Sri Lanka Institute of Information Technology

Research Project
IT4010

B.Sc. (Hons) in Information
Technology

Status Document II

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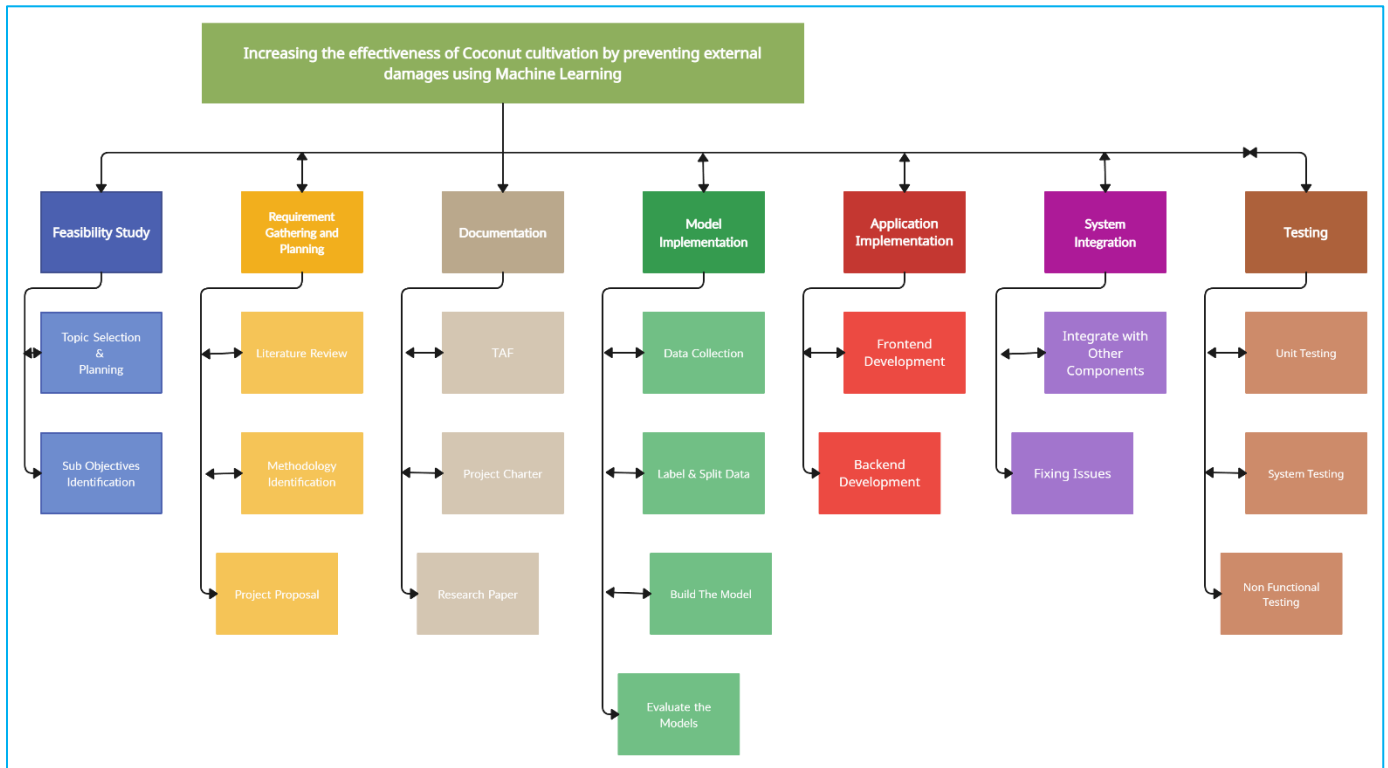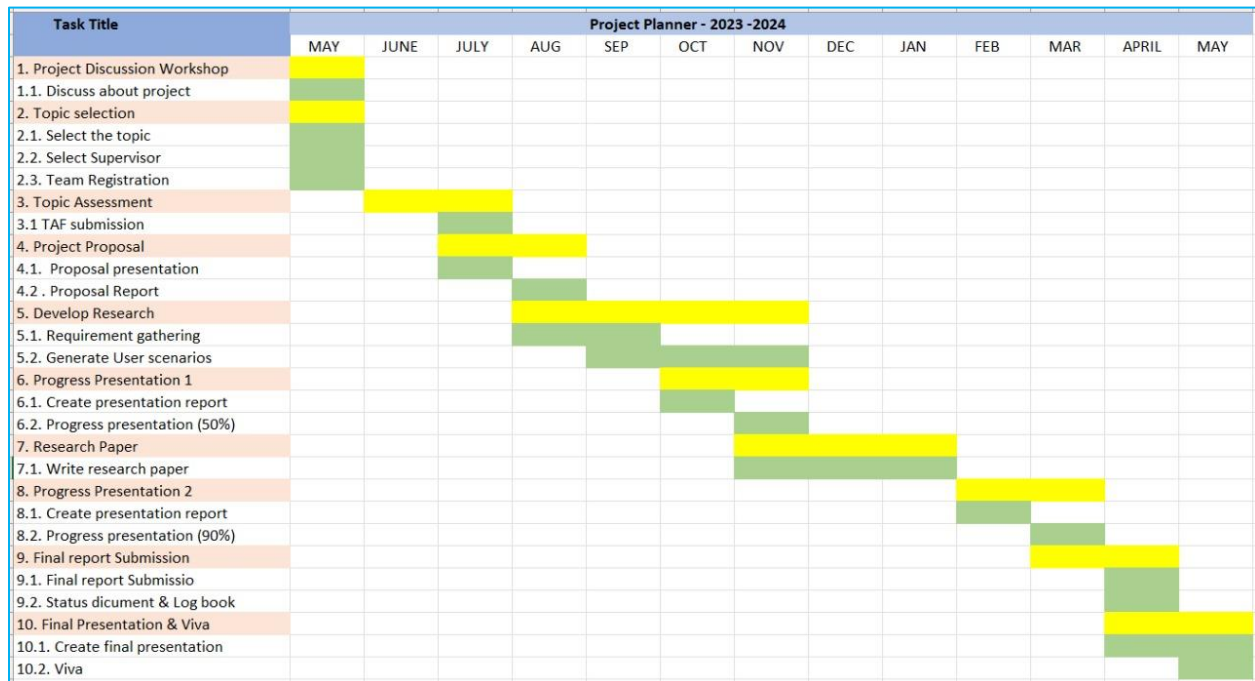Specialization: Data Science

