



College of Electrical and Mechanical Engineering
Department Electrical and Computer Engineering
Database Project Assignment

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Project Overview: Travel and Tourism Management System

Purpose:

The Travel and Tourism Management System is a desktop application designed to streamline and manage various aspects of planning and booking travel packages, with a focus on Ethiopian heritage sites. It aims to serve as a centralized platform for administrators or travel agents to manage tourists, tour packages, guides, accommodations, bookings, and payments.

Core Functionality:

1. Package Management:

- Allows administrators to create, view, update, and delete tour packages.
- Each package includes details like name, description, location (e.g., Lalibela, Axum, Simien Mountains), duration, and price.
- Can link packages to specific hotels that might be part of the tour.

2. Tourist Management:

- Manages tourist information, including name, contact details (email, phone), address, and nationality.
- Facilitates tracking tourist profiles for bookings and communication.

3. Guide Management:

- Maintains a database of tour guides with their names, contact information, languages spoken, and experience.
- Allows assignment of available guides to specific bookings.

4. Hotel Management:

- Manages information about hotels, including name, location, contact details, and ratings.
- Supports the association of hotels with specific tour packages.

5. Booking Management:

- Enables the creation of new bookings, linking a tourist to a specific package.
- Allows for the optional assignment of a tour guide to a booking.
- Calculates and stores the total cost of the booking.
- Tracks the status of bookings (e.g., Pending, Confirmed, Cancelled, Completed).

6. Payment Management:

- Records payment details for bookings, including the amount paid, payment date, payment method, and payment status.
- Ensures that each booking is linked to its corresponding payment.

Target Audience (Primary Users):

While this version is a desktop application, the primary users would be:

- Travel agency administrators/staff.
- Tour operators managing their offerings.

Technological Stack:

- **Language:** Java (using Swing for the Graphical User Interface - GUI).
- **Database:** MySQL (managed via XAMPP local server).
- **Database Connectivity:** JDBC (Java Database Connectivity) using the MySQL Connector/J driver.
- **Development Environment:** VS Code
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Key Architectural Features:

- **Layered Architecture:** The application is structured into distinct layers:
 - **Presentation Layer (UI):** Swing JPanels for user interaction.
 - **Data Access Layer (DAO):** Classes responsible for all database interactions, encapsulating SQL queries.
 - **Model Layer (POJOs):** Plain Old Java Objects representing data entities (Tourist, Package, etc.).
 - **Utility Layer:** For common functionalities like database connection management.
- **Centralized Database Connection:** A DB Connection utility class manages database connections.
- **Data Integrity:** Utilizes database foreign key constraints to maintain relationships and data consistency.

Potential Future Enhancements (Beyond Current Scope):

- User authentication and roles (admin, agent).
- More advanced search and filtering capabilities.
- Reporting features (e.g., popular packages, revenue).
- Integration with online payment gateways.
- Availability checking for guides/hotels.
- Web-based interface for wider accessibility.
- Image handling for packages and locations.

Significance:

This system provides a foundational framework for managing a small to medium-sized travel and tourism operation. By organizing data and automating common tasks, it aims to improve efficiency, reduce errors, and provide a better overview of business operations. The specific focus on Ethiopian heritage sites makes it relevant for promoting local tourism.