TRAVEL BUS SAFETY COMPANION (TBSC)

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Scrum Master

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ABSTRCT

The Travel Business Safety Companion (TBSC) is an innovative, all-encompassing web application designed to redefine how travelers approach safety and booking. By merging real-time safety alerts, location-based safety tips, access to emergency contacts, and a platform for user-generated safety reports, TBSC ensures that travelers have access to critical information to protect themselves while on the move. Additionally, the application integrates a comprehensive travel booking system, including bus travel, to offer users a seamless and convenient experience from start to finish. Built on a robust backend powered by Django and MongoDB, TBSC leverages machine learning to provide predictive analytics, route optimization, and anomaly detection, making it an essential tool for safe and efficient travel. The platform is designed to be user-friendly, catering to a broad audience, from solo adventurers to families and business travelers, offering them the assurance and convenience needed in today's complex travel environment.

The platform also features an advanced tour package selection system that caters to diverse travel preferences. Through intelligent categorization and machine learning-based recommendations, TBSC offers personalized tour packages ranging from adventure tours to cultural experiences and relaxation retreats. The multi-language support ensures international accessibility, making it a truly global travel companion. This comprehensive package selection system works in tandem with the safety features, ensuring that travelers not only choose the perfect tour but also remain protected throughout their journey.

Building upon TBSC's foundation, FaceTracePro introduces cutting-edge facial recognition technology to revolutionize missing person detection and tracking within the travel context. This advanced system seamlessly integrates with TBSC's existing infrastructure to provide real-time monitoring and rapid response capabilities when travelers go missing during their journeys. FaceTracePro employs state-of-the-art machine learning algorithms for facial recognition, enabling automatic processing of CCTV footage across multiple locations and instant alert generation when potential matches are found. The system enhances TBSC's safety features by incorporating facial data collection during the booking process, automated headcount verification at checkpoints, and coordinated communication between tour operators and law enforcement agencies. This integration transforms TBSC from a comprehensive travel safety platform into an even more powerful system that not only prevents missing person incidents but also ensures swift and effective response when such situations arise. Together, these platforms create an unprecedented safety ecosystem that sets new standards in travel security and emergency response management.

Project Overview

The Travel Business Safety Companion (TBSC) is a holistic solution tailored to meet the demands of today's dynamic travel landscape. The platform is designed to be the ultimate travel companion,

addressing both the safety and logistical needs of travelers in one integrated application. TBSC offers a suite of features aimed at enhancing user safety while simplifying the travel process.

The platform's tour package selection system represents another cornerstone of TBSC's comprehensive approach. It intelligently categorizes tours into adventure, cultural, relaxation, and seasonal packages, each carefully curated to meet specific traveler preferences. Through sophisticated machine learning algorithms, the system provides personalized recommendations based on user behavior, historical data, and current trends. The multi-language support feature breaks down language barriers, making these packages accessible to international travelers and enhancing the platform's global reach.

At its core, TBSC is a safety-first platform. It continuously monitors and aggregates data from various sources, including government advisories, local news, and user-generated reports. This data is processed in real-time, ensuring that travelers receive timely and relevant information. Whether it's a natural disaster, political unrest, health emergency, or local crime, TBSC alerts users instantly, allowing them to take proactive measures to stay safe.

In addition to its safety features, TBSC streamlines the travel planning and booking process. The platform's travel booking system is integrated directly into the application, enabling users to arrange their travel plans without leaving the safety environment of TBSC. Among the travel options available, bus travel is highlighted, providing users with a reliable and straightforward means of securing transportation. By offering both safety and booking services in one place, TBSC ensures that users can plan their travels with peace of mind, knowing that their safety is being continuously monitored.

Building upon this foundation, FaceTracePro introduces an advanced layer of security through sophisticated facial recognition technology. This enhancement transforms TBSC's capabilities by incorporating real-time missing person detection and tracking features. During the booking process, travelers' facial data is securely collected and stored, creating a comprehensive safety profile for each group member. The system continuously monitors various checkpoints and tourist locations through CCTV integration, enabling immediate action if a traveler goes missing.