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1. WORK BREAKDOWN STRUCTURE

The work breakdown structure entails breaking down a project or task into smaller, more manageable parts in a hierarchical manner. The work breakdown structure plan for the research project's timeline is presented below.

2. GANTT CHART

A Gantt chart is a popular project management tool used to visualize the schedule and progress of tasks or activities over time. The Gantt chart which we designed to plan our progress is as shown in the following diagram.

Task Title	Project Planner - 2023 -2024												
	MAY	JUNE	JULY	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APRIL	MAY
1. Project Discussion Workshop	▓												
1.1. Discuss about project	▒												
2. Topic selection	▓												
2.1. Select the topic	▒												
2.2. Select Supervisor	▒												
2.3. Team Registration	▒												
3. Topic Assessment		▓	▓										
3.1 TAF submission			▒										
4. Project Proposal			▓	▓									
4.1. Proposal presentation			▒										
4.2 . Proposal Report				▒									
5. Develop Research				▓	▓	▓	▓						
5.1. Requirement gathering				▒	▒								
5.2. Generate User scenarios					▒	▒							
6. Progress Presentation 1						▓	▓						
6.1. Create presentation report						▒							
6.2. Progress presentation (50%)													
7. Research Paper							▓	▓	▓	▓			
7.1. Write research paper							▒						
8. Progress Presentation 2										▓	▓		
8.1. Create presentation report										▒			
8.2. Progress presentation (90%)											▒		
9. Final report Submission											▓	▓	
9.1. Final report Submissio													
9.2. Status dicument & Log book												▒	
10. Final Presentation & Viva												▓	▓
10.1. Create final presentation												▒	
10.2. Viva													▒

3. PROGRESS AND PLANNER

Tracking the Completed Tasks

Task tracking is an efficient way to manage a project. For tracking purpose each component maintains a personal task tracking excel sheet.

Research Tracker

Main Tasks	Sub Tasks	Status	Completed Date
Data Collection & Summarizing	Merge all the collected data by other two components.	☑ Complete	
	Filtering all the triggered data identified as a monkey.	☑ Complete	31/08/2023
	Allocate the data according to mic locations.	☑ Complete	
Prediction Model Implementation	Preprocess the data.	☑ Complete	
	Figure out features related to prediction.	☑ Complete	
	Choose the final model and implement the model.	☑ Complete	16/10/2023
	Test and evaluate the model.	☑ Complete	
	Find the way to enhance the model accuracy.	☑ Complete	
Mobile Application Design	UI Design	☑ Complete	
	Logo Design	☑ Complete	8/11/2023
Mobile Application Development	Develop the frontend.	☑ Complete	
	Develop the backend.	☑ Complete	
	Connect the database.	☑ Complete	
	Connect frontend and backend.	☑ Complete	10/3/2024
	Integrate component UIs.	🏃 In progress	
Identified Monkeys Behavior Patterns	Summarize the virtualized data.	☑ Complete	
	Find the patterns according to monkeys visitations.	☑ Complete	28/02/2024
Monkeys Visitation Patterns Visualization	Point out the identifed mics locations.	☑ Complete	
	Find the accurated mic range.	☑ Complete	
	Virtualize all the triggering data realetd to the mic locations.	☑ Complete	
	Virtualize data regarding farmers opinion.	☑ Complete	5/3/2024
Real World Testing	Test the component and get the results	⚠ Not started	

