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Executive Summary

Company and Product summary

Bridal rental business: an online rental business specialised in bridal services from bridal rental (ranging from pre-wedding, ROM, receptions and etc), photography and video motion services.

Company goal:

to increase site-traffic, raise awareness of the brand, to provide the customers and other stakeholders (photographers) with value added visualisation to their pre-wedding photoshoot planning.

User goal:

ability to plan different outdoor locations and what's nearby for pre-wedding photoshoot in advance.

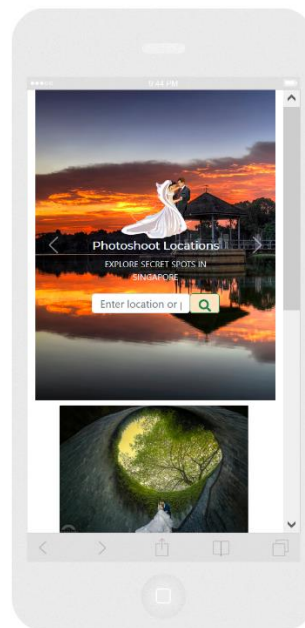
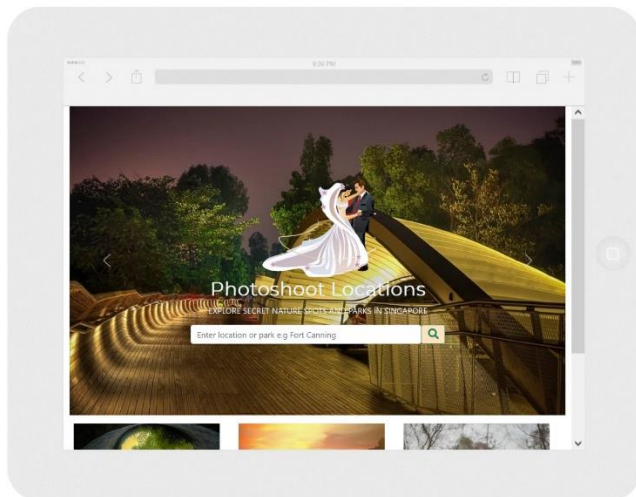
Product goal:

Provide ability to view locations (by query, recommendation, by region) and its relative weather & temperature of respective days for better planning especially for outdoor photoshoot plan.

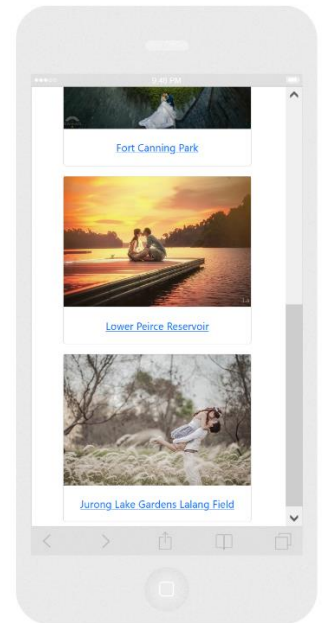
| Features | Benefits to Company and Users | |
|--------------------------|---|---|
| | Company | Users |
| Interactive Map | <ul style="list-style-type: none">▪ To address user's plain point and help users with planning for pre-wedding photoshoot especially outdoor photoshoot. | <ul style="list-style-type: none">▪ Ability to view map and navigate to different locations in Singapore.▪ Ability to see radius within 1 km.▪ Support different devices responsiveness. |
| Dynamic Weather Forecast | <ul style="list-style-type: none">▪ Increase site visit and traffic to the website.▪ Provide value-added services to existing and new potential customers and stakeholders e.g. photographers. | <ul style="list-style-type: none">▪ Ability to view weather forecast ranging from 2-hours, 24-hours and 4 days forecast.▪ Easy visualisation by representing with different icons and options to view by regions on the interactive map. |

Product & Features

Landing page:

