PROJECT REPORT

Airlines Data Analytics for Avaition Industry

Team ID: PNT2022TMID28714

Batch: B8-2A4E

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1.INTRODUCTION

1.1 PROJECT OVERVIEW

New ways to connect with a customer and real-time access to data

Technology is drastically changing the way businesses connect with their customers, **take business decisions**, and **build workflows**. No doubt, the world of aviation has been affected too: **data is transforming airlines** from pre-flight to post-flight operations, including ticket purchase, seat selection, luggage, boarding, ground transportation, etc. Hence, the **data required for dozens of use cases is captured along the various components of a passenger's journey.**

We don't book a flight via phone anymore; we don't go to the travel agencies in search of the best offers. Instead, we have **real-time access to data** that, in its turn, allows organizations to take informed steps towards operational efficiency and improved customer experience. The airline industry of today is highly competitive, generating billions of euros every year with a cumulative profit margin of less than 1%.

1.2 PURPOSE

The key reason for this can be explained by the **industry's extremely complex landscape** and by the fact that **modern airlines have many pending business issues**, such as globally uneven playing field, revenue vulnerability, an extremely variable planning horizon, high cyclicality and seasonality, fierce competition, excessive government intervention and high fixed and low marginal cost.

2.LITERATURE SURVEY

2.1 EXISTING PROBLEM

Airlines use AI systems with built-in machine learning algorithms to collect and analyze flight data regarding each route distance and altitudes, aircraft type and weight, weather, etc. Based on findings from data, systems estimate the optimal amount of fuel needed for a flight.

With the help of predictive analysis, sentiment analysis, and travel journey analysis, the airline industry keeps its customers **up-to-date in real-time**, promoting special offers based on their needs, habits, and unique experiences. By collecting and crunching data about customers, airlines understand passengers' tastes and behaviour well enough to offer them transportation options they prefer and, more important, are ready to spend money on.

Likewise, when a flight delay or baggage loss occur, travellers get nervous. And if customers don't get a response or explanation of a problem from an airline representative in a timely manner, they likely won't choose this airline for their next trip. The speed of response to customer queries matters as much as actual steps that are taken to solve an issue.

So, **travel experience is getting extremely customized and customer-oriented**.

2.2 REFERENCES

Domain Name: Airlines Analytics For Avaition Industry

Use case Name: Data Analytics

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PROBLEM STATEMENT DEFINITION

Problem Statement:

- Analyze passsenger traffic and analyze their travelling destinations.
- Analyze and help in maintaining the services of the aeroplane
- Provides broad opportunities for airspace management, enhancing flexibility in dealing with each passenger, boosting problem solving, supporting decision, providing safe flights.
- Flight delay for a specific period of time caused due to climate, security, carrier, NAS, Arrival and Departure can be overcome

