inCode 2023

Challenging Injustice

Idea Submission

Title : Sakhi

TEAM NAME : SakhiCode

MEMBER DETAILS :

Member 1 : Jigyasa Gupta
Member 2 : Shiwanshi Jha
Member 3 : Ankita Nigam

THEME:

Safety - Safe rides for women, passengers with children, and drivers.

PROBLEM STATEMENT

Safety is persistent issue where existing solutions need upgrade. **Women** face **risks** and discomfort during travel, with concerns of **harassment** and feeling unsafe, particularly when alone or at **late hours.** Insufficient **safety networks** and inadequate **route planning** contribute to their vulnerability. **Drivers** also face challenges, including **fatigue**, which jeopardizes passenger and road safety. **Passengers with children** lack proper **car seat** guidance and driver **verification**, putting their well-being at risk.

Our solution is **Sakhi** app that offers advanced safety features tailored to these user groups through technology and innovative algorithms, we provide a comprehensive solution. It empowers passengers, through **safety networks**, offers **intelligent route planning**, and ensures timely **emergency assistance**. We also prioritize passengers with children by providing car seat guidance and verifying **driver reliability**. Sakhi addresses safety gaps in transportation, making strides toward a more secure and **inclusive ride experience** for all.

Approach

Women's & Driver's Safety:

- **Safe Routing** : A sophisticated **algorithm** that takes into account various factors such as well-lit & **accident prone** areas, **high-traffic** zones, and **crime** statistics to **suggest the safest routes** options for women passengers.

- **Safety Network** : Users will have the option to create and connect with a **trusted network of contacts**, including family, friends, or emergency contacts. This network will be notified in real-time about the user's ride details, allowing them to **track the journey** and send/receive **alerts** in case of any safety concerns.

- **SOS Emergency Button** : In case of an emergency or feeling threatened, a dedicated SOS button pops within the application. It will immediately **notify** emergency **services**(police station) and the user's **safety network**, providing swift assistance and support.

- **Fake Call** : In unsafe situations women can discreetly trigger a fake incoming call through the application. This feature helps create an impression that they are engaged in a conversation, deterring potential threats.

- **Phone Shake Gestures** : A simple shake of the phone will trigger an **instant notification** to the user's safety network, informing them of a potential danger or distress situation.

- **Female Drivers** : For additional sense of security and comfort, the application will prioritize matching female passengers with female drivers whenever possible, accommodating the preferences of women passengers.

- **Suspicious Inactivity Detection**: The application will employ intelligent algorithms to monitor for prolonged periods of inactivity during a ride. If suspicious inactivity is detected, such as **extended stops** or **unexpected route deviations**, an **alert** will be sent to the user's safety network for immediate attention.

- **Live Tracking :** This feature enables constant monitoring of the journey and facilitates immediate action if any concerns arise.

Approach

Driver's Safety :

