FIT3175: Usability
(Stage B + C) - Storyboarding and Low-Fidelity Prototypes

Tutorial 1, Group 4
Lee Zhen Xuan: 31860532

Table of contents

Contents

Introduction

The main goal of developing a mobile hiking application is to aid hikers in their hiking journey, and to improve their overall hiking experience. However, the development of our hiking app also focuses on improving the overall engagement of hikers and hikers who are into photography by including more features such as community features, photography related features and more to elevate their motivation towards hiking even further.

However, creating such an app can be a complex process such as understanding what users would expect from the app and how the hiking app stands out from others. By creating storyboards and listing the accepting criteria from the user stories based on the responses collected from a group of users, we can further visualise, capture, and understand what the potential users would expect from the hiking to potentially solve their difficulties faced in their hiking experiences.

Storyboarding helps the developers to visualise the user-experience in how the users would utilize of react to the features of the application, while low-fidelity prototypes can help in the overall template and simple visualisation of the simple potential features of the final product, and its main advantage being cost-effective as well.

The 4 main user stories chosen are:

- As Kevin, I want to be able to easily find new hiking trails, so that I can have new trails to hike and destress.
- As Wai Kit, I want to be able to add new friends in a hiking app so that I can plan hiking trips with them.
- As Jisoo, I want to be able to create a hiking user profile so that I can customise my user profile and express myself as well as viewing other people's user profile.
- As Kevin, I want to know about the weather condition of the hiking trail, so that it won't ruin my photo ops.

Storyboards

PERSONA: Kevin

USER STORY/SCENARIO: As Kevin, I want to be able to easily find new hiking trails, so that I can have new trails to hike and destress.

I am only a beginner hiker and I do not know where to start hiking....

Perhaps I will try Mount Kinabalu.....

Kevin has developed an interest in hiking, but he does not know where to start as a beginner hiker

This trail is way too hard for me... and I'm so cold...

He decided to travel to a mountain that is popular but the trail is too difficult for him to trail as a beginner

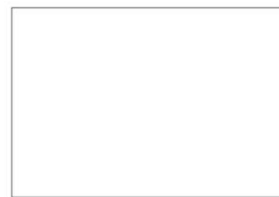Oh.... maybe FRIM is a better place to hike based on this hiking app. The trail difficulty is not too high

He downloaded the hiking trail app with a feature that could allow him to search for trails based on their difficulty

Since the trail difficulty is not that high, I will only bring my shoes, water and a small bag.

Knowing that the trail is not too difficult, he decided to bring simple as less hiking equipment to suit the trail

This trail is perfect for me! I will move on to a more difficult trail in the next month.

He found a hiking trail that best suits him and decides to challenge harder trails after getting used to hiking

PAGE #   **PROJECT/TEAM:**   **DATE:**   **STORYBOARD** NNGROUP.COM

PERSONA: Wai Kit

USER STORY/SCENARIO: As Wai Kit, I want to be able to add new friends in a hiking app so that I can plan hiking trips with them

I want to go on hiking trips together but it would be better to go hiking with someone. None of my friends go on hiking trips...

Wai Kit wants to go on hiking trips, but he thinks it would be better to go with someone. However, none of his friends hike

This person I found on the hiking has hiked my trails! She must be an experienced hiker!

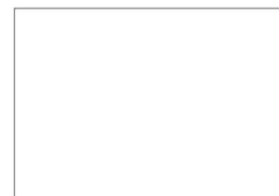He decides to use the hiking trail app that allows him to search for hiking partners to go hiking with

Someone has added me as a friend on the hiking app.

Wai Kit has added you!

Wai Kit has sent a friend request to a hiker which he found on the hiking trail app

Would you like to go hiking with me?

Sure! How about 9am Sunday at FRIM?

Great! I'll see you there!

Wai Kit chats with the hiker he found on the hiking app and plans many hiking trips together

I'm glad I found someone to hike with!

