Human computer interaction and Design

COMP1649

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Introduction

Presently, People are spending most time with the usage of the mobile phone for all time and also IT becomes more advanced and significant. Thus, it gets so many smart applications usage with diverse devices. With that report, application which becomes chiefly target for skiers usage during skiing track and record the history for the skiing activities. This had been called the smart application for the skiers.

Scenario

That application support abilities for viewing and usage at mobile device from anywhere else. Purpose of that application gets if user desires for browsing location or the route beforehand and in the duration of skiing. That application give abilities for monitoring weather forecast, keep the activity history and manage user profile and change the setting.

Interaction Design Modes

According to the Design modes, the total number of 5 steps will occur due to the development of new Ski Application. They are the following Steps:

        Step 1 - Discover
        Step 2 - Draft
        Step 3 – Build the system
        Step 4 - Testting
        Step 5 - Analysing

Step 1 - Discover

Cognitive Psychology

According to the (Farnsworth, August 3rd, 2022), About Cognitive psychology states to that field in encompass of tradition cognitivepsychology approaches, & cognitive *neuroscience* which targets the field which employs the neuroimage method for examining the cognitive processes – this involves so much overlaping with the cognitivepsychology, taking the related approaches & worldviews, although offering the route for visualizing brain activity which had been associate with those internal thinking. The cognitivepsychology gets so much overlaps with the cognitive*neuropsychology* (chiefly related with effect of the brain damages) and to some extents, with the computation neuroscience (related with to create the computational designs for the next functions).

Attention

With given moment by the time, this took with the large amount of the record from olfactory, visuals, audits, the taste senses, and tactile. As people brains get the limitation of the capacity to handle all of that record, the attentions get both on selective & limited. The attentions process permits for emphasizing on things which become related and vital for the survival during filtering out the extraneous details (Psychology, January 16, 2022).

Information-Processing

To be said for information-processing; imagine about study what is happens in people thinking gets not. For studying people thoughts, the cognitive psycholog specialist had been implemented diverse designs for representing the way of thoughts. Most significance becomes informational processing approach. At that approach, mind gets the thoughts of much such as computer. The thinking and memory had been breake-down in to the small parts of the knowledge. Like the record come mind throughout, this had been calculated from brain that considers which for doing with information. Most record trigger the immediately responses. The other unit of the record had been transfer into the long-term memory as the usage of future development.

Interaction design theory

Interaction design emphasizes to create the engaged interfaces with well-thought out the behaviors. Comprehending the way of the users and technology communicated each other becomes fundamental into that field. With that understanding, this anticipate the way of someone interact with system, fix the problems very early, like inventing the new ways for doing things (usability.gov, November 23, 2022).

Discussion of different framework for Interaction Design

It involves about three diverse interaction design theories called 1. User-Centered Design, 2. Goal Directed & 3. Design Fiction.

User-Centered Design (UCD)

UCD process causes phases through the design and development life-cycle all during emphasizing to get the deep understanding on who employ product. International standard 13407 becomes basis for so many UCD methodologies. This becomes significant for noting which UCD process not specify the accurate methods for every phase (usability.gov, November 23, 2022).

1. Specify context of usage: Define people who employ product, which they employ this for, and underneath which conditions they employ this.
2. Specify requirement: Define the business requirement or the user goal which require for meeting for product succeed.
3. Create the design solution: That part of processes had been finished for steps stages, build from the rough concepts into the completed design.
4. Evaluate the design: Evaluations - ideal throughout the usability tests with the actual user becomes integral like the quality testings get good software development.

Goal Directed Design (GDD)

GDD becomes the research-based software designs methods to anticipate the way of people respond into the new or modified products, services, or the system. GDD precisely articulate shapes and the purpose of the offline and online system element which aid the people meeting their goals. GDD had been employed in outset of product-definition process like for defining the people needs of the system beforehand the designs and constructions take place. GDD's synthesis and the design method guide generation, communication, and the specifications of the product into larger teams (Protoc, 2013 Oct 29).

Summary

GDD methods aids for ensuring the people goal & the context informed design of the networks about myski new application prototype. GDD method complemented the quality-improvement method for generating the prototypes consistent with the clinical and research aim, like goals of the patient disease management.

Step 2- Draft

Research Activities

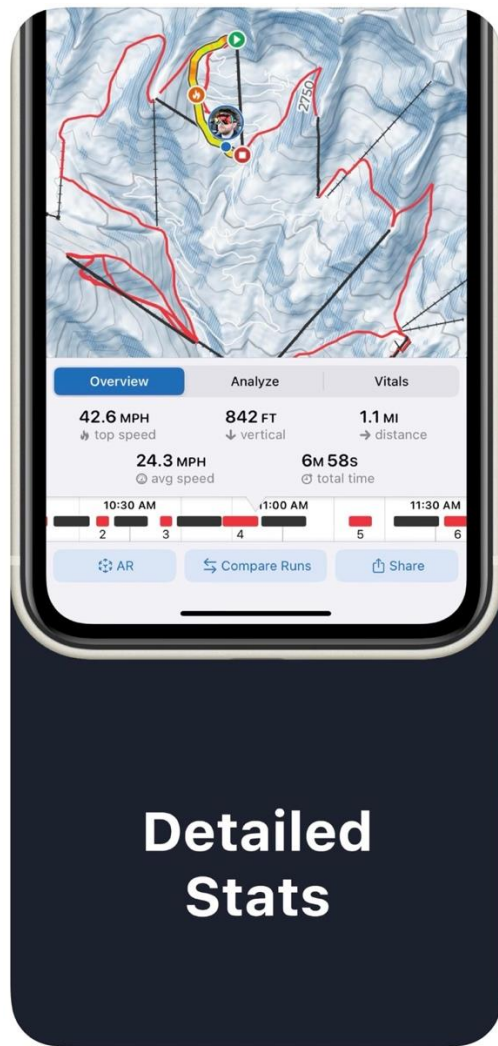The similar application research had been made for getting needed information for new ski system

