

FIT3175: Usability

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

Tutorial 1

Group 4

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Introduction

Our team aims to develop a hiking app that is user-friendly and caters to our target audience's needs. Understanding our users' needs and behaviours is crucial to achieving this goal. Therefore, I plan to create storyboards based on the user personas we developed in submission 1. These storyboards will help us to design and develop an app that aligns with our users' preferences. I will also create low-fidelity prototypes based on the storyboards. To ensure that our app meets industry standards for usability, I will apply Shneiderman's Golden Rules and Norman's Design Principles to our app's design. Our ultimate goal is to deliver an app that is not only easy to use but also enjoyable and satisfying for our users.

Selected User Stories

User Story 1:

"As Michelle, I want to be able to chat with other users, so that I can have some social interactions"

User Story 2:

"As Alicia, I want to know the best photo locations at each trail, so that I can take nice photos of my hiking partners."

User Story 3:

"As Emily, I want to learn more about hiking equipment to plan for a hike, so that I can have the necessary gear for a safe and comfortable hiking experience."

User Story 4:

"As Wai Kit, I want to be able to share my hiking photos in a community so that I can connect with other hikers and inspire other hikers"

Storyboards

Storyboard 1:

Based on [user story 1](#):

PERSONA: Michelle

USER STORY/SCENARIO:

- Frustrated that the code couldn't work
- Wants to hike, so that he can destress

- Chat function available on PC platforms as well
- Looking for a friend to hike with

- After a few days, until the day for hiking.

- Chilling while waiting for his friends to come
- Got notified that his friends are going to be late

- Feeling relieved to have a break from work
- Feeling a sense of peace

PAGE # 1

PROJECT/TEAM: 4

DATE: 24/04/2022

STORYBOARD NNGROUP.COM

Storyboard 2:

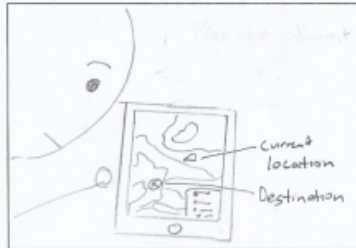
Based on [user story 2](#):

PERSONA: Alicia

USER STORY/SCENARIO:



- Feeling impatient, anxious and eager to see the best scenery of this hiking trail



- Checking the map on the phone to see how much more do they need to climb



- Reassure the second hiker that they are on the right track and they are almost there



- Appreciating the sunset they are watching
- Feeling happy when you get to see the sunset

PAGE # 2

PROJECT/TEAM: 4

DATE: 24/04/2023

STORYBOARD NNGROUP.COM

Storyboard 3:

Based on [user story 3](#):

PERSONA: Emily

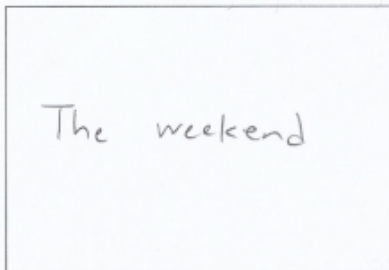
USER STORY/SCENARIO:



- Mom suggested to have a spontaneous hiking trip
- Mom wants to be healthy



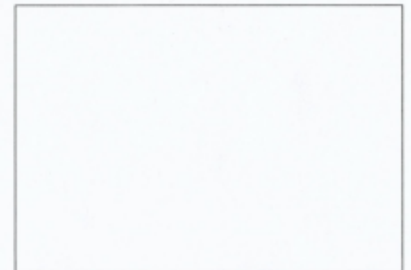
- The son worried about family's safety, decided to check what to bring for hiking as a beginner



- After a few days of buying equipment, until the day for hiking



- Feeling comfortable in the hiking gear they brought
- Sweaty because the weather is hot



PAGE # 3

PROJECT/TEAM: 4

DATE: 24/04/2023

STORYBOARD NNGROUP.COM

Storyboard 4:

Based on [user story 4](#):

PERSONA: Wai Kit

USER STORY/SCENARIO:

The storyboard consists of six panels arranged in a 2x3 grid. Panel 1 shows Wai Kit hiking on a trail with trees and a sun. Panel 2 shows Wai Kit looking at a flower. Panel 3 shows Wai Kit holding a phone. Panel 4 shows Wai Kit taking a picture of the flower. Panel 5 shows Wai Kit checking the photo on his phone. Panel 6 shows Wai Kit sharing the photo online, with a speech bubble saying 'Maybe I should go there and hike as well'.

