



OVERSEE – An AI based Driver State Monitoring System
PROJECT PLAN DOCUMENT
GOLF – SECTION A

GROUP MEMBERS:

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1 Introduction

1.1 Document Purpose:

The primary uses of the project plan are to document planning assumptions and decisions, facilitate communication among project stakeholders, and document approved scope, cost, and schedule baselines. A project plan may be summarized or detailed. The purpose of projects and project management is to achieve strategic goals, systematically and in a controlled manner. ... They define and describe the goals and benefits that are targeted through projects, as well as how project success will be measured.

1.2 Associated Documents

The content of this document is supported by project planning documents, Software Requirements Specification (SRS), Project proposal, Gantt chart, resource overview, milestone report from Project Scheduling etc.

2 Project Scope

2.1 Objectives:

- To detect drowsiness and inattention of the driver while driving the car.
- Alert the driver as well as the passengers if the driver is drowsy or inattentive.
- To make a dedicated device for the drivers to prevent road accidents.
- Owners of bus and truck drivers can also get it for their vehicle's safety.

2.2 Success Criteria:

- The 1st success would be to train and test successfully the two-machine learning model for drowsiness and inattention detection
- After that, collecting data from GPS sensor to detect the current location and suggest him the nearby parking spots.
- Collecting data from accelerometer sensor and pi camera and calculate the current state of the driver.
- Present the UI in a very friendly way so that the driver wouldn't get distracted while driving.
- The alarm should be buzzed whenever it detects any drowsiness or inattention.

3 Deliverables:

3.1 To client:

The clients here are the drivers who drive their own car or any bus or track. It is required to find out objects that should be delivered to the client and list them and make documentation. Firstly, we need to collect information from the client to make user requirements and deliver them for feedback. Then, temporary model is created for test analysis. In this we need to list which sensors and hardwires are suitable for the project. And also, how the UI and other features will be so that the drivers would be at highest ease to use this device.

3.2 From client:

To make project properly suitable for client, the developing team needs feedback from the client side. For their better understanding, documentation is essential. Documentation can contain nontechnical terms or technical terms with explanation. Documentation should be delivered frequently to the client for review. Test analysis need to be based on real time activities. After using the updated project and data can be collected from client and find out output accuracy. User can recommend certain changes. Also, the developer team need to give them support for further change in system.

4 Project Approach

The approach we have taken here is agile method. Because The Agile methodology is a way to manage a project by breaking it up into several phases. It involves constant collaboration with clients and continuous improvement at every stage. Once the work begins, teams cycle through a process of planning, executing, and evaluating. it allows teams to adapt to change quickly. The Agile process consists of short, time-boxed iterations known as sprints. Each sprint results in a working product.

4.1 Project Team Organization

Task Name	Resource Names
IDP-1	
Initiation	
Grouping	

Project Proposal	Ifath Ara,Tasnia Iqbal
Project Approval	Tasneem Mubasshira,Tasnia Iqbal
Idea	
Information Gathering	Ifath Ara
Determine Project ideas	Tasneem Mubasshira,Tasnia Iqbal,Ifath Ara
Initial Approval	Fariha Fardina Amin,Ifath Ara
Project Scheduling	Tasneem Mubasshira,Tasnia Iqbal
Study Details of the Idea	Fariha Fardina Amin,Ifath Ara
Final Idea Approval	Tasneem Mubasshira,Tasnia Iqbal
Final idea Scheduling	Fariha Fardina Amin,Ifath Ara
Plan	
Micro plan	Fariha Fardina Amin,Ifath Ara
Micro plan	
Details plan& Allocation	Tasneem Mubasshira,Tasnia Iqbal,Ifath Ara
Details Project plan Presentation	Fariha Fardina Amin,Ifath Ara
System Requirements Specification	
SRS on requirements specification	
Software and hardware requirements specification	Fariha Fardina Amin,Ifath Ara
Requirement discovery	Tasneem Mubasshira,Tasnia Iqbal
Develop Budget	Fariha Fardina Amin,Ifath Ara,Tasneem Mubasshira,Tasnia Iqbal
Feedback on software specifications	Fariha Fardina Amin,Ifath Ara
Feedback on hardware specifications	Tasneem Mubasshira,Tasnia Iqbal
Develop Submission timeline	Fariha Fardina Amin,Ifath Ara
Concept Approval	Tasneem Mubasshira,Tasnia Iqbal
Analysis complete	Fariha Fardina Amin,Ifath Ara
SRS on system modeling	
Understanding work flow	Fariha Fardina Amin,Ifath Ara,Tasneem Mubasshira
Understanding actors and environment of the system	Ifath Ara,Tasneem Mubasshira,Tasnia Iqbal
Construct sytem models	Fariha Fardina Amin,Ifath Ara,Tasneem Mubasshira
Model approval	Ifath Ara,Tasneem Mubasshira,Tasnia Iqbal
SRS on system Architecture and evaluation	
Understanding the arcitecture of system	Ifath Ara,Tasneem Mubasshira,Tasnia Iqbal
Plan on system evalution	Tasneem Mubasshira,Tasnia Iqbal
Architecture design	Ifath Ara
Architecure approval	Fariha Fardina Amin,Ifath Ara,Tasneem Mubasshira,Tasnia Iqbal
UI design	

