GLOBAL SALES DATA ANALYTICS

PROJECT REPORT

Submitted by

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BACHELOR OF ENGINEERING

IN

ELECTRONICS AND COMMUNICATION ENGINEERING

TEAM ID: PNT2022TMID28268

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1.INTRODUCTION

1.1 PROCJECT OVERVIEW:

- KnowfundamentalconceptsandcanworkonIBMCognosAnalytics.
- GainabroadunderstandingofplottingdifferentvisualizationstoprovideasuitablesoluƟ on.
- AbletocreatemeaningfulVisualizationsandDashboard(s).

1.2 PURPOSE

Sales Analysis is the process of understanding how your business performs in terms of sales. It provides insights into the past, present, and future performance of a business and can be used to help you forecast trends, identify opportunities for growth, and develop a strategic action plan for your company

2.LITERATURE SURVEY

2.1 EXISTING SYSTEM

Sales analytics products access data solely from sales tools, and their core functionality is to analyze sales information. Some companies opt to use business intelligence platforms and self-service business intelligence software instead, which can also provide companies insights into their data from a variety of other sources in addition to sales data.

Sales analytic insights can be used to improve sales strategies and implement a more predictable sales model.

2.2 REFERENCES

1. McKnight, D. H., Choudhury, V. and Kacmar, C., "Developing and validating trust measures for e-commerce: an integrative typology," Information Systems Research.

2. Michal, P., 'On-line Shopping on B2C Markets in the Czech Republic," Journal of Competitiveness.

3. Mckinsey& Company, Online and Upcoming: The Internet's Impact on India, 2012, Retrieved on Nov 10, 2014 from http://www.mck insey.com/~/media/mckinsey%20 offices/india/pdfs/online and _upcoming_the_internets_impact_on_india.ashx.

4. Nielson Global Report, "Ecommerce: evolution or revolution in the fast-moving consumer goods world," 2014, Retrieved on Oct 15, 2014 from http://ir.nielsen.com/files/doc_financials/Nielsen-Global-Ecommerce-Report-August-2014.pdf.

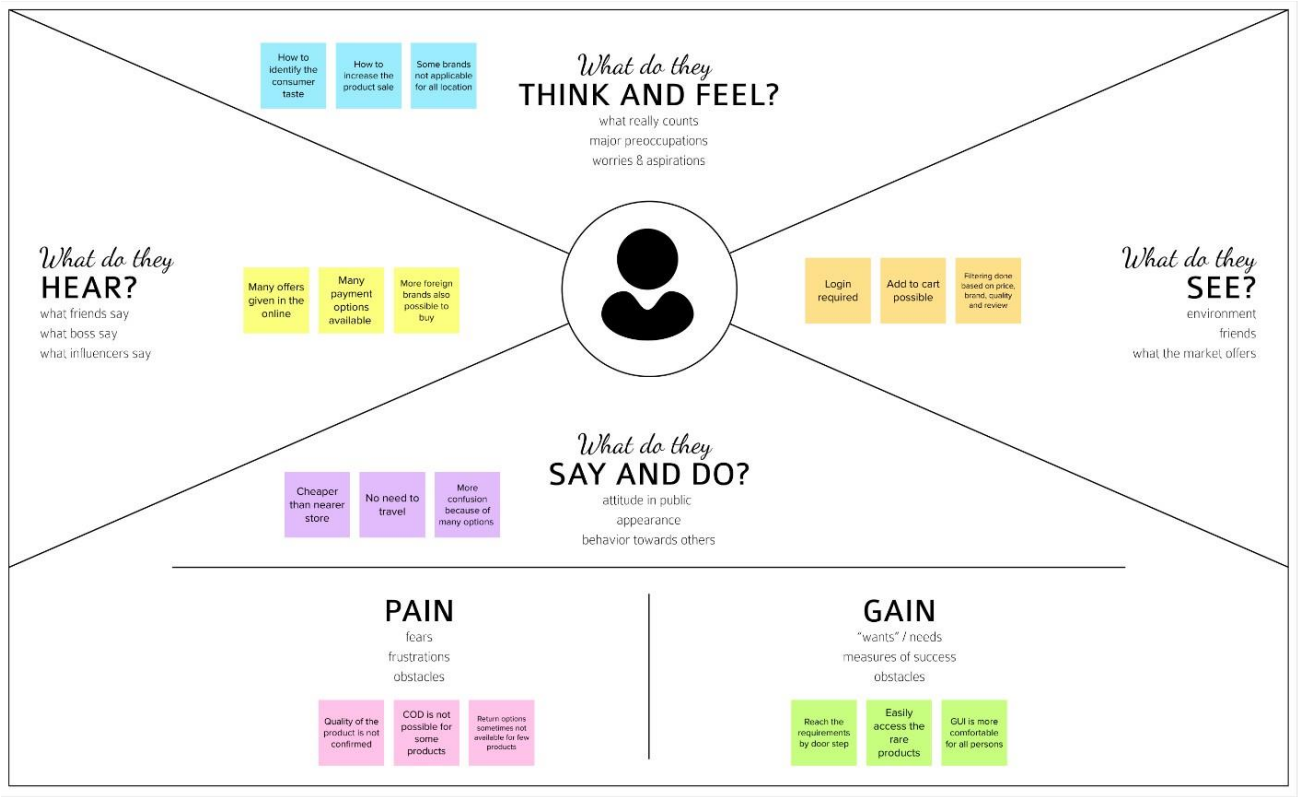
2.3 PROBLEM STATEMENT DEFINITIONS

If you clearly define your problem statement and intend to collect the data needed to solve the problem yourself, you could design your data collection methods to perfectly align to your question.when you're working with found data, you are limited by the biases, caveats, and data collection methods that the creators employed when the data were collected. That means that if you are defining your problem statement based on an existing dataset, you need to take all of these factors into account.

