GLOBAL SALES DATA ANALYTICS

PROJECT REPORT

Submitted By

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GitHub project Demo Link Global Sales Data Analytics

1. Introduction:

a. Project Overview:

Shopping online is currently the need of the hour. Because of this COVID, it's not easy to walk in a store randomly and buy anything you want. So, tryto understand a few things like, Customer Analysis and Product Analysis of this Global Super Store.

b. Purpose:

By the end of this Project, you will:

- Know fundamental concepts and can work on IBM Cognos Analytics.
- ii. Gain a broad understanding of plotting different visualizations to provide suitable solution.
- iii. Able to create meaningful Visualizations and Dashboard(s).

2. LITRATURE SURVEY

2.1 Existing Problem:

Crafting a good sales pitch from sales data analysis can be difficult. Getting the right data, hitting the right client pain points, crystallizing why your services are better than the competitors, all takes hard work. One of the best ways we've found to build a good sales pitch is to use data you already have.

In the digital world, there is no shortage of data, which translates into no shortage of potential competitive insights and advantages. With databases, datawarehouses, corporate intranets, best practices haring, web analytics, voice of the customer information, and QA or Six Sigmadata, you are well-poised for discovering good information.

2.2 References:

- 1. Han Jiawei, Micheline Kamber and Jian Pei, "**Data Mining Concepts and Techniques**" in , MK Publications, 2009. Show in ContextGoogleScholar
- M. Tennekes and E. de Jonge, "Top-down Data Analysis with Treemaps"
 Proceedings of the International Conference on Information
 Visualization Theory and Applications (IVAPP' 11), pp. 236-241, March 2011. Show in Context Google Scholar
- 3. P. Hoek, "Parallel Arc Diagrams: Visualizing Temporal Interactions", Journal of Social Structure, vol. 12, 2011. Show in ContextGoogle Scholar

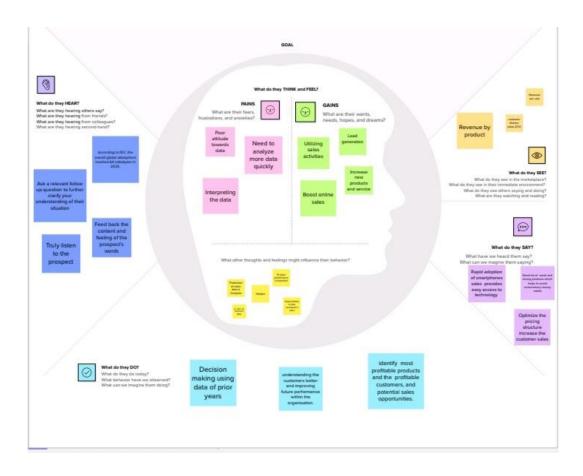
2.3 Problem Statement Definition:

Our goal is to design and create a Dashboard using the SuperstoreSales data (which is really close to reality)to provide answers to following questions

- 1. What are the performance indicators values for the past month?It's necessary for stock taking and comparing it against the same period last year.
- 2. What key factors do affect profit growth?
- 3. What categories, sub categories, products and clients generatemore profits, and what ones that bring losses?

3. IDEATION AND PROPOSED SOLUTION

3.1 EMPATHY MAP CANVAS



3.2 IDEATION AND BRAINSTORMING

erson 1		Person 2
Better egnentation	Scalability	Sentiment Big mart analysis sales
Online sales products	Global Investment	Forecasting Corporate analysis
rson 3		Person 4
plimization	Information	Prior Revenue

forecasting

Historical

sell data

data

Potential

sales

management

Data

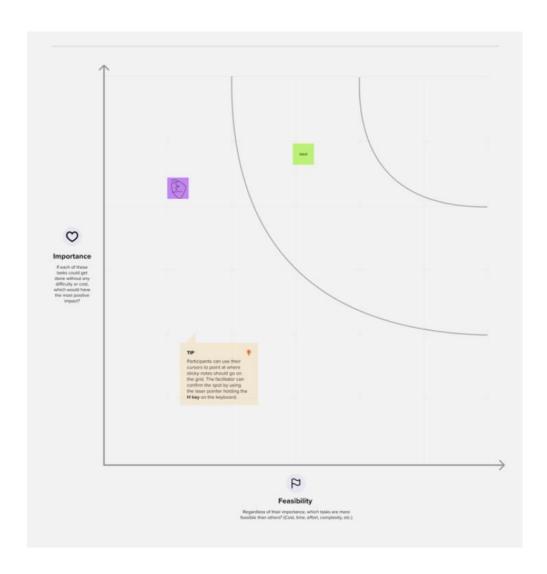
visualization

Intelligent

sales



IDEA PRIORITIZATION:



