
# CS3240: Interaction Design

## Lecturer: Zhao Shengdong

## G2: Design & Prototyping

## Group Number: 17


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# Contents

# Key User Tasks

Our group realised that since the key user tasks are mentioned in all sections of this report, we will state the key user tasks explicitly at the start so that we can reference it throughout the report. These key user tasks are derived in G1, after conducting contextual inquiry and performing thematic analysis on the data gained.

1. Display a simplistic and informational list of restaurants and activities available in Singapore. Activities include attractions, hiking trails and parks
2. Suggest activities and restaurants to users based on their preference. Preferences include: Cuisine, Cost of activities, Nature of activities (Indoors or Outdoors). The current list is non-exhaustive.
3. Display updated information regarding weather, crowds and COVID-19 restrictions

# Scenarios & Storyboards

In this section, our group will present our scenarios and storyboards as a low-fidelity prototype to our project.

Below are the representation of the elements of the scenario:

- Agents/Actors
- Setting
- Goals/Objectives
- **Actions/Events**

## Scenario 1

June, turning 23 this year, is a foreign student who has spent over 15 years in Singapore's education system, and is more than well versed with Singapore's attractions.

She recently met her boyfriend, Fucius, in a hall which she stays in and serves as her residential address. As a high achieving, busy university student, she rarely has any personal time, and less so time to spend with her boyfriend. Every weekend, they aim to go on a #happiness date, where they escape from their crammed hostel rooms and take some fresh air off campus.

However, as the semester progresses, her workload piles even heavier. It is nearing the weekend, and it's Fucius' birthday. However, she has already exhausted all her ideas for celebrations and dates. They've also **set a budget on their dates, and thus are not looking for costly attractions**. She does a quick search on Google - but she

has already done most of those activities, or is "mainstream". She whips up her phone and **enters the Recontre app** and sees many fresh and new ideas near where she stays. She then thought about bringing Fucius for a good dinner afterwards. Due to the simplistic way restaurants and attractions are presented in Recontre, June is able to **scroll through all the available food and attractions** based on the budget she has set for the date. After **clicking on a suitable restaurant, a quick look at the menu**, she used the app's page to link to the restaurant and made her reservation. Done in 10 minutes!