Construction of UI design for software of the system	Fariha Fardina Amin,Ifath Ara,Tasneem Mubasshira
Ui design approval	Fariha Fardina Amin,Tasneem Mubasshira,Tasnia Iqbal
Final IDP-1 documentation	
Final documentation	Fariha Fardina Amin,Ifath Ara,Tasneem Mubasshira,Tasnia Iqbal
Final documentation submission	Fariha Fardina Amin,Ifath Ara,Tasneem Mubasshira,Tasnia Iqbal
IDP-2	
Execution	
Design	
Primary Software Specification	Fariha Fardina Amin,Ifath Ara,Tasneem Mubasshira,Tasnia Iqbal
Primary Hardware Specification	Fariha Fardina Amin,Ifath Ara
Web app and interface design	Tasneem Mubasshira,Tasnia Iqbal
Final Design Documentation	Fariha Fardina Amin,Ifath Ara,Tasneem Mubasshira,Tasnia Iqbal
Development	
Drowsiness and emotion detection system	Fariha Fardina Amin, PiCam [1],Raspberry Pi[1],Raspberry Pi TFT Touch LCD Module (7 inch) [1],Speaker [1],Ifath Ara
Inattention detection system	PiCam [1],Raspberry Pi[1],Raspberry Pi TFT Touch LCD Module (7 inch) [1],Speaker [1],Tasneem Mubasshira,Tasnia Iqbal
Speed detection using gps	PiCam [1],Raspberry Pi TFT Touch LCD Module (7 inch) [1],Speaker [1],Fariha Fardina Amin,Ifath Ara,Raspberry Pi[1],Tasneem Mubasshira,Tasnia Iqbal
Google map API interfacing	Fariha Fardina Amin, PiCam [1],Ifath Ara,Raspberry Pi[1],Raspberry Pi TFT Touch LCD Module (7 inch) [1],Speaker [1],Tasneem Mubasshira,Tasnia Iqbal
Buy Components	Ifath Ara
Integration of all systems	PiCam [1],Raspberry Pi[1],Raspberry Pi TFT Touch LCD Module (7 inch) [1],Speaker [1]
Validation	
Training and Testing	Fariha Fardina Amin,Ifath Ara,Tasneem Mubasshira,Tasnia Iqbal, PiCam [1],Raspberry Pi[1],Raspberry Pi TFT Touch LCD Module (7 inch) [1],Speaker [1]
Final documentation	Fariha Fardina Amin,Ifath Ara,Tasneem Mubasshira,Tasnia Iqbal
Delivery	Fariha Fardina Amin,Ifath Ara
Guiding users	Tasneem Mubasshira,Tasnia Iqbal

