

Project Report Format

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1. INTRODUCTION

1.1 Project Overview

DHL is a German logistics company providing courier, package delivery and express mail service, which is a division of the German logistics firm Deutsche Post. The company was primarily interested in offshore and intercontinental deliveries, but the success of FedEx prompted DHL's own domestic (intra-US) expansion starting in 1983. In 1998, Deutsche Post began to acquire shares in DHL. It reached controlling interest in 2001, and acquired all outstanding shares by December 2002. DHL provides information about Objects, Services, pickups and destination details. We need to analyze the given data to improve the process of business.

1.2 Purpose

To provide Analytics to improve New Marks and grow the business. Visualizing the analyzed charts in the dashboard and Creating the website to display the dashboard. Increase the agility of your domestic ground distribution by leveraging DHL to plan and execute the delivery of your goods to point of storage, use or sale, using fixed, dynamic or pre-scheduled routes

2. LITERATURE SURVEY

2.1 Existing problem

Optimal decisions for operations management of BDAR: A military industrial logistics data analytics perspective. The purpose of this paper is to present a systematic procedure of optimal decisions for operations management of BDAR and form a framework of military industrial logistics data analytics. Developing a systematic procedure of optimal decisions for operations management of BDAR. Difficult to Collection the war statistics from the historical real-world combat data

A data-analytics approach to identifying hidden critical suppliers in supply networks: Development of nexus supplier index. In this study, we explore the identification and categorization of nexus suppliers. Based on the theory of nexus supplier and data envelopment analysis (DEA), we propose a dataanalytics approach to compute what we call Nexus Supplier Index (NSI). It is a measure that combines various network centrality measures.

Data analytics-enable production visibility for Cyber-Physical Production Systems. In this paper, a Cyber-Physical Production System (CPPS) using data analytics is proposed to enable production visibility. Firstly, this study uses data stream processing approaches to clean redundant data efficiently. Secondly, a Bayesian inference engine, which is trained by mining the historical data offline, is employed to identify the accuracy of an RFID-captured event.

Data analytics and performance. The moderating role of intuition-based HR management in major league baseball. We propose that due to the decreased spectrum of available strategies and simplified mechanisms of value creation associated with a greater reliance on data-driven decisions in highly competitive and specialized industries, the positive effects of social capital for data analytics on firm performance will diminish when firms predominantly adopt data-driven decision-making in deploying human resources.

Data analytic approach for bankruptcy prediction. Bankruptcy prediction problem has been intensively studied over the past decades. In this study, we focused on solving the

skewness which is a characteristic of financial data. By solving this problem, we obtained 17% average improvement in AUC over existing models. To address the second shortcoming, we analyze the importance of features identified by the XGBoost model.

Data analytics for oil sands subcool prediction — a comparative study of machine learning algorithms. This work focuses on developing a subcool model based on industrial datasets using deep learning and several other widely-used machine learning methods. Furthermore, this work compares and discusses the outof-sample performance of different machine learning algorithms using industrial datasets.

2.2 References

- 1. Optimal decisions for operations management of BDAR: A military industrial logistics data analytics perspective - XiongLi /2019
- 2. A data-analytics approach to identifying hidden critical suppliers in supply networks: Development of nexus supplier index – Benjamin B.M /2018
- 3. Data analytics-enable production visibility for Cyber-Physical Production Systems- Pengcheng Fang, JianjunYang/2020
- 4. Data analytics and performance: The moderating role of intuition-based HR management in major league baseball – Jaemin Kim, Clay Dibrell/202
- 5. Data analytic approach for bankruptcy prediction - H.Son, C.Hyun /2019
- 6. Data analytics for oil sands subcool prediction — a comparative study of machine learning algorithms - Nabil Magbool Jan, Chaoqun Li /2018

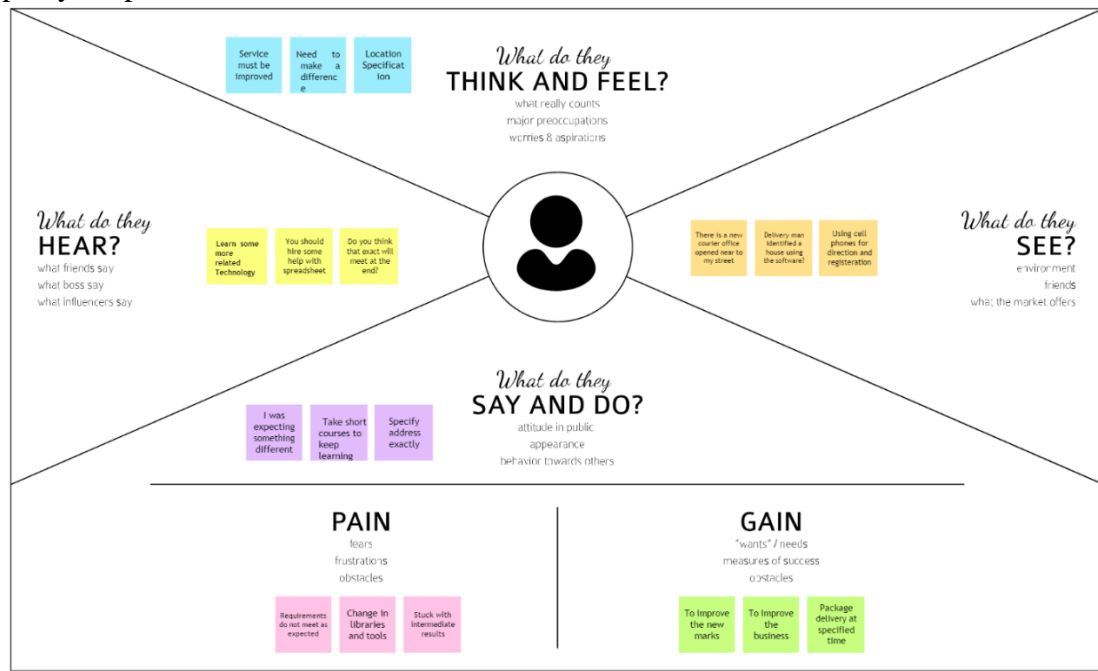
2.3 Problem Statement Definition

DHL is an international Umbrella brand and trademark for the courier, package delivery, and express mail service which is a division of the German logistics firm Deutsche Post. Our goal is to provide analytics to improve the business.



3. IDEATION & PROPOSED SOLUTION

3.1 Empathy Map Canvas



3.2 Ideation & Brainstorming

Step-1: Team Gathering, Collaboration and Select the Problem Statement



Before you collaborate

A little bit of preparation goes a long way with this session. Here's what you need to do to get going.

10 minutes



Team gathering

Define who should participate in the session and send an invite. Share relevant information or pre-work ahead.



Set the goal

Think about the problem you'll be focusing on solving in the brainstorming session.



Learn how to use the facilitation tools

Use the Facilitation Superpowers to run a happy and productive session.

[Open article](#)



1

Define your problem statement

What problem are you trying to solve? Frame your problem as a How Might We statement. This will be the focus of your brainstorm.

5 minutes

PROBLEM

To Provide analytics to
Improve the new marks and
grow the business



Key rules of brainstorming

To run an smooth and productive session



Stay in topic.



Encourage wild ideas.



Defer judgment.



Listen to others.



Go for volume.



If possible, be visual.

Step-2: Brainstorm, Idea Listing and Grouping

2

Brainstorm

Write down any ideas that come to mind that address your problem statement.

🕒 10 minutes

TIP



You can select a sticky note and hit the pencil [switch to sketch] icon to start drawing!

Manoj kannan

Understand the data	Explore on Source and Target location	Understand the Coordinates
Find the ways to handle the large amount of data	Optimized way to reach the target	List the ways of analysis

Sudharsan

Gather the required data	Enable automation of processes	Find cost effective ways
Identify the use cases	Require knowledge from the data	Maintain scalability

Guna Sekar

Find effective analytics methods	Ensure high reliability	Understand use of various visualization methods
Understand user problems	Understand user needs	Get inference from data available

Anantha Raman

Find a optimal solution for gaining insight	Ensure high accuracy is reached	Perform pre-processing of data if needed
Understand need for analytics	Understand impacts of the results	Determine the format of the output

3

Group ideas

Take turns sharing your ideas while clustering similar or related notes as you go. Once all sticky notes have been grouped, give each cluster a sentence-like label. If a cluster is bigger than six sticky notes, try and see if you can break it up into smaller sub-groups.

🕒 20 minutes

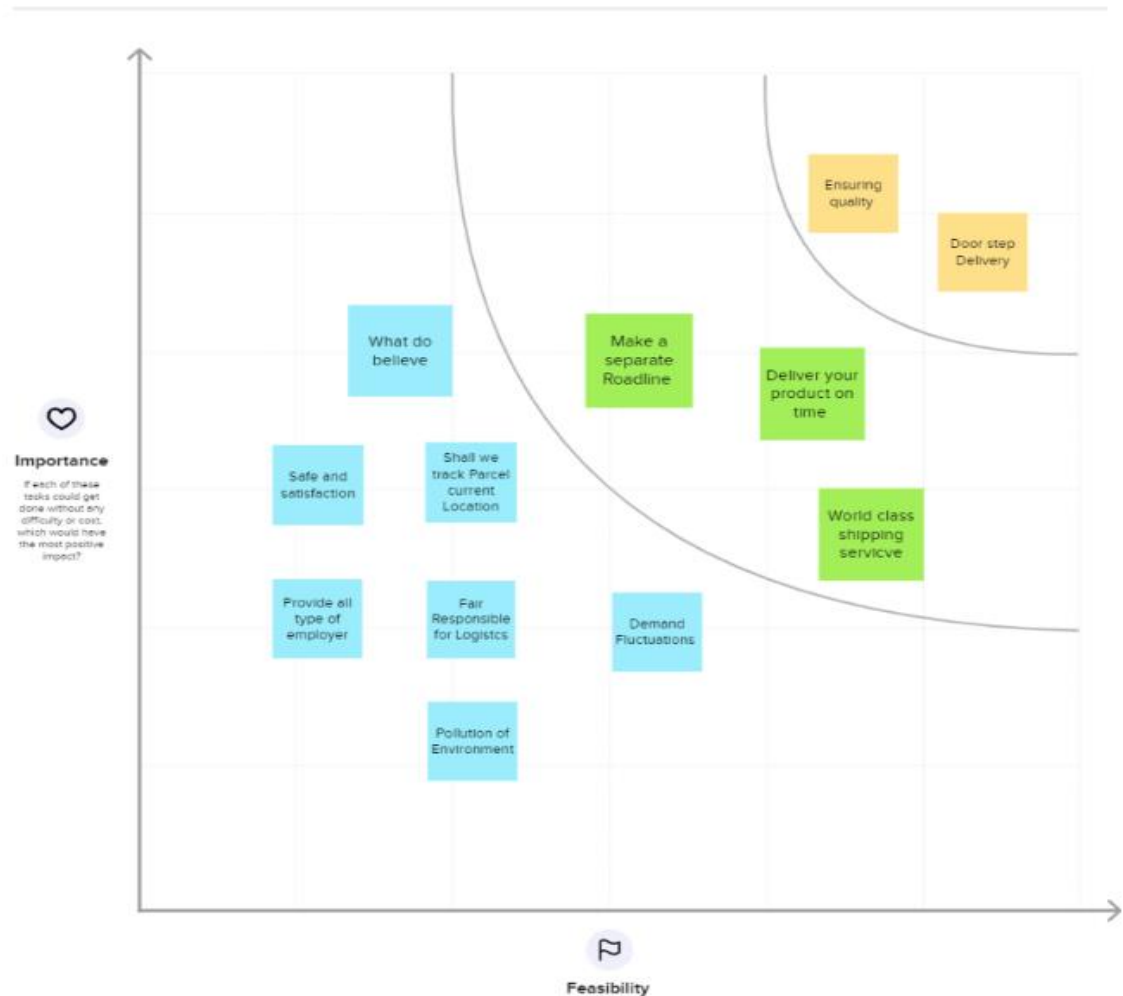
Security and safe	Environment Issues	Needs quick service	Customer Service is Available
Demand Fluctuations	High Customs Cost	Make Work Together	Make separate Road Line
Proper Documentation	You can take parcel	We are responsible	Customer can receive and receipt
Door step Delivery	Regular Update of Services	Economic growth of services	Negotiation with client and Customer

