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| --- | --- | --- | --- |
| Use Case ID: | 1 | | |
| Use Case Name: | Login | | |
| Created By: | Zhou Haoran | Last Updated By: | Zhou Haoran |
| Date Created: | 15/10/2020 | Date Last Updated: | 14/11/2020 |

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| --- | --- |
| Actor: | User, Firebase, |
| Description: | User can login with a valid email address and password combination, or is required to create account if is a new user. |
| Preconditions: | User opens the application. |
| Postconditions: | 1. User is logged in and at homepage. 2. a UID indicating the user received by the application. |
| Priority: | High |
| Frequency of Use: | Once per application use |
| Flow of Events: | 1. User key in Email address and password. 2. User press on Login button. 3. System consult with Firebase for validity of credentials. 4. System receives a UID of identify the user for further functionalities. 5. System allows the user to enter the homepage. |
| Alternative Flows: | AF-2: The email password combination is invalid.   1. System prompts “Authentication failed”. |
| Exceptions: | EX-2: Firebase cannot be reached.   1. System prompts “Authentication failed”. |
| Includes: | Create new account |
| Special Requirements: | - |
| Assumptions: | - |
| Notes and Issues: | - |

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| --- | --- | --- | --- |
| Use Case ID: | 2 | | |
| Use Case Name: | Create new account | | |
| Created By: | Zhou Haoran | Last Updated By: | Zhou Haoran |
| Date Created: | 15/10/2020 | Date Last Updated: | 14/11/2020 |

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| --- | --- |
| Actor: | User, Firebase |
| Description: | User can create new account with a email address, password, name and date of birth. |
| Preconditions: | User chooses to create account from login page. |
| Postconditions: | A new account is created, and user is at login page. |
| Priority: | High |
| Frequency of Use: | Once per user |
| Flow of Events: | 1. User enters all fields, including email address, password and password confirmation, name, date of birth. 2. User press on create account button. 3. System checks consistency of passwords. 4. System checks that passwords are not too short. 5. System consults with Firebase to create new account. 6. Firebase saves personal particulars. 7. System receives notification from firebase upon a successful account creation. |
| Alternative Flows: | AF-3,4: Passwords are too short or inconsistent.   1. System returns to Login page. 2. System prompts notification on illegal password. |
| Exceptions: | EX-5-1: Firebase cannot be reached.  EX-5-2: Firebase refused request to create account due to a duplicated email address with existing accounts.   1. System returns to Login page.   System prompt notification on a failed account creation. |
| Includes: | - |
| Special Requirements: | - |
| Assumptions: | - |
| Notes and Issues: | - |

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| --- | --- | --- | --- |
| Use Case ID: | 3 | | |
| Use Case Name: | Logout | | |
| Created By: | Zhou Haoran | Last Updated By: | Zhou Haoran |
| Date Created: | 14/11/2020 | Date Last Updated: | 14/11/2020 |

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| --- | --- |
| Actor: | User |
| Description: | User logs out from a logged in account. |
| Preconditions: | User is already logged in and is at ‘Setting’ page. |
| Postconditions: | User returns to login page and the UID of last login session is destroyed. |
| Priority: | Medium |
| Frequency of Use: | <1 per application use |
| Flow of Events: | 1. User clicks on Logout. 2. System creates a logout dialog and user is to confirm logout or return. 3. User confirms logout. |
| Alternative Flows: | AF-3: User cancels logout.   1. System returns to ‘Setting’ page. |
| Exceptions: | - |
| Includes: | - |
| Special Requirements: | - |
| Assumptions: | - |
| Notes and Issues: | - |

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| --- | --- | --- | --- |
| Use Case ID: | 4 | | |
| Use Case Name: | View PCNs in list | | |
| Created By: | Zhou Haoran | Last Updated By: | Zhou Haoran |
| Date Created: | 06/09/2020 | Date Last Updated: | 14/11/2020 |

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| --- | --- |
| Actor: | User |
| Description: | User can view all park connectors in a recycler view. Further, if the user clicks on any park connector in the list, then the user is forwarded to map view with the clicked place marked. |
| Preconditions: | User from home page clicks the ‘park connectors’ button. |
| Postconditions: | User is forward to map view with the park connector clicked on indicated with broken lines and a marker. |
| Priority: | High |
| Frequency of Use: | <5 times per application use |
| Flow of Events: | 1. User clicks on ‘park connectors’ button. 2. System retrieves park connectors information from local data. 3. System downloads park connectors pictures with their URLs. 4. System displays park connectors with pictures in a list view. |
| Alternative Flows: | - |
| Exceptions: | EX-1: User have not yet granted permission to fine position.   1. System prompts a dialog to forward the user to give permission to fine location in the map view. |
| Includes: | Search by name |
| Special Requirements: | - |
| Assumptions: | - |
| Notes and Issues: | - |

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| --- | --- | --- | --- |
| Use Case ID: | 5 | | |
| Use Case Name: | View hawker centers in list | | |
| Created By: | Chin Yi Xing | Last Updated By: | Zhou Haoran |
| Date Created: | 08/09/2020 | Date Last Updated: | 14/11/2020 |