5 Work Plan:

5.1 Work Breakdown Structure:

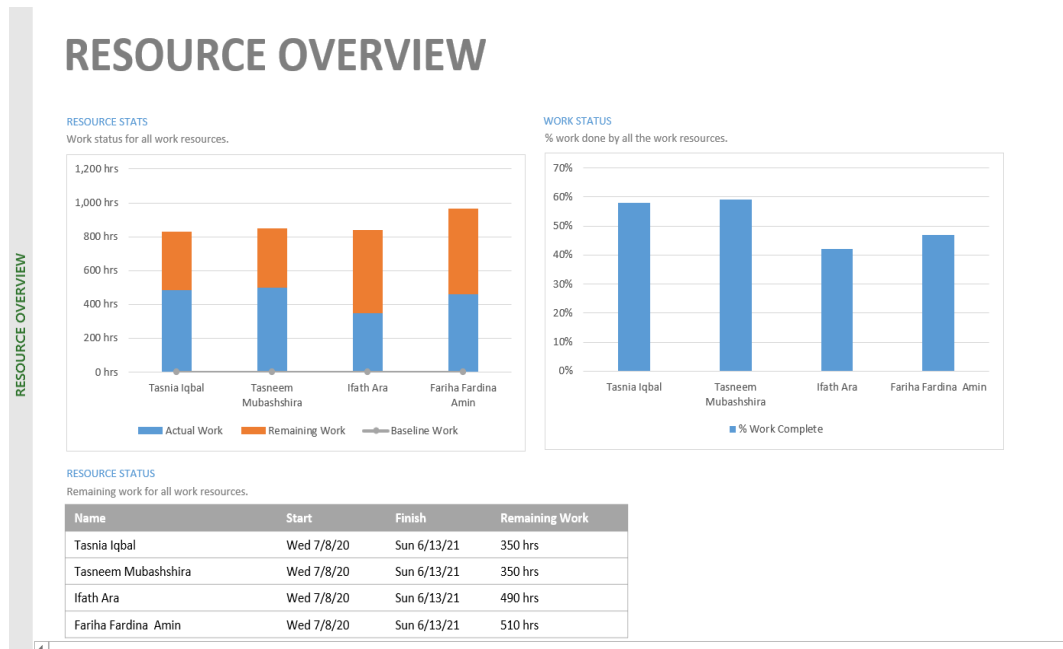
The structured in which we broke down group and subgroups of work that we have done for Gantt chart in Microsoft Project is given below:

	Task Name
Initiation	
	Grouping
	Project Proposal
Idea	Project Approval
	Information Gathering
	Determine Project ideas
	Initial Approval
	Project Scheduling
	Study Details of the Idea
	Final Idea Approval
	Final idea Scheduling
Plan	
	Micro plan
	Micro plan
	Micro plan
	Report Submission
	Details plan& Allocation
	Details Project plan Presentation
Initial SRS Deposition	
	Primary Software Specifications
	Primary Hardware Specifications

	Develop Budget
	Feedback on software specifications
	Feedback on hardware specifications
	Develop Submission timeline
	Concept Approval
	Analysis complete and start to buy components
Execution	
Design	
	Primary Software and Hardware Specification
	Create Functional Specification
	Present frontend development update based on Functional Specification and work with git hub
	Obtain approval to Proceed with front-end
	Design Complete
Development	
	Create inattention detection model and set raspberry pi OS and display
	Finalizing Drowsiness an emotion detection model and set GPS module,soundbox and accelometer
Validation	
	Testing an developing accuracy
	Documentation
	Delivery
	Training
Closing	
	Closing Presentation