FaceTracePro's machine learning algorithms work in conjunction with TBSC's existing predictive analytics to create a powerful safety ecosystem. While TBSC analyzes environmental and situational risks, FaceTracePro processes visual data from surveillance systems to maintain real-time accountability of travelers. This dual-layer approach to safety monitoring provides unprecedented protection for travelers, particularly in group tours where keeping track of all members is crucial. The integration of these systems represents a significant advancement in travel safety technology, offering a comprehensive solution that not only prevents incidents but also ensures rapid response capabilities when needed.

Key Features:

1. **Real-time Safety Alerts:**
- **Functionality:**
  - This feature provides users with instant notifications regarding safety issues in their current location. These alerts could include warnings about natural disasters (e.g., earthquakes, floods, hurricanes), political unrest (e.g., protests, riots), health emergencies (e.g., disease outbreaks), or other situations that could pose a risk to personal safety.
  - The alerts are location-based, meaning they are tailored to the user's specific geographic location, ensuring relevance and immediacy. The system uses GPS tracking to determine the user's current position and cross-references this with real-time data sources to identify any potential risks.
- **Use Cases:**
  - **Tourists in a Foreign Country:** A tourist visiting a foreign country receives an alert about a nearby protest that could turn violent. The system provides them with a safe route to avoid the area.
  - **Residents during a Natural Disaster:** Residents in a coastal area receive a tsunami warning after an earthquake, enabling them to evacuate to higher ground in time.
  - **Travelers in a Disease Outbreak:** A traveler receives an alert about a sudden outbreak of a contagious disease in a region they plan to visit, allowing them to take preventive measures or reconsider their travel plans.
- **Impact:**
  - By providing real-time, location-specific safety information, users can make informed decisions to avoid danger, ensuring their personal safety and peace of mind. This feature is particularly valuable for travelers, expatriates, and individuals in unfamiliar environments.

2. **Location-based Safety Tips:**

- **Functionality:**
  - This feature offers users tailored safety tips based on their current location. The tips can include advice on how to navigate the area safely, cultural practices to be aware of, legal considerations, or guidelines for dealing with specific local hazards (e.g., wildlife, terrain).
  - The system uses the user's GPS data to deliver relevant advice, which can vary depending on whether the user is in an urban environment, rural area, or a tourist hotspot. Additionally, these tips can be dynamic, changing based on time of day, season, or emerging local issues.
- **Use Cases:**
  - **Urban Safety:** A user in a large city receives tips on avoiding pickpockets in crowded areas, what to do if they are approached by a scammer, and how to navigate the local public transportation system safely.

- o **Nature Exploration:** A user hiking in a national park is advised on how to store food to avoid attracting wildlife, what to do if they encounter a dangerous animal, and how to stay safe during sudden weather changes.
- o **Cultural Considerations:** A user traveling in a foreign country receives tips on respecting local customs, such as dress codes or gestures that may be considered offensive.

3. User-generated Reports of Unsafe Areas:

- **Functionality:**
  - o This feature enables users to contribute to the platform by submitting reports about unsafe areas or incidents they have encountered. These reports can include descriptions, photos, videos, and even the exact location of the event. The information is then shared with the community to alert others of potential dangers.
  - o Reports are typically categorized by type (e.g., crime, accident, environmental hazard) and may include a rating system to assess the severity of the situation. Other users can comment on or verify the reports, adding credibility to the information.
- **Use Cases:**
  - o **Crime Hotspot:** A user witnesses a mugging in a particular area and submits a report, alerting others to avoid the location.
  - o **Environmental Hazard:** A user encounters a blocked road due to a landslide and reports it, allowing other travelers to find alternate routes.
  - o **Unsafe Neighborhood:** A user frequently travels through a neighborhood known for high crime rates and reports it, warning others to exercise caution or avoid the area altogether.

