

DATA ANALYTICS FOR DHL LOGISTICS FACILITIES USING IBMCOGNOS ANALYTICS

A project report submitted in partial fulfillment of the
requirements of the award of the degree of

Bachelor of Technology

in

Computer Science and Engineering

By

K. ANUHYA (410119104003)

E. SANGEETHA (410119104010)

K. SUSMITHA (410119104025)

M. MANEESHA (410119104029)



DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

ADHI COLLEGE OF ENGINEERING AND TECHNOLOGY

(Accredited by NAAC, Affiliated by ANNA UNIVERSITY, Chennai & Approved by AICTE)

KANCHIPURAM (Dt.), Chennai - 631605

2022

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

ADHI COLLEGE OF ENGINEERING AND TECHNOLOGY



CERTIFICATE

This is to certify that the project report titled “DATA ANALYTICS FOR DHL LOGISTICS FACILITIES”, being submitted by

K. ANUHYA (410119104003)

E. SANGEETHA (410119104010)

K. SUSMITHA (410119104025)

M. MANEESHA (410119104029)

in partial fulfillment of the requirements for the award of the degree of Bachelor of Technology in Computer Science and Engineering, to the Anna University, Chennai is a record of bonafied work carried out by them my guidance and supervision.

Faculty Mentor

R. Radhika

Dept. of IBM

Industry Mentor

Rakesh Miskin

Dept. of IBM

DECLARATION

We hereby declare that the project entitled, “**DATA ANALYTICS FOR DHL LOGISTICS FACILITIES**” completed and written by us, has not been previously submitted elsewhere for the award of any degree or diploma.

Place :

Date :

K. ANUHYA (410119104003)

E. SANGEETHA (410119104010)

K. SUSMITHA (410119104025)

M. MANEESHA (410119104029)

ACKNOWLEDGEMENTS

We consider it as our duty to express our gratitude to all those who guided, inspired and helped us in completion of this project work.

We acknowledgment, with profound sense of gratitude, the gratitude and support of our guide **MS. R. RADHIKA**, Department of Computer Science and Engineering, ADH COLLEGE OF ENGINEERING AND TECHNOLOGY, Chennai. His timely suggestions and Co-Operation, both professionally and personally, have greatly contributed in bringing out the project successfully.

We express our heart-felt thanks to **DR. R. GOWRI**, Professor and Head of the Department of Computer Science and Engineering, ADHI COLLEGE OF ENGINEERING AND TECHNOLOGY, Chennai, for his kind encouragement and for providing us with all required facilities for the completion of the project work.

We also express our gratitude to the Principal **DR. A. DEVARAJU**, for providing necessary infrastructure & an ambient atmosphere to complete our project work.

We are indeed indebted to all our teachers who have guided us throughout our B. Tech course for the past four years and have imparted a sufficient knowledge and inspiration to take us forward in our career.

Finally, we thank each and everyone who has helped us directly and indirectly in completion of project work.

K. ANUHYA (410119104003)

E. SANGEETHA (410119104010)

K. SUSMITHA (410119104025)

M. MANEESHA (410119104029)

ABSTRACT

Logistics management is increasingly becoming a topic of interest among academicians and practitioners since it may lead to reduced operational costs, improved delivery performance and increased customer satisfaction levels. The global logistics industry is estimated to be worth USD 300 Billion. Though most of the large service providers are headquartered in Europe, the biggest market is the US, which captures about one-third of the world market. The global logistics industry is characterized by high costs of operations , low margins, shortage of talent, infrastructural bottlenecks, demand from clients for investing in technology and providing one-stop solutions to all their needs, and consolidation through acquisitions, mergers and alliances. Though, in India, the industry is still in its infancy, there is immense potential for growth. The Indian logistics industry is currently plagued with low demand, poor infrastructure, high costs, and government Regulations etc. However, it is going to turn around on the back of robust GDP growth, globalization, FDI in logistics and increasing government support. This paper highlights the current state of the industry, including the dynamics and opportunities of growth, globally, in general, and in India, in particular, based on findings from surveys of logistics service providers, and users, of India and others countries.

TITLES	CONTENTS	PAGE. NO:
1. INTRODUCTION		1-2
1.1 Project Overview		
1.2 Purpose		
2. LITERATURE SURVEY		3-5
2.1 Existing problem		
2.2 References		
2.3 Problem Statement Definition		
3. IDEATION & PROPOSED SOLUTION		6-9
3.1 Empathy Map Canvas		
3.2 Ideation & Brainstorming		
3.3 Proposed Solution		
3.4 Problem Solution fit		
4. REQUIREMENT ANALYSIS		10
4.1 Functional requirement		
4.2 Non-Functional requirements		
5. PROJECT DESIGN		11-12
5.1 Data Flow Diagrams		
5.2 Solution & Technical Architecture		
5.3 User Stories		
6. PROJECT PLANNING & SCHEDULING		13-14
6.1 Sprint Planning & Estimation		
6.2 Sprint Delivery Schedule		
6.3 Reports from JIRA		
7. CODING & SOLUTIONING (Explain the features added in the project along with code)		
7.1 Feature 1		15-17
7.2 Feature 2		
7.3 Database Schema (if Applicable)		
8. TESTING		18-19
8.1 Test Cases		
8.2 User Acceptance Testing		
9. RESULTS		20
9.1 Performance Metrics		
10. ADVANTAGES & DISADVANTAGES		21
11. CONCLUSION		22
12. FUTURE SCOPE		23
13. APPENDIX		24
GitHub & Project Demo Link		

CHAPTER-1

INTRODUCTION

1.1 PROJECT OVERVIEW:

DHL is an international Umbrella brand and trade mark for the courier, package delivery and express mail service, which is a division of the German logistics firm Deutsche Post. The company group delivers over 1.6 billion parcels per year.

The company DHL itself was founded in San Francisco, USA, in 1969 and expanded its service throughout the world by the late 1970s. In 1979, under the name of DHL Air Cargo, the company entered the Hawaiian Islands with an inter-island cargo service using two DC-3 and four DC-6 aircraft. Adrian Dalsey and Larry Hillblom personally oversaw the daily operations until its eventual bankruptcy closed the doors in 1983. At its peak, DHL Air Cargo employed just over 100 workers, management, and pilots.