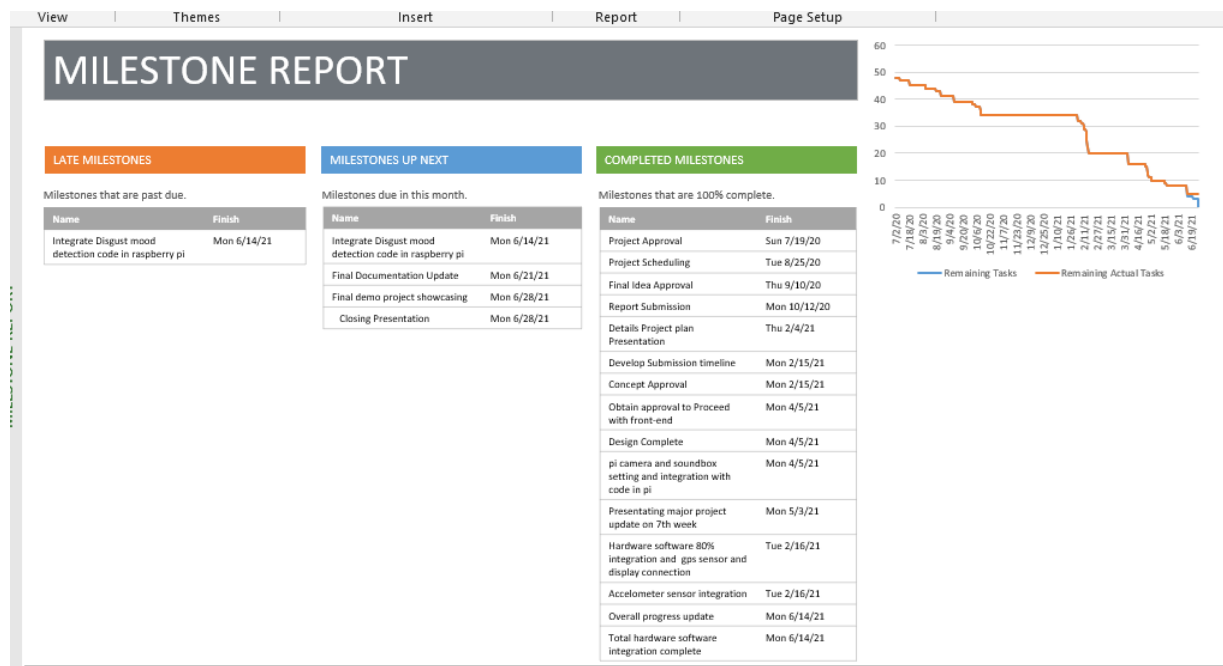
5.2 Resources:

The resource sheet from Microsoft project is shown below:



6 Milestones

The milestone report from Microsoft project is shown below:



7 Risks, Constraints and Assumptions:

7.1 Risks:

Risk is any unexpected event that can affect the project — for better or for worse. Risk can affect anything: people, processes, technology, and resources. An important distinction to remember is that risks are not the same as issues. We have the following risks in our project.

Risk of Project					
Risk number	Description	Mitigation Plan (to avoid)	Contingency Plan	Impact	Likelihood of occurrence
1.	Error in fetching data	Checking of equipment's	Restart the sensors	Wrong result	medium
2.	Failure in integrating all parts	Check every equipment before connection	Set up individual parts	The system will collapse	medium
3	Sensor burn	Carefully handle every sensor	Replace the sensors with alternatives	The data would be inaccurate	High
4	Raspberry pi burn	Minimize the amount of data	Check the storage and run the system accordingly	The device will breakdown	Low
5	Failure in device placement	Placement should be accurate to detect face	Remove the whole set up and do it again	The result wont be accurate	medium

7.2 Constraints:

The project plan has some constraints. that are:

- Due to our device's feature, for the web-app we need internet connection.
- Google map apk is paid. So, we couldn't buy it to integrate with our software.

7.3 Assumptions:

- All the drivers are going to be careful when there is a chance of them being drowsy or inattentive.
- Drivers will know that the device is monitoring them all the time so they would be more cautious.
- Owners of bus or trucks will be able to take care of their vehicles by setting the device on the bus or truck.
- The Project Plan may change with time as new issues are revealed.

8 Financial Plan:

Here is the financial plan of our project. It can increase or decrease in future according to our execution.

Ser No	Items	Cost (Taka)
1	Raspberry Pi	6220 tk
	Pi Cam	550 tk
2	Speaker	700 tk
3	Field works (if applicable)	N/A
4	Conveyance / Data Collection (with breakdown)	500
5	Typing, Drafting, Binding and Paper etc.	1000 tk
6	Raspberry Pi TFT Touch LCD Module (7 inch)	5000tk
7	Accelerometer Sensor	850 tk
8	GPS Sensor	850 tk
Total Amount		15670 tk