4. Advanced Facial Recognition System:

- Functionality:
  - o Real-time face detection and recognition leverages deep learning technology to process and analyze facial features instantly. The system uses sophisticated neural networks to create unique facial signatures that can be matched against a database of registered travelers.
  - o High-accuracy matching algorithms employ 128-dimensional face encodings to identify individuals even in crowded spaces. This technology can process multiple faces simultaneously while maintaining accuracy rates above 99%.
  - o Multi-angle face detection capabilities ensure reliable recognition regardless of head position or viewing angle. The system can create and match facial profiles from various perspectives, enhancing detection reliability.
  - o Advanced environmental adaptation allows the system to function effectively in various lighting conditions and environmental factors. The recognition algorithms automatically adjust for different light levels, shadows, and weather conditions.
  - o Seamless CCTV integration enables the system to process feeds from existing surveillance infrastructure. This integration allows for widespread coverage without requiring additional specialized hardware installation.

5. **Missing Person Registration and Tracking**:
- Functionality:
  - Secure facial data collection integrates seamlessly with the travel booking process, allowing travelers to register their facial profiles safely. The system encrypts and stores this data following strict privacy guidelines while ensuring quick access when needed. Instant case registration enables immediate response when a person is reported missing. The system automatically creates a case file with all relevant information, including the person's facial data, last known location, and group details.
  - Automated cross-referencing continuously scans surveillance footage against registered missing person profiles. The system processes multiple video feeds simultaneously, significantly increasing the chances of a quick match.
  - Real-time location tracking maintains a comprehensive history of detected locations. When a match is found, the system records the time and location, creating a timeline that helps predict possible movement patterns.
  - Alert generation system immediately notifies relevant authorities when potential matches are found. The system sends detailed reports including location data, timestamp, and confidence level of the match.

6. **Surveillance Integration**:
- Functionality:
  - Live CCTV processing enables real-time analysis of video feeds from multiple sources. The system can process hundreds of camera feeds simultaneously, scanning for registered missing persons.
  - Automated scanning at key locations continuously monitors high-traffic areas such as bus stations, tourist attractions, and checkpoints. The system maintains constant vigilance without requiring manual monitoring.
  - Multi-camera coordination ensures comprehensive coverage by synchronizing data from various surveillance points. The system creates a network of monitoring points that work together to track movement patterns.
  - Time-stamped detection logging maintains detailed records of all potential sightings. Each detection is recorded with precise timing and location data, helping create accurate movement timelines.
  - Geographic mapping visualizes all detection points on an interactive map. This feature helps identify patterns and predict possible locations where the missing person might be found.

7. **Emergency Response System**:
- Functionality:
  - One-click reporting enables instant initiation of missing person searches through a simple interface. Users can report a missing person immediately, uploading photos and last-known location with minimal steps.

- o Automated police notification system instantly alerts the nearest police stations when a missing person is reported. The system determines relevant jurisdictions based on location and sends comprehensive case details.
- o Tour operator alert system ensures immediate notification of group leaders and tour management. Real-time updates keep all stakeholders informed of search progress and developments.
- o Multi-channel communication sends alerts through SMS, email, and app notifications simultaneously. This ensures that all relevant parties receive critical information regardless of their preferred communication method.
- o Status tracking provides real-time updates on search progress and findings. All stakeholders can monitor the situation through a unified dashboard showing current status and actions taken.

8. **Group Management Features**:
- Functionality:
  - o Automated headcount verification uses facial recognition to quickly account for all group members. The system can process group check-ins within seconds, identifying any missing members instantly.
  - o Real-time group tracking maintains continuous awareness of group member locations. The system monitors movement patterns and flags any unusual separations from the group.
  - o Digital attendance management automatically logs presence at designated checkpoints. Tour operators can verify group completeness without manual counting or roll calls.
  - o Location-based monitoring tracks group dynamics and movement patterns. The system identifies if members stray too far from the group's central location.
  - o Separation alert system instantly notifies guides when group members become separated. Immediate notifications help prevent minor separations from becoming serious missing person cases.