3.IDEATION & PROPOSED SOLUTION

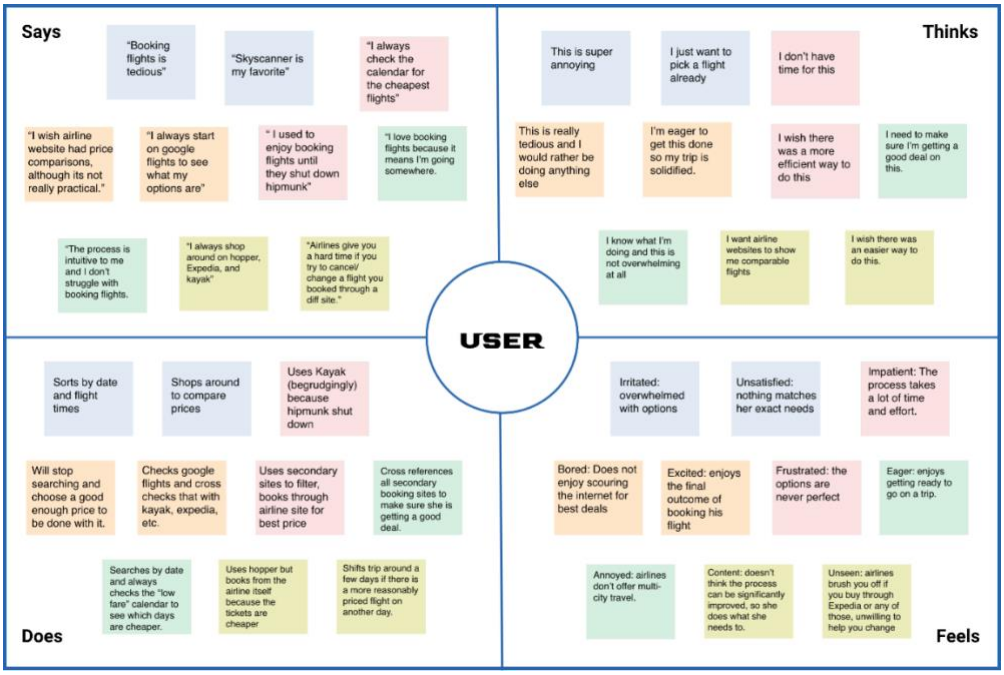
3.1 EMPATHY MAP CANVAS

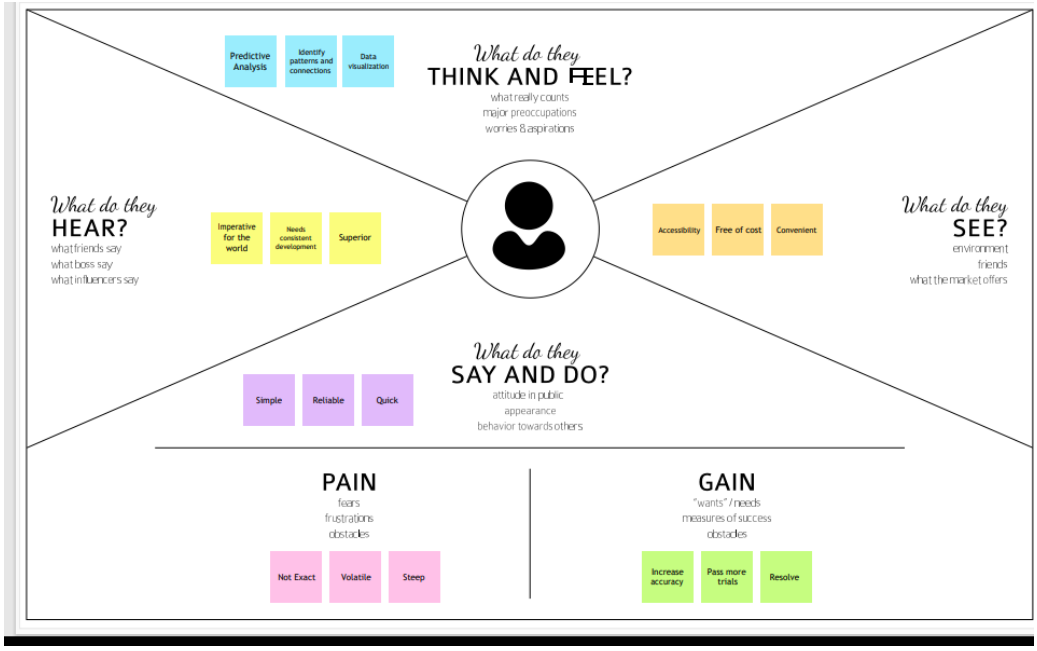
Empathy Map:

An empathy map is a simple, easy-to-digest visual that captures knowledge about a user's behaviours and attitudes.

It is a useful tool to helps teams better understand their users.

Creating an effective solution requires understanding the true problem and the person who is experiencing it. The exercise of creating the map helps participants consider things from the user's perspective along with his or her goals and challenges.


Says
"Booking flights is tedious"
"Skyscanner is my favorite"
"I always check the calendar for the cheapest flights"
"I wish airline website had price comparisons, although its not really practical."
"I always start on google flights to see what my options are"
" I used to enjoy booking flights until they shut down hipmunk"
"I love booking flights because it means I'm going somewhere.
"The process is intuitive to me and I don't struggle with booking flights.
"I always shop around on hopper, Expedia, and kayak"
"Airlines give you a hard time if you try to cancel/ change a flight you booked through a diff site."
Thinks
This is super annoying
I just want to pick a flight already
I don't have time for this
This is really tedious and I would rather be doing anything else
I'm eager to get this done so my trip is solidified.
I wish there was a more efficient way to do this
I need to make sure I'm getting a good deal on this.
I know what I'm doing and this is not overwhelming at all
I want airline websites to show me comparable flights
I wish there was an easier way to do this.
USER
Does
Sorts by date and flight times
Shops around to compare prices
Uses Kayak (begrudgingly) because hipmunk shut down
Will stop searching and choose a good enough price to be done with it.
Checks google flights and cross checks that with kayak, expedia, etc.
Uses secondary sites to filter, books through airline site for best price
Cross references all secondary booking sites to make sure she is getting a good deal.
Searches by date and always checks the "low fare" calendar to see which days are cheaper.
Uses hopper but books from the airline itself because the tickets are cheaper
Shifts trip around a few days if there is a more reasonably priced flight on another day.
Feels
Irritated: overwhelmed with options
Unsatisfied: nothing matches her exact needs
Impatient: The process takes a lot of time and effort.
Bored: Does not enjoy scouring the internet for best deals
Excited: enjoys the final outcome of booking his flight
Frustrated: the options are never perfect
Eager: enjoys getting ready to go on a trip.
Annoyed: airlines don't offer multi-city travel.
Content: doesn't think the process can be significantly improved, so she does what she needs to.
Unseen: airlines brush you off if you buy through Expedia or any of those, unwilling to help you change

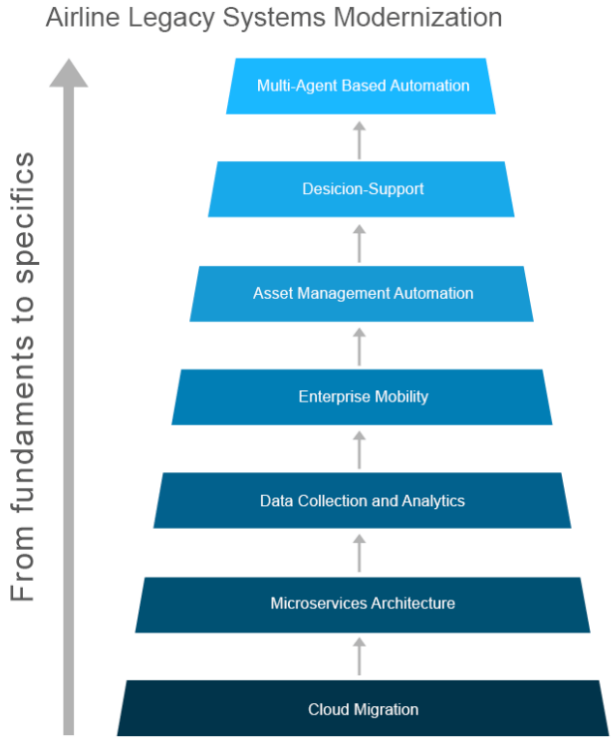

Predictive Analysis
Identify patterns and connections
Data visualization
What do they THINK AND FEEL?
what really counts
major preoccupations
worries & aspirations
What do they HEAR?
what friends say
what boss say
what influencers say
Imperative for the world
Needs consistent development
Superior
Accessibility
Free of cost
Convenient
What do they SEE?
environment
friends
what the market offers
What do they SAY AND DO?
attitude in public
appearance
behavior towards others
Simple
Reliable
Quick
PAIN
fears
frustrations
obstacles
Not Exact
Volatile
Steep
GAIN
"wants" / needs
measures of success
obstacles
Increase accuracy
Pass more trials
Resolve

