Saunders Parking Systems
Use Case Model

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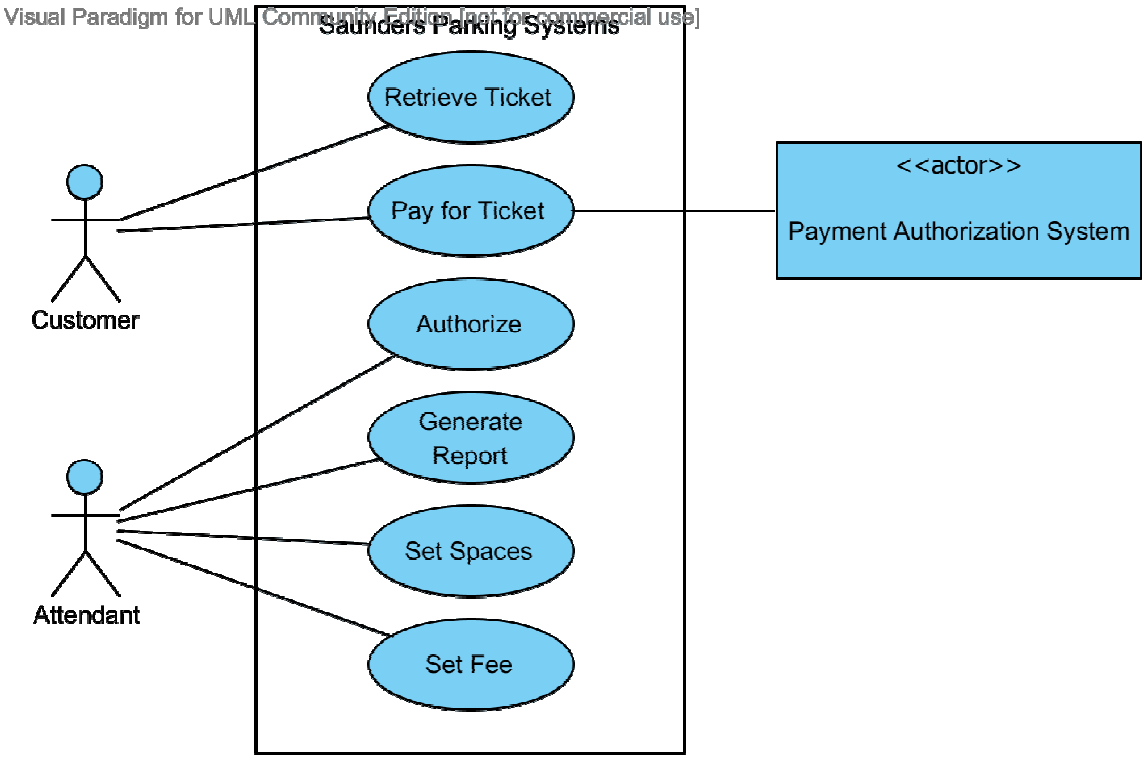
Use Case Diagram



Actor-Goal Table

Actor(s)	Goal
Customer	Retrieve a Ticket
Customer	Pay for a Ticket
Attendant	Set Parking Fee
Attendant	Set Garage Spaces
Attendant	Generate Report
Payment Authorization Service	Authorize Credit Card Payments

UC-1: Retrieve Ticket

Scope

Saunders Parking Systems

Level

User Goal

Primary Actor

Customer

Stakeholders and Interests

Customer: Retrieve ticket from dispenser, enter garage
Attendant: Garage sign updated

Preconditions

None

Success Guarantee

Customer has ticket and entered garage. Garage sign updated

Main Success Scenario

1. Customer requests ticket
2. System receives ticket request
3. System generates unique ticket ID
4. System records Entrance Event information
5. System creates ticket
6. Customer retrieves ticket
7. System opens garage gate
8. Customer enters garage
9. System updates garage sign
10. System closes garage gate

Extensions

Step 5: Dispenser out of blank tickets *(Out of Scope)*
    1. If system can detect the error, attendant will be summoned
    2. Attendant will replace blank tickets
    3. System continues at step 6

Step 7: Gate will not open *(Out of Scope)*
    1. If system can detect the error, attendant will be summoned
    2. Attendant will manually open gate
    3. System continues at step 8

Step 9: Sign will not update *(Out of Scope)*
    1. If system can detect the error, attendant will be summoned
    2. Attendant will manually update the sign
    3. System continues at step 10

Step 10: Gate will not close *(Out of Scope)*

1. If system can detect the error, attendant will be summoned
2. Attendant will manually close gate

Special Requirements

None

Variations in Technology and Data

Step 3: Ticket ID should be universally unique
Step 4: Entrance Event information consists of time stamp & ticket id

Frequency of Occurrence

Every time a customer requires entrance into the garage, Could be nearly continuous

Miscellaneous

None

UC-2: Pay for Ticket

Scope

Saunders Parking Systems

Level

User Goal

Primary Actor

Customer

Stakeholders and Interests

Customer: Pay parking fee, exit garage
Attendant: Garage sign updated
Payment Authorization System: Authorize electronic payments
Garage Owner: Collect garage revenue

