PROJECT MILESTONE 2 REPORT

PROJECT NAME	ChatBot Flight Booking System	**DATE OF STATUS ENTRY**	November 5, 2023
PROJECT CODE	BDM3035 T3F23 CFBS	**PERIOD COVERED**	October 30, 2023 to November 05, 2023
PROJECT MANAGER	Auradee Castro	**DATE OF COMPLETION**	December 15, 2023
MEMBERS	Auradee Castro (c0866821), Bhumika Babu (c0867081), Miraj Sinya (c0863371), Olivia Deguit (c0878491), Roger Mais (c0863147)		

PROJECT STATUS

PROJECT STATUS	ON TRACK	**SUMMARY**	Configured AWS streaming processing, DynamoDB, and S3 bucket. Began developing flight booking and real-time tracking using Landbot. Started exploratory data analysis for ML models with preliminary text and image preprocessing for sentiment analysis and passport reading.
TASKS	Completed the configuration for AWS streaming processing, DynamoDB and S3 bucket		
	Started the development of flight booking and real-time flight tracking functionalities utilizing the Landbot platform, recognized for its intuitive interface and capabilities in constructing conversational workflows		
	Started the exploratory data analysis phase for ML models by implementing preliminary text and image preprocessing for sentiment analysis and passport reading, respectively		

PROJECT COMPONENTS

COMPONENT	STATUS	OWNER / TEAM	NOTES
BUDGET	UNDER	MetaMorph Team	Using a simulated FlightAPI reduces the expenses associated with chatbot development
RESOURCES	ON TRACK	MetaMorph Team	Tools installation and configuration completed - Python and Jupyter Notebook - Power BI Desktop - AWS account and services - Landbot - Github Repository - Microsoft Teams
TIMELINE	ON TRACK	MetaMorph Team	Project is progressing as planned without major blockers
SCOPE	ON TRACK	MetaMorph Team	No major changes to original project design

WORK ACCOMPLISHED

TASK NUMBER	DESCRIPTION	OWNER / TEAM	NOTES
CFBS-02	AWS streaming processing	Roger Mais	Completed setup for AWS streaming processing by integrating AWS Kinesis for live data streaming, enabling real-time flight tracking, and AWS DynamoDB for NoSQL storage. Additionally, established an AWS S3 bucket for storing data, specifically designed for passport storage.

			AWS Kinesis: https://github.com/abccastro/ChatBot-Online-Flight-Booking/blob/main/docs/app/Infrastructure%20-%20AWS%20Streaming%20Processing.pdf AWS S3 bucket: https://drive.google.com/file/d/1ZOwmPgg4oRaVx7dbUOtCJ_T8TWsPhs5x/view
CFBS-06	ChatBot UI Development	Roger Mais	Landbot is a platform utilized to build chatbots, providing an intuitive drag-and-drop interface for creating conversational flows in online flight booking. This involves incorporating elements such as messages, inquiries, buttons, and various input types. See screenshot on https://drive.google.com/file/d/1DkEcaR2x72uj8FZVSyG3yV5r5GkU7ujP/view?usp=sharing
CFBS-07	Flight booking	Roger Mais	Successfully implemented the functionality for generating user flight reservations/booking. See recording on https://drive.google.com/file/d/13glqiY5bQ8ucLKYv1sEKRs2fRX0NnIxD/view?usp=sharing
CFBS-08	Real-time flight tracking	Roger Mais	Designed a dedicated page with a functional user interface for real-time flight tracking, where a plane icon demonstrates movement between locations using placeholder data
CFBS-12	Exploratory data analysis for sentiment analysis	Bhumika Babu, Olivia Deguit	Employed various sets of data cleaning and data pre-processing on the customer reviews *(which may be further refined during the model development and evaluation phase):* - Check for missing values and duplicate records - Removing non-grammatical text like URLs, email address - Removal of emojis - Handling contractions and slang words Link of the codes: https://github.com/abccastro/ChatBot-Online-Flight-Booking/blob/main/Flight%20Sentiment%20Analysis.ipynb
CFBS-12	Exploratory data analysis for passport reader	Auradee Castro, Miraj Sinja	Employed various sets of image preprocessing techniques on US passports *(which may be further refined during the model development and evaluation phase):* - Applied grayscale and noise reduction to the images - Implemented thresholding on the images Link of the codes: https://github.com/abccastro/ChatBot-Online-Flight-Booking/blob/main/Passport%20Reader.ipynb