- Going to hike
- Holding a hiking stick
- Hiking a steep hiking trail

- Encountered a beautiful flower during the hike
- Memorized by the beauty of it

- Knows not to pluck it
- Takes out his phone to take a picture

- Takes a picture of the flower

- Checking to see if the picture came out alright
- Might consider doing some touch up on the picture

- Shared the picture online
- Friends get to see it as well

PAGE # 4 PROJECT/TEAM: 4 DATE: 24/04/2023 STORYBOARD NNGROUP.COM

List of acceptance criteria

The acceptance criteria for each user story are on the Kanban task board

Kanban Board 1:

Story		
User Story 1		
To Do	Doing	Done
<ul style="list-style-type: none">• 3 vertical dots for user to click on for additional menu options• A button for user to forward a message	<ul style="list-style-type: none">• The placeholder disappears once the user starts typing• Notification to alert user of new messages• Users can read message history, , by dragging their fingers bottom to top (scroll down) and top to bottom (scroll up)• A button for filter and search messages	<ul style="list-style-type: none">• The message typed by the user is sent, once the user click on the send button• The message input field is placed at the bottom of the screen• A keyboard will appear once the user click on the message field• Different colours of the message bubbles allows users to distinguish their message from others• Timestamps to indicate the time of the message sent• Profile pic and Name of the person chatting allows users to differentiate who they are talking to, placed on top of the screen• Name comes with message bubble in group chats, to allow users to know who was the one who sent the message

		<ul style="list-style-type: none"> • Users always getting the most up-to-date messages • Users should be able to access and use all chat features on any device, including smartphones, tablets, and desktop computers.
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Kanban Board 2:

Story		
User Story 2		
To Do	Doing	Done
<ul style="list-style-type: none"> • A button that allows users to switch in between topography map and online map • Pictures on the map, that users can click on the enlarge (The pictures are the locations at each trail) • Users should be able to access and use all map features on any device, including smartphones, tablets, and desktop computers. 	<ul style="list-style-type: none"> • Users can adjust the zoom level of the map, either by zooming in or zooming out • A button that orient the map to where the user is looking at • A button for users to download the map, for offline use • A button for user to realign the map to face North 	<ul style="list-style-type: none"> • A search field for users to search locations • A location button to allow users to locate where they are right now • Users always getting the most up-to-date map • An "X" button to cancel the route user it going • A black and white chequered flag icon to destination • A human icon to show where the user is • A blue route to show the user where the user should be going • A search placeholder in the search field

		<ul style="list-style-type: none"> • Users can switch in between topography map and online map
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Kanban Board 3:

Story		
User Story 3		
To Do	Doing	Done
<ul style="list-style-type: none"> • Users should be able to access and use all e-commerce features on any device, including smartphones, tablets, and desktop computers. 	<ul style="list-style-type: none"> • Users could click on the products to get more details on the product like other user reviews on the product • A cart with plus icon for users to add more products to their cart 	<ul style="list-style-type: none"> • A search field for users to search hiking equipments • A search placeholder in the search field • List of products, where users could scroll through, by dragging their fingers bottom to top (scroll down) and top to bottom (scroll up) • Products with clear images, pricing and description • Users always getting the most up-to-date hiking information • Checkout button for users to review their order