Step-3: Idea Prioritization

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

s.no	Parameter	Description
1	Problem Statement (Problem to be solved)	DHL is an international Umbrella brand and trademark for the courier, package delivery, and express mail service which is a division of the German logistics firm Deutsche Post. The company DHL itself was founded in San Francisco, USA, in 1969 and

		expanded its service throughout the world by the late 1970s. The company group delivers over 1.6 billion parcels per year. Our goal is to improve the New marks and grow the business. To provide Analytics to improve New Marks and grow the business.
2	Idea / Solution description	Perform the coding & solutioning, acceptance testing, performance testing based as per the Time limit.
3	Novelty / Uniqueness	Analise the data collected and apply the suitable machine learning model
4	Social Impact / Customer Satisfaction	Optimized way for Domestic and international parcel delivery to Target Location
5	Business Model (Revenue Model)	Sales revenue model that makes money by mail service, product delivery
6	Scalability of the Solution	Providing analysis that provide insights how it meets the user needs

3.4 Problem Solution fit

Define CS, fit into CC	1. CUSTOMER SEGMENT(S) Customers are the important part of the sector who apply for the delivery and taking delivery of their purchases in different ways, requiring not just multi-channel but omni-channel strategies. They want products to be produced and supplied sustainably, and to pay less for them. And emerging markets are no longer just centers of production; they are becoming major areas of consumption too.	6. CUSTOMER CONSTRAINTS There may occur situations such as Labor and Shipping Shortages, Managing Complex systems, Handling Customer expectations. Local government health guidelines also play a part in restricting workforce numbers. For example, China has instituted a mandatory seven-week quarantine for returning cargo crews. Customers will always want to know where their products are and when they will arrive. Speed and convenience are key performance indicators for	5. AVAILABLE SOLUTIONS It was difficult to devote sufficient resources to running its domestic supply chain effectively and to delivering the high levels of service expected by its customers in Japan. To accomplish all of these objectives, the manufacturer chose to outsource the management of its supply chain operations in Japan to a single third-party logistics (3PL) provider that would operate as the technology company's Lead Logistics Provider (LLP). To keep track of the target location and identify the better way to reach them with known vehicle and short route	Explore AS, differentiate
	2. JOBS-TO-BE-DONE / PROBLEMS <ul style="list-style-type: none">To identify Type of serviceTo collect the required dataTo visualize the dataTo analyse the source and target locationTo identify the top contributor over the Country/City	9. PROBLEM ROOT CAUSE The COVID-19 pandemic has put health and safety at the forefront of worker concerns. Surges in late 2021 and early 2022 have placed much of the personnel in quarantine. This problem has left their other coworkers overworked and severely understaffed to handle the massive influx of shipments.	7. BEHAVIOUR To accomplish all of these objectives, the manufacturer chose to outsource the management of its supply chain operations in Japan to a single third-party logistics (3PL) provider that would operate as the technology company's Lead Logistics Provider (LLP). The company sought a global LLP that in addition to performing specified logistics services could also apply world-class expertise, knowledge, and oversight to the entire domestic logistics operation. The manufacturer selected DHL Supply Chain as its strategic T I P partner	
3. TRIGGERS <ul style="list-style-type: none">Customers having problems with current situationTrying to surpass opponent companiesLearning strategies to increase businessHeavy loss in business	10. YOUR SOLUTION Using the regression analysis to predict the target location. Regression analysis is a powerful statistical method that allows you to examine the relationship between two or more variables of interest. We can keep track of parcel or mail service using the 10 digit tracking number. If you do not have a tracking number, we advise you to contact your shipper. However, if you have other shipping reference numbers, they may work using shipment tracking systems of the specific business unit in charge of the shipment	8. CHANNELS OF BEHAVIOUR Customers can give feedback and contact the service manager or particular authorized person through the mail service, chatbot or contact number. Customers in online represents the most delivered item and charges that represents the service for the item Customers in offline can post the object with seal of the particular branch and address specified delivered at the target.	CH	
4. EMOTIONS: BEFORE / AFTER Customer Lifetime Value (CLTV) is the total revenue a customer generates throughout his or her period of association with an organization. It is relevant metric because it helps ecommerce business owners know whether their customers are becoming more or less valuable.				

4. REQUIREMENT ANALYSIS

4.1 Functional requirement

FR No.	Functional Requirement (Epic)	Sub Requirement (Story / Sub-Task)
FR-1	User Registration	Registration through any google account or social media accounts.
FR-2	User Confirmation	Confirmation via Email Confirmation via OTP
FR-3	Dataset	The DHL_Facilities.csv record are collected as a dataset and upload to Cognos analytics

FR-4	Prepare/Analyse	The dataset is moved around to prepare and analyse using Cognos
FR-5	Exploration	The data are explored using logistics dataset by Cognos
FR-6	Dashboard	The Prepared and Explored data are Visualize and created in different type of dashboards. i.e., charts, graphs, tree, reports, summary, etc..

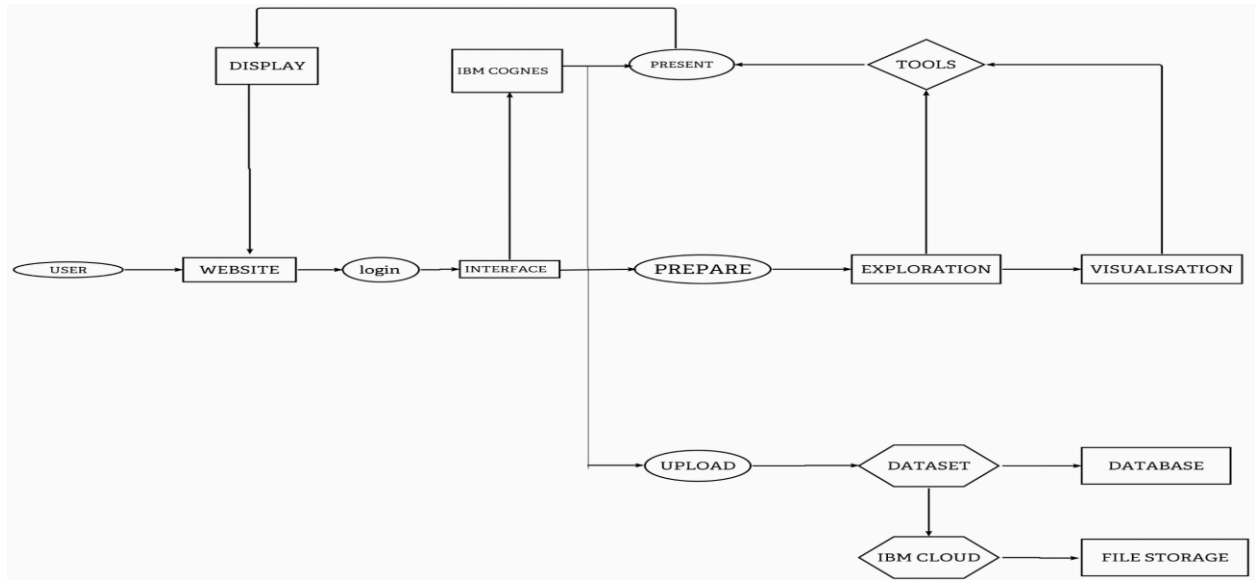
4.2 Non-Functional requirements

FR No.	Non-Functional Requirement	Description
NFR-1	Usability	No prior experience required to use the dashboard. People with basic understanding can use the system.
NFR-2	Security	Only registered user can use this application.
NFR-3	Reliability	The Analytics system ensures the reliability
NFR-4	Performance	Gets updated regularly to improve the performance of the application.
NFR-5	Availability	The availability of dataset must be constrained for accurate data.
NFR-6	Scalability	Any kind of data can be explored and the system is quiet expandable.

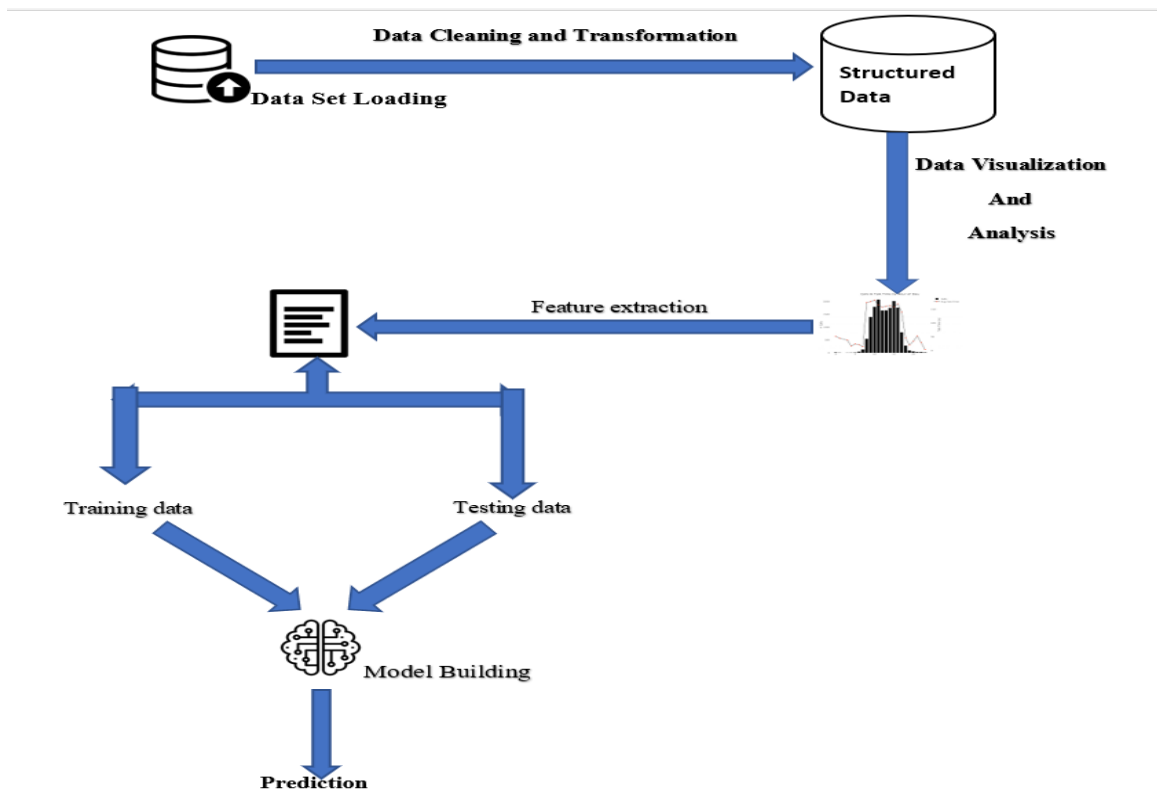
5. PROJECT DESIGN

5.1 Data Flow Diagrams

A Data Flow Diagram (DFD) is a traditional visual representation of the information flows within a system. A neat and clear DFD can depict the right amount of the system requirement graphically. It shows how data enters and leaves the system, what changes the information, and where data is stored