- Users create multiple analytical graphs/charts/Visualizations.
- Using the Analytical Visualizations, build required Dashboard(s).
- Saving and visualizing the final dashboard in the IBM Cognos Analytics.

GOAL OF THE PROJECT:

To provide Analytics to improve New Marks and grow the business.

1.2 PURPOSE:

The purpose of this study is identifying the services marketing mix (7Ps-product/service, place promotion, price, people, processes and physical evidence) decisions of a logistics company. The significance of services marketing mixes on creating a logistics services brand has received little attention in the literature. In this paper, the case of a global brand, DHL Logistics is presented. Case study was conducted by using secondary data obtained from DHL Logistics' reports and by conducting semi-constructed interviews with DHL Logistics' executives and employees. Due to the reputation and operations of the company, this framework will act as a guideline for the other alike companies. The marketing mix decisions made by DHL Logistics affect both B2B and B2C customers' brand perceptions and enhance the brand equity of DHL Logistics.

CHAPTER-2

LITERATURE SURVEY

2.1 EXISTING PROBLEM:

- If we are finding unusual patterns within our data analysis or our statistical significance is not strong enough, we might not have enough data to make valid conclusions.
- Without doing data analysis, we won't get the opportunity to evaluate the data before making actionable plans.
- Data is meaningless without context and we cannot turn data into information.
- Information is useless without being able to apply to something.

2.2 REFERENCES:

1. Aghaei, J., Niknam, T., Azizipanah-Abarghooee, R., & Arroyo, J. M. (2013). Scenario-based dynamic economic emission dispatch considering load and wind power uncertainties. *International Journal of Electrical Power & Energy Systems*, 47, 351-367.
2. Borden, N. (1965). The concept of the marketing mix. In G. Schwartz (Ed.), *Science in marketing* (pp. 386- 397). New York, NY: John Wiley & Sons.
3. Ferrell, J. (1997). Criminological verstehen: Inside the immediacy of crime. *Justice Quarterly*, 14(1), 3-23.
4. Goi, C., L. (2009). A review of marketing mix: 4ps or more?. *International Journal of Marketing Studies*, 1(1). Retrieved from:
http://www.ccsenet.org/journal/index.php/ijms/article/viewFile/97/1552%3Forigin%3Dpublication_detail
5. Gummesson, E. (2007). Exit services marketing-enter service marketing. *Journal of Customer Behaviour*, 6(2), 113-141. Manatayev, Y. Y. (2004). Commoditization of the third party logistics industry (Master's Thesis, Massachusetts Institute of Technology).
6. Retrieved from: <http://18.7.29.232/bitstream/handle/1721.1/28508/57341050.pdf?sequence=1>
7. McCarthy, E. J. (1964). *Basic marketing: A managerial approach* (2nd ed.). Homewood, IL: Richard D. Irwin.

8. Rafiq, M., and Ahmed, P.K. (1995). Using the 7ps as a generic marketing mix: An exploratory survey of UK and european marketing academics.
9. Marketing Intelligence and Planning, 13(9), 4-15.
10. Yelkur, R. (2000). Customer satisfaction and the services marketing mix. Journal of Professional Services Marketing, 2(1).

2.3 PROBLEM STATEMENT:

Create a problem statement to understand your customer's point of view. The Customer Problem Statement template helps you focus on what matters to create experiences people will love.

A well-articulated customer problem statement allows you and your team to find the ideal solution for the challenges your customers face. Throughout the process, you'll also be able to empathize with your customers, which helps you better understand how they perceive your product or service.