3.2 IDEATON & BRAINSTORMING

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

Step-2: Brainstorm, Idea Listing and Grouping

Step-3: Idea Prioritization



3.3 PROPOSED SOLUTION

Proposed Solution Template:

S.No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	To provide better airlines solutions and avoid flight delays during air travel across different regions
2.	Idea / Solution description	Understanding traveler demand for specific city pairs and pricing flights can be done using data analytics project.
3.	Novelty / Uniqueness	Unique Visualization of data from different datasets and unique graphical representation
4.	Social Impact / Customer Satisfaction	Data analytics helps the industry to understand customers' preferences and other maintenance issues. For instance, analysis of ticket booking helps the industry to target the customers with personalized offers while optimizing the price in real-time using predictive analysis techniques. As a result, by gathering meaningful data, airlines can fetch more bookings in the given timeframe.
5.	Business Model (Revenue Model)	Creating a application in a subscription based model Data analytics helps the industry to understand customers' preferences and other maintenance issues.

6.	Scalability of the Solution	Size and number of the data on the datasets can be large and sometimes very hard to visualize.

3.4 PROPOSED SOLUTION FIT

4.REQUIREMENT ANALYSIS

4.1 FUNCTONAL REQUIREMENTS

Team ID : PNT2022TMID28714

Skills Required:

Exploratory Data Analysis,

IBM Cloud Prerequisites for Data Analytics Software Specifications:

a. Anaconda Navigator - https://www.anaconda.com/products/distribution

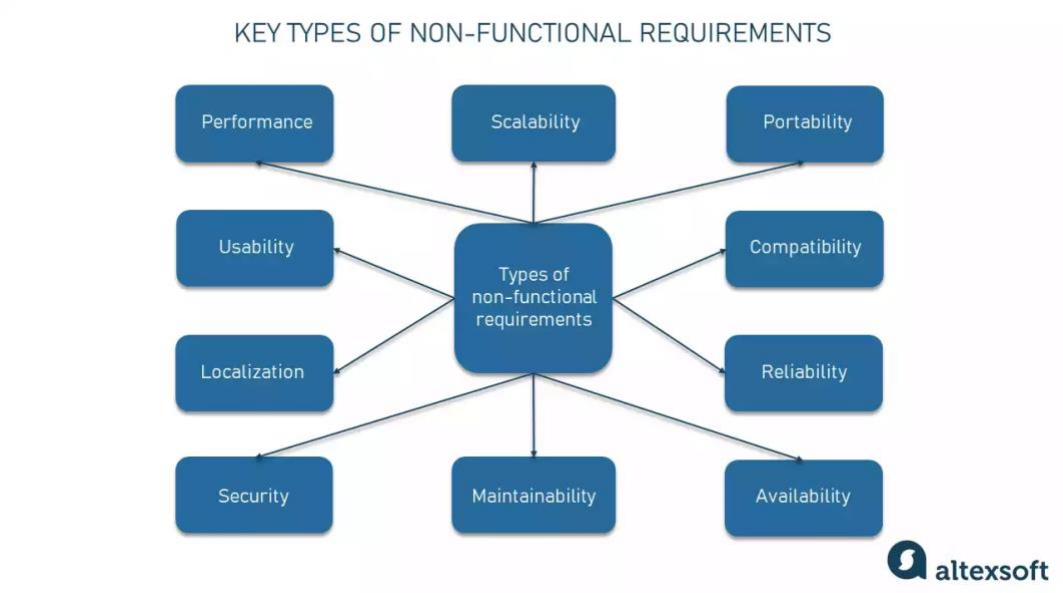
b. Jupyter notebook.

c. Google Colab - https://colab.research.google.com/

Hardware Specifications:

- Windows 10, Mac &Linux
- Ram - 4GB (minimum)
- Harddisk - 100GB (minimum)
- Processor - Intel i3 (minimum), Mac M1