3.IDEATION&PROPOSED SOLUTION

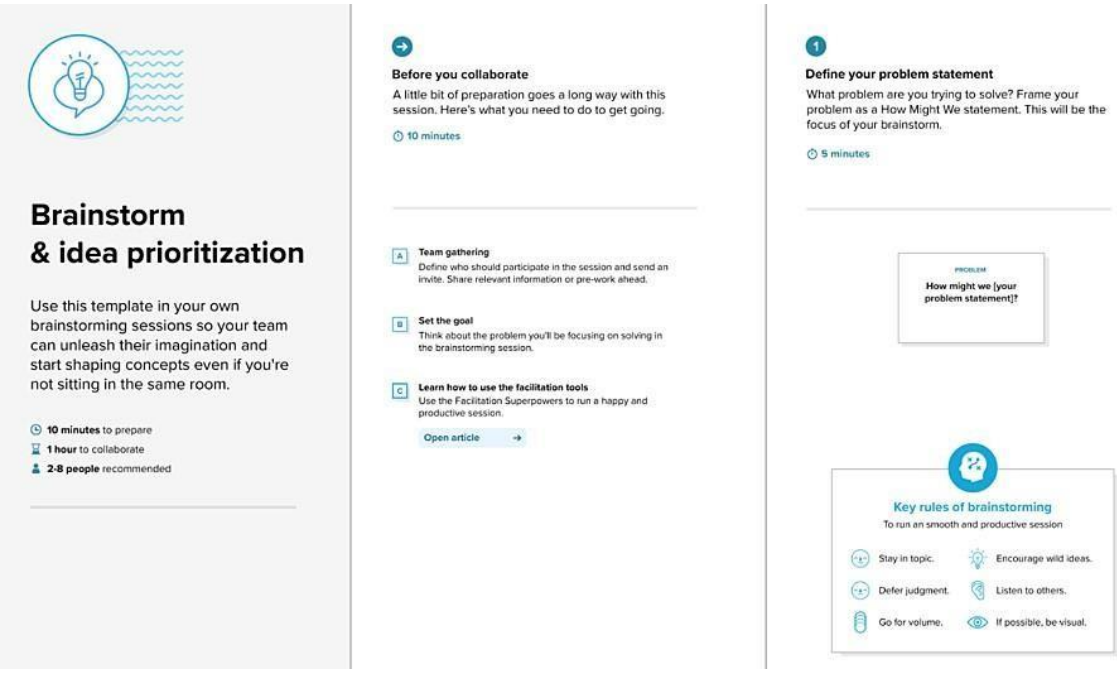
3.1 EMPATHY MAP CANVAS

An empathy map helps you identify with a customer's thoughts, feelings, and behaviors. Product teams often use empathy mapping to improve the user experience. In this article, learn how to build an empathy map and use it to improve your business strategy.



3.2 IDEATION & BRAINSTROMING

STEP-1:TEAMGATHERING,COLLEBRATIONANDSELECTTHEPROBLEMSTATMENT



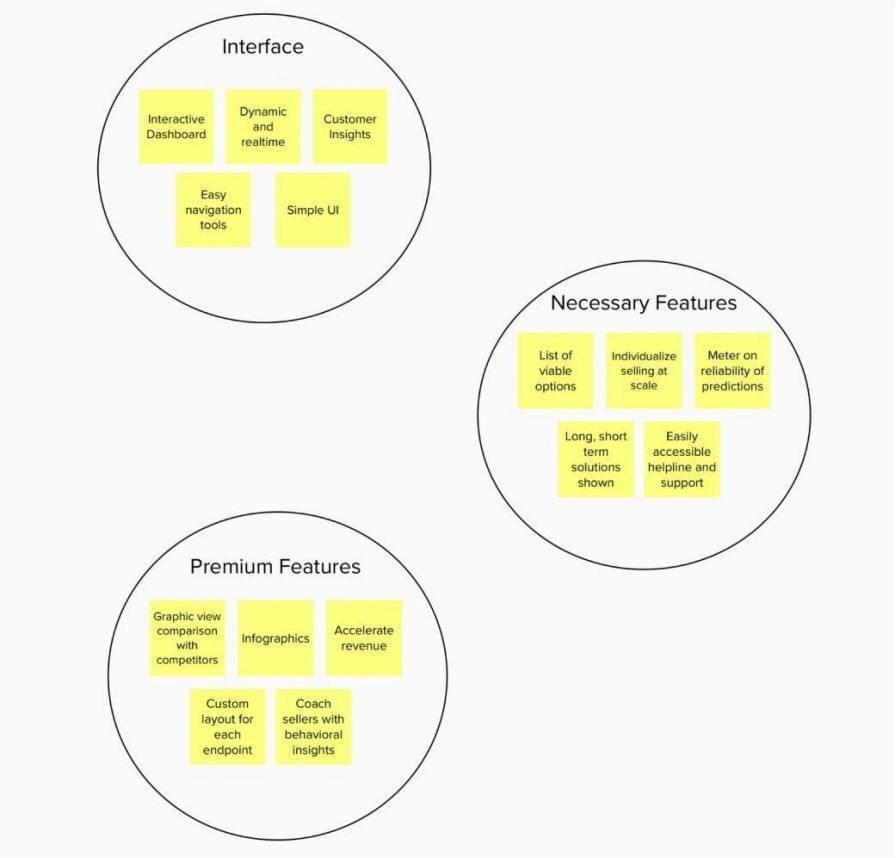
Step-2: Brainstorm, Idea Listing and Grouping

3

Group ideas

Take turns sharing your ideas while clustering similar or related notes as you go. In the last 10 minutes, give each cluster a sentence-like label. If a cluster is bigger than six sticky notes, try and see if you and break it up into smaller sub-groups.