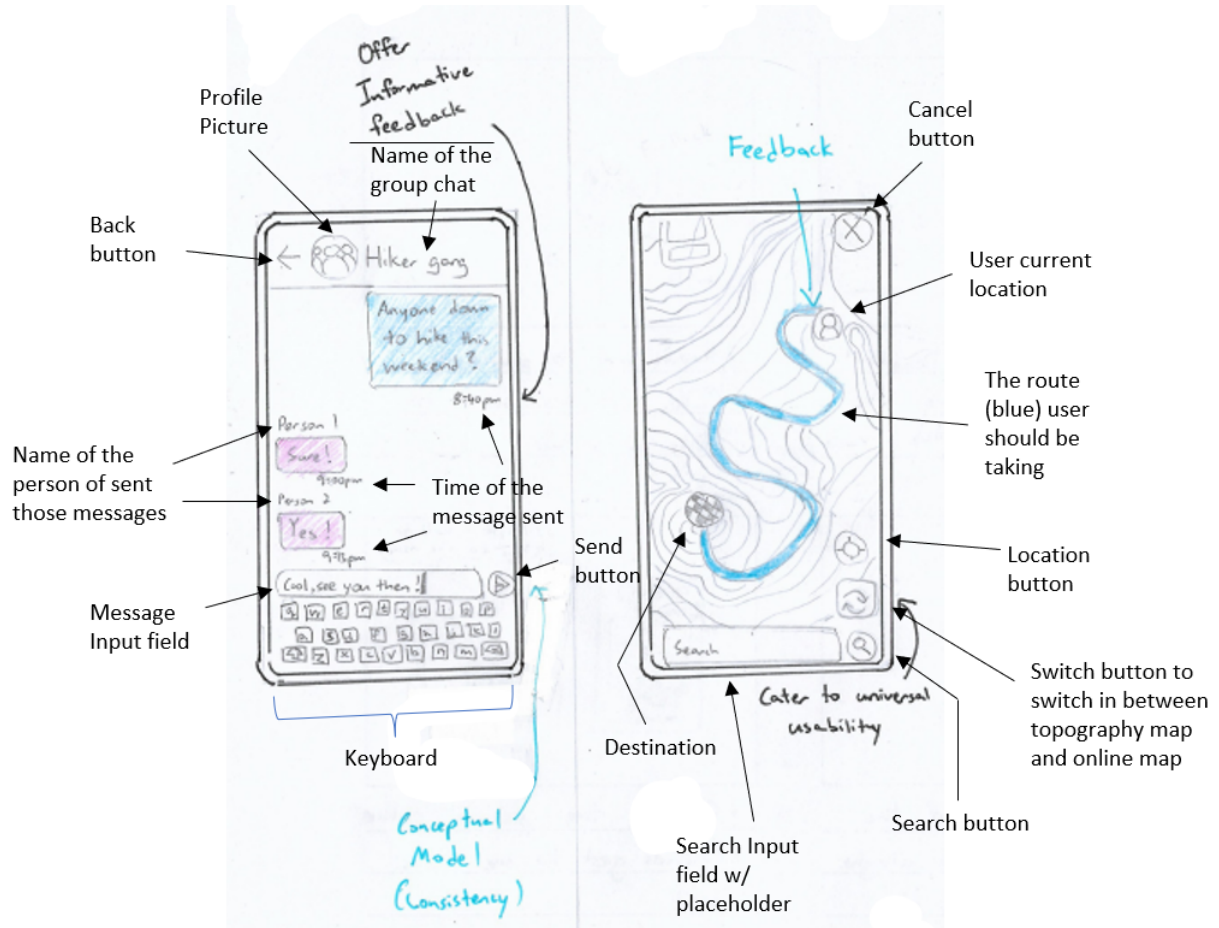
Kanban Board 4:

Story		
User Story 4		

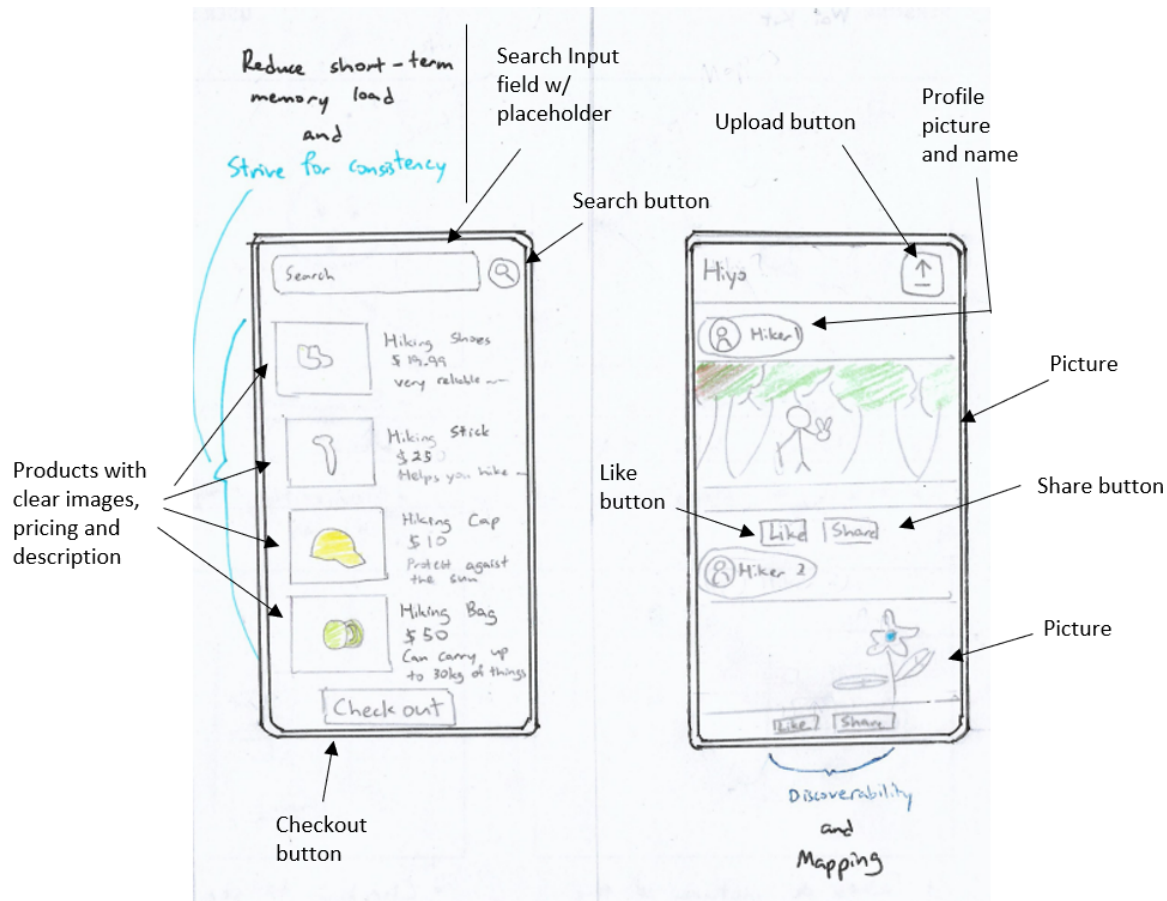
To Do	Doing	Done
<ul style="list-style-type: none"> • Users can zoom in or out on pictures to adjust their size and view details more closely or see a larger perspective. • Users should be able to access and use all photo-sharing features on any device, including smartphones, tablets, and desktop computers. • An explore button for users to discover hiking communities 	<ul style="list-style-type: none"> • A button that allows user to comment a picture • A button that allows user to save the picture • A search field for users to search other users 	<ul style="list-style-type: none"> • A button that allows user to share a picture • A button that allows user to upload a picture • A button that allows user to like a picture • Users always getting the most up-to-date hiking photos shared

Low-fidelity prototype designs

Design 1 & 2:



Design 3 & 4:



Report

From the 4 user stories that I have selected, I have identified several acceptance criteria to be implemented.

For user story 1, I have chosen to implement acceptance criteria such as "Messages are sent when users click the send button," "Different colours of message bubbles allow users to differentiate their messages from others," and "Timestamps show the time messages were sent." I have chosen to implement the "Messages are sent when users click the send button" acceptance criterion because it is essential for a chat app to allow users to send messages. Additionally, following Norman's design principles, if a button is for sending messages, it should only send messages. The "Timestamps show the time messages were sent" acceptance criterion is based on Shneiderman's Golden Rules "Offer informative feedback." It is crucial to show users when messages were sent and received, especially for time-sensitive messages.