Wai Kit is glad that he is able to find a hiking partner on the hiking app to accompany him on his hiking journey

PAGE #   **PROJECT/TEAM:**   **DATE:**   **STORYBOARD** NNGROUP.COM

As Jisoo, I want to be able to create a hiking user profile so that I can customise my user profile and express myself as well as viewing other people's user profile

Let me take a photo and share it to others...

Jisoo loves taking photos of herself while hiking to share her hiking pictures with others

I want to share my hiking experiences with others as well as upload my hiking photos. But Instagram seems like a unsuitable platform...

However, Jisoo realizes that none of her friends on social media goes hiking and therefore does not feel comfortable sharing

I can share my hiking photos to other hikers on this hiking app! I am getting more interactions from other hikers with similar interest as me!

Jisoo realizes that she there is a hiking app that allows her to create a user profile to post her hiking pictures

I can also add my location! Someone commented on my profile!

Jisoo thinks that the hiking app is a better way for her to share her hiking journey and connect with other hikers

I'm glad I found a suitable platform to share my hiking photos

Jisoo is glad that she is able to find a suitable platform to share her hiking photos with other hikers

Alicia has also uploaded a picture of hiking at Mount Kinabalu and other places. She must be an adventerous person and loves hiking as well!

Jisoo is also able to view other hikers' experiences of their hiking journey based on their user profile

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As Kevin, I want to know about the weather condition of the hiking trail, so that it won't ruin my photo ops.

I want to take nice pictures tomorrow while hiking at FRIM!

Kevin enthusiastically plans to go take photos while hiking.

I have already packed everything but it had to rain today... What a waste of effort...

Next day...

However, when Kevin reaches the hiking destination, the trail was raining and was too dangerous to hike on

There is a hiking app that indicates the current weather and also forecasts the weather for the next few days!

Kevin realizes that there is a hiking app that allows him to know the forecast and current weather of the hiking trails

FRIM trail might be raining again tomorrow. I should choose a different trail to explore.

After downloading the hiking app, he is able to plan his hiking journey earlier based on the forecast weather of the trails

I'm glad I chose a right trail to take pictures today!

Kevin is glad that he is able to find a suitable time and place to take photos while hiking

