

# **GLOBAL SALES DATA ANALYTICS**

## **PROJECT REPORT**

**Submitted By**

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**In Partial fulfilment for the award of the degree  
of  
BACHELOR OF TECHNOLOGY  
in  
INFORMATION TECHNOLOGY**

**MEENAKSHI COLLEGE OF  
ENGINEERING**

**ANNA UNIVERSITY CHENNAI-600025**

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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, try to 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:

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

## **2. LITERATURE 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, data warehouses, corporate intranets, best practices sharing, web analytics, voice of the customer information, and QA or Six Sigma data, 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 Context Google Scholar](#)
2. 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 Context Google Scholar](#)

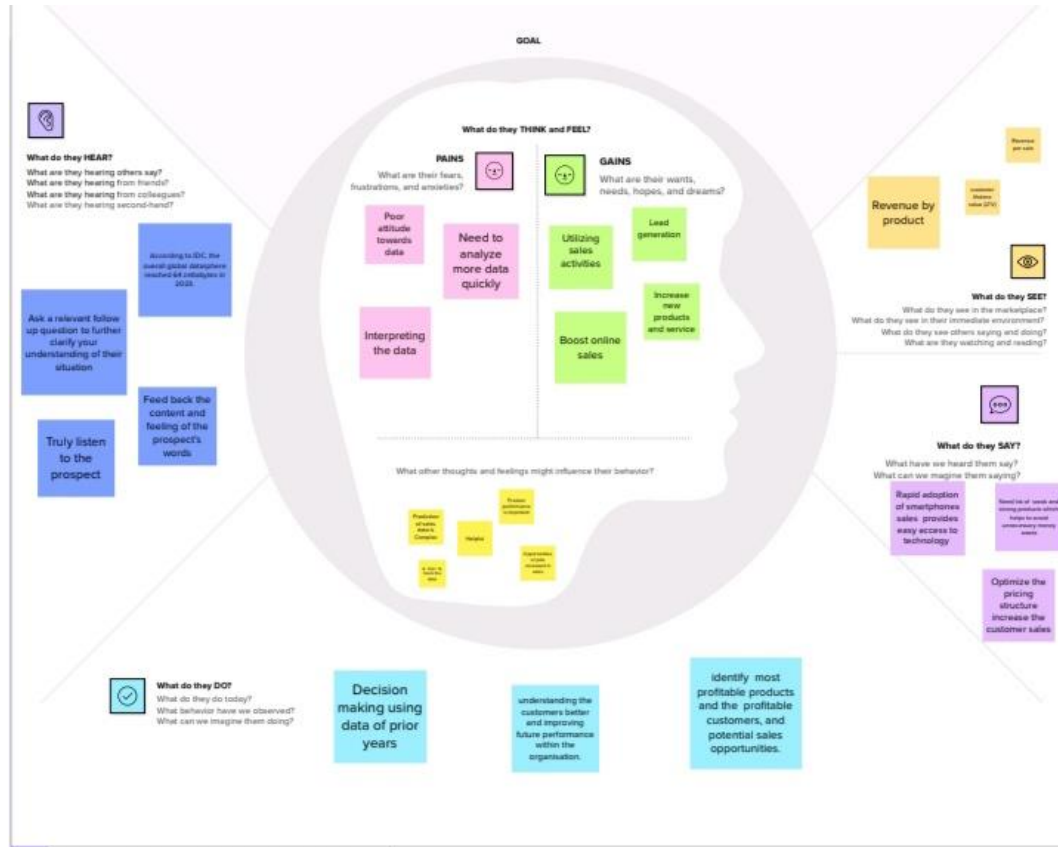
## 2.3 Problem Statement Definition:

Our goal is to design and create a Dashboard using the Superstore Sales 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 generate more profits, and what ones that bring losses?

### 3. IDEATION AND PROPOSED SOLUTION

#### 3.1 EMPATHY MAP CANVAS



#### 3.2 IDEATION AND BRAINSTORMING

### Person 1

Better segmentation	Scalability
Online sales products	Global investment

### Person 2

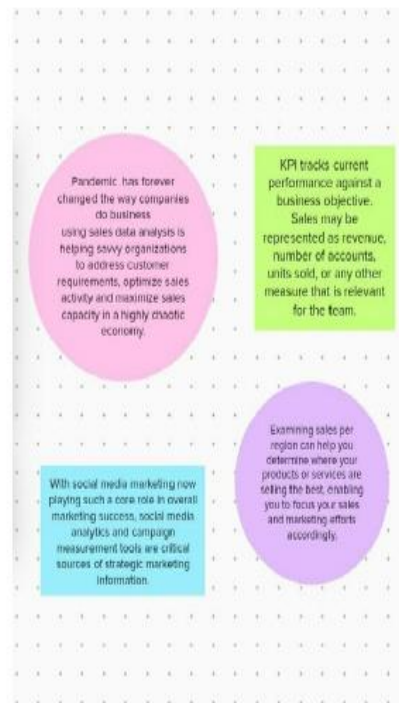
Sentiment analysis	Dig mart sales
Forecasting	Corporate analysis

### Person 3

Optimization	Information management
Intelligent sales	Data visualization

### Person 4

Prior years data	Revenue forecasting
Potential sales	Historical sell data



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

Define CS, fit into CC	<b>1. CUSTOMER SEGMENT(S)</b> 1.Stack Holders 2.Customer above 18 years	<b>6. CUSTOMER LIMITATIONS</b> 1.No stock 2.Poor Network Connection 3.Late delivery 4.Spending Budget	<b>5. AVAILABLE SOLUTIONS</b> 1.Previous sales production data in global markets 2.Online delivery.	Explore AS, differentiate
	<b>2. JOBS-TO-BE-DONE / PROBLEMS</b> 1. Financial difficulties causes economic slowdown 2. Supply problem and rising demand	<b>3. PROBLEM ROOT CAUSE</b> The pandemic has spread with alarming speed infecting millions and bringing economic activity to a near standstill as countries imposed tight restrictions on movements to halt the spread of the virus. As the health and human toll grows, the economic damage evident and represents the largest economic shock and out of stocks, the world has experienced in decades.	<b>7. BEHAVIOUR</b> 1. Maintain data accuracy. 2. Using confirmatory factor analysis we derive validity of the datasets.	
Focus on JSP, map into BE, understand RC				Focus on JSP, map into BE, understand RC
Map product situation	<b>3. TRIGGERS</b> 1.Changes in tactics 2. Current vendor dissatisfaction. 3. Financial triggers.	<b>10. YOUR SOLUTION</b> To supplement the future planning and better decision making regarding pandemic eg: Covid a predictive analytics model viz. Auto Regressive integrated moving Average(ARIMA) model is used for data analytics of data generated by the different modules.	<b>8. CHANNELS of BEHAVIOUR</b> Online Leave a review ,Redeem a coupon,Provide a feedback,Save time. Offline Spend much time to purchase offer self service.	Map product situation
	<b>4. EMOTIONS:</b> 1. Insecure feeling 2. Lack of communication 3. We need use anew strategy 4. slow response			