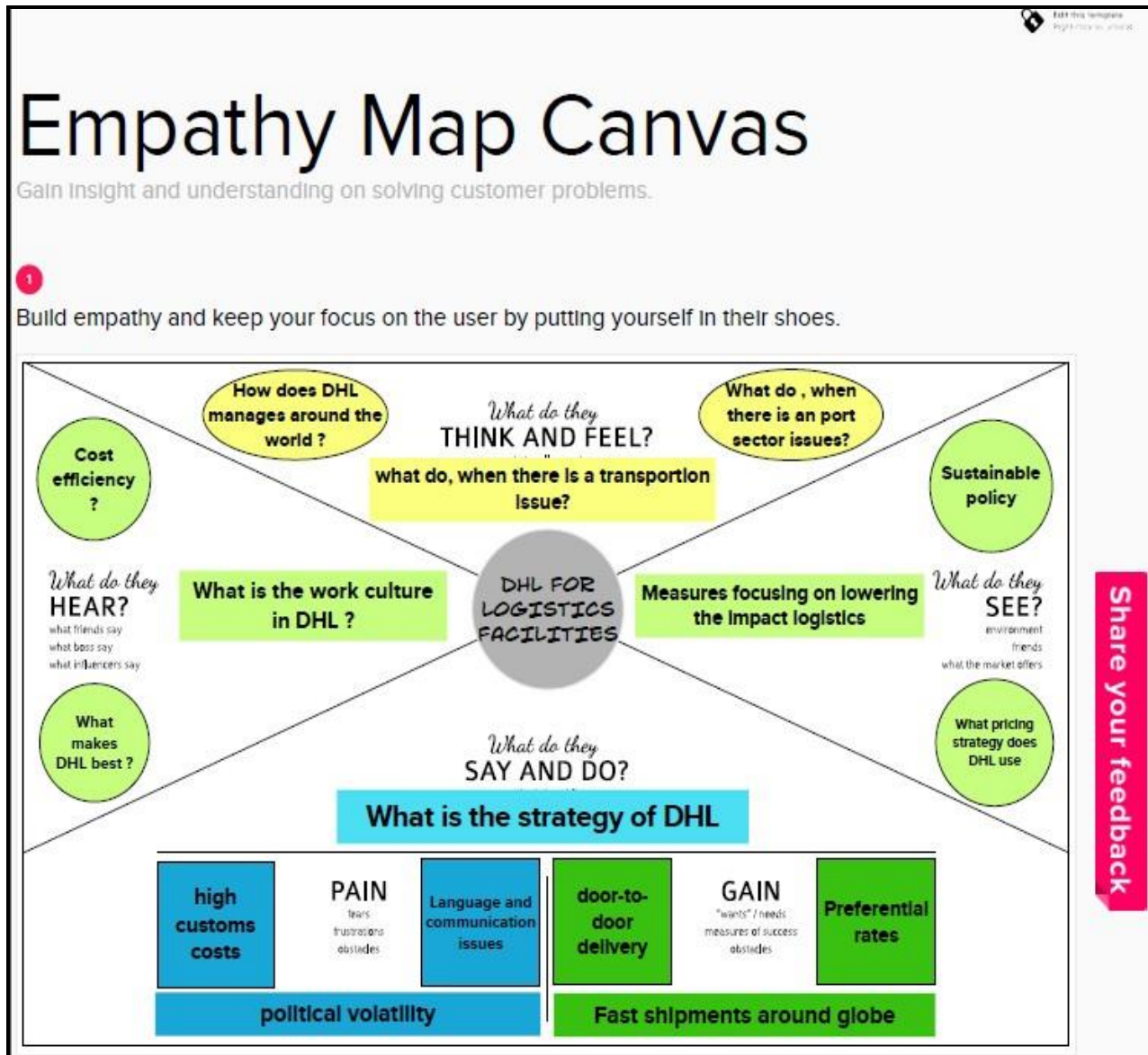


Problem Statement(PS)	I am (Customer)	I'm trying to	But	Because	Which makes me feel
PS-1	Ware house supervisor	Track items in real time as they are received, stored, packed and shipped	Advises on inventory replenishment	Guides inventory receiving and put away	Tired & stressed
PS-2	Customer	Receive a courier without any Damage.	I Will feel alack of confidence before receive a courier.	Surrounding area of my house is proper road.	Frustrated
PS-3	Delivery Man	Deliver a product to customer.	Sometimes not to deliver a courier at right time.	Customers are Living indifferent Environment.	Frustrated

CHAPTER-3

IDEATION & PROPOSED SOLUTION

3.1 EMPATHY MAP CANVAS:



3.2 IDEATION & BRAINSTORMING:

Brainstorm & idea prioritization

Use this template if you are brainstorming solutions to your users' problems that require a lot of ideas and you're not willing to be too strict.

1. Problem space
2. Problem solution
3. Idea generation

Before you ideate

Before you ideate, you need to have a clear understanding of the problem you're trying to solve. This is the first step in the process.

- 1. Problem space
- 2. Problem solution
- 3. Idea generation

Define your problem statement

Before you ideate, you need to have a clear understanding of the problem you're trying to solve. This is the first step in the process.

- 1. Problem space
- 2. Problem solution
- 3. Idea generation

Brainstorm

Now that you have a clear understanding of the problem, it's time to brainstorm ideas. This is the second step in the process.

- 1. Problem space
- 2. Problem solution
- 3. Idea generation

Crash time

Now that you have a clear understanding of the problem, it's time to brainstorm ideas. This is the second step in the process.

- 1. Problem space
- 2. Problem solution
- 3. Idea generation

After you ideate

Now that you have a clear understanding of the problem, it's time to brainstorm ideas. This is the second step in the process.

- 1. Problem space
- 2. Problem solution
- 3. Idea generation

3.3 PROPOSED SOLUTION:

S. No	Parameter	Description
1.	Problem Statement (problem to be solved)	The biggest problems in the logistics industry come from its inconsistency and fragmentation. Since there are many parties involved (manufacturers, storekeepers, drivers, managers, and end users) it's impossible to have centralized control over every step of the way.
2.	Idea / Solution description	Idea management software structures the process of gathering and developing ideas around business focus areas, including product development, day-to-day processes, customer feedback, market trends, and competitive insights, with the goal of organizing and managing those ideas for improvement or development.
3.	Novelty / Uniqueness	As a Thought leader in the logistics industry, DHL structurally invests in trend research and solution development. The nature of the workplace, work culture, and workforce are evolving.

3.4PROBLEM SOLUTION FIT:

Project Title: Data Analytics For DHL Logistics Facilities

Project Design Phase-I - Solution Fit Template

Team ID: PNT2022TMID37643

Identify strong TR & EM	1. CUSTOMER SEGMENT(S) <ul style="list-style-type: none"> Customer, delivery agent, DHL Manager. 	6. CUSTOMER CONSTRAINTS <p>The world's transportation network have provedextremely adaptable in previous crises, with carriers moving assests ,altering routes .</p>	5. AVAILABLE SOLUTIONS <p>Boost your international sales with DHL's market- leading e-commerce shipping solutions. Our supplychain solution improve efficiency.</p>	Identify strong TR & EM
	2. JOBS-TO-BE-DONE / PROBLEMS J&P <ul style="list-style-type: none"> DHL Provides job offer in a variety of function – Operations, Corporate ,sales and Support. Customer Challenge. improve resources management and service quality. 	9. PROBLEM ROOT CAUSE <ul style="list-style-type: none"> Turning supply chain disruption into opportunity. Digital technology on roads. Improving experiences, efficiency and resilience. A sustainable supply chain is a successful supply chain. 	7. BEHAVIOUR <p>What does your customer do to address the problem and get the job done? i.e. directly related: find the right solar panel installer, calculate usage and benefits;</p> <ul style="list-style-type: none"> The behavior of the consumers towardsDHL is very much positive. DHL has filled a very important space inits market through its express delivery services. All the customers of DHL have complete trust in the service quality of the company and this is the company is leading in the industry. 	
	3. TRIGGERS <p>Customers , offers for DHL products ,Attractive products, discounts. TR</p>	10. YOUR SOLUTION SL <p>DHL logistics provides a variety of logistics solutions including transport ,warehousing , Management consulting, E-commerce, integrated solutions. DHL logistics is used to shift the products from one country to another country.</p>	8. CHANNELS of BEHAVIOUR CH <p>ONLINE For checking the message that the courier has reached or not and visualizing the DHL logistics facilities analysis.</p> <p>OFFLINE Delivering the courier in offline mode.</p>	
	4. EMOTIONS: BEFORE / AFTER EM <p>Before : The customers feel stress when they face a problem or a job and the customers feels Depressed that how to solve that problem or a job.</p> <p>After : The customer feels very happy and peace after solving the problem EM</p>			

CHAPTER-4

REQUIREMENT ANALYSIS

4.1 FUNCTIONAL REQUIREMENTS:

FR No.	Functional Requirement (Epic)	Sub Requirement (Story / Sub-Task)
FR-1	User Registration	Registration through any Google account or social media account
FR-2	User Confirmation	Confirmation via Email Confirmation via OTP
FR-3	Dashboard	The collected data are found in visualized format and the prior data is analysed.
FR-4	Dataset	The DHL FACILITIES record are collected and consolidated as dataset.
FR-5	Report Generator	The periodic reports of Logistics are reported.
FR-6	Exploration	The data exploration on available dataset.

