# Project Summary: Online Car Rental Platform

**Objective:**

The project aims to build an online car rental platform using Object-Oriented Programming (OOP) in Python. Customers can rent cars on an hourly, daily, or weekly basis and return them to receive an auto-generated bill. The platform will manage inventory, track rental periods, and calculate rental costs based on the duration and rental mode chosen.

**Problem Statement:**

A car rental company needs an online platform where customers can:

1. View available cars for rent.
2. Rent cars on an hourly, daily, or weekly basis.
3. Rent multiple cars, provided the requested number doesn't exceed the available inventory.
4. Return the rented cars and receive a bill based on the rental period and mode.

**Solution Outline:**

1. **CarRental Class**:
    - Manages the car inventory and rental operations.
    - Methods:
        - display_cars(): Shows available cars for rent.
        - rent_hourly(num_of_cars): Allows customers to rent cars on an hourly basis.
        - rent_daily(num_of_cars): Allows daily car rentals.
        - rent_weekly(num_of_cars): Allows weekly car rentals.
        - return_cars(request): Calculates the total bill based on rental period and updates inventory when cars are returned.
    - Handles stock updates and validates car requests.
2. **Customer Class**:
    - Handles customer requests and returns.
    - Methods:
        - request_cars(): Allows customers to request a specific number of cars.

        - return_cars(): Returns the cars rented and prepares the necessary data (rental time, basis, and cars rented) for billing.

3. **Main Program**:
    - Provides a user-friendly interface for customers to interact with the system.
    - Customers can choose to:
        - View available cars.
        - Rent cars on an hourly, daily, or weekly basis.
        - Return rented cars and receive the total bill.
        - Exit the platform.
    - Uses input validation and guides customers through rental and return processes.

**Billing Mechanism:**

- **Hourly Rental**: $5 per hour per car.
- **Daily Rental**: $20 per day per car.
- **Weekly Rental**: $60 per week per car.
- The final bill is generated based on the rental duration (calculated from the return time) and the rental mode selected.

**Tools Used:**

- **Jupyter Notebook**: To create and execute the Python project.
- **Python**: Object-Oriented Programming concepts to design classes and methods.

**Project Flow:**

1. A customer can check the availability of cars.
2. Choose to rent cars for a specific time (hourly, daily, weekly).
3. Return the cars and automatically receive a bill based on the usage.

**Key Features:**

- Dynamic inventory management.
- Accurate billing based on rental duration and mode.
- Real-time updates on available cars.
- Simple user interface through command-line interaction.