Acceptance Criteria
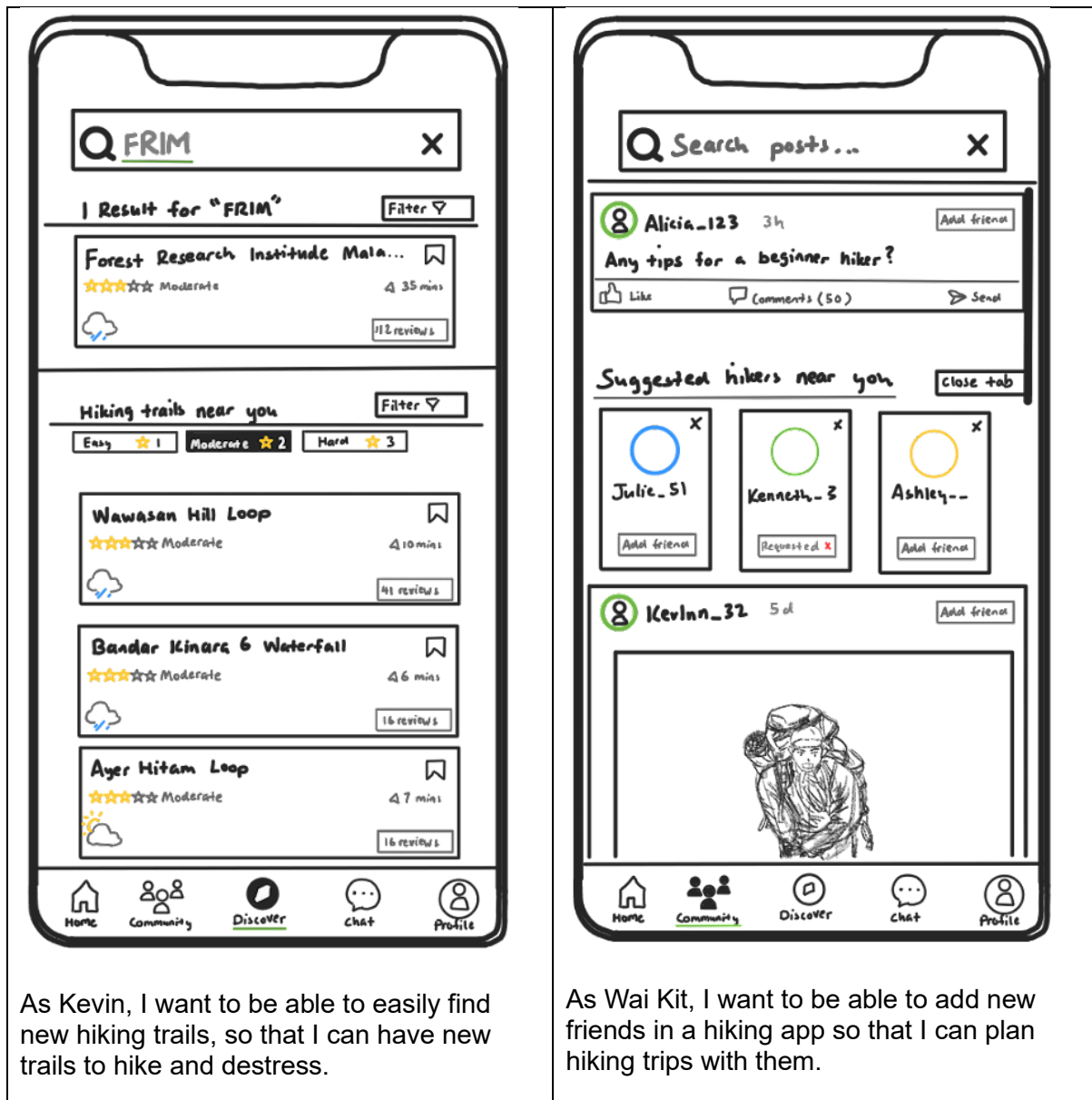
Story	To Do	Doing	Done
As Kevin, I want to be able to easily find new hiking trails, so that I can have new trails to hike and destress.	• ~~Option to use search bar to search for trails.~~ • ~~Recommends trail nearby to user.~~ • ~~Option to apply a filter based on difficulty of trail.~~ • ~~Provide simple details of trails from the list of trails.~~	• ~~Option to use search bar to search for trails.~~ • ~~Recommends trail nearby to user.~~ • ~~Option to apply a filter based on difficulty of trail.~~ • ~~Provide simple details of trails from the list of trails.~~	• Option to use search bar to search for trails. (Added a search bar for user to search trails) • Recommends trail nearby to user. (A section added in the "Navigate" page to suggest nearby trails based on their location) • Option to apply a filter based on difficulty of trail. (Added 3 boxes of difficulty for users to filter the trail based on their difficulty) • Provide simple details of trails from the list of trails. (Added simple trail information such as difficulty, distance to trail, current weather and number of reviews to each trails)
As Wai Kit, I want to be able to add new friends in a hiking app so that I can plan hiking trips with them.	• ~~Allow user to view other hikers' profile.~~ • ~~Provide a chat function for hikers to communicate with each other.~~ • ~~Provide an option to send friend request to other hikers.~~ • ~~Provide suggestions of other hiker's profile to user~~	• ~~Allow user to view other hikers' profile.~~ • ~~Provide a chat function for hikers to communicate with each other.~~ • ~~Provide an option to send friend request to other hikers.~~ • ~~Provide suggestions~~	• Allow user to view other hikers' profile. (Allow users to view other user's profile by suggesting users and clicking on their username in the community section) • Provide a chat function for hikers to communicate with each other. (Added a "chat" page for users to chat with other users) • Provide an option to send friend request to other hikers. ("Add