9. **Inter-Agency Coordination**:
- Functionality:
  - o Seamless communication platform enables instant information sharing between different agencies. All stakeholders can access and update case information in real-time through a unified interface.
  - o Cross-jurisdiction case management facilitates cooperation between different police departments. Cases can be easily transferred or jointly managed across multiple jurisdictions.
  - o Centralized data repository maintains all case information in a single, accessible location. Authorized personnel can quickly access necessary information regardless of their location.

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- o Collaborative investigation tools allow multiple agencies to work together efficiently. Agencies can share resources, updates, and findings through an integrated platform.
- o Unified reporting system standardizes case documentation across all participating agencies. This ensures consistent information sharing and reduces communication gaps.

10. **Privacy and Security**:
- Functionality:
    - o Encrypted data storage protects all sensitive information using advanced encryption standards. Personal data and facial profiles are secured using military-grade encryption protocols.
    - o Access control system ensures that only authorized personnel can access sensitive information. Different access levels are assigned based on role and responsibility.
    - o Consent management tracks and maintains user permissions for data usage. The system ensures compliance with privacy regulations by maintaining clear consent records.
    - o Data retention policies automatically manage the lifecycle of stored information. Personal data is securely deleted according to defined retention schedules.
    - o Compliance monitoring ensures adherence to privacy regulations across jurisdictions. The system automatically adapts to different privacy requirements based on location.

11. **Integration with TBSC**:
- Functionality:
    - o Unified interface combines facial recognition features with existing TBSC functionality. Users can access all features through a single, intuitive interface.
    - o Integrated alert system combines safety alerts from both systems. Users receive comprehensive safety information including both environmental and personal security alerts.
    - o Combined booking and registration streamlines the user experience. Facial registration is seamlessly incorporated into the existing booking process.
    - o Shared emergency response coordinates both systems' safety features. Emergency responses are handled through a unified protocol combining both platforms' capabilities.
    - o Cross-platform data synchronization ensures consistent information across both systems. User data and safety information are automatically synchronized between platforms.

12. Tour Package Management System:
- Functionality:
  - Comprehensive package categorization system organizing tours into distinct categories :
    - ➢ Adventure Tours featuring trekking, rafting, and extreme sports
    - ➢ Cultural Tours highlighting heritage sites and local experiences
    - ➢ Relaxation Packages focusing on wellness and leisure
    - ➢ Seasonal Packages adapted to specific times of year o Machine learning-powered recommendation engine:
    - ➢ Analyzes user preferences and booking history
    - ➢ Identifies trending packages and popular choices
    - ➢ Generates personalized suggestions based on user profiles
  - Multi-language support system:
    - ➢ Dynamic content translation for package descriptions
    - ➢ Language-specific booking interfaces
    - ➢ Culturally adapted tour information o Real-time availability tracking:
    - ➢ Synchronized booking management
    - ➢ Dynamic pricing updates
    - ➢ Instant confirmation system
  - Integration with safety features:
    - ➢ Automatic safety protocol assignment per package type
    - ➢ Package-specific emergency response plans
    - ➢ Risk assessment for different tour categories"

Existing System:

Current missing person detection and tracking systems in the travel industry suffer from significant limitations and inefficiencies. Traditional methods rely heavily on manual processes, such as physical searches, paper-based reports, and basic CCTV monitoring. These approaches are time-consuming and often ineffective, especially in crowded tourist areas or when dealing with large tour groups.

The existing surveillance systems typically operate in isolation, with no integration between different locations or agencies. When a person goes missing during travel, there's often a critical delay in initiating searches due to uncoordinated communication between tour operators, local authorities, and surveillance teams. CCTV footage must be manually reviewed, a process that is both labor-intensive and prone to human error.

Furthermore, current systems lack preventive measures and real-time monitoring capabilities. Tour operators and group leaders must rely on manual headcounts and visual verification, which becomes increasingly challenging with larger groups. The absence of automated tracking and alert systems means that separations or missing person incidents are often discovered too late, significantly reducing the chances of quick recovery.