4.2 NON-FUNCTIONAL REQUIREMENTS

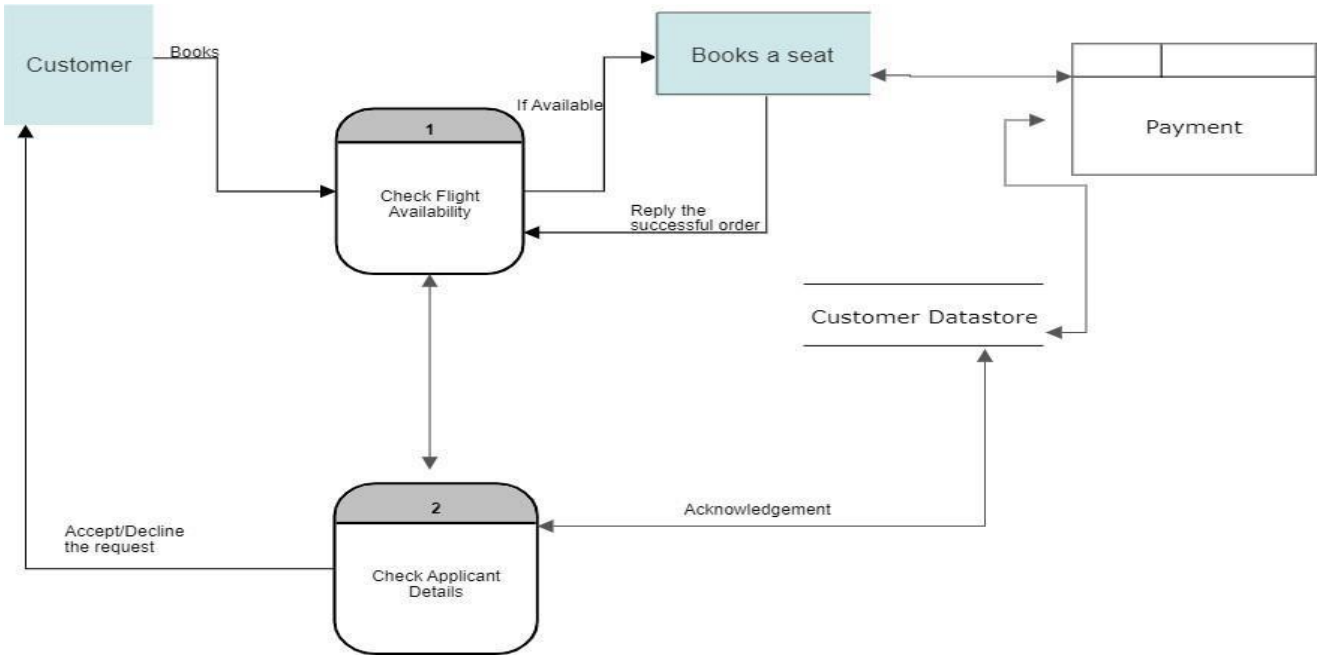


5.PROJECT DESIGN

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.

Example: DFD Level 0 (Industry Standard)

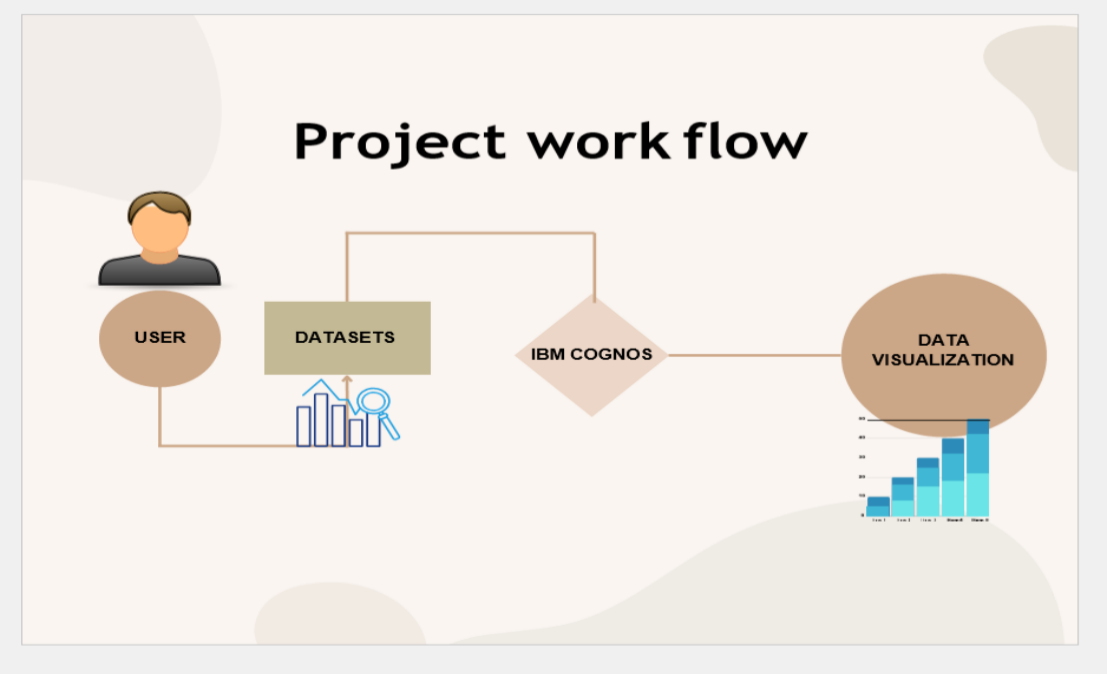


User Stories

Use the below template to list all the user stories for the product.

User Type	Functional Requirement (Epic)	User Story Number	User Story / Task	Acceptance criteria	Priority	Release
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	User will receive confirmation email once he have registered for the application	I can receive confirmation email & click confirm	High	Sprint-1
		USN-3	User can register for the application through Gmail.		Medium	Sprint-1
	Login	USN-4	User can log into the application by entering email & password.	I can get to access my web portal	High	Sprint-1
	Dashboard	USN-5	User can get to know what my dashboard consists of.	I can my details of my registration.	Low	Sprint-2
Customer Care Executive	Organization	USN-6	• Consumers will have the ability to contact the company that owns this aeroplane analysis system if they have any issues with the system for interacting with customers or if there are any problems with the aeroplane itself, such as delays or landing in an unexpected place.	The customer care workers will help out the customers in trouble.	High	Sprint-1
Administrator	Administration	USN-7	Organization takes in-charge of the administrative policies of different departments like: • registration • flight booking • delay visualization • generation of delay report	As an administrator, confirmation of user while registration is done.	High	Sprint-1

5.2 SOLUTION AND TECHNICAL ARCHITECTURE



Technology Architecture:

The Deliverable shall include the architectural diagram as below and the information as per the Table1 & Table2

