**Android Parking Booking System.**

**<Search Slot System>**

**REQ-User Story Style TEAM: 9 in SWE, CAUCSE 2021.**

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| --- | --- | --- |
| **identifier** | **User Story** | **Size** |
| **FR-1** | **As a customer, I will be able to see the internal structure of the parking lot.** | **4** |
| **FR-2** | **As a customer, I will be able to select available slots of the parking lot after choosing date, time, rental time.** | **4** |

**<USE CASE>**

**Actor : customer, administor**

**#deriving use cases from user story requirements.**

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| **Actor** | **Actor’s Goal** | **Use Case Name** |
| **customer** | **To search available slots of parking lot.** | **SearchSlot(UC-1)** |
| **customer** | **To choose date, time, rental time and check if it is available time on parking lot operation time.** | **SelectTime(UC-2)** |
| **customer** | **To see the empty slots on the internal structure of the parking lot.** | **ShowSlot(UC-3)** |
| **Server** | **To provide information of current available slots.** | **UC-1** |
| **Server** | **To provide the parking lot’s internal structure.** | **UC-3** |
| **Server** | **To check vaild time.** | **UC-2** |

**UC-1 : SearchSlot**

**UC-2 : SelectTime**

**UC-3 : ShowSlot**

**# Traceability Matrix - REQ -> Use Case**

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| --- | --- | --- |
| **Req’t** | **PW** | **UC1 UC2 UC3** |
| **FR-1**  **FR-2** | **4**  **4** | **x**  **x x x** |
| **Max PW** | | **4 4 4** |
| **Total PW** | | **4 4 8** |

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| **Use Case UC-1:** | **SearchSlot** |
| **Related**  **Requirements:** | **FR-2** |
| **Initiating Actor:** | **Customer** |
| **Actor’s Goal:** | **To search available slots of the parking lot.** |
| **Participating Actor:** | **Server** |
| **Preconditions:** | **Customer is logged in the system.**  **Customer is in the “Booking” stage.**  **Customer chooses a parking lot which he/she wants.**  **Customer inserts date, time, rental time.** |
| **Postconditions:** | **The application searches slots that can be booking-available.** |
| **Flow of Events for Main Success Scenario.** | 1. **Include SelectTime**   **← 2. System checks all slots based on the time entered by the customer and stores available slots only.** |
| **Flow of Events for Extensions(Alternate Scenario.)** | **2a. If there are no slots available.**  **← 1. System shows the message that there are no available slots at that time.**  **→ 2. Customer inputs another time or goes back to the initial stage.** |

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| **Use Case UC-2:** | **SelectTIme** |
| **Related**  **Requirements:** | **FR-2** |
| **Initiating Actor:** | **Customer** |
| **Actor’s Goal:** | **To choose date, time, rental time the customer wants.** |
| **Participating Actor:** | **Server** |
| **Preconditions:** | **Customer is logged in the system.**  **Customer is in the “Booking” stage.**  **Customer chooses a parking lot which he/she wants.** |
| **Postconditions:** | **System shall store the time selected by the customer.** |
| **Flow of Events for Main Success Scenario.** | **← 1. Application shows the internal map of the parking lot.**  **→ 2. Customer selects date, time, rental time.**  **← 3. System verifies that the time is valid. If it is correct, go to the next step.** |
| **Flow of Events for Extensions (Alternative Scenarios)** | **3(a). Customer selects invalid time.**  **← 1. System (a) detects invalid time for the parking lot’s business hours, and (b)notifies the customer.**  **← 1(a). System detects that the time entered by the customer is incorrect for the parking lot’s business hours, (b)notifies the customer that time is invalid.**  **→ 2. Customer selects date, time, rental time which is correct for the parking lot’s business.** |

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| **Use Case UC-3:** | **ShowSlot** |
| **Related**  **Requirements:** | **FR-1, FR-2** |
| **Initiating Actor:** | **Customer** |
| **Actor’s Goal:** | **To see the empty slots on the internal structure of the parking lot.** |
| **Participating Actor:** | **Server** |
| **Preconditions:** | **Customer is logged in the system.**  **Customer is in the “Booking” stage.**  **Customer chooses a parking lot which he/she wants.** |
| **Postconditions:** | **The application shows the inside map of the parking lot.** |
| **Flow of Events for Main Success Scenario.** | **← 1. Load the internal map information of the parking lot which the customer choses.**  **2. include search slot**  **→ 3. Show the empty slots on the map.**  **← 4. Customer selects a parking lot.** |