20 minutes



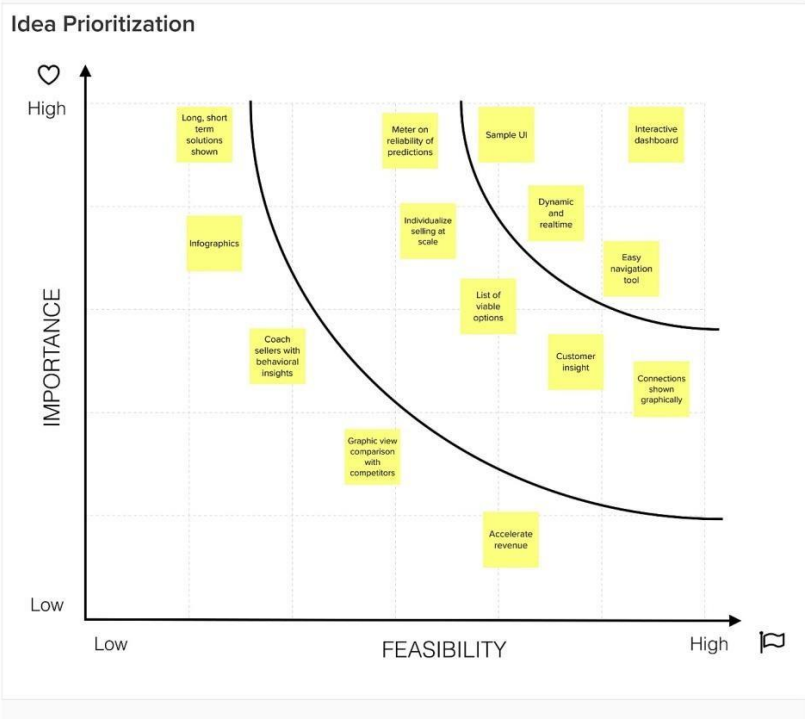
Step-3: Idea Prioritization

4

Prioritize

Your team should all be on the same page about what's important moving forward. Place your ideas on this grid to determine which ideas are important and which are feasible.

20 minutes



3.3 PROPOSED SOLUTION

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

S.No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	Increase the customer buying capacity
2.	Idea / Solution description	Identify the customer's priority
3.	Novelty / Uniqueness	Use Artificial Intelligence to give solution
4.	Social Impact / Customer Satisfaction	Customer will identify their needs even they don't know
5.	Business Model (Revenue Model)	Any AI model with good accuracy rate
6.	Scalability of the Solution	100% possible

3.4 PROBLEM SOLUTIONS FIT

4. REQUIREMENT ANALYSIS

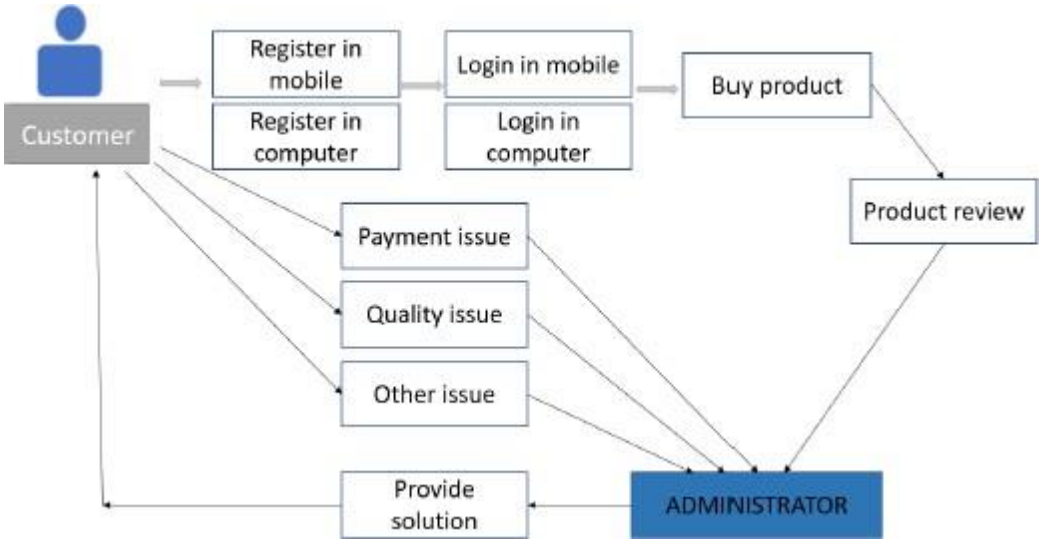
4.1 FUNCTION REQUIREMENT

Following are the functional requirements of the proposed solution.