Viewing History of Ski Tracker & Snow Forecast App	Viewing History of OpenSnow App

Tracking in Ski Tracker & Snow Forecast App	Tracking in OpenSnow App
Ski & Snowboard GPS Tracker	Color Coded Tracks (Speed)
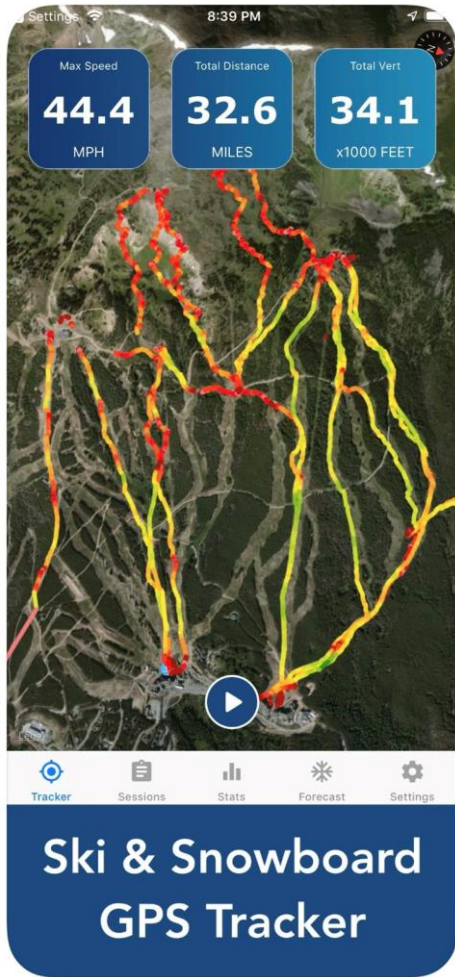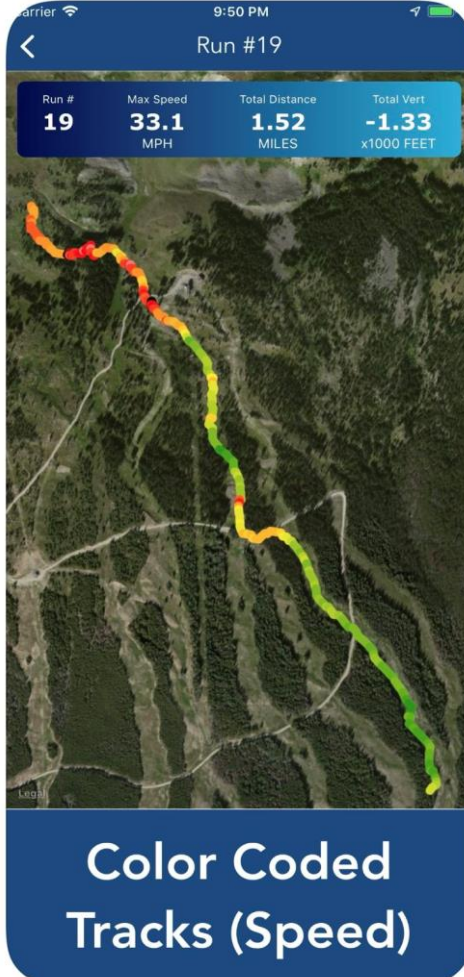
Map of the Ski Tracker & Snow Forecast App	Map of the OpenSnow App
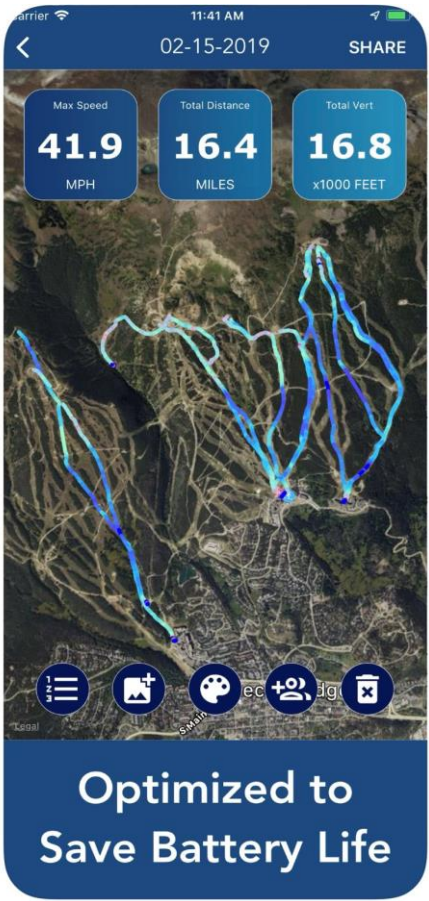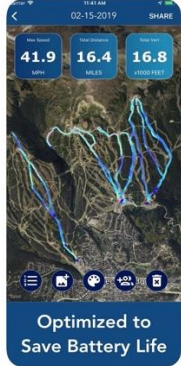
1. Clearly visible

System need to usually store the users informed for which had been going on, throughout the suitable feedback during the reasonable time.

