

EFFECT Parking Management System

Introduction

- Finding no vacant parking spots wastes drivers' time and causes stress. This project, built in C++, aims to solve this by providing an efficient, organized parking management system for smoother operations.
- Disorganized parking lots stem from poor guidance systems and lack of a user interface, causing congestion. Inefficient fee calculation further delays vehicle exits, worsening traffic flow and driver frustration.

The Project

The Enhancing Parking-Lot Experience by Efficient Tidying (EPEECT) project is a C++ based Parking Management System designed to make parking operations more efficient and organized. It displays available parking slots, records vehicle entries and exits, and automatically calculates parking fees based on time duration, overnight stays, and lost card penalties. Through automation, EPEECT minimizes manual errors and delays, ensuring faster transactions and better monitoring of parking activities.

Objectives

- Simplify parking management.
- Track vehicle details efficiently.
- Automate parking fee computation.
- Generate and save logs for record-keeping.

Features

- **Vehicle Entry** - records the license plate and entry time.
- **Vehicle Exit** - Records exit time, calculates duration, and computes fees.
- **View Logs** - Displays all vehicles with entry/exit details and fees.
- **Save Logs** - Saves parking logs to a timestamped text file.

Demo

```
+=====+
      EPEECT PARKING MANAGEMENT SYSTEM
+=====+
Available Spaces: 100 / 100
-----
[1] Vehicle Entry
[2] Vehicle Exit
[3] View Parking Logs & Invoices
[4] Exit Program
-----
Enter your choice: |
```

Demo

```
+=====+  
          EPEECT PARKING MANAGEMENT SYSTEM  
+=====+  
Available Spaces: 100 / 100  
-----  
[1] Vehicle Entry  
[2] Vehicle Exit  
[3] View Parking Logs & Invoices  
[4] Exit Program  
-----  
Enter your choice: 1  
  
Enter License Plate: ABC  
Enter Entry Time (HH:MM): 9:30  
Vehicle entered successfully.  
Slots remaining: 99
```

```
+=====+  
          EPEECT PARKING MANAGEMENT SYSTEM  
+=====+  
Available Spaces: 99 / 100
```

```
Enter License Plate: ABC  
Enter Entry Time (HH:MM): 25:61  
ERROR: Invalid time format. Please use HH:MM (24-hour format).
```

Demo

```
+=====+  
      EPEECT PARKING MANAGEMENT SYSTEM  
+=====+  
Available Spaces: 99 / 100  
-----  
[1] Vehicle Entry  
[2] Vehicle Exit  
[3] View Parking Logs & Invoices  
[4] Exit Program  
-----  
Enter your choice: 2  
+=====+  
          CURRENTLY PARKED VEHICLES  
+=====+  
#   License Plate   Entry Time  
-----  
1   ABC           9:30  
  
Select a vehicle to exit (1 - 1): 1  
Enter Exit Time (HH:MM): 12:30  
Do you have your parking card? (Y/N): y  
Was the car parked overnight? (Y/N): n  
+=====+  
          EXIT SUMMARY  
+=====+  
License Plate: ABC  
Entry Time:    9:30  
Exit Time:    12:30  
Parking Fee:   60.00 Pesos  
-----  
Vehicle exited successfully!  
Slots remaining: 100  
  
Press Enter to continue...|
```

Demo

```
+=====+  
          EPEECT PARKING MANAGEMENT SYSTEM  
+=====+  
 Available Spaces: 99 / 100  
-----  
[1] Vehicle Entry  
[2] Vehicle Exit  
[3] View Parking Logs & Invoices  
[4] Exit Program  
-----  
Enter your choice: 3  
+=====+  
          EPEECT PARKING LOGS  
+=====+  
#    License Plate   Entry Time      Exit Time      Fee (Pesos)  
-----  
1    ABC            9:30           12:30          60.00  
2    DEF            10:30          [Still Parked] ----  
-----  
Press Enter to continue...|
```

Demo

 Final Proj Code 4.exe	13/11/2025 11:09 am	Application	806 KB
 ParkingLogs_2025-11-13_11-11.txt	13/11/2025 11:11 am	Text Document	1 KB

=====				
<EPEECT Parking Management>				
#	License Plate	Entry Time	Exit Time	Fee (₹)
1	ABC123	12:30	16:30	90.00
=====				

Conclusion and Recommendation

The EPEECT Parking Management System efficiently automates vehicle tracking and fee computation, ensuring accuracy and organized record management. To further enhance its usability and scalability, future improvements such as a GUI, database integration, and automated features like real-time tracking and license plate recognition are recommended.

The End

THANK YOU FOR LISTENING