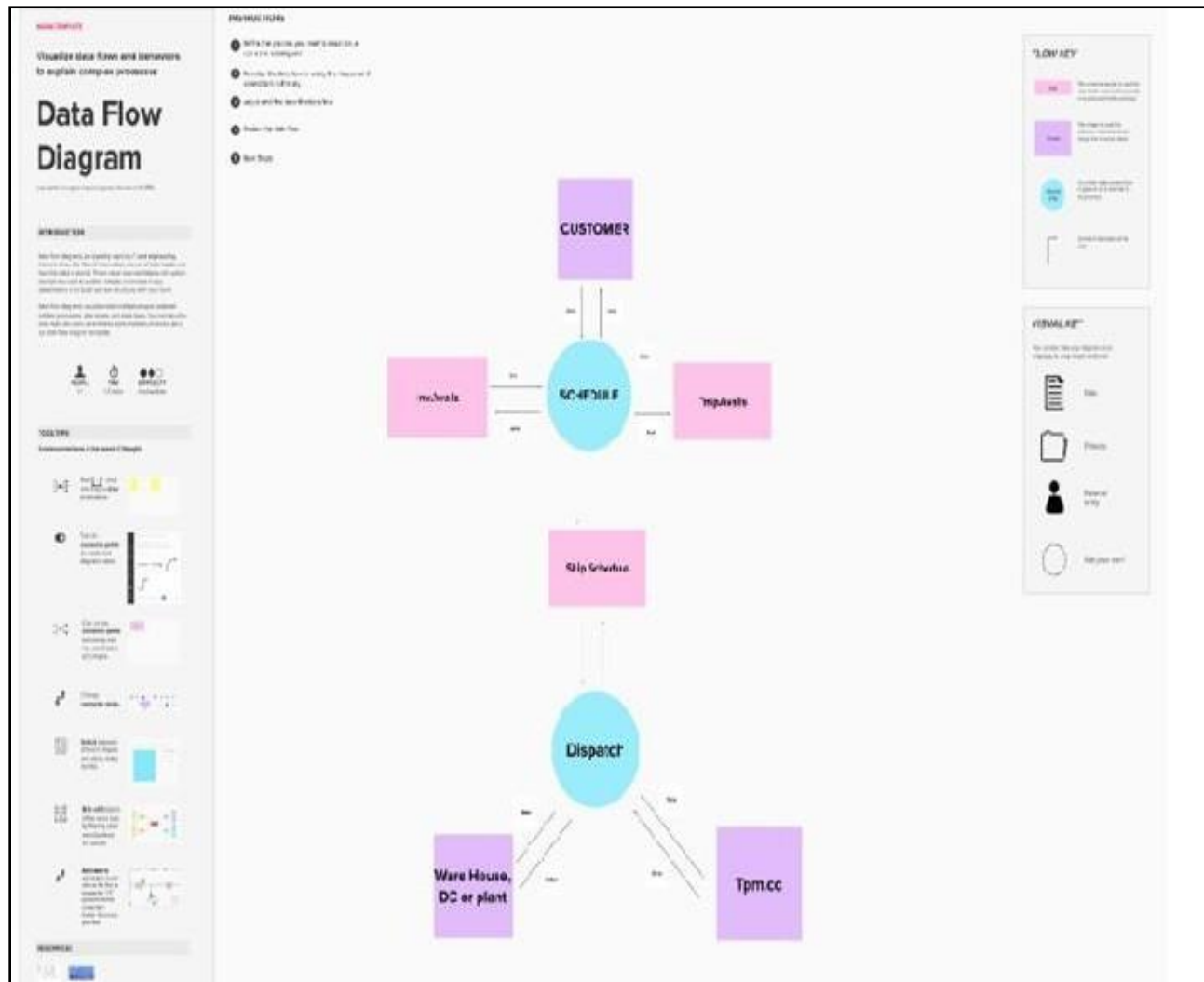
4.2 NON-FUNCTIONAL REQUIREMENTS:

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 quite expandable.

