NourishNet

Mobilizing communities to directly address childhood food insecurity.

Introduction to the Project

◎ **Topic & Goal:** To build a transparent, community-driven platform that connects children in need with a network of donors and food providers.

🌱 **The Origin:** Started as a Capstone Project to demonstrate how technology can facilitate meaningful social change.

💚 **Core Mission:** Creating a direct, on-demand supply chain for aid, bypassing slow traditional systems.

Target Audience & Stakeholders

🫱 The Beneficiaries

Requesters: Trusted adults (teachers, relatives) who submit requests on behalf of children.

Children: The primary beneficiaries who receive timely, nutritious meals through the platform.

🏪 The Providers

Food Providers: Local businesses (restaurants, hotels) and individuals willing to prepare meals.

Donors: Individuals providing financial support, with full transparency on where their funds go.

Team Roles & Implementation

Frontend

Responsible for building the responsive React interface, ensuring accessibility, and managing user interactions.

Backend

Developed the Node.js API, managed database schemas, and ensured secure authentication workflows.

Project Mgmt

Oversaw the GitHub Project Board, managed sprints, and ensured adherence to the agile workflow.

Technology Stack

Tools and solutions chosen for performance, scalability, and maintainability.

Core Technology

React & Vite

Why: Vite provides a lightning-fast build environment, while React offers a modular component-based architecture for a dynamic UI.

Node.js & Express

Why: Non-blocking I/O ideal for real-time updates and a massive ecosystem of middleware for rapid API development.

PostgreSQL

Why: A robust object-relational database chosen for its reliability and ability to handle complex relational data schemas.

Infrastructure & DevOps

🐳 Containerization

Docker & Docker Compose: Used to create consistent development and production environments. This solves the "it works on my machine" problem and simplifies deployment.

⚙️ CI/CD Automation

GitHub Actions: Automated testing and build pipelines ensure that every pull request is verified before merging, maintaining code quality and stability.

Implementation Process

Planning

Proposal definition, database schema design, and creating the Project Management Plan.

Setup

Initializing the repo, setting up Docker containers, and configuring CI/CD pipelines.

Development

Feature-branch workflow, regular code reviews, and tracking tasks on the Project Board.

Testing

Unit testing with Jest, integration testing, and final QA verification.

How the Platform Works

1   **Request Submission:** A trusted adult submits an anonymized request for a child.

2   **Donor Funding:** A donor funds the request and selects a local food provider.

3   **Preparation:** The provider prepares the meal and uploads a photo for verification.

4   **Delivery & Confirmation:** The meal is delivered, and a final confirmation photo ensures accountability before funds are released.

Challenges & Solutions

Privacy vs. Transparency

Problem: Donors want proof, but children's identities must be protected.

Solution: We implemented a strict anonymization layer where data is obscured for donors, but verified by trusted system admins.

Accountability

Problem: Ensuring funds are actually used for food.

Solution: A multi-step verification process requiring photo evidence from both the provider (food) and requester (receipt) before escrow release.

Assessment of Results

Successes

- ✓ successfully deployed an MVP that facilitates end-to-end aid.