		~~of other hiker's profile to user~~	friend" button added in the community page beside user's posts and suggested users) • Provide suggestions of other hiker's profile to user. (Added a section on the community page where it suggests users)
As Jisoo, I want to be able to create a hiking user profile so that I can customise my user profile and express myself as well as viewing other people's user profile.	• ~~Allow user to set their user profile private.~~ • ~~Allow users to add a biography to their profile.~~ • ~~Allow user to add posts to their profile.~~ • ~~Allow users to view other hikers' profile and share their own profile~~	• ~~Allow user to set their user profile private.~~ • ~~Allow users to add a biography to their profile.~~ • ~~Allow user to add posts to their profile.~~ • ~~Allow users to view other hikers' profile and share their own profile~~	• Allow user to set their user profile private. (A "lock" icon indicates that the user's profile is private) • Allow users to add a biography to their profile. (Users can edit their biography by clicking on "Edit Profile" button) • Allow user to add posts to their profile. (Users can add posts by clicking on the "+" button beside their username in the profile page) • Allow users to view other hikers' profile and share their own profile. (Users can view each other's profile by clicking on their username in the community page)
As Kevin, I want to know about the weather condition of the hiking trail, so that it won't ruin my photo ops.	• ~~Allow user to view the weather forecast of each trail.~~ • ~~Inform users of dangerous trail condition due to weather~~ • ~~Allow user to view photos of trail.~~ • ~~Allow user to view other~~	• ~~Allow user to view the weather forecast of each trail.~~ • ~~Inform users of dangerous trail condition due to weather~~ • ~~Allow user to view photos of trail.~~	• Allow user to view the weather forecast of each trail. (Added weather details for each of the trails in the navigate page) • Inform users of dangerous trail condition due to weather. (A warning sign is added in the trail information to indicate that the trail is dangerous due to weather conditions)

	~~hikers' review of trail.~~	• ~~Allow user to view other hikers' review of trail.~~	• Allow user to view photos of trail. (Added a section for users to view photos of other users based on the trail) • Allow user to view other hikers' review of trail. (Added a section for users to view other users' review on the trail)

Low-Fidelity Prototypes

Left phone screen

Q FRIM ✕

1 Result for "FRIM" [Filter ▽]

Forest Research Institude Mala... 🔖
⭐⭐⭐☆☆ Moderate   🕓 35 mins
☁️✓ |12 reviews

Hiking trails near you [Filter ▽]
[Easy ⭐ 1] [Moderate ⭐ 2] [Hard ⭐ 3]

Wawasan Hill Loop 🔖
⭐⭐⭐☆☆ Moderate   🕓 10 mins
☁️✓   41 reviews

Bandar Kinara 6 Waterfall 🔖
⭐⭐⭐☆☆ Moderate   🕓 6 mins
☁️✓   16 reviews

Ayer Hitam Loop 🔖
⭐⭐⭐☆☆ Moderate   🕓 7 mins
⛅☁️   16 reviews

🏠 Home 👥 Community 🧭 Discover 💬 Chat 👤 Profile

Right phone screen

Q Search posts... ✕

👤 Alicia_123 3h   [Add friend]
Any tips for a beginner hiker?
👍 Like   💬 Comments (50)   ➤ Send

Suggested hikers near you [Close tab]

⭕ ✕	⭕ ✕	⭕ ✕
Julie_51	Kenneth_3	Ashley_-
[Add friend]	[Requested ✕]	[Add friend]

👤 Kevlnn_32 5d   [Add friend]