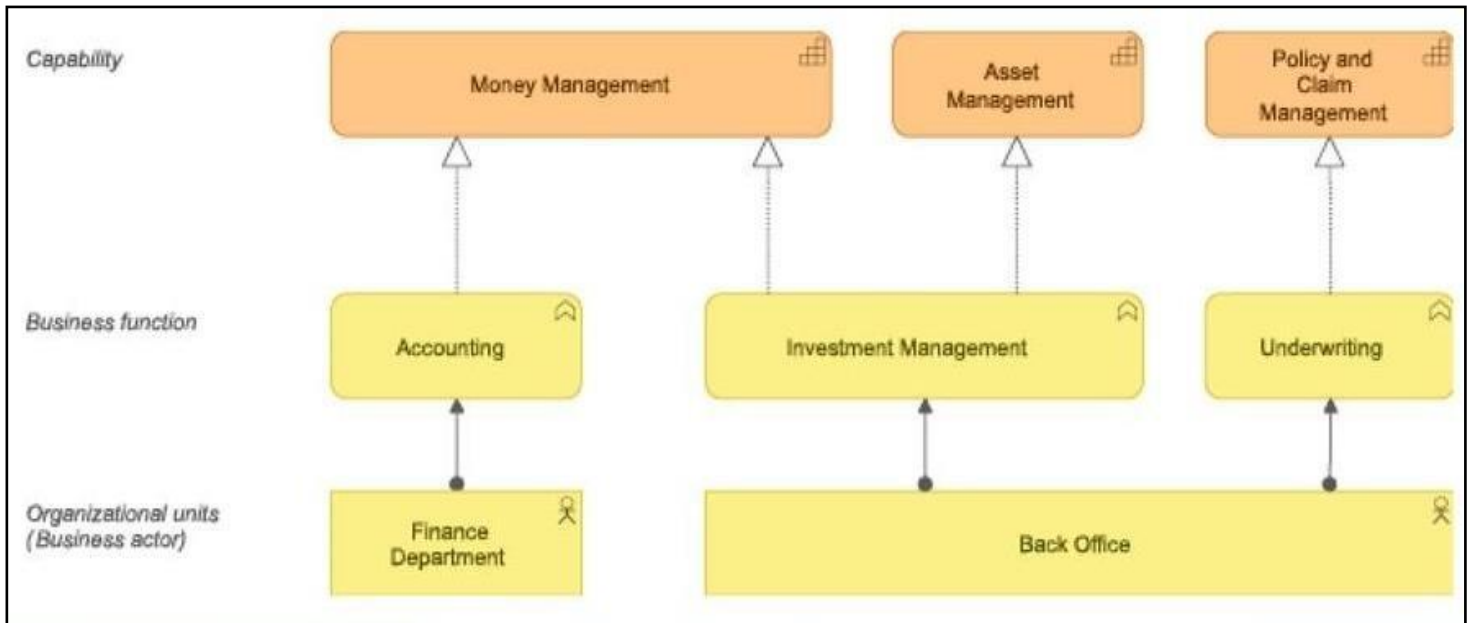
CHAPTER-5

PROJECT DESIGN

5.1 DATA FLOW DIAGRAM:



5.2 SOLUTION ARCHITECTURE:



5.3 USER STORIES:

1. Maintaining a global connectedness during a pandemic:

The pandemic has made it an especially clear how important globalization is for the economic and social immune system. Open diverse society will ultimately prove to be more robust in the face of crises.

2. The challenge of delivering the vaccines:

The covid-19 pandemic has highlighted the difficulties and the importance of securing stable supply chains for essential medical goods during public health emergencies. The logistics of distributing vaccines, when they are ready is expected to pose challenges along the supply chain.

3. Women Leaders of DHL:

Africa still has some to go in achieving gender inclusivity at the work place, but three country managers from DHL global forwarding are pushing the limits to pave the way for a future generation of women leaders.

CHAPTER-6

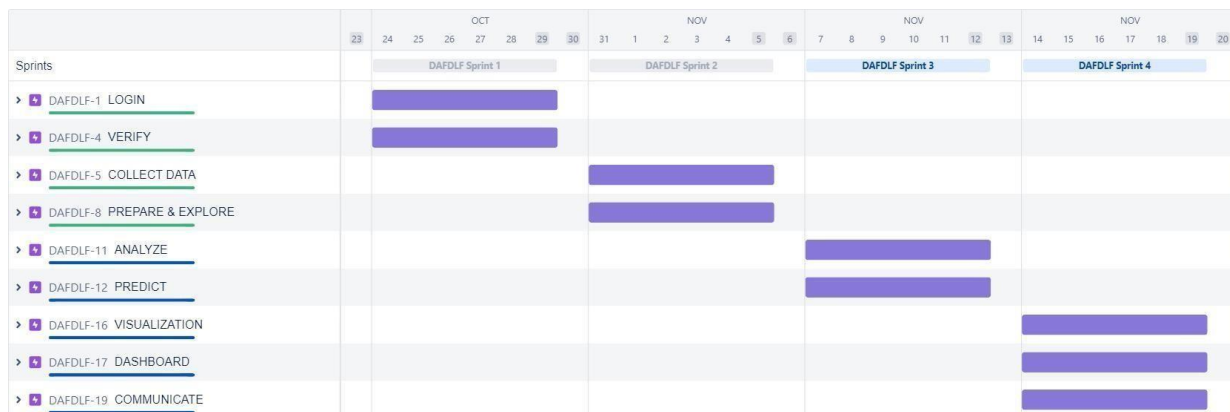
PROJECT PLANNING & SEHEDULING

6.1 SPRINT PLANNING & ESTIMATION:

MILESTONES	TASKS
MILESTONE-1	COLLECTION OF DATA KAGGLE
MILESTONE-2	UPLOADING THE REQUIRED DATA ON THE PLATFORM (IBMCOGNOS)
MILESTONE-3	EXPLORATION AND VISUALIZATION OF DATA
MILESTONE-4	CREATING THE INTERACTIVE DASHBOARD.
MILESTONE-5	DISPLAY THE INSIGHTS INTHE DASHBOARD
MILESTONE-6	PREPARE A STANDARDIZED DATASET AND USING THE DATA REQUIRED WITH THE HELP OF PYTHON PROGRAM
MILESTONE-7	USAGE OF VARIOUS ALGORITHM TO OBTAIN THE DESIRED RESULT WITH MORE ACCURACY USING GOOGLE COLAB.
MILESTONE-8	DISPLAY THEM IN THE REQUIRED FORMAT
MILESTONE-9	DEPLOYED IN THE GITHUB

Sprint	Functional Requirement (Epic)	User Story/Task	Story Points	Priority
Sprint-1	Registration	As a user, I can register for the application by entering my email, password, and confirming my password.	8	High
Sprint-1		As a user, I will receive confirmation email once I have registered for the application	8	High
Sprint-2		As a user, I can register for the application through Facebook	2	Low
Sprint-1		As a user, I can register for the application through Gmail	4	Medium
Sprint-2	Login	As a user, I can login to the application by entering Email & Password	10	High
Sprint-2	Dashboard	As a user, I can view City Wise DHL Deliveries of the given dataset	8	Medium
Sprint-3		As a user, I can view Top N Deliveries State and City of the given dataset	10	Medium
Sprint-3		As a user, I can view Top3 State Deliveries of the given dataset	10	High
Sprint-4		As a user, I can view Dashboard of Delivery states using the given dataset.	10	High

