Local Mate: Your Personalized Travel Companion

Welcome to the documentation for Local Mate, an innovative web application developed by Bachelor's Squad for the Triwizardathon 2025 hackathon. Local Mate aims to revolutionize how travelers experience new destinations by connecting them with knowledgeable local guides. This document provides a comprehensive overview of the project, its features, technical implementation, and a guide for setup and troubleshooting.

Project Overview and Objectives

Local Mate addresses the common traveler's dilemma: how to discover authentic, off-the-beaten-path experiences that only locals know. Traditional guidebooks and generic online searches often fall short, leading to missed opportunities and a less immersive travel experience.

> The core problem Local Mate solves is the disconnect between travelers seeking genuine local insights and the difficulty of accessing reliable, personalized guidance.

Our goal with Local Mate is to provide seamless local travel guidance through an intuitive web application. This project, developed during a hackathon, showcases our commitment to rapid prototyping, robust CI/CD pipelines, and scalable cloud infrastructure support, ensuring a smooth development and deployment process.

Core Features Documentation

Local Mate is designed with a user-centric approach, offering distinct functionalities for travelers and local guides.

1 User Authentication

Secure login and signup processes allow users to create accounts and access personalized features. This forms the foundation for distinguishing between traveler and guide roles.

2 Role-Based Dashboards

Upon authentication, users are directed to tailored dashboards. Travelers can browse guides and local listings, while guides manage their profiles and available services.

3 Location-Based Listings

Leveraging SQLite as the development database, Local Mate provides

dynamic, location-specific listings of guides and points of interest, enabling relevant connections.

4 Interactive UI

The application boasts an interactive and responsive user interface, built with Bootstrap and custom JavaScript, ensuring a seamless experience across various devices.

5 Website Demo

A live demo of the project is hosted on GitHub Pages, check my GitHub pages, website to see the demo video.

🖥 bachelorsquad.github.io ↗

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Local Mate – Your Local Travel Companion by Bachelor's Squad

Technical Stack Deep Dive

Local Mate is built upon a modern, layered technical architecture designed for scalability, maintainability, and efficient development.

1 Application Layer
- **Backend Logic & Routing:** Django (Python framework)
- **Frontend:** HTML, CSS, JavaScript
- **Styling:** Bootstrap (responsive design framework)
- **Development Database:** SQLite

2 CI/CD Layer
- **Build & Deploy Automation:** Jenkins

3 Infrastructure Layer
- **Infrastructure as Code (IaC):** Terraform
- **Hosted Environment:** AWS EC2 instances

4 Containerization Layer
- **Runtime Environment:** Docker (for consistent deployments)

5 Web Server Layer
- **Reverse Proxy & Serving:** NGINX

FAQ and Troubleshooting

Encountering issues during setup or operation? This section addresses common problems and provides solutions.

Q1. Application not starting?

Solution: Ensure database migrations have been applied properly. Run:

```
python3 manage.py makemigrations
python3 manage.py migrate
```

Also, check the server logs for any specific error messages that might indicate port conflicts or dependency issues.

Q2. Jenkins pipeline fails?

Solution:

- Verify SSH access from Jenkins to your EC2 instance. Check SSH keys and permissions.
- Validate the build steps in Jenkins. Ensure the commands are correct and paths are accurate.
- Check Jenkins console output for detailed error messages during the build process.

Q3. Static files (CSS/JS/images) not loading?

Solution: This typically indicates an NGINX configuration issue.

- Make sure python3 manage.py collectstatic has been run after any changes to static files.
- Verify that your NGINX configuration is correctly serving the static files from the right directory. Check the NGINX error logs.

Q4. How to add new features?

Solution: For new features, modify the relevant views in your Django application (typically in app/views.py). Remember to reflect any new URL patterns in app/urls.py to make your new features accessible.

Local Mate

Your Personalized Travel Companion

Team: Bachelor's Squad

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This document was created to provide a comprehensive overview of the Local Mate project, its architecture, and functionality, for the Triwizardathon 2025 hackathon.

Future Enhancements

While Local Mate provides robust core functionalities, several potential enhancements could further improve its utility and user experience. These areas represent exciting opportunities for future development.

Real-time Messaging

Integrate a real-time chat feature between travelers and guides to facilitate immediate communication and coordination, enhancing the spontaneity of local experiences.

Payment Integration

Implement a secure payment gateway within the platform, allowing travelers to book and pay for guide services directly, streamlining the transaction process.

Review and Rating System

Introduce a comprehensive review and rating system for guides and services. This would build trust within the community and help travelers make informed decisions.

Advanced Search Filters

Develop more sophisticated search and filtering options for guides, including language proficiency, specialized tour interests (e.g., food, history, adventure), and availability.

Mobile Application

Develop native mobile applications for iOS and Android to provide an optimized, on-the-go experience for users, leveraging device-specific features like GPS and notifications.

Conclusion and Recommendations

Local Mate, developed by Bachelor's Squad for the Triwizardathon 2025, successfully addresses the critical need for personalized, local travel guidance. The project demonstrates a strong foundation in web application development, leveraging Django for robust backend logic and a responsive frontend with Bootstrap and JavaScript.

> Our strategic use of CI/CD with Jenkins and cloud infrastructure on AWS EC2, complemented by Docker containerization and NGINX reverse proxying, showcases a commitment to modern development practices and scalable deployment.

For future development, we recommend prioritizing the implementation of a real-time messaging system and an integrated payment gateway. These features would significantly enhance the user experience and enable direct monetization of guide services. Further refinement of location-based services and expansion into a native mobile application would solidify Local Mate's position as a leading platform for authentic travel experiences.