Airline Data Analytics For Aviation Industry

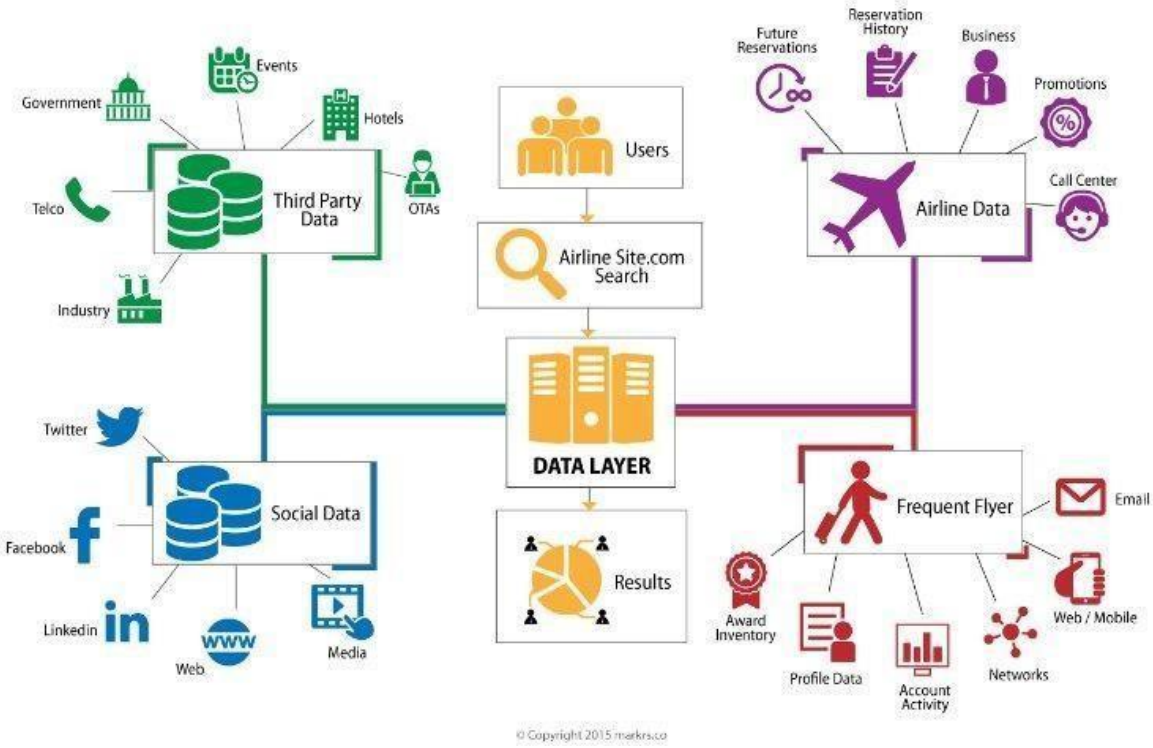


Table-1: Components & Technologies:

S.No	Components	Description	Technology
1.	User Interface	How user interacts with application. Example: Mobile App	HTML, CSS, Java Script, Excel
2.	Application Logic-1	Logic for a process in the application	IBM Watson STT service, Python
3.	Application Logic-2	Logic for a process in the application	IBM Watson Assistant
4.	Database	Data Type, Configurations	MySQL, NSQL
5.	Cloud Database	Database service on cloud	IBM DB2, IBM Cloudant
6.	File Storage	File Storage requirements	IBM Blocks Storage or other storage service or Local File system
7.	External API-1	Purpose of External API used in the application	IBM Weather API
8.	External API-1	Purpose of External API used in the application	Aadhar API
9.	Infrastructure (Server/Cloud)	Application Deployment on Local System/Cloud Local Server Configuration: Cloud Server Configuration	Local, Cloud Foundry

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	List the open-source frameworks used	Technology of open-source framework
2.	Security Implementations	List all the security/access controls implemented, use of firewalls.	Example: SHA-256, Encryption, IAM Controls, OWASP
3.	Scalable Architecture	Justify the scalability of architecture	Cognos Used
4.	Availability	Justify the availability of application (e.g: use of load balancers, distributed servers)	AWS Used
5.	Performance	Design consideration for the performance of the application (number of requests per second, use of Cache, use of CDN's)	Dashboard,Reports,Stories

5.3 USER STORIES

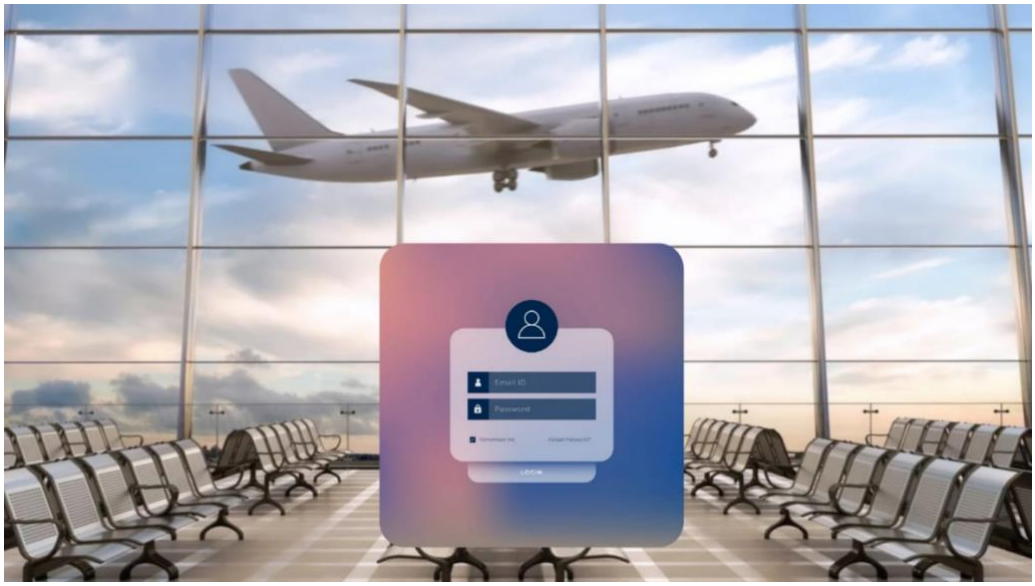
While there are multiple ways of looking at the role of technology (and all of them are correct), no matter your starting point, the ultimate goal of technology is to improve human life by reducing manual effort and increasing output. In essence, technology should be able to add value to a work process and remove obstacles. So, what are the main benefits of using data analytics modules in the aviation sector? Is it only limited to understanding a customer's purchase behavior? Or does it have other long-term benefits? Read on to find out more.

