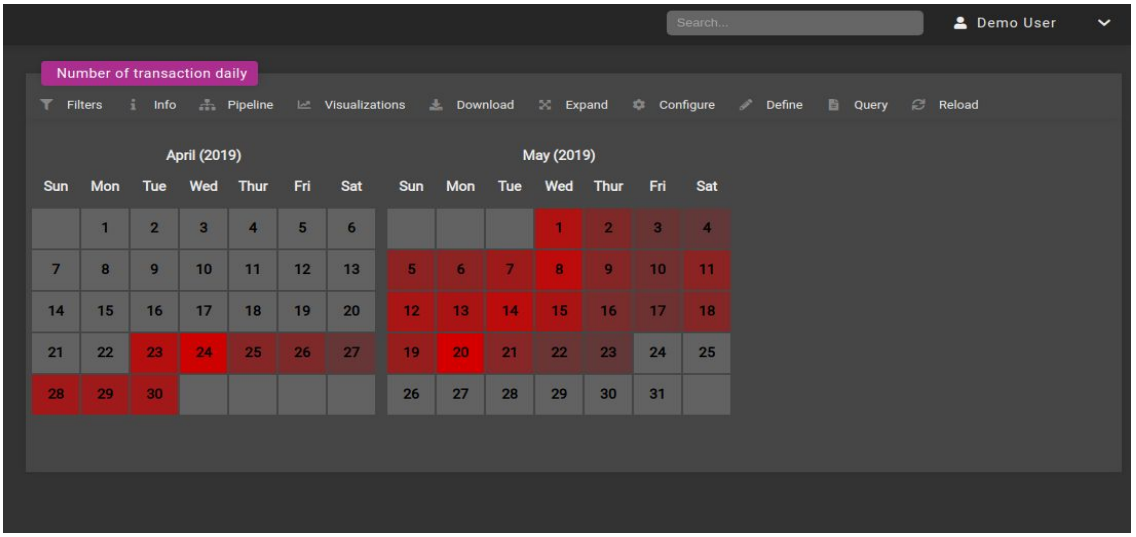
VIII. **Revenue-** The admin will also be able to see the split between **cash, credit and wallet.**

IX. **Average basket size-** refers to the number of items getting sold in a single purchase.

X. **Average ticket size or average transaction size-** refers to a customer's average purchase amount in the store.

XI. **Customer satisfaction-** The admin will be able to track the customer satisfaction (average ratings).

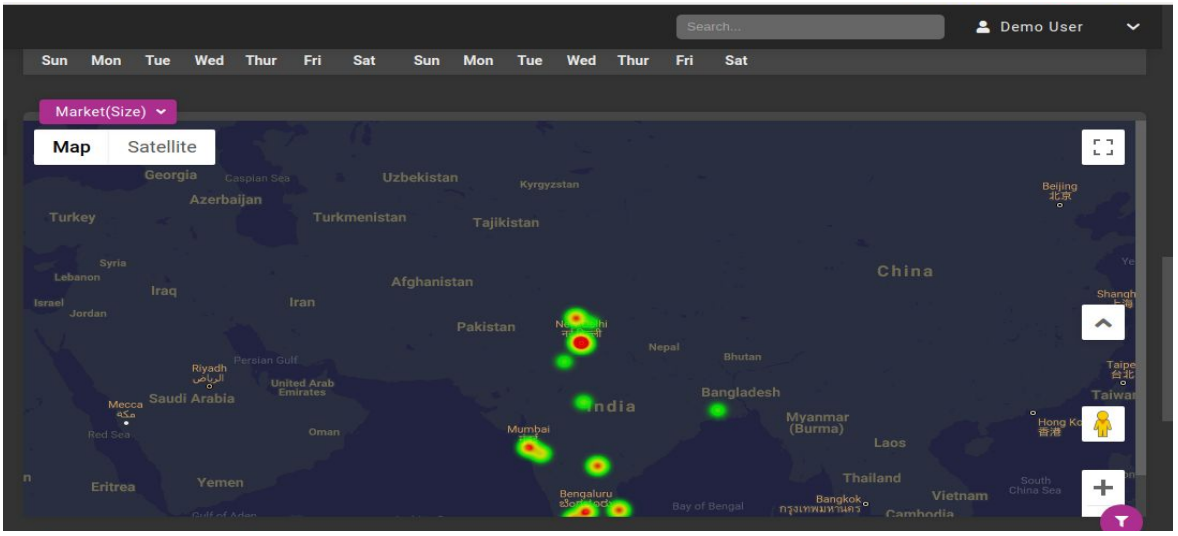
XII. Everyday Orders



XIII. **Cohorts-** Cohorts may be used to calculate retention rate- For instance, if I had 100 paying users in January, how many of those 100, were still with me in February?

