Documentation for Car Rental Application

This documentation provides an overview of the main class implementation for a Car Rental Application developed using PyQt5 and SQLite by Alp Doğu Akış, Çisem Güre, Doğa Bengü Kotan and Yiğitcan Teke as all of us' first software project.

Dependencies
> **PyQt5:** Provides UI components.
> **sqlite3**: Facilitates database management.
> **datetime:** Used for date manipulation.

Code Overview

Database Connection

```
con = sqlite3.connect("Rent A Car.db")
```

```
cursor = con.cursor()
```

The code connects to the SQLite database Rent A Car.db, enabling data operations.

Class: main
The main class, derived from QMainWindow, handles the main functionality of the application, including UI setup, database operations, and event handling.

__init__ Method
The initializer sets up the UI, connects button actions, and populates data in UI components like tables and ComboBoxes.

Methods
1. **ComboBox()**
   - Populates various ComboBoxes with data retrieved from the database.
   - Fetches and adds customers, vehicles, employees, and branches to their respective ComboBoxes.
2. **fetch_data_from_database()**
   - Fetches data from the SalesData table to be displayed in the application.
3. **populate_table()**
   - Populates a QTableWidget in the UI with SalesData from the database.
   - Uses fetched data to dynamically set the table's row and column counts.

4. **customerregister()**
    - Registers a new customer by collecting data from input fields.
    - Validates inputs and inserts customer details into the Customers table in the database.
    - Updates the customer ComboBox after registration.
5. **eklebutonu()**
    - Adds a new sales transaction to the SalesData table.
    - Validates required fields, formats dates, and ensures correct data types for cost and profit.
    - Inserts sales transaction data into the database and refreshes the vehicle ComboBox and table view.

UI Components and Buttons
- **self.qtTasarim.ekle:** Button connected to eklebutonu() for adding new sales transactions.
- **self.qtTasarim.register_2:** Button connected to customerregister() for registering customers.

Database Tables
- **Customers**: Stores customer details.
- **Vehicles**: Stores vehicle information (includes vehicle availability).
- **Employees**: Stores employee details (filtered by department).
- **Branches**: Stores branch locations.
- **SalesData**: Stores sales transaction details.

Error Handling and Validation
- Phone number validation in customerregister() checks for a 10-digit numeric format.
- Date format validation ensures correct entry format (mm-dd-yyyy) for transaction dates in eklebutonu().

Main Application Execution

```
app = QApplication([])

pencere = main()

pencere.show()

app.exec_()

con.close()
```

The application initiates a QApplication, displays the main window, and executes the event loop. Finally, it closes the database connection on exit.