DROWSINESS DETECTION SYSTEM

Prepared by: Group-7

Akhil Dekarla	B20091
Dev Prajapat	B20093
Devansh Agrawal	B20094
Garvit Verma	B20098
Pranav Dharme	B20095
Shreesha	B20119
Ujjawal Khadanga	B20139

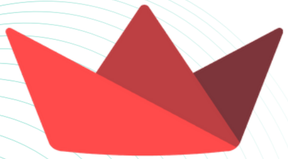
Introduction

Fatigue is a safety problem that has not yet been deeply tackled mainly because of its nature.
So, to tackle this problem, we have made an application which uses a camera sensor to take snaps of a driver driving a vehicle and gives him/her an alert signal in the real time whenever driver feels drowsiness

Features

- A **personal dashboard** for each driver
- Detect drowsiness based on **eye aspect ratio**.
- Whenever driver feels **drowsy**, system gives an alerting sound.
- A **warning page** where driver can see exact time & date when he felt drowsy.

TECHNOLOGIES USED



MySQL®

OpenCV

Backend + Integration

Python 3 is used for backend purpose as well as its libraries and frameworks for the integration and deployment with web.

STREAMLIT

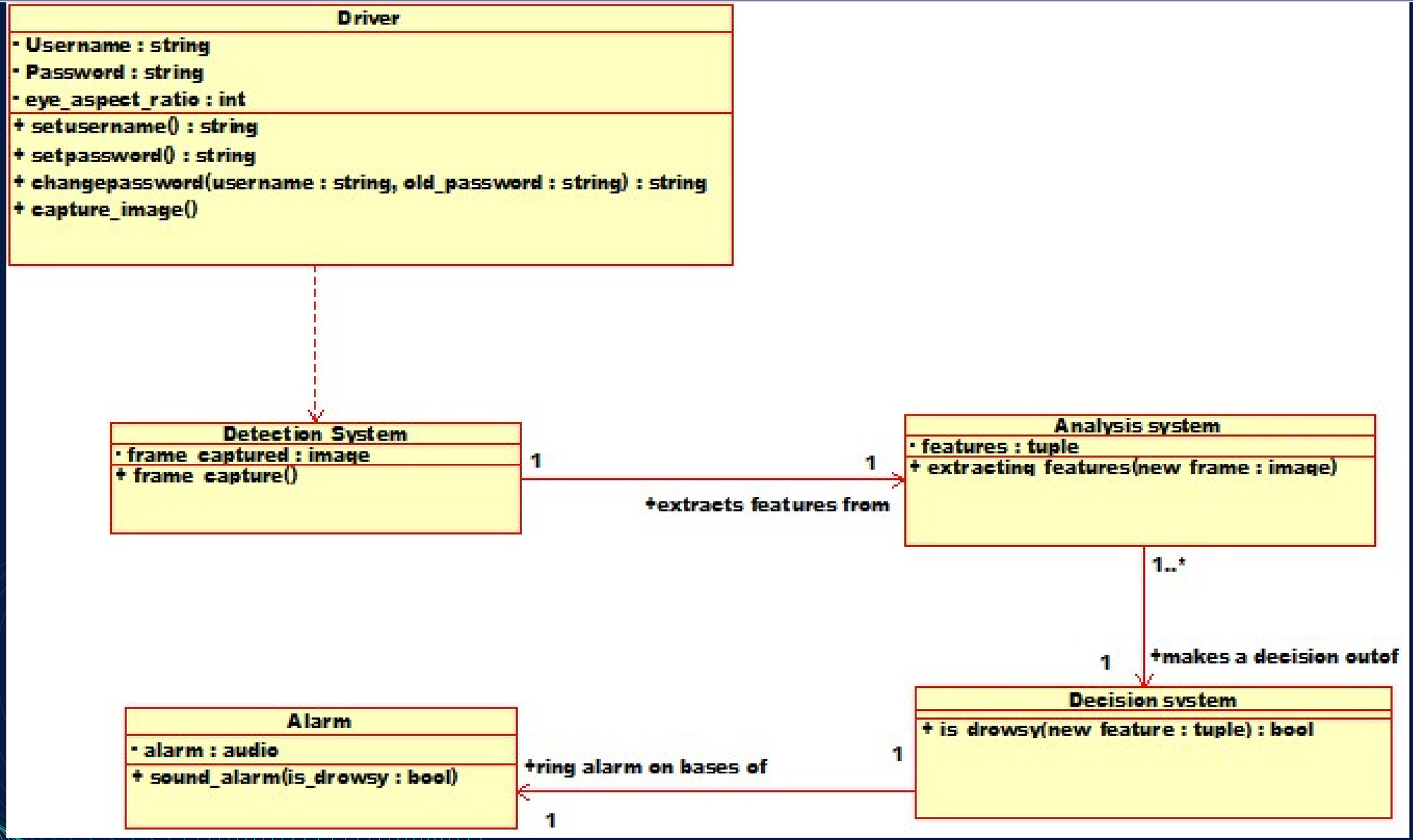
Streamlit is the library that allows us to build frontend for our machine learning and data science apps by writing all the code in Python.

MySQL

For storing users info (sign-up/login) as well as base eye aspect ratio, MySQL is used as database

OpenCV

OpenCV is a great tool for image processing and performing computer vision tasks.