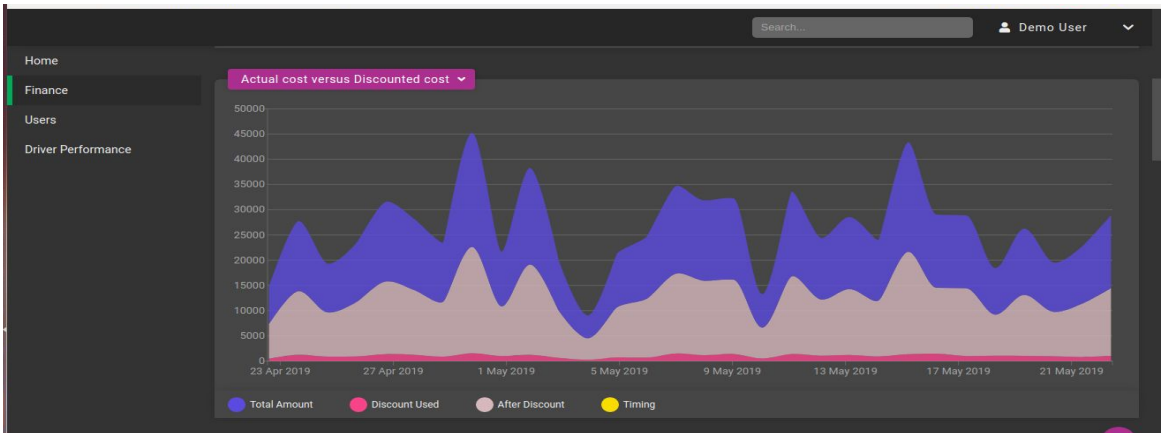
XI. Market Analysis-

- Where are my best customers located?
- Size of market
- Performance of all the ad campaigns based on geography and demographics of the target audience
- Decide the marketing budget based on market size



- **Promotions-** The admin can track the number of times the promo code has been used. The admin will also track the expense of promotion

- **Actual cost versus Discounted cost-** The amount spent on a campaign and the actual revenue generated from the campaign.



Key Features-

1) We can integrate with the following data sources-
    - MySQL
    - PostgreSQL
    - MSSQL
    - APIs
    - MongoDb
    - CSV(Excel)
    - Google Big Query
    - Google Big Query Legacy
    - Oracle
    - Amazon Redshift

2) The reporting interface includes many features like:

- Column Search (Contains, Not Contains, Equals, >, <, etc)
- Grouping date based data sets to their nearest week and month.
- Calculate Rolling Average and Rolling Sum for data-based data.
- See day-of-week based trends with the weekday filter.
- Sorting by columns.
- Aggregation Functions (Sum, Average, Min, Max, etc)
- Download the data as CSV.

3) The add-on includes visualizations like:

- Tabular Reports
- Spatial Maps
- Cohorts
- Line Graph
- Funnels
- Bar Graph
- Stacked Column Graph
- Area Chart

Section 10

Future Prospects

Video Analytics

We are all familiar with the old concept of a video surveillance system, where we hope the security guard sitting in a booth watching the security camera feed live to catch suspicious activity. This model is prone to human flaws as it relies on having a live person watching and reviewing the video. Considering the fact that the different security guards may have differing levels of focus or different ideas of suspicious activity, it is safe to conclude that this old method is neither practical nor efficient.

Therefore, Video analytics has emerged as an important enabler in taking the video surveillance system to the next level. Advanced video pattern-based algorithms monitor the video feed around the clock, alerting you to only unusual activities so you only need to watch the cameras only when something happens. They extract only the valid motion in a scene, filtering out any disturbance in the background such as lighting changes, weather, trees, and animal movements. This will help you best utilize your surveillance system, recognize the movements and characteristics of people and vehicles, while ignoring any activity that isn't relevant to a scene, saving your time and effort.

Intelligent video analytics adds artificial intelligence to cameras by analyzing video content in real-time, extracting metadata, sending out alerts and providing actionable intelligence to the security personnel or other systems. It can be embedded at the edge (in-camera), in servers on-premise, and/or on the cloud.

Advanced video pattern-based algorithms can be used for:

- *Motion detection*- to detect valid motion, filtering out noise such as lighting changes and tree/animal movements.
- *Facial recognition & license plate reading*- could be used for automated attendance and tracking of employees as well as their vehicles in the premise.
- *People counting & dwell time monitoring for retail stores*- counts people, vehicles and other objects. It can be used to generate comprehensive reports on people and vehicle traffic patterns.
- Recognizing long lines at checkout and sending alerts.
- *Intrusion Detection*– Video analytics also provides automated perimeter monitoring and secure area protection.
- *Camera Tamper Detection*– Advanced video analytics can be employed to detect any attempt to tamper the camera, partially or completely blocking its field of view, or drastically changing the camera angle, etc.

