Project Report

Analytics Tool for E-Commerce Businesses

Submitted By:

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1 INTRODUCTION

1.1 Overview

Our project focuses on the e-Commerce business sector of our economy. It was to provide an analytics tool to ease their process of analization in their industry. We have created a dashboard using IBM Cognos Analytics tool as an analytics tool for e-Commerce business.

1.2 Purpose

We have included various features and visualizations in the dashboard which will certainly make the work of the user even easier to analyze. A business owner utilizing this dashboard, could improve the economy of his business and enhance his company sales. A customer utilizing this dashboard could decide on the statistics a specific company and be able to select their preferred choice of a product.

2 LITERATURE SURVEY

2.1 Existing problem

As a consequence of the current situation of covid-19, we have entered a virtual world where everything is done online on the internet. E-commerce is one such field that has flourished by bounds in recent times. There are many small and big online brands today. From groceries, clothes, furniture and for that matter even medicines can be bought online these days. Such an increase in demand also means huge competition. Hence, it turns out to become a necessity to analyze and understand the sales, trends, and profits of different products sold on these e-commerce sites.

At present, businesses are mostly being analyzed by people such as business owners manually and individually. This method is totally time-consuming and at times the predictions and analytics of this method might turn out to inaccurate. Because of that, their company could incur losses which is totally not preferred by them. So, we cannot put our entire whole-hearted trust in this solution that exists.

2.2 Proposed solution

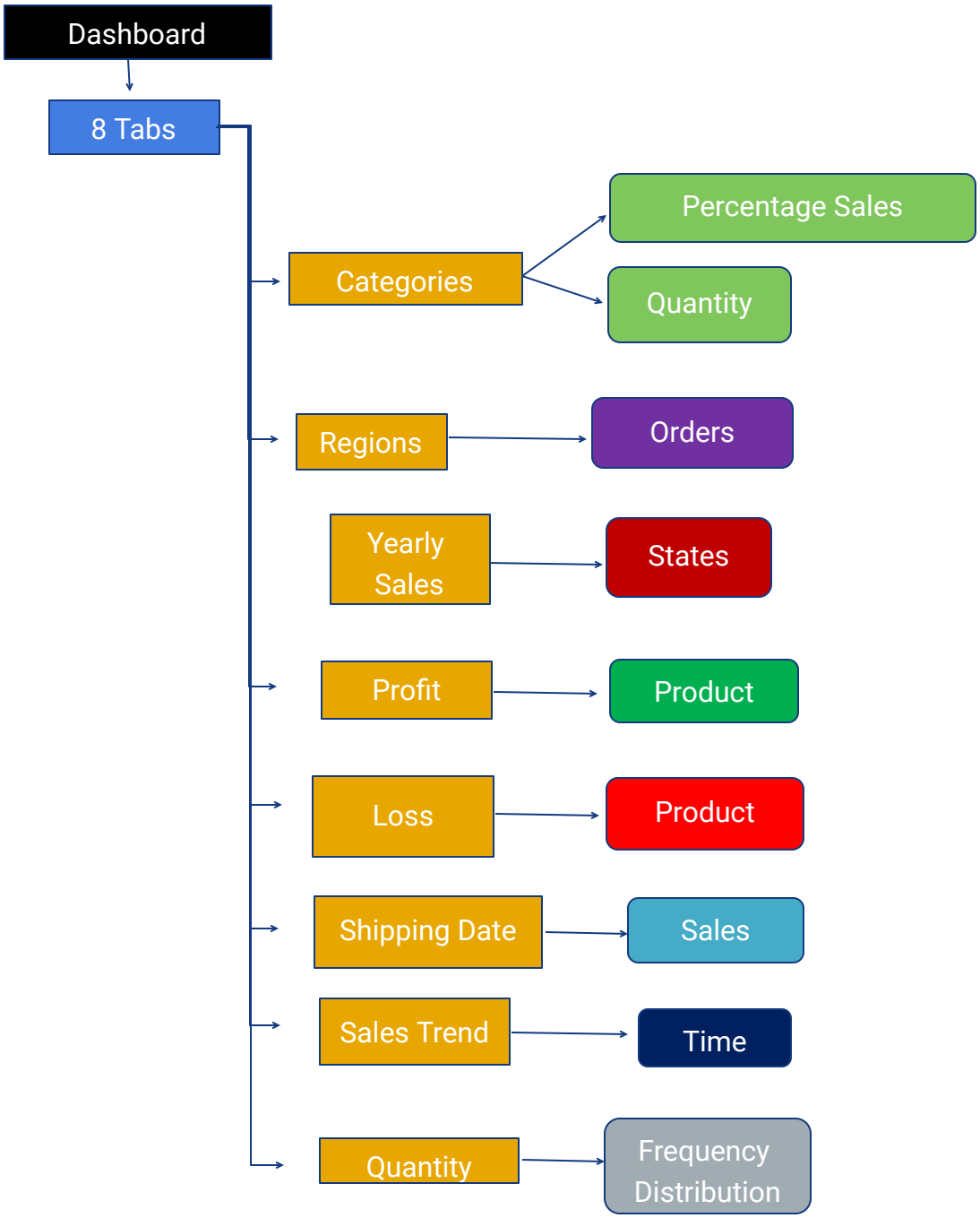
We propose a solution that will provide analytical tools for e-commerce business in the form of an Analytical Dashboard to help the owner understand the current business in the market. It will help them understand the potential and importance of each product in different regions and profit trends that will help in the growth of the business.

