

ID	Backlog ID	Name	Goal	Preconditions	Success End Condition	Failed End Condition	Trigger	Normal Flow	Alternative Flows	Frequency of Use	Assumptions	Pass/Fail
1	1-1-1	Add item view: user interface	Display the a view title, cameran icon, text field and two buttons in the view.	The user access to the applicaion and is logged in. The user taps the plus button in the item list view.	The correct elements(a view title, cameran icon, text field and two buttons) are displayed same as the UI design.	Components are not displayed properly.	Login in the application	1. User is in the item list view 2. User taps the plus button in the navigation bar 3. Application displays the add new item view.	N/A	Rare	N/A	Pass
2	1-2-1	Add item view: camera or choose pictures	Display the a view title, cameran icon, text field and two buttons in the view.	The user access to the applicaion and is logged in. The user is in the add item view.	After the cameran icon is tapped, the application displays two options to select: "Select from photo library" and "take a new photo".	Nothing happens after the cameran icon is tapped or nothing triggered after any of the two options is tapped.	The camer icon is tapped.	1. User is in the add item view. 2. User taps cameran icon. 3. application triggers a action menu where user can have two option to select.	N/A	Rare	N/A	Pass
3	1-2-2	Add item view: trigger camera application	Trigger the native camera application once the cameran icon is tapped.	The user access to the applicaion and is logged in. The user is in the add item view.	The camera application is triggered successfully and ready to take a picture of the item.	The camera application is not triggered when the cameran icon is tapped.	The camer icon is tapped then the "take a new photo" option is tapped.	1. User is in the add item view. 2. User taps cameran icon. 3. application triggers a action menu where user can have two option to select. 4. Uesr taps the "take a new photo" option.	N/A	Rare	N/A	Pass
4	1-2-3	Add item view: retake photo	After taking a photo, there should be an option for using it and another option for retaking it.	The user access to the applicaion and is logged in. The user is in the add item view and native camera application is triggered	After a photo is taken, the native camera application displays a button "retake" in the left bottom corner and another button "OK" in the right bottom corner. If the "retake" button is selected, current photo will be erased and enable user to take another photo. If the "OK" button is selected, application will pass the photo to the next view.	The native camera application does not display correct two buttons after a photo is taken.	A photo is taken in the triggered camera application.	1. User is in the native camera application triggered in the add item view. 2. User takes a photo of the item. 3. application displays the taken photo, an button with "Retake" on it and another button with "OK" on it.	1. If the "Retake" button is tapped, the application goes back to previous stage and let the user to take another photo. 2. If the "OK" button is tapped, the application goes to next stage which should be display the photo on the add item view.	Rare	N/A	Pass
5	1-2-4	Add item view: store photo	After user decides to use the taken photo, it should store a copy in the photo library.	The user access to the applicaion and is logged in. The user is in the add item view and native camera application is triggered	After a photo is taken and selected to used, the taken photo will be stored in the photo library.	The native camera application does not store the photo in the photo library.	A photo is taken and selected to use in the triggered camera application.	1. User takes a photo and selects it in the native camera application triggered in the add item view. 2. The application stores the taken photo in the photo library.	N/A	Rare	N/A	Pass
6	1-2-5	Add item view: choose photo from camera roll	User can browse the native photo application to select an desired photo, rather than taking a new photo.	The user access to the applicaion and is logged in. The user is in the add item view.	The native camera roll API is triggered and user the select any photo from the existing albums. The selected photo will be passed to the next view.	The camera roll API is not triggered or a photo URI can not be passed to the next view.	The camer icon is tapped then the "selecte from photo library" option is tapped.	1. The application triggers a action menu where user can have two option to select in the add item view. 2. Uesr taps the "select from photo library" option.	1. application goes back the add item view if user cancel to select a photo from the photo library.	Rare	There are already taken photos in the photo libaray.	Fail
7	1-2-6	Add item view: not add photo	application should display a placeholder picture if no photo is choosen.	The user access to the applicaion and is logged in. The user is in the add item view.	application will not prevent user to the next stage if the user save a new item without choosing a photo.	User cannot go to the next stage if the user does not use any photo.	User taps save button without taking a photo or selecting a photo from the photo library.	1.User is in the add item view. 2. User taps the save button with the validated item name input but without using any photo.	N/A	Rare	N/A	Pass

