

| | | | |
|----------------|------------------------------|--------------------|------------------------------|
| Use Case ID: | UC001 | | |
| Use Case Name: | Search by Text | | |
| Created By: | Wong Yit Jian/Leong Lee Tian | Last Updated By: | Wong Yit Jian/Leong Lee Tian |
| Date Created: | 11/2/2018 | Date Last Updated: | 26/2/2018 |

| | |
|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Actor: | User (initiating actor) |
| Description: | Search attractions by text |
| Preconditions: | The user has a phone with internet connection |
| Postconditions: | <ol style="list-style-type: none"> 1. The user receives basic information of the attraction, or 2. The user receives a “No matches found” message |
| Frequency of Use: | 10 times per day |
| Flow of Events: | <ol style="list-style-type: none"> 1. The user inputs text into the search box. 2. The Search Manager retrieves a list of attractions from the visitSingapore API. 3. The Search Manager matches the input text with the list of attractions. 4. If there are valid matches, the Search Manager retrieves all the basic information of matched attractions to the user using the included use case RetrieveBasicInformation. 5. The Search Interface display the basic information of all matched attractions. |
| Alternative Flows: | AF-S4: If there are no valid matches <ol style="list-style-type: none"> 1. The Search Interface displays the message “No matches found” 2. Return to Step 1 |
| Exceptions: | EX1: If there is no internet connection <ol style="list-style-type: none"> 1. The System displays the message “No internet connection” |
| Includes: | RetrieveBasicInformation |

| | | | |
|----------------|------------------------------|--------------------|------------------------------|
| Use Case ID: | UC002 | | |
| Use Case Name: | Select by Category | | |
| Created By: | Wong Yit Jian/Leong Lee Tian | Last Updated By: | Wong Yit Jian/Leong Lee Tian |
| Date Created: | 11/2/2018 | Date Last Updated: | 26/2/2018 |

| | |
|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Actor: | User (initiating actor), local database (participating actor) |
| Description: | Search attractions from a list of attraction categories |
| Preconditions: | The user has a phone with internet connection |
| Postconditions: | The user receives basic information of the attraction under the selected category. |
| Frequency of Use: | 10 times per day |
| Flow of Events: | <ol style="list-style-type: none"> 1. The user selects to search by category. 2. The Category Manager returns a list of categories from local database. 3. The Category Interface displays a list of categories. 4. The user selects one of the categories. 5. The Category Manager passes the selected category to the local database. 6. The Category Manager requests a list of attractions under the selected category from the local database. 7. The Category Manager retrieves all basic information of each of the attractions in the list using the included use case RetrieveBasicInformation. 8. The Category Interface displays the basic information of the attractions. |
| Exceptions: | EX1: If there is no internet connection <ol style="list-style-type: none"> 1. The System displays the message “No internet connection” |
| Includes: | RetrieveBasicInformation |

| | | | |
|----------------|------------------------------|--------------------|------------------------------|
| Use Case ID: | UC003 | | |
| Use Case Name: | Pick by Suggestion | | |
| Created By: | Wong Yit Jian/Leong Lee Tian | Last Updated By: | Wong Yit Jian/Leong Lee Tian |
| Date Created: | 11/2/2018 | Date Last Updated: | 26/2/2018 |

| | |
|-------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Actor: | User (initiating actor), local database (participating actor) |
| Description: | The user searches attractions from a list of suggested attraction. |
| Preconditions: | The user has a phone with internet connection. |
| Postconditions: | The user receives the basic information of suggested attractions. |
| Frequency of Use: | 10 times per day |
| Flow of Events: | <ol style="list-style-type: none"> 1. The user selects to search by suggestion. 2. The Suggestion Manager requests a sorted list of attractions according to overall rating from the local database. 3. The Suggestion Manager retrieves the basic information of the attractions using the included use case RetrieveBasicInformation. 4. The Suggestion Interface display the basic information of the attractions. |
| Exceptions: | EX1: If there is no internet connection <ol style="list-style-type: none"> 1. The System displays the message “No internet connection” |
| Includes: | RetrieveBasicInformation |