3.3 PROPOSED SOLUTION

S.No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	Shopping online is currently the need of the hour. Because of this COVID, it's not easy to walk in a store randomly and buy anything you want. So, try to understand a few things like, Customer Analysis and Product Analysis of this Global Super Store.
2.	Idea / Solution description	The described solution is by using IBM cognos we can display all the records and previous year global sales of product names, category and sub category as a graphical representation.
3.	Novelty / Uniqueness	we are going to provide discounts to the customers to increase the sales by providing free door step delivery of products to customers.
4.	Social Impact / Customer Satisfaction	Customer should know the available products and nearest location of the shops which gives the idea to customer for purchase.
5.	Business Model (Revenue Model)	This method focuses on the actual sales numbers from the customers. This helps to determine which products are top performers and multiplying the shop and increasing the product quantity.

3.4 PROBLEM SOLUTION FIT



4 EMOTIONS:		
1. Insecure feeling		
2. Lack of communication		
3. We need use anew startergy		
4. slow response		

4. REQUIREMENT ANALYSIS

Project Design Phase-II Solution Requirements (Functional & Nonfunctional)

Date	14 October 2022	
Team ID	PNT2022TMID27765	
Project Name	Global sales data analytics	
Maximum Marks	4 Marks	

Functional Requirements:

Following are the functional requirements of the proposed solution.

FR No.	Functional Requirement (Epic)	Sub Requirement (Story / Sub-Task)
FR-1	User Registration	Registration through Facebook Registration .through Gmail Registration through google
FR-2	Account creation	Gmail and password for account creation
FR-3	User Confirmation	Confirmation via Email Confirmation via OTP
FR-4	Personal details for account	Name, age, sex, mail id, contact no, previous sales records, etc for health account basic details

Non-functional Requirements:

Following are the non-functional requirements of the proposed solution.

FR No.	Non-Functional Requirement	Description
NFR-1	Usability	Good mobile navigation will boost the usability of the entire product, helping users to enjoy all the features offered. Bad navigation will make it difficult to find things, making it less likely that users will ever experience the product the way the design team had envisioned. Our solution has better features in navigation such as hamburger menu, Bottom navigation, Top navigation, Cards, Tabs, Gesture-Based Navigation, Full-screen navigation, 3D touch. The report mainly focuses on the most dynamic information of the global market.

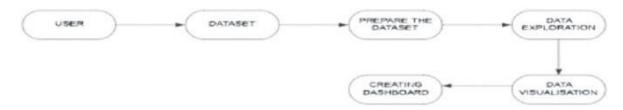
NFR-2	Security	Global security service revenues are forecast to increase 4.4% per year to \$295 billion in 2026, with most growth occurring in the first half of the forecast period due to strengthening economic environments as the impact of the COVID-19 pandemic fades. Though the most significant recovery from the pandemic-driven downturn already occurred in 2021, long-term growth prospects for the industry are quite healthy, as companies work to respond to an evolving social environment and provide increasingly complex technology-aided solutions. While the overall effect of the COVID-19 pandemic on the global security services industry was negative, the impact on a segment-by-segment basis was complex and varied: 1. Spending on security guards was boosted in many countries by the need to enforce public health regulations. 2. Falling occupancy rates in commercial real estate shrank the market base, but reduced inperson presence at many facilities also created security risks that required solutions. 3. Concern about property crime – which is an important driver of security spending – broadly
NFR-3	Reliability	increased and was exacerbated by widespread rioting. In most instances, the sales organization consults with the customer to determine its needs in terms of product type, quantity, required quality and delivery expectations. After negotiation, the salespeople typically reach an agreement on pricing and terms with the customer and a contract is executed. Upon receipt of the purchase order, production schedules the job, manufactures the product in compliance with the company's safety and environmental management policies and prepares the order for shipping to the customer. The customer demands product, price, quality and transport from the sales department. The sales department, in turn, demands that the production department manufacture the product to comply with the terms set forth by the customer, and the production department demands reliability from the machine, process and plant design team, and from the maintenance department.

