USE CASE DESCRIPTIONS

Use case : Locate Nearest Charging Port

Use Case ID:	1		
Use Case Name:	Locate Nearest Charging Location		
Created By:	Adrian Chua	Last Updated By:	Adrian Chua
Date Created:	2nd September 2023	Date Last Updated:	2nd September 2023

Actor:	Initiating Actor - App User
Description:	Users of the application are able to locate the nearest location.
Preconditions:	Users must open the app with GPS permissions enabled and activate scanning for the charging port.
Postconditions:	The onscreen map shows pop-ups of the nearest charging ports to the user's location
Priority:	High
Frequency of Use:	High
Flow of Events:	1. User turns on location services and gives the application permission for use. 2. User opens the Application to the home page. 3. Application shows charging locations near the user and its details, including the distance from the user's current location. 4. Users are able to further filter for different charging types 5. Users are able to set any particular charging location as their favourite 6. Users are able to determine the popularity of any particular charging location, given by an indicator on each charging location that shows the number of concurrent users that has this charging location near to them as well
Alternative Flows:	1. User does not provide the application with location services permission 2. A prompt will show up on the user's screen to on location services and give the application permission to access 3. If user refuse to give access to location services, the application will exit

	4. If the user turns on location services and gives permission for the application to use, the flow will continue with the original flow of events.
Exceptions:	-
Includes:	Location Services (GPS)
Special Requirements:	-
Assumptions:	User has data access or is connected to Wi-Fi
Notes and Issues:	-

Use case : Review Charging locations

Use Case ID:	2		
Use Case Name:	Review Charging locations		
Created By:	Adrian Chua	Last Updated By:	Adrian Chua
Date Created:	2nd September 2023	Date Last Updated:	2nd September 2023

Actor:	Initiating Actor - App User
Description:	Users are able to review charging locations on the application that they deemed to be useful and reliable for other users to use.
Preconditions:	Users have a charging location to review
Postconditions:	The charging location shows the rating by the user
Priority:	Low
Frequency of Use:	Medium
Flow of Events:	1. User selects the particular charging location he wants to review from the map 2. User clicks on the location and selects the “Submit Reviews” option 3. Users can review the charging location 4. User would give the charging location a rating out of 5 stars 5. User is also able to add optional comments about the charging location 6. User is also able to like or dislike another user’s comments about the charging location 7. User is also able to reply to another user’s comments about the charging location
Alternative Flows:	-
Exceptions:	-
Includes:	-
Special Requirements:	-

Assumptions:	Assume the user had previously used the charging location
Notes and Issues:	When users are to give comments on the location, their choice of language will be auto-filtered by an algorithm.

Use case : Send new undiscovered charging location

Use Case ID:	3		
Use Case Name:	Send new undiscovered charging location		
Created By:	Adrian Chua	Last Updated By:	Adrian Chua
Date Created:	2nd September 2023	Date Last Updated:	2nd September 2023

Actor:	Initiating Actor - App User
Description:	Users are able to send and notify about new undiscovered charging port locations that are not currently available on the map of the application or not on the list of pending locations.
Preconditions:	Charging port location is not yet discovered and is not present on the application Charging port location is not on the list of pending locations
Postconditions:	After approval by the voting system, the new charging location will be moved from the yellow map containing pending locations to the green map containing the confirmed charging locations.
Priority:	Medium
Frequency of Use:	Medium
Flow of Events:	1. User navigates to the “activity” page in the application. 2. User selects the option to submit an undiscovered charging port location. 3. System verifies that the user has not exceeded his daily activity quota in …. 4. System verifies that there are no pending cases at the user's current location 5. A pop-up form will appear for the user to fill up the information for the undiscovered charging port. 6. The user takes a picture using the phone camera or uploads an image from the gallery of the location of the charging location as well as the exact location. 7. In the form, in addition to the photo and the exact location, it will also require the user to input the