5.2 Solution Architecture



Technology Architecture:

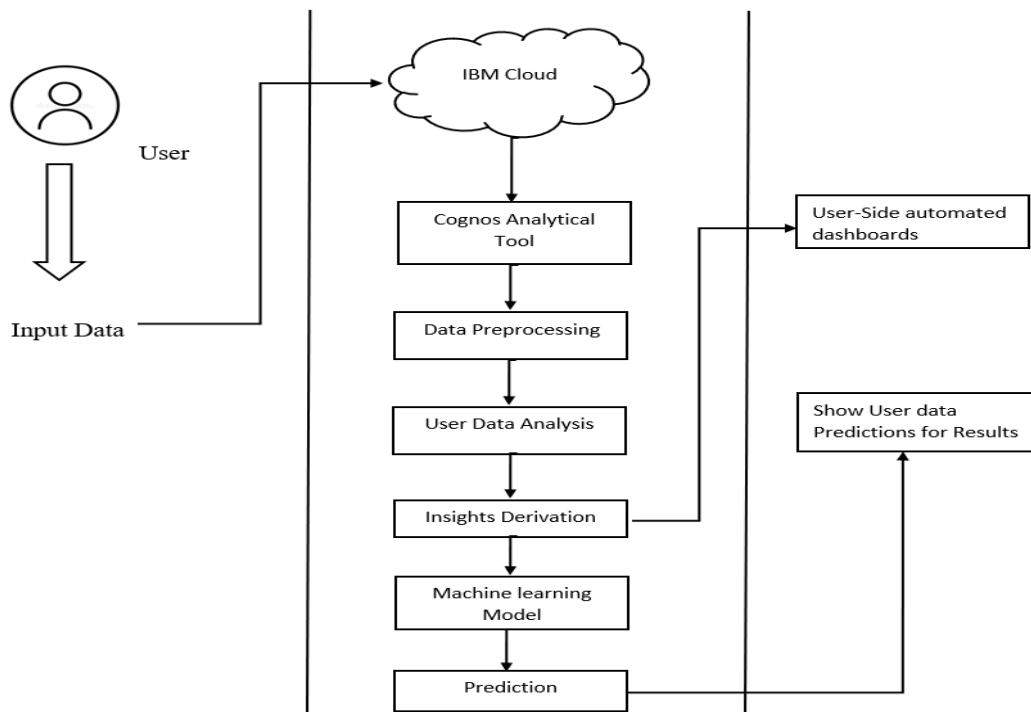


Table-1 : Components & Technologies:

S. No	Component	Description	Technology
1	IBM Cognos Analytics	To perform data analysis(Visualization chart) on the user data	IBM Cognos Tool
2	Data Preprocessing	To prepare the data for the analysis and further process	Python
3	Machine Learning Model	To build the machine learning model for classification	Jupyter Notebook
4	Prediction	To do the predictive analysis on the input data	Analysis Model
5	Dashboard	Graphical User Interface that provides analysis on user data	IBM Cognos Dashboard

Table-2: Application Characteristics:

5.3 User Stories

User Type	Functional Requirement (Epic)	User Story Number	User Story / Task	Acceptance criteria	Priority	Release
Customer	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
		USN-3	As a user, I can register for the application through Facebook	I can register & access the dashboard with Facebook Login	Low	Sprint-2
		USN-4	As a user, I can register for the application through Gmail	I can register & access the dashboard with Gmail Login	Medium	Sprint-1
	Login	USN-5	As a user, I can log into the application by entering email & password	I can login into the application with Gmail login	High	Sprint-1
	Dashboard	USN-6	As a user I can use the methods provided in the Dashboard.	I can access the dashboard with various methods	High	Sprint-2
Customer Care Executive	Login	USN-7	As a Customer Care Executive, I can log into the application by entering my Executive email Id & password	I can login with my credentials	Medium	Sprint-1
	Service	USN-8	As a Customer Care Executive, I can answer user's queries	I can give the solutions to the user's queries	High	Sprint-3
Administrator	Login	USN-9	As an Administrator, I can log into the application by entering my Administer email Id & password	I can login with my credentials	High	Sprint-1
	Access	USN-10	As an admin, I can make changes to the interface according to the needs	I have a full access to the application	High	Sprint-3
Customer tools	Tools	USN-11	I can perform analysis by tools (Cognos and with ML)	I have an ease of Accessing tools.	High	Sprint 1

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	Login	USN-1	As a user, I can register & log into the application by entering email & password	10	High	GUNA SEKAR M
Sprint-1	Verify	USN-2	As a user, I can verify the email with given otp and check for correct subscription access	10	High	GUNA SEKAR M
Sprint-2	Collect Data	USN-3	As an admin I can define questions & goals then collect data & provide the dataset in IBM Cognos analytics	10	High	ANANTH A RAMAN
Sprint-2	Prepare & Explore	USN-4	As an admin I can prepare, explore & present the dataset in IBM Cognos analytics	10	High	ANANTH A RAMAN B
Sprint-3	Analyze	USN-5	As an admin, I will analyze the given dataset (Data pre-processing)	10	High	SUDHAR SAN M
Sprint-3	Predict	USN-6	As an admin, I will predict the length of stay (Prediction)	10	High	SUDHAR SAN M
Sprint-4	Visualization	USN-7	As a user, I can select the visualization type like Report, Dashboard and story (Creating visualization)	7	Medium	GUNA SEKAR M
Sprint-4	Dashboard	USN-8	As a user, I can upload the datasets to the dashboard and view visualizations	8	High	MANOJ KANNAN S
Sprint-4	Communicate	USN-9	As an admin, I can communicate to the client for user queries and visualize the best dashboards in any platform as a user expected	5	Low	MANOJ KANNAN S

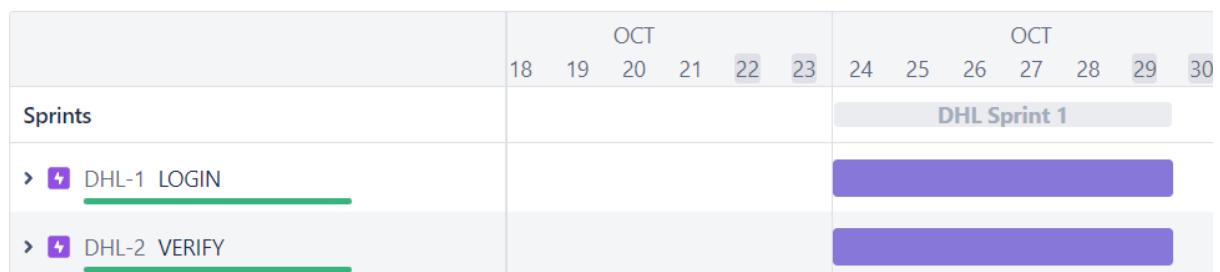
6.2 Sprint Delivery Schedule

Sprint	Total Story Points	Duration	Sprint Start Date	Sprint End Date (Planned)	Story Points Completed (as on Planned End Date)	Sprint Release Date (Actual)
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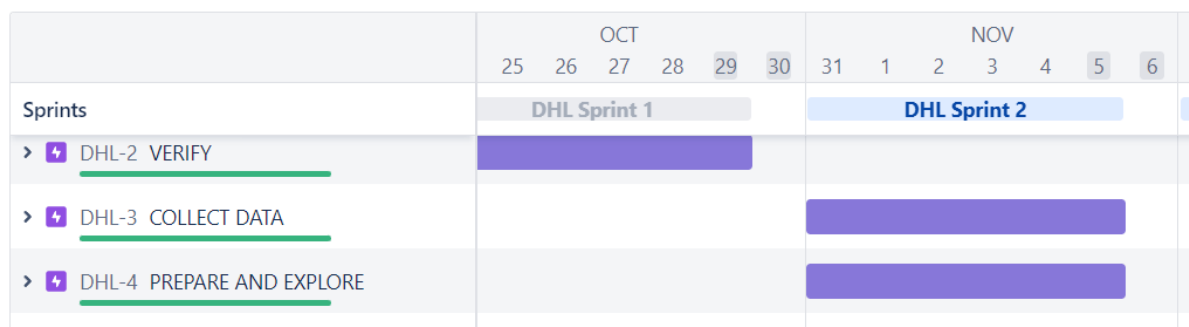
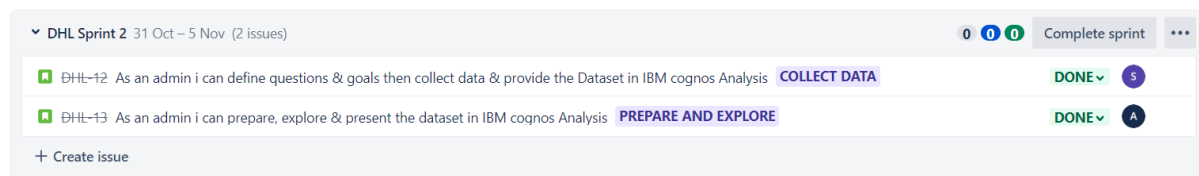
Sprint-1	20	6 Days	24 Oct 2022	29 Oct 2022	20	29 Oct 2022
Sprint-2	20	6 Days	31 Oct 2022	05 Nov 2022	20	05 Nov 2022
Sprint-3	20	6 Days	07 Nov 2022	12 Nov 2022	20	12 Nov 2022
Sprint-4	20	6 Days	14 Nov 2022	19 Nov 2022	20	19 Nov 2022

6.3 Reports from JIRA

SPRINT 1



SPRINT 2



S

A

Epic ▾

TO DO

IN PROGRESS

DONE 2 ISSUES ✓

As an admin i can define questions & goals then collect data & provide the Dataset in IBM cognos Analysis

COLLECT DATA

DHL-12

✓

S

As an admin i can prepare, explore & present the dataset in IBM cognos Analysis

PREPARE AND EXPLORE

DHL-13

✓

A

SPRINT 3

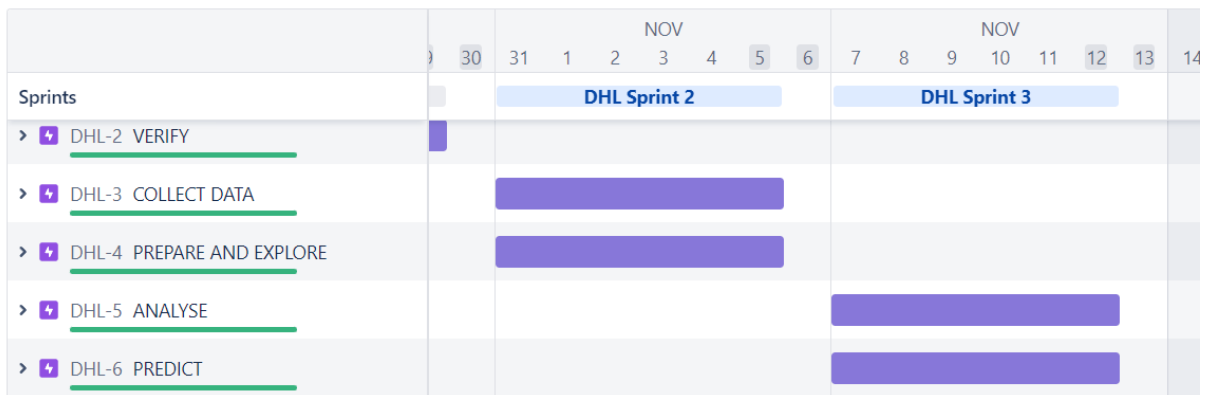
DHL Sprint 3
7 Nov – 12 Nov
(2 issues)

0
0
0
Complete sprint
...