NFR-4	Performance	High performers have a 36.97% conversion rate, and they take on average 36.5 days to close a deal. For low performers, the average conversion rate is 4.95% and they take 53.62 days to close. Great salespeople are especially careful about not filling their days with conversations leading to nowhere. At the same time, once they've detected a potential prospect, they use all their intelligence and experience to maximize their chances of winning.
NFR-5	Availability	By setting up An Application Performance Monitoring (APM) system that helps to monitor the avail ability of application. Consistent performance monitoring and optimization help you to tackle issues as quickly as they show up. Our record is designed in such a way that to emphasize avail ability

5.PROJECT DESIGN

5.1 DATA FLOW DIAGRAM

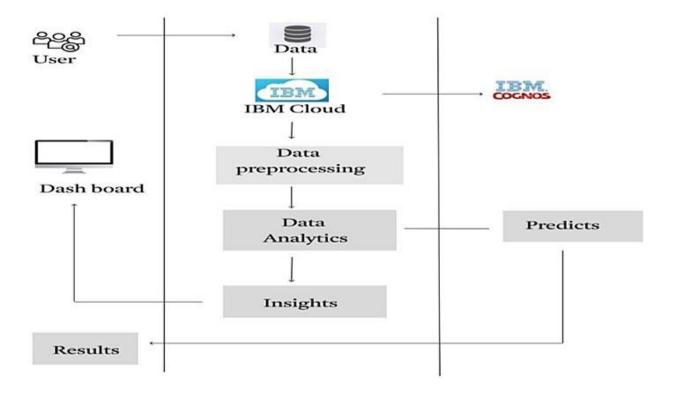
Simple Data flow diagram:



Structural flow diagram:



5.2 SOLUTION & TECHNICAL ARCHITECTURE



5.3 USER STORIES

User stories:

requirement (Epic)	story number	story/task	Acceptance criteria		Release
		(Epic) number	(Epic) number	(Epic) number	(Epic) number

Business owner	Online registration	USN-1	As a business owner, I want tologin to my account.	Input data fields toenter: 1.Username/email 2.Password 3.Re- enter password 4.Security question 5.Security answer	High	Sprint-1
	Data upload	USN-2	As a business owner, I want to upload my sales data to perform analytics.	Submission of excel filecontaining the sales data.	High	Sprint- 1
	Improve performance	USN-3	As a busines owner, I want touse the analytics results to make my business performance better	analytics results to myonline store.	High	Sprint- 2
Customer (Buyer)	Registration	USN-1	As a buyer, I want to login tomy account	Input data fields toenter: 1.Username/email 2.Password 3.Re- enter password 4.Security question 5.Security answer	High	Sprint-3
	Buy	USN-2	As a buyer, I want to buy products form the online store	Search for the items tobuy in the application	Medium	Sprint-3

Analytics team administrator	Analysis ofsales data	USN-1	As an administrator, Iwant to analysethe sales data for better performance of	Get the sales data formthe business owner.	High	Sprint-4
			the store.			

6. PROJECT PLANNING & SCHEDULING

6.1 SPRINT PLANNING & ESTIMATION

Sprint	Functional Requirement (Epic)	User Story Number	User Story / Task	Story Points	Priority	Team Members
Sprint-1 Registration	Registration	USN-1	As a user, I can register for the application by entering my email, password, and confirming my password.	2	High	Naveen Sivabalan Shrisanjay Abishek
		USN-2	As a user, I will receive confirmation email once I have registered for the application	1	Low	
		USN-3	As a user, I will log in to the desired application using login credentials.	1	Medium	
Sprint-2	Pre processing	USN-4	As a user, I can do the data cleaning process.	2	High	Naveen Sivabalan Shrisanjay Abishek
		USN-5	As a user, I can perform Extract, Transform Load (ETL) process.	2	High	
Sprint-3	Dashboard	USN-6	As a user, I can upload the data of global sales for analysis.	1	Medium	

