

PROJECT REPORT

DATA ANALYTICS BASED RETAIL STORE STOCK INVENTORY ANALYTICS

TEAM ID:PNT2022TMID33849

TEAM MEMBERS:

Kamalieshwary. T - 950819106024
Pon shiva Haritha.E -950819106054

Anisha.S - 950819106003
Elakiya.M- 950819106304

Introduction

overview:

- ✓ Retail inventory management is the process of ensuring you carry merchandise that shoppers want, with neither too little nor too much on hand. By managing inventory, retailers meet customer demand without running out of stock or carrying excess supply.
- ✓ In practice, effective retail inventory management results in lower costs and a better understanding of sales patterns. Retail inventory management tools and methods give retailers more information with which to run their businesses.
- ✓ Inventory management is vital for retailers because the practice helps them increase profits. They are more likely to have enough inventory to capture every possible sale while avoiding overstock and minimizing expenses.
- ✓ Inventory management helps retailers address another costly inefficiency that happens when products expire or become obsolete.

Literature survey:

Author: MD Imtiaz Uddin, Tanvir Ahmed, RedoyanRaz, AHM SaifulIslam

Global Journal of Computer Science and Technology, 2020

Data mining is one of the most essential tools for gathering information from different datasets in almost all recent industries. In this 21st-century, data mining gained attention because of its significance in decision making, and it has become a key component in various industries such as retail. Inventory management requires pre-planned goals and attention to detail, and prioritizing items that require less attention can be a waste of time and resources. Learning indications about customers' shopping patterns by showing associations among various provides significant value in managing retail inventory. In the present research paper, popular data mining techniques have been applied and analyzed for multi-item inventory management in retail sales stores to show how data mining techniques can optimize and organize the retail inventory.

Author:Puppala Sridhar, CR Vishnu, R Sridharan

Inventory management has become a key factor in today's world of uncertainty, particularly in the retail sector. Accordingly, there is a high requirement of managing and controlling the inventory with appropriate policies to elevate the organization's performance. In fact, a proper system has to be implemented for monitoring customer demand. This system will, in turn, assist in maintaining the right level of inventory. In this direction, the present research focuses on a retail store and explores a solution for an inventory-related problem experienced by the firm. A simulation model is developed and run for particular merchandise using Arena simulation software. Rigorous experimentation is conducted with the model by altering the inputs/model characteristics, and a more effective system is proposed. Compared with the existing traditional inventory management system, the proposed system will reduce the inventory level by 40% and lost sales by 87%.

Furthermore, the proposed system is optimized using the OptQuest module in Arena simulation software. As a result, the inventory level is further reduced by 73% compared to the existing system. Store managers in various organizations may utilize the proposed methodology for improving their inventory management system.

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Author:GarimaMakkar

Data Management, Analytics and Innovation, 529-542, 2020

Be it a retailer, producer, or supplier, the weather has a substantial effect on each one of them. Climate variability and weather patterns have become critical success factors in retail these days. As a matter of fact, weather forecasting has become a \$3 billion business now. One of the main reason behind this surge is the capability of the forecasters to sell weather-related information to businesses who then strategize their various decisions regarding inventory, marketing, advertising, etc. accordingly. Hence only those retailers who stay “ahead of the game” will be able to enjoy huge sales while others who do not would face the consequences. Various studies regarding change in consumer behavior occurring due to the change in weather conditions have shown that even a degree change in temperature affects the store’s traffic and reflect the growing importance of predictive analytics in this domain. However, these studies incorporate only the historical weather statistics into account. In this paper, we will propose our methodology for footfall analytics to see how the changes in weather conditions will impact the retail store’s traffic and thereby retailing value chain, using real-time weather forecasts and footfall data. This analysis provides a platform for retailers to make evidence-driven decisions and strategize their business plan which would help them to deepen the customer involvement and to get efficiency in the planning process.

Author: Neha Verma, Dheeraj Malhotra, Jatinder Singh

Journal of Management Analytics 7 (3), 424-442, 2020

Presently, retailing has changed its face from unordered stacked traditional stores to beautifully decorated and appropriately managed merchandise stores or shopping malls with excellent ambiance and comfort. Therefore, these stores try to accommodate all needed items for daily use or rarely required items under the same roof. However, the primary challenge for today's retailer is that the modern customer is quality and brands conscious as well as compare for services provided to them by different outlets at the comfort of home with a single click. Therefore, customers prefer to purchase from E-Commerce websites instead of physically visiting a retail store, which leads to the downfall in the sales of retailers which become a serious threat to them. Therefore, retailers are required to work sincerely towards their customer expectations by providing all their needed goods under the same roof. Therefore, the objective of this paper is to assist retail business owners to recognize the purchasing needs of their customers and hence to entice customers to physical retail stores away from competitor E-Commerce websites. This paper employs a systematic research methodology based on association rule mining deployed over Map-Reduce based Apriori association mining and Hadoop based intelligent cloud architecture to determine useful buying patterns from purchase history of previous customers, in order to assist retail business owners. The finding acknowledges that the traditional mining algorithms have not progressed to support big data analysis as required by current retail businesses owners. The job of finding unknown association rules from big data requires a lot of resources such as memory and processing engines. Moreover, traditional mining systems are inadequate to provide support for partial failure support, extensibility, scalability etc. Therefore, this study aims to implement and develop MapReduce based Apriori (MR-Apriori) algorithm in the form of Intelligent Retail Mining Tool i.e. IRM Tool to recognize all these concerns in an efficient manner. The proposed system adequately satisfy all significant requisites anticipated from modern Big Data processing systems such as scalability, fault tolerance, partial failure support

etc. Finally, this study experimentally verifies the effectiveness of the proposed algorithm.

Author: Geert-Jan van Houtum, Jan A Van Mieghem

Manufacturing & Service Operations Management 22 (1), 36-46, 2020

We present a reproducible, objective review of research trends using text mining and citations of papers published in Manufacturing & Service Operations Management during its first 20 years whose abstracts or keywords contain capacity or inventory. The review is followed by our subjective projections on future research opportunities.

Author: Larissa Janssen, Jürgen Sauer, Thorsten Claus, Uwe Nehls

Computers & Industrial Engineering 118, 9-22, 2018

The food waste in grocery retail is a worldwide problem. Many mathematical inventory models for perishable items do not have a closing day's constraint, although the age of perishable items also increases on closing days in grocery stores. We develop a new age-based inventory model with a closing day's constraint. This stochastic multi-item inventory model includes total stock capacity constraints, a positive lead time, a periodic inventory control, a target customer service level and mixed FIFO and LIFO issuing policies for perishable items with a fixed lifetime under a non-stationary random demand. We show in a comparative simulation study under a rolling planning that the closing day's constraint improves order decisions and reduces waste quantities and costs in grocery stores.