For user story 2, I have chosen to implement acceptance criteria such as "Users can switch in between topography map and online map", "A human icon to show where the user is" and "A black and white chequered flag icon to destination". I decided to implement the "Users can switch between topography and online maps" acceptance criteria to follow the "Cater to

universal usability" principle from Shneiderman's Golden Rules. Online maps are generally easier to read than topography maps, but the latter provide more details. By enabling users to switch between these map types, our app can accommodate a wider range of users with different skill levels and experience. Additionally, the acceptance criteria of having a human icon to show the user's location on the map was chosen based on the feedback principle from Norman's Design Principles. This visual feedback allows users to better understand their location and navigate the map more effectively, which contributes to a better user experience.

In user story 3, I implemented acceptance criteria such as "A search field for users to search hiking equipment", "Products with clear images, pricing and description", and "Checkout button for users to review their order". The search field allows users to quickly find the specific hiking product they are looking for, reducing their search time and improving their overall experience. The clear images, pricing, and detailed descriptions of products, presented in a consistent manner, help users make informed purchasing decisions based on "Reduce short-term memory load" and "Strive for consistency" from Shneiderman's Golden Rules. Finally, the checkout button enables users to review and confirm their order before making a purchase, helping to prevent errors and improving overall user satisfaction based on "Prevent errors" from Shneiderman's Golden Rules.

In user story 4, I have implemented several acceptance criteria to enhance the user experience of our photo-sharing app. These include a button for users to share a picture, a button for users to like a picture, and a button for users to upload a picture. To ensure that the "like" and "share" buttons are easily discoverable, I have placed them right below each picture, following the principles of "Mapping" and "Discoverability" from Norman's Design Principles. This design decision makes it easy for users to interact with the pictures they like and share them with others, contributing to a more engaging and enjoyable user experience.

Overall, these acceptance criteria have been implemented with the aim of providing a seamless and user-friendly hiking app experience for our users.

Conclusion


To summarise, our team aims to deliver a hiking app that is user-friendly and tailored to our target audience's needs. To achieve this, we have used storyboards to create an app that aligns with our users' preferences, and I have implemented several acceptance criteria based on user stories to enhance the app's user experience. I have adhered to Shneiderman's Golden Rules and Norman's Design Principles to ensure that our app meets industry standards for usability. Our main objective is to provide a seamless, enjoyable, and user-friendly hiking app experience for our users.

Appendix

User Stories Referred

The user persona and associated user stories from submission 1

Michelle's user persona



Michelle Chong Jie En
23, Selangor, Malaysia

STUDENT

NATIONALITY: MALAYSIAN
MARITAL STATUS: SINGLE
EMPLOYMENT: STUDENT
FIELD OF EMPLOYMENT: LAW & POLICY

BIO

As a student, Michelle feels the pressure of academic life and views hiking as an escape from the demands of work. She enjoys the tranquility of hiking and being surrounded by nature, which helps her to unwind and de-stress. Nevertheless, she understands the value of social interaction and hopes to meet individuals who share her love for hiking.

Michelle's previous experience with hiking apps has been frustrating, as she has encountered outdated information and a lack of community engagement. She also found some apps too complicated to use, which hampered her ability to plan hiking trips effectively. Nevertheless, she remains determined to pursue her passion for hiking and is actively searching for a reliable and user-friendly hiking app that will enable her to achieve her goals while connecting with like-minded individuals.

<p>Motivations</p> <ul style="list-style-type: none">• Social engagement - socialize and interacting with others• Achievement - gives a sense of accomplishment• Fitness and health - improving health• Photography - taking photos of hiking scenery• Distress - getting away from work• Intrinsic - hike as a hobby	<p>Skills</p> <p>Social engagement on an app community features <div><div></div><div></div><div></div><div></div><div></div></div></p> <p>Proficiency in reading topographic map <div><div></div><div></div><div></div><div></div><div></div></div></p> <p>Proficiency in reading online map <div><div></div><div></div><div></div><div></div><div></div></div></p> <p>Social engagement <div><div></div><div></div><div></div><div></div><div></div></div></p> <p>Photography <div><div></div><div></div><div></div><div></div><div></div></div></p>
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<p>Goals</p> <ul style="list-style-type: none">• Increase endurance, in order to hike longer in the future• Improve mental health• Taking good hiking sceneries• Reduce feelings of isolation and loneliness• Join a hiking group• Hike Gunung Tahan	<p>Frustrations</p> <ul style="list-style-type: none">• Outdated information of hiking trail from previous hiking applications• Lack of community engagement from previous hiking applications• Previous hiking applications are too complex to use
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User Stories