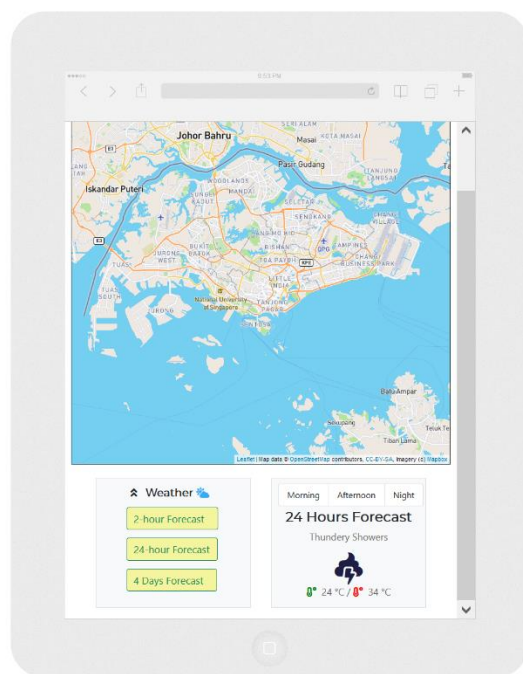


iPhone 6-8 Plus portrait - width: 414px

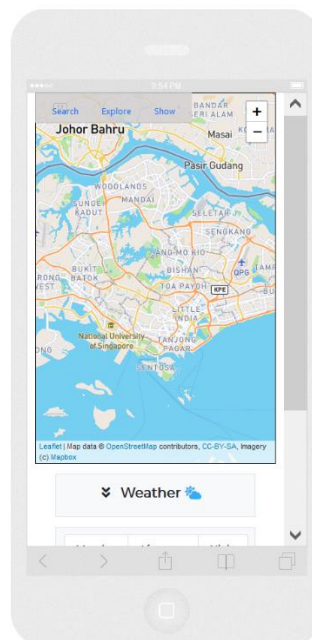


iPhone 6-8 Plus portrait - width: 414px

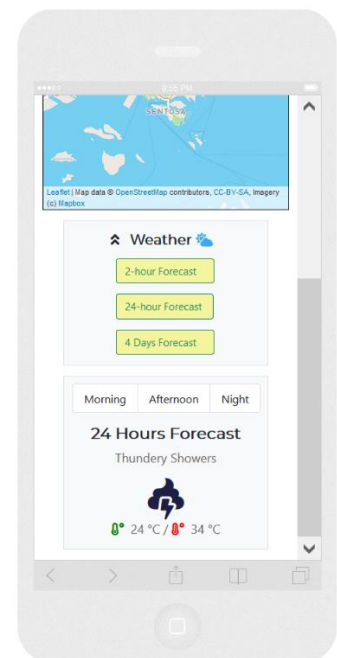
Map navigation page:



iPad portrait - width: 768px



iPhone 6-8 Plus portrait - width: 414px



iPhone 6-8 Plus portrait - width: 414px

See pdf file for more screenshot

This is a single page application. The page is divided into 2 sections, the landing page and the map page.

On the landing page, the app will first address to the users with greetings and a search bar to encourage user to type something to search. The map section will be triggered when the user presses down the "Enter" key or click on the search button.

On the map section, information/functions are organised into 2 sections:

| Navigation bar section: | Weather Forecast section |
|--|--|
| Float Navbar panel <ul style="list-style-type: none">SearchExploreHide | Two sections for the weather forecast: <ul style="list-style-type: none">Weather Forecast option buttonsDisplay result |
| Search tab <ul style="list-style-type: none">Search results of parks and Foursquare locations will be displayed hereDetails of the parks including images will be displayed whenever availableUser can interact with the map through clicking on the result link, or on marker, the map will zoom in to show the targeted marker with location name and what's are within 1km radius.Users can clear the search by pressing on "clear result" button. | Weather Forecast options: <ul style="list-style-type: none">2-hours Forecast24-hours Forecast4 days Forecast |
| Explore tab <ul style="list-style-type: none">Allow user to interact with the map to explore more by the recommendation of famous photo-shooting spotsUser can switch between each checkbox optionsUser can also show the region which will divide Singapore into each region. | Weather Forecast display result: <ul style="list-style-type: none">Respective result will be displayedThe respective weather icon will be displayed and plot on the mapClick on weather icon will be zoom to location.User can choose to view the weather by regions on the map too24-hours Forecast, can be viewed by period of the day (morning, afternoon and night).4 days Forecast, will displayed the high-low temperature. |
| Hide tab <ul style="list-style-type: none">Allow hiding of the Navbar panel so the map can be viewed unobstructed across devices of all sizes | |
| Map section: | |
| <ul style="list-style-type: none">Both search navigation bar and weather forecast data will be plot and interactive on the map. | |