Proposed System:

The Travel Bus Safety Companion (TBSC) addresses these challenges by offering a fully integrated platform that combines real-time safety monitoring with comprehensive travel booking services. TBSC is designed to provide travelers with all the tools they need to stay safe and manage their journeys efficiently within a single application. FaceTracePro revolutionizes missing person detection and tracking by integrating cutting-edge facial recognition technology with TBSC's comprehensive travel safety platform. The system introduces several innovative solutions:

1. Real-time Safety Alerts: TBSC provides instantaneous notifications based on the user's current location. These alerts cover a wide range of potential hazards, including natural disasters, political unrest, health emergencies, and more. The system is designed to be highly responsive, ensuring that users receive critical information as soon as possible, giving them the time they need to react appropriately.

2. Location-based Safety Tips: The application offers personalized safety tips that are specific to the user's current location and travel itinerary. These tips are curated from reliable sources and are regularly updated to reflect the latest safety advice. Whether a user is navigating a foreign city or traveling through rural areas, TBSC ensures they have the knowledge they need to stay safe.

3. User-generated Safety Reports: TBSC fosters a community-driven approach to safety by allowing users to report unsafe areas or incidents they encounter. These reports are shared with other travelers in real-time, creating a network of collective safety that benefits all users. This feature also enhances the platform's data richness, allowing for more accurate and comprehensive safety monitoring.

4. Comprehensive Travel Booking: TBSC's integrated booking system allows users to plan and secure their travel arrangements within the same application. The platform supports a range of travel options, with a special focus on bus travel, which is often underserved in traditional travel apps. Users can book their bus journeys with the confidence that TBSC's safety features will continue to monitor their travel route.

5. **Preventive Monitoring**: FaceTracePro implements automated facial recognition at key checkpoints throughout travel routes. The system continuously monitors group movements, automatically detecting when members separate from their groups and triggering immediate alerts before situations become critical.

6. **Automated Surveillance Processing**: The platform processes CCTV feeds in real-time using advanced machine learning algorithms. This automation eliminates the need for manual video review, enabling instant detection of missing persons across multiple locations simultaneously.

7. **Unified Response System**: When a person is reported missing, FaceTracePro automatically activates a coordinated response. The system instantly shares facial data with local authorities, begins processing surveillance feeds, and sends alerts to relevant stakeholders, all through a single, integrated platform.

8. **Smart Search Optimization**: Using artificial intelligence, the system analyzes movement patterns and predicts likely locations where a missing person might be found. This intelligent approach significantly reduces search times and improves recovery rates.

9. **Cross-Platform Integration**: By integrating with TBSC, FaceTracePro creates a comprehensive safety ecosystem. The system combines travel safety features with advanced biometric tracking, providing unprecedented protection for travelers from booking through journey completion.

10. **Privacy-Focused Design**: The system implements state-of-the-art encryption and data protection measures, ensuring that facial recognition capabilities enhance safety without compromising user privacy. All personal data is handled in compliance with international privacy regulations.

User Description:

The Travel Business Safety Companion (TBSC) is designed to serve a broad spectrum of users, each with unique needs and expectations. The platform's versatility ensures that it can accommodate various user profiles, from the tech-savvy solo traveler to the cautious family on vacation. At the core of TBSC there are four distinct modules: Admin, Moderator, Police, and Customer, working in harmony with TBSC's existing travel management system.

- Solo Travelers: Individuals traveling alone often prioritize safety above all else. TBSC's real-time safety alerts, emergency contact access, and user-generated safety reports provide these travelers with the tools they need to navigate unfamiliar environments with confidence. The platform's booking features also allow them to plan their trips without having to switch between multiple apps, streamlining their travel experience.

- Families: For families, safety is a paramount concern, especially when traveling with children. TBSC offers peace of mind through its location-based safety tips and comprehensive emergency contact lists. Parents can also use the platform to book travel arrangements that prioritize safe routes and reputable service providers, ensuring a smooth and secure journey for the whole family.

