Project Design Phase-II
Data Flow Diagram & User Stories

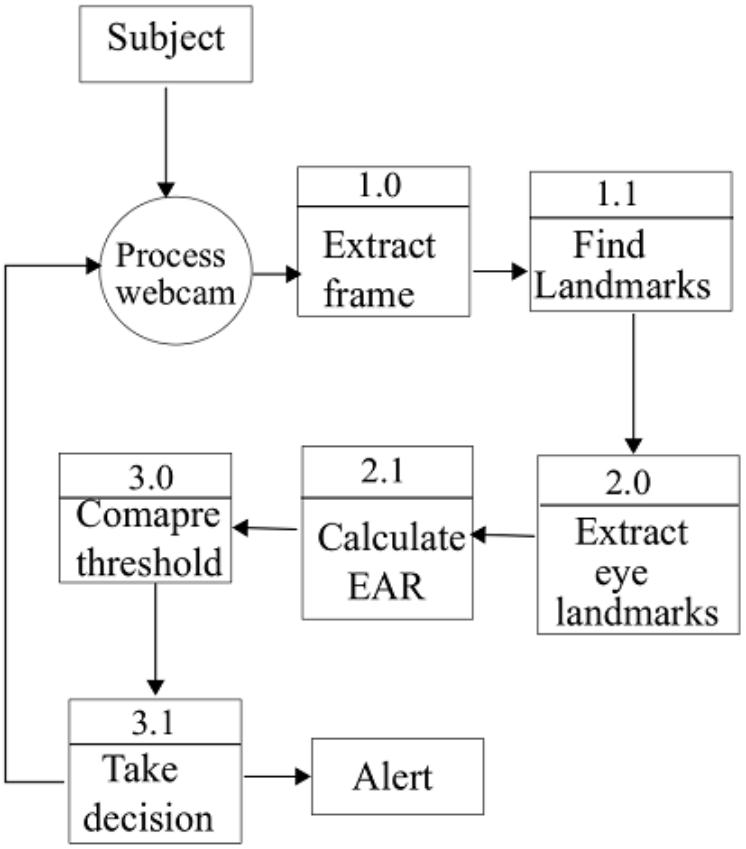
Date	23 May 2023
Team ID	NM2023TMID14164
Project Name	Drowsiness Detection and alerting system

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.

The methodology used to design the Drowsiness Detection System is an iterative research and analysis cycle. The research stage generates concepts and the analysis stage selects concepts, analyze requirements and constraint A convolutional neural network, named EM-CNN, is proposed to detect the states of the eyes and mouth from the ROI images. The percentage of eyelid closure over the pupil over time (PERCLOS) and mouth opening degree (POM) are two parameters used for fatigue detection

Image processing is used to recognize the face of the driver and then its extracts the image of the eyes of the driver for detection of drowsiness. The HAAR face detection algorithm takes as captured frames of image and then the detected face is considered as output. A drowsiness detection system is implemented which uses the concept of Ear Aspect Ratio and Mouth Aspect Ratio and it is validated using ResNet50 pre-trained model. Once the course attendee is detected drowsy, questions are generated using Natural Language Processing based on the video watched till then



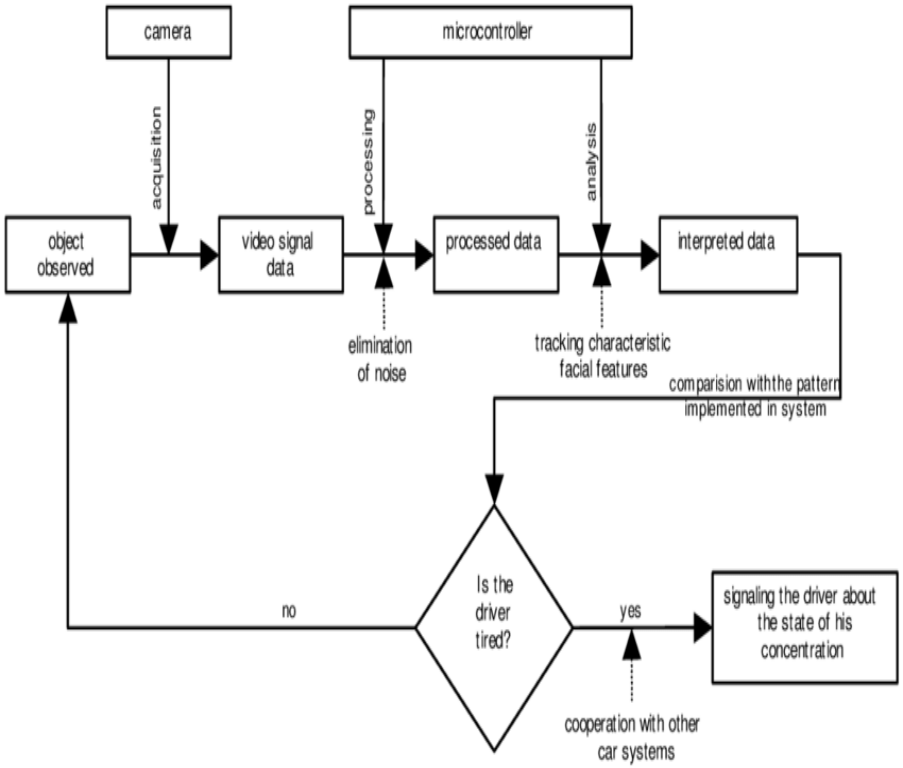
Example: DFD for drowsiness detection and alerting system

Example: [(Simplified)]

User Stories

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

User type	Functional requirement	User story number	User story /task	Acceptance criteria	priority	Team members
To detect eye ratio	Eye ratio	Usn-1	To detect drowsiness	I can access through web cam	high	harish
To detect mouth ratio	Mouth ratio	Usn -2	To detect fatigue	It can also access through web cam	high	harish
To access alarm system	Alarm system	Usn -3	To alert the driver	It can given bysensor	low	sudhan
To made decision	Decision system	Usn-4	To made decision	It can access through source code	low	arul sudhan
To made analysis	Analysis system	Usn-5	To made analysis that driver had a fatigue or drowsiness	It can be accessthrough source code and web cam	low	Dharma durai
	To made this through thedetection method		To made detection alerting system	This made through our project		


camera
microcontroller
acquisition
processing
analysis
object observed
video signal data
processed data
interpreted data
elimination of noise
tracking characteristic facial features
comparision withthe pattern implemented in system
Is the driver tired?
no
yes
signaling the driver about the state of his concentration
cooperation with other car systems