Market and competitive landscape

| 5 Forces | | | | |
|---|--|--------------------------------------|--|--|
| Users | Alternative solutions | Existing competitors | New rivals | Partner leverage |
| <ul style="list-style-type: none"> Individual who wants to rent wedding outfits and bridal items online. Individual who is looking for wedding photoshoot services. | Google map NEA website weather.com | Google map NEA web weather.com | Other existing bridal services can develop these features on their platform. | <ul style="list-style-type: none"> Rental business Individual who wants to rent items online |
| Neutral | Strong | Strong | Weak | Neutral |

Technologies Used

| HTML 5 | To structure the content of the website. |
|--|--|
| CSS | To add stylistic touches to the website. |
| Bootstrap 5.1 | To structure the layout of the website (i.e. Navbar, cards, interactive container) and ensure website is mobile responsiveness. |
| GoogleFonts | To style the typography on the website to enhance the visual experience of users. |
| FontAwesome 5.15.4 | Uses the icons provided by FontAwesome 4.7 to enhance the user experience by making user interaction with the application more intuitive. |
| API | |
| Leaflet 1.71 | Mobile-friendly interactive maps API to plot out Singapore map. ref: https://leafletjs.com/reference-1.7.1.html |
| Four Square | Location data platform API to plot locations/venues on Leaflet map. ref: https://api.foursquare.com/v2/venues/search |
| National Park data | GeoJSON data to locate parks in Singapore (managed by National Parks Board) ref: https://data.gov.sg/dataset/parks?resource_id=579a406c-f1bb-44da-afb7-45d8c1e4465f |
| Weather Forecast: 2 hours weather forecast | To display the latest two hour weather forecast for multiple areas in Singapore which were updated half-hourly from NEA. ref: https://api.data.gov.sg/v1/environment/2-hour-weather-forecast |
| Weather Forecast: 24 hours weather forecast | To provide the latest 24 hour weather forecast that was updated multiple times throughout the day ref: https://api.data.gov.sg/v1/environment/24-hour-weather-forecast |
| Weather Forecast: 4 days weather forecast | To provide the latest 4 day weather forecast which was updated twice a day from NEA ref: https://api.data.gov.sg/v1/environment/4-day-weather-forecast |
| Singapore regions boundary (geojson MultiPolygon) | To provide indicative polygon of region boundary, divides Singapore into regions to plot on Leaflet map ref: https://data.gov.sg/dataset/master-plan-2019-region-boundary-no-sea |

User Experience (UX)