6.2 SPRINT DELIVERY SCHEDULE:

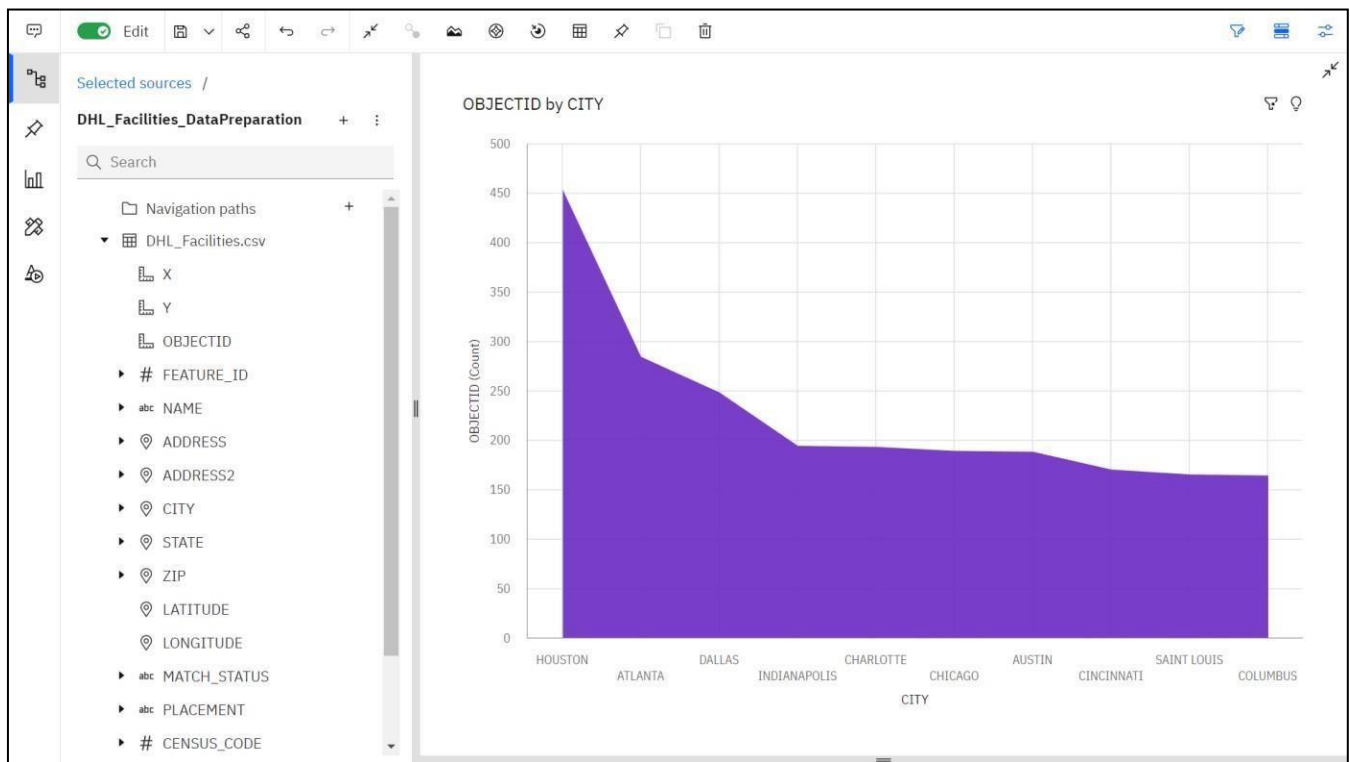


CHAPTER-7

CODING & SOLUTION

7.1 FEATURE-1:

- **Area Chart Showing City wise DHL Deliveries**



- **Top N Deliveries by State and City**

Selected sources /

DHL_Facilities_DataPreparation +

Q Search

Navigation paths +

▼ DHL_Facilities.csv

 X

 Y

 OBJECTID

 # FEATURE_ID

 abc NAME

 ADDRESS

 ADDRESS2

 CITY

 STATE

 ZIP

 LATITUDE

 LONGITUDE

 abc MATCH_STATUS

 abc PLACEMENT

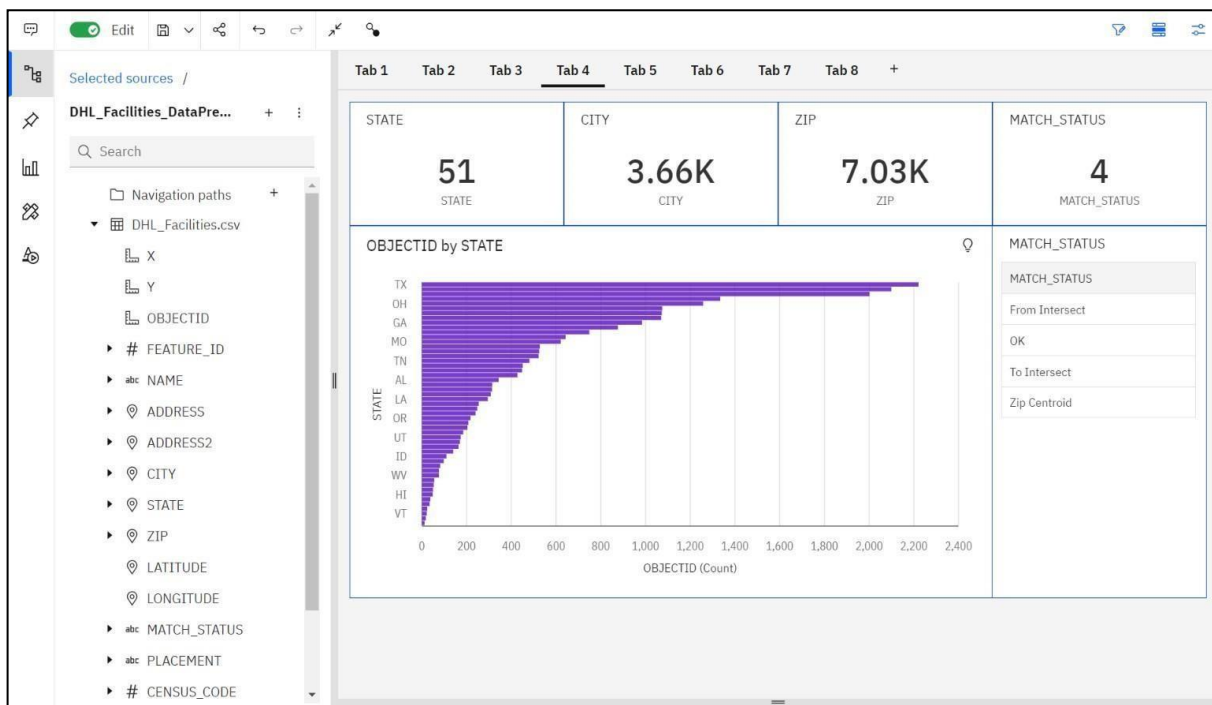
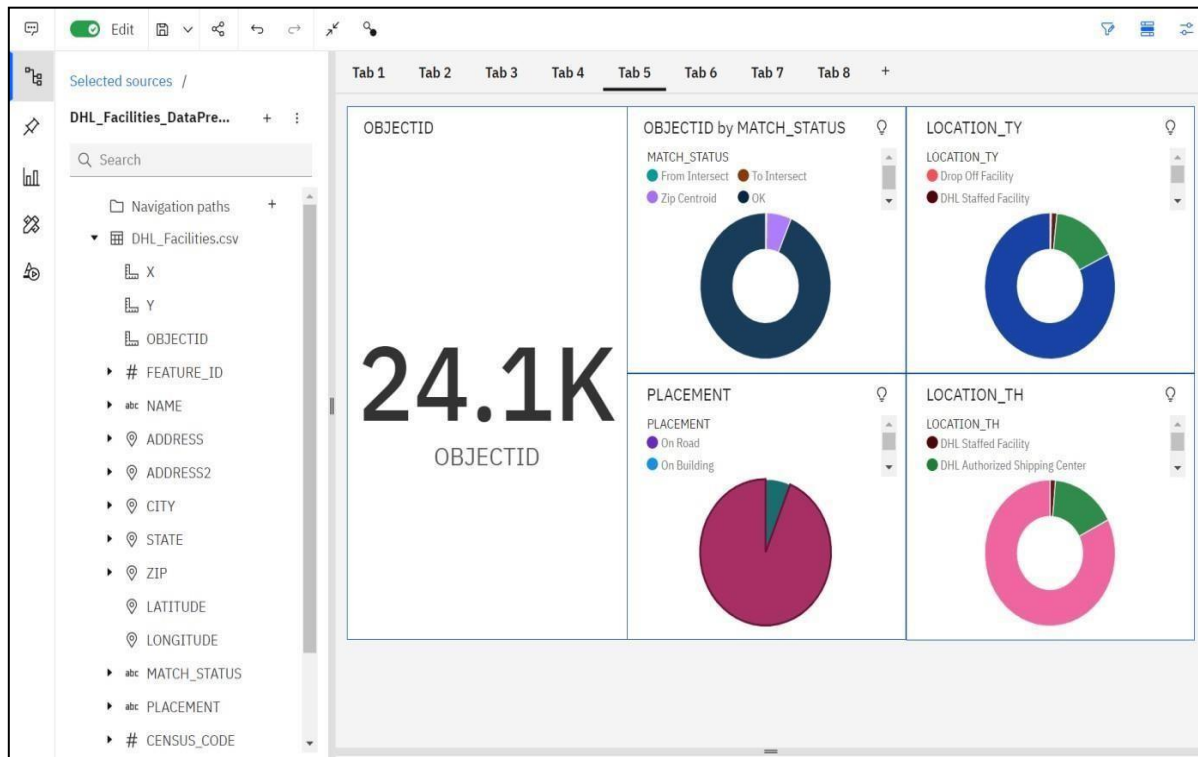
 # CENSUS_CODE

OBJECTID, CITY and STATE

Rank (STATE)	STATE	CITY	OBJECTID
2	FL	BOCA RATON	60
8	NY	NEW YORK	59
9	GA	MARIETTA	59
5	OH	CLEVELAND	58
2	FL	NAPLES	55
8	NY	BROOKLYN	54
10	MI	TROY	54
1	TX	PLANO	53
9	GA	NORCROSS	53
10	MI	GRAND RAPIDS	53
1	TX	FORT WORTH	52
2	FL	CLEARWATER	48
2	FL	TALLAHASSEE	48
10	MI	FARMINGTON HILLS	46
3	CA	SAN JOSE	45
5	OH	TOLEDO	44
10	MI	ANN ARBOR	43

7.2 FEATURE-2:

- **Summary Charts and Bar Chart Showing Deliveries & Dashboard showing Delivery Status are below:**



CHAPTER-8

TESTING

8.1 TEST CASES:

DHL faced the challenge of introducing a new knowledge testing tool. The important issue was the ability to present all results with graphs and statistics after the assessments. Without the expenditure of extra time and effort to prepare them. It would accelerate analysis and drawing conclusions about the level of knowledge of the workforce.