RISKS AND ROADBLOCKS

TASK NUMBER	DESCRIPTION	OWNER / TEAM	FIX / RESOLUTION
CFBS-07, CFBS-08	Cost involved on the development of flight booking and real-time flight tracking using FlightAPI (an external API) for getting flight details	MetaMorph Team	Implemented a simulated FlightAPI to obtain flight details, mitigating the cost involved on trial-and-error scenarios during chatbot development. This approach conserves resources, considering the restricted number of data requests allowed by external APIs
CFBS-08	Testing with live data from the API can be challenging during the development phase due to its dynamic nature. There may be instances where the dataset for specific targeted locations is unavailable.	MetaMorph Team	Implemented a simulated FlightAPI to obtain flight details, providing the developer and tester with the ability to manage/control the dataset for use in both development and testing stages
CFBS-12	Handling diverse passport formats and languages presents a challenge, especially within the constraints of a tight development schedule	MetaMorph Team	The scope of image processing will be restricted to US passports due to specific requirements and constraints related to other passport formats and languages.

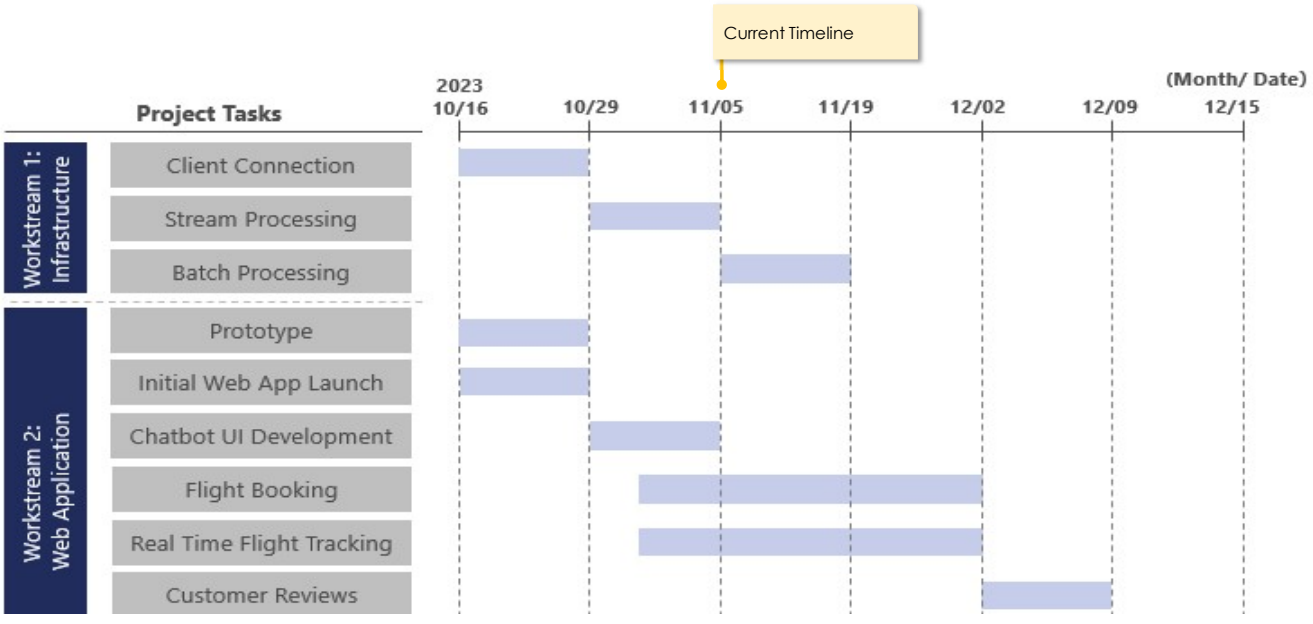
HIGHLIGHTS AND KEY TAKEAWAYS

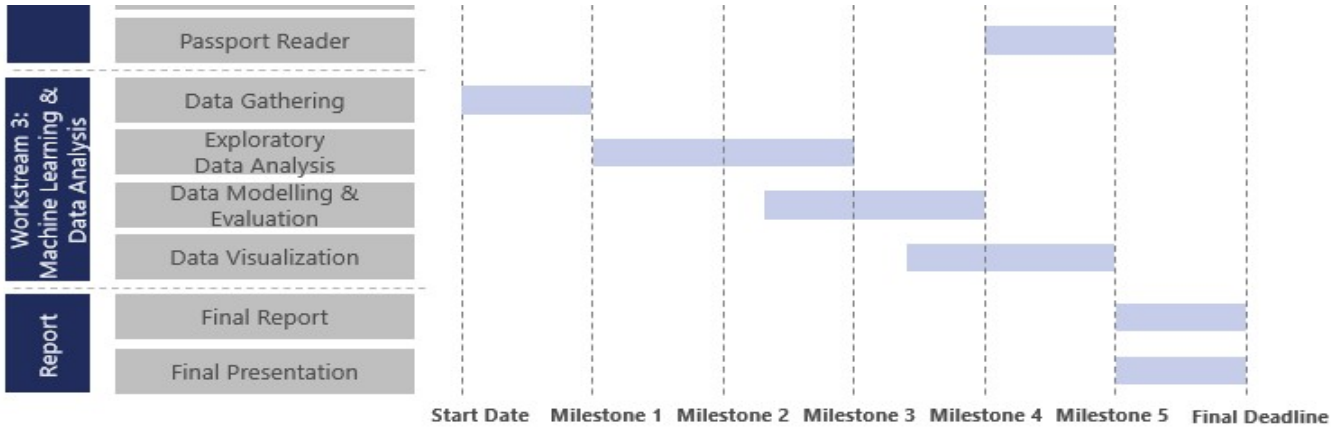
Successfully completed all deliverables for milestone 2 as communicated to stakeholders
Able to identify and raise potential risks on using FlightAPI and perform preventive measures by resorting to simulated API, which will lower the cost involved when developing the functionality on flight booking and real-time flight tracking of chatbot application