- It improves the average turnaround time needed to cater to market trends
- Properly implemented data modules help flight operators bag more customers and profits
- Predictive analytics is the key to preparing for future crises and put a mitigation plan in place
- It helps businesses make data-backed and more informed policy decisions
- Not just sales and customer service, data analytics play a vital role in flight operations and maintenance too

As a result of the above, implementing a data collection and analytics module has several short and long-term benefits for the operator like competitive pricing, enhanced customer satisfaction, edge over competitors, and better profit margins.

As one of the most highly trusted aviation colleges in Kolkata, we, at Avlon Shiksha Niketan, are right here to give life to your vision of a fulfilling career in the aviation sector by empowering you with the latest skills and tips of the trade. Coupled with world-class mentors and holistic learning modules, we give wings to dreams!

5.4 Login Page



6.PROJECT PLANNING AND SCHEDULING

6.1 SPRINT PLANNING AND ESTIMATION

Product Backlog, Sprint Schedule, and Estimation (4 Marks)

Use the below template to create product backlog and sprint schedule

Sprint	Functional Requirement (Epic)	User Story Number	User Story / Task	Story Points	Priority	Team Members
Sprint-1	Registration	USN-1	I can sign up for the application as a user by providing my email address, password, and confirming that.	2	High	Saran
Sprint-1	Registration	USN-2	When I register for the application as a user, I will get a confirmation email.	3	High	Joshua
Sprint-1	Login	USN-3	I've grown accustomed to using credentials to access the system as a user.	2	Low	Muthu selvam
Sprint-1	Collection of dataset	USN-4	I can collect the dataset and choose the area of interest to be tracked and analysed as a user.	5	Medium	Yugendran
Sprint-2	Dataset Exploration	USN-5	I can explore the given dataset through IBM cognos	6	High	Saran
Sprint-2	Dataset Visualization	USN-6	I will use cognos as a developer to visualise the provided dataset into a dashboard.	6	High	Yugendran
Sprint-3	Dashboard Customization	USN-7	I can personalise the dashboard that is visualised as a user.	6	Medium	Muthu selvam
Sprint-3	Ease of Access	USN-8	I can simply access and use the dashboard as a user.	6	Medium	Joshua
Sprint-4	Report Generation	USN-9	I can view the detailed report of my visualization	6	High	Joshua
Sprint-4	Dashboard Establishment	USN-10	Established the dashboard into a website and submit the website.	6	High	Saran

6.2 SPRINT DELIVERY SCHEDULE

Project Tracker, Velocity & Burndown Chart: (4 Marks)

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

Velocity:
Imagine we have a 10-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)

$$\text{Average velocity} = \text{Sprint duration} / \text{velocity} = 12/6 = 2$$

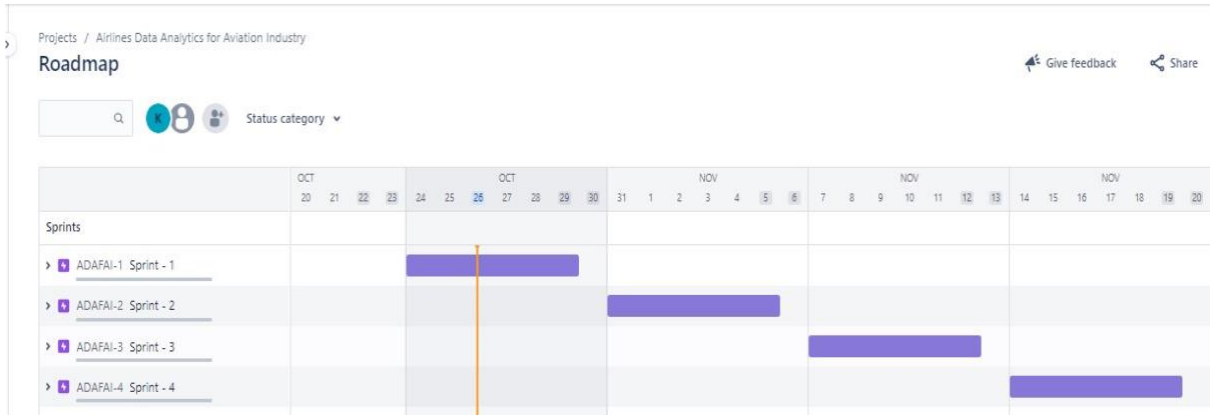
Burndown Chart:

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

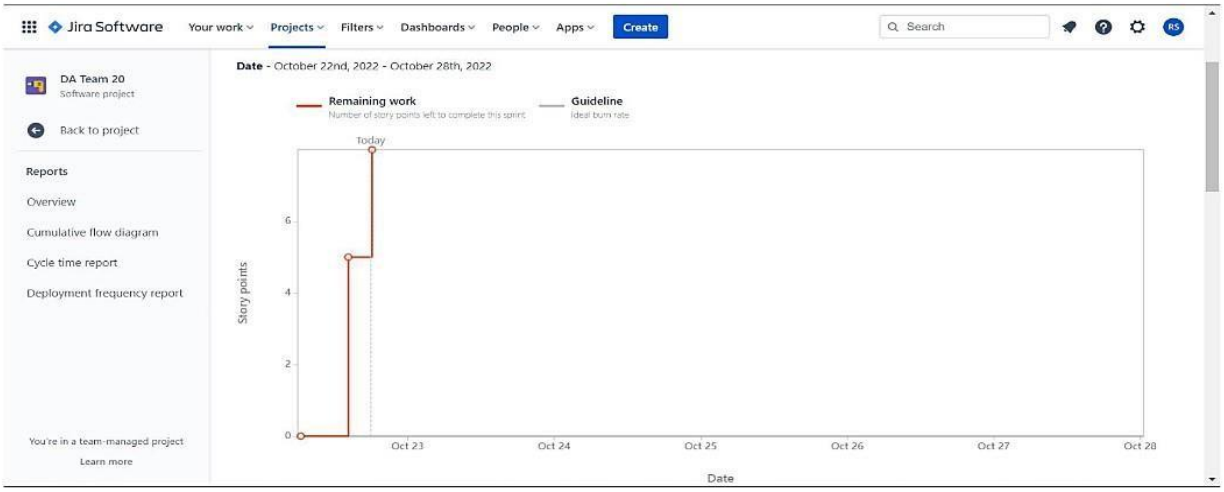
Road Map:

A roadmap is a strategic plan that defines a goal or desired outcome and includes the major steps or milestones needed to reach it. It also serves as a communication tool, a high-level document that helps articulate strategic thinking the why behind both the goal and the plan for getting there.



Kanban Board:

A kanban board is an agile project management tool designed to help visualize work, limit work-in-progress, and maximize efficiency (or flow). It can help both agile and DevOps teams establish order in their daily work.



7.CODING & SOLUTIONING

7.1 FEATURE 1

1. HTML for web page making
2. CSS, Javascript, vendor for static design content
3. Python Flask for the web server integration

7.2 FEATURE 2

1. Creating IBM cloud account
2. Accessing IBM Cognos Analytics Platform
3. Creating Dashboard for operations
4. Understanding the dataset
5. Loading and preparing the dataset
6. Joining the tables and dataset
7. Exploring the dataset

8.TESTING

8.1 TEST CASES

8.1 Test Cases

- Verify user is able to see home page.
- Verify user is able to see Dashboard page.
- Verify user is able to navigate to Report page.
- Verify filters are working

Resolution	Severity 1	Severity 2	Severity 3	Severity 4	Subtotal
By Design	10	4	2	3	20
Duplicate	1	0	3	0	4
External	2	3	0	1	6
Fixed	11	2	4	20	37
Not Reproduced	0	0	1	0	1
Skipped	0	0	1	1	2
Won't Fix	0	5	2	1	8
Totals	24	14	13	26	77

8.2 USER ACCEPTANCE TESTING

1.Purpose of Document

The purpose of this document is to briefly explain the test coverage and open issues of the [ProductName] project at the time of the release to User Acceptance Testing (UAT).

2.Defect Analysis

This report shows the number of resolved or closed bugs at each severity level, and how they were resolved

3.Test Case Analysis

This report shows the number of test cases that have passed, failed and understand

Section	Total Cases	Not Tested	Fail	Pass
Print Engine	7	0	0	7
Client Application	51	0	0	51
Security	2	0	0	2
Outsource Shipping	3	0	0	3
Exception Reporting	9	0	0	9
Final Report Output	4	0	0	4
Version Control	2	0	0	2

9.RESULTS

9.1 PERFORMANCE METRICS

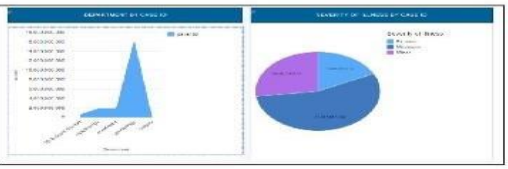
Model Performance Testing:

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

S.No.	Parameter	Screenshot / Values
1.	Dashboard design	Number of Visulizations / Graphs – 22 Number of tabs – 4 
2.	Data Responsiveness	Data's will dynamically changed and graph also changed. 
3.	Amount Data to Rendered (DB2 Metrics)	Number of rows read – 318438 Number of rows loaded – 318438 Number of rows rejected – 0 

Model Performance Testing:

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

S.No.	Parameter	Screenshot/ Values
1.	Dashboard design	Number of Visulizations / Graphs – 22 Number of tabs – 4 
2.	Data Responsiveness	Data's will dynamically changed and graph also changed. 
3.	Amount Data to Rendered (DB2 Metrics)	Number of rows read – 318438 Number of rows loaded – 318438 Number of rows rejected – 0 
4.	Utilization of Data Filters	We created filters for Dashboards which is perfectly working. 
5.	Effective User Story	Number of Scene Added – 7 Animations are perfectly displayed. Images are perfectly rendered. 
6.	Descriptive Reports	Number of Visulizations / Graphs – 6
		

10.ADVANTAGES & DISADVANTAGES

Advantages:

1. Improve on time performance for airlines. ...
2. Accurate flight data, no need for manual input. ...
3. Increased customer satisfaction. ...
4. Analyse the best performing flights. ...
5. Historic data trends, storage and compliance. ...
6. Fuel efficiencies for carbon neutral airlines.

Disadvantages:

1. High Cost
2. More Risk
3. Huge Investment

11 CONCLUSION

The airline industry is cyclical and sensitive to a number of external economic factors that affect the number of domestic and international travellers, including consumer confidence and corporate profit. Improved economic conditions over the five years to2016 have increased demand for both business and consumer travel. The newer aircrafts continuing to update to satisfy the request from consumers. There has been a tremendous surge in the percentage of people who are now traveling longer distances and becoming frequently flyers more than ever before. As far as changes in travel preferences millennial are found to be willing to spend more on business travel than other generations when it comes to business travel. Globally the aviation industry is consumers over 200million tons of jet fuel per year (IBIS World, 2016). There is an increasing demand for international flight and airport are beginning to grow and airports now have a system to comply with passengers with connecting flights, it is very important for airport to standardize their processes in order to minimize passenger confusion benefiting the foot traffic of airport and making the airlines more profitable. The airline industry is focusing on Safety, Efficiency and Environmental performance and matching investment with returns, joining forces to ensure that government policies, avoiding counter-productive taxation, supporting further liberalization and growth, Give tools to access markets and consolidate where it makes business sense, making aviation business sense and try to build a safe, secure and profitable environment, and become a stronger contributor to the social and economic welfare of the region.