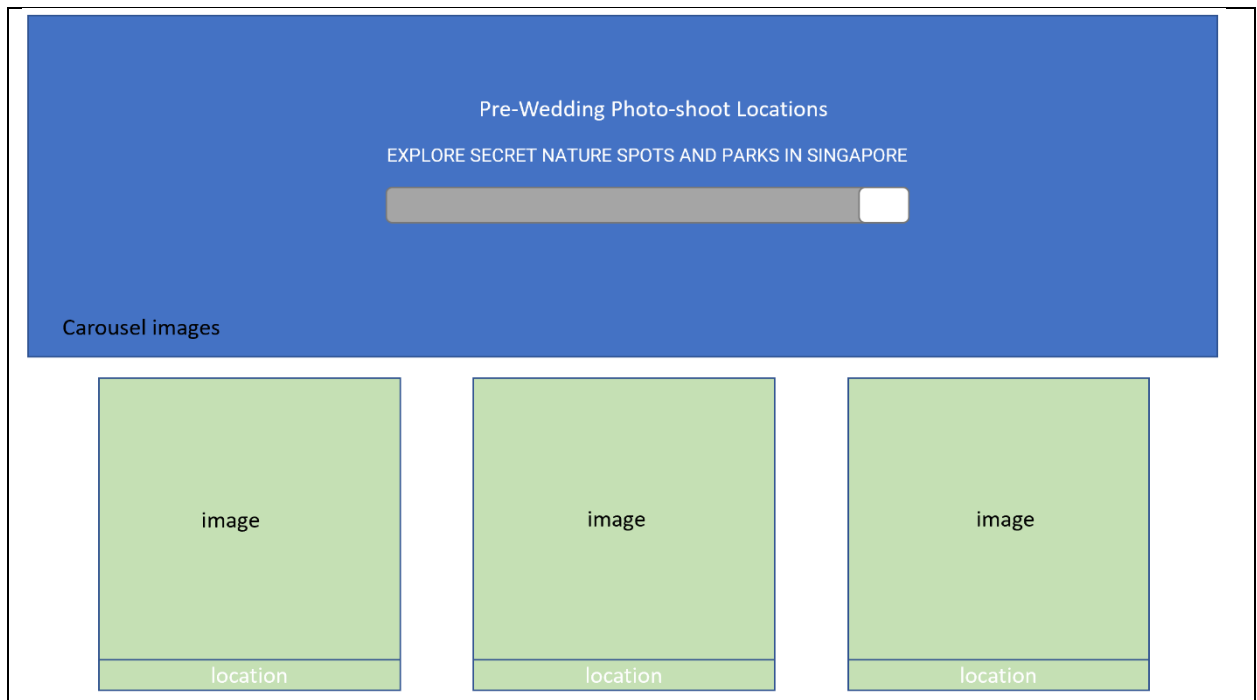
User Persona

| | | |
|---|--|---|
| User Persona - Consumer  | Background Linda is office employee. She is currently living with parent. Linda is fashion enthusiasts and always follows the trend, and peer pressure. She likes discounted items and value for money. Activities/ Interest <ul style="list-style-type: none"> ○ Hanging out with friends ○ Dating and enjoy nice café ○ Updating activity on social media ○ Enjoy beautiful nature | Dislike/Frustration <ul style="list-style-type: none"> ○ When plan for outdoor activities and the weather is not permitted. ○ When the mood and tone in the photo are not as desire. ○ Need to do many sourcing. Buying Behaviour <ul style="list-style-type: none"> ○ Trendy and recommended by influencers. ○ Will try to get similar to what is in trend but within budget. ○ Good customer services and easy to navigate to use the service. |
| Linda, 28 Dating Graduated Employed | Motivations <ul style="list-style-type: none"> ○ Easy to navigate applications ○ Allow a level of control or ability to plan on her end | Buying Objective <ul style="list-style-type: none"> ○ To get nice gown and accessories at budget. ○ Allow to use for outdoor photoshoot |
| Personality <ul style="list-style-type: none"> ○ Extrovert ○ Emotional ○ Friendly | Goals <ul style="list-style-type: none"> ○ To get nice designed gown at the good price. ○ To do photoshoot at beautiful scenery and landscape with ability to plan in advance | Social networks / websites <ul style="list-style-type: none"> ○ Social media platform ○ Shopping platform ○ Fashion influencers / blogger ○ Travel website / blogger / YouTube channels |

