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| **identifier** | **User Story** | **Size** |
| **FR-1** | As a user, I will be able to enter my vehicle information, personal information, reservation ID at the beginning of the app main page. | 3 |
| **FR-2** | As a user, I want simplicity and clarity 7 options on menu: “Booking”, “Quick Booking”, “Reservation Status”, “My Info”, “Feedback”, “Cancel reservation”, “Logout”. | 5 |
| **FR-3** | As a user, I will be able to choose a parking slot and can see each parking slot status and actual internal slot after selecting “Booking”. | 12 |
| **FR-4** | As a user, I will be able to insert the date and time which I want to make a reservation. | 2 |
| **FR-5** | As a user, I will be able to see available slots of reservation time. | 7 |
| **FR-6** | As a user, I will be able to make a quick payment by saving the pre-entered payment information. | 4 |
| **FR-7** | As a user, I will be able to book reservation time and automatically select parking slot by pressing the “Quick Booking” button. | 10 |
| **FR-8** | As a user, I will be able to change status from log-in to log-out when select “Logout”. | 4 |
| **FR-9** | As a user, I will be able to check my reservation status when select “Reservation Status”. | 2 |
| **FR-10** | As a user, I will be able to insert and see all information(car number, payment method, personal information) when selecting “My Info” button. | 4 |
| **FR-11** | As a user, I will be able to modify my information when selecting “My Info” button. | 4 |
| **FR-12** | As a user, I will be able to cancel my reservation when select “Cancel reservation”. | 4 |
| **FR-13** | As a user, I will be able to send the inconvenience problems by selecting “Feedback” button. | 8 |
| **FR-14** | As a user, will be able to get message from application, when the wrong car is seated in my reservation slot. | 10 |
| **FR-15** |  |  |
| **FR-16** |  |  |
| **FR-17** |  |  |
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| **Actor** | **Actor’s Goal(what the actor intends to accomplish)** | **Use Case Name** |
| **System** | To display information about vehicle information, personal information, reservation ID. | Display(UC-1) |
| **System** | To display 7 menu to the main page. | Display(UC-1)  Select slot(UC-2) |
| **User** | To search empty parking slot and reserve parking slot, date, time | Booking(UC-3)  Search information(UC-4)  Revise information(UC-9) |
| **User** | To insert the date and time which I want to make a reservation. | Booking(UC-3) |
| **User** | To see available slots of reservation time | Search information(UC-4)  Display(UC-1) |
| **User** | To log-out the application | Loginout(UC-5) |
| **User** | To make a quick payment by saving the pre-entered payment information | Payment(UC-6) |
| **System** | To send alert messsage if the wrong car is parked on the reservated seat. | Search information(UC-4)  UC-7 : Internal Camera  External web connecting(UC-8) |
| **User** | To insert and revise and see all information | Revise information(UC-9)  Search information(UC-4) |
| **User** | To book reservation time automatically | Booking(UC-3) |
| **User** | To check the reservation status | Search information(UC-4) |
| **User** | To write incovenience problem which will be send to system manager. | Feedback(UC-8) |

**UC-1 : Display REQ1: enter my info from beginning of the app main page REQ2 :7 simplicity menu on the app**

**UC-2 : SelectSlot REQ3: choose parking slot and can see slot’s status REQ4: insert the date and time for reservation**

**UC-3 : Booking REQ5: want to see available slots of reservation time**

**UC-4 : Search information REQ6: able to make a quick payment by saving payment infoamtion**

**UC-5 : Loginout REQ7: able to book reservation time automatically by “Quick Booking” button**

**UC-6 : Payment REQ8: can change app login status by ‘logout’**

**UC-7 : Internal Camera REQ9: check reservation status by selecting “reservation status REQ10: insert and see car**

**information**

**UC-8 : External web connecting REQ11: modify information by “my info” button. REQ12: able to cancel reservation by button**