Author: Roberta Sirovich, Giuseppe Craparotta, Elena Marocco

Artificial Intelligence for Fashion Industry in the Big Data Era, 173-195, 2018

Retail stock allocation is crucial but challenging. The authors developed an innovative solution, successfully tested in the context of high-end fashion: collaboration between artificial intelligence and human intuition. Each week, stores are assigned a budget based on current stock levels versus potential sales, and offered to “spend” this budget with an initial data-driven recommendation on which SKU/sizes order and release. Each store manager is then given a time window, so she can modify the proposal while respecting budget constraints; and finally, the artificial intelligence optimally allocates available stock to requests based on the expected likelihood of sale minus cost of logistics, subject to management-defined constraints. Our test showed how this system outperformed the control group of stores, relying on a traditional head office-driven allocation without direct human input. The retailer boosted sales, demand cover, and stock rotation performance: an estimated 1M EUR margin/month positive impact. Moreover, the new system improved store managers morale through non-monetary incentive-driven empowerment.

Author: Mansoor Hussain, Vijaydeep Siddharth, Sanjay Arya

Indian journal of public health 63 (3), 194, 2019

Background:

An efficient inventory control system would help optimize the use of resources and eventually help improve patient care.

Objectives:

The study aimed to find out the surgical consumables using always, better, and control (ABC) and vital, essential, and desirable (VED) technique as well as calculating the lead time of specific category A and vital surgical consumables.

Methods:

This was a descriptive, record-based study conducted from January to March 2016

in the surgical stores of the All India Institute of Medical Sciences, New Delhi.

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Author: Jasmine Kaur, Vernika Arora, ShivaniBali

International journal of system assurance engineering and management 11 (5), 953-961, 2020

A nexus of technological advances and an increasingly competitive environment of the retail industry has taken the phrase, “Customer is the King” to a new tangent altogether. It has been observed how combination of technologies along with analytical concepts of video analytics, social media analytics, wireless analytics and smart vision systems on marketing concepts like market basket model, value-based customer segmentation, campaign planning, etc. can impact the customer satisfaction and reduce the customer churn rate. An effective amalgamative implementation of these concepts will help enhance customer satisfaction and help the retailers gain an edge in the competitive market environment. The aim of this paper is to understand the technological advancements along with the impact of data analytics in the retail sector and to capture and retain maximum customers by conceptualizing effective merchandising and marketing strategies.

IDEATION&PROPOSED SOLUTION:

EMPATHY MAP CANVAS:

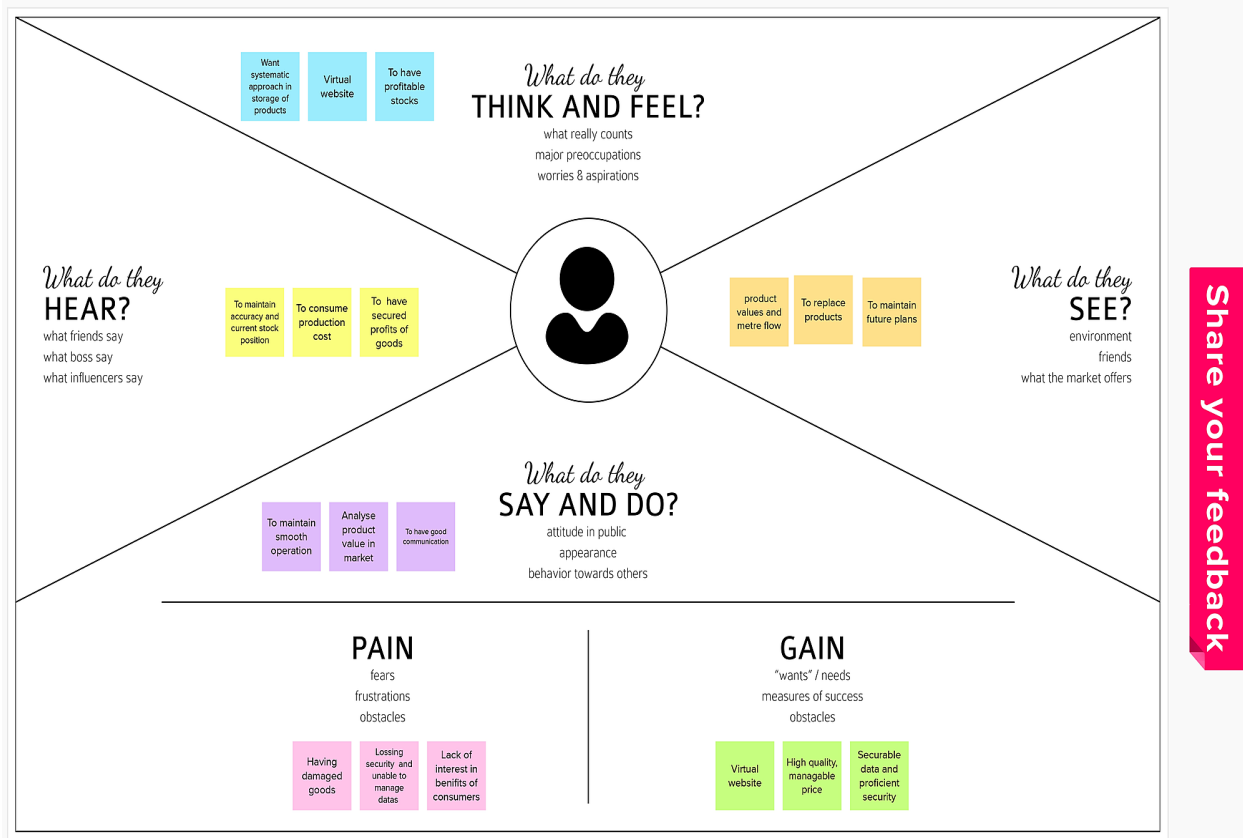
Edit this template
Right-click to unlock

Empathy Map Canvas

Gain insight and understanding on solving customer problems.

1

Build empathy and keep your focus on the user by putting yourself in their shoes.



IDEATION&BRAINSTORMING:

The screenshot displays a PDF document titled "Brainstorming (2).pdf" in a viewer window. The document is a template for brainstorming and idea prioritization, organized into several sections:

- Brainstorm & idea prioritization:** Includes instructions on how to use the template and a checklist for the process.
- Before you collaborate:** Lists steps for preparing for a brainstorming session, such as defining the problem, setting ground rules, and preparing materials.
- Define your problem statement:** Provides a template for writing a clear problem statement.
- Brainstorm:** Contains a table for recording brainstormed ideas, categorized by "Idea", "Feasibility", and "Desirability".
- Group ideas:** Includes a section for grouping ideas into themes and a checklist for the process.
- Prioritize:** Features a graph for plotting ideas based on "Feasibility" (x-axis) and "Desirability" (y-axis). The graph shows a curve representing the trade-off between the two, with a yellow box indicating the optimal point for a "good idea".
- After you collaborate:** Lists steps for following up on the brainstorming session, such as sharing ideas, implementing ideas, and evaluating results.

The PDF viewer interface shows the document is 1 page long, zoomed in at 7%, and includes a sidebar with navigation options. The Windows taskbar at the bottom shows the date as 18-11-2022 and the time as 00:26.