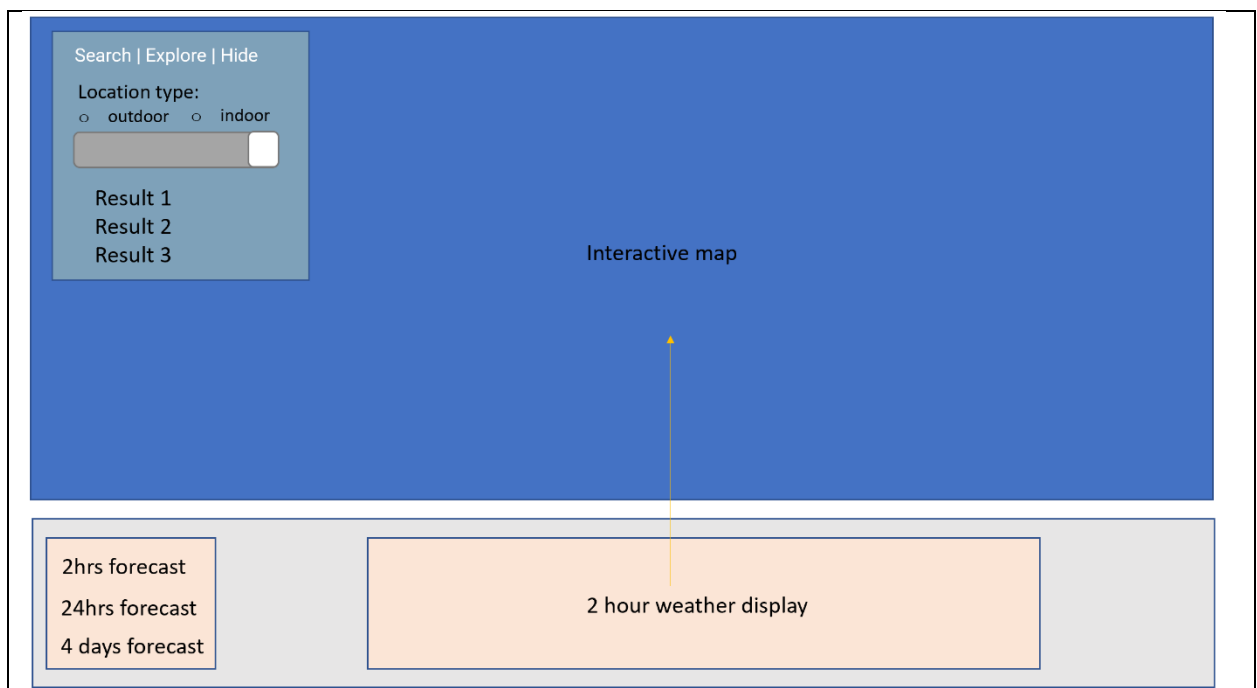
| Needs | Pain Points |
|--|---|
| <ul style="list-style-type: none"> ○ Nice gown within the budget ranges and allow to wear for outdoor photoshoot. | <ul style="list-style-type: none"> ○ The weather that ruins the outdoor pre-wedding photoshoot and when missing the other beautiful scenery spot nearby. ○ There are cost for photographer services and gown renting so they wish to complete the photo-shooting within the planned timeline. |