	charging location type , whether it is lockable, the capacity of the charging location as well as whether it is a paid/public area. 8. The form will contain checkboxes for all the possible information for a charging location and the user should tick wherever appropriate. 9. The review will be reflected under history in the “Profile” tab and have the status “Pending” 10. Once the form is submitted, it will appear on the yellow map containing all the pending new locations to undergo a voting process by the community and once 15 votes are achieved, it will be verified. 11. Once it is verified and approved, the new charging location along with all its information will be moved to the green map and other users will be able to view it on their maps when they open the application. 12. A notification will be sent to the user to notify the user that his new charging location is approved. 13. The user will be given points and it will be credited under his account, which the user can see under the “rewards” tab.
Alternative Flows:	1. User exceeds his activity quota 1.1. System lets user know he has exceeded his activity quota and should try again tomorrow 2. User sends a submission of an invalid undiscovered charging location 2.1. The case will be downvoted 2.2. After 15 days, if vote count on the new location does not hit the target, a notification will be automatically sent to the user to inform them that the case is rejected 2.3. The submission of the new location will be moved into the User’s profile tab under history 3. Based on user current location, there is already a pending report of new charging location 3.1. User is redirected to the voting use case to vote for the report instead, accompanied with a pop-up message to inform the user. 3.2. “Based on your current location, there appears to already be a pending report of the new charging location. Please go ahead and vote for it instead.”
Exceptions:	-
Includes:	-

Special Requirements:	Clear image and precise location of the charging location
Assumptions:	People are assumed to vote with the intent to be truthful
Notes and Issues:	-

Use case : Report damaged or incorrectly described ports

Use Case ID:	4		
Use Case Name:	Damaged or Incorrectly described ports reporting		
Created By:	Winfred Cheok	Last Updated By:	Winfred Cheok
Date Created:	2nd September 2023	Date Last Updated:	18th September 2023

Actor:	Initiating Actor - App User
Description:	Users are able to report damaged or incorrectly described ports through the app. This allows the app to remain as updated as possible and also allows users to earn points through their good will.
Preconditions:	-
Postconditions:	The reports will be subjected to voting by other users and would result in either an “Approved” or “Rejected” outcome.
Priority:	Medium
Frequency of Use:	Medium
Flow of Events:	1. User spots a damaged or incorrectly described port. 2. User logs into the app and navigates to the green map, which contains the confirmed charging locations. 3. User shares current location 4. User should be able to identify the charging location on the green map in the app 5. System verifies that user has not exceeded his daily activity quota 6. User clicks on the charging location and selects either “damaged” or “incorrectly described” option for the port 7. User takes a photo and upload it into the app 8. User selects the corresponding options, depending on whether it is damaged or incorrectly described. 9. User submits the case and gets a pop up text saying “Thank you for your contribution, get your friends to back you up!” 10. The review will be reflected under “historical activities” in the “Profile” tab and have the status “Pending”

	11. It will undergo a voting process by the community and once it hits 15 votes, it will be approved. 12. Once it is verified and approved, the changes will be made to the charging location, automatically updating all its information into the database 13. The user will get a notification stating that the case has been verified and the exact number of points will be credited into his account 14. The case status will be updated from “Pending” to “Approved” under history in the “Profile” tab.
Alternative Flows:	1. The case is rejected because it was an invalid/incorrect submission. 1.1. The case will be downvoted 1.2. After 15 days, if votes on the new location does not hit target, a notification will be automatically sent to the user to inform them that the case is rejected 1.3. No points will be credited into his account 1.4. The case status will be updated from “Pending” to “Rejected” under history in the “Profile” tab. 2. User identified the charging location and it already have a pending damaged/incorrectly described report 2.1. User will be prompted to vote for the report instead of submitting a new report 2.2. Navigate to the voting use case
Exceptions:	-
Includes:	-
Special Requirements:	A clear image of the port and filling in of the corresponding options would be required for the case to be approved.
Assumptions:	People are assumed to vote with the intent to be truthful
Notes and Issues:	-

Use case : Points redeemed

Use Case ID:	5(a)		
Use Case Name:	User redeem rewards with points		
Created By:	Winfred Cheok	Last Updated By:	Winfred Cheok
Date Created:	2nd September 2023	Date Last Updated:	2nd September 2023

