

TravelZen – Simplify and harmonize your travel plans

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Problem Statement

Managing travel logistics such as flights, accommodations, local events, and itinerary updates can be highly complex and time-consuming for travellers. The lack of a centralized system that integrates airlines, tour operators, government bodies makes it challenging to streamline travel planning. A cohesive platform offering seamless coordination and proactive suggestions would significantly enhance the travel experience by ensuring efficient handling of travel plans and reducing the hassle of managing multiple sources of information.

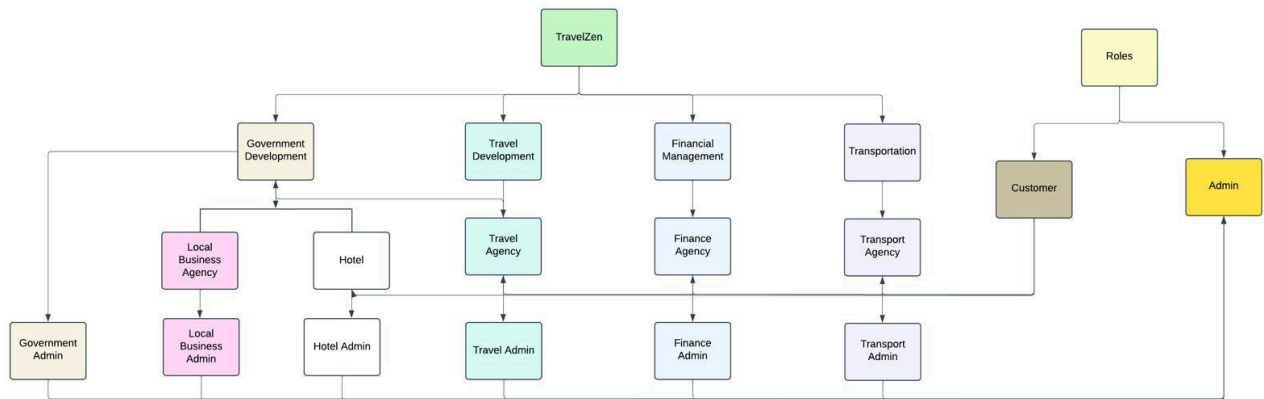
Solution

TravelZen is a unified platform designed to simplify and harmonize travel planning and management. It connects key stakeholders—airlines, travel operators, hotel operators—through a **Travel Network**. By offering automated work requests and user-friendly interfaces for travelers and admins, TravelZen ensures a seamless travel experience.

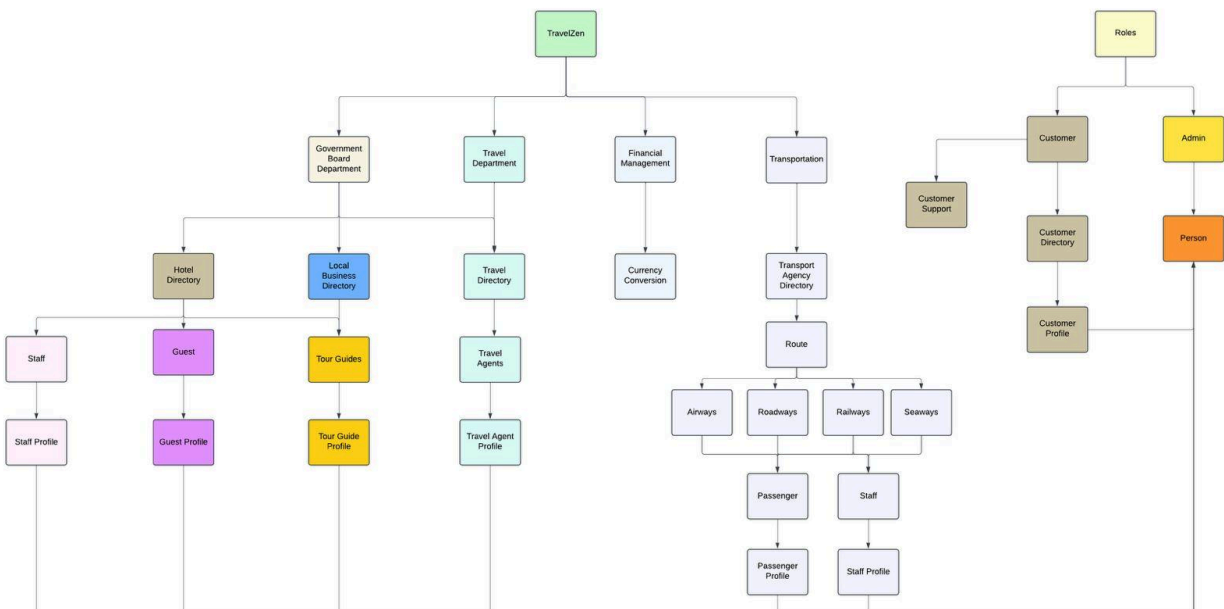
Key features include:

- Centralized itinerary creation and management.
- Cross-enterprise collaboration for smoother operations.
- API for Currency conversion.
- Budget planning with category-wise tracking for international travel expenses.
- Centralized Database(MySQL) for Admin and Customers.
- Email Verification
- Password Encryption and Decryption

High-Level Component Diagram



UML Diagram:



Components

1. UI Layer:

Login and Signup: Role-based access for different users (e.g., Admin and Traveler).

Traveler Dashboard: Allows travelers to view itineraries, bookings, perform functionalities like currency conversion and budget management

Admin Dashboard: Enables admins to manage enterprises and their respective admins.

Interactive Itinerary View: Provides drag-and-drop tools for reordering activities.

2. Business Logic Layer:

Itinerary Management: Handles the creation, updates, and deletion of travel plans.

Booking Management: Manages hotel, route, and local activity bookings.

3. Data Access Layer:

Organizations: Includes Scheduling Flights, Road, Seaways, Railways, Customer Support, Hotel Management, and the

Database: Stores Admin and Customer related data.

4. External Services:

Currency API: Helps user to convert the currency

Jars:

1. iTextPDF: A library for creating and manipulating PDF documents programmatically (e.g., saving invoices or reports like total cost in PDF format).
2. Jakarta Activation: Provides functionality to determine MIME data types and handle operations like data viewing, editing, and printing.
3. Jakarta Mail: Enables applications to send, receive, and process emails using JavaMail API.
4. jBCrypt: A library for securely hashing and storing passwords using the BCrypt algorithm.
5. Mail-1.4.7.jar: A version of JavaMail API (predecessor to Jakarta Mail) for handling email operations like sending and receiving messages.
6. MySQL Connector: A JDBC driver to enable Java applications to connect and interact with MySQL databases.

Ecosystem Hierarchy

Networks

- **Travel Network:** Connects all enterprises and organizations, facilitating seamless communication and collaboration.

Enterprises

1. **Government Tourism Board:** Promotes tourism, cultural heritage, and oversees travel policies to attract visitors.
2. **Transportation Board:** Regulates and manages transport infrastructure, schedules, and safety for public and private transit systems.
3. **Financial Management Board:** Handles financial oversight, budgeting, and funding for tourism-related projects and enterprises.
4. **Travel Department Board:** Coordinates travel operations, including approvals, partnerships, and overall travel industry management.

Organizations

1. **Local Business Agency:** Supports and promotes local businesses catering to travellers, such as local activity providers, tour guides.
2. **Hotel Agency:** Oversees room availability, guest services, and hotel bookings.
3. **Travel Agency:** Manages tour packages, itinerary planning, and alternative travel suggestions.
4. **Transport Agency:** Regulates and manages transportation options, including scheduling and ensuring smooth transit.
5. **Currency Exchange Agency (USA, INDIA, CHINA, EUROPE):** Provides real-time currency conversion and exchange services for international travelers.
6. **Customer Support:** Assists travelers with inquiries, complaints, and issue resolution.

Roles

1. **Admin:** Manages all Enterprise Admins and ensures smooth system-wide operations.
2. **Customer:** Creates and manages personal itineraries.
3. **Travel Agency Admin:** Oversees travel agency operations, including itinerary adjustments and customer bookings.
4. **Hotel Admin:** Manages hotel room availability, bookings, and cancellations.
5. **Financial Admin:** Handles financial transactions, budgeting, and currency exchange operations.
6. **Local Business Admin:** Oversees local business activities catering to tourists, like shops and activities.
7. **Transportation Board Admin:** Regulates and manages transport schedules and operations.

8. **Government Board Admin:** Handles local business and hotel-related activities to support tourism and compliance.

Use Cases

1. **Traveler Use Cases:**
 - Register and log in to the platform.
 - Create and modify itineraries with drag-and-drop reordering.
2. **Admin Use Cases:**
 - Manage users, roles, and enterprises.
3. **Cross-Organization Use Case:**
 - A traveler requests a hotel booking; the request is routed to the Hotel Management Team.
4. **Currency Conversion and Budget Planning:**
 - View currency exchange rates for international travel.
 - Set and monitor trip budgets with category-wise breakdowns.