

ENHANCED OVERTAKING MANAGEMENT SYSTEM WITH INTER VEHICULAR COMMUNICATION AND BLACK BOX

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Problem Definition

- Overtaking on bridges can be extremely dangerous, as it increases the risk of collision with on going traffic.
- A challenge while driving a car or a bike is that a huge vehicle in front it, creates lack of vision.
- Knowing the cause of an accident is needful for investigators, insurance companies etc to know exactly what happened.

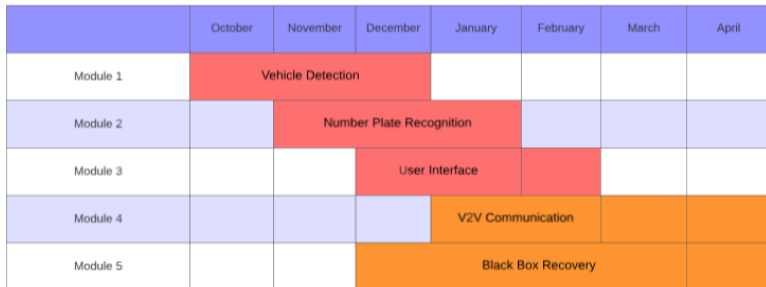
Project Objective

- Detecting violators in bridges
- Inter Vehicular Communication using V2V communication
- Implementation of a Black Box.

Scope of implementation

- Detection of Overtaking vehicles
- Inter Vehicular Communication
- Fine payment module
- Black box

Gantt Chart



Work in 30% Evaluation

- Detecting violators in bridges.
- Gui for V2V communication

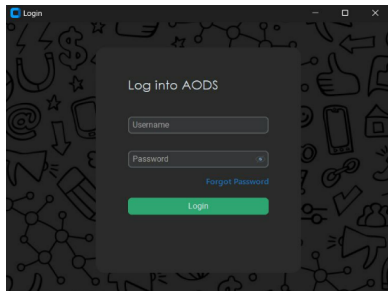
Work in 60% Evaluation

- Completed Part of Detecting violators in Bridges
- Completed Part of V2V communication
- Gui and Database connection for Fine Payment Module

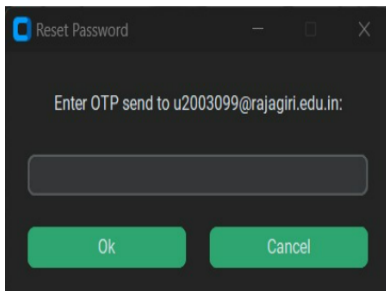
Work in 100% Evaluation

- Detecting and Reporting Violators in Bridges
- Website for Fine Payment
- V2V communication for safe Overtaking
- Implementation of Black Box

Interim Results(AODS)

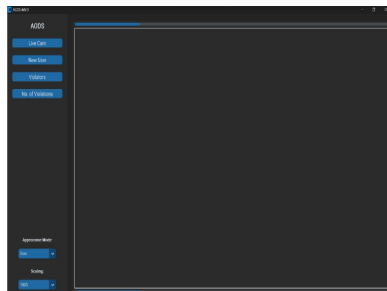
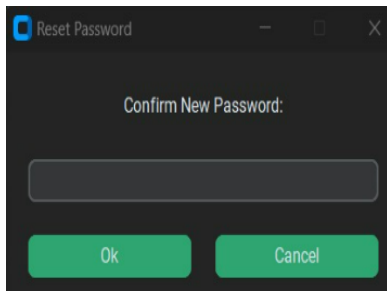


The screenshot shows a 'Login' window titled 'Log into AODS'. It features a dark background with a pattern of white icons. The window contains two input fields: 'Username' and 'Password'. Below the 'Password' field is a link that says 'Forgot Password'. At the bottom of the window is a green button labeled 'Login'.

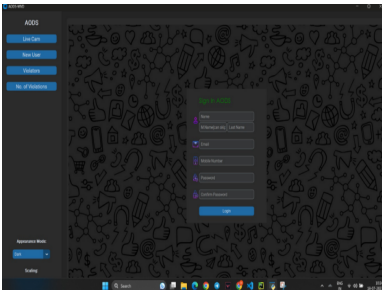
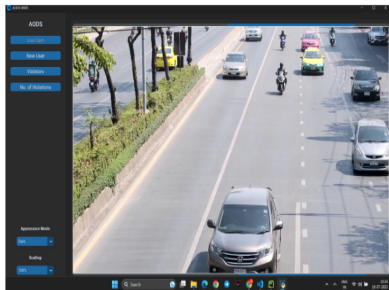


The screenshot shows a 'Reset Password' window. It has a dark background and a title bar with a blue icon and the text 'Reset Password'. The main text inside the window says 'Enter OTP send to u2003099@rajagiri.edu.in:'. Below this text is a large, empty rectangular input field. At the bottom of the window are two green buttons: 'Ok' and 'Cancel'.