DHL-14
As an admin i will analyze the given dataset (preprocessing)
ANALYSE
IN PROGRESS
SM

DHL-15
As an admin i will predict the location(prediction)
PREDICT
IN PROGRESS
S

+ Create issue



SPRINT 4

The screenshot displays the Jira Software interface for a project named "Data Analytics using DHL Logistics Facilities". The interface is organized into a Kanban board with three columns: "TO DO", "IN PROGRESS 2 OF 2 ISSUES", and "DONE 5 OF 5 ISSUES".

- TO DO Column:** Contains one card labeled "DHL-18" with a "DASHBOARD" label.
- IN PROGRESS Column:** Contains two cards. The first card is labeled "DHL-16" with a "COMMUNICATE" label. The second card is labeled "DHL-18" with a "DASHBOARD" label.
- DONE Column:** Contains three cards. The first card is labeled "DHL-12" with a "COLLECT DATA" label. The second card is labeled "DHL-14" with an "ANALYSE" label. The third card is labeled "DHL-13" with a "PREPARE AND EXPLORE" label.

The interface includes a sidebar on the left with navigation options: "Roadmap", "Backlog", and "Board". The top navigation bar shows "Jira Software" and "Projects". The bottom of the screen features a "Quickstart" button.

	OCT							NOV							NOV														
	23	24	25	26	27	28	29	30	31	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
sprints	DAFDLF Sprint 1							DAFDLF Sprint 2							DAFDLF Sprint 3							DAFDLF Sprint 4							
DAFDLF-1 LOGIN																													
DAFDLF-4 VERIFY															IBM-Project-54082-1661588854														
DAFDLF-5 COLLECT DATA															PNT2022TMID24413														
DAFDLF-8 PREPARE & EXPLORE																													
DAFDLF-11 ANALYZE																													
DAFDLF-12 PREDICT	IBM-Project-54082-1661588854																												
DAFDLF-16 VISUALIZATION	PNT2022TMID24413																												
DAFDLF-17 DASHBOARD																													
DAFDLF-19 COMMUNICATE																													

CODING & SOLUTIONING (Explain the features added in the project along with code)

6.4 Feature 1

```
<!DOCTYPE html>
<html>
<head>
<title>DHL Logistics Facilities</title>
<meta charset="UTF-8">
<meta name="viewport" content="width=device-width, initial-scale=1">
<link rel="stylesheet" href="https://www.w3schools.com/w3css/4/w3.css">
<link rel="stylesheet" href="https://fonts.googleapis.com/css?family=Oswald">
<link rel="stylesheet" href="https://fonts.googleapis.com/css?family=Open+Sans">
<link rel="stylesheet" href="https://cdnjs.cloudflare.com/ajax/libs/font-
awesome/4.7.0/css/font-awesome.min.css">
<style>
h1,h2,h3,h4,h5,h6 {font-family: "Oswald"}
body {font-family: "Open Sans"}
</style>
</head>
<body class="w3-light-grey">

<!-- Navigation bar with social media icons -->

<div class="w3-bar w3-black w3-hide-small">
<div align = "left">
<h2 class = w3-xlarge>DHL Logistics Facilities Analysis</h2></div>
<div class="w3-right w3-hide-small">
<a href= "Ind.html" class="w3-bar-item w3-button">Home</a>
<a href= "data.html" class="w3-bar-item w3-button">Prediction</a>
<a href= "dashboard.html" class="w3-bar-item w3-button">DashBoard</a>
</div>
</div>

<!-- w3-content defines a container for fixed size centered content,
and is wrapped around the whole page content, except for the footer in this example -->
<div class="w3-content" style="max-width:1600px">

<!-- Header -->
<header class="w3-container w3-center w3-padding-48 w3-white">
<h6>Welcome to the Analytics of <span class="w3-tag">DHL Logistics
Facilities</span></h6>
```

</header>

<!-- Grid -->

<div class="w3-row w3-padding w3-border">

<!-- Blog entries -->

<div class="w3-col l8 s12">

<!-- Blog entry -->

<div class="w3-container w3-white w3-margin w3-padding-large">

<div class="w3-center">

<h3>DHL Logistics Facilities Data Visualization</h3>

</div>

<div class="w3-justify">

<iframe

src="https://us3.ca.analytics.ibm.com/bi/?perspective=dashboard&pathRef=.public_folders%2FDHL_Logistics%2FDHL_DashBoard&closeWindowOnLastView=true&ui_appbar=false&ui_navbar=false&shareMode=embedded&action=view&mode=dashboard&subView=model0000018378e9c01e_00000000" width="900" height="500" frameborder="0" gesture="media" allow="encrypted-media" allowfullscreen=""></iframe>

</div>

</div>

<hr>

<!-- END BLOG ENTRIES -->

</div>

<!-- About/Information menu -->

<div class="w3-col l4">

<!-- About Card -->

<div class="w3-white w3-margin">

<div class="w3-container w3-black">

<h4>Data Visualization Charts Tab Names : </h4>

<p>

Area Chart Showing City Wise DHL Deliveries

Top N Deliveries By State And City

Showing Top 3 State Deliveries

Total Number of Objects IDs Serviced by DHFL - Summary Card

Zip Code wise Number of Objects Serviced

Mach Status Filters

Placement Filters

```

        <li>Dashboard Showing Delivery Stats Using Donut Charts</li>
        <ul><li>Placement Filters</li>
        <li>Mach Status Filters</li>
        <li>Location Ty Filters</li>
        <li>Location Th Filters</li></ul>
        <li>Zip Code wise Number of Objects Serviced</li>
        <li>Top Contributor Countries / Cities - Geo Map display</li>
    </ol>
</p>
</div>
</div>
<hr>
<!-- END GRID -->
</div>

<!-- END w3-content -->
</div>
<!-- Footer -->
<footer class="w3-container w3-dark-grey" style="padding:32px">
    <a href="#" class="w3-button w3-black w3-padding-large w3-margin-bottom"><i class="fa
fa-arrow-up w3-margin-right"></i>To the top</a>
    <p>Powered by PNT2022TMID17919</p>
</footer>
</body>
</html>

```

```

<!--=====Prediction=====--!>
<!DOCTYPE html>
<html>
<head>
<title>Data Analytics for DHL Logistics Facilities</title>
<meta charset="UTF-8">
<meta name="viewport" content="width=device-width, initial-scale=1">
<link rel="stylesheet" href="https://www.w3schools.com/w3css/4/w3.css">
<link      href="https://fonts.googleapis.com/css?family=Raleway"      rel="stylesheet"
type="text/css">
<link rel="stylesheet" href="https://www.w3schools.com/w3css/4/w3.css">
<link rel="stylesheet" href="https://fonts.googleapis.com/css?family=Oswald">
<link rel="stylesheet" href="https://fonts.googleapis.com/css?family=Open Sans">

```

```
<link          rel="stylesheet"          href="https://cdnjs.cloudflare.com/ajax/libs/font-
awesome/4.7.0/css/font-awesome.min.css">
<style>
body {font-family: "Raleway", Arial, sans-serif}
.w3-row img {margin-bottom: -8px}
body {font-family: Arial, Helvetica, sans-serif;}
* {box-sizing: border-box;}

input[type=text], select, textarea {
  width: 100%;
  padding: 12px;
  border: 1px solid #ccc;
  border-radius: 4px;
  box-sizing: border-box;
  margin-top: 6px;
  margin-bottom: 16px;
  resize: vertical;
}

input[type=submit] {
  background-color: #04AA6D;
  color: white;
  padding: 12px 20px;
  border: none;
  border-radius: 4px;
  cursor: pointer;
}

input[type=submit]:hover {
  background-color: #45a049;
}

.container {
  border-radius: 5px;
  background-color: #f2f2f2;
  padding: 20px;
}
</style>
</head>
<body>
```

```

<div class="w3-bar w3-black w3-hide-small">
<div align = "left">
  <h2 class = w3-xlarge>DHL Logistics Facilities Analysis</h2></div>
  <div class="w3-right w3-hide-small">
    <a href= "Ind.html" class="w3-bar-item w3-button">Home</a>
    <a href= "data.html" class="w3-bar-item w3-button">Prediction</a>
    <a href= "dashboard.html" class="w3-bar-item w3-button">DashBoard</a>
    <!--<a href= "Ind.html" class="w3-bar-item w3-button">Home</a>-->
  </div>
</div>
<div class="container" data-aos="fade-up">
  <div class="predictform">
    <h2>Predict</h2>
    <form action="{{ url_for('result') }}" method="POST" >

      <label for="X-COORDINATE">ENTER THE X : </label>
      <input type="text" name="X" id="X" required><br/><br/>
      <label for="Y-COORDINATE">ENTER THE Y: </label>
      <input type="text" name="Y" id="Y" required><br/><br/>
      <label for="OBJECTID">ENTER THE OBJECTID : </label>
      <input type="text" name="objectid" id="objectid" required><br/><br/>
      <label for="FEATUREID">ENTER THE FEATURE ID : </label>
      <input type="text" name="featureid" id="featureid" required><br/><br/>
      <label for="ZIPCODE">ENTER THE ZIP CODE : </label>
      <input type="text" name="zipcode" id="zipcode" required><br/><br/>
      <label for="LATITUTDE">ENTER THE LATITUDE: </label>
      <input type="text" name="latitude" id="latitude" required><br/><br/>
      <label for="LONGITUDE">ENTER THE LONGITUDE: </label>
      <input type="text" name="longitude" id="longitude" required><br/><br/>
      <label for="CENSUS_CODE">ENTER THE CENSUS CODE: </label>
      <input type="text" name="censuscode" id="censuscode" required><br/><br/>
      <input type="submit" value="predict" align="center" name="predict"/>
    </form>
  </div>
</div>
<p style="position:relative;left:300px;color:red;font-size:larger">Predicted City is :
Austin</p>
</section>

</body>