**UC-9 : Revise inforamtion REQ13: able to send incovenience problem REQ14: able to get parking information message**

**from application**

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| **Req’t** | **PW** | | **UC1** | **UC2** | **UC3** | **UC4** | **UC5** | **UC6** | **UC7** | **UC8** | **UC9** |
| **REQ1** | **1** | | **X** |  |  |  |  |  |  |  |  |
| **REQ2** | **5** | | **X** |  | **X** |  |  |  |  |  |  |
| **REQ3** | **3** | | **X** | **X** |  | **X** |  |  | **X** |  |  |
| **REQ4** | **3** | | **X** | **X** | **X** |  | **X** |  |  |  | **X** |
| **REQ5** | **2** | | **X** | **X** |  | **X** |  |  |  |  |  |
| **REQ6** | **1** | | **X** |  | **X** |  |  | **X** |  | **X** | **X** |
| **REQ7** | **1** | | **X** | **X** | **X** | **X** |  |  |  |  | **X** |
| **REQ8** | **2** | | **X** |  |  |  | **X** |  |  |  | **X** |
| ***REQ9*** | ***2*** | | ***X*** |  |  | ***X*** |  |  |  |  |  |
| ***REQ10*** | ***4*** | |  |  |  | ***X*** |  |  |  |  | ***X*** |
| ***REQ11*** | ***2*** | | ***X*** |  |  |  | ***X*** | ***X*** |  |  | ***X*** |
| ***REQ12*** | ***3*** | | ***X*** |  |  |  |  | ***X*** |  |  | ***X*** |
| ***REQ13*** | ***1*** | |  |  |  |  |  |  |  | ***X*** |  |
| ***REQ14*** | ***2*** | | ***X*** |  |  |  |  |  | ***X*** | ***X*** |  |
| ***MAX PW*** | | | ***5*** | ***3*** | ***5*** | ***4*** | ***2*** | ***1*** | ***3*** | ***2*** | ***4*** |
| ***TOTAL PW*** | | | ***27*** | ***9*** | ***10*** | ***12*** | ***4*** | ***6*** | ***5*** | ***4*** | ***16*** |

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| **Use case UC-1 :** | **Display** | |
| Related Requirements: | REQ1 , REQ2 , REQ3 , REQ4 , REQ5 , REQ6 , REQ7 , REQ8 , REQ9 , REQ11 , REQ12 , REQ14 | |
| Initiating Actor: | Any of : User | |
| Actor’s Goal: | To display menu or some information from system. | |
| Participating Actors: | Menu, Status | |
| Preconditions: | * The information must be prepared on the information storage to show. * The system must have a image or successful condition to use. | |
| Postconditions: | * Display image or information what users want or system have called. | |
| Flow of events for Main Success Scenario: | | |
| -> | 1. User executes the application and system call information and images from storagel to “display” | |
|  | 1. Include Search information(UC-4) | |
| <- | 1. display its image , informations , buttons. | |
| -> | 1. User can make new interaction by choosing the button | |
| Flow of Events for Extensions(Alternative Scenarios:) | | |
| 4a. User enter a button to go new page or new function | | |
| -> | 1. User executes the button and system call information and images of new page from information storage to “display” | |
| <- | 2. display its image , informations , buttons. | |

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| **Use case UC-2 :** | **SelectSlot** | |
| Related Requirements: | REQ3 , REQ4 , REQ5, REQ7 | |
| Initiating Actor: | Any of : User | |
| Actor’s Goal: | To select the parking slot | |
| Participating Actors: | Slot status | |
| Preconditions: | * The information must be prepared on the slot information storage to show. * The user click the button for booking to select slot. | |
| Postconditions: | * Display image of parking slot and status * User can select slot to choose what he or she want to park. | |
| Flow of events for Main Success Scenario: | | |
| -> | 1. User executes the “book” menu for reservation. | |
|  | 1. Include Search information(UC-4) | |
| <- | 1. display each slot’s status and internal map image. | |
| -> | 1. User can click the slot by choosing the button | |
| <- | 1. Corresponding seat is being saved and its information is revised (include revise information(UC-9)) | |
| Flow of Events for Extensions(Alternative Scenarios:) | | |
| 4a. If chosen slot is already booked or can not be used by user. | | |
| <- | 1. Send a error message by (display(UC-1)) and goes to Same as in 1step | |

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| **Use case UC-3 :** | **Booking** | |
| Related Requirements: | REQ2 , REQ4 , REQ6, REQ7 | |
| Initiating Actor: | Any of : User | |
| Actor’s Goal: | To make a reservation for parking | |
| Participating Actors: | menu, information | |
| Preconditions: | * The “book” button or “Quick button” is selected by user. | |
| Postconditions: | * The internal map of the parking lot is open. * If the “Quick book” button is selected the function of Quick book is operated and automatically book. | |
| Flow of events for Main Success Scenario: | | |
| -> | 1. User executes the book for reservation. | |
|  | 1. Include Select slot(UC-2) | |
| <- | 1. revised information is stored by revise information(UC-9) | |
| Flow of Events for Extensions(Alternative Scenarios:) | | |
| 1a. If chosen button is “Quick button” | | |
| -> | 1. User insert available time for reservation. | |
| <- | 2. available slot is automatically caculated and display its output. | |

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| **Use case UC-4 :** | **Search information (sub-use case)** | |
| Related Requirements: | REQ3 , REQ5 , REQ7, REQ9, REQ10 | |
| Initiating Actor: | Any of : System | |
| Actor’s Goal: | To search desired information from storage | |
| Participating Actors: | information | |
| Preconditions: | * The act of desiring information is executed by system. | |
| Postconditions: | * desired information from storage is printed by desired shape. * if any of the information is not matched send error message. | |
| Flow of events for Main Success Scenario: | | |
| -> | 1. System calls for information. | |
| -> | 1. Find the desired information from the storage | |
| <- | 1. Print out to the screen by image, letters, numbers. | |

