**Use Cases for a Parking System**

ICT 4305: Object Oriented Methods and Programming

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**PART 1: USE CASE DIAGRAM**

A diagram of parking system

AI-generated content may be incorrect.

**ACTORS:**

* Customer – students, faculty, staff, visitors
  + - Parking Office – admin
    - Gate / Parking Lot Hardware – scanners or gates in each lot (entry only or entry and exit)
    - Payment Gateway – external payment processor/ billing service
    - Enforcement - parking attendant
    - System – University Parking Management System

**KEY INTERACTIONS:**

* **Customer Interactions**
  + - Register Account / Login – create a customer profile
    - Register Vehicle – add vehicle details into the system
    - Purchase Permit – buy a parking permit
    - Assign / Manage Permits – link permits to vehicles or update then
    - Enter Lot (Scan) – scan a permit at the gate to enter
    - Exit Lot (Scan) – scan at the gate to leave
    - View Account/Transactions – check history and balances
    - Renew Permit – extend validity of existing permit
* **System / Automated Interactions**
  + - Validate Permit – confirm the scanned permit is valid
    - Calculate Parking Fee – determine the fee based on time/lot rules
    - Apply Discount (conditional) – apply compact car or special discounts
    - Charge Payment – bill customer’s account or process external payment
* **Parking Office (Admin) Interactions**
  + - Configure Lot Pricing – set rules for different lots
    - Generate Reports – usage, revenue, violations
    - Assign / Manage Permits
* **Enforcement Officer Interactions**
  + - Issue Violation – ticker or fine for improper use