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8	1-3-1	Add item view: add item's name	application should be display display an editable text field in the add item view, which enable user to input the text item's name.	The user access to the applicaion and is logged in. The user is in the add item view.	The text input field in the add item view is editable, user can edit the text value of it.	The text input field in the add item view is not editable, user cannot edit the text value of it.	Uesr taps the text fields in the add item view.	1. User is in the add item view. 2. The text input field displays correct placeholder text: "Enter item's name" 3. User taps the text input field. 4. The application triggers the keyboard. 5. User can input the item's name.	N/A	Rare	N/A	Pass
9	1-3-2	Add item view: store item's name	After the save button is tapped, ther application will store the value of the text input field as the item's name in the application.	The user access to the applicaion and is logged in. The user is in the add item view and has typed the item's name in the text field.	After the save button is tapped, the value of the text input field will be stored in the application successfully.	After the save button is tapped, the value of the text input field is not stored in the application/	Uesr taps the text fields in the add item view.	1. The text input field in the add item view is edited by the user with a validated name. 2. User taps the save button. 3. The application saves the value of the text field in the application.	N/A	Rare	The text input value is validated.	Pass
10	1-4-1	Add item view: validate inputs	After the save button is tapped, ther application will validate the input's value. The values will only be saved f the inputs are validated.	The user access to the applicaion and is logged in. The user is in the add item view.	After the save button is tapped, the application will validate all the inputs, including the photo and the text field. If the they are all validated, then the data will be saved. Otherwise the application will display the error message to prompt the user to input the validated data.	The application is not able to validate the input, such as the input length of the item's name.	Uesr taps the save button in the add item view.	1. User is in the add item view. 2. User taps the save button. 3. The application validates the input fields.	1. If all the data are validated, the application will save the data in the application, then return to the item list view. 2. If any of the data is invalidated, the application will display an error message to ask user to input correctly.	Rare	N/A	Fail
11	1-5-1	App registers tracker	System can store a unique id of the tricker and bound it with the item in the application	The user access to the applicaion and is logged in. The user is in the add item view and validated inputs of the item are saved.	The system has saved the validated inputs of the item and the application sends a request to pair the tracker with this item via bluetooth.	The system is unable to send any request to the tracker.	Uesr taps the save button in the add item view with validated inputs , and the system has saved all the input data in the application.	1. The application has saved the item's data . 2. The application send a request to register the tracker.	1. If the bluetooth sensor is turned off, prompty user to turn it on.	Rare	N/A	Fail
12	1-5-2	Tracker receives register request from App	The tracker should able to receive and read the request from the application via bluetooth.	The application has sent a request to register the tracker with bluetooth.	The server hosted on the tracker is able to read and interpretate the register request sent from the application	The server hosted on the tracker is not able to read and interpretate the request sent from the application	The application has sent a register request to the nearby tracker.	1. The application send a request to register the tracker. 2. The tracker received the request and read the data in it. 3. The tracker pairs itself with the application via the data in the request.	N/A	Rare	N/A	Fail
13	1-5-3	App stores Tracker data	The application stores the tracker's special ID and pair it with the item's data as a reference.	The tracker has received a register request from the tracker and already registered itself with the application.	The application stores an unique ID of the tracker and pair it with the item.	The application cannot store any data of the tracker.	The tracker stored the application's registered data and sends back a registering succeed response.	1. The tracker pairs itself with the application via the data in the request. 2. The application stores the tracker's unique ID in the storage.	N/A	Rare	N/A	Fail