Ski Tracker & Snow Forecast App		That system gets the visibility of the system status as this states which had been going on throughout process.
OpenSnow App		That system gets the visibility of the system status as this states which which had been going on throughout process.

2. Matching the system design and real

System needs to speak language of users, including some phrase, word, and the concepts those are familiar with all of us than the term of system oriented. The information appears including with the natural and the logical orders by the real-world convention

| Ski Tracker & Snow Forecast App | | That system employs color red & green that basically meaned red had been locked and the green becomes open. Thus, this matches with real world. |
| OpenSnow App | | That system not employ any color for stating whatever this had been locked or opened, although with the letters, thus this not gets standard for matching with real world. |

Dimension of Interaction Designs

Accordingly, 5D model interaction designs are very supportive and it is introduced by Gillian Crampton Smith initially. His concept includes just only 4D model for interaction designs. But for the 5D interaction design mode, it is added by the Kevin Silver.

1D - Word

As the interaction design achieves all about the communications with the people, word played the essential roles in that. Most of all people considered for writing like putting about a word than others. Besides, that can get too much ßconsiderations in the choosing of the word with designs. The right words employed in accurate right times become powerful as the swords. In the period of writing, that is not considers to who talks, that become very poor because of not writing all. As the example that; when the product targets for the retired people but this writes about something which only young generation may comprehend, customers, retire person, no contact to productw. Thus, style of writing and terminologies usages, become everything which needs to be carefulness crafting with the familiar ways for intending the user.

Visual Representations

It described any graphical element like photo, diagram, typography, and icon that the user make the interactions with. That always supplements word which uses to make the communication with the user.

It becomes powerful such the word. E.g, the icon usage of the user become familiar makes them comprehend that this desired to convey instantly. But this became improbable that they continues to read into further when visuals failed to catch attention of user.

Physical Object or Spaces

That becomes whereas interactions taking places. Users interact with the designs throughout the physical object. E.g, the user interacted with the computer & mouses in the sitting at the business.

The good visual becomes vital. However, they not get desired impact when this not put element truly. Getting the clutter web designs hinder users from the interaction with products efficiently as they searched this toughing for making the interaction with element. The designer needs to keep by mind that the physical object & the spacing differ by devices to devices. Some which looks good at the laptops not needed to look goods in phone. Furthermore, even the people environments may impacts the way of interactions with the applications.

Time

The interaction user with those 1ˢᵗ 3 dimension have been measured with the term of time. The people required enable to track the progress employed the motion & sounds.

The designer need to also notes no. of time by user spending the interactions with products itself & lately the way of picking interactions. E.g, that supposed the users get the online shoppings. They had been adding products to shopping carts and processes to complete payments. Although, because of most issues, the payments had been declining. Consequently, they decided to lately play. As the results, this needs to becomes the option for users in continue the interactions whereas people left that. If users must initiated everything from beginning, people not purchased from website.

Behaviors

It contained the actions and reactions. With the interaction designs, it can state the way of the people perform the features on the website & application. Furthermore, those contain reaction of the people, like the emotional response or feedbacks.