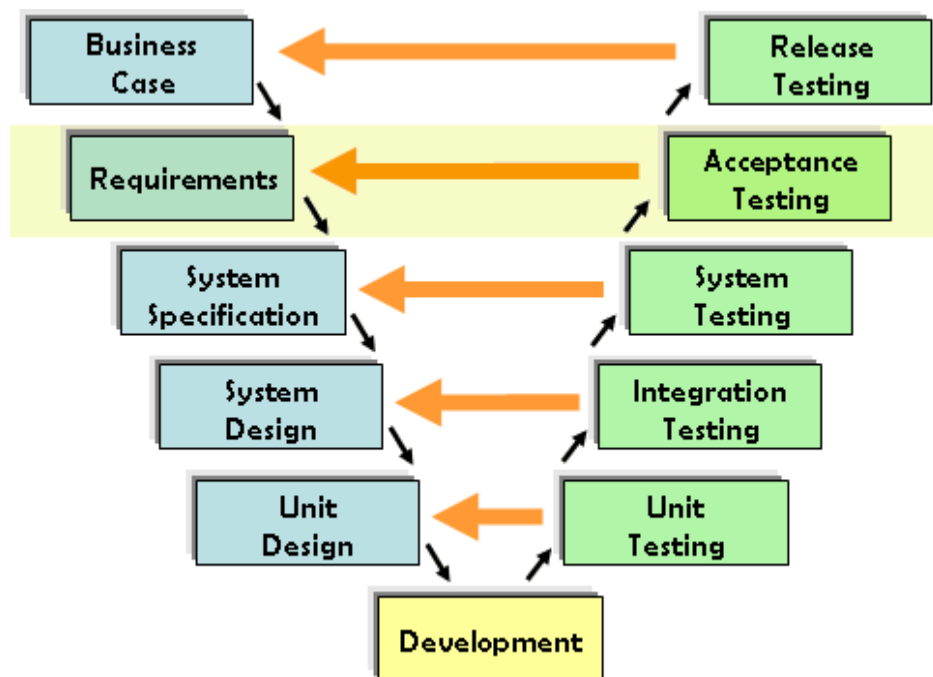
DHL tests are mostly about our offer and sales processes. We test our operations team, sales personnel and couriers. They use our knowledge base daily, and it is also available to them during the tests. It is paramount that an employee who doesn't know the answer to a question be able to look it up in the available material and not simply leaves the problem unsolved.

After a brief search, we discovered that Test portal ticked all the boxes, was able to meet DHL's demands and offered superior training quality.

DHL tests the knowledge of all the employees in the Polish branches. The firm employs a considerable number of persons, so a simple test sheet preparation process was a must. They differ based on the department and position. Most of them include single- or multiple-choice questions. Some contain attachments in the form of images. Other times it is necessary to conduct a test using short, open-ended questions. It all depends on what skills and knowledge we need to assess or strengthen.

User Acceptance Testing (UAT) is a process to check whether the system accepts a user's requirements. It's performed at a time when actual users use the system. This testing comes after - Unit Test-->Integration Test, -->System Test, -->Acceptance Test in the process.

The main Purpose of UAT is to validate end to end business flow. It does not focus on cosmetic errors, spelling mistakes or system testing. User Acceptance Testing is carried out in a separate testing environment with production-like data setup. It is kind of black box testing where two or more end-users will be involved.



CHAPTER-9

REUSLTS

9.1 PERFORMANCE METRICS:

S. No	Parameter	Screenshot/Values
1.	Dashboard design	No. of Visualizations/ Graphs-5
2.	Data Responsiveness	Yes, the website is responsive completely, that is by resizing the browser window size as per the tests cenario.
3.	Amount Data to Rendered(DB2Metrics)	Totally there are 24.1k records in the dataset.
4.	Utilization of Data Filters	Data Filter used in Estimate the DHL LOGISTICS in the base of data analytics.
5.	Effective User Story	<p>No. of Scene Added –8</p> <ul style="list-style-type: none">• To create the Registration page of the Website• To create the Login page of the Website• To create the Dashboard page of the Website• To work on the given dataset, Understand the Dataset• Load the dataset to Cloud platform then Build the required Visualizations• Using the data production in Indian dataset, create various graphs and charts to highlight the in sights and visualizations.• Build a Visualizations to show case Average data Production by state and city.• Show case the Yearly usage of Area in data Production in city wise.

CHAPTER-10

ADVANTAGES & DISADVANTAGES

ADVANTAGES:

- **Time-saving Efficiency:** With dashboards, we are no longer wasting valuable time generating reports from multiple systems. Instead, data is drawn from a source and displayed as an easy to interpret visual overview
- **Better Forecasting:** With greater insight into the data, future demand can be more accurately predicted using historic information. Businesses can be more effectively planned for demand fluctuations, setting measurable goals and deliverables for greater success
- **Better Decision Making:** Whether you're providing reporting and analysis for the entire organization or functional areas of the business, a dashboard allows companies to analyze key data quickly and meticulously. Visualized interactivity serves to deliver overwhelming amounts of data in a way that is easy to understand. With the ability to easily identify what the data really means; better decisions can be made relevant to the business.

DISADVANTAGES:

- Flashy or cluttered design, with users attempting to incorporate too much information without understanding constraints or considering their specific needs from the range of different measurables detailed data analysis provides.
- The technology used in the development of dashboards differs from other software solutions already employed in organizations and can be initially difficult to understand.
- The business has no predetermined rules and hierarchies for how dashboard metrics are used. This means each employee can use the metrics in different ways, resulting in a diverse set of data being reported.

CHAPTER-11

CONCLUSION

From this project, we have successfully:

The services marketing mix has an incontrovertible importance for creating a mental picture of intangible products, in other words services. In a similar vein, when logistics sector's disadvantageous position in Porter's Face Forces of Competition Model is considered, it is ought to emphasize the importance of positioning decisions and marketing mix efforts for logistics service providers. Due to the reputation and global operations of Deutsche Post DHL, the developed framework in this paper will act as a guideline for the other alike companies. For further research, customer side can also be considered and customer satisfaction can be measured via surveys.

- Created multiple analysis charts/graphs.
- Used the analyzed chart creation of dashboard.
- Saved and visualized the final dashboard in the IBM Cognos Analytics.

CHAPTER-12

FUTURE SCOPE

Never has the importance of supply chains been more widely acknowledged by societies in connecting people and improving lives. On an unprecedented level, we are seeing businesses transform logistics from a quiet, back-end operation into a strategic asset and value driver. At the same time, more technology visionaries than ever before are beginning to understand the vast, ripening opportunities in the logistics industry to develop and apply their innovative solutions around the world.

At DHL, we believe that success in this new era requires innovation: inspiration, open exchange, and deep collaboration. By sharing *The Logistics Trend Radar 6.0*, we invite you – our customers, colleagues, and partners – to connect with us and jointly shape the **Era of Logistics**.

CHAPTER – 13

APPENDIX

13.1 Git Hub Link:

<https://github.com/anuhyaCSE>

13.2 Project Demo Link:

[https://www.awesomescreenshot.com/video/12624942?key=bed65efd
f6f0bf8614134201a9d24161](https://www.awesomescreenshot.com/video/12624942?key=bed65efd
f6f0bf8614134201a9d24161)