Utilization of the Landbot platform enhances the user-friendliness of the chatbot application, and the tools provided by the platform make the development much faster and less prone to errors
Initiated exploratory data analysis phase for ML models by applying initial text and image preprocessing for sentiment analysis and passport reader. This progress was made smoothly without impediments.

UPCOMING WORK

TASK NUMBER	STATUS	DETAILS
CFBS-02	ON TRACK	AWS batch processing including the establishment of connection to AWS Glue and Redshift
CFBS-07	ON TRACK	Continuation of the development of flight booking feature by focusing on subtasks on searching for booked flights and processing cancellations
CFBS-08	ON TRACK	Continuation of the development of the real-time flight tracking feature by integrating the real-time flight tracking UI into the chatbot. Start the development process for simulating the FlightAPI's Flight Tracker API
CFBS-12	ON TRACK	Continuation of the development of explanatory data analysis for sentiment analysis: Incorporating additional important data preprocessing steps for the customer reviews
CFBS-12	ON TRACK	Continuation of the development of exploratory data analysis for passport reader: Incorporating additional important image pre-processing steps for US passport images
CFBS-13	ON TRACK	Data modelling and evaluation for sentiment analysis and passport reader

PROJECT MILESTONE AND TIMELINE




Passport Reader
Workstream 3: Machine Learning & Data Analysis
Data Gathering
Exploratory Data Analysis
Data Modelling & Evaluation
Data Visualization
Report
Final Report
Final Presentation
Start Date
Milestone 1
Milestone 2
Milestone 3
Milestone 4
Milestone 5
Final Deadline