Those five dimensions state to the way of the users interaction with system and communication with this in the interaction design terms (Scout, Oct 2021).
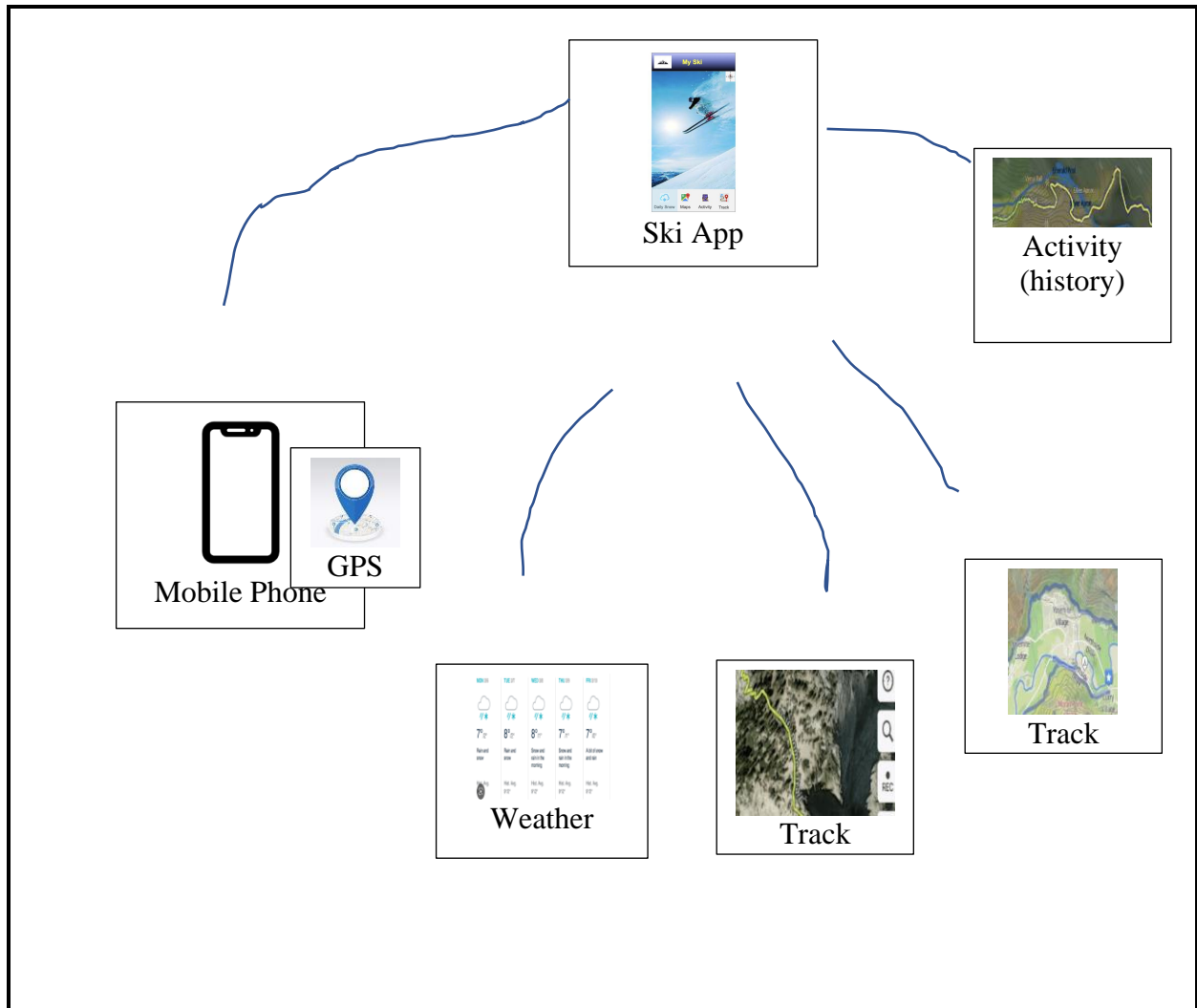
Step 3 - Build the system