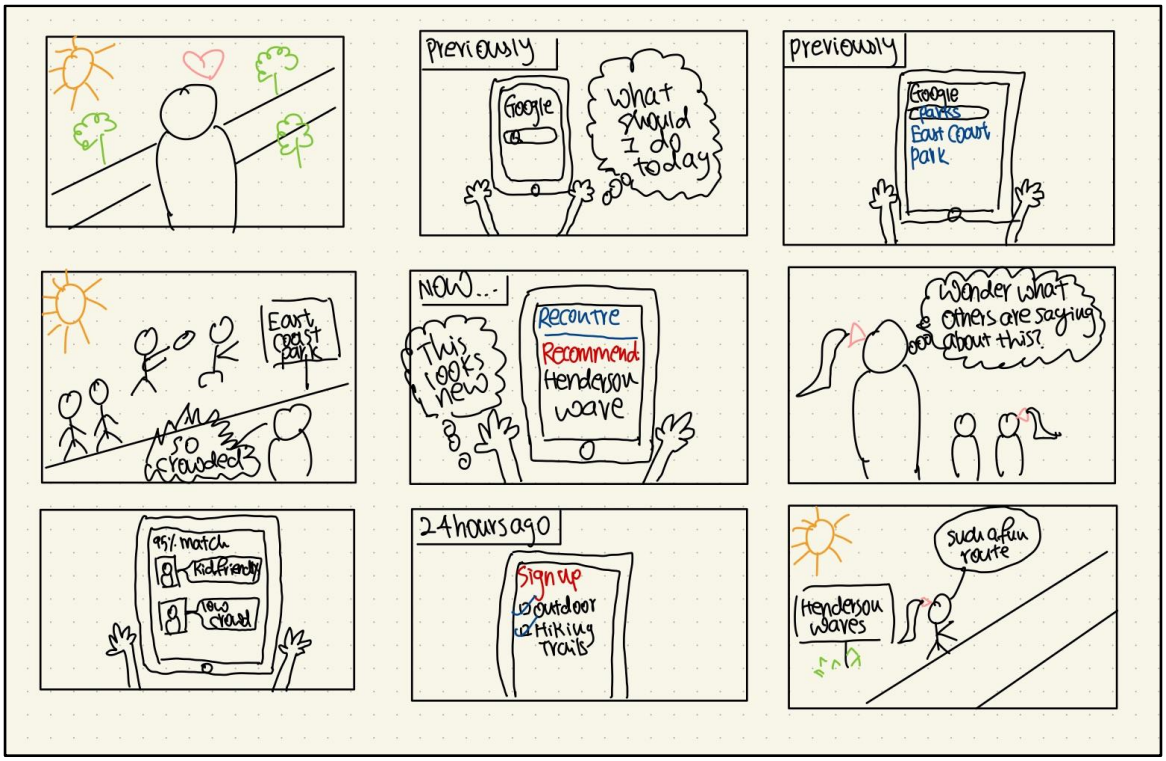
## Storyboard 1


## Scenario 2

May, a 38-year-old outdoor activity enthusiast, has always been looking for different adventures such as trekking, hiking and cycling. She likes to look for places to go by friend recommendations because recommended activities listed in popular search engines such as Google are often too popular, hence too crowded to her liking. This means she needs to dedicate time and effort to look for outing locations.

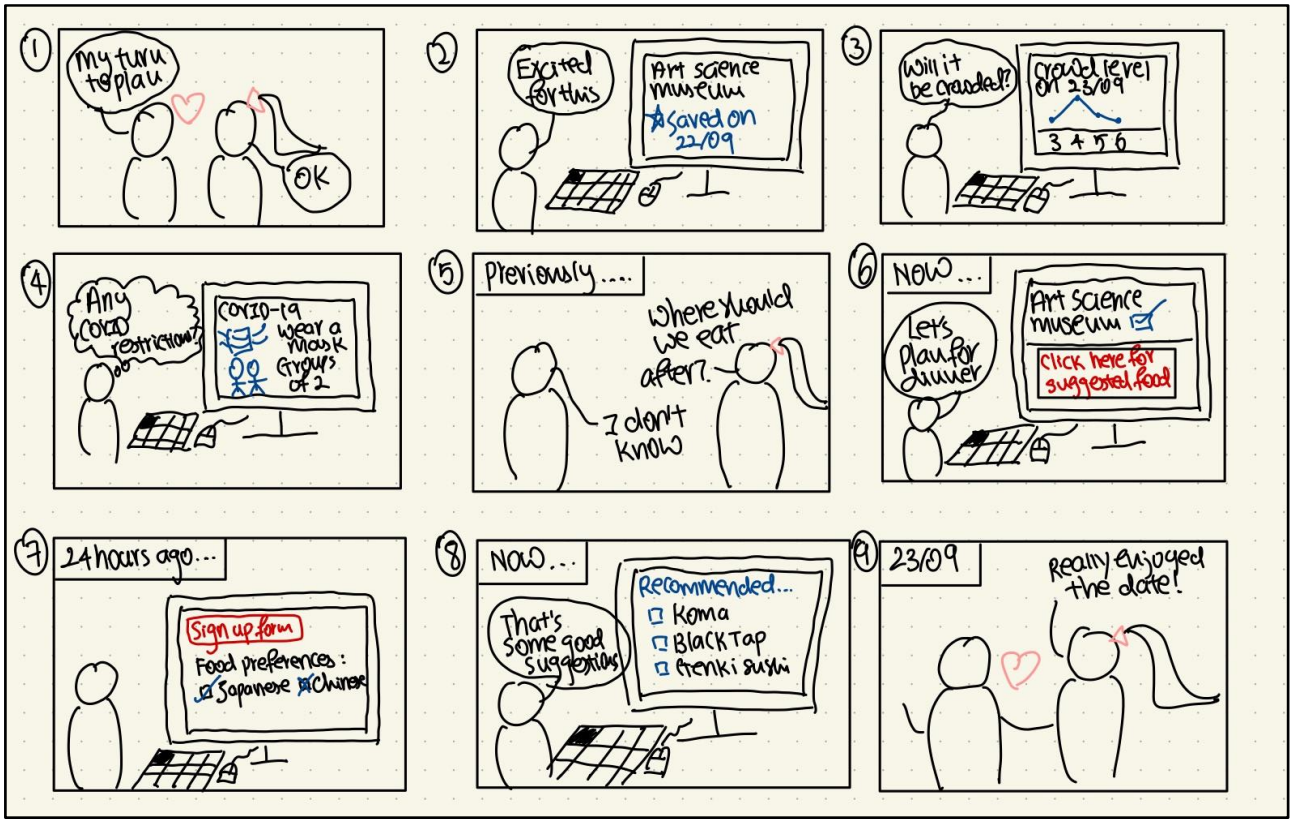
However, having two kids and a full time job now, she has less and less time to explore for possible new outing ventures. Thus, over time, her interest for outdoor activities diminishes because she has exhausted her idea stash. She would like to have new recommendations to reignite her passion. May **enters the Recontre application** and is able to **view some recommended places** for new ventures based on her preferences. During the sign up process, May has already **entered her passion into the sign up form**. She is also able to **tap into the specified attraction and see what others have commented about the place**. With this, May can now enjoy new outing ventures with her children.

