



National University of Technology

(Artificial Intelligence Department)

Presenting:

GoZen: A Smart Transport Management System

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Note:

This document presents the comprehensive report of our project **GoZen**. For full access to the project files, source code, and installation instructions, please visit our [GitHub repository](#):

We encourage you to explore the repository for detailed implementation and to experience the project firsthand.

Introduction

GoZen is a modern and user-friendly desktop-based booking application developed in **Java Swing**. It simulates a smart travel system that offers two main booking functionalities:

- **Ticket Booking for Bus and Train**
- **Ride Booking for Bike and Car**

Designed with simplicity and practicality in mind, GoZen ensures a seamless experience for both casual users and travelers. It features a polished UI, interactive animations, dynamic forms, and a database-backed authentication system using **Microsoft Access** via **UCanAccess**.

This project was developed as part of a coursework submission and focuses on delivering a real-world booking system with clear architecture, modular classes, and visually appealing design — aimed at helping users book tickets or rides with ease.

📁 Project Structure

```
ZenGo/
    └── src/
        ├── SplashScreen.java      # Intro screen with loading animation
        ├── AuthSystem.java       # Handles login/signup with DB connection
        ├── MainMenu.java         # Shows Book Ticket / Book Ride options
        ├── BookingManager.java   # Routes user to the appropriate form
        ├── Ticket.java           # Custom confirmation display
        └── resources/
            ├── logo.png          # Logo for splash screen
            ├── ticket2.png        # Ticket-style image for confirmation
            ├── ride.png           # Ride-style image for confirmation
            └── other images/       # Images used in Project

    └── database/
        └── users.accdb          # Microsoft Access DB for user credentials

    └── map/
        └── UcanAccess
            └── ucanaccess.jar     # JDBC driver file
                                    # JDBC driver for MS Access (required)

    └── README.md              # This file!
```

Features

i.

Splash Screen

Functionality:

- **Welcome Interface:** Displays a polished splash screen when the application starts.
- **Branding:** Shows the GoZen logo with a smooth loading animation using dynamic dots.
- **Auto Transition:** After 4 seconds, it automatically transitions to the AuthSystem (Login/Signup screen).

UI Screenshot:



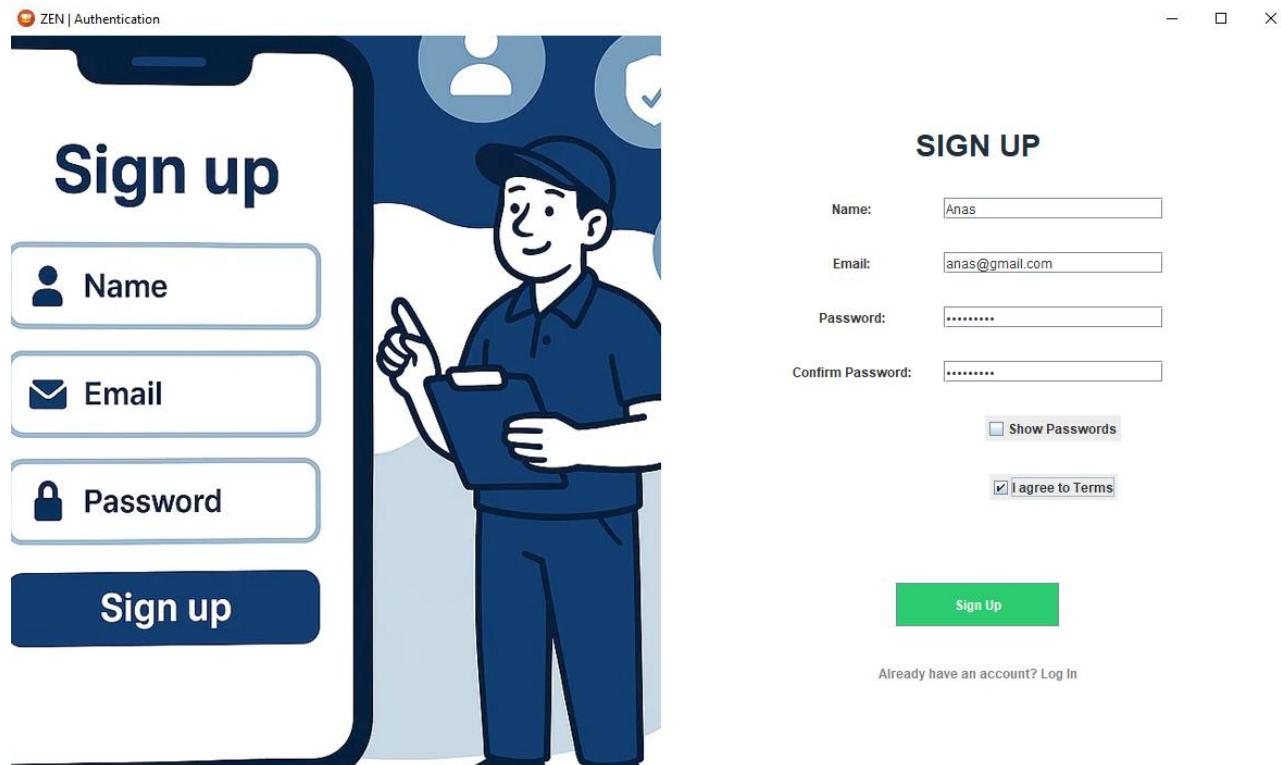
ii.