Conceptual Design

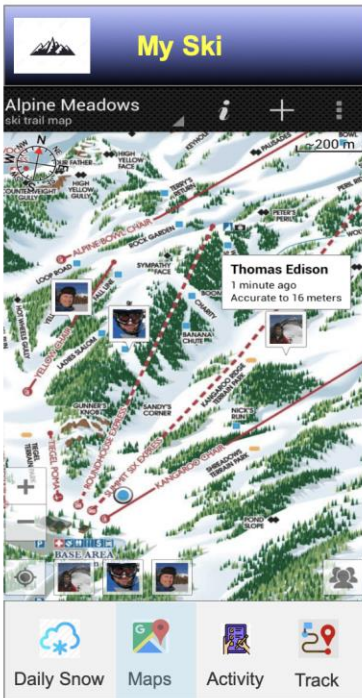

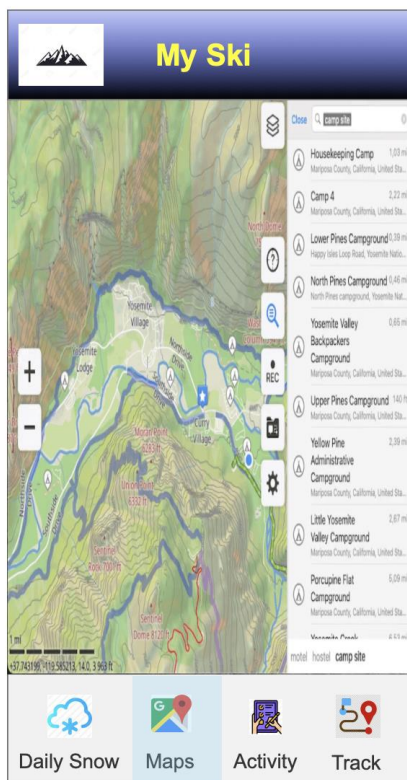Fig Conceptual Model of myski app

Myski app prototype

Home

Weather
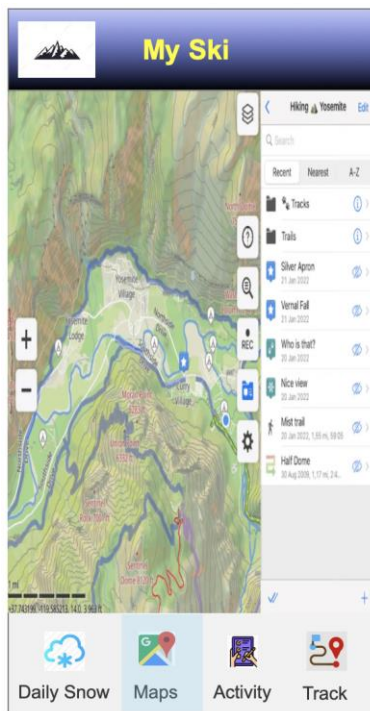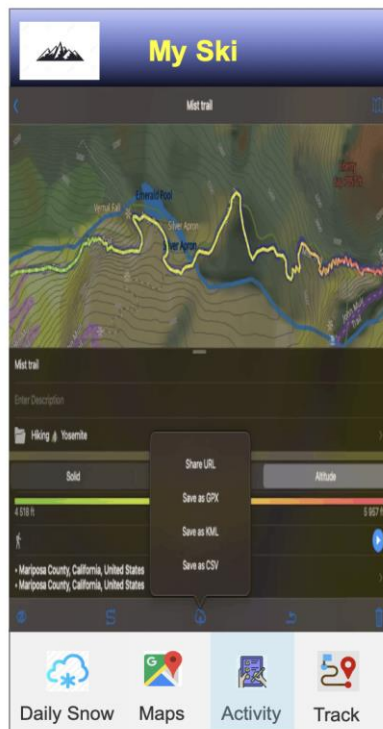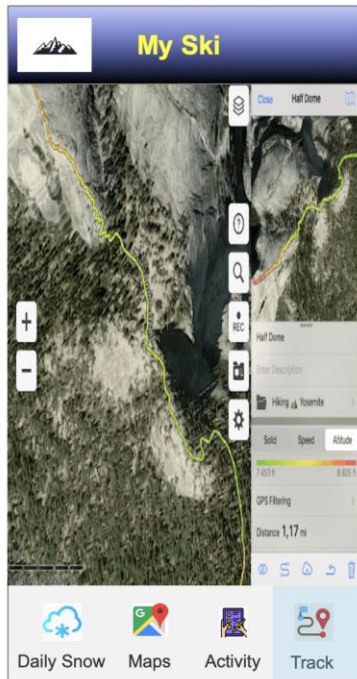
Map

Map2 Search anywhere Even offline

Map 3

Activity (history)

Track

Statistics tracking
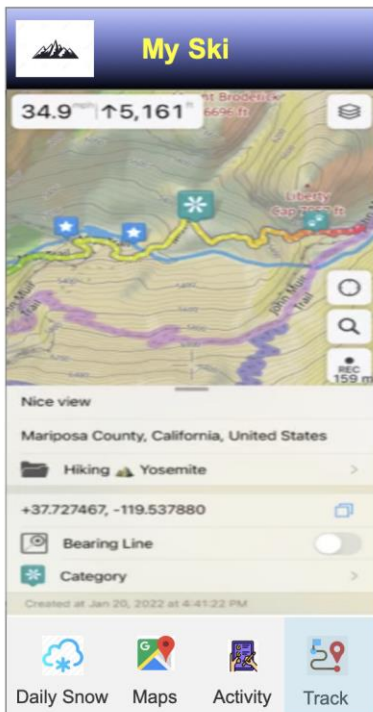
Tracking details
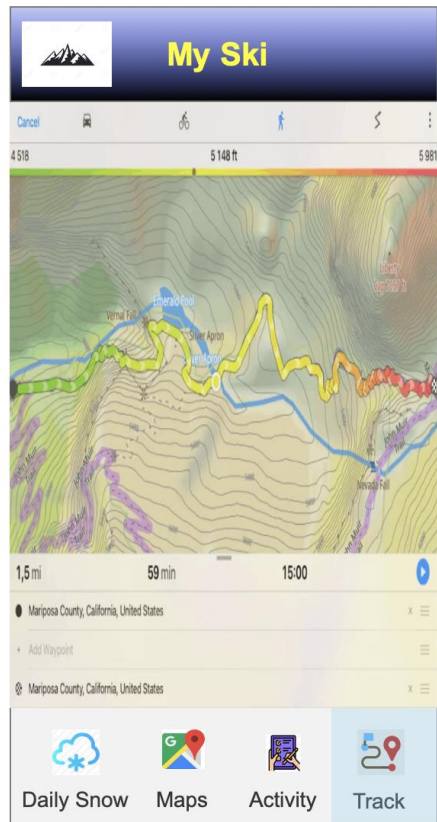
Step 4 - Testing