4. MEETINGS

MEETINGS WITH THE SUPERVISOR (MR. Vishan Jayasinghearachchi)

As a team, it is necessary to obtain proper guidance from the supervisor to complete the project successfully. Supervisor guidance is crucial for a research project as it provides valuable expertise, support, and mentorship throughout the research process. The following are the details of the meetings that were conducted with the supervisor.

Date	Reason	Mode
11/07/2023	Discuss about the topic selection	Physical
19/07/2023	Finalize the topic	Physical
22/07/2023	Discuss about Proposal presentation	Teams
11/08/2023	Discuss about proposal issues	Hybrid
18/08/2023	Finalize the Components	Hybrid
25/08/2023	Discuss about TAF	Hybrid
01/09/2023	Initial awareness for progress presentation 1	Teams
06/10/2023	Prep for Progress Presentation	Physical
31/10/2023	Final Prep for Progress Presentation	Physical
10/11/2023	Discuss about the PP1 Comments	Hybrid
01/12/2023	Discuss component progress & related issues	Hybrid
15/12/2023	Discuss component progress & related issues	Hybrid
22/12/2023	Discuss progress of the research paper & components	Hybrid
19/01/2024	Discuss progress of the research paper & components	Teams
…………………	……………………………………………………………….	……………..
…………………	……………………………………………………………….	……………..
02/02/2024	Discuss progress of the research paper & components	Teams
09/02/2024	Discuss progress of the components	Hybrid
16/02/2024	Discuss component progress & related issues	Teams
20/02/2024	Awareness for publication of research papers	Teams
29/02/2024	Discuss component progress & related issues	Physical
07/03/2024	Awareness for publication of research papers.	Teams
14/03/2024	Finalize the Components Models Implementations.	Physical
16/03/2024	Final Prep for Progress Presentation 2.	Physical

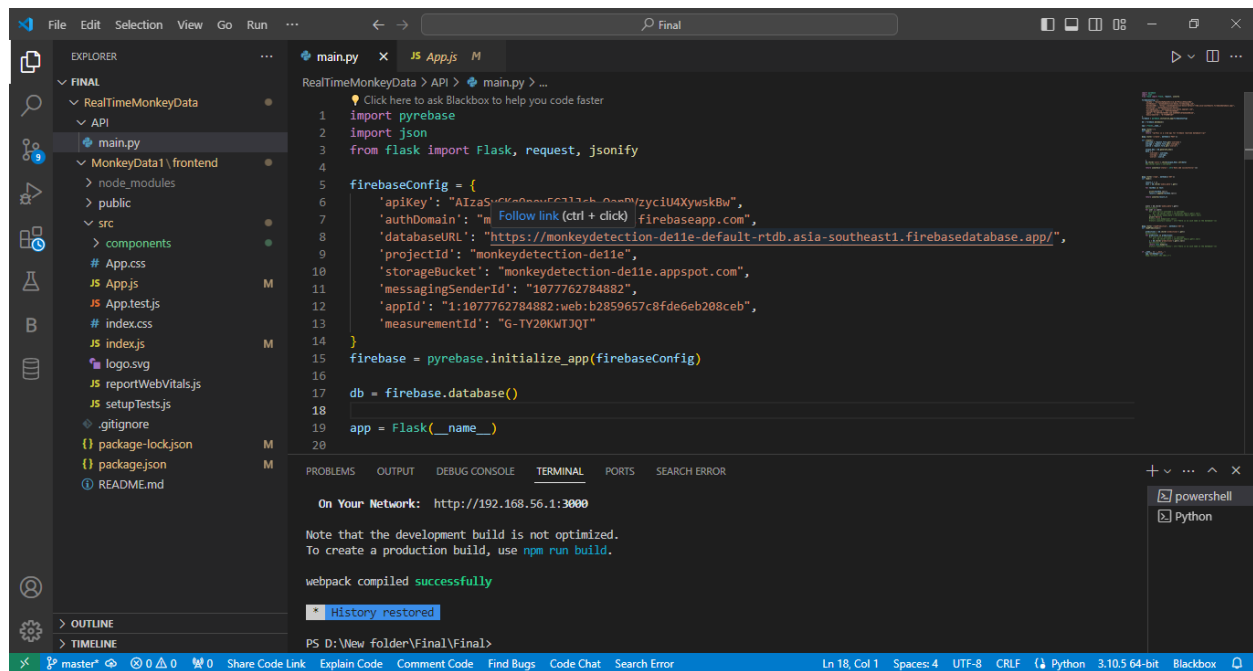*HYBRID – Some members physically & others online