## Storyboard 2




## Scenario 3

John, a 29 year old software engineer, has planned a date with his Ash, his girlfriend of 3 year. He wants to ensure that nothing will disrupt the date. He had **previously saved the details of the activities onto the application**. He is able to **see the crowd levels for that particular day, and the current COVID-19 restrictions relevant for the attraction**. Previously, John and Ash will always argue because they do not know what to eat for dinner after going to an attraction, they would want to avoid the argument and frustrations using Recontre. Recontre takes care of that by **asking for food preferences during the sign up form** which it later uses to recommend dining options around the attraction venue. This makes the date planning for John smooth and also to eliminate any frustrations John and Ash have during the date.




# Individual Wireframes

Please see individual files.

# Individual Interactive Prototype

| Name | Key User Task designed | Link |
|---|---|---|
| Ho Zheng Ting | 1 | https://www.figma.com/file/UIPFCfgBBi9NW6ql2i8x1B/CS3240-G2-KUT1-Zheng-Ting?node-id=0%3A1 |
| Low Jia Yee | 1 | https://www.figma.com/file/wxRZAStizfm7qgPXn4QgvZ/Hi-Fidelity-Prototype?node-id=0%3A1 |
| Ngan Ji Cheng | 1 | https://www.figma.com/file/Q16fJ8s3V216b02scioD6z/User-Task-1?node-id=0%3A1 |
| Tan Zheng Wen | 2 | https://www.figma.com/proto/P224BDo3cZWUrcId2g00nv/G2-Individual?node-id=75%3A1266&scaling=scale-down&page-id=75%3A1265&starting-point-node-id=75%3A1266 |
| Yang Hui Ting | 3 | https://www.figma.com/file/mkjGTrTPBqZikUbJrYM2NV/G2-Prototype?node-id=0%3A1 |

# Final Interactive Prototype

## Link to Figma Prototype

https://www.figma.com/proto/nG4jr7Qwj7efqjRmqmlppX/G2?node-id=404%3A5730&scaling=scale-down&page-id=343%3A4488&starting-point-node-id=404%3A5730

## Design Portfolio

Our team has standardized the following scheme in our design, for reference.

Colour Scheme:
Background: #FFFFFF
Text: #323232
Action Buttons: #7000FF
Tags: #AC3B61
Font Selection:
Application Name: Kaushan Script
Titles: Comfortaa
Texts: Lato

# Insights (Individual & Group)

For ease of reading, we have restructured the team's reflections from the wireframes (Section D) and the User Reviews of individual prototypes (Section F) here.

## Jia Yee

**Section D: Internal Team Review**

My individual wireframe consists of a homepage and detail page for each attraction to tackle key user task 1, and a recommendation page to tackle key user task 2.

For key user task 1, my group mates felt that users may find difficulty choosing an attraction out of all the attractions available on the website. This is because the website only offers selections of top attractions instead of all attractions. The "Attractions" sub-category is also not implemented, so it is not known how it will look like. However, the page with detailed description of Universal Studios Singapore was given recognition for being clear and concise, with important factors such as cost, availability and review clearly shown in the webpage.

For key user task 2, my group mates felt that having the "feeling lucky" recommendation button in the middle of the website was odd, but I explained that it was to highlight the main function of the website, which is to help users with decision fatigue. Another problem was that a user could not further narrow down filtering options when obtaining random recommendations. Lastly, it was suggested that another metric "distance from each other" could be presented in the recommended results, so that a user is aware that both the attraction and place to eat are close to each other.