Priority	User Stories	Justification
Must Have	<ul style="list-style-type: none">As Robert, I want to be able to search and discover hiking trails, so that I can trail that suits my needsAs Robert, I want to look at maps, so that I can navigate through the a hiking trailAs Michelle, I want to be able to chat with other users, so that I can have some social interactionsAs Michelle, I want to be able to monitor my hiking performance, so that I know what's my hiking progress	<p>Users' preferences and needs for hiking vary, including difficulty level, terrain, distance, and location. A search and discovery feature can personalise the app for users like Robert, allowing him to find trails that meet his criteria.</p> <p>A map feature can enhance safety and enjoyment by helping users navigate and discover new routes.</p> <p>Social interaction, through a chat feature, can foster connections and a sense of community, increasing engagement.</p> <p>Tracking hiking performance metrics, such as distance, time, and elevation, can provide motivation and a sense of achievement for users like Michelle, improving the app's effectiveness.</p> <p>Adding these features is necessary because they fulfil the basic needs of a hiking trail app. For hikers like Robert and Michelle, the search and discovery feature, map, chat function, and performance tracking are essential components for a personalised and safe hiking experience.</p>

Alicia's user persona



Alicia's user persona card is a digital profile layout. It features a circular profile picture of a young woman with long dark hair. Below the photo is her name 'Alicia' and a quote 'I love taking pictures of the people I love'. To the left is a dark grey box containing personal details like age, gender, and income. To the right are four white boxes with rounded corners, each containing a different section: Biography, Goals, Motivations, and Frustrations. At the bottom right is a 'Skills' section with star ratings for various abilities. The background of the card is a scenic image of a mountain range at sunset.

Alicia

"I love taking pictures of the people I love"

Age : 21
Gender : Female
Marital Status : In a relationship
Nationality : Malaysian
Current State of Residence : Perak
Employment : Student
Field of Employment : Healthcare & Medicine
Annual Income: : < RM20,000

Biography

Alicia is a Chinese Malaysian, who lives in Perak. She is currently a student studying to be a pharmacist. She goes on short hikes a few times a year due to her busy schedule. When she does, she prefers to hike with her family or her partner. She is a casual hiker who uses hiking to socialize with her hiking partners and take photos of them as memories. Hence, she believes an app that assists her in taking better photos on hikes will improve her hiking experience with others.

Goals

- Take nice photos of her friends, family and significant other while on hikes
- Learn more about aesthetic hiking photo locations
- Use hikes as an opportunity to socialize and catch up with friends and family
- Store and share hiking memories with others

Motivations

- Able to take photos of her hiking partners
- Opportunity to socialize and interact with her hiking partners
- Improve her health while connecting with others

Frustrations

- Difficulty finding new hiking trails for new photos
- Bad weather condition of hiking location ruins hiking experience
- Does not know the equipment she should or should not bring
- Not sure what photo locations there are at the hiking trails