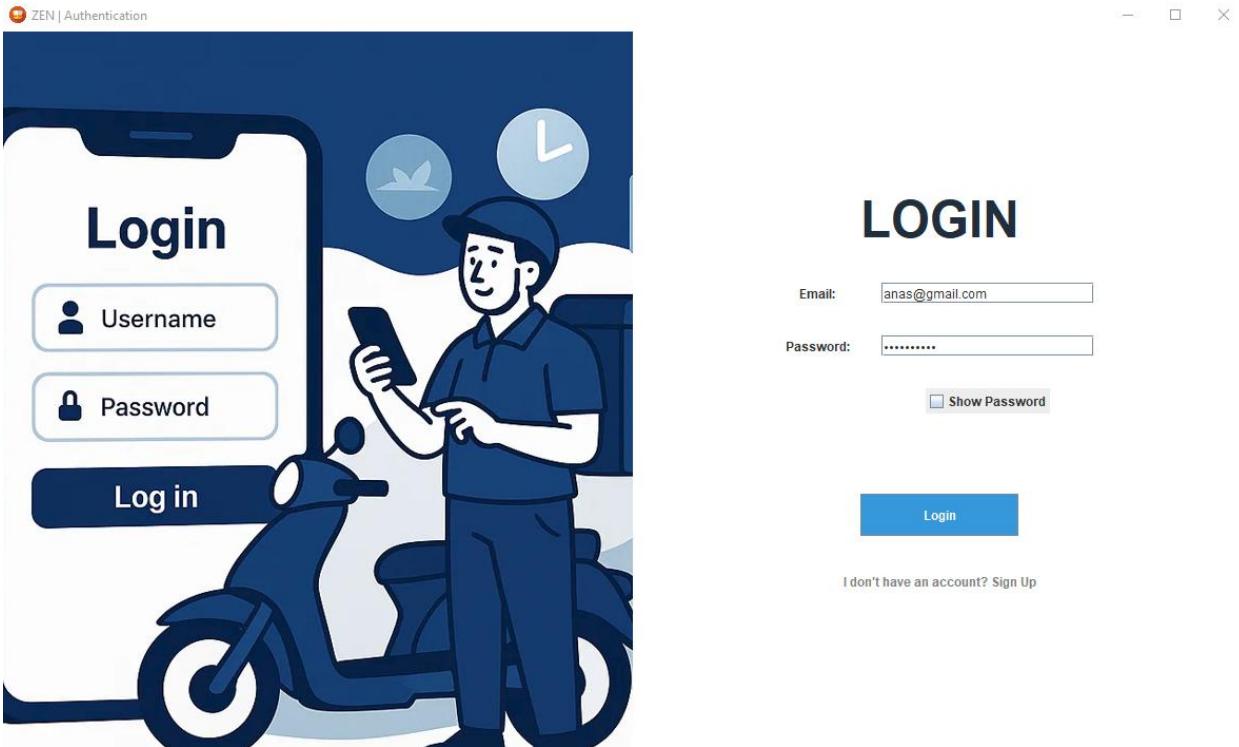
Authentication System

Functionality:

- **Signup Page:** Allows new users to create an account by entering their name, email, and password.
- **Login Page:** Authenticates existing users based on credentials stored in the database.
- **Storage:** Credentials are stored in a connected Microsoft Access database file **users.accdb** using the UCanAccess library.
- **Validation:** Includes error handling for empty fields, password mismatches, and incorrect login credentials.

UI Screenshots:





Error Handling Screenshots:

I agree to Terms

Email must be lowercase and valid.

[Sign Up](#)

You must agree to the terms.

[Sign Up](#)

Password must be 8+ chars with upper/lower/digit/special.

[Sign Up](#)

Invalid email or password.

[Login](#)

iii.

Main Menu Dashboard

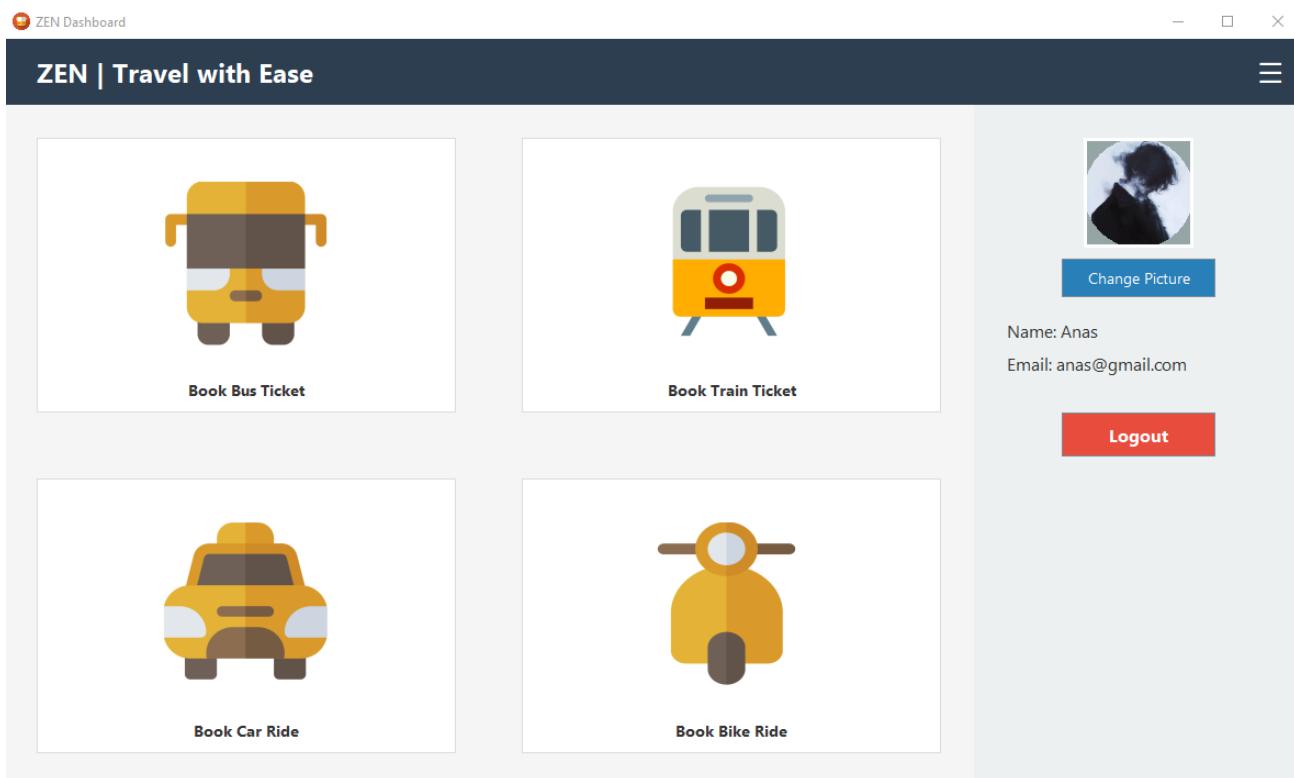
Functionality:

- **Central Hub:** After successful login, users are taken to the GoZen Main Menu — the core navigation dashboard.
- **Transport Options:** Bus, Train, Car, and Bike.
- **Dynamic Navigation:** Clicking any of the four options launches a different booking form, handled by the BookingManager class based on whether it's a **ticket** (bus/train) or a **ride** (car/bike).

User Profile Functionality:

- **User Identification:** The logged-in user's name is displayed on the dashboard.
- **Profile Picture Support:** User can upload a custom profile picture via a file chooser.

UI Screenshot:



iv.

Booking Forms (Ticket & Ride)

Functionality:

Shows booking form based on transport choice:

- *Ticket* (Bus, Train): Name, Source, Destination, Date
- *Ride* (Car, Bike): Name, Pickup, Drop-off, Time

Managed By:

- BookingManager Class decides which form to display.
- **Error Handling:** Checks all fields filled, shows alert if empty

UI Screenshot:

Booking - Book Train Ticket

Name: Anas
Email: anas@gmail.com

Booking Details

Booking Type: Book Train Ticket

From: karachi

To: islamabad

Date (YYYY-MM-DD): 2025-06-10

Time (HH:MM AM/PM): 11:30 am

No. of Seats: 2

Confirm Booking **Reset**

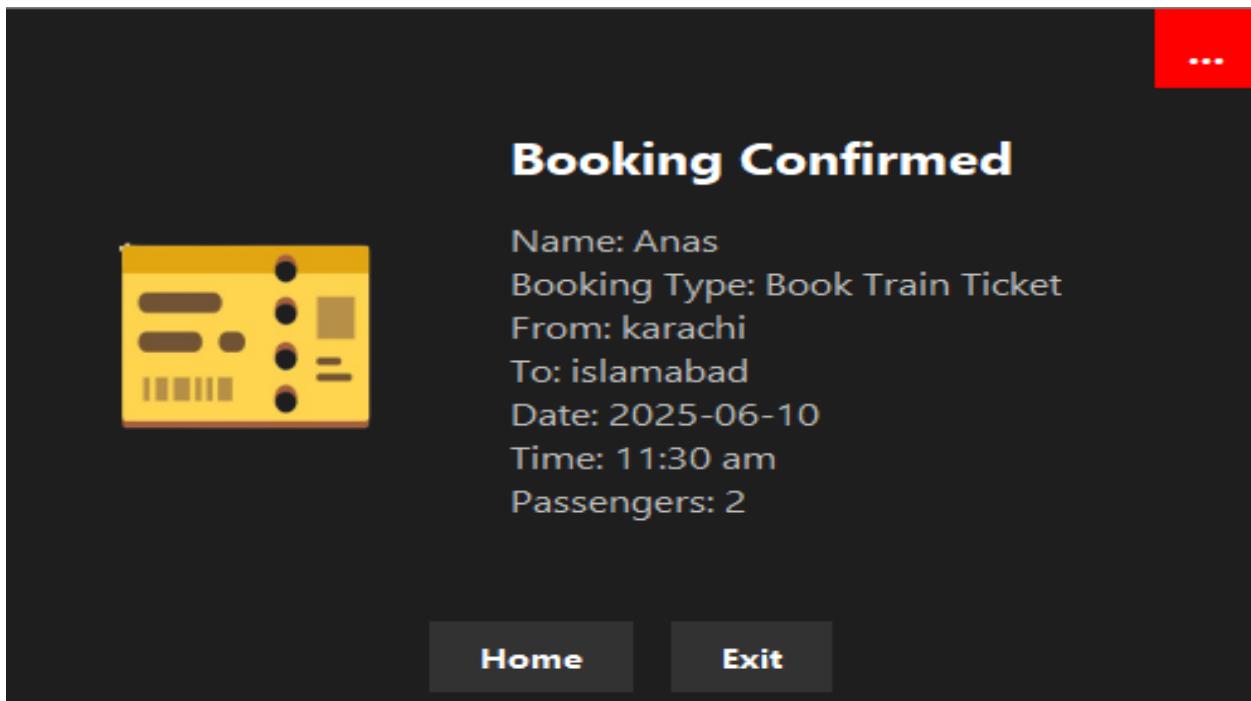
v.