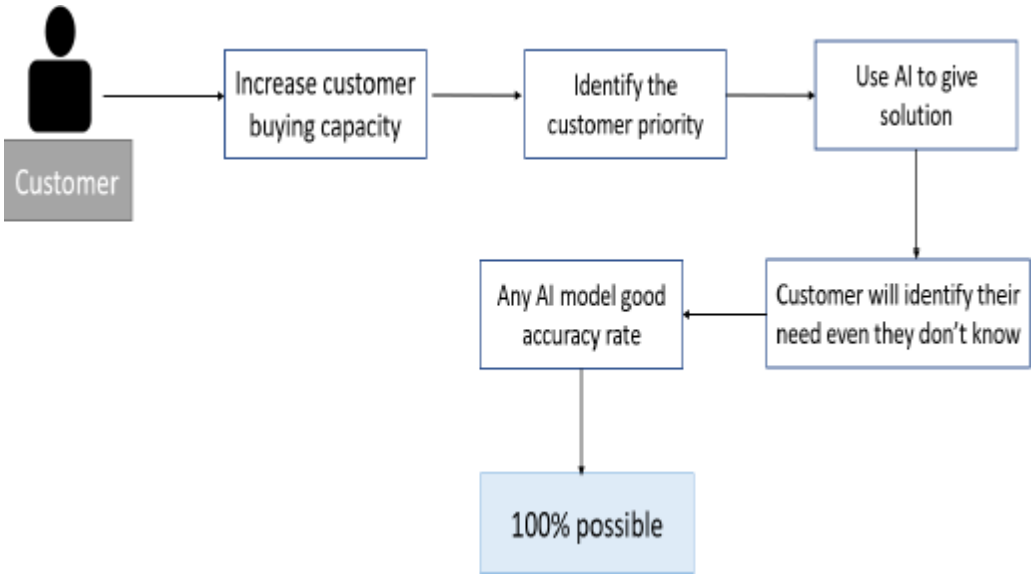
FR No.	Functional Requirement (Epic)	Sub Requirement (Story / Sub-Task)
FR-1	User Registration	Registration through Form Registration through Gmail Registration through LinkedIn
FR-2	User Confirmation	Confirmation via Email Confirmation via OTP
FR-3	User rating	Via message Via Star Via thumbs up
FR-4	Payment mode	Via COD Via UPI Via Credit card Via Debit card

5. PROJECT DESIGN

5.1 DATA FLOW DIAGRAMS



5.2 SOLUTION & TECHNICAL ARCHITECTUES



5.3 USER STORIES

User Stories

User Type	Functional Requirement (Epic)	User Story Number	User Story / Task	Acceptance criteria	Priority	Release
Customer (Mobile user)	Registration	USN-1	As a user, I can register for the application by entering my email, password, and confirming my password.	I can access my account / dashboard	High	Sprint-1
		USN-2	As a user, I will receive confirmation email once I have registered for the application	I can receive confirmation email & click confirm	High	Sprint-1
	Login	USN-1	As a user, I can log into the application by entering email & password		High	Sprint-1
		USN-2	As a user, I can log into the application by entering mobile & password		High	Sprint-1
Customer (Web user)	Registration	USN-1	As a user, I can register for the application by entering my email, password, and confirming my password.	I can access my account / dashboard	High	Sprint-1
		USN-2	As a user, I will receive confirmation email once I have registered for the application	I can receive confirmation email & click confirm	High	Sprint-1
	Login	USN-1	As a user, I can log into the application by entering email & password		High	Sprint-1
		USN-1	As a user, I can log into the application by entering mobile & password		High	Sprint-1
Customer Care Executive	Difficulties	USN-1	Change the product	I can be done by single click in customer support option	Medium	Sprint-1
		USN-2	Make the payment method change	I can change the payment mode easily and many possibilities are available	Medium	Sprint-1
'Administrator	Product Quality Issue	USN-1	Product received is damaged	After I put the product status in web, the administrator contacts me and resolve the issue	Medium	Sprint-1
		USN-2	Product not able to track	Using the support option I rise the query, and my problem will be noticed and resolved	Medium	Sprint-1

6. PROJECT PLANNING & SCHEDULING

6.1 SPRINT PLANNING & ESTIMATION

Sprint 1	Functional Requirement (Epic)	User Story Number	User Story /Task	Story Points	Priority	Team Member
Sprint 1	Registration (Customer Mobile User)	UNS 1	As a user, I can register for the website by entering my email, password, and confirming me password	3	High	5
Sprint 1	Login	UNS 2	As a user, I will receive confirmation email once I have registered for the application	2	High	5
Sprint 1	Collecting Sample Dataset	UNS 3	As a user, I should share the data source for	3	High	5

			the dashboard			
Sprint 2	Preprocessing and cleaning the dataset	UNS 4	As a data Analyst I should preprocess and clean the dataset if required	3	High	5
Sprint 2	Create Dashboard	UNS 5	As a data Analyst I need to perform data visualization and create a dashboard using BI tool	3	High	5
Sprint 3	Access Dashboard	UNS 6	As a user, I can access my Sales Data Analytics Dashboard	3	High	5
Sprint 3	Web Developmen nt	UNS 7	As a programmer I should create website for the user	3	High	5
Sprint 4	Access the Website	UNS 8	As a user, I can register, login to Access my Sales Data Analytics Dashboard	3	High	5

Sprint 4	Embed Dashboard into Website	UNS 9	As a programmer, I want to embed the dashboard to the website so the user can access the dashboard easily through websit	1	High	5
Sprint 4	Publish Website	UNS 10	As a programmer, I should publish the dashboard so that the user can access the website from any device through internet	3	High	5