**Section E: Individual Interactive Prototype**

I decided to focus on key user task 1 for this section. In this section, I added a filtering function to address the concern raised in the previous section regarding the inability to choose an attraction out of a list of all attractions.

**Section F: User review of your own hi-fidelity prototype**

1 user was consulted with the hi-fidelity prototype. The user is a female working adult who is currently in a relationship. The user was only asked to click around. The following insights were obtained:

- Clicking “Attractions” to find out the list of all attractions was not obvious at first.
- The bright orange button on a white background tires her eyes easily. The dark orange/brown colour used for other components were more comfortable to the eyes.
- More categories such as time and price range could be added.

# Ji Cheng (Reflection)

**Section D: Internal Team Review**

I presented my two Balsamiq wireframes to my group mates and the user tasks that I focused on were user tasks 1 and 3. For both wireframes, my group mates mentioned that the wireframe is very informative and comprehensive. Both flushes out the idea that I want to portray for both user tasks. After which, they pointed out some issues that I can look into to make my wireframe easier for users to understand.

For user task 1, group mates mentioned that the sentence “Seeing Singapore in a new light” is taking up too much space in the wireframe. However, I mentioned that I want to continue to include this in the wireframe as it is part of the tagline of the application. Therefore, I adjusted the size accordingly and utilising the white space technique, I managed to place the tag line in a suitable position such that it is pleasing on the eyes of users. Another reason for it taking up a big space might be due to the colour that I chose. Since it is a low fidelity wireframe, I decided to remove the colour so that it is not as distracting.

The next feedback that I received is that in user task 1, some of my icon usage were misleading the users. Previously I used a magnifying glass icon in a window that contained a listing of searches, therefore, my group mates were confused whether further searches were needed or if it is a list. I have since changed the logo.

For user task 3, one feedback I got is that the information regarding COVID-19 restrictions given to the users should be of value. In my wireframe example, I stated in the “Future World” exhibition previously that “Sliding through fruit fields” exhibition is closed. However, this caused some confusion to those users that have not been to this exhibition before and would not know what the exhibition name means. Therefore,

I used pictorial representations of the exhibition instead of the name to give users a better understanding.

**Section E: Individual Interactive Prototype**

For the interactive prototype, I chose user task 1 as the user task to design a hi-fidelity prototype for. I utilised Figma to perform the hi-fidelity prototype design.

During the review given for my Balsamiq wireframes, my group members pointed out that the tagline that I placed in my application “Seeing Singapore in a new light” took up quite a large space and that I could decrease the size of it. For the Figma prototype, I decided to adjust the position of the tagline so that it does not hinder the usage of the search function for the user. Even in this prototype, I still believed that the tagline is important as it gives users a quick understanding of what the application does.

To give additional information to the users in bite-sized format, I also added two icons next to the “Nearest MRT” information line. This is because during the internal review, my group members also mentioned that users might not know which MRT line the MRT station name is situated at. I considered adding the MRT icon with the station number into my Figma prototype, but I realised that there is a simplistic way to go about solving this by just creating a circle symbol and filling it in with the MRT station colours.

**Section F: User review of hi-fidelity prototype**

Number of target users tested: 1

Background on target user: The target user is a female who is currently an undergraduate in the National University of Singapore and is currently in a relationship. She stays on campus and regularly plans for dates with her boyfriend of 2 years.

Method of test: Since I only implemented one key user task for my hi-fidelity prototype, I did not include any specific test cases for the user.

Insights: The user noted that the colour choice was very pleasing to the eyes and allowed for a comfortable usage of the application. The extra information of temperature as well as date given in the top right hand corner of the application is a good way of providing additional information to the user. She further noted that the details given in each “card” was sufficient enough.

However, one insight that I gained was that previously, I had a page named “Trending activities”. In that page, I added both attractions such as Universal Studios Singapore and also activities such as Latte Art workshops. However, the user rightfully pointed out that this information would be misleading to the user. Therefore, I changed my last page of the webpage to “Trending Attractions” and only included attractions into the page.