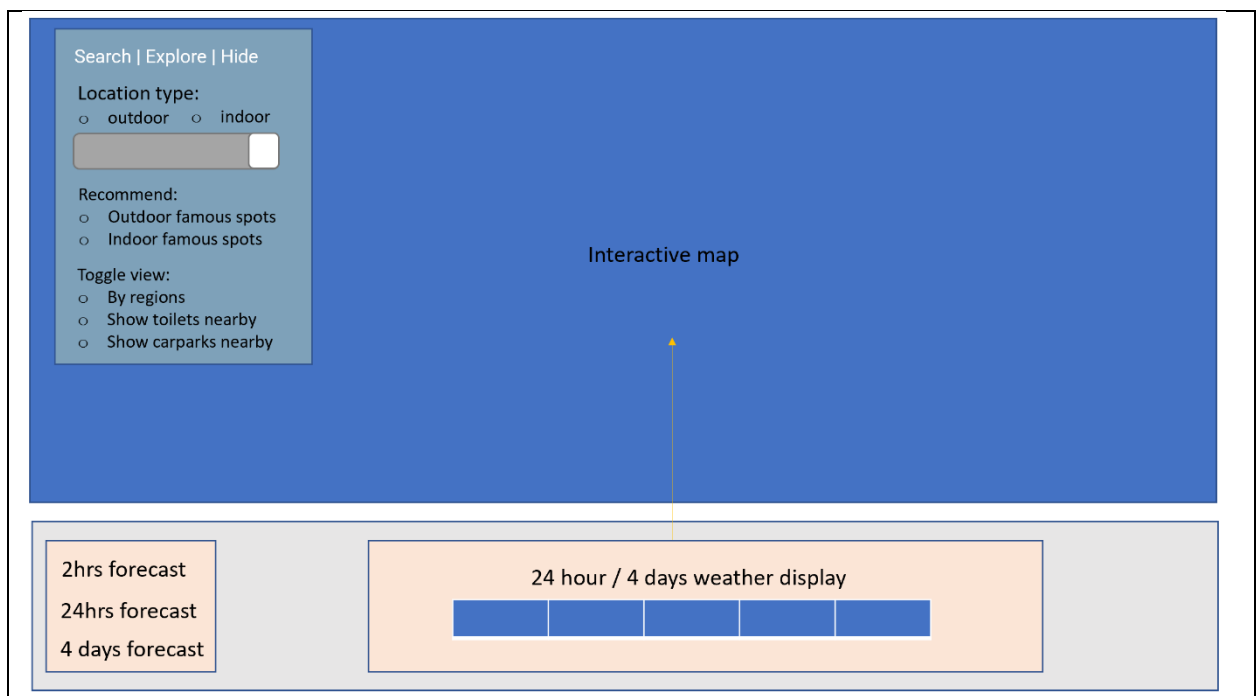
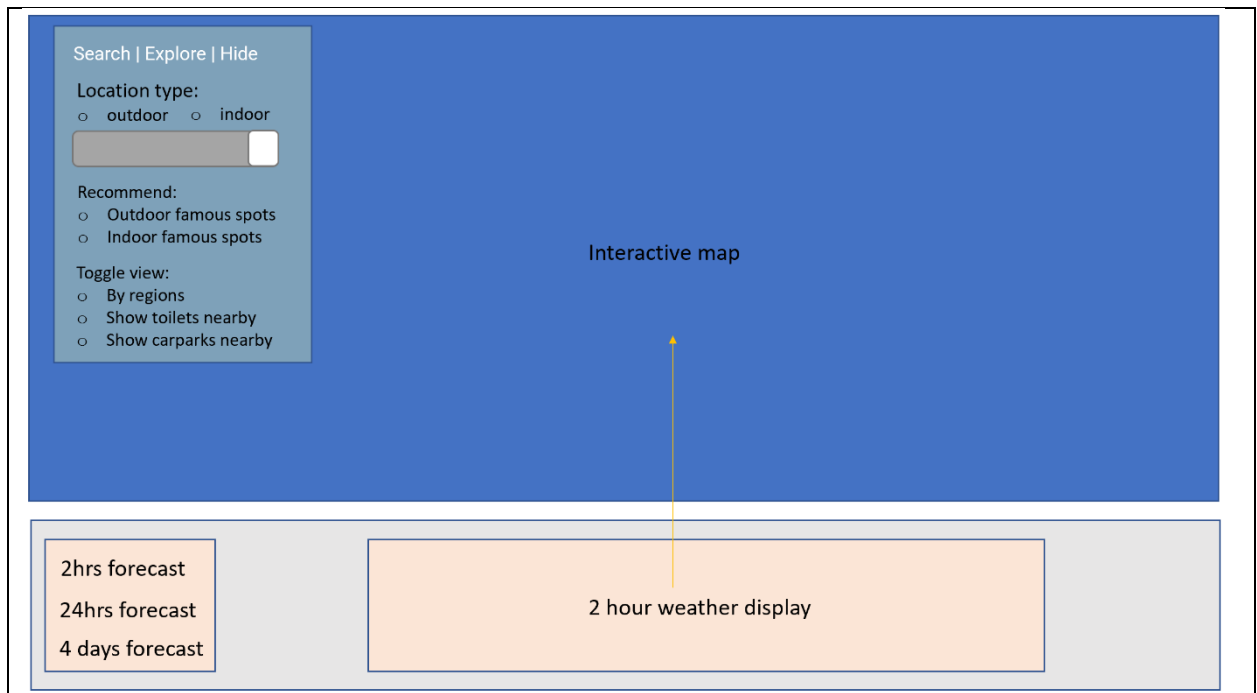
Wireframe

Page1:



Page2:





See pdf file for wireframe

Surface Plane

Responsiveness:

This website is responsive to small, medium and large screen sizes. It is a mobile first approach application.

Colours:



See pdf file for color code

Typography

Using **google font (Montserrat, sans-serif)**: its simple geometric letters which make the design appealing and have a large X-height. It provides the vibes of trust and can go best with maximum fonts. The font has a charming tale, features friendly and open sizes curves. This makes for a more natural reading rhythm more commonly found in humanist and serif types.

Layout

Collapsible Tab is used to make sure the map can be viewed unobstructed across devices of all sizes and user can hide and show the search options as desired.

The element view hight (vh) is designed at 80% view hight of the screen in order to have other element sections appear on the screen in the same time. This is to inform users to scroll down for other details.