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

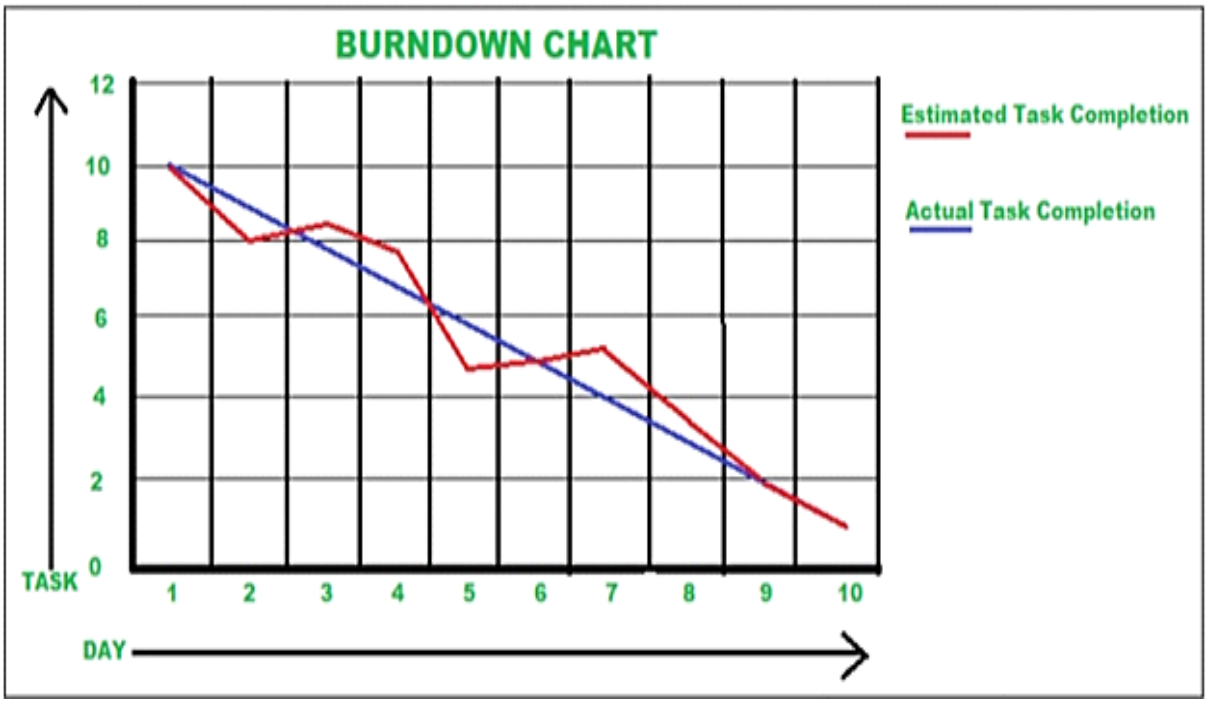
Velocity:

We have a 24-day sprint duration, and the velocity of the team is 20 (points per sprint). Let's calculate the team's average velocity (AV) per iteration unit (story points per day)

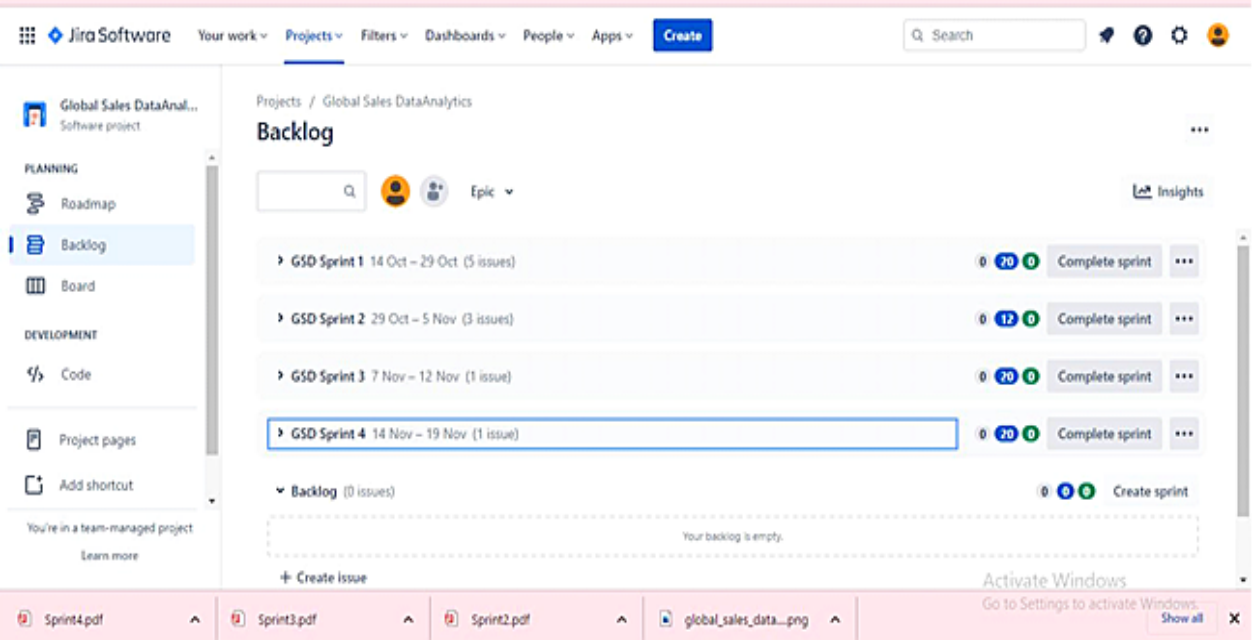
AV = Sprint Duration / Velocity = 20 / 10 = 2

Burndown Chart :