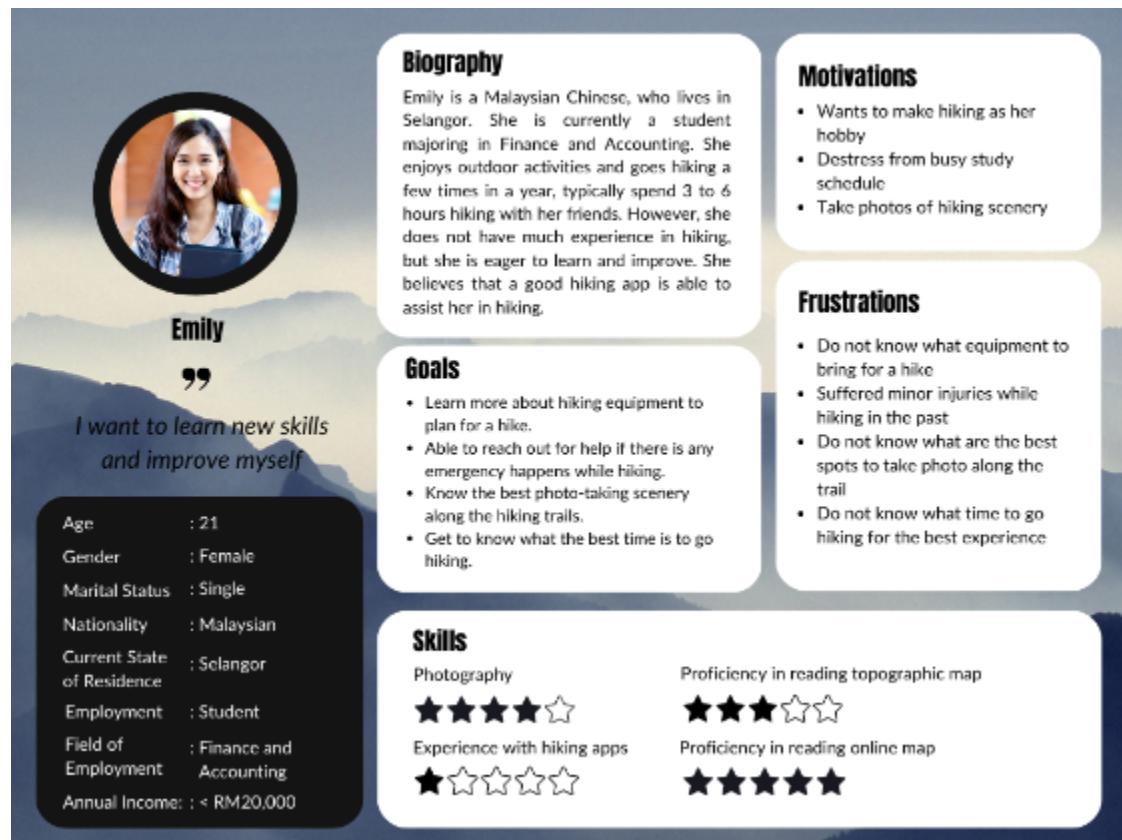
Skills

Photography	Proficiency in reading topographic map
★★★★☆	★☆☆☆☆
Experience with hiking apps	Proficiency in reading online map
★☆☆☆☆	★★★★★

User Stories

Priority	User Stories	Justification
Must Have	<ul style="list-style-type: none">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.As Kevin, I want to be able to know the best time for hiking photography, so that I can capture the best scenery photosAs Alicia, I want to know the best photo locations at each trail, so that I can take nice photos of my hiking partners.	<p>Our hiking app's main focus is to accurately provide hiking trail information to our users so that they have the best hiking photography experience. Information listed in these user stories, such as hiking trail locations, weather conditions and best duration to hike, are essential information for our users in order for them to successfully plan a hike for pictures. Hence, we must implement features to display this information to our users.</p> <p>Our hiking app also has a side objective of potentially providing suitable hiking photography information for our users to have the best hiking photography experience on their hiking journey. Hence, providing information on the best photo locations and scenery locations during a hike through already existing pictures can help improve their experience.</p>

Emily's user persona



A user persona card for Emily, a Malaysian Chinese student. The card features a circular profile picture of Emily, a quote from her, and several sections detailing her background, goals, motivations, frustrations, and skills. The background of the card is a scenic image of mountains.

Emily

"I want to learn new skills and improve myself"

Age : 21
Gender : Female
Marital Status : Single
Nationality : Malaysian
Current State of Residence : Selangor
Employment : Student
Field of Employment : Finance and Accounting
Annual Income : < RM20,000

Biography

Emily is a Malaysian Chinese, who lives in Selangor. She is currently a student majoring in Finance and Accounting. She enjoys outdoor activities and goes hiking a few times in a year, typically spend 3 to 6 hours hiking with her friends. However, she does not have much experience in hiking, but she is eager to learn and improve. She believes that a good hiking app is able to assist her in hiking.