🏠 Home 👥 Community 🧭 Discover 💬 Chat 👤 Profile
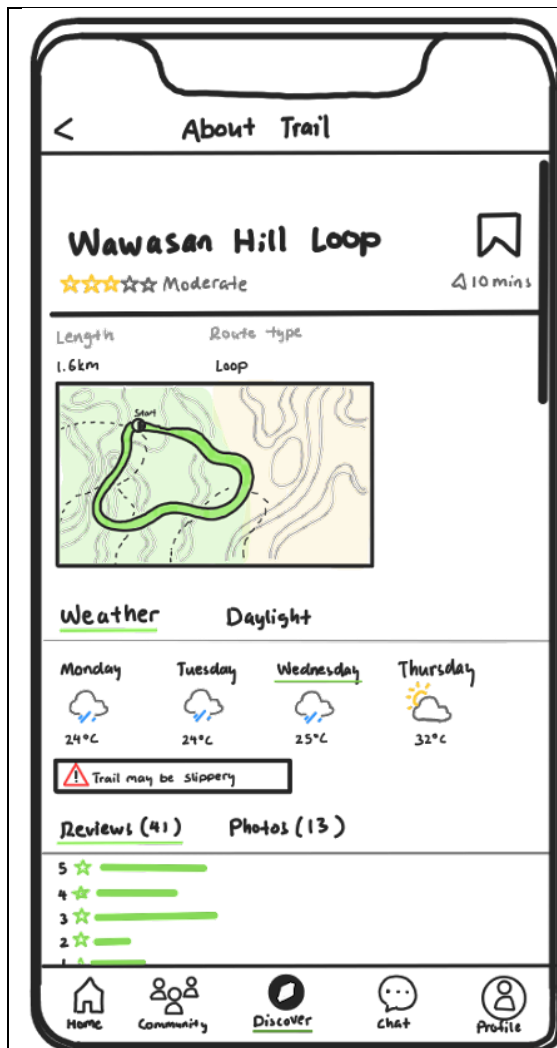

As Kevin, I want to be able to easily find new hiking trails, so that I can have new trails to hike and destress.

As Wai Kit, I want to be able to add new friends in a hiking app so that I can plan hiking trips with them.

Left Phone — About Trail

< About Trail

Wawasan Hill Loop 🔖
⭐⭐⭐☆☆ Moderate   △ 10 mins

Length   Route type
1.6km   Loop

Weather   **Daylight**

Monday	Tuesday	Wednesday	Thursday
☁️	☁️	☁️	⛅
24°C	24°C	25°C	32°C

⚠️ Trail may be slippery

Reviews (41)   **Photos (13)**

5 ☆ ▬▬▬
4 ☆ ▬▬▬
3 ☆ ▬▬
2 ☆ ▬

🏠 Home   👪 Community   🧭 Discover   💬 Chat   👤 Profile

As Jisoo, I want to be able to create a hiking user profile so that I can customise my user profile and express myself as well as viewing other people's user profile.

Right Phone — Nicholas_25

< Nicholas_25 🔒   ⊞   ≡

25   150
Posts   Friends

Nicholas
Expert Hiker
Hello everyone! I have been hiking for 5 years and I love to make new hiking friends!

[Edit profile]   [Share profile]

Edit post

👤 **Nicholas_25** 2h   ... ✗
Exploring Mount Kinabalu tomorrow!
👍 Like   💬 Comments (50)   ➤ Send

👤 **Nicholas_25** 10h   ... ✗
Any tips for a good camera?
(Edited)
👍 Like   💬 Comments (50)   ➤ Send

Post has been edited   Undo

🏠 Home   👪 Community   💿 Discover   💬 Chat   👤 Profile

As Kevin, I want to know about the weather condition of the hiking trail, so that it won't ruin my photo ops.