Preconditions

UC-1 completed successfully

Success Guarantee

Payment authorized, fee paid, and customer exited garage. Garage sign updated

Main Success Scenario

1. Customer approaches exit gate
2. System asks for Customer ticket
3. Customer inserts ticket
4. System reads ticket
5. System computes total fee
6. System presents customer with fee
7. System asks for payment
8. Customer provides payment
9. If electronic payment, System authorizes payment
10. System records Exit Event information
11. System prints receipt
12. Customer retrieves receipt
13. System opens gate
14. Customer exits garage
15. System updates garage sign
16. System closes gate

Extensions

Any Step: Assistance Needed
    1. Customer indicates assistance is needed
    2. System summons Attendant to provide assistance

Step 2: Customer has lost ticket

1. Customer indicates ticket has been lost
2. System charges lost ticket fee
3. System continues as step 6

Step 4: System can not read ticket

1. System returns ticket
2. Customer is prompted to enter ticket id manually
3. Customer enters ticket id
4. System continues at step 5

Step 5: Ticket is invalid

1. System indicates ticket is invalid
2. System charges lost ticket fee
3. System continues as step 6

Step 8: Customer does not have valid payment

1. Attendant is summoned for manual resolution

Step 9: Payment authorization denied

1. System indicates payment authorization failed
2. System returns to step 7

Step 11: Dispenser out of paper *(Out of Scope)*

1. If system can detect the error, attendant will be summoned
2. Attendant will replace paper
3. System continues at step 12

Step 13: Gate will not open *(Out of Scope)*

1. If system can detect the error, attendant will be summoned
2. Attendant will manually open gate
3. System continues at step 14

Step 15: Sign will not update *(Out of Scope)*

1. If system can detect the error, attendant will be summoned
2. Attendant will manually update the sign
3. System continues at step 16

Step 16: Gate will not close *(Out of Scope)*

1. If system can detect the error, attendant will be summoned
2. Attendant will manually close gate

Special Requirements

- System should accept cash (exact change only) and electronic (credit/debit card) payments.
- Credit authorization response within 30 seconds 90% of the time.

Variations in Technology and Data

None

Frequency of Occurrence

Every time a customer requires to exit the garage, Could be nearly continuous

Miscellaneous

None

UC-3: Generate Report

Scope

Saunders Parking Systems

Level

User Goal

Primary Actor

Attendant

Stakeholders and Interests

Attendant: Generate usage & revenue reports

Preconditions

UC-6 completed successfully

Success Guarantee

Reports generated

Main Success Scenario

1. Attendant indicates a report should be generated
2. System prompts the Attendant to select report type
3. Attendant selects report type
4. System presents Attendant with report options
5. Attendant sets report options
6. Attendant indicates report should be generated
7. System generates report

Extensions

Any Step: Cancellation

1. Attendant indicates the report generation should be cancelled
2. System returns to pre-reporting state

Special Requirements

None

Variations in Technology and Data

Step 7: Reports will be displayed on the screen only.

Frequency of Occurrence

Daily

Miscellaneous

None

UC-4: Set Fee

Scope

Saunders Parking Systems

Level

User Goal

Primary Actor

Attendant

Stakeholders and Interests

Attendant: Adjust the parking fee for the garage
Garage Owner: Adjust fee's to increase business and revenue

Preconditions

UC-6 completed successfully

Success Guarantee

Fee's updated to new fee

Main Success Scenario

1. Attendant indicates the parking fee should be adjusted
2. System asks the Attendant for the new parking fee
3. Attendant enters new parking fee
4. System sets the parking fee
5. System returns to pre-configuration state

Extensions

None

Special Requirements

None

Variations in Technology and Data

None

Frequency of Occurrence

Whenever parking fee's change

Miscellaneous

None

UC-5: Set Spaces

Scope

Saunders Parking Systems

Level

User Goal

Primary Actor

Attendant

Stakeholders and Interests

Attendant: Update spaces to match garage availability

Preconditions

UC-6 complete successfully

Success Guarantee

Number of spaces updated to reflect availability

Main Success Scenario

1. Attendant indicates the spaces available should be adjusted
2. System asks the Attendant for the new space count
3. Attendant enters new space count
4. System sets the space count
5. System returns to pre-configuration state

Extensions

None

Special Requirements

None

Variations in Technology and Data

None

Frequency of Occurrence

Whenever space availability changes

Miscellaneous

None

UC-6: Authentication

Scope

Saunders Parking Systems

Level

User Goal

Primary Actor

Attendant

Stakeholders and Interests

Attendant: Wants to be authorized by the system

Preconditions

None

Success Guarantee

Attendant is authorized

Main Success Scenario

1. Attendant indicates they want to be authorized
2. System prompts Attendant for credentials
3. System verifies credentials
4. System indicates the Attendant is authorized

Extensions

Step 3: Credentials invalid

1. System indicates the provided credentials are invalid
2. System returns to step 2

Special Requirements

None

Variations in Technology and Data

Step 2: Credentials will be provided as a user id and pin

Frequency of Occurrence

Potentially several times an hour

Miscellaneous

None