Date	Reason	Mode
11/07/2023	Discuss about the topic selection	Physical
19/07/2023	Finalize the topic	Physical
06/10/2023	Discuss component progress & related issues	Teams
27/10/2023	Discuss about Progress presentation	Teams

5. Challenges faced and solutions.

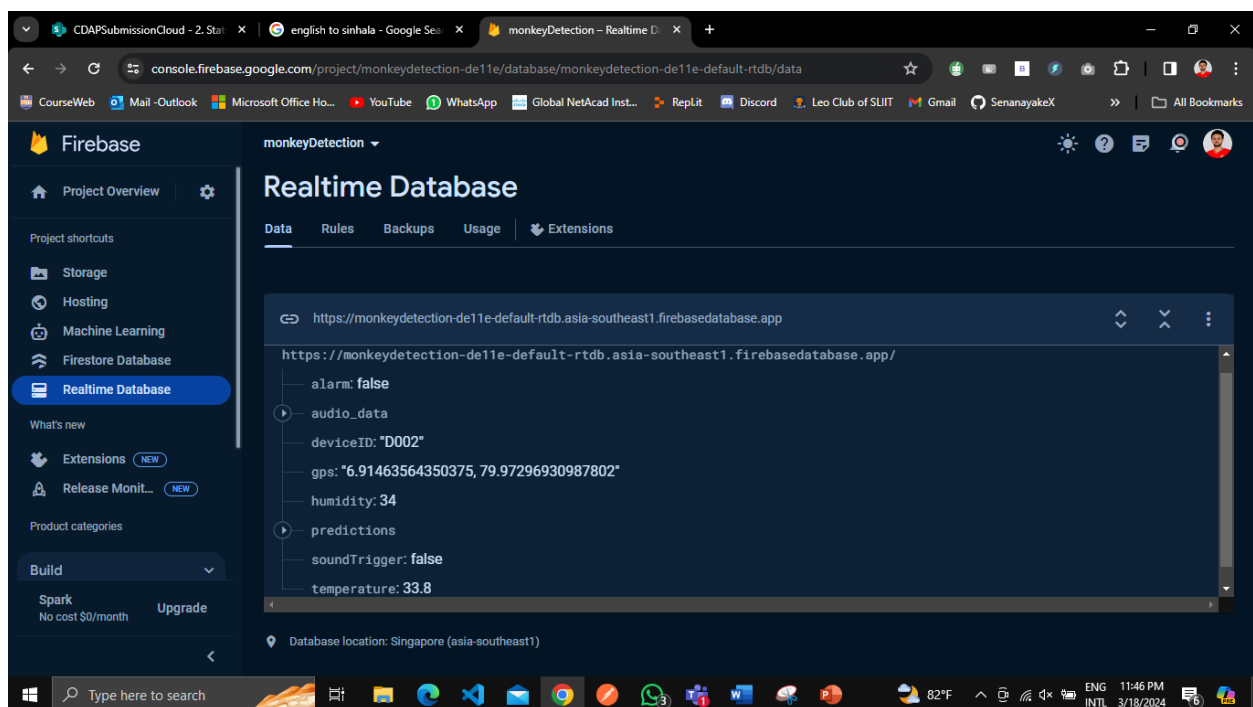| Challenges	Solutions
1. Low accuracy of the model.	• The dataset was expanded from 150 to 900 records. • Real-time data was collected.
2. Not enough features of dataset to train the model.	• I followed up with more research papers on this issue and found some additional data features. • By feature extraction, the most effective data features were selected.
3. Not fluent enough about developing mobile app.	• Refreshed my knowledge by studying many mobile app development tutorials.
4. It took so long to implement the final model.	• Studied the model and gone through with tutorials.

6. Mobile Application Implementation

Frontend Development – React Native
Backend Development – Python with Flask

7. Database Implementation

Firebase Database