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14	1-5-4	App activates Tracker	After pairing the tracker, the application can activate the locating function via bluetooth.	The tracker is paired with the application.	The application sends a bluetooth request to the paired tracker, which enables the tracker starts the locating service and send data to the S3 database.	The application cannot activate the tracker's locating service at all	For the first time that the tracker and the the application have been paired with each other.	1. The tracker has finished the pairing routine with the application. 2. The application has finished the pairing routine with the tracker. 3. The application send a request to the tracker to activate its' locating service. 4. The tracker receives the request and starts the locating services.	N/A	Rare	N/A	Fail
15	2-1-1	App monitors the geolocation of Tracker.	The application sends out the location request to the tracker at regular intervals, the default interval time is 10 minutes.	The tracker has been paired with the application.	The application successfully sends out an HTTP request to the tracker via Hologram cloud every five minutes.	The application fails to sends out an HTTP request to the tracker via Hologram cloud every five minutes.	The application has activated the tracker and paired with it .	1. The application sends an HTTP request to the Hologram. 2. After 10 minutes, the application repeat step 1 and step 2 again.	N/A	Often	The tracker has been activated.	Fail
16	2-1-2	Tracker sends out geolocation data.	The tracker should be able to response the request from the application.	The tracker has been paired with the application.	After receiving the request from the application via Hologram Cloud, the tracker should send geolocation data back to Amazon S3 server via Hologram Cloud.	The tracker is not able to response the geolocation data to the Hologram Cloud.	The tracker has activated by the application and paired with it , then the application sends out a geolocation data request to the tracker.	1. The tracker receives the request from the application. 2. The tracker responses the request with the geolocation data. 3. The Hologram Cloud receives the data from the tracker and stores it in the Amazon S3 server.	N/A	Often	The tracker has been activated.	Fail
17	2-1-3	App store the history of Tracker's location data at regular intervals.	The application should be able to store the location data behind the background.	The tracker has been paired with the application, and there are already location data stored in the Amazon S3 server.	The application makes a HTTP request to the Amazon S3 Server and retrieves the location data.	The application fails to make the HTTP request or retrieve the location data from the Amazon S3 server.	The application is set up to monitor the tracker.	1. The application sends an HTTP request to the Amazon S3 Server. 2. After 10 minutes, the application repeat step 1 and step 2 again.	N/A	Often	N/A	Fail
18	2-1-4	[Deprecated]	-	-	-	-	-	-	-	-	-	
19	2-2-1	Tracker activates the bluetooth mode when the paired mobile device is 30 meters nearby.	The tracker should be able to switch modes based on the distance between it and the mobile device.	The tracker has been paired with the application.	The tracker successfully activates the bluetooth mode.	The tracker fail to active the bluetooth mode.	The distacne between the tracker and the mobile device is shorter than 30 meters.	1. The tracker determine if the mobile device is nearby within 30 meters, if it is true, activate the bluetooth mode.	1. If the mobile device is not within 30 meters closed, activate cellular mode.	Normal	N/A	Fail
20	2-2-2	Tracker activates the cellular mode when the paired mobile device more than 30 meters away.	The tracker should be able to switch modes based on the distance between it and the mobile device.	The tracker has been paired with the application.	The tracker successfully activates the cellular mode.	The tracker fail to active the cellular mode.	The distacne between the tracker and the mobile device is longer than 30 meters.	1. The tracker determine if the mobile device is 30 meters away, if it is true, activate the cellular mode.	1. If the mobile device is not 30 meters away, activate bluetooth mode.	Normal	N/A	Fail
21	3-1-1	Item list view: user interface	Display the a view title, and a item photo, a item name and a button for each item in the view within 5 seconds.	The user has added at least one item with name andphoto in the item list.	The correct elements(a view title, item photos, item names and buttons) are displayed same as the UI design within 5 seconds.	Components are not displayed properly or timeout.	The user logins to the application.	1. The user logins to the application. 2.. The application renders the correct elements on the screen within 5 seconds.	N/A	Normal	N/A	Pass

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22	3-1-2	Item list view: display data from storage.	The application should retrieve the data form the mobile storage and render with the correct UI elements.	The user has added at least one item with name andphoto in the item list.	The correct elements(a view title, item photos, item names and buttons) are displayed same as the UI design within 5 seconds.	Components are not rendered properly with the data.	The user logs in to the application.	1. The user logs in to the application. 2. The application retrieves the data from the storage. 3. The application renders the data on the UI elements	N/A	Normal	N/A	Pass