## 4. REQUIREMENT ANALYSIS

### Project Design Phase-II Solution Requirements (Functional & Non-functional)

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	<b>Usability</b>	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.

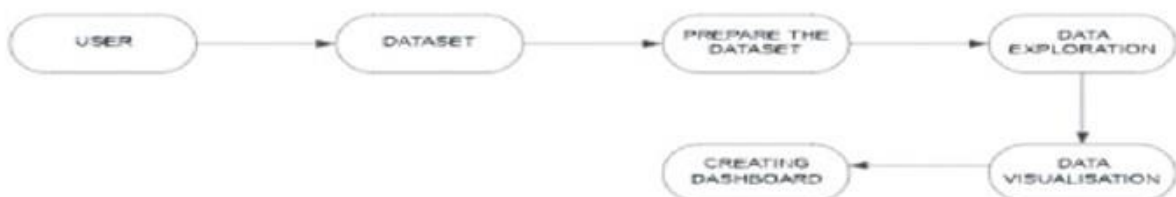
NFR-2	<b>Security</b>	<p>Global security service revenues are forecast to increase 4.4% per year to \$295 billion in 2026, with most growth occurring in the first half of the forecast period due to strengthening economic environments as the impact of the COVID-19 pandemic fades. Though the most significant 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.</p> <p>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:</p> <ol style="list-style-type: none"> <li>1. Spending on security guards was boosted in many countries by the need to enforce public health regulations.</li> <li>2. Falling occupancy rates in commercial real estate shrank the market base, but reduced in-person presence at many facilities also created security risks that required solutions.</li> <li>3. Concern about property crime – which is an important driver of security spending – broadly increased and was exacerbated by widespread rioting.</li> </ol>
NFR-3	<b>Reliability</b>	<p>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.</p> <p>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.</p> <p>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.</p>

NFR-4	<b>Performance</b>	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	<b>Availability</b>	By setting up An Application Performance Monitoring (APM) system that helps to monitor the availability 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 availability

## 5.PROJECT DESIGN

### 5.1 DATA FLOW DIAGRAM

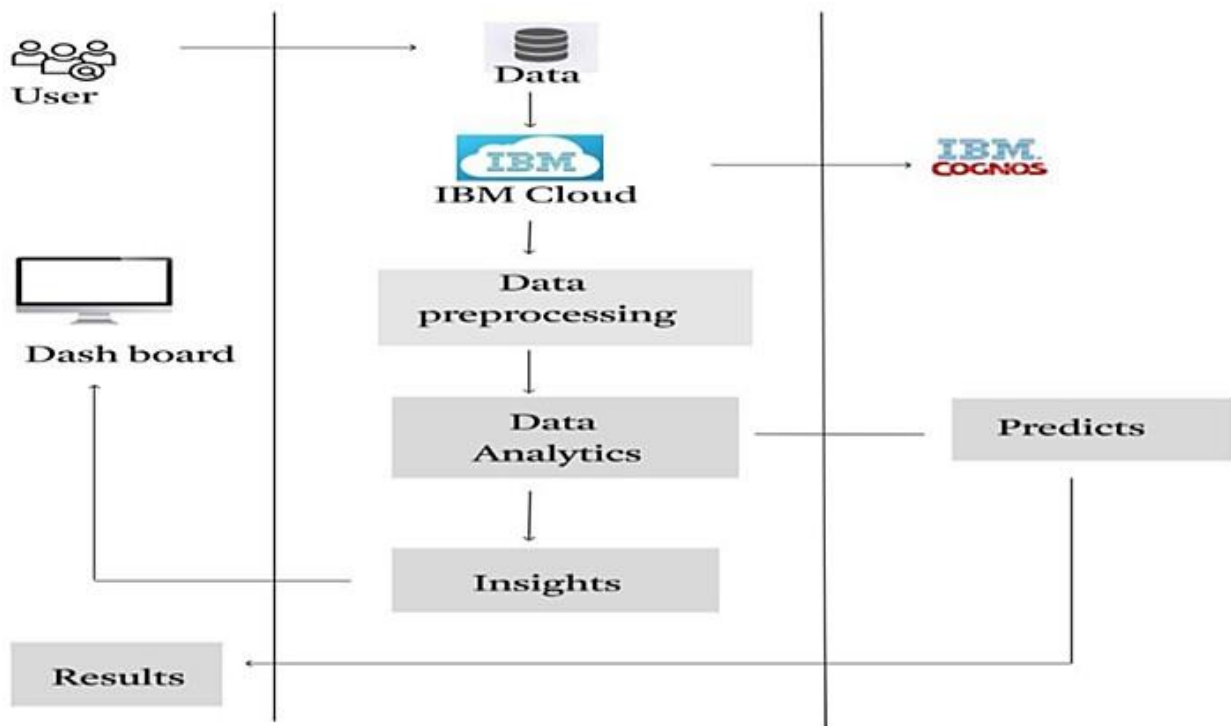
#### Simple Data flow diagram:



#### Structural flow diagram:



## 5.2 SOLUTION & TECHNICAL ARCHITECTURE



## 5.3 USER STORIES

### User stories:

User type	Functional requirement (Epic)	User story number	User story/task	Acceptance criteria	Priority	Release
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Business owner	Online registration	USN-1	As a business owner, I want to login to my account.	Input data fields to enter: 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 file containing the sales data.	High	Sprint-1
	Improve performance	USN-3	As a business owner, I want to use the analytics results to make my business performance better	Reflection of the analytics results to my online store.	High	Sprint-2