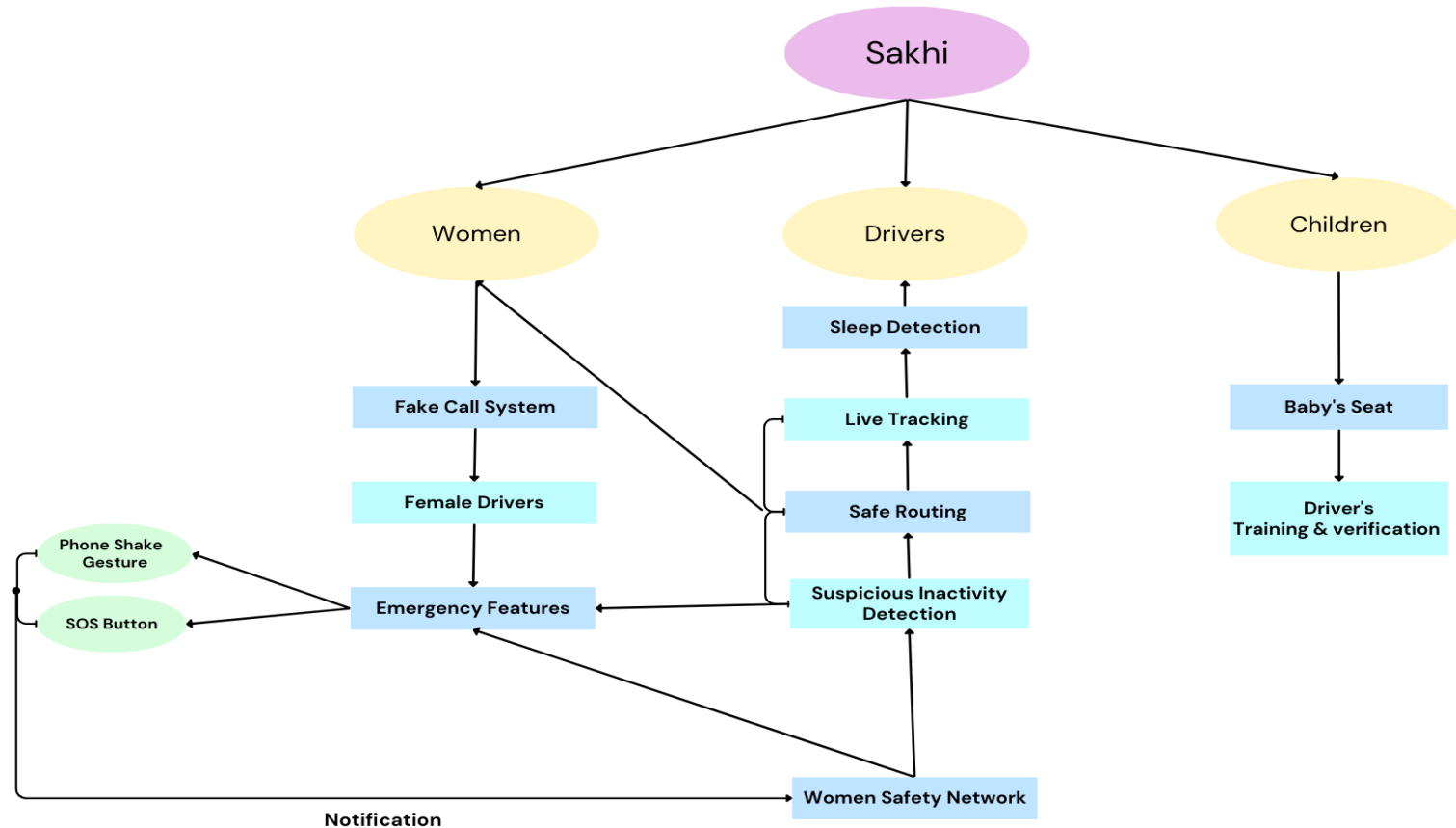**a. Sensor-based sleep detection** using driver's **smartphone camera :**

