Use Cases

for

Charge

Version 0.0

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Boston University CS411 Team 10

02/22/2016

Use Case List

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| ID | Primary Actor | Use Case Title |
| 1.0 | Navigator | Route a distance greater than EV range |
| 2.0 | Searcher | Zoom in on map to show charge stations in given area |
| 3.0 | Vehicle Owner | Zoom on current location |
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Case 1.0

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| --- | --- | --- | --- |
| Use Case ID: | 1.0 | | |
| Use Case Name: | Route a distance greater than EV range | | |
| Created By: | Zachary Ganger, Bianca Annoscia, Daniel Lipovsky,  Zachary Lister | Last Updated By: | Zachary Ganger, Bianca Annoscia, Daniel Lipovsky,  Zachary Lister |
| Date Created: | 02/22/2016 | Date Last Updated: | 02/22/2016 |

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| Actors: | Navigator |
| Description: | Since EV’s have limited range and charging stations are relatively sparse and poorly advertised, the user should be able to enter an origin, a destination, and the range of their vehicle and receive a Google Maps-style route including stops for recharging |
| Trigger: | Navigator requests a route to destination |
| Preconditions: | 1. User has network connection 2. User must be authenticated 3. User must have set up profile (Car model, home city, etc) 4. User should have EV |
| Postconditions: | 1. If destination is unreachable within range, prompt user 2. Else provide route on map and listed directions |
| Normal Flow: | 1. User logs in 2. User searches using destination, current location as default 3. User selects from several route options 4. User follows selected route to destination |
| Alternative Flows: | 1. User logs in 2. User provides both origin and destination 3. User selects from several route options   4. User follows selected route to destination |
| Exceptions: | 1. Destination is not reachable by car range (provide alternatives, i.e. car rental) 2. Invalid destination (Prompt user to re-enter field) |
| Includes: | 2.0. Mapping charge stations on map |
| Priority: | Top priority!! This is the whole point. |
| Frequency of Use: | Predictably once/week or on extended trips including business trips or vacations. Likely use during free time or long trips, due to likelihood that trips outside free time will likely be along known routes. |
| Business Rules: | Remind users that if charge station in use, they may need to account for this in trip duration |
| Special Requirements: | 1. Zoom map to maximize size of route in window   Possibilities:  2. Account for traffic if data is available |
| Assumptions: | 1. User has EV 2. User has connected device 3. User has e-mail address/facebook for authentication 4. User can verify vehicle information |
| Notes and Issues: | 1. Performance affected by connection 2. Keep crashes to a minimum 3. Route should provide cushion for range to lower likelihood of depleted charge |

Case 2.0

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| Use Case ID: | 2.0 | | |
| Use Case Name: | Zoom in on map to show charge stations in given area | | |
| Created By: | Zachary Ganger, Bianca Annoscia, Daniel Lipovsky,  Zachary Lister | Last Updated By: | Zachary Ganger, Bianca Annoscia, Daniel Lipovsky,  Zachary Lister |
| Date Created: | 02/22/2016 | Date Last Updated: | 03/02/2016 |

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| Actors: | Searcher |
| Description: | If users search one location rather than directions, they should be shown a zoomed in view of that area with stations plotted on it. |
| Trigger: | Searcher searches for a location |
| Preconditions: | 1. User has network connection 2. User must be authenticated 3. User must have set up profile (Car model, home city, etc) 4. User should have EV |
| Postconditions: | 1. Zoom in on location & provide map 2. Plot any existing stations |
| Normal Flow: | 1. User logs in 2. User searches location 3. User views map |
| Alternative Flows: | 1. N/A |
| Exceptions: | 1. If no stations in range of the location, show a message |
| Includes: | 1. N/A |
| Priority: | High priority! |
| Frequency of Use: | Predictably once/week or on extended trips including business trips or vacations. Likely use during free time or long trips, due to likelihood that trips outside free time will likely be along known routes. |
| Business Rules: | Remind users that if charge station in use, they may need to account for this in trip duration |
| Special Requirements: | 1. Map zooms to range of car/3 from location, to allow reaching destination and returning to charge, with a buffer.   Possibilities:  2. Account for traffic if data is available |
| Assumptions: | 1. User has EV 2. User has connected device 3. User has e-mail address/facebook for authentication 4. User can verify vehicle information |
| Notes and Issues: | 1. Performance affected by connection 2. Keep crashes to a minimum 3. Route should provide cushion for range to lower likelihood of depleted charge |

Case 3.0

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| Use Case ID: | 3.0 | | |
| Use Case Name: | Zoom on current location | | |
| Created By: | Zachary Ganger, Bianca Annoscia, Daniel Lipovsky,  Zachary Lister | Last Updated By: | Zachary Ganger, Bianca Annoscia, Daniel Lipovsky,  Zachary Lister |
| Date Created: | 03/02/2016 | Date Last Updated: | 03/02/2016 |

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| Actors: | Vehicle Owner |
| Description: | Similar to the 2nd case, but rather than searching a location, the user could select to use their current location using gps (on mobile) or address location services |
| Trigger: | Owner searches current location |
| Preconditions: | 1. User has network connection 2. User must be authenticated 3. User must allow current location on device 4. User must have set up profile (Car model, home city, etc) 5. User should have EV |
| Postconditions: | 1. Zoom in on location & provide map 2. Plot any existing stations |
| Normal Flow: | 1. User logs in 2. User selects current location 3. (User allows location services access) 4. User views map |
| Alternative Flows: | 1. User logs in 2. User selects current location 3. (User refuses location services access) 4. User is notified of function failure |
| Exceptions: | 1. If no stations in range of the location, show a message |
| Includes: | 2.0. Mapping charge stations on map |
| Priority: | High priority! |
| Frequency of Use: | Predictably once/week or on extended trips including business trips or vacations. Likely use during free time or long trips, due to likelihood that trips outside free time will likely be along known routes. |
| Business Rules: | Remind users that if charge station in use, they may need to account for this in trip duration |
| Special Requirements: | 1. Map zooms to range of car/3 from location, to allow reaching destination and returning to charge, with a buffer.   Possibilities:  2. Account for traffic if data is available |
| Assumptions: | 1. User has EV 2. User has connected device 3. User has e-mail address/facebook for authentication 4. User can verify vehicle information |
| Notes and Issues: | 1. Performance affected by connection 2. Keep crashes to a minimum 3. Route should provide cushion for range to lower likelihood of depleted charge |

Revision History

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| --- | --- | --- | --- |
| **Name** | **Date** | **Reason For Changes** | **Version** |
| Zachary Ganger, Bianca Annoscia, Daniel Lipovsky,  Zachary Lister | 02/22/2016 | Initial commit | 0.0 |
| Zachary Ganger, Bianca Annoscia, Daniel Lipovsky,  Zachary Lister | 03/02/2016 | Add Cases 2 and 3 | 0.1 |