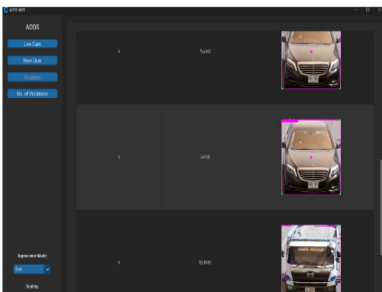
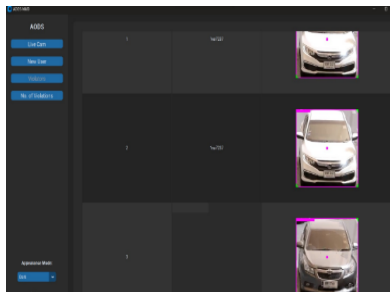
Interim Results(AODS)



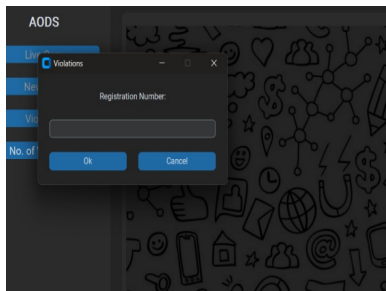
Interim Results(AODS)



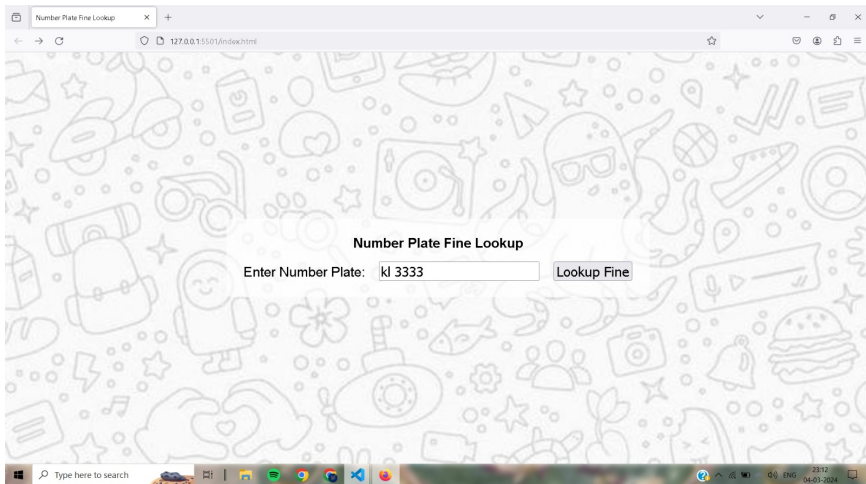
Interim Results(AODS)



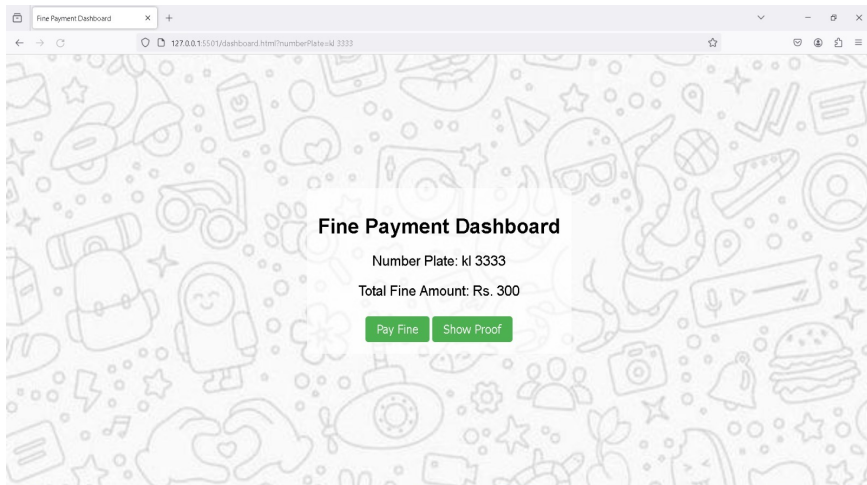
Interim Results(AODS)