Sprint	Functional Requirement (Epic)	User Story Number	User Story / Task	Story Points	Priority	Team Members
	Dashboard	USN-7	As a user, I can analyse the data by performing calculations and executing several visualization charts.	2	High	Naveen Sivabalan Shrisanjay Abishek
		USN-8	As a user, I can gain insights of the data for business analysis	2	High	
		USN-9	As a user, I can get the information for business analysis.	1	Medium	
Sprint-4	Report, Story and customer care	USN-10	As a user, I can generate report for the customer or sales analyst for knowing the insights about the sales.	2	Medium	Naveen Sivabalan Shrisanjay Abishek
	outomer sure	USN-11	As a user, I can clear queries of customers from the analysis of the sales.	1	Medium	
		USN-12	As a user, I can modify report according to the information gathered after analysis.	1	Low	

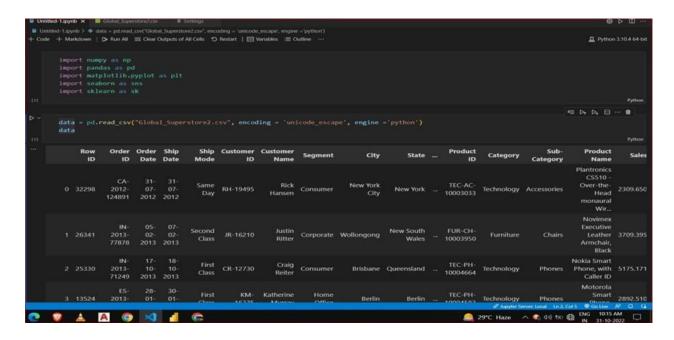
6.2 SPRINT DELIVERY SCHEDULE

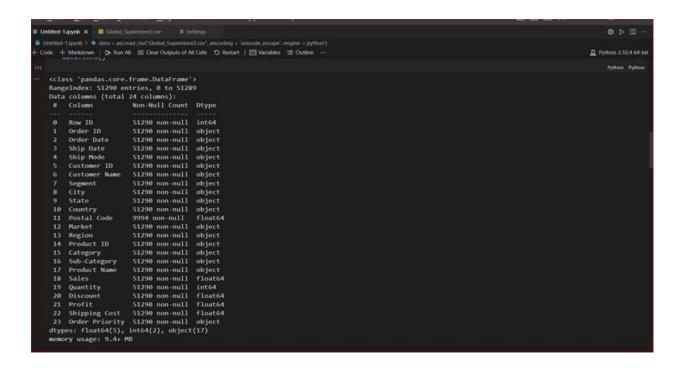
Sprint	Total Story Points	Duration	Sprint Start Date	Sprint End Date (Planned)	Story Points Completed (as on Planned End Date)	Sprint Release Date (Actual)
Sprint-1	4	6 Days	04 Nov 2022	10 Nov 2022	4	10 Nov 2022
Sprint-2	4	6 Days	05 Nov 2022	11 Nov 2022	4	11 Nov 2022
Sprint-3	6	6 Days	06 Nov 2022	12 Nov 2022	6	12 Nov 2022

Sprint	Total Story Points	Duration	Sprint Start Date	Sprint End Date (Planned)	Story Points Completed (as on Planned End Date)	Sprint Release Date (Actual)
Sprint-4	4	6 Days	07 Nov 2022	13 Nov 2022	4	13 Nov 2022