| | | | |
|----------------|------------------------------|--------------------|------------------------------|
| Use Case ID: | UC004 | | |
| Use Case Name: | Retrieve Basic Information | | |
| Created By: | Wong Yit Jian/Leong Lee Tian | Last Updated By: | Wong Yit Jian/Leong Lee Tian |
| Date Created: | 11/2/2018 | Date Last Updated: | 26/2/2018 |

| | |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Actor: | visitSingapore API (participating actor), local database (participating actor) |
| Description: | The system retrieves the name, address, rating, image and operating hours of the attraction. |
| Preconditions: | Invocation as an included use case by UC001, UC002, UC003 |
| Postconditions: | The System has returned all the attractions information. |
| Flow of Events: | <ol style="list-style-type: none"> 1. Search Manager, Category Manager, Suggestion Manager retrieves the name, address, image and operating hours of the attraction from the visitSingapore API. 2. The System retrieves the overall rating from the local database. |
| Exceptions: | EX1: If there is no internet connection <ol style="list-style-type: none"> 1. The System displays the message “No internet connection” |

| | | | |
|----------------|--------------------------------|--------------------|------------------------------|
| Use Case ID: | UC005 | | |
| Use Case Name: | Display Attraction Information | | |
| Created By: | Wong Yit Jian/Leong Lee Tian | Last Updated By: | Wong Yit Jian/Leong Lee Tian |
| Date Created: | 11/2/2018 | Date Last Updated: | 26/2/2018 |

| | |
|-----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Actor: | User (initiating actor), visitSingapore API (participating actor), Wunderground API (participating actor), local database (participating actor) |
| Description: | The System displays all the information of the attraction. |
| Preconditions: | The user has a phone with internet connection |
| Postconditions: | The system has displayed the information. |
| Flow of Events: | <ol style="list-style-type: none"> 1. The user selects the attraction from the list of searched attractions. 2. The System retrieves the name, address, image, description, web URL and operating hours of the attraction from the visitSingapore API using the included use case RetrieveDetailedInformation. 3. The System retrieves the overall rating, rating and review of the attraction from the local database using the included use case RetrieveDetailedInformation. 4. The System retrieves the weather from the Wunderground API using the included use case RetrieveDetailedInformation. 5. The System displays the information of the attraction. |
| Exceptions: | EX1: If there is no internet connection <ol style="list-style-type: none"> 1. The System displays the message “No internet connection” |
| Includes: | RetrieveDetailedInformation |

| | | | |
|----------------|-------------------------------|--------------------|------------------------------|
| Use Case ID: | UC006 | | |
| Use Case Name: | Retrieve Detailed Information | | |
| Created By: | Wong Yit Jian/Leong Lee Tian | Last Updated By: | Wong Yit Jian/Leong Lee Tian |
| Date Created: | 11/2/2018 | Date Last Updated: | 26/2/2018 |

| | |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Actor: | visitSingapore API (participating actor), Wunderground API (participating actor), local database (participating actor) |
| Description: | The System retrieves all the information of the attraction. |
| Preconditions: | Invocation as an included use by DisplayAttractionInformation /UC005 |
| Postconditions: | The System has returned all the attractions information. |
| Flow of Events: | <ol style="list-style-type: none"> 1. The System retrieves the name, address, image, description, web URL and operating hours of the attraction from visitSingapore API. 2. The System retrieves the weather information from the Wunderground API. 3. The System retrieves the overall rating, rating and review from the local database. |
| Exceptions: | EX1: If there is no internet connection <ol style="list-style-type: none"> 1. The System displays the message “No internet connection” |

| | | | |
|----------------|------------------------------|--------------------|------------------------------|
| Use Case ID: | UC007 | | |
| Use Case Name: | Get Direction | | |
| Created By: | Wong Yit Jian/Leong Lee Tian | Last Updated By: | Wong Yit Jian/Leong Lee Tian |
| Date Created: | 11/2/2018 | Date Last Updated: | 26/2/2018 |