- Business Professionals: Frequent business travelers require a solution that is both efficient and reliable. TBSC's integrated approach to safety and booking allows these users to manage their itineraries with minimal hassle, while also staying informed about potential risks that could impact their plans. The platform's machine learning-driven route optimization is particularly valuable for professionals who need to maximize both safety and efficiency during their travels.

- Tourists: Leisure travelers often explore new destinations, making them more vulnerable to safety risks. TBSC's user-friendly interface provides tourists with essential safety information in real-time, while also allowing them to contribute to the community by reporting any unsafe conditions they encounter. The platform's travel booking feature ensures that tourists can plan their activities with ease, knowing that their safety is being continuously monitored.

- Tour Operators and Moderators: TBSC also serves the needs of tour operators and moderators who are responsible for ensuring the safety of groups during travel. These users can utilize the platform to monitor real-time safety conditions, optimize travel routes for groups, and access emergency contacts quickly. The booking system allows them to arrange transportation and accommodations that meet the highest safety standards, enhancing the overall experience for their clients.

- Admin module serves as the central control system, managing both the facial recognition capabilities and the integration with TBSC's travel booking features. Administrators can efficiently handle user registrations, police station coordination, and system configurations, ensuring seamless operation between both platforms.

- The User module empowers travelers and tour operators with enhanced safety features. During the booking process through TBSC, users can now register their facial data, which becomes part of their travel profile. This proactive approach ensures that if a group member goes missing, their information is readily available for immediate action. Tour operators can also maintain real-time headcounts through automated facial recognition at checkpoints and rest stops.

- The Police module leverages state-of-the-art machine learning face recognition technology to enhance the search and rescue process. When a missing person case is reported through the TBSC platform, law enforcement officials can immediately access the person's facial data and cross-reference it with CCTV footage in their jurisdiction. The system automatically processes surveillance feeds and sends instant notifications when potential matches are found, significantly reducing response time in critical situations.

Modules and Functionalities:

1. **Admin**:

- Login:
  - o The admin logs into the system through secure authentication to access and manage all facial recognition and tracking functionalities assigned to their role.

- Manage Customers:
  - o Admin manages customer profiles, including creating, editing, and deleting customer accounts.

- Manage Moderators:
  - o Admin manages moderator accounts, assigning responsibilities, and ensuring they have the correct permissions.

- Manage Bookings:
  - o Admin oversees and manages all bookings on the platform, including customer and bus schedules.

- Generate Reports:
  - o Admin generates various reports related to platform usage, bookings, customer feedback, and safety incidents.

- Handle Reports/Review Rating:
  - o Admin reviews user-generated reports and ratings, ensuring they meet platform standards.

- Oversee Transactions:
  - o Admin monitors and manages financial transactions on the platform, including payments and refunds.

- View Bus List:
  - o Admin can view a list of all buses registered on the platform, including their details and current status.

- Weather Updates:
  - o Admin accesses weather updates that might affect travel plans and makes this information available to users.

- Manage Police Stations:
  - o Admin oversees the registration, management, and monitoring of all police stations in the system, including their jurisdictions, permissions, and operational status.

- System Configuration:
  - o Admin controls and configures all system parameters including facial recognition settings, CCTV integration, alert thresholds, and privacy controls.

- Case Management:
  - o Admin supervises all missing person cases in the system, including assignment to police stations, progress monitoring, and resolution tracking.

- User Management:
  - o Admin handles the creation and management of all police user accounts, including setting access levels, monitoring activities, and providing system support.

- Report Generation:

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- o Admin generates and analyzes comprehensive reports on system usage, missing person statistics, and case resolution metrics.
- System Monitoring:
    - o Admin oversees the entire system's performance, including facial recognition accuracy, CCTV integration status, and data security measures.

2. **Police**:
- Login:
    - o Police officers access their designated portal using secure credentials to manage missing person cases and surveillance operations.
- Case Management:
    - o Officers create, update, and manage missing person cases, including evidence collection and inter-station coordination.
- Surveillance Monitoring:
    - o Police personnel monitor real-time CCTV feeds and facial recognition matches across their jurisdiction.
- Alert Management:
    - o Officers handle incoming alerts about potential matches and coordinate emergency responses with other stations.
- Investigation Tools:
    - o Police utilize facial recognition search tools and historical data to conduct thorough missing person investigations.
- Communication:
    - o Officers maintain communication with other police stations, tour operators, and concerned parties regarding case updates.