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| --- | --- |
| Actor: | User |
| Description: | User can view all hawker centers in a recycler view. Further, if the user clicks on any hawker center in the list, then the user is forwarded to map view with the clicked place marked. |
| Preconditions: | User from home page clicks the ‘hawker centers’ button. |
| Postconditions: | User is forward to map view with the hawker center clicked on indicated with a marker. |
| Priority: | High |
| Frequency of Use: | <5 times per application use |
| Flow of Events: | 1. User clicks on ‘hawker centers’ button. 2. System retrieves hawker centers information from local data. 3. System downloads hawker centers pictures with their URLs. 4. System displays hawker centers with pictures in a list view. |
| Alternative Flows: | - |
| Exceptions: | EX-1: User have not yet granted permission to fine position.   1. System prompts a dialog to forward the user to give permission to fine location in the map view. |
| Includes: | Search by name |
| Special Requirements: | - |
| Assumptions: | - |
| Notes and Issues: | - |

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| --- | --- | --- | --- |
| Use Case ID: | 6 | | |
| Use Case Name: | Search by name | | |
| Created By: | Zhou Haoran | Last Updated By: | Zhou Haoran |
| Date Created: | 06/09/2020 | Date Last Updated: | 14/11/2020 |

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| Actor: | User |
| Description: | User searches for park connectors or hawker centers by their names, and only the matching ones are to appear in the list view. |
| Preconditions: | User is at either park connectors or hawker center list view page. |
| Postconditions: | User is only shown places whose names partially match pattern string. |
| Priority: | Medium |
| Frequency of Use: | < 5 times per application use |
| Flow of Events: | 1. User enters a pattern string. 2. System filters places based on their names. 3. System display in list view only the places that matches. |
| Alternative Flows: | - |
| Exceptions: | - |
| Includes: | - |
| Special Requirements: | - |
| Assumptions: | - |
| Notes and Issues: | - |

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| --- | --- | --- | --- |
| Use Case ID: | 7 | | |
| Use Case Name: | View PCNs on map | | |
| Created By: | Zhou Haoran | Last Updated By: | Zhou Haoran |
| Date Created: | 06/09/2020 | Date Last Updated: | 14/11/2020 |

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| --- | --- |
| Actor: | User |
| Description: | User is displayed with all PCN’s represented with broken lines on the map, or with the PCN clicked previously in list view displayed. |
| Preconditions: | User has entered the map view. |
| Postconditions: | 1. User is displayed with PCNs. 2. User has selected a particular PCN and navigation function is abled. |
| Priority: | High |
| Frequency of Use: | <5 times per application use |
| Flow of Events: | 1. User checks on the Park Connector chip. 2. System displays all PCNs on the map, each represented by broken lines. 3. User taps on a point near a PCN. 4. System places a marker, displays that PCN’s name and name of the PCN loop it belongs to in a info window. 5. System makes navigation button visible. |
| Alternative Flows: | AF-1: User entered map view from list view, after clicking on name of a PCN.   1. User is shown the broken lines representing that PCN before checking Park Connector chip. |
| Exceptions: | - |
| Includes: | - |
| Special Requirements: | SR-4: PCN marker and info window shall disappear after user clicks elsewhere on the map. |
| Assumptions: | - |
| Notes and Issues: | - |

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| --- | --- | --- | --- |
| Use Case ID: | 8 | | |
| Use Case Name: | View hawker centers on map | | |
| Created By: | Chin Yi Xing | Last Updated By: | Zhou Haoran |
| Date Created: | 06/09/2020 | Date Last Updated: | 14/11/2020 |

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| --- | --- |
| Actor: | User |
| Description: | User is displayed with all hawker center ’s represented with ground overlays on the map, or with the hawker center clicked previously in list view displayed. |
| Preconditions: | User has entered the map view. |
| Postconditions: | 1. User is displayed with hawker center s. 2. User has selected a particular hawker center and navigation function is abled. |
| Priority: | High |
| Frequency of Use: | <5 times per application use |
| Flow of Events: | 1. User checks on the Hawker Center chip. 2. System displays all hawker center s on the map, each represented a ground overlay. 3. User taps on a point near a hawker center. 4. System places a marker, displays that hawker center’s name and name of the PCN loop it belongs to in a info window. 5. System makes navigation button visible. |
| Alternative Flows: | AF-1: User entered map view from list view, after clicking on name of a hawker center.   1. User is shown ground overlays representing that hawker center before checking Hawker Center chip. |
| Exceptions: | - |
| Includes: | - |
| Special Requirements: | SR-4: hawker center marker and info window shall disappear after user clicks elsewhere on the map. |
| Assumptions: | - |
| Notes and Issues: | - |

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| --- | --- | --- | --- |
| Use Case ID: | 9 | | |
| Use Case Name: | Check user’s location | | |
| Created By: | Zhou Haoran | Last Updated By: | Zhou Haoran |
| Date Created: | 08/09/2020 | Date Last Updated: | 14/11/2020 |