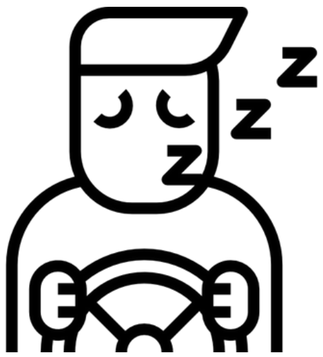

Driver
- Username : string
- Password : string
- eye_aspect_ratio : int
+ setusername() : string
+ setpassword() : string
+ changepassword(username : string, old_password : string) : string
+ capture_image()
Detection System
- frame_captured : image
+ frame_capture()
1
1
+extracts features from
Analysis system
- features : tuple
+ extracting_features(new_frame : image)
1..*
1
+makes a decision outof
Decision system
+ is_drowsy(new_feature : tuple) : bool
1
+ring alarm on bases of
1
Alarm
- alarm : audio
+ sound_alarm(is_drowsy : bool)

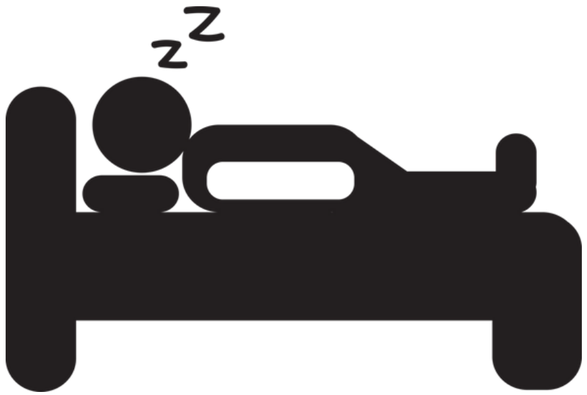
Future Scope

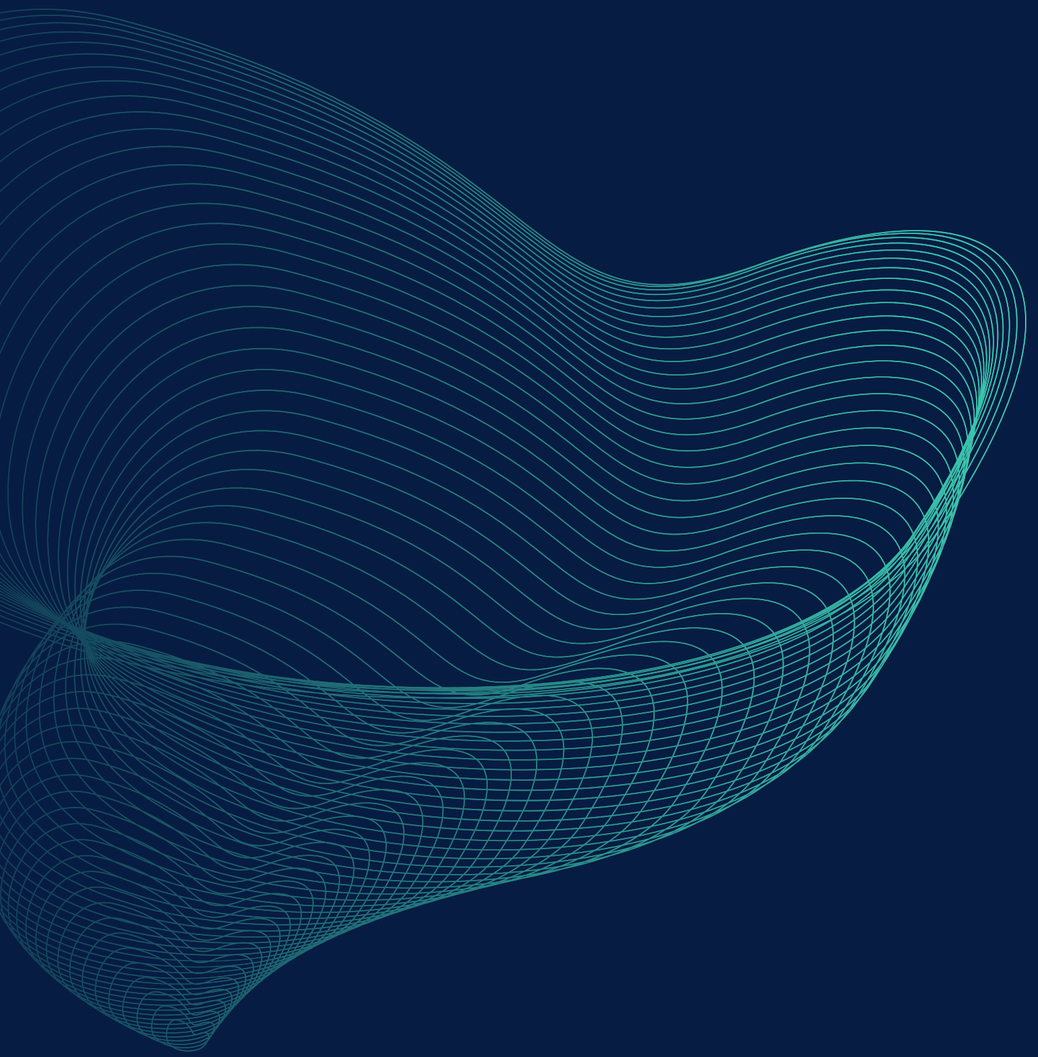
Sensing Heart Rate

Netflix and other streaming services

Blink rate, yawning







Thank You