This method would certainly be more beneficiary than the existing/ prevalent solution.

The time factor would certainly be reduced and ease the analysis process of the user. The business owner would certainly be benefited while utilizing this proposed solution in his business.

3 THEORITICAL ANALYSIS

3.1 Block diagram



3.2 Hardware / Software designing

3.2.1 Hardware

We had PCs or laptops to be available with each team member with which we designed this dashboard.

3.2.2 Software

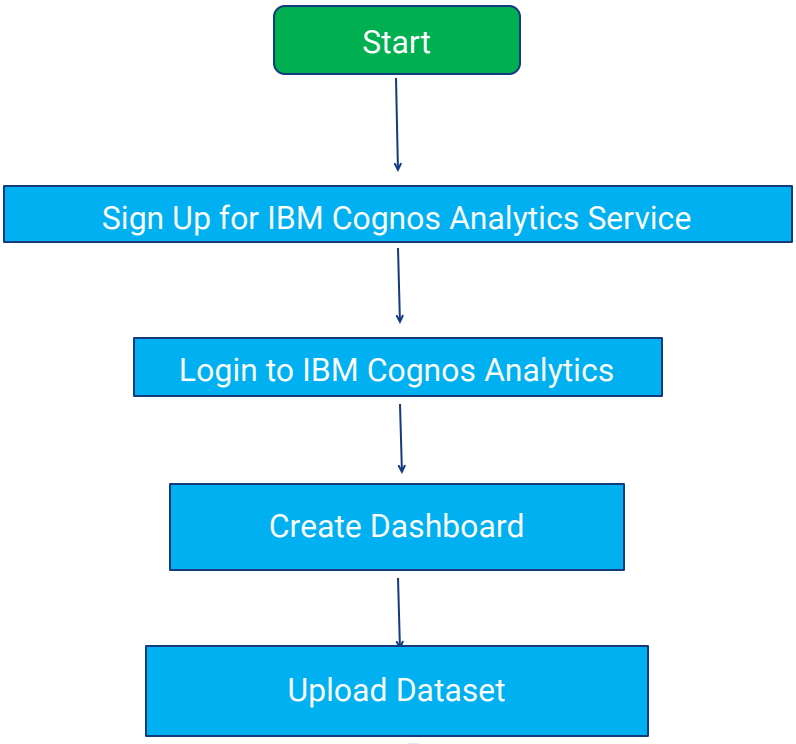
We had access to IBM Cognos Analytics Tool on which we developed the dashboard.

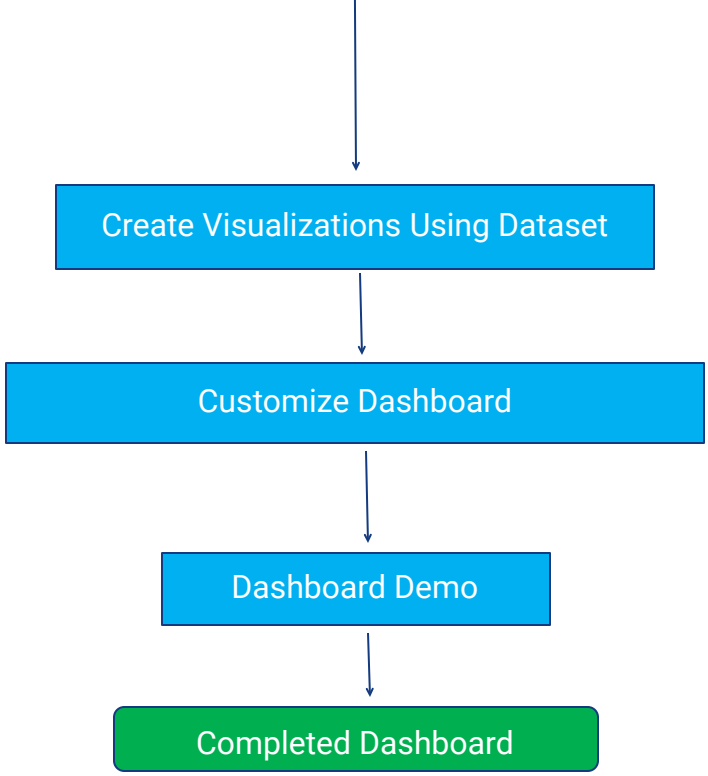
We also utilized a US-Superstore Dataset from the internet website source, Kaggle.