```

</html>

6.5 Prediction

Predict the City based on the X-Coordinate, Y-Coordinate, Objectid, Featureid, Latitude, Longitude, Zipcode using the random forest algorithm.

```
from flask import Flask, render_template, request
app = Flask(__name__)

@app.route('/result',methods = ['POST'])
def result():
    temp=[]
    columns=['X','Y','OBJECTID','FEATURE_ID','LATITUDE','LONGITUDE','ZIP']
    temp.append(int(request.form['X']))
    temp.append(int(request.form['Y']))
    temp.append(int(request.form['objectid']))
    temp.append(int(request.form['featureid']))
    temp.append(int(request.form['latitude']))
    temp.append(int(request.form['longitude']))
    temp.append(int(request.form['zipcode']))
    df = pd.read_csv('DHL_Facilities.csv')
    X = df.iloc[:,0:4] #Geo-Codes, ObjectID, FeatureID
    Y = df.iloc[:,9:12] #Latitude, Longitude
    Z = df.iloc[:,14] #ZipCode
    X = pd.concat([X,Y,Z],axis = 1)
    Y = df.iloc[:,7]
    X = X.replace('Not Available',0)
    X = pd.DataFrame(X)
    df1=pd.DataFrame(columns=columns)
    df1=pd.concat((df,pd.DataFrame(data=[temp],columns=columns)))
    classifier=RandomForestClassifier(n_estimators=50, random_state=0)
    x_train,x_test,y_train,y_test = train_test_split(X,Y,test_size=0.2,random_state = 0)
    scaler = StandardScaler()
    x_train = scaler.fit_transform(x_train)
    classifier.fit(x_train,y_train)
    pred = classifier.predict(df1)
    return render_template("data.html",result = result)

if __name__ == '__main__':
```

app.run()

6.6 Database Schema (if Applicable)

Table Created in DB2

The screenshot shows the IBM Db2 on Cloud console. The top navigation bar includes 'Load Data', 'Load History', 'Tables', 'Views', 'Indexes', 'Aliases', 'MQTs', 'Sequences', and 'Application objects'. The 'Tables' tab is selected. A search bar at the top left says 'Find schemas or tables'. On the left sidebar, 'Schemas' is selected. The main area displays a table list with columns 'Name', 'Schema', and 'Properties'. One table is listed: 'DHL' in schema 'SGS16661'. To the right, the 'Table definition' panel shows the table's structure:

Name	Data type	Nullable	Length	Scale
X	DECIMAL	Y	13	3
Y	DECIMAL	Y	13	3
OBJECTI D	SMALLINT	Y		0
FEATUR E_ID	SMALLINT	Y		0

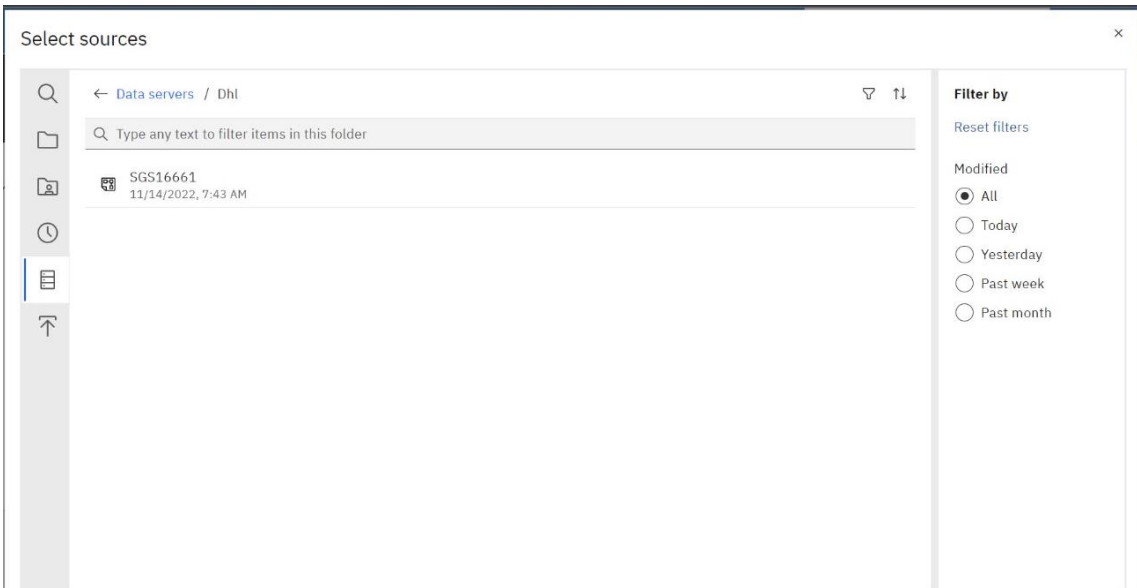
Below the table definition is a 'View data' button. The bottom status bar indicates 'Total: 1, selected: 0'.

Create Service Credentials

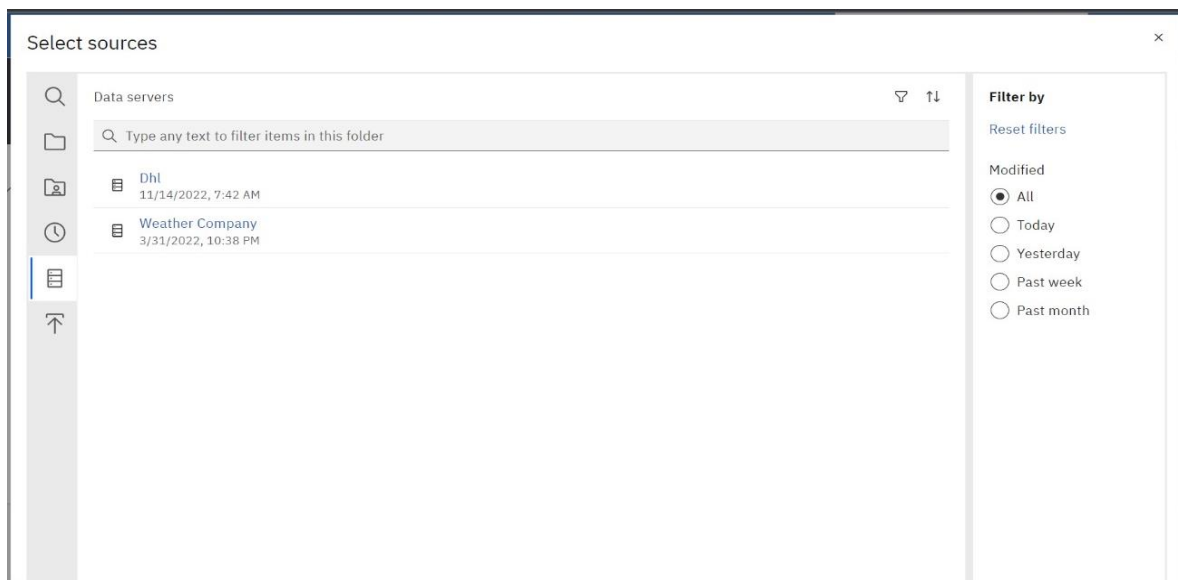
The screenshot shows the IBM Cloud console. The top navigation bar includes 'Catalog', 'Manage', and 'SURYA R's Account'. The left sidebar shows 'Resource list' with 'Db2-9t' selected. The main area displays the 'Service credentials' section for the 'Db2-9t' resource. It includes a 'New credential' button and a table of existing credentials:

Key name	Date created
Service credentials-1	2022-11-14 7:09 PM

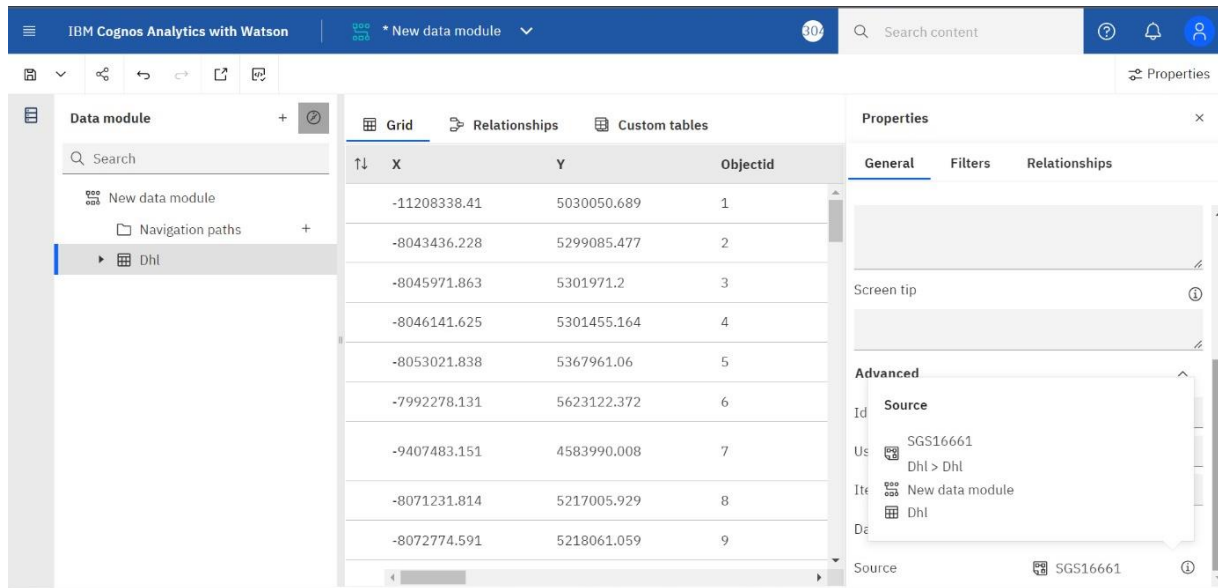
Connected to Cognos: **Select Schema**



Select correct data



Displayed the meta data in Cognos



7. TESTING

7.1 Test Cases

Component	Test Scenario	Test Data	Expected result	Status
Login Page	User enters the name and Password	Username : admin123 Password : admin	User should be navigated to the dashboard	Working as expected
Login Page	User enters incorrect name and Password	Username : adminxyz Password : admin1	Error Message	Working as expected
Main Page	User able to navigate to the dashboard		The Visualizations are displayed	Working as expected
Main Page	User able to navigate to the Prediction page	User enters details about location, objected, featureid and zipcode	Details submitted	Working as expected
Main Page	Prediction result is viewed		City name displayed	Working as expected

7.2 User Acceptance Testing

1. Purpose of Document:

The purpose of this document is to briefly explain the test coverage and open issues of analysing the DHL Logistics facilities information

2. Defect Analysis:

Resolution	Severity 1	Severity 2	Severity 3	Severity 4	Subtotal
By Design	7	5	3	2	17
Duplicate	1	0	2	0	3
External	3	2	0	1	6
Fixed	11	3	5	15	34
Not Reproduced	0	0	0	1	1
Skipped	0	1	0	1	2
Won't Fix	0	3	5	1	9
Totals	22	14	15	21	72


3. Test Case Analysis:

Section	Total Cases	Not Tested	Fail	Pass
Print Engine	7	0	0	7
Client Application	40	0	0	40
Security	2	0	0	2
Outsource Shipping	3	0	0	3
Exception Reporting	9	0	0	9
Final Report Output	3	0	0	3
Version Control	1	0	0	1

8. RESULTS

8.1 Performance Metrics

LOGIN PAGE:



Username

admin

Password

.....