# Zheng Ting (Reflection)

## Section D: Internal Team Review

My Balsamiq wireframes targeted Key User Tasks (KUT) 1 and 3. The feedback was extremely constructive, highlighting potential points we could integrate with our final prototype, as well as crucial insights on areas for improvement for the wireframe which were helpful in understanding and refining UI concepts derived from lessons, as well as the importance of heuristic evaluation. Some areas we considered for integration include:

- Tags which bring out key features of an activity or restaurant in KUT1
- Clear demarcation of information with the use of containers, making information more aligned in KUT3

Importantly, we also discussed some areas of refinement, which we saw potential for integration upon edits:

- Tags of key features should not be abbreviated as it adds to cognitive load in KUT1
- A clear button should be added for “cards” of activities in KUT1
- Providing information on current promotions could be better displayed as it was not intuitive in KUT1
- A description may not be required as it clutters the page for KUT1
- Container sizes can be standardized for KUT3
- Filters could be removed for KUT3 as it is not relevant
- Instead of using bordered containers, we can increase signal-to-noise ratio by removing the borders for both KUT1 and KUT3. where appropriate

Following their recommendations, I have made the edits moving forward in the hi-fidelity model. It has been an insightful exercise, and the process of iterative review has also made the process more dynamic and exciting.

## Section E: Individual Interactive Prototype

Following the review, I incorporated the various suggestions into the hi-fidelity prototype, while retaining the positives. In this prototype, KUT 1 was chosen as it presented more opportunities for improvement.

## Section F: User review of hi-fidelity prototype

2 user reviews were conducted on this prototype. A brief overview of both user reviews are detailed below, following with a summarized list of key pointers from these reviews.

### User 1

User 1 is a graduate from the National University of Singapore who has just started working (for a period of 1 year). User 1 is attached and has previously feedbacked on having little time to plan dates with her boyfriend. I found this target group to find the most value in having this solution, and thus believe that would provide insightful, skin-in-the-game feedback. Similar to previous interviews, I first introduced the purpose of the application and the ideas behind it without revealing too many specifics. Using this interactive prototype for evaluation, I seeked to understand how the user would interpret the details and information first - “What could be misinterpreted by the user?”. Given the brevity and conciseness of information, the balance between being concise and being ambiguous was an area I wanted to iron out. Thus I instructed the user to feel free to explore the prototype, to scroll for activities and to talk through their interaction with the interface while I took notes. The user feedback was generally positive, with special attention given to the clean look of the interface. The user also commented that the “MRT” detail was well constructed, as it included the MRT lines and stop, which may help reduce the cognitive load and help users make quicker decisions. I then proceeded to ask more specific questions, such as what information they may have expected to see but was not there, or if the tags were misinterpreted. This user had the interpretation I had expected and thus did not present any problems. One minor suggestion the user provided was to not use “See Details” and instead use a pop-up button to reduce the number of words on the prototype, which was noted in our further iterations. Another suggestion was that there was too much unused space with the use of the containers, which while provided structure, also reduced the amount of information that could be displayed. User 1 also had comments on having more subgroups for the filter function. However, since this was not defined within the scope of KUT1, I had not included this in this prototype.

### User 2

User 2 is a graduating junior college student (age 18), currently single. She enjoys going out with her group of friends on a bi-weekly basis. Given their schooling status, they often look for affordable activities to engage in. While this user is defined within our secondary user (as opposed to the primary user as is User 1), I believe it worthwhile to gather feedback from our secondary users as well, as they may provide different perspectives from primary users, which may be beneficial for all users. Following the process of User 1, I explained the motivations for this prototype, then invited her to interact with the prototype. Much of the feedback overlapped with User 1, which for brevity will be omitted here. What stood out in this review was her interest in the “free” tag, where she appreciated that it was color coded differently than others,

allowing for easy identification. She also suggested having the grid being in columns of 2 to see more activities within a single screen. Surprisingly, User 2 interpreted the tags to be clickables, and tried to click on the tags expecting herself to be brought to a page with that specific filter. She also tried to click on the “Nearest MRT” logos expecting to be brought to a page with all attractions within the area. This provided a degree of insights on possible misinterpretation, as well as possible action points to further improve the clarity of the prototype. These pointers and notes were then brought up for group discussion in this report’s following sections.