Actor:	Initiating Actor - App User

Description:	Users can redeem rewards they have accumulated from various activities in the app such as discovery and reporting.
Preconditions:	User must have accumulated enough points for redemption
Postconditions:	-
Priority:	Low
Frequency of Use:	Medium
Flow of Events:	1. User login into the app and click on rewards tab 2. Users can browse the rewards catalogue 3. Users can filter the rewards catalogue to find rewards that are more appealing to them. 4. Users can click on the individual rewards to find out more information 5. Users can redeem the reward with their points 6. The corresponding number of points will be deducted from their total points. 7. Their remaining points will be instantly reflected. 8. The reward can be found under “MyRewards”
Alternative Flows:	1. User selects a reward but does not have enough points to redeem. 2. User would not be able to click on the redeem button and a small warning text stating “ Insufficient points “ will be reflected below.
Exceptions:	-
Includes:	-
Special Requirements:	-
Assumptions:	-
Notes and Issues:	-

Use case : Points earned and redeemed

Use Case ID:	5(b)		
Use Case Name:	Points awarded to user from admin		
Created By:	Winfred Cheok	Last Updated By:	Winfred Cheok
Date Created:	2nd September 2023	Date Last Updated:	18th September 2023

Actor:	Initiating actor - Vote counter
Description:	Points will be awarded to users after their submitted cases have reached a certain number of votes. Points will be allocated based on the current tier of the users.
Preconditions:	Users submit cases for verification or voted

Postconditions:	Cases submitted have been fully verified
Priority:	Low
Frequency of Use:	Medium
Flow of Events:	1. User previously submitted cases regarding either a new charging location, damaged charging port or incorrectly described charging location, or voted for any of the above. 2. The case will be classified as pending and other users might choose to vote to verify the case 3. Once the case reaches 15 votes, the case status will be updated from “Pending” to “Approved”. 4. The user gets a notification that their case has been verified and the exact number of points they have been awarded depending on their current tier 5. Users who accumulated 300 lifetime points will be in Silver Tier 6. Users who accumulated 1,200 lifetime points will be Gold Tier 7. Users who accumulated 4,500 lifetime points will be in Platinum Tier 8. Users in silver tier are awarded 5% more points, gold tiers are awarded 10% more points, platinum tiers are awarded 20% more points 9. Each successfully verified report will earn the user a base point of 35 points 10. Each voter of the successfully verified report will earn 5 points.
Alternative Flows:	1. Case expires upon 15 days of inactivity (Does not hit target) 2. The user gets a notification that their case has been rejected due to expiry and lack of votes. 3. The case status will be updated from “Pending” to “Rejected” 4. No points would be awarded to the user.
Exceptions:	-
Includes:	-
Special Requirements:	-
Assumptions:	-
Notes and Issues:	-

Use case : Member (User) login verification

Use Case ID:	6		
Use Case Name:	User login verification		
Created By:	Winfred Cheok	Last Updated By:	Winfred Cheok
Date Created:	2nd September 2023	Date Last Updated:	2nd September 2023

Actor:	Initiating actor - Application user Participating actor - Database Administrator (DBA)
Description:	The DBA would check whether the account exists and whether the account login details are correct.
Preconditions:	
Postconditions:	User manages to login successfully.
Priority:	High
Frequency of Use:	High
Flow of Events:	1. User opens app and app requests login information 2. User enters his username and password 3. DBA checks for the existence of this account 4. The account exists and its corresponding password is correct 5. User would be able to login successfully

Alternative Flows:	1. Account does not exists 1.1. User opens app and app requests login information 1.2. User enters his username and password 1.3. DBA checks for the existence of this account 1.4. Account does not exist 1.5. A error message “First time user please sign up” 1.6. User selects sign up 1.7. User inputs email address 1.8. User inputs valid username 1.9. User inputs valid password 1.10. User reconfirms valid password 1.11. DBA records user’s login details 1.12. User will have to login with new account just created 2. Wrong password 2.1. User opens app and app requests login information 2.2. User enters his username and password 2.3. DBA checks for the existence of this account 2.4. Account exists, however password does not match username. 2.5. Error message “ Invalid password, please try again” will be displayed 2.6. User tries again. 2.7. After 3 tries, error message “ Forget password ?” will be displayed 2.8. User clicks on forget password link 2.9. “ Reset password link being sent to this email address, please change your password from the link” 2.10. A reset password link would be sent to their email address 2.11. User open up their email and search for the reset password email 2.12. User can click on the link and change their password 2.13. User changes their password successfully. 2.14. User login into the app with their username and new password
Exceptions:	-
Includes:	-
Special Requirements:	No duplicate emails and usernames