Customer (Buyer)	Registration	USN-1	As a buyer, I want to login to my account	Input data fields to enter: 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 from the online store	Search for the items to buy in the application	Medium	Sprint-3

Analytics team administrator	Analysis of sales data	USN-1	As an administrator, I want to analyze the sales data for better performance of the store.	Get the sales data from the business owner.	High	Sprint-4
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## 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	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
		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

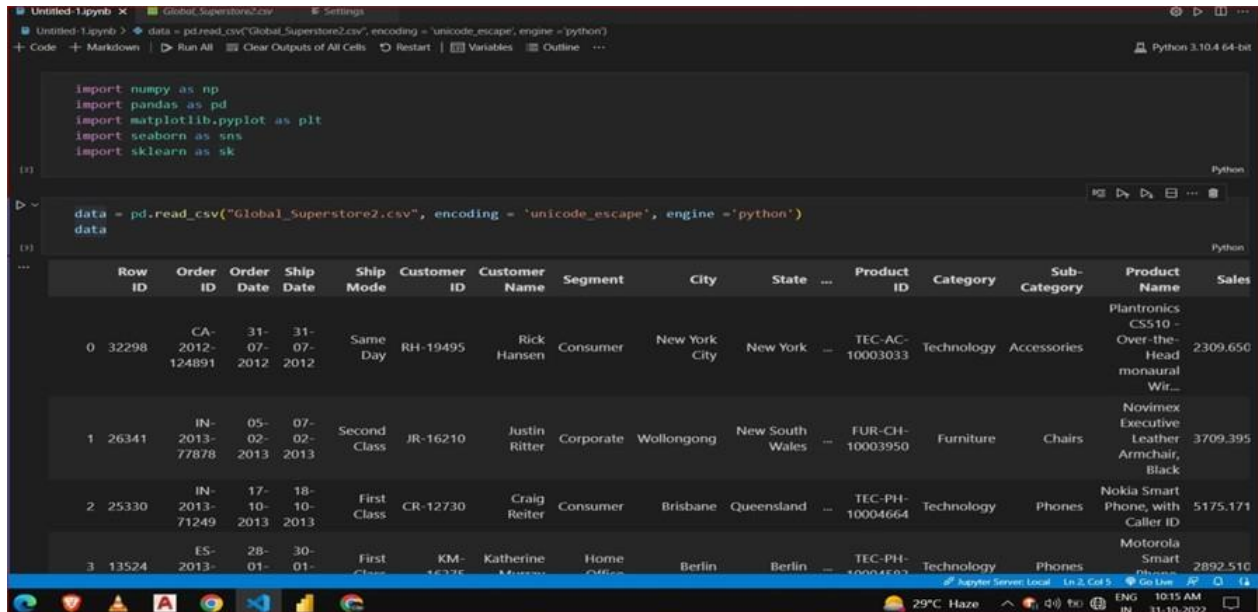
Sprint	Total Story Points	Duration	Sprint Start Date	Sprint End Date (Planned)	Story Points Completed (as on Planned End Date)	Sprint Release Date (Actual)
Sprint-1	4	6 Days	04 Nov 2022	10 Nov 2022	4	10 Nov 2022
Sprint-2	4	6 Days	05 Nov 2022	11 Nov 2022	4	11 Nov 2022
Sprint-3	6	6 Days	06 Nov 2022	12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



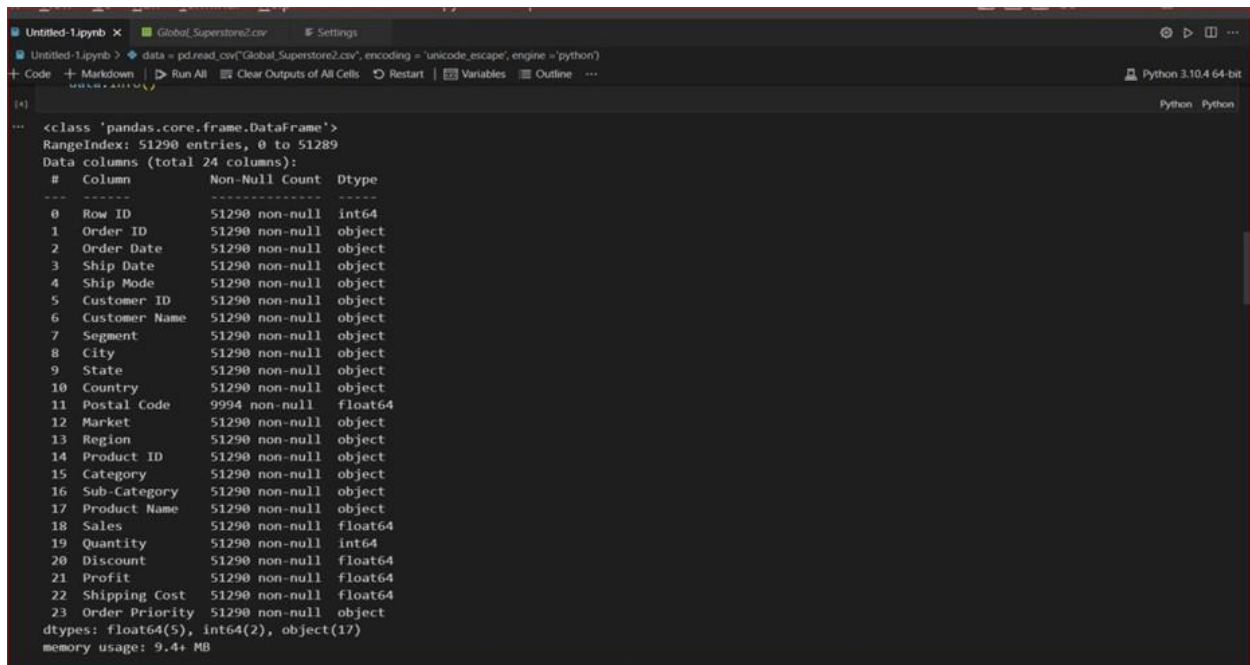
The screenshot shows a Jupyter Notebook interface with a code cell containing the following Python code:

```
import numpy as np
import pandas as pd
import matplotlib.pyplot as plt
import seaborn as sns
import sklearn as sk

data = pd.read_csv("Global_Superstore2.csv", encoding = 'unicode_escape', engine = 'python')
data
```

The output of the code is a preview of the first four rows of the 'Global\_Superstore2.csv' file. The data is presented in a table with 17 columns: Row ID, Order ID, Order Date, Ship Date, Ship Mode, Customer ID, Customer Name, Segment, City, State, Product ID, Category, Sub-Category, Product Name, and Sales.