**Summary**

Following these user reviews, the key findings can be summarized as:

1. Information of individual activities could be better compacted to allow for more information on screen (Severity: Major)

2. Tags were misinterpreted to be clickable (Severity: Catastrophic)

3. Page to attraction details could be changed to an icon (Severity: Cosmetic)

4. Nearest MRT was interpreted to be clickable (Severity: Catastrophic)

Concluding, having user reviews proved instrumental in providing insights and perspectives to which both the designer and the group may have overlooked, perhaps attributable to “group-think” fallacy and familiarity, reinforcing the need for the uninitiated to conduct a honest, unbiased review of the prototypes. This helps in ensuring the prototypes are identifiable and attractive to a wider audience rather than those who may have the same mental models as our team.

# Zheng Wen (Reflection)

**Section D: Internal Team Review**

My two wireframes are based on task 2 (Suggest food or activities based on user’s preference) and task 3 (Display updated information on weather, crowds and Covid19 restrictions).

My Balsamiq wireframe on task 2 presents a layout of recommended places by the application that generally resembles a social media feed. Each recommendation card will additionally contain the reasons as to why a place gets recommended to the user. In order to allow the user to save or discard the recommendation, I described that I was going to use some swiping gesture interaction on top of the buttons (similar to the ‘swipe left, swipe right’ commands of Tinder).

1. My team liked the underlying idea and layout but they suggested that it would be much better if I used a mobile application view instead of a desktop web application view. **(Severity: Minor)**

2. They also felt that the content on each of the recommendation cards was too much and felt cluttered. In particular, they did not like the fact that I used two scroll bars within one recommendation card. **(Severity: Cosmetic)**

For my wireframe on task 3, most of them liked the idea of placing the Covid19 updates on a speech bubble. When presented in a desktop web view, most of them also felt that putting the metrics on external factors onto cards is neater as it can be aligned to a grid. I justified my choice as going for a two column layout (similar to the layout that google uses when you search up a restaurant) with continuous scrolling since I felt that the nature of the different metrics would not be of the same size and thus may look unbalanced on cards. After having more context on my thought process,

3. They advised me to use more white space or more obvious headers to signal the start and end of a section. Their advice was great and actually applicable too in my high fidelity prototype on task 2 since I also had to display a list of information there. **(Severity: Cosmetic)**

After the invaluable feedback session, I also found that my wireframe design could be improved as I had to explain my thought process on top of showing my wireframes to my team.

**Section E: Individual Interactive Prototype**

I chose to work on task 2. I took up all their great feedback on the wireframe and applied it to the high fidelity

1. I changed the web view to mobile for my high-fidelity prototype and used just one vertical scrolling to browse the entire feed of recommendations (since it is a mobile view).

2. I separated the reasons for recommendation into a modal that the user can easily toggle so that I can have more white space in the synopsis of the food/activity and the overall look does not seem so cluttered. There was no need for multiple inner scrollbars anymore.

3. I applied my feedback from task 3's wireframe by using clear borders and more white space to separate each unique section and adopted a simple single column list view in the 'why is this recommended modal'.

**Section F: User Review**

My first interviewee is a primary target user (young couple) and she has given me the following feedback.

1. Text in description might be too small but unsure unless she can see the application on her phone. **(Severity: Cosmetic)**

2. Confusing text used in buttons (not intuitive what they really mean)

    a. User is unsure of the difference between save and plan from looking at the prototype. **(Severity: Major)**

3. The pop up modal on reasons for recommendations could be made to be more aesthetically pleasing. User cannot point out exactly what is wrong but just does not like the modal design. **(Severity: Cosmetic)**

My second interviewee is a secondary target user (person who plans activities for his clique) and he has given me the following additional feedback.

4. If the user misclicked ‘Never (recommend this again)’ or ‘Save’, there isn't an immediate way to immediately revert the action. **(Severity: Minor)**

5. Likes the look of the recommendation page.

6. Agreed that the reason why something is recommended is not as important as the details of the recommendation itself such that the reason for recommendation should be hidden by default.

**Final Interactive Prototype**

I am assigned to do task 2.

For issue #2, I changed the text of the buttons to resolve the issue.

I addressed issue #4 by implementing a way to immediately undo the two actions in case the user misclicked.

# Hui Ting (Reflection)

**Section D: Internal Team Review**

I decided to work on user tasks 2 and 3 for my Balsamiq wireframes. My teammates commented that both of my wireframes had a clean look and were simple to understand. They also gave constructive feedback for each prototype individually.