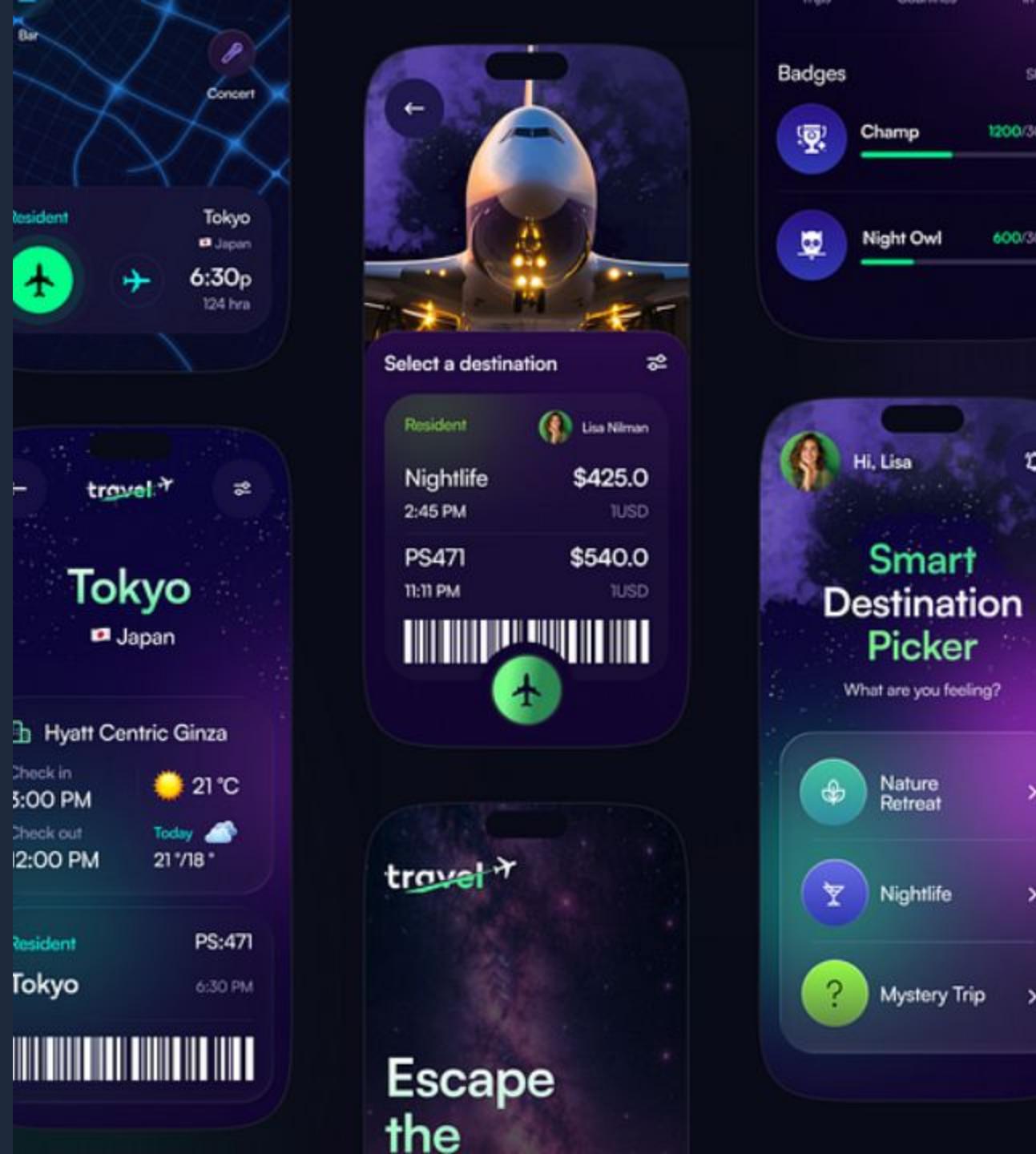- ✓ Established a secure, open-source codebase for community contribution.

Room for Improvement

- ↑ Mobile responsiveness needs optimization for older devices.

- ↑ More advanced automated vetting for new business providers.

Future Development

🚀 **Phase 2 Expansion:** Integrating education and medical aid requests into the platform.

🤖 **AI Monitoring:** Implementing AI to monitor chat logs and verify images for safety compliance.

📱 **Mobile Apps:** Developing native iOS and Android applications to increase accessibility for requesters on the go.

Questions?

Thank you for your attention.

NourishNet Capstone Project

Image Sources

https://media.istockphoto.com/id/623503300/photo/group-photo-of-happy-food-bank-volunteers.jpg?s=612x612&w=0&k=20&c=A-ix7KCF2OnCeHFv4LFShh5wLpCzai8L2P_Nt8X4jdk=

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