The use of video surveillance is not merely restricted for security purposes. But video analytics has more widespread uses. Video streams are being measured in real-time to find deeper insights that can be in the form of patterns, anomalies, motion detection, behavior, events and much more. The information collected can help businesses to enjoy a multitude of benefits like **increased sales, time savings, reduction in losses and boost in productivity.**

For instance, retail organizations can use video analytics to identify in-store performance and take appropriate actions. Insights provided by video analytics can help store owners in better product placement, advertisement, and promotion display. Moreover, retailers can also use this information to optimize staff allocation and plan cleaning activities accordingly, thereby improving the overall customer experience.

In conclusion, video analytics is the need of the hour! The video data is massive and the benefits it can bring to a business are even greater. With the help of guidance from the right video analytics experts, you can focus and make efforts in the right direction to grow and prosper.

Conclusion & Learning

The duration of four months at **Clicklabs Pvt. Ltd**. has been an extremely rigorous process of learning. Working with the data scientist **Mr. Achin Sharma** on dashboard designing and integration with various business models gave me a deep knowledge of how useful data can be and how data blending from different sources and bringing it onto one platform in a visualization can provide tremendous business insights and allows business owners to take profit oriented decision.

KATO is an end to end solution for Data Analytics , Business Intelligence and provides multiple feature like data blending from various sources and also provides a variety of visualizations.

In Today's world of technology where data is generated in massive quantities daily. An Advanced Analytics Tool like KATO takes a leap from the traditional methods of data analytics and is quite useful for any business to operate progressively towards high profits.

During the course of the Internship I learned to identify Performance metrics for any business , and how they can effectively monitor their Key Performance Indicators. What was Interesting was to learn how data is collected from various sources and then it can be blended to produce visualizations over a mobile responsive screen that the business owner can use at ease to view the progress in business and can even generate reports for attaining business intelligence.

I also got an opportunity to learn creation of Business Intelligence reports and how various visualizations can provide essential information for survival and growth of any business.

Bibliography

1. Acohido, B. 2010. Tech-savvy put business intelligence to work. USA Today 11/17/10.
2. Agarwal, A., Chakrabarti S., and Aggarwal, S. 2006. Learning to rank networked entities. In Proceedings of the ACM SIGKDD International Conference on Knowledge Discovery and Data Mining. 14–23.
3. Anderson-Lehman, R., Watson, H. J., Wixom, B. H., and Hoffer, J. A. 2004. Continental Airlines flies high with real-time business intelligence. MIS Quart. Exec. 3, 4, 163–176.
4. Beyer, M. 2011. Gartner says solving 'big data' challenge involves more than just managing volumes of data. http://www.gartner.com/it/page.jsp?id=1731916.
5. Dean, J. and Ghemawat, S. 2010. MapReduce: A flexible data processing tool. Comm. ACM 53, 1.
6. The Economist. 2010. Data, data everywhere. 2/10. Fortunato, S., 2010. Community detection in graphs. Phys. Rep. 486, 3–5, 75–174. Gaber, M. M., Zaslavsky, A., and Krishnaswamy, S. 2005. Mining data streams: A review. SIGMOD Record 34, 2.
7. Gartner. 2012. Gartner says worldwide business intelligence, analytics and performance management software market surpassed the $12 billion mark in 2011. http://www.gartner.com/it/page.jsp?id=1971516.
8. L., Konstan, J. A., Borchers, A., and Riedl, J. 1999. An algorithmic framework for performing collaborative filtering. In Proceedings of the 22nd Annual International ACM SIGIR Conference on Research and Development in Information Retrieval. 230–237. IBM. 2011.
9. The 2011 IBM tech trends report, November 15. http://ibm.com/developerworks/techntrendsreport. Kang, U., Tsourakakis, C. E., Appel, A. P., Faloutsos, C., and Leskovec, J. 2011.
10. The McKinsey 2011 Big Data Report. Marshall, B., McDonald, D., Chen, H., and Chung, W. 2004. EBizPort: Collecting and analyzing business intelligence information. J. Amer. Soc. Inform. Sci. Technol. 55, 10, 873–891. Nelson, G. 2010. Business Intelligence 2.0: Are we there yet? SAS Global Forum.
11. Methodologies. Morgan & Claypool Publishers. Turban, E., Sharda, R., Aronson, J. E., and King, D. 2008. Business Intelligence: A Managerial Approach.
12. Pearson Prentice Hall. Watson, H. J. 2012. This isn't your mother's BI architecture. Bus. Intell. J. 17, 1, 4–6. Watson, H. J. and Wixom, B. H. 2007. The current state of business intelligence. IEEE Comput. 40, 9, 96–99. Wixom, B. H., Watson, H. J., and Werner, T. 2011. Developing an enterprise business intelligence capability. MIS Quart. Exec. 10, 2.