4 EXPERIMENTAL INVESTIGATIONS

We carried out a wide range of experiments with the data in the dataset and visualizations. We had to decide on which would be the dependent and independent factor in a visualization. Then only we were able to match up with the expected solutions of the proposed project**.**

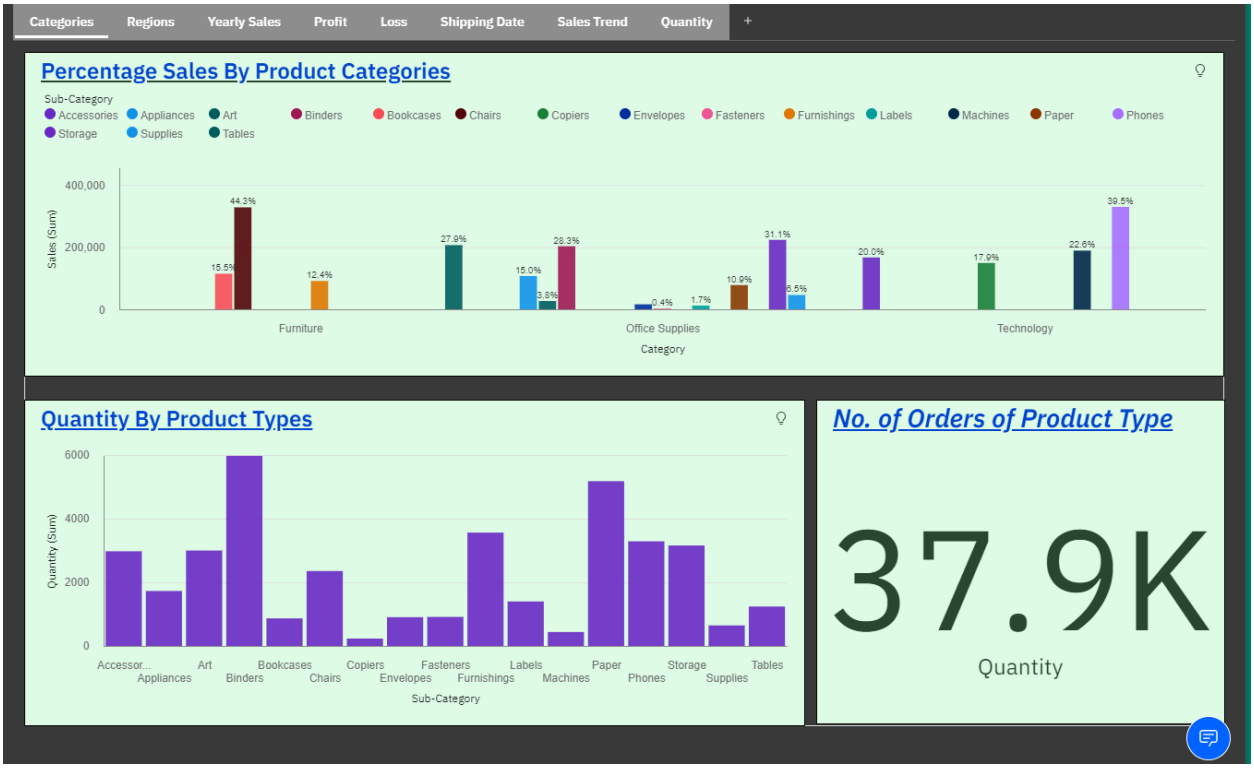
5 FLOWCHART



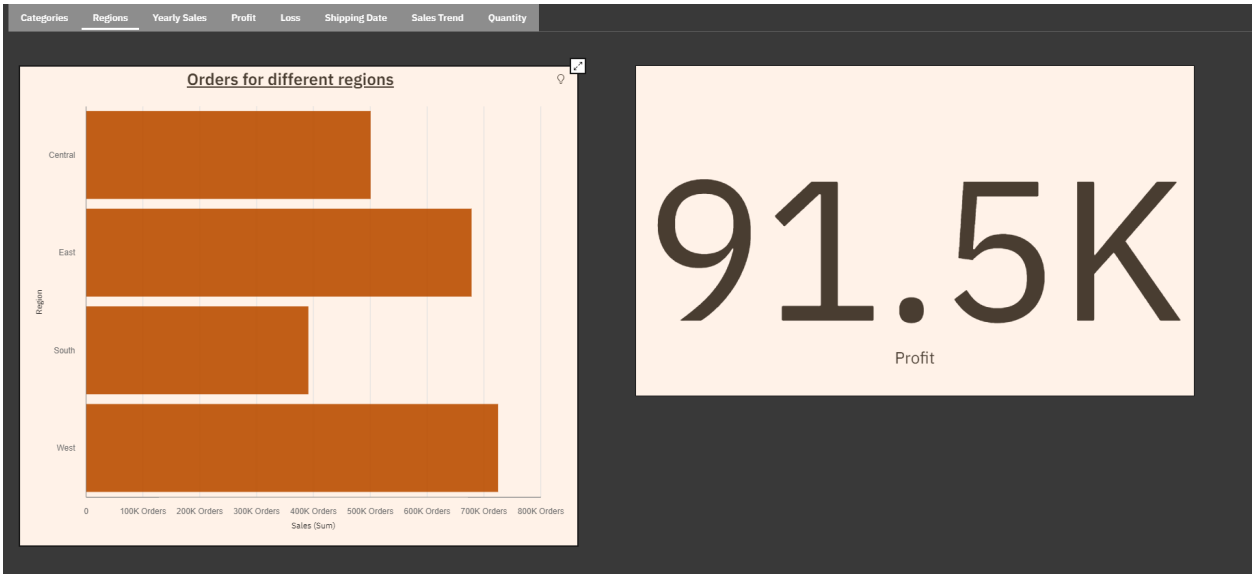


6 RESULT

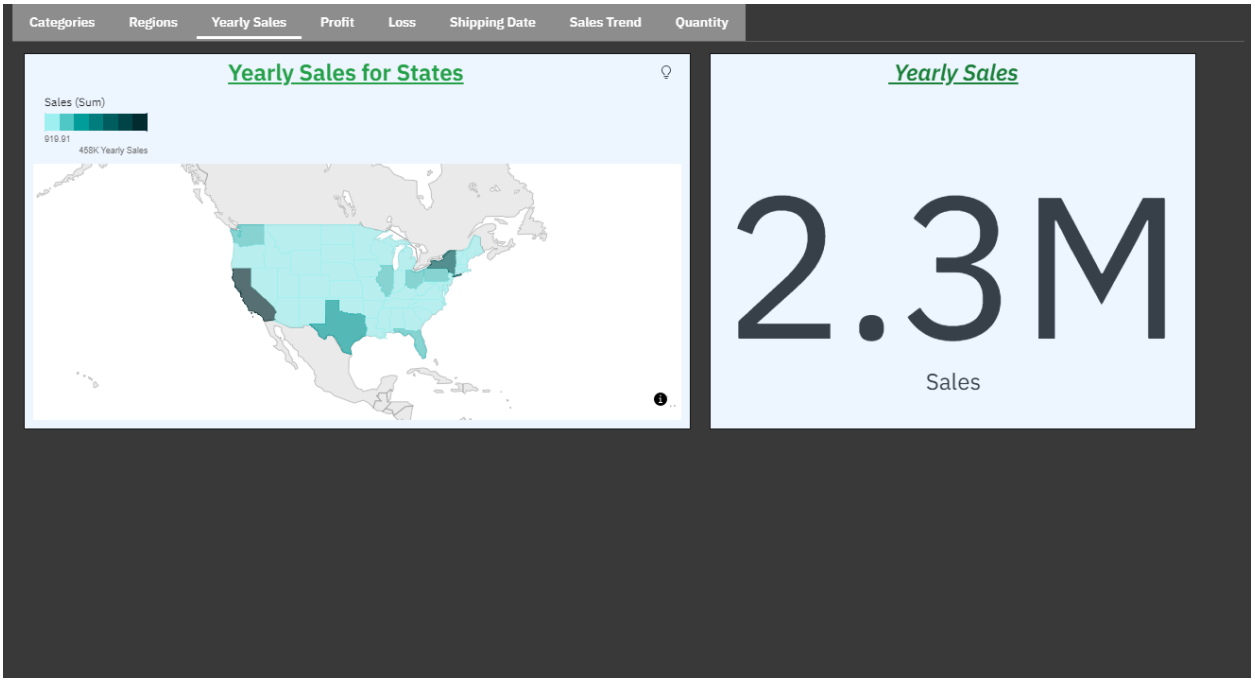
TAB 1 - Categories:



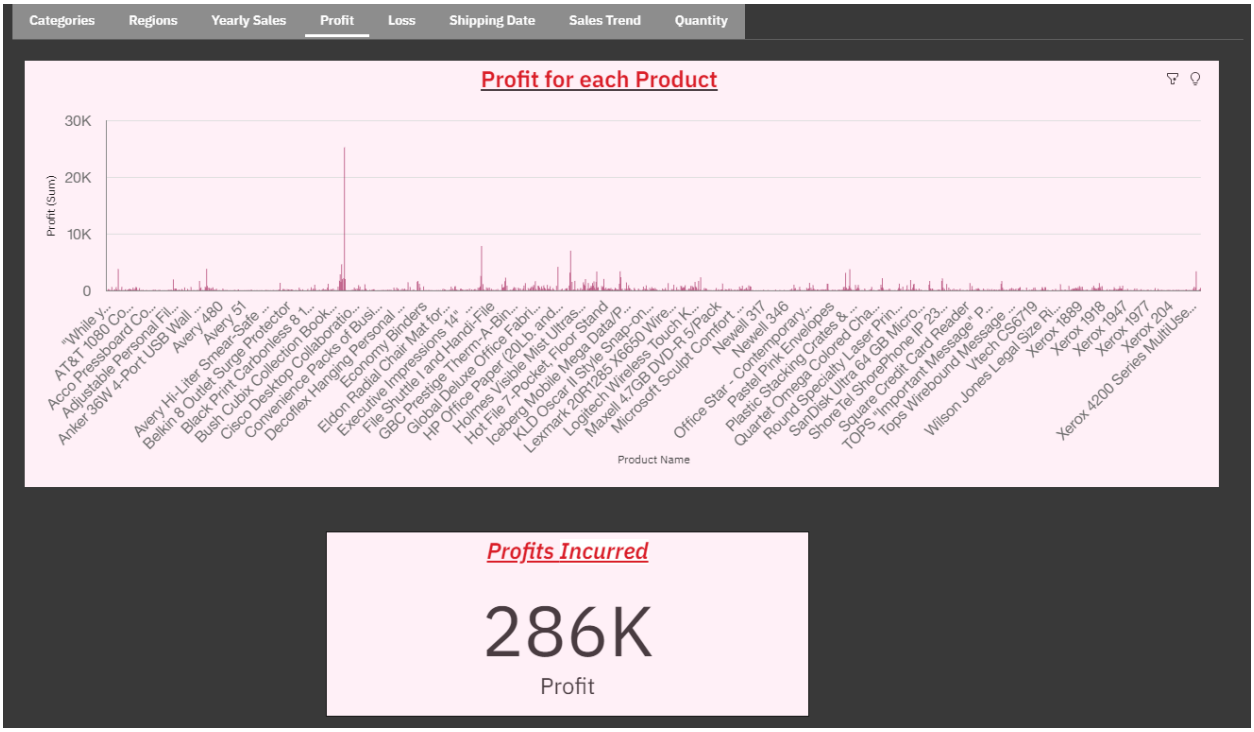
TAB 2 - Regions:



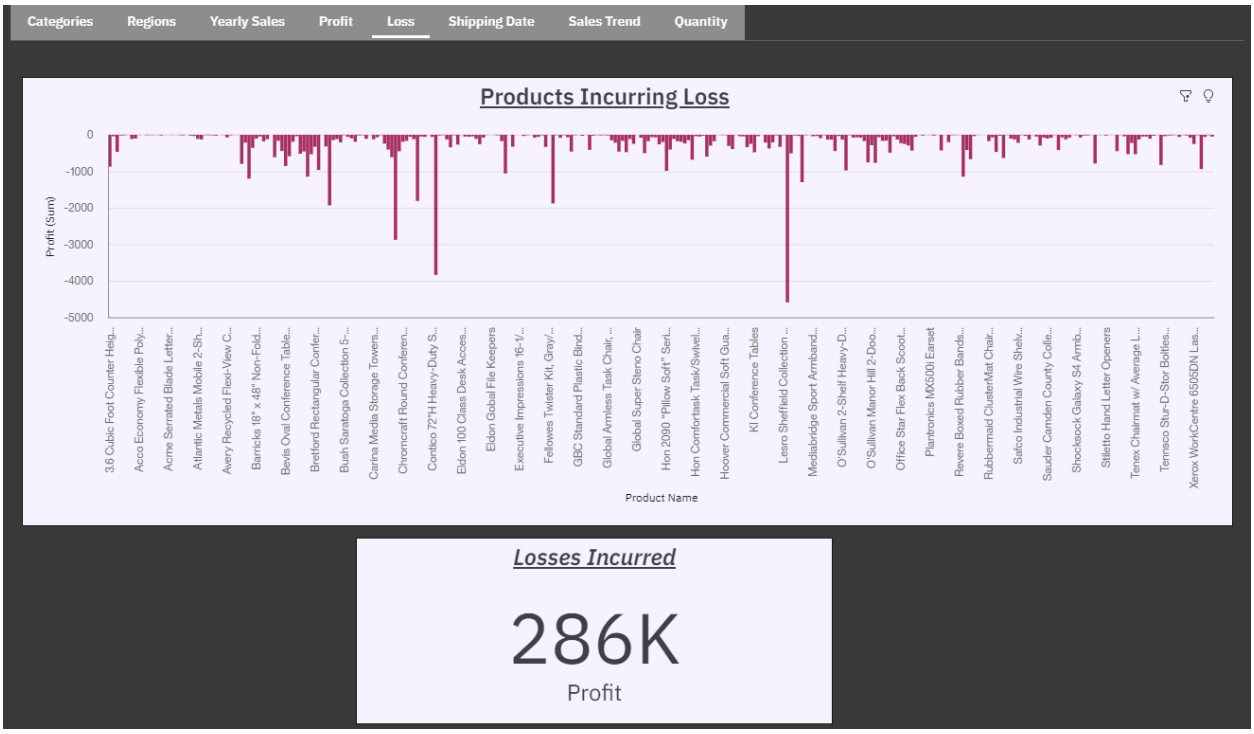
TAB 3 - Yearly Sales:



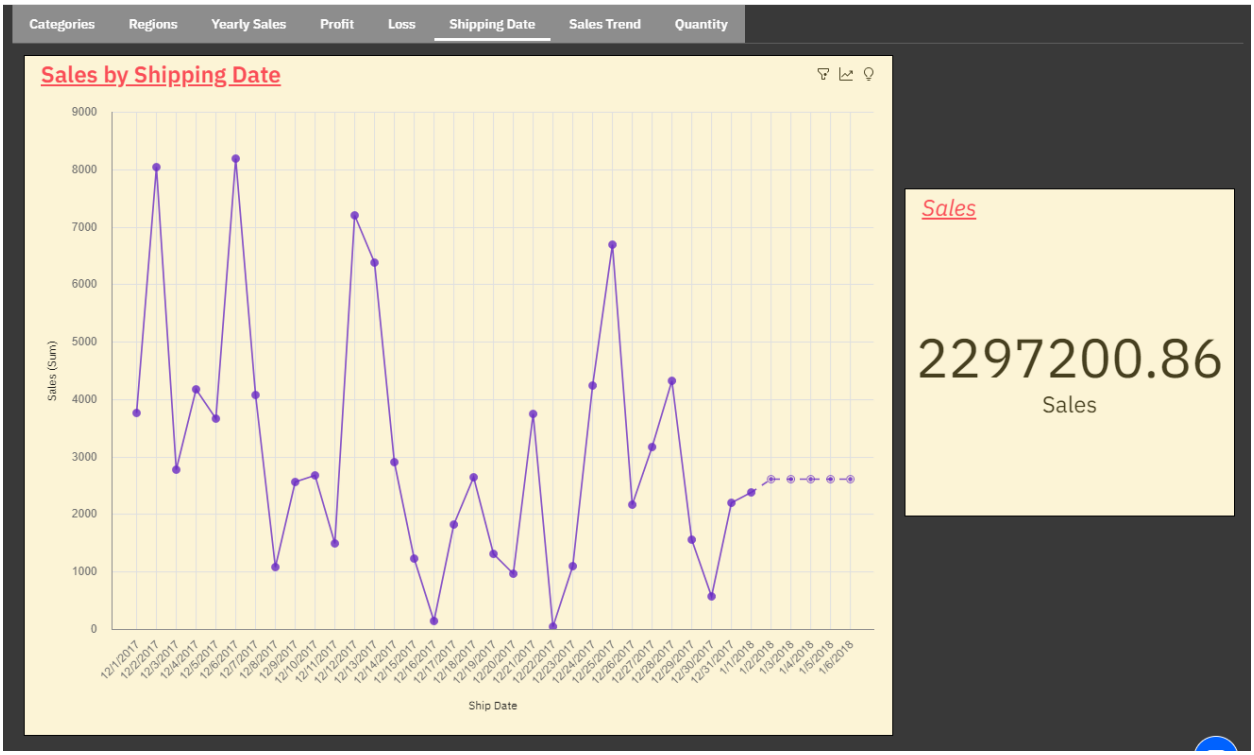
TAB 4 - Profit:



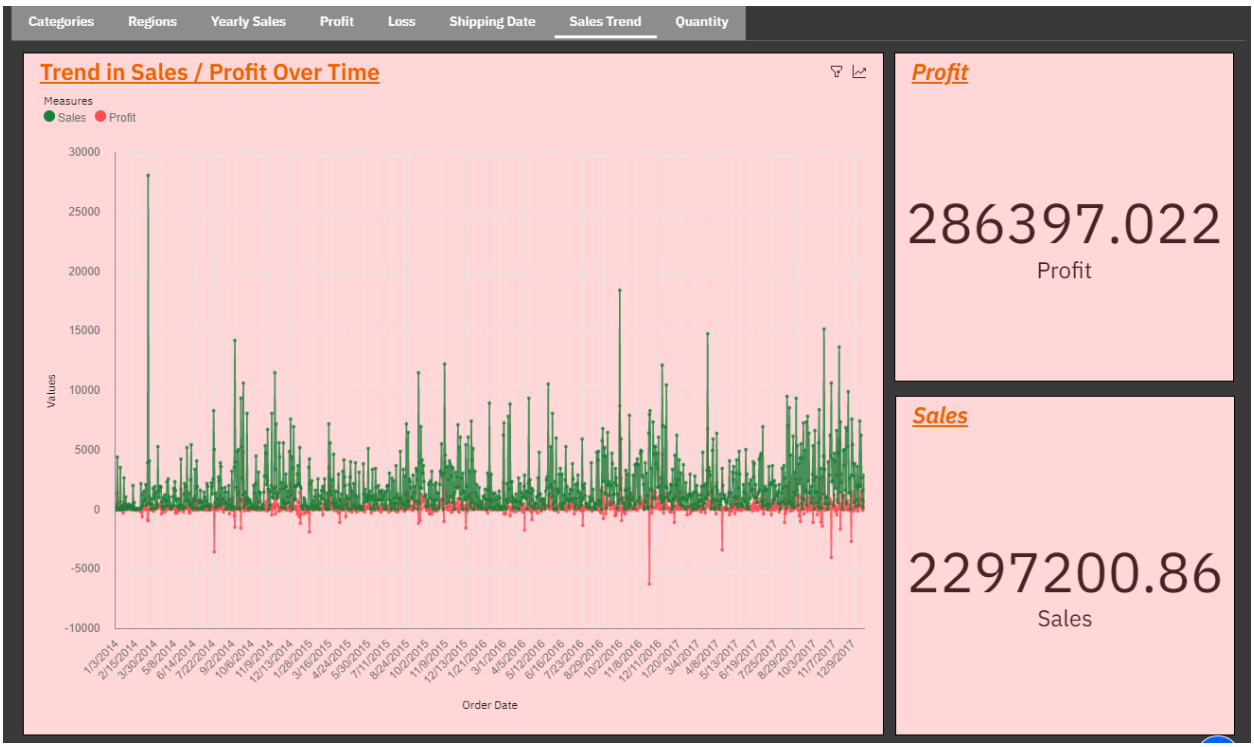
TAB 5 - Loss:



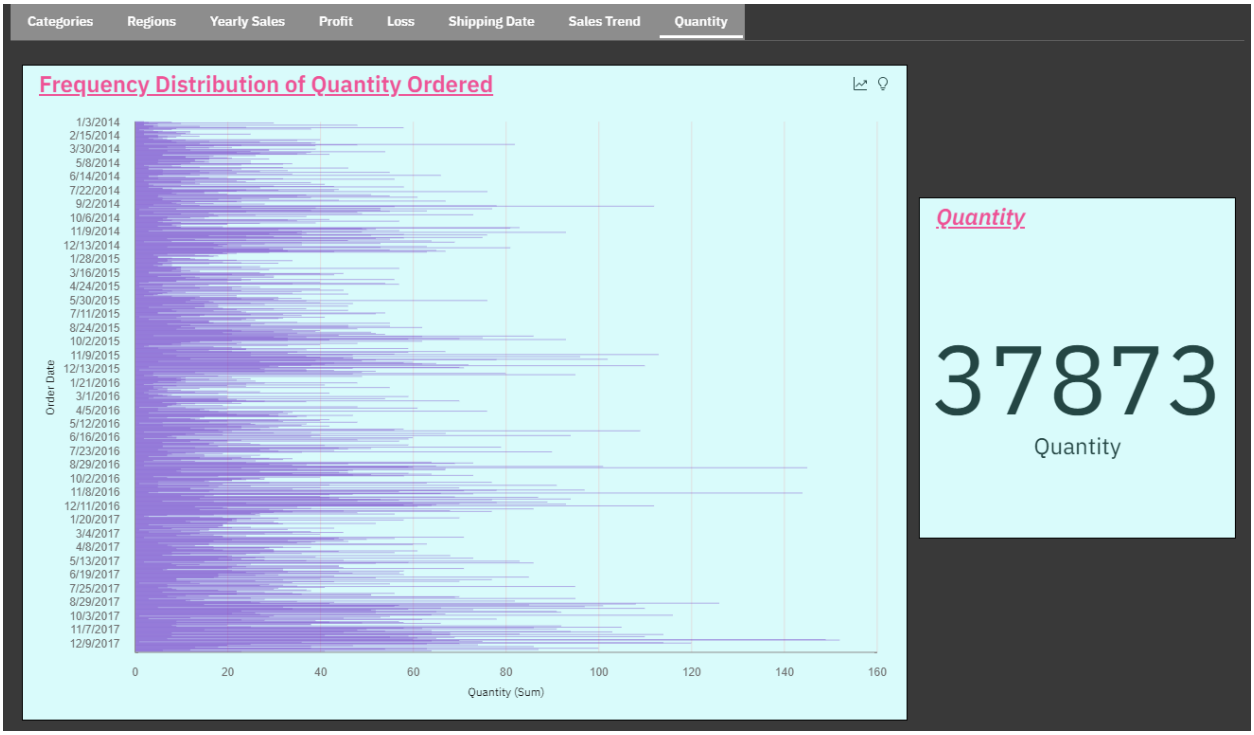
TAB 6 - Shipping Date:



TAB 7 - Sales Trend:



TAB 8 - Quantity:



7 ADVANTAGES & DISADVANTAGES

7.1 Advantages

1. Our solution collects data and provides a personalized customer experience based on the user's location, shopping, and browsing history so that they can enjoy the service with great ease.
2. **Business owners can identify frequent customers or premium customers using the data of their product purchases and give them the privilege of extra benefits.**
3. **Our visualizations in the dashboard are customized in a way that it becomes easy for the utilization of the owner/ user who views it. They'll be able to browse around with ease.**

7.2 Disadvantages

1. The visualizations are present in different tabs so the user has to navigate around to get the analytics. Everything is not present in the same page.

2. This dashboard is for now limited to to utilized dataset alone. It needs to be customized to be used for all kinds of dataset.

8 APPLICATIONS

This dashboard can be applied to obtain the following analytics of a business;

1. **Region that accounts for greater number of orders.**
2. **Frequency distribution of quantity ordered.**
3. **Percentage sales by different product categories.**
4. **Profitable products or their sub products in last few years.**
5. **Products that incurred losses.**
6. **Product type that was ordered greater times.**
7. **Yearly sales for various states.**
8. **Forecasting future sales according to shipping date.**
9. **Trend in profit/sales over time (years/months/quarters).**

9 CONCLUSION

So, as a conclusion and at the end of this project, we have created an analytical, interactive dashboard using a dataset that will provide various insights on the e-Commerce businesses. This would would certainly boost up the progress of their business.

10 FUTURE SCOPE

This dashboard has been created using a dataset of a specific predefined e-Commerce business. We can enhance this solution for being able to be utilized for any kind of e-Commerce business and more inputs of visualizations can be added based on the business considered.

11 BIBILOGRAPHY

1. https://www.kaggle.com/juhi1994/superstore-analysis
2. https://www.ibm.com/docs/en/cognos-analytics/11.1.0?topic=stories-get-started-dashboards
3. https://www.ibm.com/docs/en/cognos-analytics/11.1.0?topic=e-forecasting
4. https://www.ibm.com/docs/en/cognos-analytics/11.1.0?topic=dashboards-visualizations
5. https://www.youtube.com/watch?v=1VXO8p8yX9Y

APPENDIX

A. Source Code (Data)

US Superstore data.xls (DataSet for e-commerce) (3.19 MB)
(Table – Orders; Total Rows – 9994 ; Total Columns – 21)
[From Kaggle, https://www.kaggle.com/juhi1994/superstore-analysis]