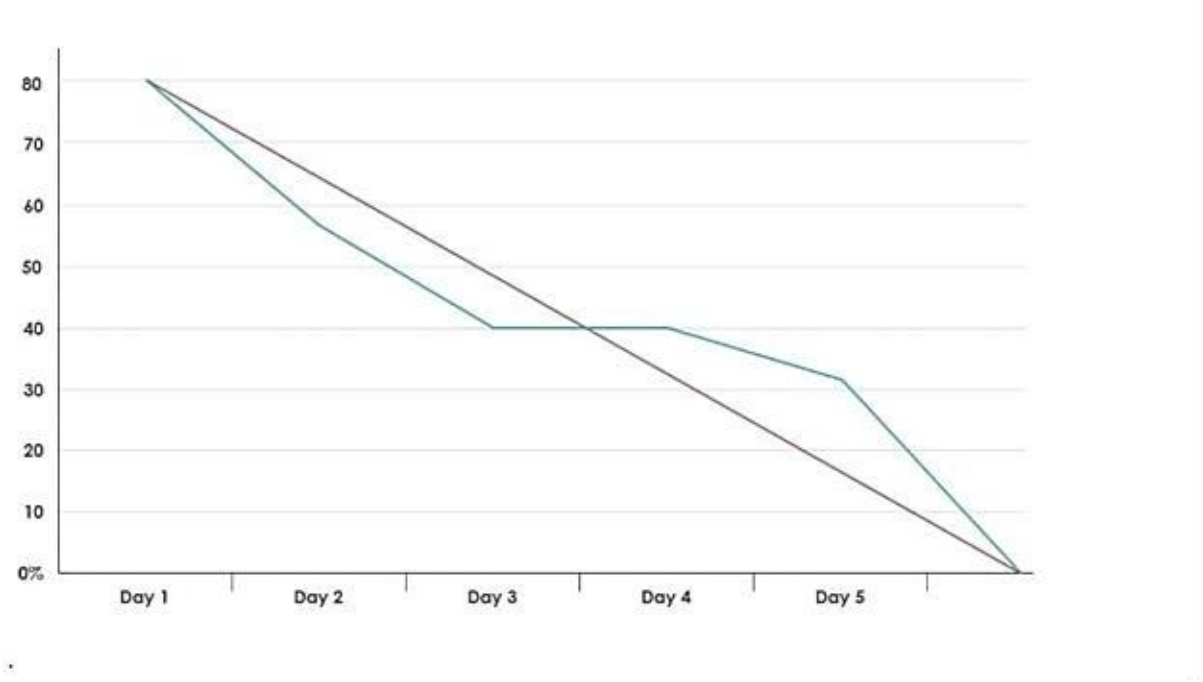
A burn down chart is a graphical representation of work left to do versus time. It is often used in agile software development methodologies such as Scrum. However, burn down charts can be applied to any project containing measurable progress over time.



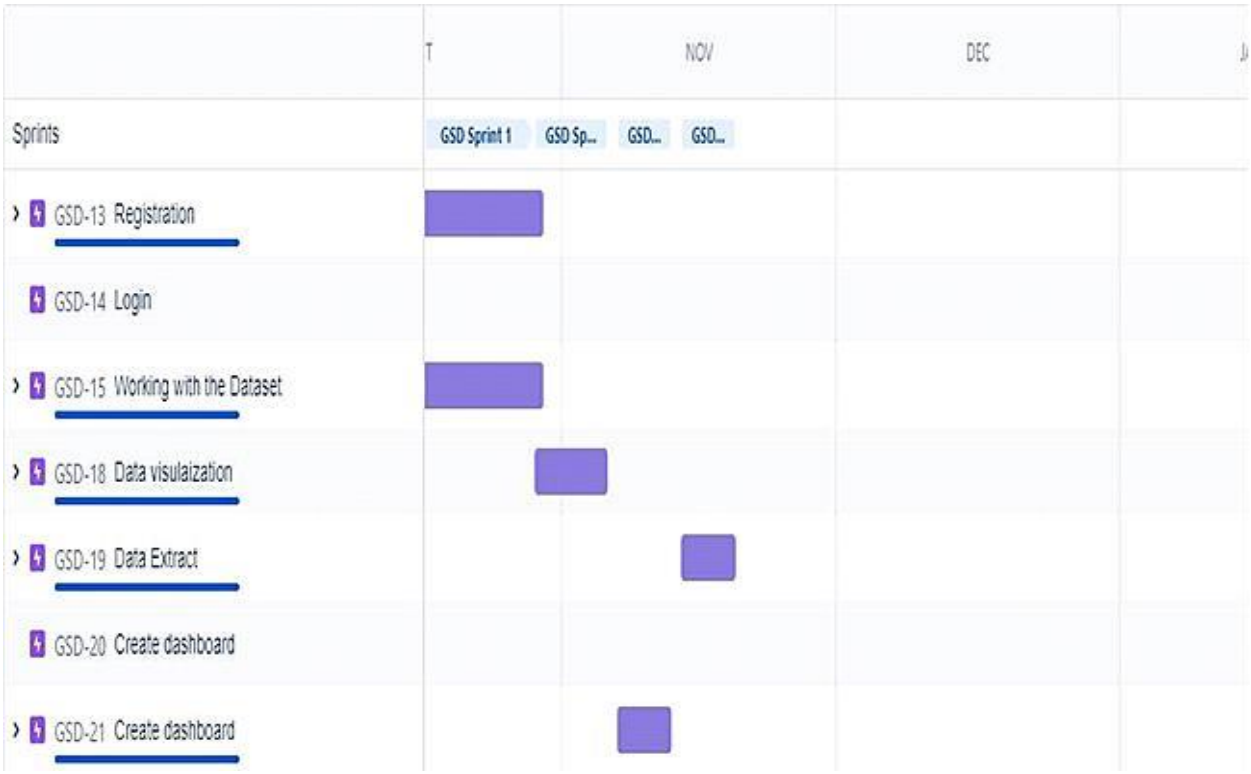
6.3 Reports from JIRA :



Burndown chart :



Road Map:


T
NOV
DEC
Sprints
GSD Sprint 1
GSD Sp...
GSD...
GSD...
GSD-13 Registration
GSD-14 Login
GSD-15 Working with the Dataset
GSD-18 Data visulaization
GSD-19 Data Extract
GSD-20 Create dashboard
GSD-21 Create dashboard

7. CODING SOLUTIONING

7.1.1 Feature 1

Sales – Analysis:

This is an analysis of the sales data with particular focus given to how promotions and advertising translate into sales, in terms of both units sold and sales dollars.