Goals

- Learn more about hiking equipment to plan for a hike.
- Able to reach out for help if there is any emergency happens while hiking.
- Know the best photo-taking scenery along the hiking trails.
- Get to know what the best time is to go hiking.

Motivations

- Wants to make hiking as her hobby
- Destress from busy study schedule
- Take photos of hiking scenery

Frustrations

- Do not know what equipment to bring for a hike
- Suffered minor injuries while hiking in the past
- Do not know what are the best spots to take photo along the trail
- Do not know what time to go hiking for the best experience

Skills

Photography ★★★★★☆

Experience with hiking apps ★☆☆☆☆

Proficiency in reading topographic map ★★★★★☆

Proficiency in reading online map ★★★★★

Priority	User Stories	Justification
Must Have	<ul style="list-style-type: none"> As Jon, I want to access detailed information about each hiking trail so that I can plan my hike more efficiently. As Emily, I want to be able to view the hiking trails on a detailed map, so that I can navigate the trail easily and avoid getting lost during the hike. As Emily, I want to learn more about hiking equipment to plan for a hike, so that I can have the necessary gear for a safe and comfortable hiking experience. As Jon, I want to know the suitable weather to go hiking, so that I can plan my hike accordingly and avoid hiking during bad weather conditions. 	<p>Planning a hike can be time-consuming and challenging, especially for novice hikers or those with busy schedules. However, by providing comprehensive information about hiking trails in our app, hikers can easily find and filter trails based on their preferences. Given that most hikers are beginners, they may need an easy-to-read map to guide them along the trails.</p> <p>Moreover, it's crucial for hikers to know what essentials they need to bring along for their hike. To save their time and effort, they need a complete list of equipment required for each hiking trail, so they don't have to search for these items online. Additionally, being aware of weather conditions before beginning a hike is essential for the hiker's safety and enjoyment. Hence, information on current and forecasted weather conditions is essential for planning a hike.</p> <p>The features above are the key aspects that can fulfil most of the users' needs, hence they must be implemented.</p>

Wai Kit's user persona



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	<div><div></div><div></div><div></div><div></div><div></div></div>
Experience with hiking apps	<div><div></div><div></div><div></div><div></div><div></div></div>
Proficiency in reading topographic map	<div><div></div><div></div><div></div><div></div><div></div></div>
Proficiency in reading online map	<div><div></div><div></div><div></div><div></div><div></div></div>
Social engagement	<div><div></div><div></div><div></div><div></div><div></div></div>

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

Could have	<ul style="list-style-type: none"> 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 Wai Kit, I want to be able to share my hiking photos in a community so that I can connect with other hikers and inspire other hikers. 	<p>A feature of adding new friends could be added in order to keep in contact with those that they have recently interacted with, or usually interact with for much convenience in planning new hiking trips as well as encouraging interaction between hikers.</p> <p>A feature regarding creating a user profile could be added in order for users to save their hiking experiences as well as expressing themselves in terms of their recent hiking activity.</p> <p>A community feature that allows the users to share their hiking photos would be a great way for users to express their passion in hiking as well as hiking activities.</p>
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Storyboarding Technique

NNGroup's storyboard template was used. ([storyboard-template.pdf \(nngroup.com\)](https://nngroup.com/storyboard-template.pdf))

Kanban task board format

The Kanban format was based on the format used in Tutorial 5 of Semester 1 in 2023, which involved creating a separate table for each user story. An example is shown below:

Story	To Do	Doing	Done
As Tony Smith, I want to get notifications, so that I can know when my plants need to be watered and fertilised.	<ul style="list-style-type: none"> • Option to register/add a user's plants in the app. • Provide 3 different alternatives for the user to receive notifications; e.g. Email, sms, WhatsApp, etc. • Notification icon on the homescreen of the app 	<ul style="list-style-type: none"> • Provide 3 different alternatives for the user to receive notifications; e.g. Email, sms, WhatsApp, etc. • Notification icon on the homescreen of the app 	<ul style="list-style-type: none"> • Notification icon on the homescreen of the app