3. **User (Tourists/Customers)**:

- Login:
    - o The Customer logs into the system to access their functionalities.
- Booking:
    - o Customers book bus tickets and packages through the platform, selecting routes, times, and seating preferences.
- Make Payment:
    - o Customers make payments for their bookings using the platform's payment gateway.
- Manage Profile:
    - o Customers manage their personal profiles, including updating contact information and preferences.
- Search Buses:
    - o Customers search for buses based on their preferences, such as routes, timings, and availability.

- View Service Details:
    - Customers view detailed information about the bus services, including amenities, ratings, and operator information.
- View Booking History:
    - Customers view their past bookings, including details like date, time, and payment status.
- Receive Notifications:
    - Customers receive notifications about their bookings, safety alerts, and other important updates.
- Submit Reports:
    - Customers submit reports related to safety, service quality, or other concerns during their travels.
- Receive Safety Alerts:
    - Customers receive real-time safety alerts based on their location and travel routes.
- View Location Review:
    - Customers can view reviews and safety information about specific locations they plan to visit.
- View Personalized Recommendations:
    - Customers receive personalized recommendations based on their past travel history and preferences.
- Submit Review/Rating:
    - Customers submit reviews and ratings for the services they have used, contributing to the community's feedback.
- Missing Person Reporting:
    - Users can file missing person reports with photographs and incident details through an intuitive interface.
- Case Tracking:
    - Users monitor the progress of their reported cases and receive regular status updates through the system.
- Profile Management:
    - Users manage their personal information, facial data, and privacy settings within the platform.
- Communication:
    - Users receive case updates and emergency alerts while maintaining contact with authorities through the system.
- Safety Features:
    - Users access various safety tools including emergency resources, location-based alerts, and panic button functionality.

4. Moderators:
- Login:
    - Secure authentication system for moderator access

- Add Bus:
  - Moderators add new buses to the platform, inputting all necessary details such as bus number, route, and schedule.
- Update Bus:
  - Moderators update existing bus information, including schedules, routes, and status.
- View Booking:
  - Moderators view and monitor bookings made by customers, ensuring everything runs smoothly.
- Manage Profile:
  - Moderators manage their own profiles, including updating personal information and credentials.
- Manage Bus Schedule:
  - Moderators manage bus schedules, adjusting times, routes, and ensuring there are no conflicts.
- Generate Reports:
  - Moderators generate reports based on the data available to them, focusing on their specific responsibilities.
- View Notification:
  - Moderators view notifications related to reports, bookings, and other important platform activities.
- Push Safety Alerts:
  - Moderators push safety alerts to users based on real-time data and reports from customers.
- Check User Reports:
  - Moderators check and verify reports submitted by users to ensure accuracy and reliability.
- Publish Reports:
  - Moderators publish verified reports to the platform, making them accessible to all users.
- Tour Package Management:
  - Create and manage diverse tour package categories
  - Set pricing and availability
  - Update package details and inclusions
  - Monitor booking trends and package performance
- Content Management:
  - Maintain multi-language package descriptions
  - Update safety guidelines for each package type
  - Manage media content for package presentations
- Package Analytics:
  - Track package popularity and user engagement
  - Generate performance reports
  - Analyze user feedback and ratings
- Recommendation System Management:

- o Configure recommendation algorithms
- o Update trending packages
- o Manage seasonal promotions
- Quality Control:
  - o Review and approve package listings
  - o Monitor service standards
  - o Handle package-related user queries

5. Agents
- Login:
  - o The Agent logs into the system to access their functionalities.
- Safety Reports:
  - o Agents can report safety reports according to the allocated location.

Technologies and Tools:

- **Backend Framework:** Django
- **Frontend:** Django templates and JavaScript
- **Database:** Sqlite3