Design Principle for myski app

1. Visibility
Clearly visible map and routing path with colors

3. User Control
User can adjust minimize and maximize the map area

2. Match system and real world
Can make recording of current ski track

4. Prevent error for users

GPS already On
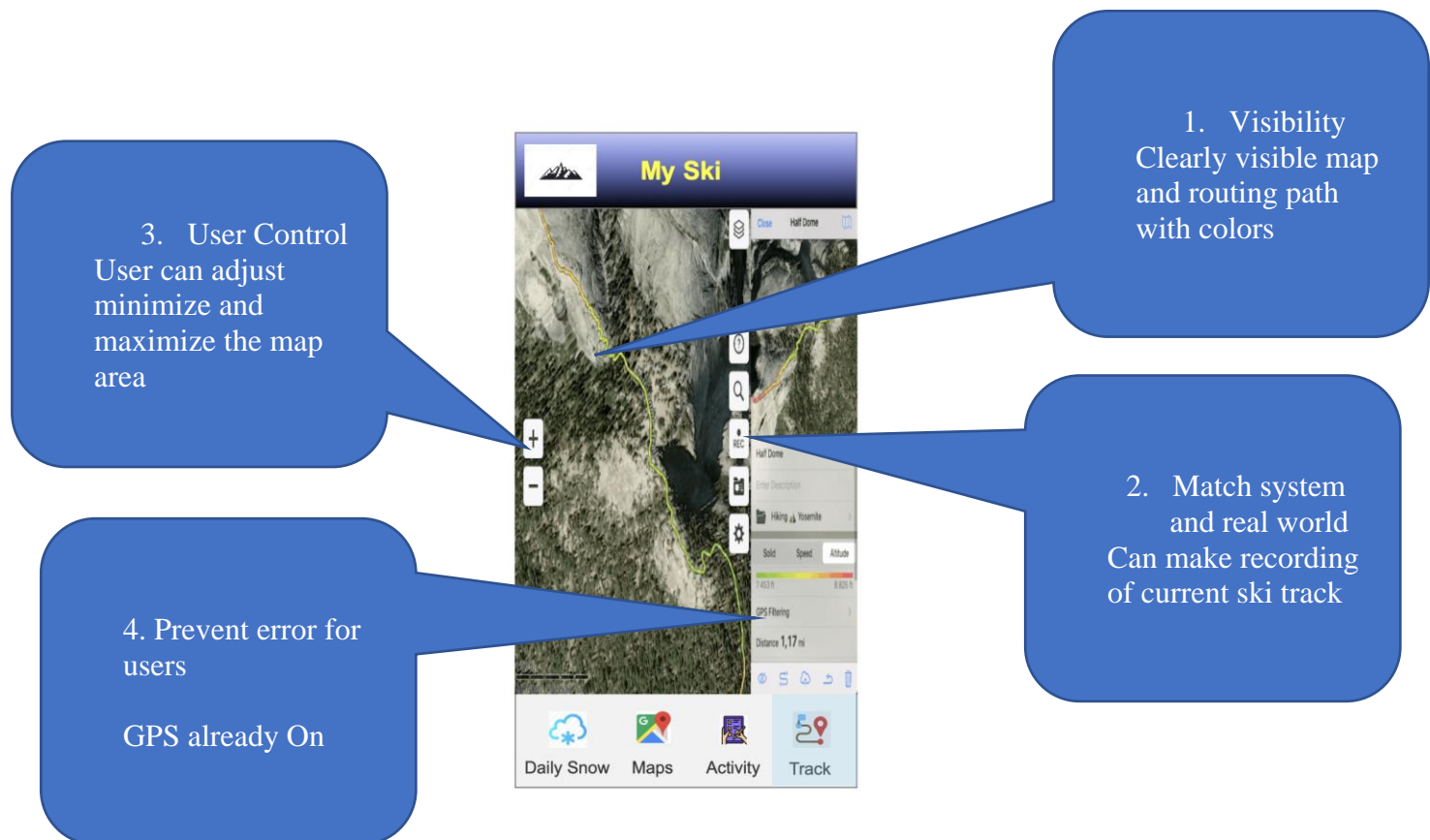
7. Flexible to use

Very effectively use by showing with routing map
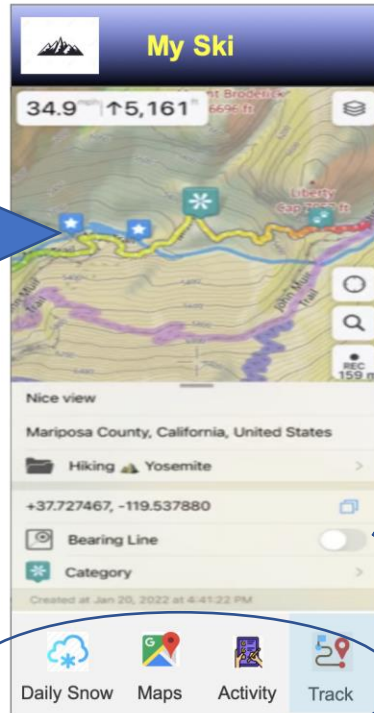
6. Make Recognition