Report

The first user story chosen is "As Kevin, I want to be able to easily find new hiking trails, so that I can explore new trails to hike and destress". One of the main functions of a hiking app is to allow the users to find and search for new hiking trails. This is essential for both beginner and experts' hikers as it allows beginner hikers to know have a guideline of where to start their first few hikes based on the difficulty level of the trail, and to allow expert hikers to explore more new trails as they venture into their hiking journey. One of the acceptance criteria for this is having the option to use the search bar to search for trails. This can be useful when the user already knows what trails they want to explore and to find more information about the trail to get well prepared for their next hiking journey. The next acceptance criteria are the hiking app recommending nearby trails of the user. This can be useful as it provides the convenience of the user to find new trails nearby so that they can save the hassle of travelling too far for a hike. Furthermore, an option to apply a filter based on a difficulty trail should be implemented to cater the needs of the users especially beginner hikers to start their hiking journey without endangering themselves when pursuing a hike for a more casual and relax experience, and for expert hikers who want to challenge themselves after exploring more trails. The last acceptance criteria is providing simple details of trails from the list of trails. This is mainly to ensure that the users have critical information that helps them plan their hikes to be well prepared for their hiking journey, and most of all ensuring that they bring along important equipment for their hiking journey to avoid any unforeseen accidents during their hike. One of the Shneiderman's Golden Rules applied to the implementation of the hiking app page is "Strive for Consistency". This can be seen where each of the trails listed provide consistent information such as the trail's name, difficulty, distance to trail location, current weather of the trail, number of reviews for the trail as well as the option to save the trail to review it in the future. One of the Norman's design principles applied is affordance. This can be seen where the trail difficulties under the tab "Hiking trails near you" can be chosen to allow the users to filter the listed hiking trails based on their difficulty level.

The next user story chosen is "As Wai Kit, I want to be able to add new friends in a hiking app so that I can plan hiking trips with them". A hiking app with community features and allowing the users to find new friends could be essential for users to make new friends based on their similar interest in hiking, as well as getting the users by building new relationships by hiking. More importantly, finding new hiking partners and sharing their hiking experiences could also motivate the hikers when they encourage each other to stay active and set new challenges during their hike. One of the acceptance criteria listed is allowing the users to view other hikers' posts in the community. This is a great way for the users interact with one another as well as exploring more hikers based on their recent activities. Furthermore, a chat function for hikers to communicate with each other could be useful for hikers to communicate with each other in order to get to know each other more as well as getting advices on hiking and planning new hiking trips together through messaging. The last acceptance criteria is providing suggestions of other hiker's profile to the user. This could be useful for the users to discover new user accounts and content that they might be interested in. This is also especially useful for new user accounts to dive in the hiking community by discovering and knowing more users to interact with. One of the Shneiderman's Golden Rules applied is "Permit Easy Reversal of Actions". This can be seen where the friend requests sent to other users can be cancelled if they have mistakenly sent a friend request to other users by accident. One of the Don Norman's Design Principles that is applied is "Feedback". This can be seen where if the user has sent a friend request to other users, the "Add Friend" box will be turned into "Requested" with a cross to indicate that a friend request has been sent to the user and can be cancelled if pressed again.

Besides that, one of the user stories chosen is "As Jisoo, I want to be able to create a hiking user profile so that I can customise my user profile and express myself as well as viewing other people's user profile". This feature can be useful to allow users to personalize their user experience in the hiking app by sharing updates about themselves to the community, such as

their recent hiking activities, location, and hiking preferences to find suitable hiking partners to explore hiking trails with. A user profile helps user express and represent themselves in the community as a unique individual to allow the community to have a more engaging atmosphere. One of the acceptance criteria towards this user story is allowing the user to have an option to set their user profile as private. This is mainly to ensure their privacy where some users are not comfortable sharing their personal information or recent hiking activities to other strangers in the hiking app, as certain posts may leak out their location as well as hiking habits. This can also be useful to the users to limit who can view their user profile containing this sensitive information. The next acceptance criteria is allowing the user to add posts to their profile. This is to allow the user to customize their user profile with their hiking experiences and recent hiking updates to allow other users to know more about the user based on their posts or recent updates in hiking. The last acceptance criteria is allowing users to view other hikers' profile and share their own profile. By allowing the users to view each other's profile and sharing their profiles to other users, it helps to build a sense of a community within the app where the users can make more hiking friends within the app as well as learn more about each other based on viewing each other's profile who share a similar interest in hiking. One of the Shneiderman's Golden Rules applied is "Keep users in control" where the user is in control in managing their own user profile such as privacy settings, as well as creating new posts or deleting their posts, and editing their profile to change their biography. One of the Don Norman's Design Principles applied is "Conceptual Model Consistency". This can be seen where the common or general icons used in the page of the user profile are used such as a "cross" icon to delete their posts, a "thumbs up" icon to indicate a like button, or a "plus icon" to indicate that the user can add new posts to their profile and more.