Different types of Sales Analysis

- Furniture company sales analysis HTML file
- Cereal Company Sales Analysis HTML file
- Financial Statement Analysis PDF file

Analysis using R Shiny Dashboard

- Furniture company sales Dashboard R Shiny app

Steps for Cereal Company Sales Analysis

1. Download the Raw Data
2. Analysis code R file
3. Final Analysis R file

Steps for Furniture company sales analysis

1. Download the Raw Data
2. Analysis code R file
3. Dashboard Code HTML file
4. Final Dashboard PDF file
5. Final Analysis HTML file

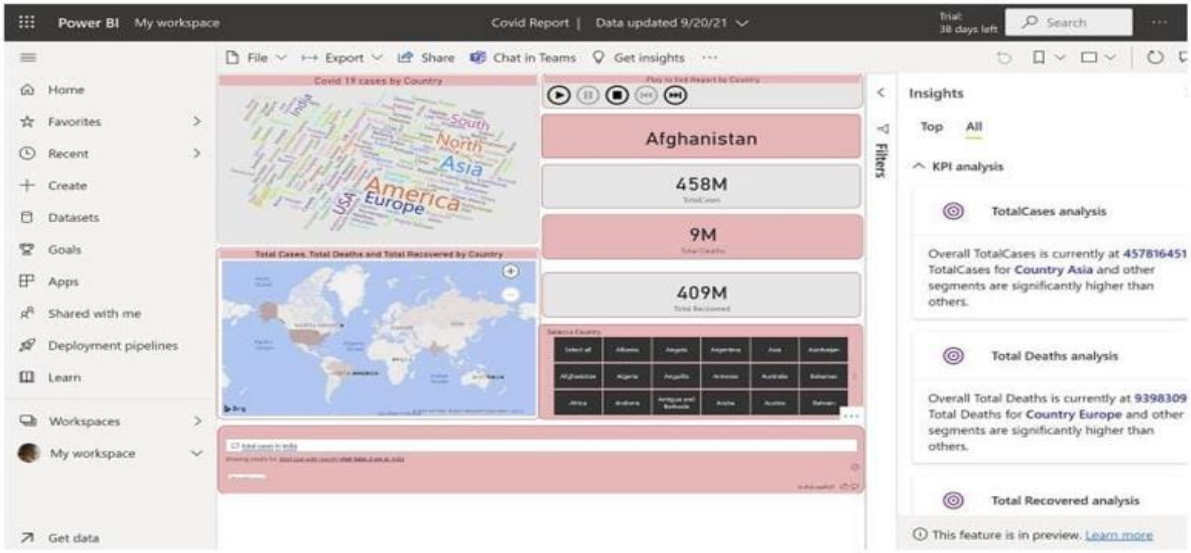
fearture-1:

Step 1: Understand the Business

Step 2: Get Your Data

Step 3: Explore and Clean Your Data

Step 4: Enrich Your Datasets



8. TESTING

8.1 USER ACCEPTANCE TESTING

1. PurposeofDocument

The purpose of this document is to briefly explain thetestcoverageandopenissuesofthe [Global sales data analytics] project at the time of the release to User Acceptance Testing (UAT).

2. DefectAnalysis

Thisreportshowsthenumberofresolvedor closed bugs at each severity level, and how they were resolved

Resolution	Severity1	Severity2	Severity3	Severity4	Subtotal
By Design	9	3	2	3	18
Duplicate	1	0	3	0	4
External	2	3	0	1	6
Fixed	10	2	4	18	36
Not Reproduced	0	0	1	0	1
Skipped	0	0	1	1	2
Won'tFix	0	4	2	1	7
Totals	22	12	13	24	74

3. TestCaseAnalysis

Thisreportshowsthenumberoftestcasesthathavepassed,failed, anduntested

Section	TotalCases	Not Tested	Fail	Pass
PrintEngine	7	1	0	6
ClientApplication	49	2	1	46
Security	2	0	0	2
OutsourceShipping	2	0	0	2
ExceptionReporting	7	0	0	7
FinalReportOutput	6	0	0	6
VersionControl	2	0	0	2

8.2 PERFORMANCE TESTING

Model Performance Testing:

Project team shall fill the following information in model performance testing template.

S.No.	Parameter	Screenshot / Values
1.	Dashboard design	No of Visulizations / Graphs - 7-8 visualization/6-7 graphs
2.	Data Responsiveness	Users and Analyst or Developers
3.	Amount Data to Rendered (DB2 Metrics)	5 counrties
4.	Utilization of Data Filters	Sales ,profit, products, market rate and order id filtration
5.	Effective User Story	No of Scene Added - 30 user stories
6.	Descriptive Reports	No of Visulizations / Graphs - 4 visualizations/6 graph

9. ADVANTAGES& DISADVANTAGES

- **Advantages:**
  - ❖ Data analytics helps an organization make better decisions
  - ❖ Increase the efficiency of the work
  - ❖ The analytics keeps you updated of your customer behavioural changes
  - ❖ Personalization of products and services
  - ❖ Improving quality of products and services

- **Disadvantages:**

  security issues, ethical issues, the deliberate abuse of big data by malevolent players (e.g. organized crime), and unintentional misuse.