23	3-1-3	[Deprecated]	-	-	-	-	-	-	-	-	-	
24	3-1-4	Item list view: indicates the item is lost or not.	The user should be able to tell if the items are lost or not once seeing the item list.	The user has added at least one item with name andphoto in the item list.	The item is 5 meters away from the mobile device should be considered as a lost item, which will render with a red border to indicate the user it is lost.	The item is 5 meters away from the mobile device is not considered as lost or not with a red border rendered.	Any of the item is 5 meters away from the mobile device.	1. The user is in the item list view. 2. The application retrieves the data from the storage. 3. The application determines if any of the item is 5 meters away from the device's current locartion. 4. Any of the items is 5 meteres away from the device will be rendered with a red border.	N/A	Normal	N/A	Fail
25	3-2-1	Item list view: turn on and off of the tracker.	The user should be able to turn on and off of the tracker in the item list view.	At least one tracker has been paired with the application.	The application successfully turns on/off of the tracker.	The application fails to turn on/off of the tracker.	The user taps the button of a tracker.	1. The application sends an HTTP request to the tracker via Hologram Cloud. 2. The tracker receives the request and turns on/off of itself based on the request.	N/A	Rare	N/A	Fail
26	3-3-1	Item details view: user interface	Display the a item name, a map and the item history location list in the view within 5 seconds.	The item has stored at least one location data.	The correct elements(a item name, a map and the item history location list) are displayed same as the UI design within 5 seconds.	Components are not displayed properly or timeout.	The user taps the item photo in the item list view.	1. The application retrieves the location data of the selected item from the storage. 2. The application renders the UI elements with the retrieved data.	N/A	Normal	N/A	Pass
27	3-3-2	Item details view: navigate from the item list view to item details view	The application is able to navigate between views.	At least one tracker has been paired with the application and that item has stored at least one location data.	The application successfully navigates from item list view to the item details view.	The application fails to switch views.	The user taps the item photo in the item list view.	1. The user is in item list view and taps the one of the item. 2. The application switches to item details view and renders the item details view UI elements.	N/A	Normal	N/A	Pass
28	3-3-3	Item details view: map	The application should display latest 10 history locations on the map.	The item has stored at least one location data.	The location data are displayed on the map in the correct location.	The location data fails to display on the map or they are in the wrong location.	The user taps the item photo in the item list view.	1. The application retrieves the location data of the selected item from the storage. 2. The application renders the geolocation of the data on the map.	N/A	Normal	N/A	Pass
29	3-3-4	[Deprecated]	-	-	-	-	-	-	-	-	-	
30	3-4-1	Item details view: trigger Apple Map	The application should be able to use the item's location data, pass it to the Apple Map application, and trigger the nativation function and lead the user to the item's location	User is in the item details view.	The Apple Map application is triggered after the user taps the navigate button. It gets into the navigation mode and lead user to the location based on the distance. If the user is closed to the item, then it will navigate the user to the item in "walking" mode. If the item is far from the user it will be in the "transit" mode	The Apple Map application is not triggered after the navigate button is tapped. Or the Apple Map application is triggered but it does not receive the correct location data of the item and activate the navigate mode either.	User taps the navigate button	1. User taps the navigate button. 2. The application triggers the Apple Map application and passs the geolocation of the item to it. 3. Apple Map automatically activates navigation mode and lead user to the item.	N/A	Often	There are item's location data stored in the application already	Pass

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31	3-4-2	Item details view: trigger Google Map	The application should be able to use the item's location data, pass it to the Google Map application, and trigger the navigation function and lead the user to the item's location	User is in the item details view.	The Google Map application is triggered after the user taps the navigate button. It gets into the navigation mode and lead user to the location based on the distance. If the user is closed to the item, then it will navigate the user to the item in "walking" mode. If the item is far from the user it will be in the "transit" mode	The Google Map application is not triggered after the navigate button is tapped. Or the Google Map application is triggered but it does not receive the correct location data of the item and activate the navigate mode either.	User taps the navigate button	1. User taps the navigate button. 2. The application triggers the Google Map application and passes the geolocation of the item to it. 3. Google Map automatically activates navigation mode and lead user to the item.	N/A	Often	There are item's location data stored in the application already	Fail