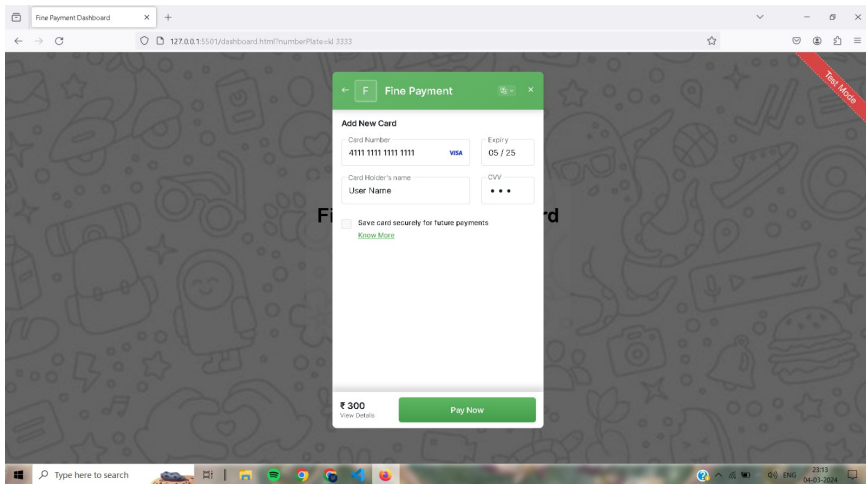
Interim Results(Fine Payment)



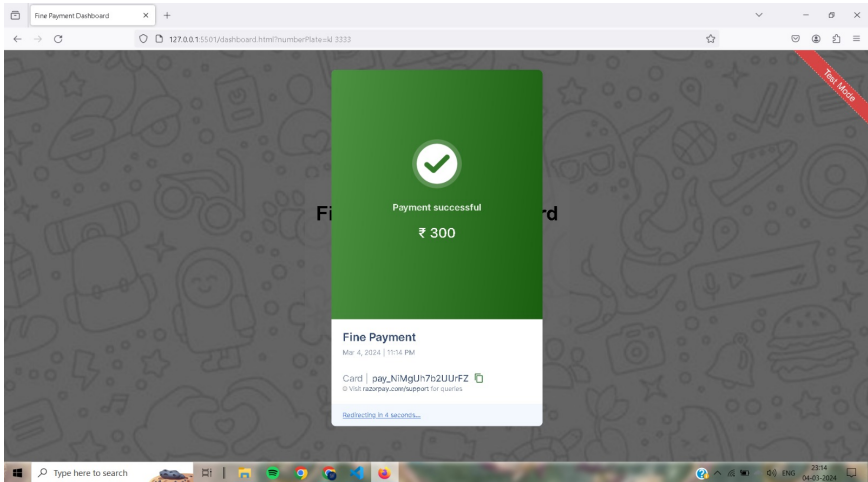
Interim Results(Fine Payment)



Interim Results(Fine Payment)




Interim Results(Fine Payment)



Interim Results(V2V)

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Login

Sign in to continue

EMAIL

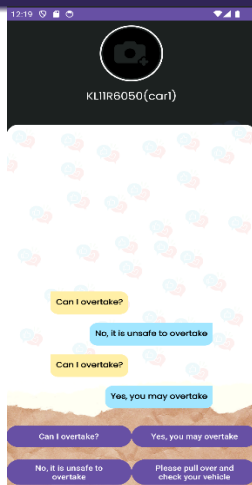
PASSWORD

Login

[Sign Up](#)

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Scan



Future Scope

- EODS can be useful for the motor department as no AI camera's have the capability to capture violators in Bridges.
- Inter-Vehicular communication could be integrated and used in vehicles for a safer and more clear overtaking.
- The implementation of black box would be a major breakthrough for investigators and insurance companies. It could also be enhanced in the future to detect the presence of alcohol, not wearing seat belt, etc.

Task Distribution

- Harikrishnan R: Inter Vehicluar Communication
- Mathew Shaji : Fine Payment, Database
- Hariraman M : Black Box
- Jai Mathew James: QR Recognition , Black Box

Conclusion

Enhanced Overtaking Management System with Inter Vehicular Communication and black box helps in detecting and reporting violators disobeying traffic rules. It also allows vehicle to vehicle communication in terms of requesting and granting permission to overtake. It allows the user to login and pay the due fines of the violations they committed. It also includes a black box with all the relevant data.

Reference I

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- ④ S. An and K. Chang, "Enhancing Reliability in 5G NR V2V Communications Through Priority-Based Groupcasting and IR-HARQ," in *IEEE Access*, vol. 11, pp. 72717-72731, 2023, doi: 10.1109/ACCESS.2023.3292150.

THANK YOU