Can hide bearing line

5. Standard Design

Standard for every pages

9. Help user recognize

When user entered search data, the similar or related information will be shown

10. Help function

When user clicked help icon, help document will be shown

8. Aesthetic designs

Can Easily use for all users

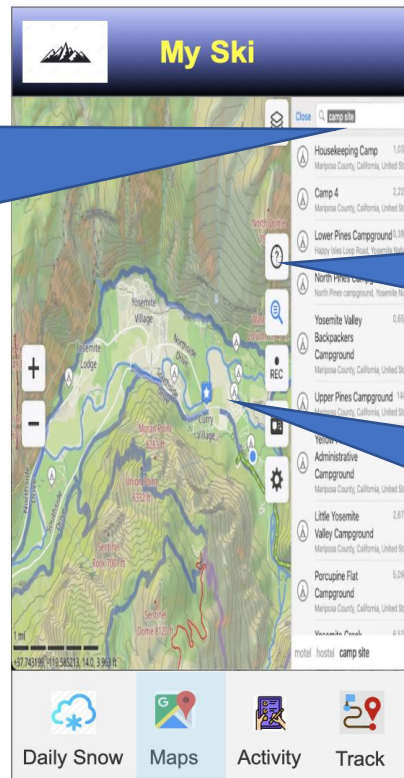*Heuristic evaluation for myski app*

NO	PRINCIPLES	CHECKING FOR MYSKI APP				
1	Clearly visible	1	2	3	4	<u>5</u>
2	Matching the system design and real	1	2	3	4	<u>5</u>
3	Controlling the user and give free to use	1	2	3	<u>4</u>	5
4	Standard Design	1	2	3	4	<u>5</u>
5	Prevent error for users	1	2	3	<u>4</u>	5
6	Make Recognition	1	2	3	4	<u>5</u>
7	Flexible to use	1	2	3	4	<u>5</u>
8	Aesthetic designs	1	2	3	4	<u>5</u>
9	Diagnose error	1	2	3	<u>4</u>	5
10	Help function	1	2	3	4	<u>5</u>

Step 5 - Analysing

Target users for myski app

For the new myski app, I mainly target to survey for the 3 people who are young adults and they are very interest to play the skiing.

Google Form survey

Survey Questions

General questions

   I.   What is your age?

- Under 10 years old
- Between 10-50 years old

- Above 50 years old

2.What is your educational level?

- High School
- College
- University Graduated
- Others

3.What is your gender?

- Male
- Female
- Prefer not to say
- Others

4.What is your occupation?

- Own business
- Company staff
- Technician
- Others

Ski app questions

1. How skills are u in skiing?
- I am just a new
- I can ride
- I am skillful
- I am expert

2. Do you think that the color used in myski app is suitable?

- Yes
- No

3. Do you think that the functions used in myski app is usable?

- Yes
- No

4. Do you think the showing map in the routing path is easy of use?

- Yes
- No

5. Do you like using this myski app?

- Not too much
- A few
- Moderately like
- Very Much

6. Do you like adding snow weather forecast in myski app?

- Yes
- No

Survey for Myski application's Prototype

General Questions

What is your age?

◯ Under 10 years old

◯ Between 10-50 years old

◯ Above 50 years old

What is your educational level?

◯ High School

◯ College

◯ University Graduated

◯ Other: _____

What is your gender?

◯ Male

◯ Female

◯ Prefer not to say

◯ Other: _____

What is your occupation?

◯ Own business

◯ Company staff

◯ Technician

◯ Other: _____

Next   Clear form

27

Effectiveness of Myski application's featres

Description (optional)

How skills are u in skiing?

◯ I am just a new

◯ I can ride

◯ I am skillful

◯ I am expert

Do you think that the functions used in myski app is usable?

◯ Yes

◯ No

◯ Maybe

Do you think the showing map in the routing path is easy of use?

◯ Yes

◯ No

◯ Maybe

Do you like using this myski app?

◯ Yes

◯ No

◯ Maybe

Do you like adding snow weather forecast in myski app?

◯ Yes

◯ No

◯ Maybe

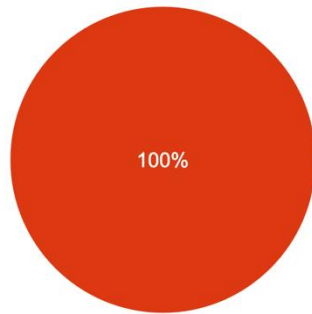Back   Submit   Clear form

28

Google Form Answers
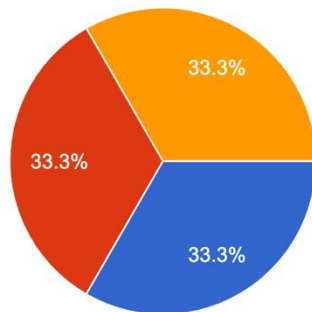
What is your age?
3 responses

- Under 10 years old
- Between 10-50 years old
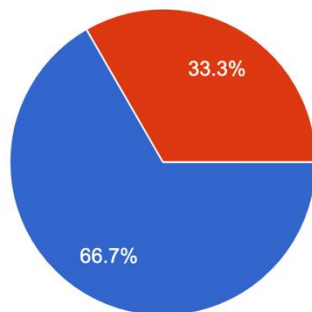- Above 50 years old