12.FUTURE SCOPE

Engines and aircraft become lighter, quieter and more efficient. Emerging technologies are reshaping with robotics, artificial intelligence, the internet of things, unmanned aircraft systems and the push for hybrid and electric airplanes

It can be used **to predict future glitches, prevent them from happening, and make the maintenance procedures more accurate and thorough**. As a result, it is possible to lower costs related to maintaining an aircraft.

13. APPENDIX

SOURCE CODE

PYTHON FLASK

```
from flask import Flask,render_template
app=Flask(__name__)
@app.route('/')
def airlines():
    return render_template('data.html')
if __name__ =='__main__':
    app.run(debug = True)
```

The popular Python frameworks used by developers for web development is Flask. In this article, you will get introduced to Python Flask framework. Along with this, we will also see some of the basic implementations along with some HTTP methods.

REGISTRATION BASED CODES

```
<!DOCTYPE html>
<html lang="en" xmlns="http://www.w3.org/1999/xhtml">

<head>
<meta charset="utf-8" />
<meta name="viewport" content="width=device-width,initial-scale=1.0" />
<meta name="google-signin
client_id"content="22151811252683m9fn4qse4rfi7tm0dkvjh6qlftl7qd.apps.googleusercontent.com">
<title>Airport details</title>
<link rel="stylesheet" href="registerationcss.css" />
```

```
<script type="text/javascript" src="registerationscript.js"></script>
<script src="https://kit.fontawesome.com/ab849647da.js" crossorigin="anonymous"></script>
<link href="https://cdn.jsdelivr.net/npm/bootstrap@5.0.2/dist/css/bootstrap.min.css" rel="stylesheet"
integrity="sha384EVSTQN3/azprG1Anm3QDgpJLIm9Nao0Yz1ztcQTwFspd3yD65VohhpuuCOmLASjC
" crossorigin="anonymous">
</head>

<body>
<div class="g-signin2" data-onsuccess="onSignIn"></div>
<script src="sigingoogle.js"></script>
<script src="https://apis.google.com/js/platform.js" async defer></script>
<scriptsrc="https://cdn.jsdelivr.net/npm/bootstrap@5.0.2/dist/js/bootstrap.bundle.min.js"integrity="sha384
-MrcW6ZMFYlzcLA8Nl+NtUVF0sA7MsXsP1UyJoMp4YLEuNSfAP+JcXn/tWtIaxVXM"
                    crossorigin="anonymous"></script>
<script src="https://ajax.googleapis.com/ajax/libs/jquery/3.6.0/jquery.min.js"></script>
<section>
          <div class="color"></div>
          <div class="color"></div>
          <div class="color"></div>
          <div class="box">
          <div class="square" style="-i: 0"></div>
          <div class="square" style="-i: 1"></div>
          <div class="square" style="-i: 2"></div>
          <div class="square" style="-i: 3"></div>
          <div class="square" style="-i: 4"></div>
          <div class="container">
          <div class="form">
          <h2>Registration</h2>
          <form onsubmit="return validation()" action="Login" method="post">
<div class="inputbox">

<input id="firstname" type="text" placeholder="First Name" name="firstname"></div>
<div class="inputbox">

<input id="lastname" type="text" placeholder="Last Name" name="lastname"></div>
<div class="inputbox">

<input id="email" type="text" placeholder="Your Email" required name="email"></div>
<div class="inputbox">

<input id="password" type="password" placeholder="Password" required name="password"></div>
<div class="inputbox">

<input id="confrimpassword" type="password" placeholder="Confrim Your Password" required
```

```
                                                                name="confrimpassword">
</div>
<div class="inputbox">

<input id="dateofbirth" type="date" placeholder="Date Of Birth" required name="dateofbirth">
</div>
<div class="inputbox">
<input id="mobile" type="text" placeholder="Mobile Number" required name="mobile">
</div>
<div class="inputbox">
<input onclick="validation()" type="submit" value="Register">
</div>
<p class="forget">Login Using Social Accounts</p>
<div class="social">
<a href="https://accounts.google.com/v3/signin/identifier?dsh=S-
1542879895%3A1668070630331798&continue=https%3A%2F%2Fwww.google.co.in%2F&ec=GAZAm
gQ&hl=en&passive=true&flowName=GlifWebSignIn&flowEntry=ServiceLogin&ifkv=ARgdvAs7-
zXi7RBnL7iQAB8wpX5ZIm4tyHlhsyG7ul7P-ONgOR2srHsJBOcxYc3XgiYRy8Wvf47gaQ"
                                                                target="_blank">
<i class="fa-brands fa-google fa-2xl"></i>Login with Google</a>
<ahref="https://www.facebook.com/login/?privacy_mutation_token=eyJ0eXBlIjowLCJjcmVhdGlvbl90a
W1lIjoxNjY4MDYzMTEwLCJjYWxsc2l0ZV9pZCI6MjY5NTQ4NDUzMDcyMDk1MX0%3D"
                                                                target="_blank">
<i class="fa-brands fa-facebook-f  fa-2xl"></i>Login with Facebook</a>
          </div>
          </form>
          </div>
 </div>
</div>
</section>
</body>

</html>
```

GITHUB & PROJECT DEMO LINK:

GITHUB LINK:

AIRLINES ANALYTICS FOR AVAITION INDUSTRY

https://github.com/IBM-EPBL/IBM-Project-50500-1660912746

PROJECT DEMO LINK:

https://youtu.be/v0Kd4Eu16u0