32	3-4-3	[Deprecated]	-	-	-	-	-	-	-	-	-	
33	3-5-1	Item details view: rename item	The user should be able to change the item's name in the application	User is in the item details view.	The application provides an interface for user to edit the item's name, and stores the new name in the storage.	The application fails to provide an interface for user to edit the item's name or store the new name in the storage.	User taps the edit button in the item details view.	1. The application renders the text field with the value of item's name. 2. The user edits the text field with item's new name. 3. The user taps save button. 4. The application reads the new item's name and stores in the storage.	N/A	Rare	N/A	Pass
34	3-5-2	Item details view: retake photo	The user should be able to change the item's photo in the application	User is in the item details view.	The application provides an interface for user to edit the item's photo, and stores the new photo in the storage.	The application fails to provide an interface for user to edit the item's photo or store the new photo in the storage.	User taps the edit button in the item details view.	1. The application renders the photo. 2. The user taps the photo and the application triggers the camera app 3. The user takes a new photo of an item. 4. The application reads the new item's photo and stores in the storage.	N/A	Rare	N/A	Pass
35	3-6-1	User deletes item	The user should be able to delete the item's all data in the application	User is in the item details view.	The application provides an interface for user to delete all the data in the storage.	The application fails to provide an interface for user to delete all the data in the storage.	User taps the edit button in the item details view.	1. The application renders a delete button. 2. The user taps the delete button. 3. The application deletes all the data related to the item from the storage. 4. The application send an turn off request to the tracker.	N/A	Rare	N/A	Fail
36	3-6-2	App deletes item data	The application should be able to delete the item's all data in the application	User is in the item details view.	The application deletes all the data related to the deleted item.	The application fails to delete all the data related to the deleted item.	User taps the delete button in the edit item view.	1. The application deletes all the data related to the item from the storage.	N/A	Rare	N/A	Fail
37	3-6-3	App turns off Tracker after delete the item.	The application should automatically turn off the tracker after the associated item is deleted	User is in the item details view.	The application sends a turn off request to the tracker and the tracker turn itself off after receiving the request.	The application fails to send a turn off request to the tracker or the tracker could not turn itself off after receiving the request.	User taps the delete button in the edit item view.	1. The application send an turn off request to the tracker.	N/A	Rare	N/A	Fail
38	4-1-1	App trigger OS notification when any of the items is too far .	The application should trigger the OS notification based on the distance between the mobile device and the location data stored.	At least one tracker has been paired with the application.	If the mobile device is 10 meters away from the item, the application triggers the OS notification and warns the user that the item might be lost.	The application fails to trigger the OS notification even if the mobile device is 10 meters away from the item.	If the mobile device is 10 meters away from the item.	1. The application triggers the OS notification. 2. The notification contains the warning message along with the item's name, item's last stored location.	N/A	Normal	N/A	Fail

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39	4-1-2	OS notification links to App	The OS notification should redirect the user back to the application	At least one tracker has been paired with the application.	If the application triggers the OS notification, one of the buttons displayed with the notification can redirect the user back to the application.	If the application triggers the OS notification, none of the buttons displayed with the notification can redirect the user back to the application.	If the mobile device is 10 meters away from the item and the notification is triggered.	1. An OS notification triggered by the application. 2. And one of the button should redirect the user back to the application in the item details view.	N/A	Normal	N/A	Fail
40	5-1-1	Passcode register view: user interface	Display the an icon of lock, a text explaining why the applicaiton would be safer with a passcode setup and a input field let the user register the passcode.	The user has not set up the passcode.	The correct elements(a lock icon, a text description and a input field) are displayed same as the UI design within 5 seconds.	Components are not displayed properly or timeout.	The user has not setup the passcode and it is the first time login into the application	1. The application renders the correct UI element. 2. The user input the passcode.	N/A	Rare	N/A	Pass