| | |
|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Actor: | User (initiating actor), GoogleMap API (participating actor) |
| Description: | The System calls GoogleMap API to show the route to the attraction |
| Preconditions: | This use case extends the DisplayAttractionInformation/UC005 . It is initiated when the user clicks on the Navigation button. |
| Postconditions: | The navigation System has displayed the route. |
| Frequency of Use: | 10 times per day |
| Flow of Events: | <ol style="list-style-type: none"> 1. The user clicks the Get Direction button in the selected attraction information page. 2. The System will pass the address of the attraction to on-device navigation System which the default is GoogleMap through android API. 3. The navigation System shall display the route to the attraction. |
| Alternative Flows | AF-S2: If no navigation System is found on device <ol style="list-style-type: none"> 1. The System shall invoke the web version of Google Map and pass the address of the attraction. 2. The System returns to Step 3. |
| Exceptions: | EX1: If there is no internet connection <ol style="list-style-type: none"> 1. The System displays the message “No internet connection” |
| Assumptions: | User will need to know how to get to the attractions. |

| | | | |
|----------------|------------------------------|--------------------|------------------------------|
| Use Case ID: | UC008 | | |
| Use Case Name: | Rate and Review | | |
| Created By: | Wong Yit Jian/Leong Lee Tian | Last Updated By: | Wong Yit Jian/Leong Lee Tian |
| Date Created: | 11/2/2018 | Date Last Updated: | 26/2/2018 |

| | |
|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Actor: | User (initiating actor), local database (participating actor) |
| Description: | Allows user to give rating and review to the attraction |
| Preconditions: | <ol style="list-style-type: none"> 1. This use case extends the DisplayAttractionInformation/UC005. It is initiated when the user clicks on the Rate and Review button. 2. The user has a user account. |
| Postconditions: | The user has rated and/or review the attraction. |
| Frequency | 10 times per day |
| Flow of Events: | <ol style="list-style-type: none"> 1. The user clicks the Rate and Review button in the selected attraction information page. 2. The user gives a rating from 1 to 5 to the attraction. 3. The Rate and Review Interface ask the user if they want to write a review for the attraction. 4. The user writes a review of 0 to 100 characters. 5. The Rate and Review Interface ask to confirm the submission. 6. The Rate Review Manager updates the overall rating, rating and review to the local database. 7. The Rate and Review Interface returns to the attraction information page. |
| Alternative Flows | <p>AF-S3: If the user chose not to write a review</p> <ol style="list-style-type: none"> 1. The Rate and Review Interface returns to Step 5. <p>AF-S5: If the user chose not to submit</p> <ol style="list-style-type: none"> 1. The Rate Review Manager will not update the database with the rating and review. 2. The Rate and Review Interface returns to Step 7. |
| Exceptions: | <p>EX1: If there is no internet connection</p> <ol style="list-style-type: none"> 1. The System displays the message “No internet connection” |

| | | | |
|----------------|------------------------------|--------------------|------------------------------|
| Use Case ID: | UC009 | | |
| Use Case Name: | Alert Bad Weather | | |
| Created By: | Wong Yit Jian/Leong Lee Tian | Last Updated By: | Wong Yit Jian/Leong Lee Tian |
| Date Created: | 13/2/2018 | Date Last Updated: | 26/2/2018 |

| | |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Actor: | Wunderground API (participating actor) |
| Description: | The system will alert the user about bad weathers |
| Preconditions: | This use case extends the DisplayAttractionInformation /UC005. It is initiated when the retrieved weather is extreme. |
| Postconditions: | The user has closed the alert message |
| Flow of Events: | <ol style="list-style-type: none"> 1. If the weather type that is retrieved from the Wunderground API is rainy, display the message “It is raining”. 2. If the weather type that is retrieved from the Wunderground API is thunderstorm, display the message “Warning! Thunderstorm appearing at the area”. 3. The user closes the alert window and returns to the attraction information page. |
| Exceptions: | EX1: If there is no internet connection <ol style="list-style-type: none"> 1. The System displays the message “No internet connection” |