PROPOSED SOLUTION

Project Design Phase-I Proposed Solution Template

| | |
|---------------|--|
| Date | 19 September 2022 |
| Team ID | PNT2022TMID33849 |
| Project Name | Retail store stock inventory analytics |
| Maximum Marks | 2 Marks |

Proposed Solution Template:

Project team shall fill the following information in proposed solution template.

| S.No. | Parameter | Description |
|-------|--|--|
| 1. | Problem Statement (Problem to be solved) | Increasing Competition: Globalized supply chains are subject to unpredictable economic shifts and market forces that impact the competition for raw materials. Small businesses are sometimes faced with choosing between competing for high-demand materials or holding enough inventory to control cost |
| 2. | Idea / Solution description | Safety Stock: Maintain safety stock to offset supply chain disruptions and help manage increased lead times due to shifting international competition for raw materials. Proper inventory planning helps operations adapt to global supply chains |
| 3. | Novelty / Uniqueness | The retailer's interface with the customer is service-based. Retailers sell small quantities of items on a frequent basis. Retailers provide in terms of location, credit facilities, range of merchandise, after - sales service, |
| 4. | Social Impact / Customer Satisfaction | Regulation and control from various pressure groups such as social activists, social workers, and consumer |

| | | |
|----|--------------------------------|---|
| | | implementing their restrictively and communicating the true picture about the benefits or harms of using a product |
| 5. | Business Model (Revenue Model) | Some retailers assume that a little tinkering with the value proposition is all it takes to adapt to changes in the marketplace. Although it is almost always necessary to keep the value proposition aligned with shifts in the market, the most successful retailers make significant improvements in their operating model as well, because the value proposition and operating model together are responsible for the entire business model success |
| 6. | Scalability of the Solution | An application program would be scalable if it could be moved from a smaller to a larger operating system and take full advantage of the larger operating system in terms of performance (user response time and so forth) and the larger number of users that could be handled. |

PROBLEM SOLUTION:

Problem-Solution fit canvas 2.0

Purpose / Vision

| | | | | |
|-------------------------|---|--|--|-----------------------------------|
| Define CS, fit into CC | 1. CUSTOMER SEGMENT(S) CS Who is your customer? i.e. working parents of 0-5 y.o. kids All kind of customers which includes the Researcher, Showroomer, The deal Seeker and many of this kind | 6. CUSTOMER CONSTRAINTS CC What constraints prevent your customers from taking action or limit their choices of solutions? i.e. spending power, budget, no cash, network connection, available devices. Inventory constraints refer to cumulative resources, which can store a single or several different products and have a prescribed minimum and maximum inventory, where the inventory is depleted and replenished overtime | 5. AVAILABLE SOLUTIONS AS Which solutions are available to the customers when they face the problem or need to get the job done? What have they tried in the past? What pros & cons do these solutions have? i.e. pen and paper is an alternative to digital notetaking To invest in relations with suppliers, retailers and middlemen. To audit ourselves. To supply chain management. To encourage digital and contactless payments. Finally the solutions are based on solving the challenges by Listen, Emphasize, Apologize, Solve and Think. | Explore AS, differentiate |
| | 2. JOBS-TO-BE-DONE / PROBLEMS J&P Which jobs-to-be-done (or problems) do you address for your customers? There could be more than one, explore different sides. Storage space and Data Inaccuracy are the problems usually faced by customers. The jobs to be done by them are serving and processing sales transactions | 9. PROBLEM ROOT CAUSE RC What is the real reason that this problem exists? What is the back story behind the need to do this job? i.e. customers have to do it because of the change in regulations. When your coworkers make a mistake in data it will cause data inaccuracy. The failure occurs in the process of storing, accessing, and transporting multiple times throughout the supply chain | 7. BEHAVIOUR BE What does your customer do to address the problem and get the job done? i.e. directly related: find the right solar panel installer, calculate usage and benefits; indirectly associated: customers spend free time on volunteering work (i.e. Greenpeace) The customer behaviour is addressed by their aggressive, expressive, passive or constructive nature and their issues will be resolved for better purposes | |
| Identify strong TR & EM | 3. TRIGGERS TR What triggers customers to act? i.e. seeing their neighbour installing solar panels, reading about a more efficient solution in the news. A Trigger is an event that causes a buyer to have a clear need, which usually converts into a sense of purpose and urgency in | 10. YOUR SOLUTION SL If you are working on an existing business, write down your current solution first, fill in the canvas, and check how much it fits reality. If you are working on a new business proposition, then keep it blank until you fill in the canvas and come up with a solution that fits within customer limitations, solves a problem and matches customer behaviour. My solutions for the problems faced by customers is to prevent making mistakes, attending customer needs, providing satisfaction and by maintaining the supply chain. We can also have new inventories to be more helpful. | 8. CHANNELS of BEHAVIOUR CH 8.1 ONLINE What kind of actions do customers take online? Extract online channels from #7 Customers on online will search for product quality and other people's experience 8.2 OFFLINE What kind of actions do customers take offline? Extract offline channels from #7 and use them for customer development. They will check for product billing, qualities and their quantities | Extract online & offline CH of BE |
| | 4. EMOTIONS: BEFORE / AFTER EM How do customers feel when they face a problem or a job and afterwards? i.e. lost, insecure > confident, in control - use it in your communication strategy & design. The customer feels the emotions of anger, aggressive and upset. They feel needs and excitement before a problem | | | |



Problem-Solution fit canvas is licensed under a Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 license
 Created by Daria Nepriakhina / Amaltama.com



REQUIRED ANALYSIS: FUNCTIONAL AND NON FUNCTIONAL REQUIREMENT:

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

| | |
|---------------|--|
| Date | 03 October 2022 |
| Team ID | PNT2022TMID33849 |
| Project Name | Project - Retail Store Stock Inventory Analytics |
| Maximum Marks | 4 Marks |

Functional Requirements:

Following are the functional requirements of the proposed solution.