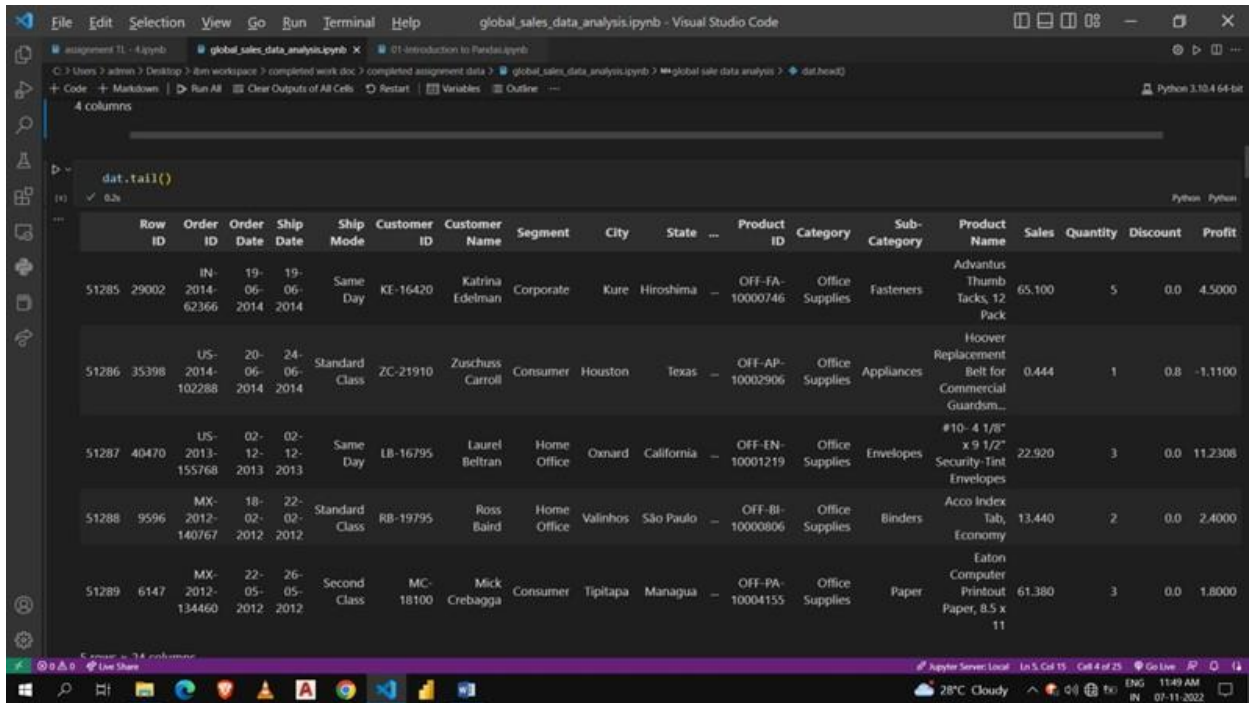
Row ID	Order ID	Order Date	Ship Date	Ship Mode	Customer ID	Customer Name	Segment	City	State	Product ID	Category	Sub-Category	Product Name	Sales
0	32298	CA-2012-124891	31-07-2012	Same Day	RH-19495	Rick Hansen	Consumer	New York City	New York	TEC-AC-10003033	Technology	Accessories	Plantronics CS510 - Over-the-Head monaural Wir...	2309.650
1	26341	IN-2013-077878	05-02-2013	Second Class	JR-16210	Justin Ritter	Corporate	Wollongong	New South Wales	FUR-CH-10003950	Furniture	Chairs	Novimex Executive Leather Armchair, Black	3709.395
2	25330	IN-2013-071249	17-10-2013	First Class	CR-12730	Craig Reiter	Consumer	Brisbane	Queensland	TEC-PH-10004664	Technology	Phones	Nokia Smart Phone, with Caller ID	5175.171
3	13524	ES-2013-01-	28-01-	First Class	KM-16325	Katherine Murray	Home Office	Berlin	Berlin	TEC-PH-10004503	Technology	Phones	Motorola Smart Phone	2892.510



The screenshot shows a Jupyter Notebook interface with a code cell containing the following Python code:

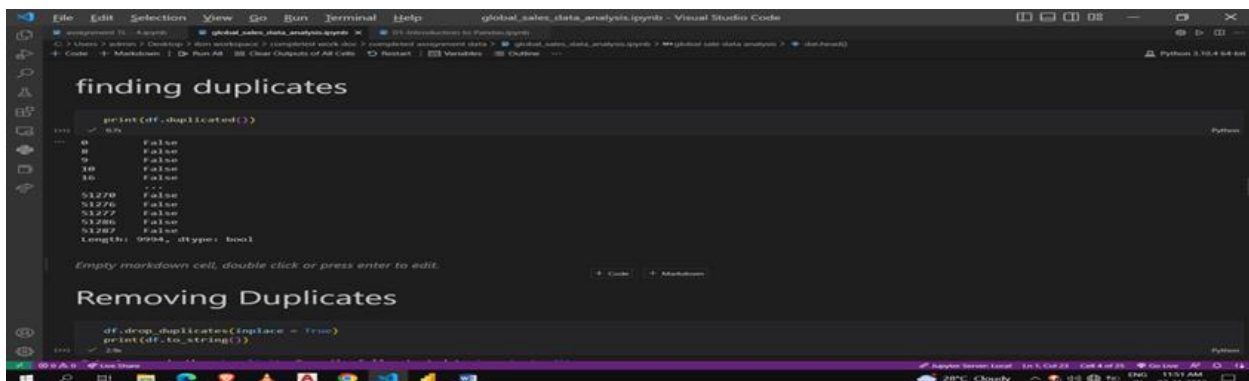
```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 51290 entries, 0 to 51289
Data columns (total 24 columns):
#   Column                Non-Null Count  Dtype
---  ---
0   Row ID                51290 non-null  int64
1   Order ID              51290 non-null  object
2   Order Date            51290 non-null  object
3   Ship Date             51290 non-null  object
4   Ship Mode             51290 non-null  object
5   Customer ID           51290 non-null  object
6   Customer Name         51290 non-null  object
7   Segment               51290 non-null  object
8   City                  51290 non-null  object
9   State                 51290 non-null  object
10  Country               51290 non-null  object
11  Postal Code           9994 non-null   float64
12  Market                51290 non-null  object
13  Region                51290 non-null  object
14  Product ID            51290 non-null  object
15  Category              51290 non-null  object
16  Sub-Category          51290 non-null  object
17  Product Name          51290 non-null  object
18  Sales                 51290 non-null  float64
19  Quantity              51290 non-null  int64
20  Discount              51290 non-null  float64
21  Profit                51290 non-null  float64
22  Shipping Cost         51290 non-null  float64
23  Order Priority         51290 non-null  object
dtypes: float64(5), int64(2), object(17)
memory usage: 9.4+ MB
```

## SPRINT 2:



The screenshot shows a Visual Studio Code window with a Jupyter Notebook titled 'global\_sales\_data\_analysis.ipynb'. The notebook is open to a cell containing the code `dat.tail()`. The output of this code is a pandas DataFrame showing the last five rows of the dataset. The DataFrame has 17 columns: Row ID, Order ID, Order Date, Ship Date, Ship Mode, Customer ID, Customer Name, Segment, City, State, Product ID, Category, Sub-Category, Product Name, Sales, Quantity, Discount, and Profit. The data is as follows:

Row ID	Order ID	Order Date	Ship Date	Ship Mode	Customer ID	Customer Name	Segment	City	State	Product ID	Category	Sub-Category	Product Name	Sales	Quantity	Discount	Profit
51285	29002	2014-06-23	2014-06-24	Same Day	KE-16420	Katrina Edelman	Corporate	Kure	Hiroshima	OFF-FA-10000746	Office Supplies	Fasteners	Advantus Thumb Tacks, 12 Pack	65.100	5	0.0	4.5000
51286	35398	2014-06-10	2014-06-10	Standard Class	ZC-21910	Zuschuss Carroll	Consumer	Houston	Texas	OFF-AP-10002906	Office Supplies	Appliances	Hoover Replacement Belt for Commercial Guardsm...	0.444	1	0.8	-1.1100
51287	40470	2013-12-15	2013-12-12	Same Day	LB-16795	Laurel Beltran	Home Office	Oxnard	California	OFF-EN-10001219	Office Supplies	Envelopes	#10 - 4 1/8" x 9 1/2" Security-Tint Envelopes	22.920	3	0.0	11.2308
51288	9596	2012-05-14	2012-05-22	Standard Class	RB-19795	Ross Baird	Home Office	Valinhos	São Paulo	OFF-BI-10000806	Office Supplies	Binders	Acco Index Tab, Economy	13.440	2	0.0	2.4000
51289	6147	2012-05-13	2012-05-26	Second Class	MC-18100	Mick Crebaggia	Consumer	Tipitapa	Managua	OFF-PA-10004155	Office Supplies	Paper	Eaton Computer Printout Paper, 8.5 x 11	61.380	3	0.0	1.8000

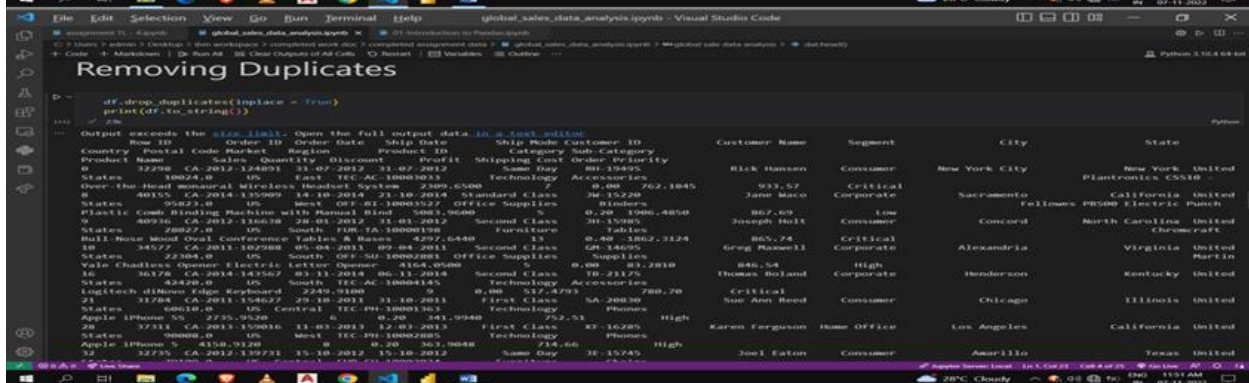


The screenshot shows a Visual Studio Code window with a Jupyter Notebook titled 'global\_sales\_data\_analysis.ipynb'. The notebook is open to a cell containing the code `print(df.duplicated())`. The output of this code is a boolean Series indicating which rows are duplicates. The output is as follows:

```
0      False
1      False
2      False
3      False
4      False
51270    False
51271    False
51272    False
51286    False
51287    False
51288    False
51289    False
Length: 9994, dtype: bool
```

Below the code cell, there is a section titled 'Removing Duplicates' with the code `df.drop_duplicates(inplace=True)` and `print(df.to_string())`. The output of this code is a large DataFrame showing the first 10 rows of the dataset after removing duplicates. The DataFrame has 17 columns: Row ID, Order ID, Order Date, Ship Date, Ship Mode, Customer ID, Customer Name, Segment, City, State, Product ID, Category, Sub-Category, Product Name, Sales, Quantity, Discount, and Profit. The data is as follows:

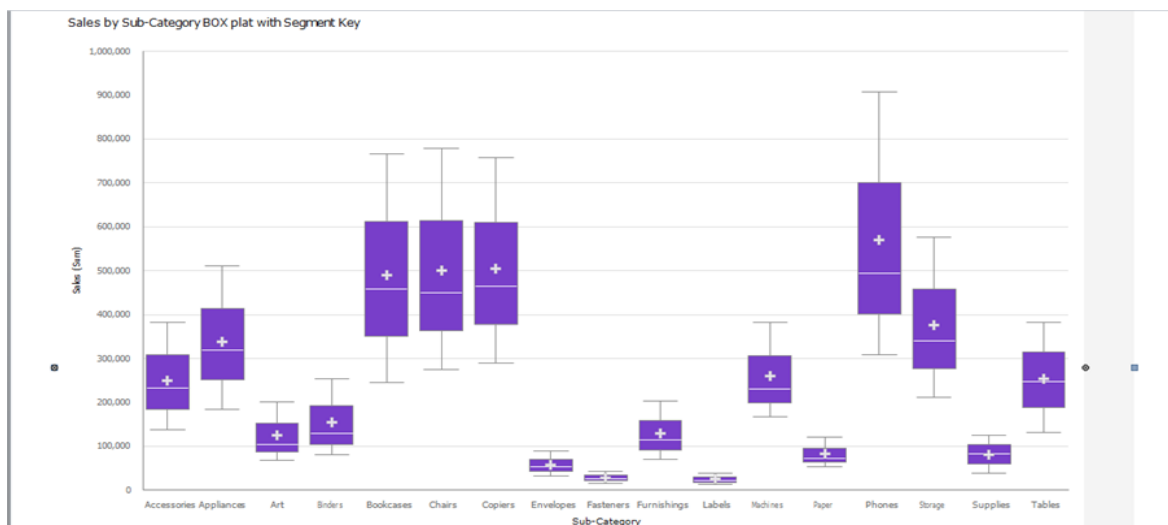
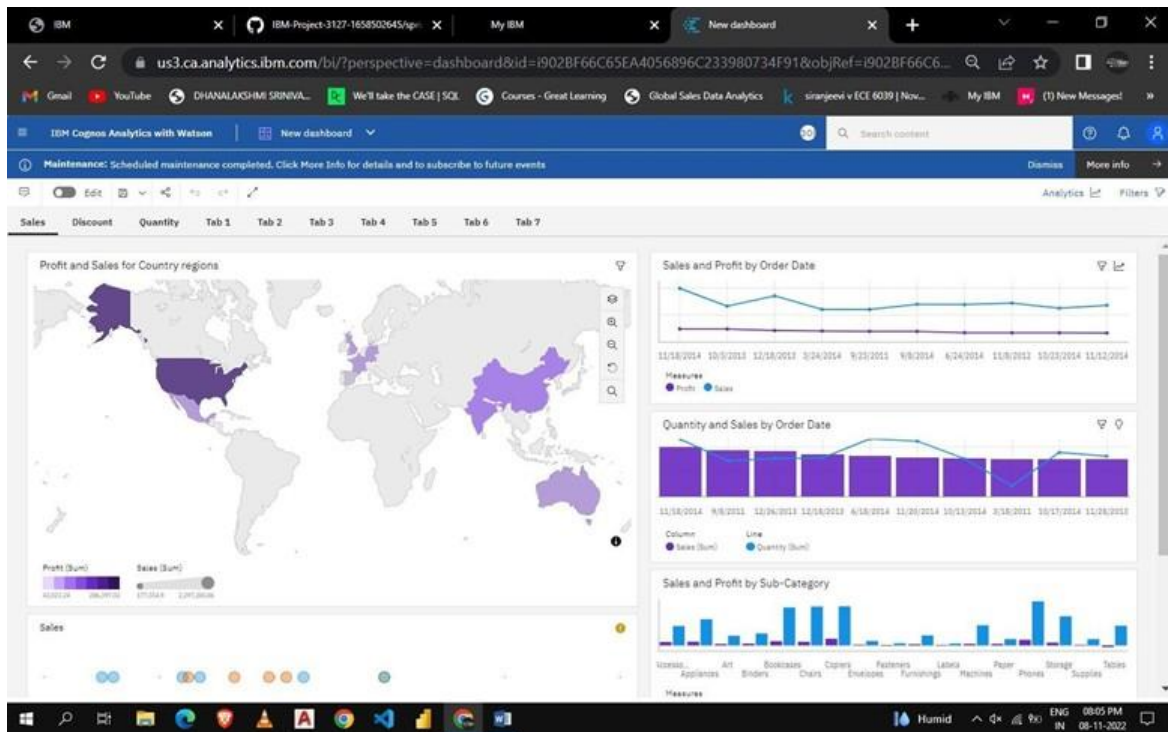
Row ID	Order ID	Order Date	Ship Date	Ship Mode	Customer ID	Customer Name	Segment	City	State	Product ID	Category	Sub-Category	Product Name	Sales	Quantity	Discount	Profit
0	32398	2013-12-01	2013-12-01	Standard Class	KE-16420	Katrina Edelman	Corporate	Kure	Hiroshima	OFF-FA-10000746	Office Supplies	Fasteners	Advantus Thumb Tacks, 12 Pack	65.100	5	0.0	4.5000
1	35398	2014-06-10	2014-06-10	Standard Class	ZC-21910	Zuschuss Carroll	Consumer	Houston	Texas	OFF-AP-10002906	Office Supplies	Appliances	Hoover Replacement Belt for Commercial Guardsm...	0.444	1	0.8	-1.1100
2	40470	2013-12-15	2013-12-12	Same Day	LB-16795	Laurel Beltran	Home Office	Oxnard	California	OFF-EN-10001219	Office Supplies	Envelopes	#10 - 4 1/8" x 9 1/2" Security-Tint Envelopes	22.920	3	0.0	11.2308
3	9596	2012-05-14	2012-05-22	Standard Class	RB-19795	Ross Baird	Home Office	Valinhos	São Paulo	OFF-BI-10000806	Office Supplies	Binders	Acco Index Tab, Economy	13.440	2	0.0	2.4000
4	6147	2012-05-13	2012-05-26	Second Class	MC-18100	Mick Crebaggia	Consumer	Tipitapa	Managua	OFF-PA-10004155	Office Supplies	Paper	Eaton Computer Printout Paper, 8.5 x 11	61.380	3	0.0	1.8000
5	32398	2013-12-01	2013-12-01	Standard Class	KE-16420	Katrina Edelman	Corporate	Kure	Hiroshima	OFF-FA-10000746	Office Supplies	Fasteners	Advantus Thumb Tacks, 12 Pack	65.100	5	0.0	4.5000
6	35398	2014-06-10	2014-06-10	Standard Class	ZC-21910	Zuschuss Carroll	Consumer	Houston	Texas	OFF-AP-10002906	Office Supplies	Appliances	Hoover Replacement Belt for Commercial Guardsm...	0.444	1	0.8	-1.1100
7	40470	2013-12-15	2013-12-12	Same Day	LB-16795	Laurel Beltran	Home Office	Oxnard	California	OFF-EN-10001219	Office Supplies	Envelopes	#10 - 4 1/8" x 9 1/2" Security-Tint Envelopes	22.920	3	0.0	11.2308
8	9596	2012-05-14	2012-05-22	Standard Class	RB-19795	Ross Baird	Home Office	Valinhos	São Paulo	OFF-BI-10000806	Office Supplies	Binders	Acco Index Tab, Economy	13.440	2	0.0	2.4000
9	6147	2012-05-13	2012-05-26	Second Class	MC-18100	Mick Crebaggia	Consumer	Tipitapa	Managua	OFF-PA-10004155	Office Supplies	Paper	Eaton Computer Printout Paper, 8.5 x 11	61.380	3	0.0	1.8000