Login

ABOUT:

DHL:

DHL Logistics

Prediction DashBoard



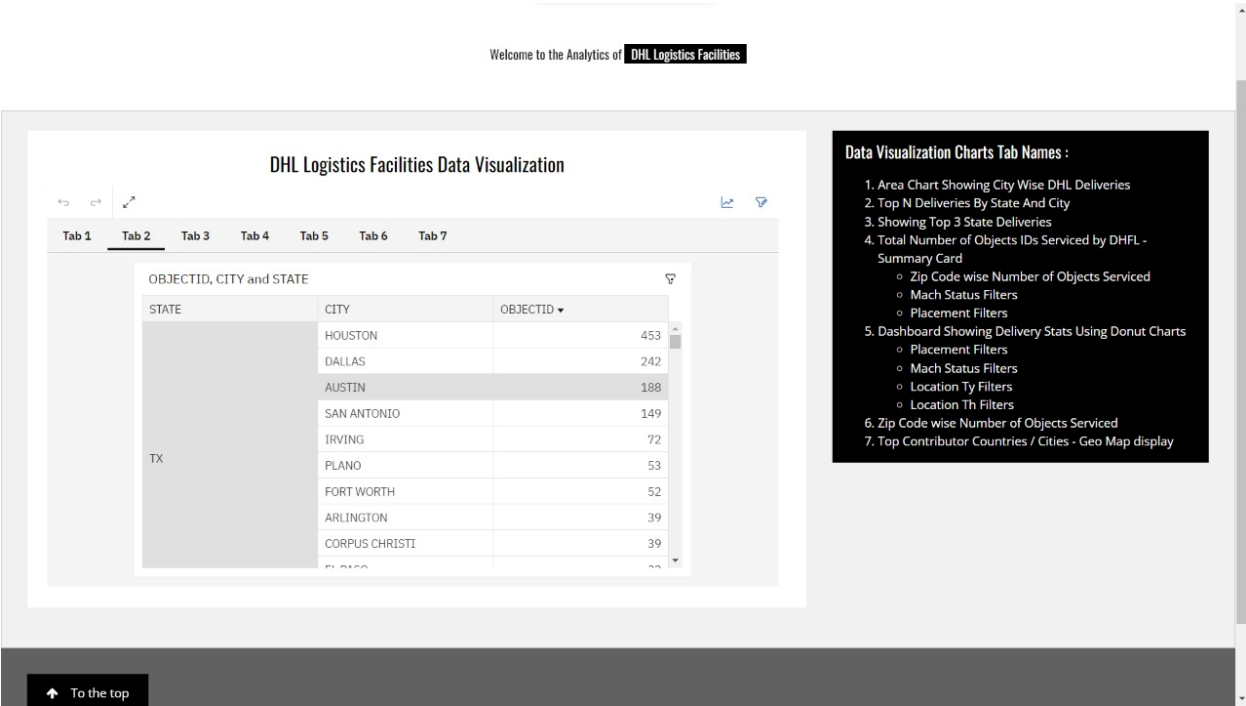
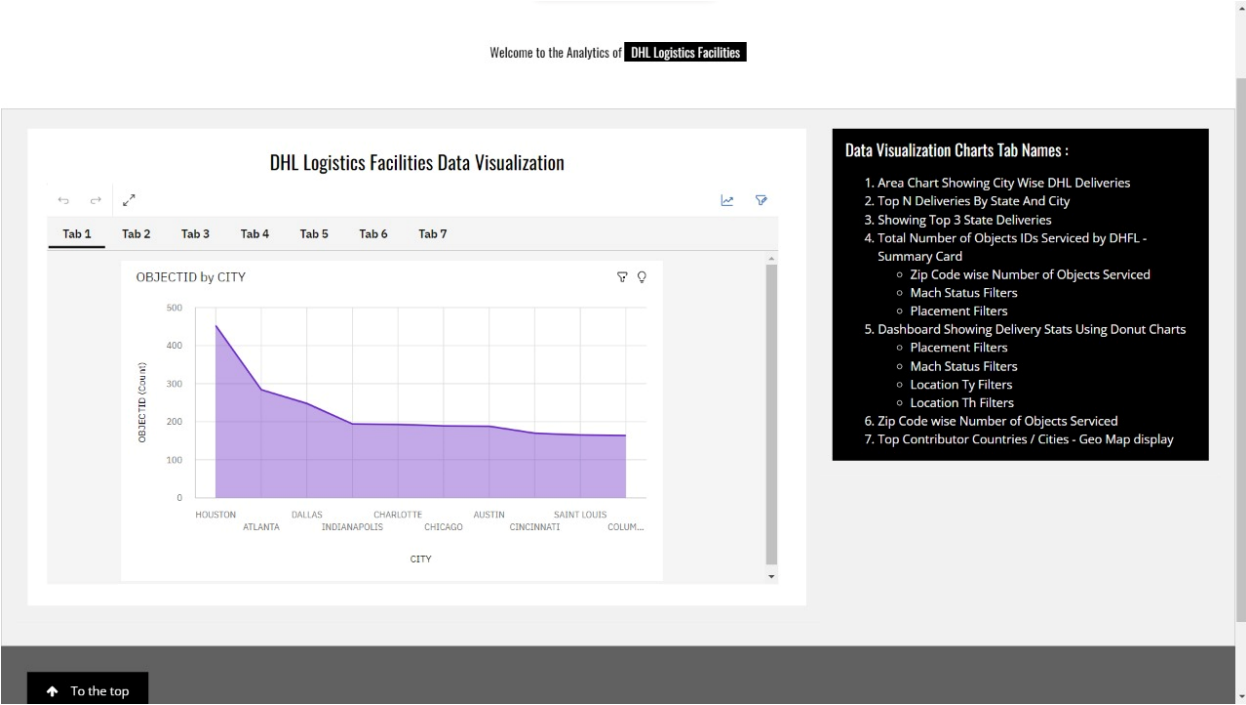
About DHL Logistics

DHL Supply Chain, part of the EUR 56.6bn DPDHL Group, is the world's leading contract logistics provider. Combining value-added and management services with traditional fulfilment and distribution, our customized, integrated logistics solutions drive efficiency, improve quality and create competitive advantage.

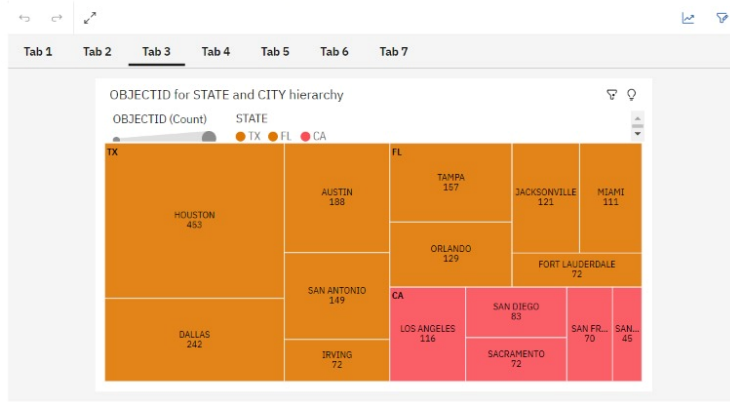
DHL Supply Chain offers specialist, proven expertise within the Auto-Mobility, Consumer, Chemicals, Energy, Engineering & Manufacturing, Life Sciences & Healthcare, Retail and Technology sectors. As today's global markets grow, our innovative logistics solutions are ready to help.

Powered by DHL Logistics Facilities

DASHBOARD CHARTS:



DHL Logistics Facilities Data Visualization

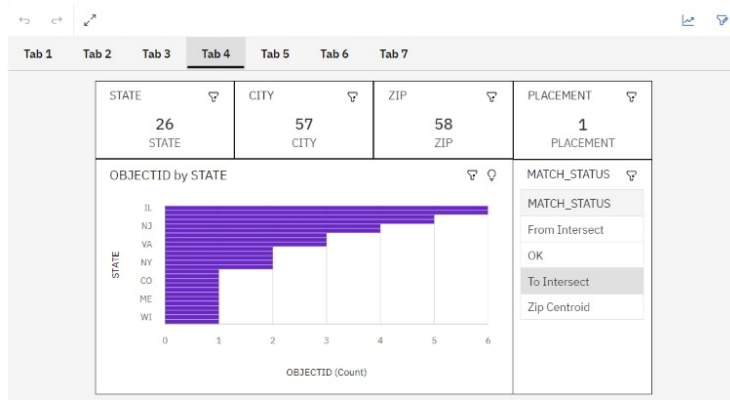


Data Visualization Charts Tab Names :

1. Area Chart Showing City Wise DHL Deliveries
2. Top N Deliveries By State And City
3. Showing Top 3 State Deliveries
4. Total Number of Objects IDs Serviced by DHFL - Summary Card
 - o Zip Code wise Number of Objects Serviced
 - o Mach Status Filters
 - o Placement Filters
5. Dashboard Showing Delivery Stats Using Donut Charts
 - o Placement Filters
 - o Mach Status Filters
 - o Location Ty Filters
 - o Location Th Filters
6. Zip Code wise Number of Objects Serviced
7. Top Contributor Countries / Cities - Geo Map display

↑ To the top

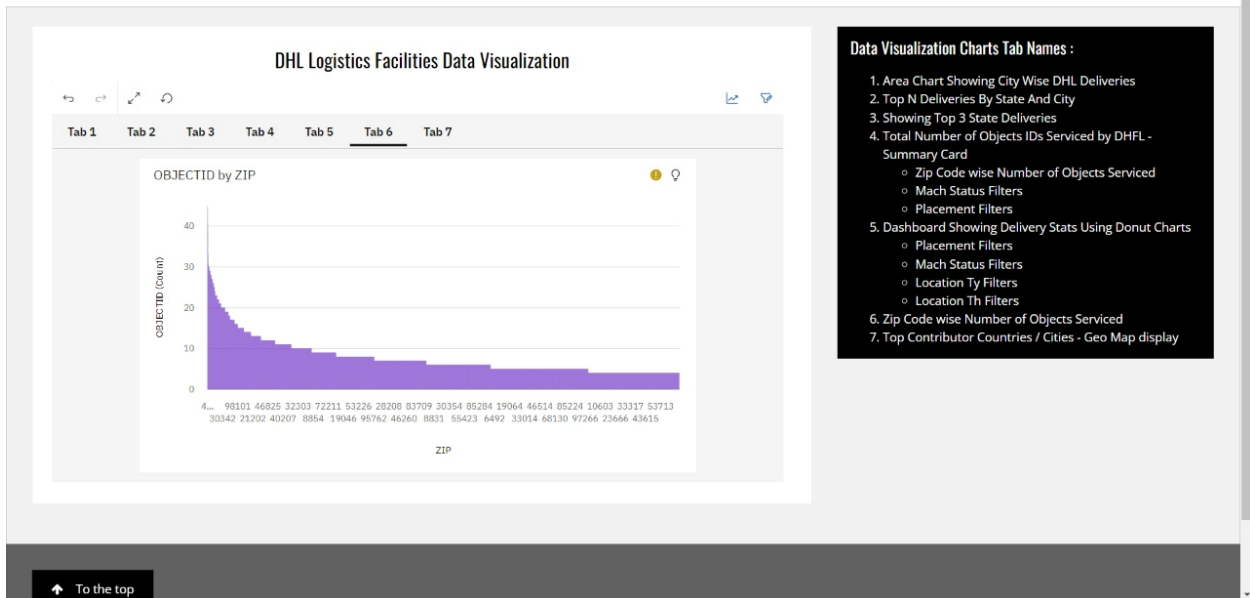
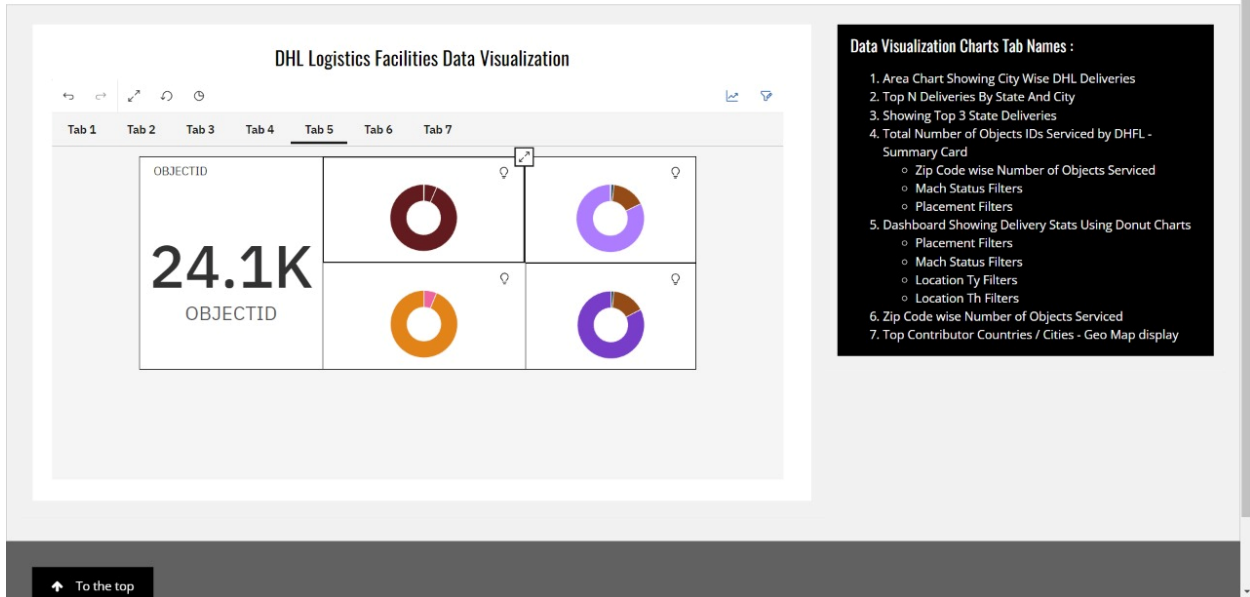
DHL Logistics Facilities Data Visualization