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| --- | --- |
| Actor: | User, Location API |
| Description: | User’s location is shown on map by a marker. |
| Preconditions: | User is in the map view. |
| Postconditions: | User’s location is shown by a marker. |
| Priority: | High |
| Frequency of Use: | <5 times per application use |
| Flow of Events: | 1. User clicks on ‘My Location’ button in map view. 2. System checks that permission to fine location has been granted by the phone. 3. System consult with Location API for user’s location. 4. System displays the received location on the map by a marker. |
| Alternative Flows: | AF-2: The permission to fine location has not been granted.   1. System prompts a dialog to request for access to fine location. |
| Exceptions: | EX-2: The phone is not equipped with modules that can provide its location.  EX-AF-2: User refuse to grant permission to fine location.   1. User’s location will be assumed to be a default location. |
| Includes: | - |
| Special Requirements: | - |
| Assumptions: | - |
| Notes and Issues: | - |

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| --- | --- | --- | --- |
| Use Case ID: | 10 | | |
| Use Case Name: | Navigate | | |
| Created By: | Zhou Haoran | Last Updated By: | Zhou Haoran |
| Date Created: | 08/09/2020 | Date Last Updated: | 14/11/2020 |

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| --- | --- |
| Actor: | User, Directions API, Firebase |
| Description: | User is shown with a nearest route from current location a location the user specifies. |
| Preconditions: | 1. User has clicked on a hawker center or a park connector. 2. User clicks on Navigation button. |
| Postconditions: | 1. System draws a route from user’s current location to the location specified. 2. System add one line of visited history to user’s profile. |
| Priority: | High |
| Frequency of Use: | <5 times per application use |
| Flow of Events: | 1. User specifies a location to navigate to. 2. User clicks on Navigation button. 3. System request for navigation from Directions API. 4. System receives a navigation. 5. System displays this route on map. 6. System requests for visited history from Firebase. 7. System appends time and navigation destination to the end of visited history. 8. System uploads new visited history to Firebase. |
| Alternative Flows: | - |
| Exceptions: | - |
| Includes: | Check user’s location, View PCNs on map, view hawker centers on map. |
| Special Requirements: | - |
| Assumptions: | - |
| Notes and Issues: | - |

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| --- | --- | --- | --- |
| Use Case ID: | 11 | | |
| Use Case Name: | View nearest PCN | | |
| Created By: | Zhou Haoran | Last Updated By: | Zhou Haoran |
| Date Created: | 14/11/2020 | Date Last Updated: | 14/11/2020 |

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| --- | --- |
| Actor: | User |
| Description: | The name of the nearest PCN to the user is displayed on home page. |
| Preconditions: | User is at home page. |
| Postconditions: | The name of the nearest PCN is displayed. |
| Priority: | Medium |
| Frequency of Use: | <5 times per application use |
| Flow of Events: | 1. System traverse through all park connectors. 2. System computes their distance to the user and choose the nearest one. 3. System displays its name. |
| Alternative Flows: | - |
| Exceptions: | - |
| Includes: | Check user’s location |
| Special Requirements: | - |
| Assumptions: | - |
| Notes and Issues: | - |

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| --- | --- | --- | --- |
| Use Case ID: | 12 | | |
| Use Case Name: | View profile and history | | |
| Created By: | Zhou Haoran | Last Updated By: | Zhou Haoran |
| Date Created: | 14/11/2020 | Date Last Updated: | 14/11/2020 |

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| --- | --- |
| Actor: | User, Firebase |
| Description: | User views the name, date of birth and visited history. |
| Preconditions: | User is at ‘Setting’ page. |
| Postconditions: | User is displayed with name, date of birth and visited history |
| Priority: | Medium |
| Frequency of Use: | <1 time per application use |
| Flow of Events: | 1. User clicks on Profile. 2. System requests user particulars and visit history from firebase with user UID. 3. System displays user particulars and visited history. |
| Alternative Flows: | - |
| Exceptions: | - |
| Includes: | - |
| Special Requirements: | - |
| Assumptions: | - |
| Notes and Issues: | - |

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| --- | --- | --- | --- |
| Use Case ID: | 13 | | |
| Use Case Name: | Feedback | | |
| Created By: | Zhou Haoran | Last Updated By: | Zhou Haoran |
| Date Created: | 14/11/2020 | Date Last Updated: | 14/11/2020 |

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| Actor: | User, Firebase |
| Description: | User provides feedback to the application. |
| Preconditions: | User is at ‘Settings’ page. |
| Postconditions: | User’s feedback is uploaded to Firebase. |
| Priority: | Low |
| Frequency of Use: | <5 times per user |
| Flow of Events: | 1. User clicks on Feedback. 2. User input feedback. 3. User clicks ‘Submit’. 4. System uploads feedback to Firebase. 5. System show a notification for feedback received. |
| Alternative Flows: | - |
| Exceptions: | - |
| Includes: | - |
| Special Requirements: | - |
| Assumptions: | - |
| Notes and Issues: | - |