To address the issue of **driver fatigue** and **reduce** the **risk of accidents** caused by **drowsy driving,** the system will continuously monitor the driver's **eye** movements, **facial expressions**, and **head position** to detect signs of drowsiness or inattentiveness. If any concerning patterns are detected, such as drooping eyelids or nodding off, the system will promptly **alert** the driver with an audible **alarm** or vibrating feedback.
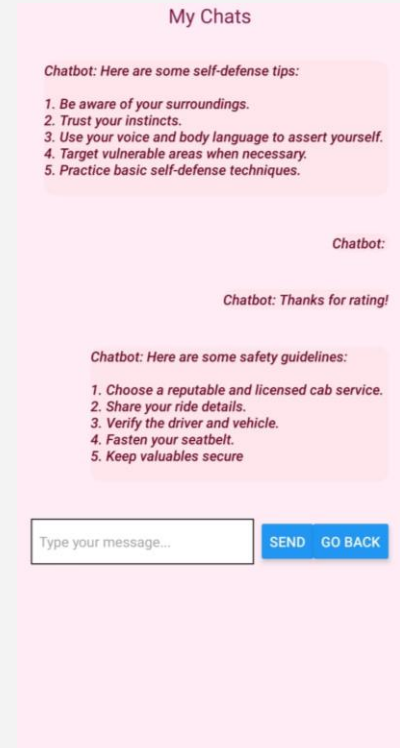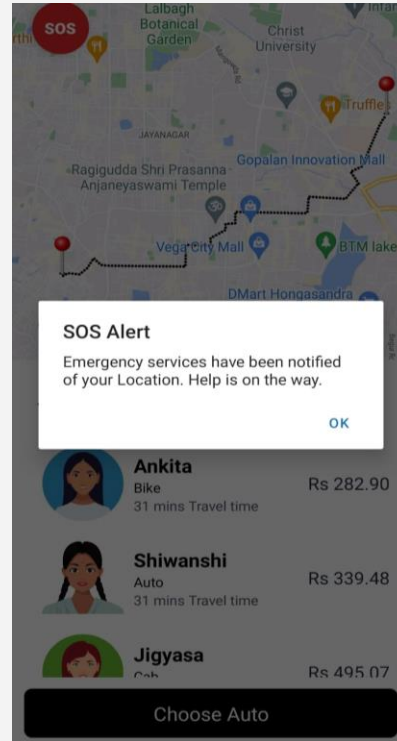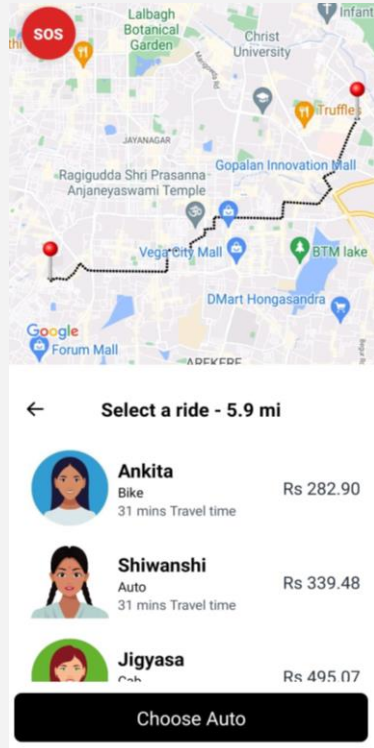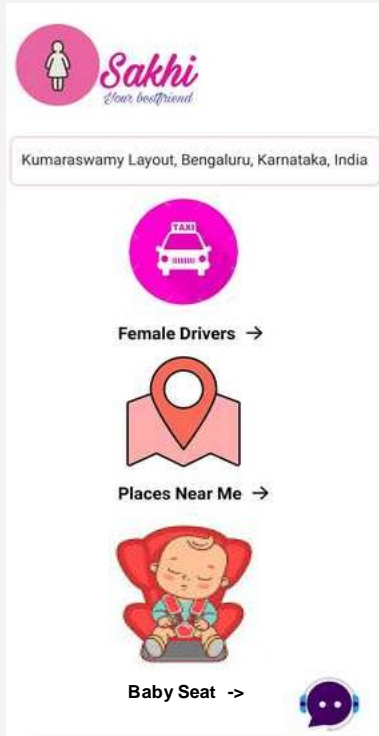
Children Safety :

To ensure the safety of passengers traveling with children, Sakhi will implement the following measures:

a. **Baby Safe Seats** & **leg space:** The application will provide to opt for a baby seat while booking rides + guidelines on proper car seat installation and usage to ensure the safety of children during rides.

b. **Driver Verification & Training:** Drivers will undergo a rigorous verification process, including thorough **background checks** and driver training programs. This step will ensure that drivers are reliable, responsible, and equipped to handle the transportation needs of passengers with children.

Flowchart

Images

SOCIETAL IMPACT

- **Empowering Women:** Increased confidence and security.

- **Child Safety :** Emphasizing proper car seat usage, driver verification, and specialized training, we prioritize the safety of passengers with children.

- **Safe Work Environment for Drivers**: Safer work environment & alerts guarding against fatigue & improving the quality of transportation services.

- **Fostering a Culture of Safety:** By integrating safety protocols, advanced technology, and comprehensive solutions, our project sets a new standard for safety in the transportation industry.

- **Building Trust and Confidence:** Hassle free services creating a positive perception.

FUTURE SCOPE

→ **Business Relevance** :
- Self-driving cabs collaboration
- Collaboration with AI Tech companies
- Increased User Engagement and Retention
- Enhanced Brand Reputation
- Partnership Opportunities with Legal authorities

Scalability :
- Publishing on Google Play & App store
- Rewards & Loyalty Program for users
- Marketing with brands

Team :
Roles and competencies of team's participants

1. **Jigyasa Gupta** :

   App Integration(with Firebase)
   Frontend(React Native)

2. **Shiwanshi Jha** :

   App Backend
   (JavaScript, React Native)

3. **Ankita Nigam** :

   Artificial Intelligence & Machine Learning
   (Python, OpenCV)

How we need help ?

- **Expertise and guidance** in the field of AI, natural language processing for chatbot and the tech field can be highly beneficial.

- **Organizers and mentors** can assist by evaluating our project and **providing constructive feedback**. Evaluating the feasibility, technical implementation, and overall impact of the project will help us refine the idea and improve the quality of our work.

- Facilitating opportunities for **industry exposure** to collaborate with experts can foster a collaborative learning environment and will be very helpful.

THANK YOU !!!