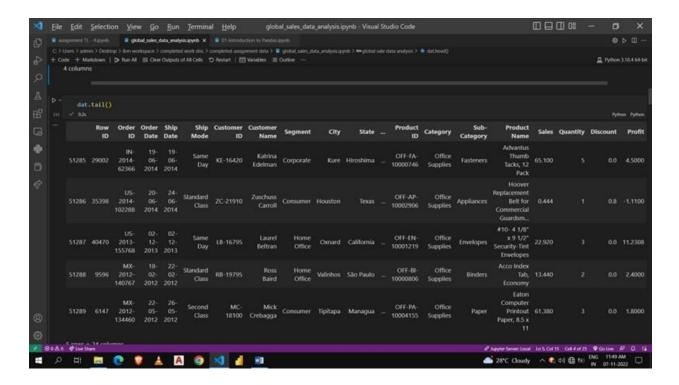
6.3 REPORTS FROM

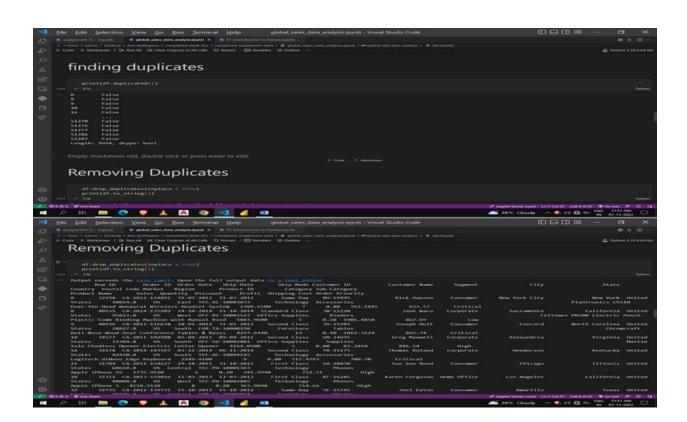
JIRASPRINT 1:



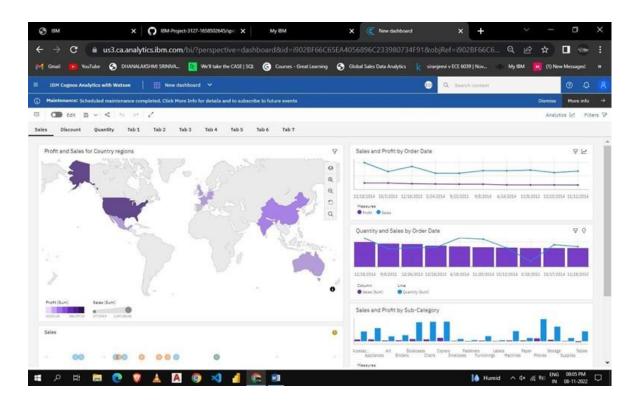


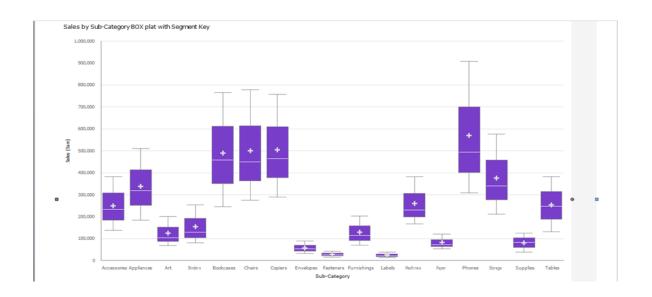
SPRINT 2:



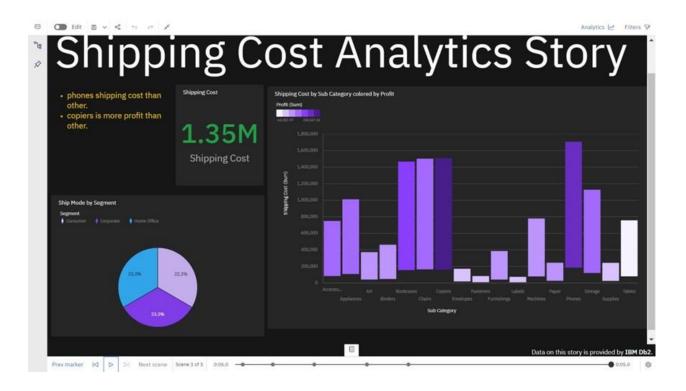


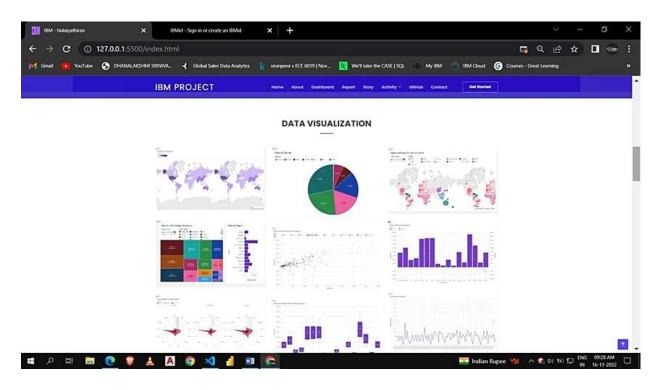
SPRINT 3:





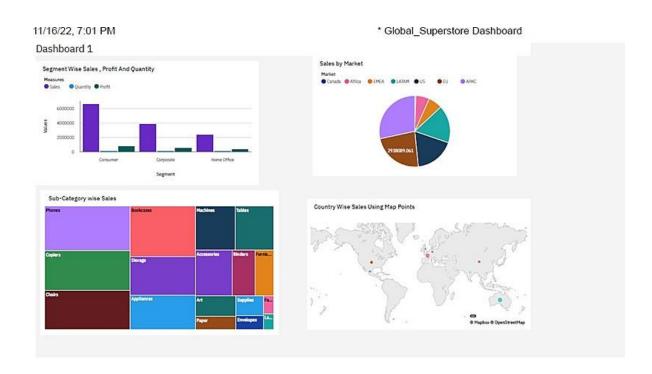
SPRINT 4:

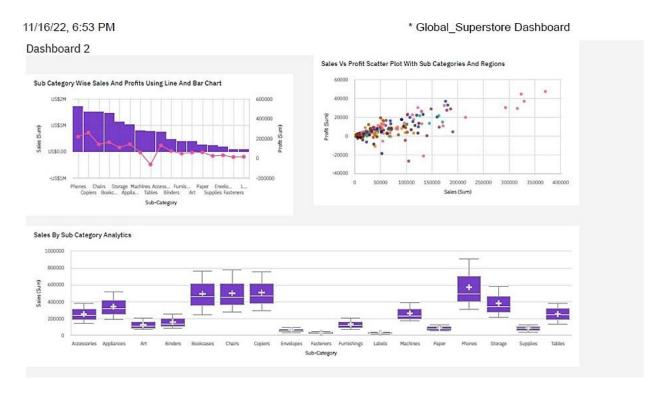




7. RESULTS:

7.1 PERFOMANCE METRICES





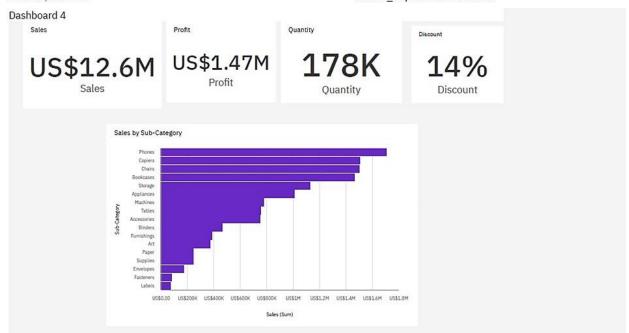
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* Global_Superstore Dashboard

Sales By Segment Analysis Sales Start Stum) Sales Start Stum) Ingret sales Stum) First CI Same I Second CI Segment Second CI Consumer Co

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* Global_Superstore Dashboard



8. ADVANTAGES & DISADVANTAGES

ADVANTAGES

- a. It was the cost efficiency project.
- b. Receive full-scale services Maximize presentation
- c. It was the timing saving project for peoples.

DISADVANTAGES

- a. The lack of data security is the big disadvantages in this project.
- b. Risk of choosing the wrong provider

9. CONCLUSION

By implementing this analytics solution, the company brought their competitive and sales data reporting in-house, cut costs and increased the accuracy of their reporting and analysis. As the company moves forward with this new solution, their sales reporting costs will most likely be reduced by 50 to 70%.

They are now able to analyse raw data themselves, respond more quickly to changes in market trends and perform root cause analysis to determine those shifts in the market. By securing quicker access to their data with the new solution, the company was also able to reduce the risk associated with delayed responses to changes in their markets.

With the new solution, the company can now process sales reports faster than the outsourced solution, reducing turn around time between 50% to 60%. The reporting needs of the company have been streamlined, consolidating over 10 reports into the centralized dashboard solution.

The company's competitive analysis group is also able to more quicklyrespond to internal data requests given they have the ability to pull the

information themselves. With this quicker response, the company is better able to react to changes in the market and predict opportunities for its sales force.

The business also experienced an increase in the overall understanding of their sales data throughout the organization. The company now has great flexibility in the presentation of their sales and competitive data, while also being able to integrate sales data with other key data points for the organization.

10. FUTURE SCOPE

Sales analytics refers to the use of technology to collect and use salesdata to derive actionable insights. It is used to identify, optimize, and forecast sales. It uses different metrics and KPIs to plan an efficient sales model that generates higher revenue for the business.

GITHUB PROJECT DEMO LINK

Github Link demo link: https://github.com/IBM-EPBL/IBM-Project-10746-1659201520

*https://youtu.be/E5tVyrND68M