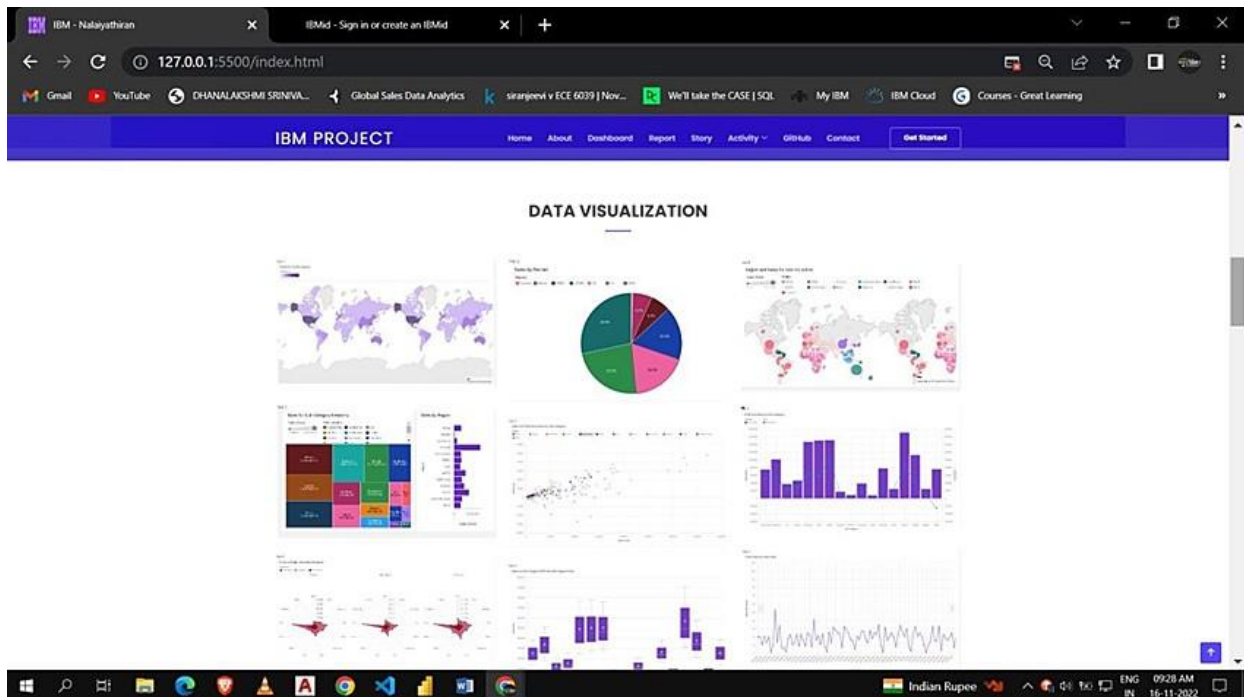
The screenshot shows a Visual Studio Code window with a Jupyter Notebook titled 'global\_sales\_data\_analysis.ipynb'. The notebook is open to a cell containing the code `df.drop_duplicates(inplace=True)` and `print(df.to_string())`. The output of this code is a large DataFrame showing the first 10 rows of the dataset after removing duplicates. The DataFrame has 17 columns: Row ID, Order ID, Order Date, Ship Date, Ship Mode, Customer ID, Customer Name, Segment, City, State, Product ID, Category, Sub-Category, Product Name, Sales, Quantity, Discount, and Profit. The data is as follows:

Row ID	Order ID	Order Date	Ship Date	Ship Mode	Customer ID	Customer Name	Segment	City	State	Product ID	Category	Sub-Category	Product Name	Sales	Quantity	Discount	Profit
0	32398	2013-12-01	2013-12-01	Standard Class	KE-16420	Katrina Edelman	Corporate	Kure	Hiroshima	OFF-FA-10000746	Office Supplies	Fasteners	Advantus Thumb Tacks, 12 Pack	65.100	5	0.0	4.5000
1	35398	2014-06-10	2014-06-10	Standard Class	ZC-21910	Zuschuss Carroll	Consumer	Houston	Texas	OFF-AP-10002906	Office Supplies	Appliances	Hoover Replacement Belt for Commercial Guardsm...	0.444	1	0.8	-1.1100
2	40470	2013-12-15	2013-12-12	Same Day	LB-16795	Laurel Beltran	Home Office	Oxnard	California	OFF-EN-10001219	Office Supplies	Envelopes	#10 - 4 1/8" x 9 1/2" Security-Tint Envelopes	22.920	3	0.0	11.2308
3	9596	2012-05-14	2012-05-22	Standard Class	RB-19795	Ross Baird	Home Office	Valinhos	São Paulo	OFF-BI-10000806	Office Supplies	Binders	Acco Index Tab, Economy	13.440	2	0.0	2.4000
4	6147	2012-05-13	2012-05-26	Second Class	MC-18100	Mick Crebaggia	Consumer	Tipitapa	Managua	OFF-PA-10004155	Office Supplies	Paper	Eaton Computer Printout Paper, 8.5 x 11	61.380	3	0.0	1.8000
5	32398	2013-12-01	2013-12-01	Standard Class	KE-16420	Katrina Edelman	Corporate	Kure	Hiroshima	OFF-FA-10000746	Office Supplies	Fasteners	Advantus Thumb Tacks, 12 Pack	65.100	5	0.0	4.5000
6	35398	2014-06-10	2014-06-10	Standard Class	ZC-21910	Zuschuss Carroll	Consumer	Houston	Texas	OFF-AP-10002906	Office Supplies	Appliances	Hoover Replacement Belt for Commercial Guardsm...	0.444	1	0.8	-1.1100
7	40470	2013-12-15	2013-12-12	Same Day	LB-16795	Laurel Beltran	Home Office	Oxnard	California	OFF-EN-10001219	Office Supplies	Envelopes	#10 - 4 1/8" x 9 1/2" Security-Tint Envelopes	22.920	3	0.0	11.2308
8	9596	2012-05-14	2012-05-22	Standard Class	RB-19795	Ross Baird	Home Office	Valinhos	São Paulo	OFF-BI-10000806	Office Supplies	Binders	Acco Index Tab, Economy	13.440	2	0.0	2.4000
9	6147	2012-05-13	2012-05-26	Second Class	MC-18100	Mick Crebaggia	Consumer	Tipitapa	Managua	OFF-PA-10004155	Office Supplies	Paper	Eaton Computer Printout Paper, 8.5 x 11	61.380	3	0.0	1.8000

### SPRINT 3:



## SPRINT 4:

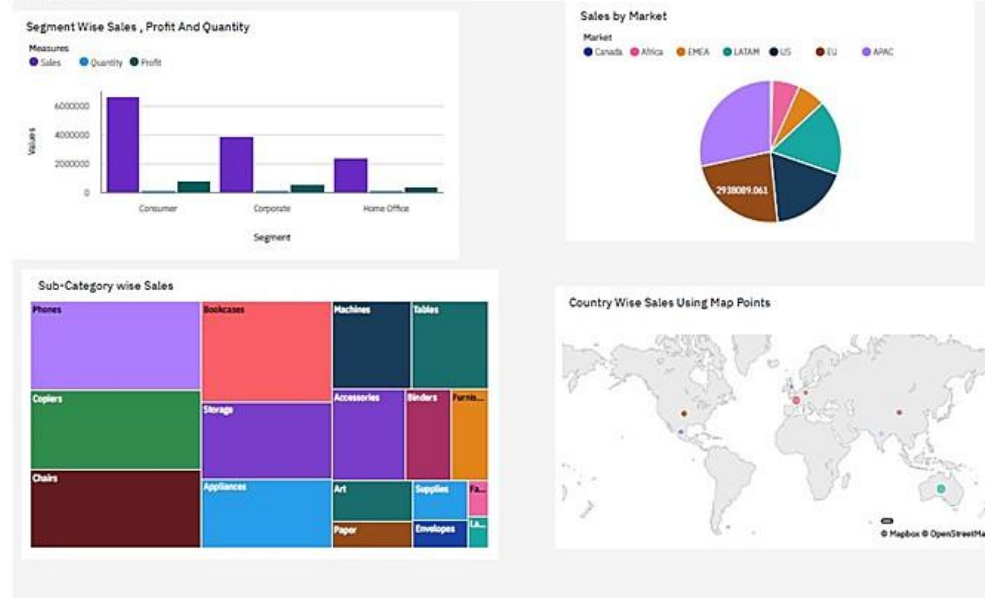


## 7. RESULTS:

### 7.1 PERFORMANCE METRICES

11/16/22, 7:01 PM

Dashboard 1



11/16/22, 6:53 PM

\* Global\_Superstore Dashboard

Dashboard 2



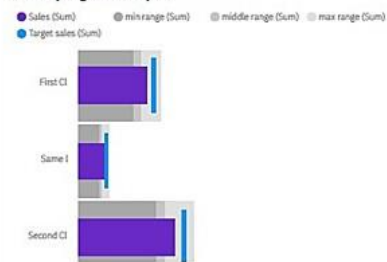


11/16/22, 6:55 PM

\* Global\_Superstore Dashboard

### Dashboard3

Sales By Segment Analysis



Sales Vs Profit By Countries



Regional Quantity And Sales Using Radar Chart



Country Wise Sales Vs Profit Using Word Cloud



11/16/22, 6:59 PM

\* Global\_Superstore Dashboard

### Dashboard 4

Sales

**US\$12.6M**  
Sales

Profit

**US\$1.47M**  
Profit

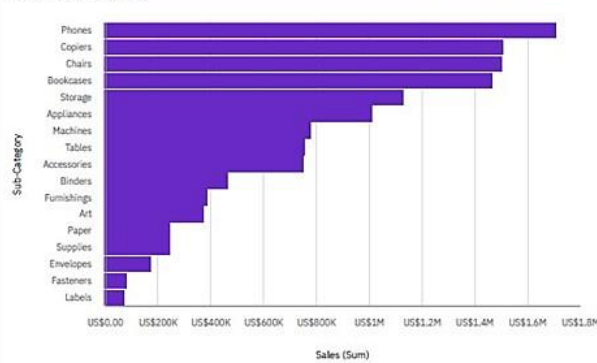
Quantity

**178K**  
Quantity

Discount

**14%**  
Discount

Sales by Sub-Category



## **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 quickly respond 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 sales data 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 :** <https://github.com/IBM-EPBL/IBM-Project-5204-1658751561>

**\*<https://youtu.be/E5tVyrND68M>**