41	5-1-2	Passcode register view: stores the passcode.	The application should let the user double input the passcode, then store the passcode in the storage both inputs are the same.	The user has not set up the passcode.	After the user inputs the same passcode two time, the application stores the passcode into the storage.	The application could not read the input data or store the input data.	The user input the passcode in the passcode field.	1. The user inputs the passcode. 2. The application asks the user to input the passcode again. 3. The user inputs the passcode again. 4. The application compares both passcode inputs. 5. If both inputs are exactly the same, stores the passcodes into the storage.	1. If both passcode inputs are not identical, the application re-asks the user to input the passcode again.	Rare	N/A	Pass
42	5-1-3	Touch ID register view: UI	Display the an icon of fingerprint, a text explaining why the applicaiton would be safer with the Touch ID setup and two buttons let the user selects whether to enable it or not.	The user has not set up the Touch ID.	The correct elements(a fingerprint icon, a text description and two buttons) are displayed same as the UI design within 5 seconds.	Components are not displayed properly or timeout.	The user has not setup whether to enable the Touch ID.	1. The application renders the correct UI element. 2. The user select whether to enable Touch ID. 3. The application stores the user's decision.	N/A	Rare	N/A	Pass
43	5-2-1	Setting view: user interface.	Display the a list of setting options in the setting view.	N/A	The correct elements are displayed same as the UI design within 5 seconds.	Components are not displayed properly or timeout.	The user enters the setting view.	1. The application renders the correct UI element..	N/A	Rare	N/A	Pass
44	5-2-2	Setting view: reset password	The application should enable user to change the password	The user has set up the passcode.	The new passcode is read and stored in the storage	The new passcode could not be read or stored.	The user is in the setting view and taps the reset passcode option.	1. The application renders the same user interface of register passcode. 2. The user follows the process of passcode registration in backlog ID 5-1-2. 3. The application reads and stores the new passcode.	N/A	Rare	N/A	Fail
45	5-3-1	Setting view: turn off password protection	The passcode proectection should be able to be turned off.	The user has set up the passcode.	The passcode is no longer needed to be entered after turning off.	The application still asks the user to input the passcode when login to the application.	The user is in the setting view and taps the turn off passcode option.	1. The application stores the user's decision of whether to ask for passcode whenever login the application.	N/A	Rare	N/A	Fail

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46	5-5-1	Login: Two ways to login App	The user could either choose to use Touch ID or passcode to login the application	The user has set up the passcode and Touch ID.	The applications logins the user if the user uses the correct fingerprint via Touch ID or enters the correct passcode.	The applications fails to login the user even if the user uses the correct fingerprint via Touch ID or enters the correct passcode.	The user has set up the passcode and Touch ID, then launches the application.	1. The application reads the user's setting of credentials. 2. The application asks the user to input the fingerprint for Touch ID. 3. If the users passes the correct fingerprint, the application logins. 4. If the users does not pass the correct fingerprint, the application asks the user to input the passcode.	N/A	Often	N/A	Pass
47	5-5-2	Login: Authentication	The application should be protected by the credentials such as Touch ID or passcode.	The user has set up the passcode and/or Touch ID.	The application should stay in login page view if the user could not input correct credentials.	The application leads user to the item list view even if the user could not provide the correct credentials.	The use launches the application.	1. The user is asked to provided the passcode. 2. If the user input the wrong passcode, the application displays the error message and asks the user to input again. 3. Repeat step 1 to 2 for five times if the user could not input the correct passcode. 4. The application asks the user to wait for 10 minutes to input again.	N/A	Often	The user has set up the passcode and/or Touch ID.	Pass
48	5-5-3	Login: redirect to item list page.	The application should redirect from login view to item list view.	The user has inputed the correct credentials in the login view.	The application navigates to the item list view from the login view.	The application fails to navigate to the item list view from the login view.	The user enters the correct credentials in the login view.	1. The application unmounts the login view and displays the loading animation. 2. The application reads the item data from the data storage. 3. The application renders the items list components with the item data.	N/A	Often	The user has set up the passcode and/or Touch ID.	Pass