# Project: Car Rental System

## Overview

This project is a Car Rental System implemented using .NET MAUI and Blazor. The system includes functionality for managing cars, customers, and rentals. It integrates a SQL Server database for persistent data storage and uses dependency injection for service management.

## File Descriptions

### 1. ****MainPage.xaml****

* **Type**: XAML (UI Definition)
* **Purpose**: Defines the UI layout for the main page of the application. It includes a BlazorWebView to integrate Blazor components within the .NET MAUI application.

### 2. ****MainPage.xaml.cs****

* **Type**: C# (Code-Behind for XAML)
* **Purpose**: Contains the logic for the MainPage. It handles events like initializing the BlazorWebView and logs when the view is initialized.

### 3. ****MauiProgram.cs****

* **Type**: C# (Application Entry Point)
* **Purpose**: Configures the .NET MAUI application, including:
  + Registering services like DataService, CarService, and CustomerService.
  + Setting up dependency injection for SQLM (SQL Manager).
  + Adding support for Blazor WebView and debugging tools.

### 4. ****SQLM.cs****

* **Type**: C# (Database Interaction)
* **Purpose**: Manages SQL Server interactions, including:
  + Fetching data for cars, customers, and rentals.
  + Adding new entries for cars, customers, and rentals.
  + Updating car availability.
  + Reusable helper methods for executing parameterized SQL queries.

### 5. ****AppAssemblyHelper.cs****

* **Type**: C# (Utility)
* **Purpose**: Provides access to assembly metadata, which can be useful for loading resources or dynamic type discovery.

### 6. ****AdminHome.razor****

* **Type**: Blazor Component
* **Purpose**: Represents the Admin Home page, allowing navigation to CarInventory and Add Customer pages.

### 7. ****CarInventory.razor****

* **Type**: Blazor Component
* **Purpose**:
  + Displays a list of cars available in the inventory.
  + Handles loading and error states.
  + Fetches car data from the SQLM service.

### 8. ****ChooseCar.razor****

* **Type**: Blazor Component
* **Purpose**:
  + Allows users to browse available cars for rent.
  + Displays car details and provides a "Rent" button for booking.
  + Navigates to the RentCar page for completing the booking process.

### 9. ****Counter.razor****

* **Type**: Blazor Component
* **Purpose**: A simple counter component for testing and demonstration purposes.

### 10. ****Customers.razor****

* **Type**: Blazor Component
* **Purpose**:
  + Displays a list of customers.
  + Provides a form for adding new customers.
  + Fetches and updates customer data using the SQLM service.

### 11. ****Home.razor****

* **Type**: Blazor Component
* **Purpose**: Serves as the welcome page for the application, displaying a basic introduction.

### 12. ****Main.razor****

* **Type**: Blazor Component
* **Purpose**:
  + Acts as the root component.
  + Allows users to select their role (Admin or User).
  + Displays the appropriate home page (AdminHome or UserHome) based on the selected role.

### 13. ****RentCar.razor****

* **Type**: Blazor Component
* **Purpose**:
  + Handles the car rental process.
  + Accepts user details and books the car.
  + Updates the car's availability and saves the rental details to the database.

### 14. ****UserHome.razor****

* **Type**: Blazor Component
* **Purpose**: Provides a simple user home page with a button to navigate to the ChooseCar page for renting a car.