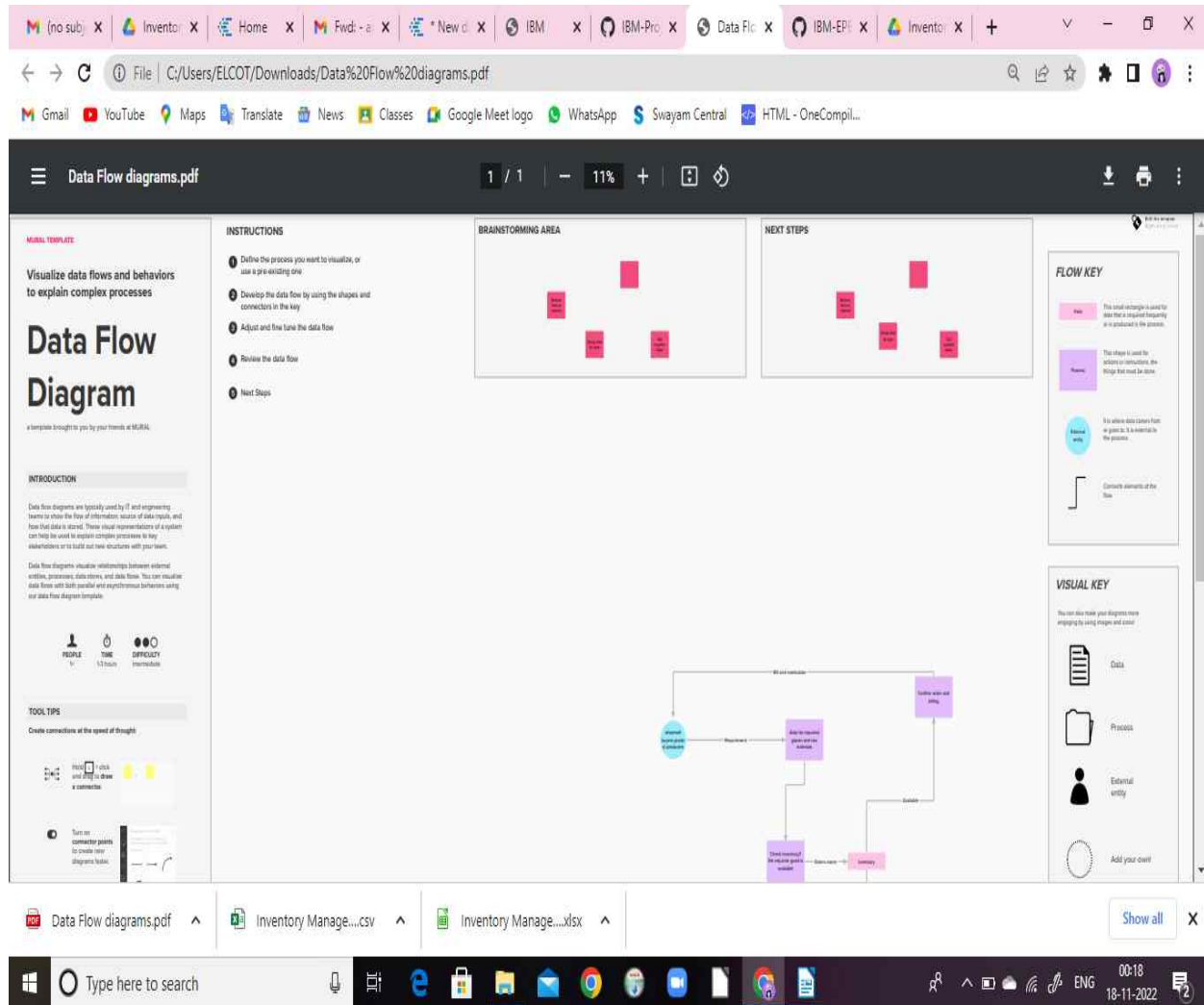
| FR No. | Functional Requirement (Epic) | Sub Requirement (Story / Sub-Task) |
|--------|-------------------------------|--|
| FR-1 | User Registration | Registration through Form Registration through Gmail Registration through LinkedIn |
| FR-2 | User Confirmation | Confirmation via Email Confirmation via OTP |
| FR-3 | User Ordering | Ordering through Website Ordering Through directly |
| FR-4 | User Payment | Payment via Online Payment via offline |
| | | |
| | | |

Non-functional Requirements:

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

| FR No. | Non-Functional Requirement | Description |
|--------|----------------------------|---|
| NFR-1 | Usability | The customer decides where he shops and whether he uses the online store via the computer,the smartphone or a tablet. Good usability for every end device is essential for the shopping experience and in some cases makes the difference of whether a purchase takes place or not. |
| NFR-2 | Security | The process of ensuring safety and optimum management control of stored goods. |
| NFR-3 | Reliability | The understanding of customers well can drastically reduce churn and increase up-selling opportunities,thus increasing revenues for the company. |
| NFR-4 | Performance | Inventory performance is a measure of how effectively and efficiently inventory is used and replenished. |
| NFR-5 | Availability | It represents the extent to which a company has enough inventory to fulfill customer orders |

PROJECT DESIGN: DATA FLOW DIAGRAM:



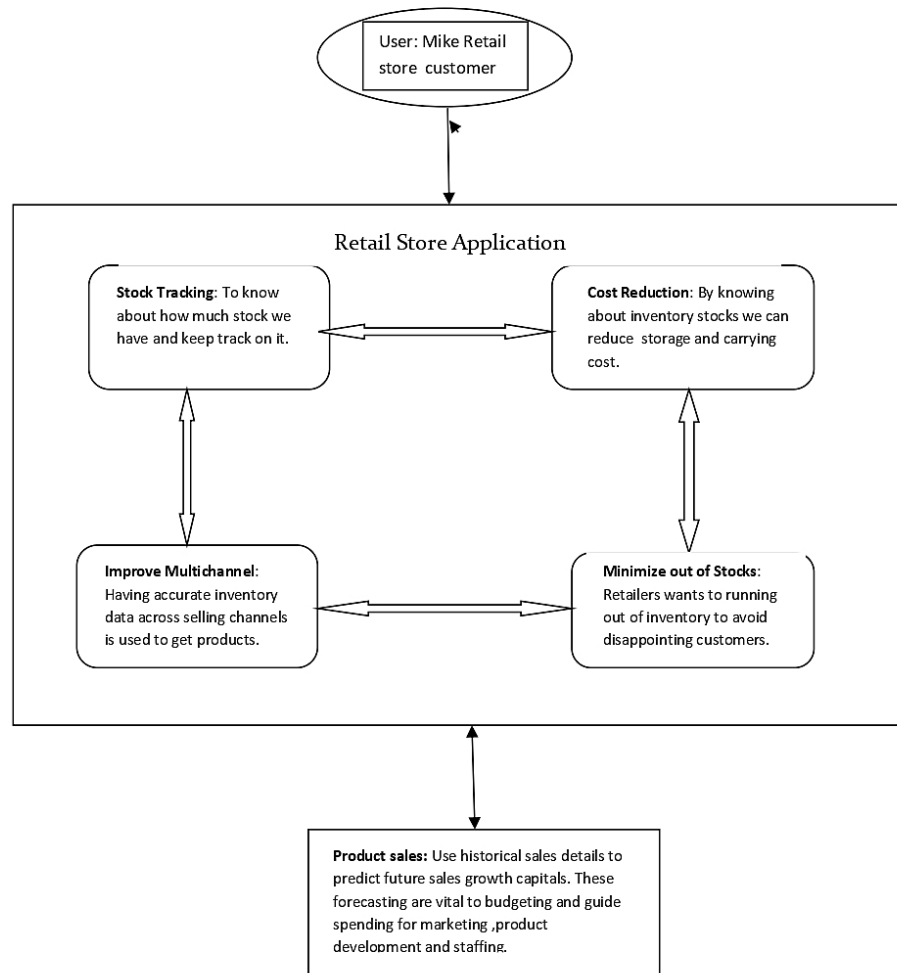
SOLUTION & TECHNICAL ARCHITECTURE:

As for solution and Technical architecture the templates are separated and posted below for references.