Lastly, the user profile chosen is "As Kevin, I want to know about the weather condition of the hiking trail, so that it won't ruin my photo ops." The weather condition of the hiking trail is essential to users not only for the hikers to capture the perfect view or scenery during their hike, but also to ensure their safety to avoid the trail when the trail gets too dangerous to hike during certain seasons. One of the acceptance criteria is allowing the user to view the forecast of each trail. This is essential for the users prepare for any weather hazards such as thunderstorms, heavy rains, or extreme weather conditions to help the hikers avoid any dangerous situations that could lead to accidents, or even inform the hikers that are currently pursuing the trail to turn back on continuing to pursue the hike. Besides that, one of the acceptance criteria is allowing the user to view photos of trail. This helps the users to have better idea of what to expect on the trail such as the basic terrain of the trail, the potential photographic spots and sceneries, and potential obstacles that could be too dangerous for certain hikers. This could also be useful for hikers who are photogenic where these photos could give an idea to these hikers on which is the best location along the trail to take great photos during their hike. Lastly, the acceptance criteria is allowing the user to view other hikers' review of trail. These reviews help provide deeper insight into the current conditions of the trail, or whether the trail is suitable for beginner hikers or not to provide a more accurate update on the trail information. Besides that, it would also be useful for the hikers to plan their hike from reviews that contain the information on how much time is spent on the trail, or what are the essential equipment to bring to better pursue the trail. Reading the reviews of the other hikers can help the users get a basic sense of what could be expected from the hiking experience of that trail and the overall experience of the trail. One of the Shneiderman's Golden Rules applied is "Reduce Short-term Memory Load." This can be seen where the overall page is divided into subsections, and basic visual aids such as weather icons, bars that represent the number of reviews for each section of the review, and the number of stars to indicate the difficulty level of the trail. One of the Don Norman's Design Principles applied is "Visibility". This can be seen where clear labelling has been included for each element in the page, highlighting tabs to indicate that the current tab has been chosen, and consistency where each of the day in the weather tab indicates the forecasted weather and the possible temperature.

Conclusion

In conclusion, the focus of developing the storyboard, listing the acceptance criteria, and creating a low-fidelity prototype is to enable the developers to visualise and better understand what the user might want to see in a hiking app that can cater to their hiking needs and improve their overall hiking experience.

After developing the storyboard, the developers can better visualize the different scenarios that could be faced by the users when interacting with the app, and how the app helps them in their overall hiking journey. After listing the acceptance criteria, the developers can further understand what the users will expect of a hiking app and more features could be added to cater to their needs. After creating a low-fidelity prototype, the developers can also have a simple visualization of the final product of the app in a low and cost-effective manner.

Appendix

Biography
Kevin is a Malaysian Chinese, who lives in Selangor. He is currently a full stack developer working in IT. He goes hiking only a few times in a year. When he does, he usually hikes short hours, preferably with his friends. He is a casual hiker who hikes to destress by taking photos of nature, usually of landscapes and twilights. Hence, he believes that an app that can give him the best hiking photography experience will improve his hiking experience too.

Goals
- Use hiking as a efficient way to destress from his busy work
- Learn more about hiking photography to take better photos of nature
- Research about new trails to hike and take photos
- Able to plan a hike without bad weather wasting his free time and photo ops

Motivations
- Destress from his busy work schedule
- Able to enjoy sceneries of nature to relax
- Able to take nice photos during his hikes

Frustrations
- Difficulty finding information on new hiking trails for new scenery
- Does not know the best time to hike to get the best scenery for photos
- Bad weather condition of hiking location for photo taking
- Not sure what sceneries there are at new trails

Kevin
Taking photos of nature relaxes my soul

Age	: 22
Gender	: Male
Marital Status	: Single
Nationality	: Malaysian
Current State of Residence	: Selangor
Employment	: Full Stack Developer
Field of Employment	: IT
Annual Income:	: < RM20,000

Skills

Photography
★★★★★

Experience with hiking apps
★★★☆☆

Proficiency in reading topographic map
★★☆☆☆

Proficiency in reading online map
★★★★☆

- User Stories for Kevin:
  - As Kevin, I want to be able to easily find new hiking trails, so that I can have new trails to hike and destress.
  - As Kevin, I want to know about the weather condition of the hiking trail, so that it won't ruin my photo ops.