Assumptions:	Users have an email address
Notes and Issues:	-

Use case : Voting system

Use Case ID:	7		
Use Case Name:	Voting System		
Created By:	Melvin Lee	Last Updated By:	Adrian Chua
Date Created:	8th September 2023	Date Last Updated:	8th September 2023

Actor:	Initiating Actor - App User
Description:	Users are able to upvote or downvote on pending reports if they are in the area and verifies that the reports are indeed accurate.
Preconditions:	There is a pending report for the charging location and the user about to vote for it is at the area, verifiable with current gps location.
Postconditions:	After voting, it will still remain pending but the vote counter on the location changes by one (Either increase one with upvote or decreases one with downvote)
Priority:	High
Frequency of Use:	High
Flow of Events:	1. As the user opens the application and logged in 2. The default map will consist green markers on the confirmed charging locations 3. Pending reports of damaged and incorrectly described charging locations will appear on the locations with a green marker 4. Pending reports of new pending charging locations will appear on the locations with a yellow marker 5. If user wants to vote for those reports, users can click on the indicator on the charging location 6. User shares current location 7. System verifies that current location matches with viewed report 8. User is able to submit their vote for the report (upvote to verify that the information is accurate, downvote to suggest that the report is inaccurate)

	9. After voting, the vote counter on the report changes value depending on the vote and the value will be displayed. 10. If user wants to vote for reports of new charging locations 11. Users are able to toggle green and yellow markers on/off in a checkbox at the top right corner of the screen 12. The yellow map will contain all the pending reports of charging locations, shown as points on the map based on their location. 13. User will select the location to vote for 14. User shares current location 15. System verifies that current location matches with viewed report 16. User is able to submit their vote for the report (upvote to verify that the information is accurate, downvote to suggest that the report is inaccurate) 17. After voting, the vote counter on the report changes value depending on the vote and the value will be displayed. 18. Users will be able to view previously voted reports under “Profile” -> “Historical votes” 19. Once the report is approved, the user will receive 5 points for voting, which will be automatically added into the account 20. A message will also be sent to the user to notify of them of this
Alternative Flows:	1. If user wants to retract their vote 1.1. User navigate back to the report they have voted on 1.2. Click once again on the button they have voted to remove the vote (upvote button if upvoted, downvote button if downvoted) 1.3. The vote will be removed and the vote counter will be corrected accordingly.
Exceptions:	-
Includes:	-
Special Requirements:	Users are limited to a maximum of 5 activity quota a day, to avoid misuse of the feature.
Assumptions:	-
Notes and Issues:	- Pending reports are removed after 15 days of inactivity/ not hitting target vote count

	- Users are not allowed to both upvote and downvote at the same time - Once location hits certain number of votes, it will be verified and no longer be pending

Use Case : View Historical Activities

Use Case ID:	View Historical activities		
Use Case Name:	8		
Created By:	Adrian Chua	Last Updated By:	Adrian Chua
Date Created:	12th September 2023	Date Last Updated:	12th September 2023

Actor:	Initiating actor - User
Description:	Users are able to view their past submitted cases as well as the cases that they have voted for
Preconditions:	Users enter the application and want to view their historical activities
Postconditions:	Users are on the “Historical activities“ page on the application
Priority:	Medium
Frequency of Use:	Medium
Flow of Events:	1. User navigates to the “Profile” page 2. User click on “Historical Activities” 3. Four options will appear in the form of a dropdown menu, namely “View damaged reports”, “Previously shared new locations”, “Used Charging location” as well as “Past votes” 4. Users will pick the one he is interested to view 5. Navigate to a separate page that will show the past history of the user for the particular option that the user selected 6. User can choose to navigate back to look at other historical activities
Alternative Flows:	1. If user clicks “historical activities” and selected an option in which the user have no prior history 2. Screen page will display “ No Historical activities”, with the rest of the page blank 3. There will be a back button for the user to navigate back to the profile page
Exceptions:	-
Includes:	-

Special Requirements:	-
Assumptions:	-
Notes and Issues:	-