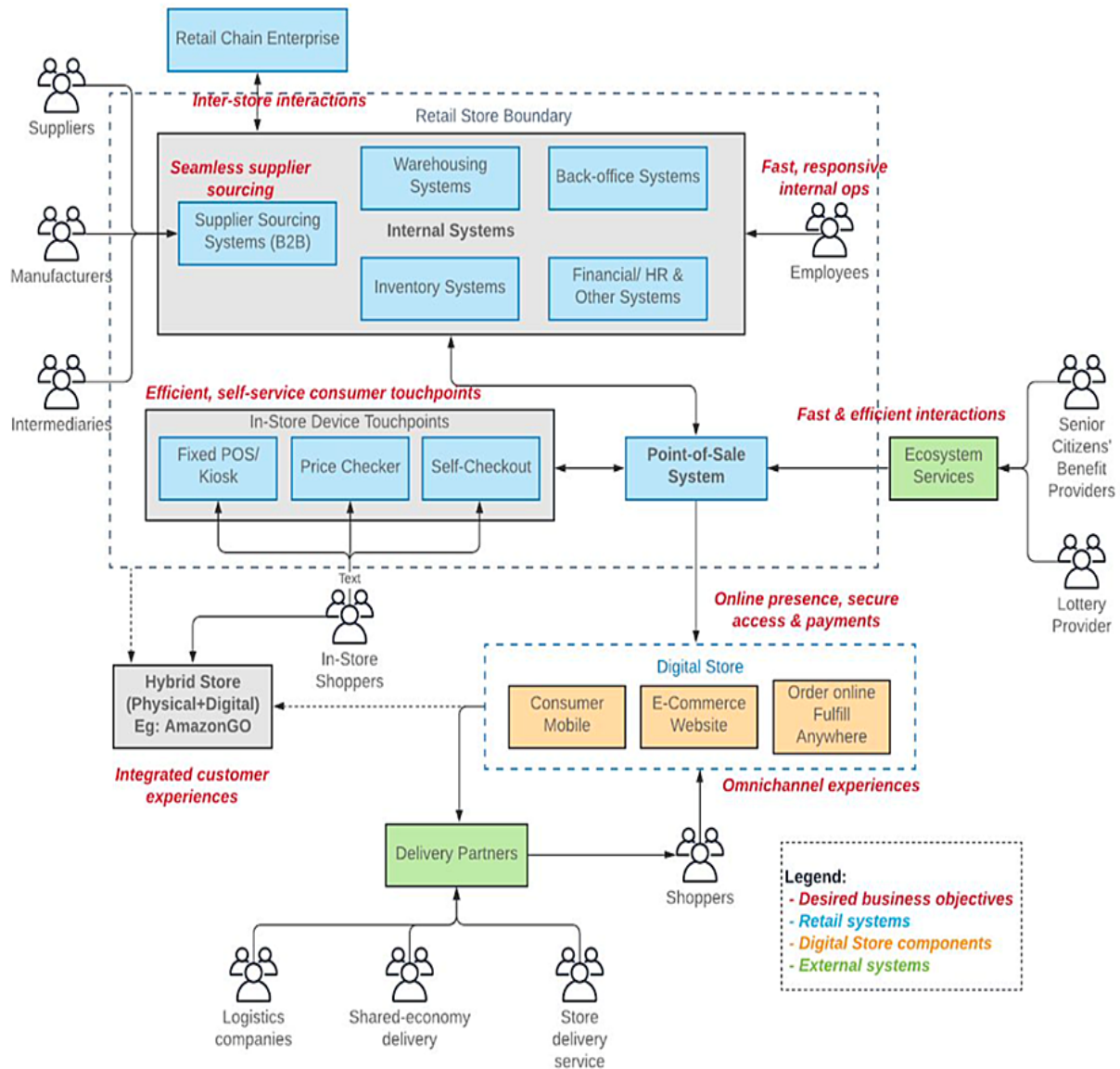
PROJECT DESIGN PHASE - I

SOLUTION ARCHITECTURE

| | |
|---------------|--|
| Date | 13 October 2022 |
| Team id | PTN2022TMID33849 |
| Project Name | Retail Store Stock Inventory Analytics |
| Maximum marks | 4 marks |



TECHNICAL ARCHITECTURE:



PROJECT PLANING & SCHEDULING:

The planning phase has been divided into four sprints and the code developments and their estimation has established as follows.

SPRINT PLANING & 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 | Kamalieshwary T |
| Sprint-1 | | USN-2 | As a user, I will receive confirmation email once I have registered for the application | 1 | High | S.Anisha |
| Sprint-2 | | USN-3 | As a user, I can register for the application through Facebook | 2 | Low | E.Haritha |
| Sprint-1 | | USN-4 | As a user, I can register for the application through Gmail | 2 | Medium | M.Elakiya |
| Sprint-1 | Login | USN-5 | As a user, I can log into the application by entering email & password | 1 | High | E.Haritha |
| Sprint-2 | Data Filling | USN-6 | As a user,I can add ,update and clear details of data. | 8 | High | Kamalieshwary T |
| Sprint-2 | | USN-7 | As a user,I can scrutinize different stock categories. | 4 | High | M.Elakiya |
| Sprint-2 | Dashboard | USN-9 | As a user,I can monitor performance of retail business and make better decisions | 4 | Medium | S.Anisha |
| Sprint-3 | Stock | USN-10 | As a user, I can locate stock and its quantity and cost. | 5 | High | M.Elakiya |
| Sprint-3 | Prediction | USN-11 | As a user,I can predict least profit and high profit. | 7 | High | Kamalieshwary T |
| Sprint-3 | | USN-12 | As a user, I can predict overflow of stocks. | 6 | High | M.Elakiya |
| Sprint-4 | Software Billing | USN-13 | As a user,I can have paperless documents on inventory,invoice and purchase order procedures. | 9 | Medium | E. Haritha |
| Sprint-4 | Analyze | USN-14 | As a user,I can analyze stocks and make decisions. | 9 | High | S.Anisha |

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 | 20 | 6 Days | 24 Oct 2022 | 29 Oct 2022 | 6 | 29 Oct 2022 |
| Sprint-2 | 20 | 6 Days | 31 Oct 2022 | 05 Nov 2022 | 18 | 02 Nov 2022 |
| Sprint-3 | 20 | 6 Days | 07 Nov 2022 | 12 Nov 2022 | 18 | 02 Nov 2022 |
| Sprint-4 | 20 | 6 Days | 14 Nov 2022 | 19 Nov 2022 | 18 | 02 Nov 2022 |

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Projects / Retail Store Stock Inventory Analytics

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▼ **RSSIA Sprint 2** 31 Oct – 7 Nov (4 issues) 0 0 18 Complete sprint

- RSSIA-9 As a user, I can register for the application through Facebook. **REGISTRATION** 2 DONE **H**
- RSSIA-16 As a user, I can monitor performance of retail business and make better decisions. **DASHBOARD** 4 DONE **H**
- RSSIA-17 As a user, I can scrutinize different stock categories. **DATA FILLING** 4 DONE **H**
- RSSIA-16 As a user, I can add, update and clear details of data. **DATA FILLING** 8 DONE **H**

+ Create issue

► **RSSIA Sprint 3** 7 Nov – 14 Nov (3 issues) 0 0 18 Complete sprint [Quickstart](#) ✕

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Insights

▼ RSSIA Sprint 3 7 Nov – 14 Nov (3 issues)