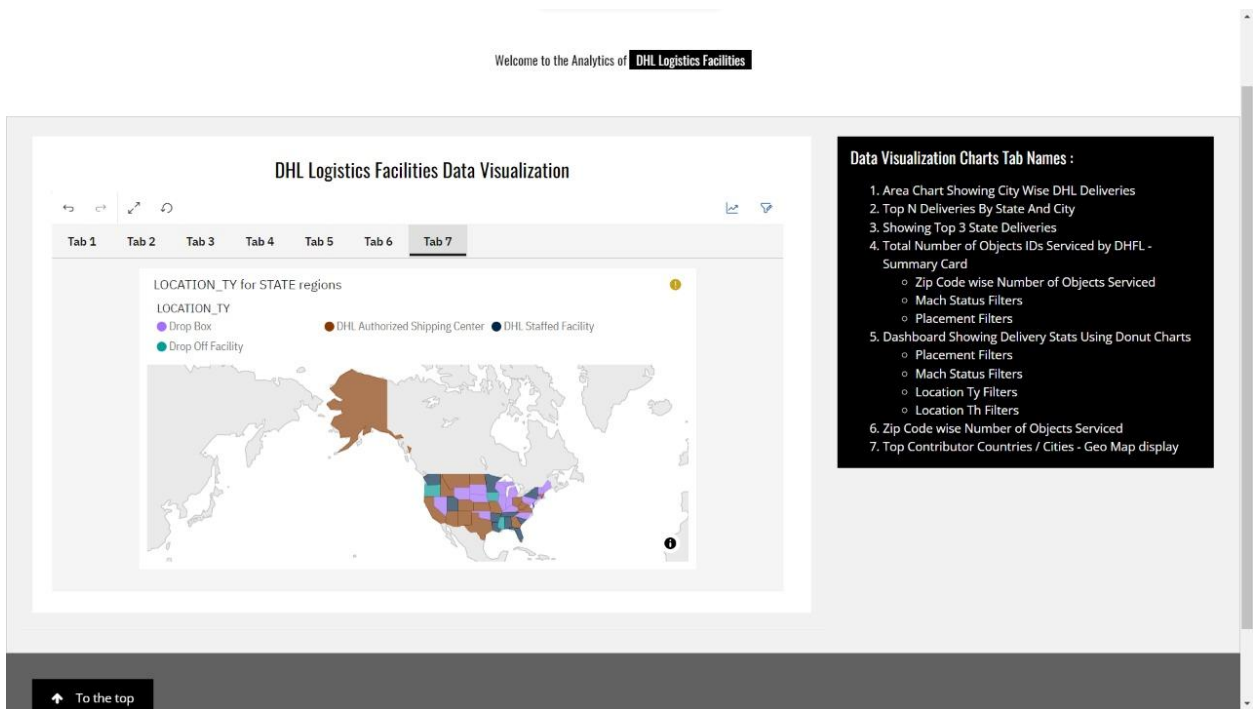


Data Visualization Charts Tab Names :

1. Area Chart Showing City Wise DHL Deliveries
2. Top N Deliveries By State And City
3. Showing Top 3 State Deliveries
4. Total Number of Objects IDs Serviced by DHFL - Summary Card
 - o Zip Code wise Number of Objects Serviced
 - o Mach Status Filters
 - o Placement Filters
5. Dashboard Showing Delivery Stats Using Donut Charts
 - o Placement Filters
 - o Mach Status Filters
 - o Location Ty Filters
 - o Location Th Filters
6. Zip Code wise Number of Objects Serviced
7. Top Contributor Countries / Cities - Geo Map display

↑ To the top





PREDICTION PAGE:

DHL Logistics Facilities Analysis

Home Prediction DashBoard

Predict

ENTER THE X :

ENTER THE Y:

ENTER THE OBJECTID :

ENTER THE FEATURE ID :

ENTER THE FEATURE ID :

ENTER THE ZIP CODE :

ENTER THE LATITUDE:

ENTER THE LONGITUDE:

ENTER THE CENSUS CODE:

ENTER THE ZIP CODE :

ENTER THE LATITUDE:

ENTER THE LONGITUDE:

ENTER THE CENSUS CODE:

Predict

Predicted City is :

AUSTIN

9. ADVANTAGES & DISADVANTAGES

Advantages:

This application helps the users to get idea about the DHL Logistics facilities information and analysis of services it produces and also to estimate the city name based on the location details.

Disadvantages:

Usage of this application requires prior knowledge about the DHL Logistics.

10. CONCLUSION

This application is designed in such a way that it provides analysis about DHL Logistics facilities to the user and better understanding of product delivery services which helps in process of to provide analytics to improve the business

11. FUTURE SCOPE

The application is designed in such a way that it provides opportunities for making enhancements in the future by adding features like analysis about delivery services , online services, delivery ordering, etc.

12. APPENDIX

SOURCE CODE

myapp.py

```
from sklearn.ensemble import RandomForestClassifier
import pandas as pd
import numpy as np
import pickle
from flask import Flask, request, render_template
from sklearn.metrics import precision_score, recall_score, f1_score
from sklearn.metrics import accuracy_score
from sklearn.preprocessing import StandardScaler
from sklearn.model_selection import train_test_split
app = Flask(__name__)
@app.route("/template")
def home():
```

```
return render_template("Login.html")
```

```
@app.route("/template",methods=["POST","GET"])
```

```
def index():
```

```
    return render_template("index.html")
```

```
@app.route("/template",methods=["POST","GET"])
```

```
def result():
```

```
    temp=[]
```

```
columns=['X','Y','OBJECTID','FEATURE_ID','ZIP','LATITUDE','LONGITUDE','CENSUS_CODE']
```

```
    temp.append(int(request.form['X']))
```

```
    temp.append(int(request.form['Y']))
```

```
    temp.append(int(request.form['objectid']))
```

```
    temp.append(int(request.form['featureid']))
```

```
    temp.append(int(request.form['zipcode']))
```

```
    temp.append(int(request.form['latitude']))
```

```
    temp.append(int(request.form['longitude']))
```

```
    temp.append(int(request.form['censuscode']))
```

```
df = pd.read_csv('DHL_Facilities.csv')
```

```
X = df.iloc[:,0:4] #Geo-Codes, ObjectID, FeatureID
```

```
Y = df.iloc[:,9:12] #Latitude, Longitude
```

```
Z = df.iloc[:,14] #ZipCode
```

```
X = pd.concat([X,Y,Z],axis = 1)
```

```
Y = df.iloc[:,7]
```

```
X = X.replace('Not Available',0)
```

```
X = pd.DataFrame(X)
```

```
df1=pd.DataFrame(columns=columns)
```

```
df2=pd.concat((df1,pd.DataFrame(data=[temp],columns=columns)))
```

```

classifier=RandomForestClassifier(n_estimators=50, random_state=0)
x_train,x_test,y_train,y_test = train_test_split(X,Y,test_size=0.2,random_state = 0)
classifier.fit(x_train,y_train)
res = classifier.predict(df2)
return render_template("data.html",result = res)

if __name__=='__main__':
    app.run()

```

Login.html

```

<!DOCTYPE html>
<html>
<head>
<meta name="viewport" content="width=device-width, initial-scale=1">
<style>
body { font-family: Arial, Helvetica, sans-serif;}
form {border: 3px solid #f1f1f1;}

input[type=text], input[type=password] {
    width: 100%;
    padding: 12px 20px;
    margin: 8px 0;
    display: inline-block;
    border: 1px solid #ccc;
    box-sizing: border-box;
}

button {
    background-color: #04AA6D;
    color: white;
    padding: 14px 20px;

```

```
margin: 8px 0;
border: none;
cursor: pointer;
width: 100%;
}
```

```
button:hover {
  opacity: 0.8;
}
```

```
.cancelbtn {
  width: auto;
  padding: 10px 18px;
  background-color: #f44336;
}
```

```
.imgcontainer {
  text-align: center;
  margin: 24px 0 12px 0;
}
```

```
img.avatar {
  width: 40%;
  border-radius: 50%;
}
```

```
.container {
  padding: 16px;
}
```

```
span.psw {
```

```
float: right;
padding-top: 16px;
}
```

```
/* Change styles for span and cancel button on extra small screens */
```

```
@media screen and (max-width: 300px) {
```

```
span.psw {
    display: block;
    float: none;
}
```

```
.cancelbtn {
    width: 100%;
}
```

```
}
```

```
</style>
```

```
</head>
```

```
<body>
```

```
<h2>Login Form</h2>
```

```
<form action="/Sem 7/Nalaiya thiran/IBM/Ind.html" method="post">
```

```
<div class="imgcontainer">
```

```