For Task 2, I interpreted the user task as designing a way to get user preferences and display restaurants and activities that appeal most to them. Thus, I came up with a quiz-taking style of understanding users' preferences. I also thought of displaying the most relevant reviews to users for each particular restaurant or activity, as users with similar preferences may relate better with each other. Below are the comments by the team:

- Quiz is a good way to get user preferences, perhaps could add a short question/survey on the type of outing the user would like to plan, each time they enter the application, in order to supply better ideas to aid them in their date planning.

- Home page is simple and easy to navigate.

- User views portion was rather cluttered, and more borders could be added to make use of white space.

For Task 3, I interpreted the task to display updated information when a user is planning a date on our application. Having prior plans, a user could easily visualize problems and make amends to their plan. Below are the comments by the team:

- Interesting to show details as part of the planning process

- All the important information (weather, crowd levels, COVID-19 restrictions) should be positioned at the top of the page, rather than at the bottom, for the user's easy viewing.

- The style of boxes used may be misinterpreted as an input field.

**Section E: Individual Interactive Prototype**

Following the feedback of my teammates, I felt that I had more to work with for Task 3. I used Figma to create the hi-fidelity prototype.

Following new ideas from my teammates, I made the following revisions to my prototype:

1. Moved the important information (weather, COVID-19 restrictions) to the top for easy viewing

2. Added title and dates for the date

3. Moved warnings to the top of details page

4. Added weather comparison on the same page

**Section F: User review of your own hi-fidelity prototype**

I tested my prototype with 2 users.

The first user is a working adult within the age range of our target users, who plans dates to go out with his girlfriend. The user noted the following:

1. COVID-19 restrictions could be more specific to the details (different classification of eateries have different restrictions)

2. Coloured words are a bit hard to read

3. Upper/lowercasing should be more consistent

The second user is an undergraduate of the National University of Singapore, who likes to plan outings with her friends. The user noted that:

1. Can include recommendation pairings for events under details page

2. Better if rescheduling could be done on the main page itself, so that user is able to reference other events planned in the day

3. User and social reviews could be added to details page, to provide more information when planning

Both users liked the minimalistic look of the application. They also liked the weather comparison and easy changing of the date by weather, and the simple way to check the status of events planned at one glance. Both users noted that:

1. information on the details page not very well structured, difficult to compare information (Severity: Major)

2. Font sizing on details page is inconsistent with the hierarchy expected (Severity: Minor)

# Group Reflection

Firstly, we dedicated time to review and familiarize with each other's wireframes and choosing between having a web application or a mobile application. Some of our members designed for a web application while some designed for a mobile application. After reviewing some of our thematic analysis points from G1 and reviewing some ideas, we decided to use a mobile platform. We believe that given the "on-the-go" nature of our application, a mobile application is likely the more popular interface that our target users will use to access our application. Thus, to emulate the best prototype and most common interaction method, we believe it to be more applicable to use a mobile application.

We spent a significant amount of time ironing out interpretation issues, owing to our different perspectives. This refers to issues on interpreting what certain logos meant, and how we could prevent ambiguity while retaining the information integrity. This nonetheless proved a rewarding exercise as we moved forward with our hi-fidelity prototype. Our group has a common agreed minimalistic approach, which we undertook as we did our reviews moving forward, thus we opted to make certain information more concise, and found interesting ways to display as much information in as little words or icons as possible. We also considered extensively the aesthetic and user experience, applying important lessons from heuristic evaluation. For instance, we initially missed some exit and back buttons, reducing the user control and freedom, which was kindly pointed out during our review session. Different members also brought about their individual user reviews which provided key insights into new ideas or improvement areas for our final prototype, such as fixing transparencies in our filter button and making information more compact through removing of containers, designing a new "card" approach. This was a major learning point for our team, where we see the value in having users outside of our group test and feedback on our prototype. We attribute this to the possible group-think bias, where our team has aligned our conception of the application, thus closing off to possible interpretations of our application. There may also have been other anchoring biases and confirmation biases which were not constructive to our iterative process. Thus, we see the value in having user reviews to break these biases and not to succumb to a single mental model. This is crucial, as given the vast reach of our target audience (despite it being a targeted group, though nonetheless a huge population), not all our audience would have interpreted certain signals from our application in the same way as we did. Thus, having this variety of perspective was instrumental in improving our application. With this insight, we also brainstormed on ways we could improve our signal-to-noise ratio, combining the best of our wireframes together to achieve the optimal result, integrating the constructive feedback on the positives, as well as areas of improvement into our final prototype.