0 0 18 Complete sprint

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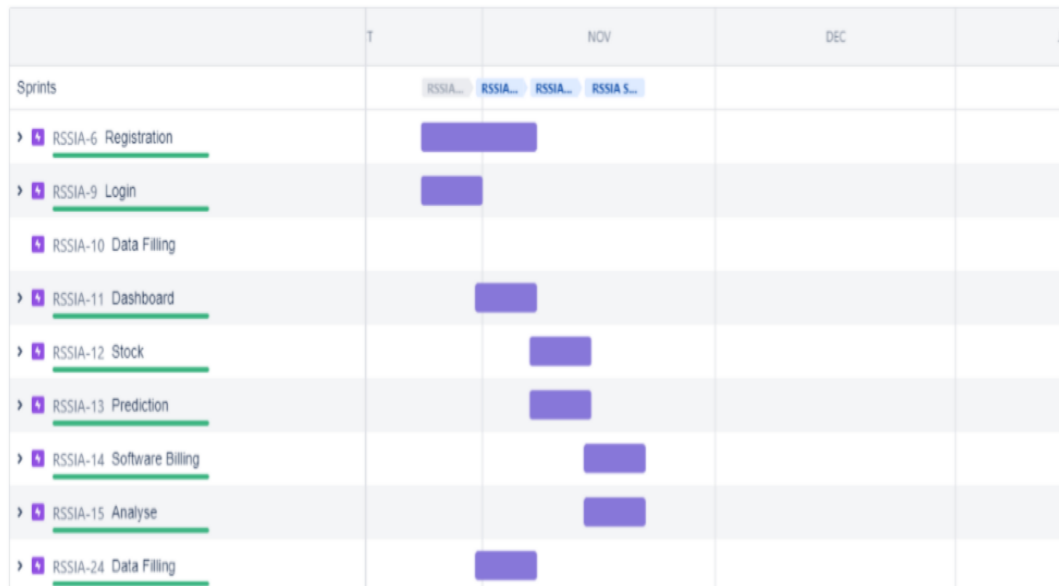
- RSSIA-19 As a user, I can locate stock and its quantity and cost. STOCK 5 DONE 1
- RSSIA-20 As a user, I can predict least profit and high profit. PREDICTION 7 DONE 1
- RSSIA-21 As a user, I can predict overflow of stocks. PREDICTION 6 DONE 1

+ Create issue

► RSSIA Sprint 4 14 Nov – 21 Nov (2 issues)

0 0 18 Con

Quickstart



CODING&SOLUTION:

Feature 1:

```

1 <!DOCTYPE html>
2 <html lang="en">
3
4 <!--HTML HEADER-->
5 <section class="vh-100" style="background-color:
  #508bfc;">
6   <div class="container py-5 h-100">
7     <div class="row d-flex justify-content-center
  align-items-center h-100">
8       <div class="col-12 col-md-8 col-lg-6 col-xl-
  5">

```

```
9      <div class="card shadow-2-strong"
    style="border-radius: 1rem;">
10      <div class="card-body p-5 text-center">
11
12          <h3 class="mb-5">Sign in</h3>
13
14          <div class="form-outline mb-4">
15              <input type="email" id="typeEmailX-2"
    class="form-control form-control-lg" />
16              <label class="form-label"
    for="typeEmailX-2">Email</label>
17          </div>
18
19          <div class="form-outline mb-4">
20              <input type="password"
    id="typePasswordX-2" class="form-control form-
    control-lg" />
21              <label class="form-label"
    for="typePasswordX-2">Password</label>
22          </div>
23
24          <!-- Checkbox -->
25          <div class="form-check d-flex justify-
    content-start mb-4">
26              <input class="form-check-input"
    type="checkbox" value="" id="form1Example3" />
27              <label class="form-check-label"
    for="form1Example3"> Remember password </label>
```

```
28         </div>
29
30     </div>
31 </div>
32 </div>
33 </div>
34 </div>
35</section>
36<a
    href="file:///C:/Users/JESUS/Documents/index.html">
    log in </a>
37<!-- Header -->
38<header class="w3-display-container w3-content w3-
    center" style="max-width:1500px">
39
40
41 <!-- Navbar (placed at the bottom of the header
    image) -->
42 <div class="w3-bar w3-light-grey w3-round w3-
    display-bottommiddle w3-hide-small" style="bottom:-
    16px">
43     <a href="#" class="w3-bar-item w3-
    button">Home</a>
44     <a href="#Services" class="w3-bar-item w3-
    button">Services</a>
45     <a href="#contact" class="w3-bar-item w3-
    button">Contact</a>
46 </div>
```

```
47</header>
48
49<!-- Page content -->
50
51<!--HTML IMAGES -->
52
53
54
55<div class="w3-content w3-padding-large w3-margin-top" id="Services">
56
57<h1> STOCK DETAILS </h1>
58
59<iframe
    src="https://us1.ca.analytics.ibm.com/bi/?perspective=dashboard&pathRef=.my_folders%2FNew%2Bdashboard&closeWindowOnLastView=true&ui_appbar=false&ui_navbar=false&shareMode=embedded&action=view&mode=dashboard&subView=model000001848134fc52_000000000" width="1500" height="1000"
    frameborder="0" gesture="media" allow="encrypted-media" allowfullscreen=""></iframe>
60
61<h2> stock report</h2>
62
63<iframe
    src="https://us3.ca.analytics.ibm.com/bi/?pathRef=.my_folders%2FReport&closeWindowOnLastView=true&
```

```

&ui_appbar=false&ui_navbar=false&shareMo
de=embedded&action=run&prompt=false"
width="1200" height="1000" frameborder="0"
gesture="media" allow="encrypted-media"
allowfullscreen=""></iframe>
64
65<h3> stock story </h3>
66
67<iframe
  src="https://us1.ca.analytics.ibm.com/bi/?perspecti
ve=story&pathRef=.my_folders%2FNew%2Bstory&
closeWindowOnLastView=true&ui_appbar=false&
ui_navbar=false&shareMode=embedded&action=v
iew&sceneId=model00000184819b0e45_000000000&
sceneTime=10000" width="1500" height="1000"
frameborder="0" gesture="media" allow="encrypted-
media" allowfullscreen=""></iframe>
68
69
70 <!-- Contact -->
71 <div class="w3-light-grey w3-padding-large w3-
padding-32 w3-margin-top" id="contact">
72   <h3 class="w3-center">Contact</h3>
73   <hr>
74   <p>contact us:students at GCE.
75   <form action="/action_page.php"
target="_blank">
76     <div class="w3-section">

```



```
77         <label>Name</label>
78         <input class="w3-input w3-border"
type="text" required name="Name">
79     </div>
80     <div class="w3-section">
81         <label>Email</label>
82         <input class="w3-input w3-border"
type="text" required name="Email">
83     </div>
84     <div class="w3-section">
85         <label>Message</label>
86         <input class="w3-input w3-border" required
name="Message">
87     </div>
88     <button type="submit" class="w3-button w3-
block w3-dark-grey">Send</button>
89 </form><br>
90     <p>Powered by <a
href="https://www.w3schools.com/w3css/default.asp"
target="_blank" class="w3-hover-text-
green">w3.css</a></p>
91
92 </div>
93
94<!-- End page content -->
95</div>
96
97</body>
```

98</html>

99

Feature 2:
solutions for the above code.