| | | | |
|----------------|------------------------------|--------------------|------------------------------|
| Use Case ID: | UC010 | | |
| Use Case Name: | Login Existing User | | |
| Created By: | Wong Yit Jian/Leong Lee Tian | Last Updated By: | Wong Yit Jian/Leong Lee Tian |
| Date Created: | 25/2/2018 | Date Last Updated: | 26/2/2018 |

| | |
|-----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Actor: | User (initiating actor), local database (participating actor) |
| Description: | Allow user to login |
| Preconditions: | <ol style="list-style-type: none"> 1. The user has a phone with internet connection, and 2. The user has a User Account, and 3. The user has a Login ID and Password. |
| Postconditions: | <ol style="list-style-type: none"> 1. The user has login to the system, or 2. The user receives an explanation from the Login Interface why he/she failed to login. |
| Frequency of Use: | 10 times per day |
| Flow of Events: | <ol style="list-style-type: none"> 1. The user clicks Login. 2. The Login Interface requests the input of Login ID and a Password. 3. The user enters the Login ID and Password. 4. The Login Interface sends the Login ID and Password to the User Manager. 5. The User Manager verifies the Login ID and Password with the account information in the local database. 6. If the Login ID and Password are verified, then the user has successfully login to the System. |
| Alternative Flows: | AF-S5: If the Login ID and/or Password are invalid <ol style="list-style-type: none"> 1. The Login Interface display the message "Invalid ID/Password. Please try again!". 2. Return to Step 2 |
| Exceptions: | EX1: If there is no internet connection <ol style="list-style-type: none"> 1. The System displays the message "No internet connection" |
| Special Requirements: | <ol style="list-style-type: none"> 1. The Password must be alphanumeric. 2. The Password must be in the range of 8-20 characters. 3. The Login ID must be in the range of 1-20 characters. |
| Assumptions: | The ratings and reviews of the attractions must be given by registered user so that the rating and review are credible. |

| | | | |
|----------------|------------------------------|--------------------|------------------------------|
| Use Case ID: | UC011 | | |
| Use Case Name: | Sign Up New User | | |
| Created By: | Wong Yit Jian/Leong Lee Tian | Last Updated By: | Wong Yit Jian/Leong Lee Tian |
| Date Created: | 25/2/2018 | Date Last Updated: | 26/2/2018 |

| | |
|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Actor: | User (initiating actor), local database (participating actor) |
| Description: | Allow user to create an account |
| Preconditions: | 1. The user has a phone with internet connection |
| Postconditions: | 1. The user has successfully created an account. 2. The user receives an explanation from the Sign Up Interface why he/she failed to create an account. |
| Frequency of Use: | 10 times per day |
| Flow of Events: | <ol style="list-style-type: none"> 1. The user clicks Sign Up. 2. The Sign Up Interface requests the input of Login ID and Password. 3. The user enters the Login ID and Password. 4. The Sign Up Interface sends the Login ID and Password to the User Manager. 5. The User Manager verifies the Login ID in the local database. 6. The User Manager verifies the Password. 7. If the Login ID and Password are verified, then the user has successfully created an account. |
| Alternative Flows: | <p>AF-S7: If the Login ID is invalid</p> <ol style="list-style-type: none"> 1. The Sign Up Interface display the message “Someone has used the same ID. Please try again!”. 2. Return to Step 2 <p>AF-S7: If the Login ID and/or Password are out of range</p> <ol style="list-style-type: none"> 1. The Sign Up Interface display the message “Login ID/Password characters out of range. Please try again!”. 2. Return to Step 2 <p>AF-S7: If the Password is not alphanumeric</p> <ol style="list-style-type: none"> 1. The Sign Up Interface display the message “Password is not alphanumeric (etc “abc12”). Please try again!”. 2. Return to Step 2 |
| Exceptions: | <p>EX1: If there is no internet connection</p> <ol style="list-style-type: none"> 1. The System display message “No internet connection” |
| Special Requirements: | <ol style="list-style-type: none"> 1. The Password must be alphanumeric. 2. The Password must be in the range of 8-20 characters. 3. The Login ID must be in the range of 1-20 characters. 4. The Login ID and Password must be unique. |
| Assumptions: | Users will need to create an account to rate and review attractions so that the rating and review are credible. |