```

```
</div>
```

```
<div class="container">
```

```
<label for="uname"><b>Username</b></label>
```

```
<input type="text" placeholder="Enter Username" name="uname" required>
```

```
<label for="psw"><b>Password</b></label>
```

```
<input type="password" placeholder="Enter Password" name="psw" required>
```

```
<button type="submit">Login</button>
</div>
</form>
<script src="vendor/jquery/jquery.min.js"></script>
  <script src="vendor/bootstrap/js/bootstrap.bundle.min.js"></script>

  <!-- Core plugin JavaScript-->
  <script src="vendor/jquery-easing/jquery.easing.min.js"></script>

  <!-- Custom scripts for all pages-->
  <script src="js/sb-admin-2.min.js"></script>

  <script type="text/javascript">
    var loginCheck=function(){
      const loginForm = document.getElementById("login-form");
      const loginButton = document.getElementById("login-form-submit");
      // const loginErrorMsg = document.getElementById("login-error-msg");
      const username = loginForm.username.value;
      const password = loginForm.password.value;

      if (username === "admin" && password === "admin123") {
        window.location.replace("Ind.html");
      } else {
        alert("Invalid Username/Password!");
        console.log("login error");
      }
    }
  }
</script>

</body>
```

</html>

Dashboard.html

<!DOCTYPE html>

<html>

<head>

<title>DHL Logistics Facilities</title>

<meta charset="UTF-8">

<meta name="viewport" content="width=device-width, initial-scale=1">

<link rel="stylesheet" href="https://www.w3schools.com/w3css/4/w3.css">

<link rel="stylesheet" href="https://fonts.googleapis.com/css?family=Oswald">

<link rel="stylesheet" href="https://fonts.googleapis.com/css?family=Open+Sans">

<link rel="stylesheet" href="https://cdnjs.cloudflare.com/ajax/libs/font-awesome/4.7.0/css/font-awesome.min.css">

<style>

h1,h2,h3,h4,h5,h6 { font-family: "Oswald" }

body { font-family: "Open Sans" }

</style>

</head>

<body class="w3-light-grey">

<!-- Navigation bar with social media icons -->

<div class="w3-bar w3-black w3-hide-small">

<div align = "left">

<h2 class = w3-xlarge>DHL Logistics Facilities Analysis</h2></div>

<div class="w3-right w3-hide-small">

Home

Prediction

DashBoard

</div>

</div>

<!-- w3-content defines a container for fixed size centered content,
and is wrapped around the whole page content, except for the footer in this example -->

```
<div class="w3-content" style="max-width:1600px">
```

```
<!-- Header -->
```

```
<header class="w3-container w3-center w3-padding-48 w3-white">
```

```
  <h6>Welcome to the Analytics of <span class="w3-tag">DHL Logistics  
Facilities</span></h6>
```

```
</header>
```

```
<!-- Grid -->
```

```
<div class="w3-row w3-padding w3-border">
```

```
<!-- Blog entries -->
```

```
<div class="w3-col l8 s12">
```

```
<!-- Blog entry -->
```

```
<div class="w3-container w3-white w3-margin w3-padding-large">
```

```
  <div class="w3-center">
```

```
    <h3>DHL Logistics Facilities Data Visualization</h3>
```

```
  </div>
```

```
<div class="w3-justify">
```

```
  <iframe
```

```
src="https://us3.ca.analytics.ibm.com/bi/?perspective=dashboard&pathRef=.public_folders  
%2FDHL_Logistics%2FDHL_DashBoard&closeWindowOnLastView=true&ui_appb  
ar=false&ui_navbar=false&shareMode=embedded&action=view&mode=das  
hboard&subView=model0000018378e9c01e_00000000" width="900" height="500"  
frameborder="0" gesture="media" allow="encrypted-media" allowfullscreen=""></iframe>
```

```
</div>

</div>

<hr>

<!-- END BLOG ENTRIES -->

</div>


<!-- About/Information menu -->

<div class="w3-col l4">

  <!-- About Card -->

  <div class="w3-white w3-margin">

    <div class="w3-container w3-black">

      <h4>Data Visualization Charts Tab Names : </h4>

      <p>

        <ol>

          <li>Area Chart Showing City Wise DHL Deliveries</li>

          <li>Top N Deliveries By State And City</li>

          <li>Showing Top 3 State Deliveries</li>

          <li>Total Number of Objects IDs Serviced by DHFL - Summary Card</li>

          <ul><li>Zip Code wise Number of Objects Serviced</li>

            <li>Mach Status Filters</li>

            <li>Placement Filters</li></ul>

          <li>Dashboard Showing Delivery Stats Using Donut Charts</li>

          <ul><li>Placement Filters</li>

            <li>Mach Status Filters</li>

            <li>Location Ty Filters</li>

            <li>Location Th Filters</li></ul>

          <li>Zip Code wise Number of Objects Serviced</li>

          <li>Top Contributor Countries / Cities - Geo Map display</li>

        </ol>

      </p>

    </div>

  </div>

</div>
```

```

        </div>

        <hr>

        <!-- END GRID -->

    </div>

<!-- END w3-content -->

</div>

<!-- Footer -->

<footer class="w3-container w3-dark-grey" style="padding:32px">
    <a href="#" class="w3-button w3-black w3-padding-large w3-margin-bottom"><i class="fa fa-
arrow-up w3-margin-right"></i>To the top</a>

    <p>Powered by PNT2022TMID17919</p>
</footer>

</body>

</html>

```

data.html

```

<!DOCTYPE html>

<html>

<head>

<title>Data Analytics for DHL Logistics Facilities</title>

<meta charset="UTF-8">

<meta name="viewport" content="width=device-width, initial-scale=1">

<link rel="stylesheet" href="https://www.w3schools.com/w3css/4/w3.css">

<link href="https://fonts.googleapis.com/css?family=Raleway" rel="stylesheet" type="text/css">

<link rel="stylesheet" href="https://www.w3schools.com/w3css/4/w3.css">

<link rel="stylesheet" href="https://fonts.googleapis.com/css?family=Oswald">

<link rel="stylesheet" href="https://fonts.googleapis.com/css?family=Open Sans">

<link rel="stylesheet" href="https://cdnjs.cloudflare.com/ajax/libs/font-awesome/4.7.0/css/font-
awesome.min.css">

<style>

```

```
body {font-family: "Raleway", Arial, sans-serif}
.w3-row img {margin-bottom: -8px}
body {font-family: Arial, Helvetica, sans-serif;}
* {box-sizing: border-box;}
```

```
input[type=text], select, textarea {
  width: 100%;
  padding: 12px;
  border: 1px solid #ccc;
  border-radius: 4px;
  box-sizing: border-box;
  margin-top: 6px;
  margin-bottom: 16px;
  resize: vertical;
}
```

```
input[type=submit] {
  background-color: #04AA6D;
  color: white;
  padding: 12px 20px;
  border: none;
  border-radius: 4px;
  cursor: pointer;
}
```

```
input[type=submit]:hover {
  background-color: #45a049;
}
```

```
.container {
  border-radius: 5px;
```

```

background-color: #f2f2f2;
padding: 20px;
}
</style>
</head>
<body>
<div class="w3-bar w3-black w3-hide-small">
<div align = "left">
<h2 class = w3-xlarge>DHL Logistics Facilities Analysis</h2></div>
<div class="w3-right w3-hide-small">
<a href= "Ind.html" class="w3-bar-item w3-button">Home</a>
<a href= "data.html" class="w3-bar-item w3-button">Prediction</a>
<a href= "dashboard.html" class="w3-bar-item w3-button">DashBoard</a>
<!--<a href= "Ind.html" class="w3-bar-item w3-button">Home</a>-->
</div>
</div>
<div>
<div class="container" data-aos="fade-up">
<div class="predictform">
<h2>Predict</h2>
<form action="{ { url_for('result') } }" method="POST" >

<label for="X-COORDINATE">ENTER THE X : </label>
<input type="text" name="X" id="X" required><br/><br/>
<label for="Y-COORDINATE">ENTER THE Y: </label>
<input type="text" name="Y" id="Y" required><br/><br/>
<label for="OBJECTID">ENTER THE OBJECTID : </label>
<input type="text" name="objectid" id="objectid" required><br/><br/>
<label for="FEATUREID">ENTER THE FEATURE ID : </label>
<input type="text" name="featureid" id="featureid" required><br/><br/>
<label for="ZIPCODE">ENTER THE ZIP CODE : </label>
<input type="text" name="zipcode" id="zipcode" required><br/><br/>

```

```

<label for="LATITUDE">ENTER THE LATITUDE: </label>
<input type="text" name="latitude" id="latitude" required><br/><br/>
<label for="LONGITUDE">ENTER THE LONGITUDE: </label>
<input type="text" name="longitude" id="longitude" required><br/><br/>
<label for="CENSUS_CODE">ENTER THE CENSUS CODE: </label>
<input type="text" name="censuscode" id="censuscode" required><br/><br/>
<input type="submit" value="predict" align="center" name="predict"/>
</form>
</div>
</div>
<p style="position:relative;left:300px;color:red;font-size:larger">Predicted City is :
Austin</p>
</section>

```

```

</body>

```

```

</html>

```

Index.html

```

<!DOCTYPE html>

```

```

<html>

```

```

<head>

```

```

<title>DHL Logistics Facilities</title>

```

```

<meta charset="UTF-8">

```

```

<meta name="viewport" content="width=device-width, initial-scale=1">

```

```

<link rel="stylesheet" href="https://www.w3schools.com/w3css/4/w3.css">

```

```

<style>

```

```

body { font-family: "Times New Roman", Georgia, Serif;}

```

```

h1, h2, h3, h4, h5, h6 {

```

```

    font-family: "Playfair Display";

```

```

    letter-spacing: 5px;

```

```

}

```

```

</style>

```

</head>

<body>

<!-- Navbar (sit on top) -->

<div class="w3-top">

<div class="w3-bar w3-white w3-padding w3-card" style="letter-spacing:4px;">

DHL Logistics

<!-- Right-sided navbar links. Hide them on small screens -->

<div class="w3-right w3-hide-small">

Prediction

DashBoard

</div>

</div>

</div>

<!-- Page content -->

<div class="w3-content" style="max-width:1100px">

<!-- About Section -->

<div class="w3-row w3-padding-64" id="about">

<div class="w3-col m6 w3-padding-large w3-hide-small">

</div>

<div class="w3-col m6 w3-padding-large">

<h1 class="w3-center">About DHL Logistics</h1>

<p class="w3-large">DHL Supply Chain, part of the EUR 56.6bn DPDHL Group, is the world's leading contract logistics provider. Combining value-added and management services

with traditional fulfilment and distribution, our customized, integrated logistics solutions drive efficiency, improve quality and create competitive advantage.</p>

<p class="w3-large w3-text-grey w3-hide-medium">DHL Supply Chain offers specialist, proven expertise within the Auto-Mobility, Consumer, Chemicals, Energy, Engineering & Manufacturing, Life Sciences & Healthcare, Retail and Technology sectors. As today's global markets grow, our innovative logistics solutions are ready to help.</p>

</div>

</div>

<hr>

</div>

<!-- Footer -->

<footer class="w3-center w3-light-grey w3-padding-32">

<p>Powered by DHL Logistics Facilities</p>

</footer>

</body>

</html>

GitHub & Project Demo Link

GITHUB PROJECT LINK :

<https://github.com/IBM-EPBL/IBM-Project-2455-1658471854>

DEMO LINK :

<https://drive.google.com/file/d/1-ezaXArS8BmtYZ8TBaLiFNtJiRPwdJN6/view?usp=sharing>