100%

What is your educational level?
3 responses

- High School
- College
- University Graduated

33.3%
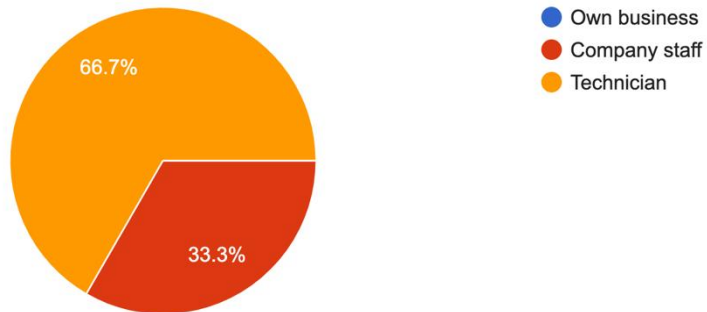33.3%
33.3%

What is your gender?
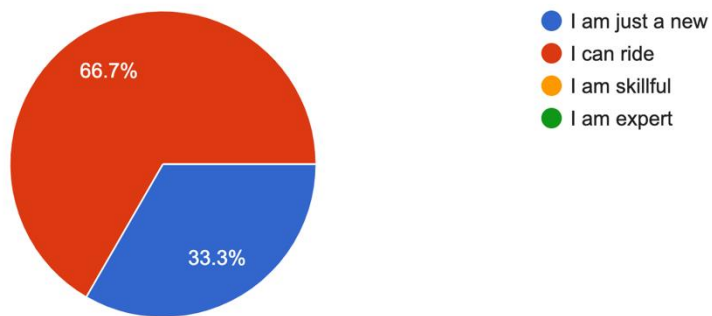3 responses

- Male
- Female
- Prefer not to say

33.3%
66.7%

What is your occupation?

3 responses

- ● Own business
- ● Company staff
- ● Technician

66.7%

33.3%

How skills are u in skiing?

3 responses

- ● I am just a new
- ● I can ride
- ● I am skillful
- ● I am expert

66.7%

33.3%

Do you think that the color used in myski app is suitable?

3 responses

- ● Yes
- ● No
- ● Maybe

100%
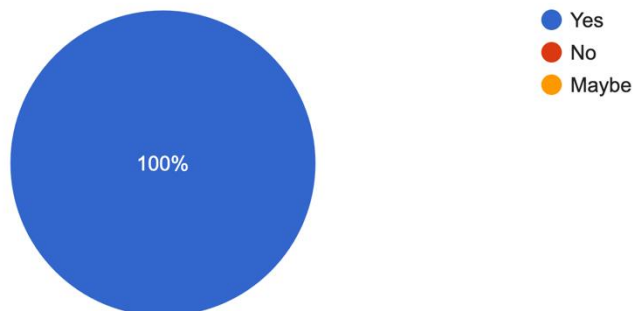
Do you think that the functions used in myski app is usable?
1 response

- ● Yes
- ● No
- ● Maybe

100%
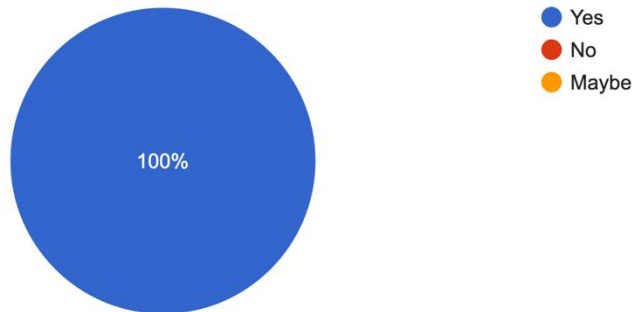
Do you like using this myski app?
3 responses

- ● Yes
- ● No
- ● Maybe

100%
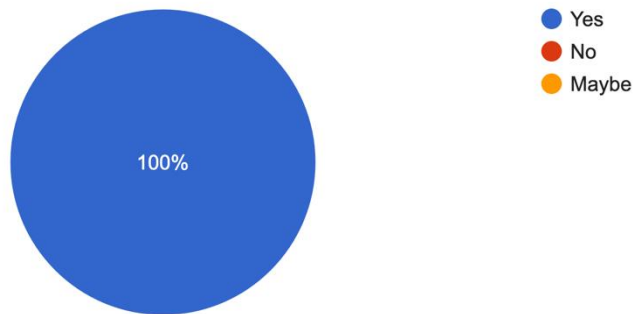
Do you like adding snow weather forecast in myski app?
3 responses

- ● Yes
- ● No
- ● Maybe

100%

https://docs.google.com/forms/d/12GeNqcAI3tQBUtKkIwp-dIaozdGAowEpKTU45InVZ5Y/edit
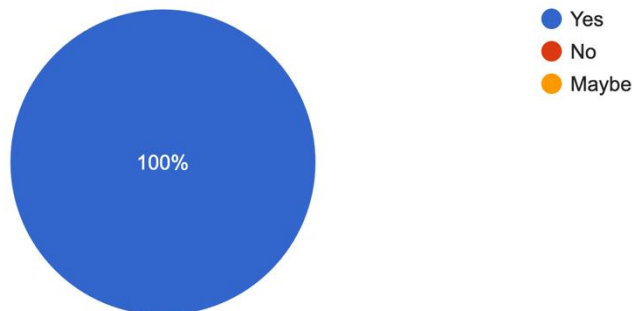
In accordance with four respondents google form, all of the users like color employed for that new Flora Ski app. Furthermore, all of the users think which Myski application becomes useful for the skiers.

Conclusion

In accordance with the heuristic evaluation checkings, rating result for Clearly visible, Matching the system design and real, Standard Design, Make Recognition, Flexible to use, Aesthetic designs and Help function are all achieved 5 points for rating. Moreover, Controlling the user and give free to use, prevent error for users and Diagnose error are achieved 4 points for the ratings. Thus, new Myski app becomes so good for employing and effective for the users. For future, skiers give the voice command during skiing. Thus, they may readily employ that application. By the other hand, map had been employed such as google map and all of the connected friends' location get readily state with map during skiing.

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