BIO

Wai Kit is a student who takes good care of his health and loves to take photos of hiking sceneries such as Sunset photos, Landscape photos and more. He is an outgoing person and is willing to make friends by interacting with other on his hiking journey.

Despite his busy schedule as a student who is majoring in HealthCare and Medicine, Wai Kit still make it a priority to plan hiking trips throughout the year.

Wait Kit also has a passion for photography where he utilizes his smartphone camera and his favorite DSLR camera to take photos and uploads them on social media.

Overall, Wai Kit is a casual hiker and photographer who focuses on his health, has a passion for photography and an outgoing person who likes to make new friends.

Motivations

- Photography - taking photos hiking scenery
- Social engagement - socializing and interacting with others
- Nature and Adventure - exploring the outdoors
- Fitness and health - improving overall health

Skills

Photography	●●●○○
Experience with hiking apps	●●●●○
Proficiency in reading topographic map	●○○○○
Proficiency in reading online map	●●●●○
Social engagement	●●●●●

Goals

- Finding new friends by connecting with other hikers, and plan hiking trips together
- Taking good photos of hiking sceneries, and sharing hiking photos on a hiking community
- Improving fitness and health
- Share hiking photos and experiences with others

Frustrations

- Lack of community engagement from previous hiking applications
- Previous hiking apps are too complex to use
- Outdated information of the hiking trails
- Lack of information of the hiking trails

Lee Wai Kit
23, Selangor, Malaysia

STUDENT

NATIONALITY: MALAYSIAN
ETHNICITY: CHINESE
MARITAL STATUS: SINGLE
EMPLOYMENT: STUDENT
FIELD OF EMPLOYMENT: STUDENT

- User Story for Wai Kit: As Wai Kit, I want to be able to add new friends in a hiking app so that I can plan hiking trips with them.

BIO

Jisoo is an avid hiker who spends most of her weekends hiking with her friends. She spends more than 6 hours on each hike and hike a few times a month. Jisoo strives to improve her health while at the same enjoying taking pictures of the flora and fauna, and beautiful landscape sceneries throughout her hiking journey.

Jisoo loves to share her hiking photos on social media and would also love to join a hiking community to socialize and interact with other hikers. She has used hiking apps for her hiking journey, but she found these hiking apps to be too complex to use and lack of community interactions.

One of a feature that Jisoo is particularly interested in is creating and customizing her own user profile, as well as viewing the user profile of others to know other hiker's experiences.

Motivations

- Fitness and health - improving health
- Photography - taking photos of hiking scenery
- Social engagement - socialize and interacting with others
- Destress - getting away from work

Skills

Photography

Experience with hiking apps

Proficiency in reading topographic map

Proficiency in reading online map

Social engagement

Lee Jisoo

22, Selangor, Malaysia

STUDENT

NATIONALITY: MALAYSIAN
ETHNICITY: CHINESE
MARITAL STATUS: SINGLE
EMPLOYMENT: STUDENT
FIELD OF EMPLOYMENT: STUDENT

Goals

- Improving health and fitness
- Taking good hiking sceneries
- Interacting and socializing with other hikers
- Destress from hectic work through hiking
- Customizing own user profile
- View other hiker's user profile

Frustrations

- Unsure of what equipment to bring when hiking
- Lack of information of the condition of hiking trails
- Lack of community engagement from previous hiking applications
- Lack of information for the best time and whether condition for hiking

- User Story for Jisoo: As Jisoo, I want to be able to create a hiking user profile so that I can customise my user profile and express myself as well as viewing other people's user profile.