Software Application Development

Product prioritization

| MoSCoW Prioritisation Technique | |
|---------------------------------|---|
| Must have | <ul style="list-style-type: none">▪ Search bar navigation▪ Interactive map (show marker, pop up location name, zoom, within approximate radius)▪ Parks and venue location in Singapore▪ Weather Forecast▪ Excellent UX (within 3 clicks)▪ Responsive design (small, medium and large screen) |
| Should have | <ul style="list-style-type: none">▪ Show region▪ Show famous spots (both parks and venues)▪ Icon marker location to represent and distant each selected option result on the map |
| Could have | <ul style="list-style-type: none">▪ Show nearby restaurants & toilets▪ Show nearby carpark availability▪ Photo API to the popup marker |
| Won't have | To be review |

Estimation and Planning

Release planning (Tasks feature break down)

| Features | Tasks list | Priority | Release No. | Sprint No. |
|------------------|--|----------|-------------|------------|
| Park Search | <ul style="list-style-type: none">○ Leaflet map setup○ Park data API setup and consumption○ Search navigation bar setup○ Park name popup and marker setup○ Zoom and fly to marker○ 1km radius setup with popup message○ Customized icon marker | 1 | 1 | 1 |
| Venue Search | <ul style="list-style-type: none">○ Foursquare API setup and consumption○ Filter the venue categories and country location to Singapore○ Marker and venue name pop up on the map○ Zoom and fly to marker○ 1km radius setup with popup message○ Customized icon marker | 1 | 1 | 1 |
| Weather Forecast | 2-hours weather forecast <ul style="list-style-type: none">○ 2-hours weather API setup and consumption○ Setup the weather icons, add them to | 1 | 1 | 1 |

| | | | | |
|----------------|--|---|---|---|
| | <ul style="list-style-type: none"> marker to display on the map by locations Display tooltips pop up date & time on the map | | | |
| | 24-hours weather forecast <ul style="list-style-type: none"> 24-hours weather API setup and consumption Setup region latitude longitude Setup the weather icons, add them to marker to display on the map by regions Filter data to time of day and high-low temperature Display tooltips pop up date & time on the map | 1 | 1 | 2 |
| | 4 days weather forecast <ul style="list-style-type: none"> 4 days weather API setup and consumption Filter data by date and high-low temperature | 1 | 1 | 2 |
| Region display | <ul style="list-style-type: none"> Singapore regions boundary setup and consumption Plot the marker to present the center of MultiPolygon Reset the map zoom to default | 2 | 1 | 2 |

Agile estimation (Sprint planning)

| Product Backlog: Park and Venue Search Features | | | | |
|---|--------------|---|------------|-----------------|
| User Story | Story Points | Task List | Sprint No. | Estimated hours |
| As user, I want to be able to view the map so that I can search for places of desired. | 1 | <ul style="list-style-type: none"> Design and implement interface for map navigation (within 3 clicks) Setup leaflet map Setup search navigation bar Set the navbar float on the map Setup the map height and zoom level for different screen size | 1 | 3 |
| As user, I want to search for any beautiful parks within Singapore and show the other park similarly so I can see what are options there for me | 1 | <ul style="list-style-type: none"> Park data API setup and consumption Display the filtered search result on navigation bar Sorted search result display by alphabet Setup vertical scroll bar to hold search result | 1 | 3 |
| As user, I want to also be able to search for places/venues in | 2 | <ul style="list-style-type: none"> Foursquare API setup and | 1 | 4 |

| | | | | |
|---|---|---|---|-----|
| Singapore and show the other park similarly so I can see what are options there for me | | <ul style="list-style-type: none"> consumption ○ Display the filtered search result on navigation bar ○ Filter the venue categories and country location to Singapore ○ Sorted search result display by alphabet ○ Setup vertical scroll bar to hold search result | | |
| As user, I want to be able to click on each pin mark on the map to see the name | 1 | <ul style="list-style-type: none"> ○ Park name popup and marker setup ○ Setup fly to the first result location ○ Setup zoom and fly to marker ○ Customized icon marker to differentiate the different data display | 1 | 2 |
| As user, I want to be able to see what else in that area within walking distance so that I won't missed any nice park or places to take my wedding photo-shoot. | 1 | <ul style="list-style-type: none"> ○ Setup 1km radius setup with popup message ○ Add walking icon for radius popup | 1 | 0.5 |
| As user, I want to be able to clear my search and the pin marker on the map so I won't get confuse with my new search outcome. | 1 | <ul style="list-style-type: none"> ○ Clear search result, layer and marker for both park data and venue data. ○ Setup "clear search" button on the navigation bar | 1 | 0.5 |
| As user, I want to be able to hide the navigation bar so that I can see the map fully and clearer. | 1 | <ul style="list-style-type: none"> ○ Setup "hide" and "show" tap on the navigation bar (to display respective tap when action needed) ○ Hide the navigation card body. | 1 | 0.5 |
| As user, I want to be able to navigate the map on phone and laptop so that it convenience on the go or sometime in office | 1 | <ul style="list-style-type: none"> ○ Setup the map height and zoom level for different screen size ○ CSS styling and responsive containers layout to suit different screen size for better UX. | 1 | 2 |