Sign in

harivlr2002@gmail.com Email

Password Password

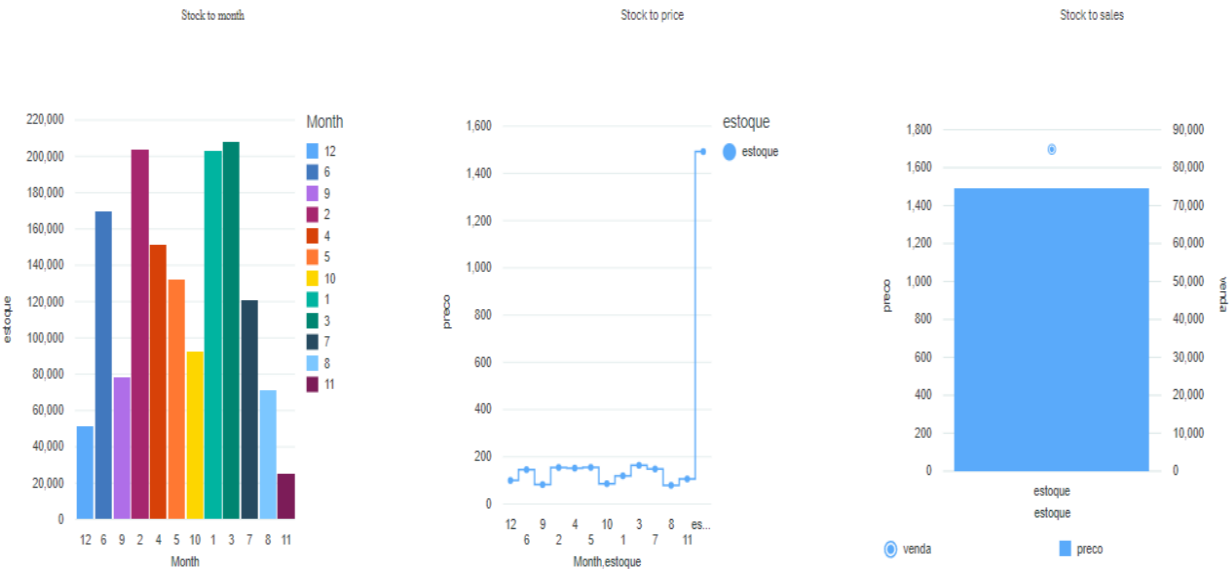
☒ Remember password

[log in](#)

Stock Details



Stock Report

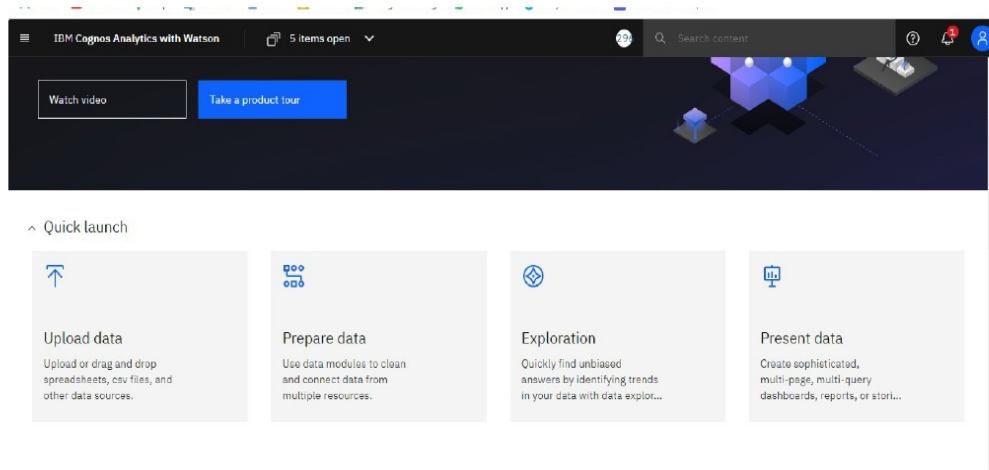


Stock Story

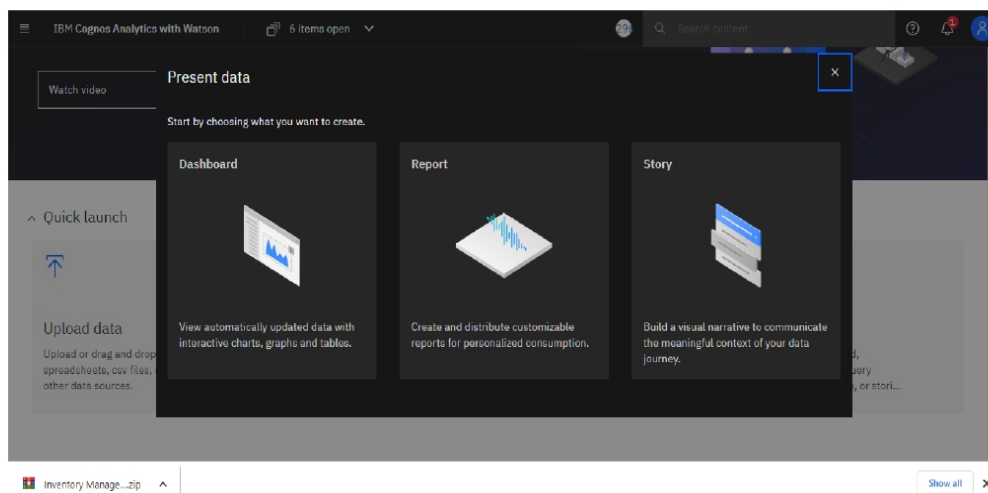


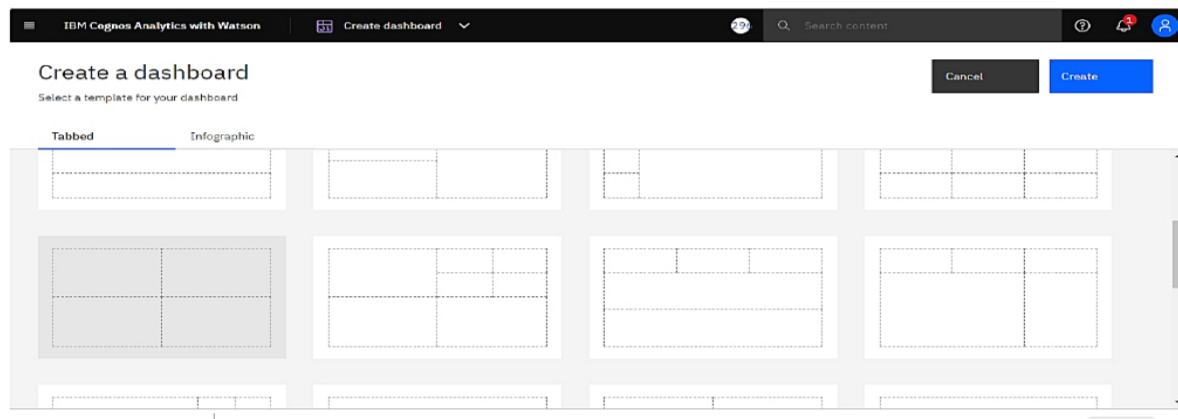
Testing the data:

1. Go to the present data

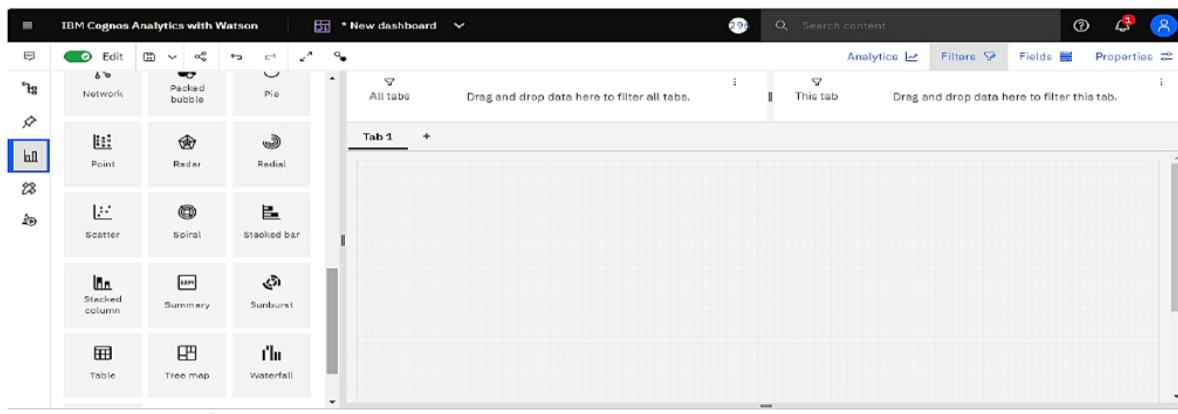


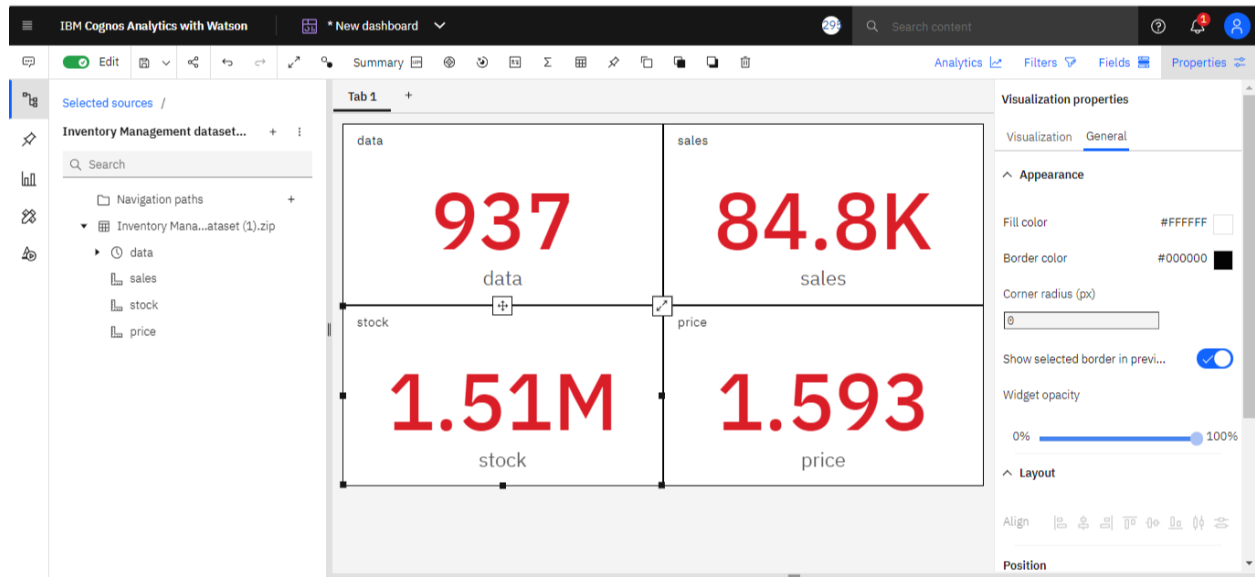
2. Click the dashboard





4. Select any one from the type of listed graphs





Data Filtering:

Filtering of data can be done in IBM Cognos Analytics by presenting the data. The process is easy to implement when we have the concept behind it. While splitting a dataset the format will have many layers to fulfill it. It also has mathematical calculations to find some crucial data calculations.

The screenshot shows the IBM Cognos Analytics interface with a 'New data module' selected. The 'Data module' pane on the left shows a search bar and a tree view with 'New data module', 'Navigation paths', 'Inventory M...set (1).zip', '# Row Id', 'data', 'Year', 'Month', 'Day', 'sales', 'stock', and 'price'. The main area displays a 'Grid' view of the data. The table has columns for 'Row Id', 'data', 'Year', 'Month', 'Day', 'sales', and 'stock'. The data is filtered to show rows from 1 to 11, representing dates from 2014-01-01 to 2014-01-11.

| Row Id | data | Year | Month | Day | sales | stock |
|--------|------------|------|-------|-----|-------|-------|
| 1 | 2014-01-01 | 2014 | 1 | 1 | 0 | 4972 |
| 2 | 2014-01-02 | 2014 | 1 | 2 | 70 | 4902 |
| 3 | 2014-01-03 | 2014 | 1 | 3 | 59 | 4843 |
| 4 | 2014-01-04 | 2014 | 1 | 4 | 93 | 4750 |
| 5 | 2014-01-05 | 2014 | 1 | 5 | 96 | 4654 |
| 6 | 2014-01-06 | 2014 | 1 | 6 | 145 | 4509 |
| 7 | 2014-01-07 | 2014 | 1 | 7 | 179 | 4329 |
| 8 | 2014-01-08 | 2014 | 1 | 8 | 321 | 4104 |
| 9 | 2014-01-09 | 2014 | 1 | 9 | 125 | 4459 |
| 10 | 2014-01-10 | 2014 | 1 | 10 | 88 | 5043 |
| 11 | 2014-01-11 | 2014 | 1 | 11 | 188 | 5239 |

RESULT:

The result of this analytics is based on how we predict the data and to provide an analytic view to the customer about stock values and to improve the further development of retailers.

ADVANTAGES:

- Customer Behavior Insights
- Improving Marketing ROI
- Optimizing In -Store Operation
- Managing The Basics
- Enhancing Loyalty

DISADVANTAGES:

- Loss Of Items
- Scanning Error
- Improper Inventory Tracking
- Hacking
- Theft

APPLICATIONS:

- Flex Your Ordering Muscles
- Be Proactive With Your Supply Chain
- Crunch Your Numbers
- Maximize Efficiency
- Prioritize Accuracy
- Use An Inventory Management System

FUTURE SCOPE:

- 'Physical Stores Are Here To Stay. Retail Analytics Paves The Way'.
- 'The In-Store Experience Is The Leverage. In Store Analytics Can Make A Difference'.
- 'Analytics Is Key To Optimizing Inventory And Supply Chain Logistics'

APPENDIX:

Github

Project demo link .

https://drive.google.com/file/d/137jKkb5F7Lre_9-Wet8-6GMuj2aH21cp/view?usp=sharing