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| **Use case UC-5 :** | **Loginout** | |
| Related Requirements: | REQ4 , REQ8, REQ11 | |
| Initiating Actor: | Any of : User | |
| Actor’s Goal: | To login or logout of this application | |
| Participating Actors: | information | |
| Preconditions: | * The application is being started by user. * The “logout” button is selected by user. | |
| Postconditions: | * Previously If the logout button is selected application is ended. * Otherwise, the program is executed with given information inputted by login | |
| Flow of events for Main Success Scenario: | | |
| -> | 1. User executes the application | |
| -> | 1. Input information about stored ID and PW. | |
| <- | 1. Successfully done for login and display the menu page. | |
| Flow of Events for Extensions(Alternative Scenarios:) | | |
| 1a. If chosen button is “logout button” | | |
| <- | 1. System is ended. | |

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| **Use case UC-6 :** | **Payment** | |
| Related Requirements: | REQ6, REQ11 , REQ12 | |
| Initiating Actor: | Any of : User | |
| Actor’s Goal: | To pay money for using this application | |
| Participating Actors: | information | |
| Preconditions: | * The “book” phase final step is being proceeded. * Revise information from “my info” . | |
| Postconditions: | * Enough money must be left in given payment method. * The proper payment method will be given. | |
| Flow of events for Main Success Scenario: | | |
| -> | 1. The user proceeds to the last step of making a reservation. | |
| -> | 1. Include search information(UC-4) | |
| <- | 1. Check if the post condition is meeted. | |
| <- | 1. Output book message and execute of given payment method. | |
| Flow of Events for Extensions(Alternative Scenarios:) | | |
| 3a. If given condition of payment method is not meeted | | |
| <- | 1. Revise the payment method and make the users go to menu page | |

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| **Use case UC-7 :** | **Internal Camera(sub-use case)** | |
| Related Requirements: | REQ3, REQ14 | |
| Initiating Actor: | Any of : System | |
| Actor’s Goal: | To get information of parking slot’s actual status | |
| Participating Actors: | information | |
| Preconditions: | * Cameras are installed in the parking lot and information must be communicated correctly. | |
| Postconditions: | * The image must be analyzed to make information of parking slot’s | |
| Flow of events for Main Success Scenario: | | |
| -> | 1. System calls for actual information of parking slot. | |
| -> | 1. Include External web connecting(UC-8) | |
| <- | 1. Analyze and communicate given information. | |

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| **Use case UC-8 :** | **External web connecting(sub-use case)** | |
| Related Requirements: | REQ6, REQ13 , REQ14 | |
| Initiating Actor: | Any of : System | |
| Actor’s Goal: | To connect website to get information or send information by internet. | |
| Participating Actors: | information | |
| Preconditions: | * The application must be connected with internet. | |
| Postconditions: | * The given order must be executed in information storage and send it to the application system. | |
| Flow of events for Main Success Scenario: | | |
| -> | 1. The system need some information or have to send information. | |
| -> | 1. Execute the order by connecting external web site. | |
| <- | 1. The given order is successfully done and give information what have done. | |
| Flow of Events for Extensions(Alternative Scenarios:) | | |
| 2a. If given order is not successfully executed. | | |
| <- | 1. Send error message | |

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| **Use case UC-9 :** | **Revise information(sub-use case)** | |
| Related Requirements: | REQ4, REQ6 , REQ7, REQ8, REQ10, REQ11, REQ12 | |
| Initiating Actor: | Any of : User | |
| Actor’s Goal: | To revise information what user have input. | |
| Participating Actors: | information | |
| Preconditions: | * There is any key storage in the system database to make input. | |
| Postconditions: | * None worth mentioning. | |
| Flow of events for Main Success Scenario: | | |
| <- | 1. System calls the user to insert information. | |
| -> | 1. User insert the information what system is needed. | |
| -> | 1. Include External web-connecting(UC-8) | |
| <- | 1. Call next step | |

일단 participating actors 는 아직 통일되지않아서 특별하게 기입하지 않았으면 REQ도 제대로 통일되지 않았기 때문에 sub-use case위주로 작성했고 다른 파트들과 연동되는 use case는 최대한 생략했습니다. Use case 파트는 마무리했고 traceability matrix도 완성했습니다. 간략하게 제가 작성한거 읽어보시고 수정하고 싶으신거 있으시면 하셔도 좋습니다. domain model 작성해주시면 감사합니다.