Test Case and Acceptance Criteria

| Test Case Scenario | Test Scope | Criteria | |
|--------------------------------|--|---|--|
| | | Acceptance | Failure |
| Park and Venue Search Features | interface for map navigation setup (Leaflet map) | <ul style="list-style-type: none"> ○ Able to properly loaded the map for all screen sizes (small, medium and large) ○ Navigation bar float on the top left of the map container ○ The navbar must be able to hide and show for better visibility of the map as desired. | <ul style="list-style-type: none"> ○ Map is not loaded properly in any of the screen size ○ Navigation bar was not position as desired at location ○ Unable to hide or show navbar properly. When hit on hide, it doesn't hide the body of the search bar or when hit show, it doesn't show the body of the search bar. |
| | Park Search Venue Search | <ul style="list-style-type: none"> ○ Able to type input and search for result ○ The result displayed in alphabetically at the body of float navigation bar. ○ The user must be able to vertically scroll down the list if the list long (scroll bar must exist). ○ It must automatically fly to the maker of first search result on the list with name popup and show radius within 1km | <ul style="list-style-type: none"> ○ Type search input but no result display or result mismatch (e.g. outside Singapore, different categories from the search input). ○ The result did not display alphabetically ○ The result did not appear on the float navigation bar. ○ There's no scroll down bar vertically to look through the result list. ○ It is not fly to first location on the search result and/or the name did not popup and/or show radius within 1km. |
| | Marker and popup name setup | <ul style="list-style-type: none"> ○ The markers must be display and pinned to correct location on the map ○ Whenever user click on marker, the popup name will appear and clickable to close the popup box. ○ The radius must display together with markers and popup message and icons to inform user within | <ul style="list-style-type: none"> ○ The markers are not displayed and/or pinned to correct location on the map ○ The popup name did not appear when click on marker ○ Unable to click on close popup box ○ Radius and/or the radius popup message did not populate when zoom to makers |

| | | | |
|--|--|---|---|
| | | 1km <ul style="list-style-type: none"> ○ When click on another marker, it must fly and zoom to that selected marker ○ Markers must be customized to represent different type of data categories | <ul style="list-style-type: none"> ○ Unable to fly to another marker when click on them ○ Customized markers are not showing up correctly to display different categories of data search. |
| | Clear search result | <ul style="list-style-type: none"> ○ The clear search button must be available on navbar and functional. ○ When clear search button is clicked, the search result and layers as well as markers will be cleared. | <ul style="list-style-type: none"> ○ The clear search button is not available on navbar and/or not functional. ○ The search result, layer and markers of existing search were not cleared on the map after hitting on the button. |
| | Responsive application (mobile, tablet and laptop) | <ul style="list-style-type: none"> ○ When use any devices, the map height and zoom level must be different and suitable for each screen size. ○ The layout of the containers, font sizes must be adjusted and suitable for each screen sizes. | <ul style="list-style-type: none"> ○ The map height and zoom level doesn't change as per screen sizes. ○ The layout of the containers, font sizes are not adjusted and not suitable for each screen sizes. |

Future development features

- Show nearby restaurants & toilets
- Show nearby carpark availability
- Fourquare Photo API

References

- Credit data for Park, Singapore regions boundary and weather data to data.gov.sg
- Venue data are from foursquare.com
- Images are from:
 - <https://singaporebrides.com/>
 - <https://www.xeplanner.com/>
 - <https://hitcheed.com/>
 - <http://www.perfectweddings.sg/>
 - <https://www.blissfulbrides.sg/>
 - <https://www.onethreeonefour.com/>