Ticket Confirmation Page

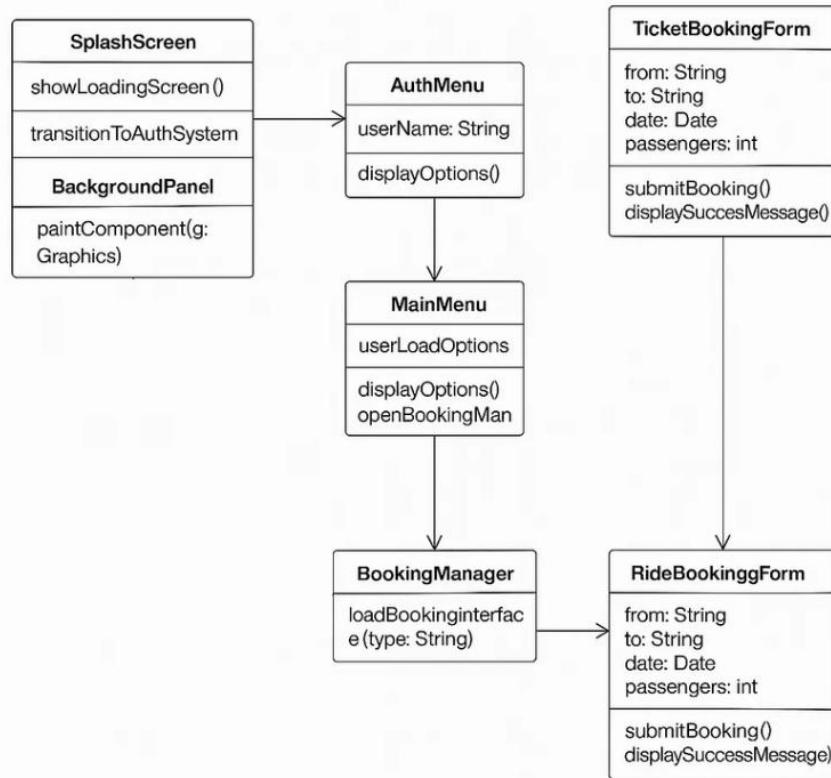
Functionality:

- After booking, a confirmation window pops up.
- Displays all booking details (Name, Type, From, To, Date, Time, Passengers).
- For rides, it also includes the **Vehicle Type**.
- Two buttons:
 - Home: Closes the confirmation window.
 - Exit: Closes the entire application.
- Uses different layouts and images for **Ticket** and **Ride** bookings.
- Ticket bookings show a bus/train image, ride bookings show a car/bike image.

UI Screenshot:



Baisc UML:



For Source Code: [GitHub repository](#)

Final Notes & Project Outcomes

Building *GoZen* has been more than just a semester project — it's been a hands-on journey through real-world software development. From designing intuitive interfaces with Java Swing to implementing secure authentication and smooth booking flows, this project allowed us to:

- Apply **object-oriented programming** in a structured and practical way
- Understand the power of **event-driven GUI development**
- Learn how to integrate **file and database systems** effectively
- Handle real-time **error checking and validation** to improve user experience
- Focus on clean design, accessibility, and ease of use

To Sir Mehran: Thank you for guiding us. This project is our small tribute to everything We've learned in your class.

والآخرة الدنيا في كثيرا خيرا الله جزاك 