10. CONCLUSION

Data analysis includes the inspection, modification, modeling, and transforming of data as per the need of the research topic. The conclusion is the final inference drawn from the data analysis, review of literature, and findings.

12.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.

APPENDEX

SOURCE CODE:

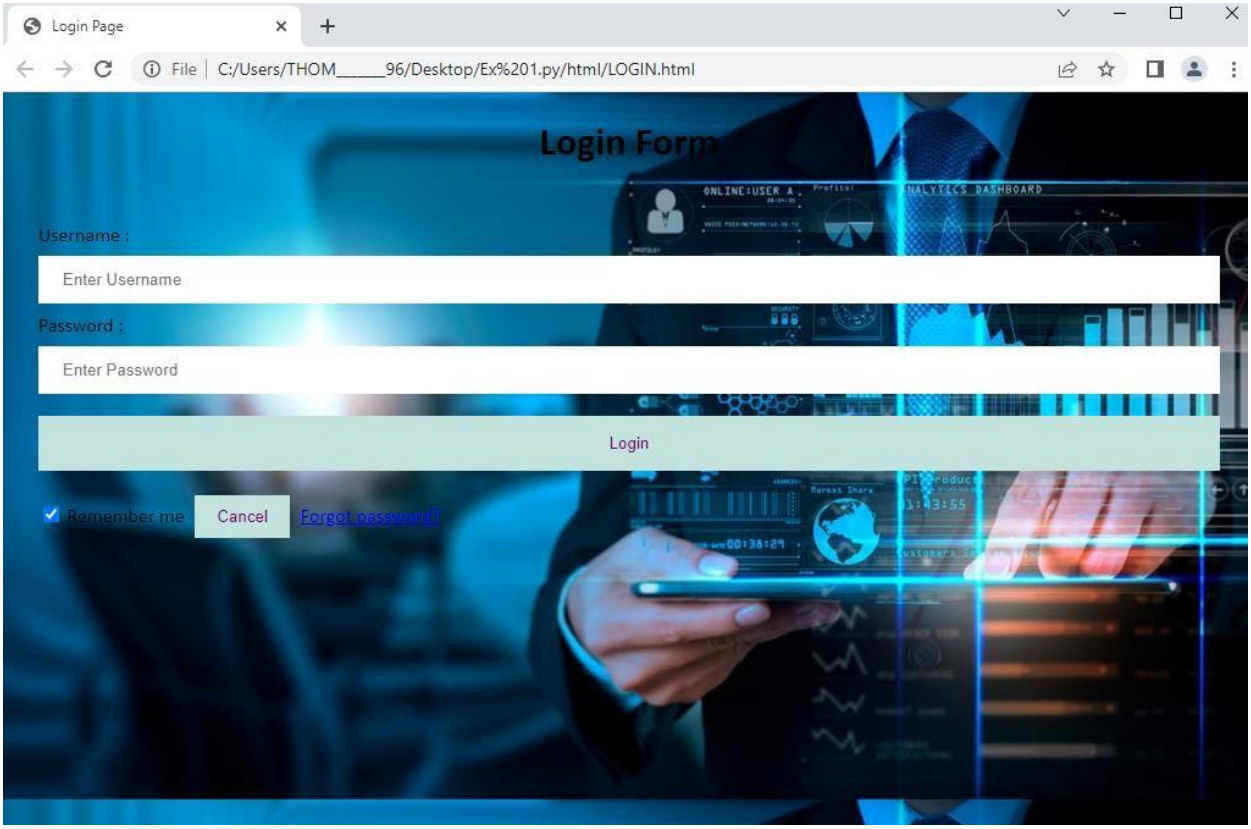
```
<!DOCTYPE html>
<html>
<head>
<meta name="viewport" content="width=device-width, initial-scale=1">
<title> Login Page </title>
<style>
Body {
  font-family: Calibri, Helvetica, sans-serif;
  background-color:white;
  background-image: url('https://2h2fxj2oochv47z6ig3v0sve-wpengine.netdna-ssl.com/wp-content/uploads/2021/07/man-in-a-suit-standing-behind-a-hologram-of-data-analytics-1030x579.jpg');"
}
button {
       background-color:#c3e3dc;
       width: 100%;
        color: purple;
        padding: 15px;
        margin: 10px 0px;
        border: none;
        cursor: pointer;
         }
form {
        border: 3px solid #f156189;
    }
input[type=text], input[type=password] {
        width: 100%;
        margin: 8px 0;
        padding: 12px 20px;
        display: inline-block;
        border: 2px white;
        box-sizing: border-box;
    }
button:hover {
        opacity: 0.7;
    }
  .cancelbtn {
        width: auto;
        padding: 10px 18px;
        margin: 10px 5px;
```

```
    }


.container {
        padding: 25px;
<!--          background-color:pink; -->
    }
</style>
</head>
<body>
    <center> <h1>Login Form </h1> </center>
    <form>
        <div class="container">
            <label>Username : </label>
            <input type="text" placeholder="Enter Username" name="username"
required>
            <label>Password : </label>
            <input type="password" placeholder="Enter Password" name="password"
required>
            <button type="submit">Login</button>
            <input type="checkbox" checked="checked"> Remember me
            <button type="button" class="cancelbtn"> Cancel</button>
            <a href="#"> Forgot password? </a>

        </div>
    </form>
</body>
</html>
```

Output:



GITHUB : https://github.com/IBM-EPBL/IBM-Project-54343-1664605967

PROJECT DEMO LINK:

https://drive.google.com/file/d/1d97lm4RKxtEp6x6vPnyfZAYhIImBG3Rp/view?usp=share_link

THANK YOU !!!!