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1. Introduction

Human interaction with computers in many ways, the way people interaction with computer is also very important. The interface makes it easy for the users to interact with the computers.

This article is about the design of the first HCI. We spoke about what HCI is. What it does in life and how it interacts with us the next step is to conduct research on HCI in design research and design, briefly discussing HCI's research connected to the design of user interaction with your computer for you to gather and study. Apply yourself to this article. Following that are the prototypes that I created. This is followed by statistics from surveys on human-computer interface design. What is achieved in the interface design process has both strengths and limitations. What I've learnt from the preceding research.

2. Background

Human-Computer Interaction (HCI) is interdisciplinary, a discipline concerned with the design, evaluation, and implantation, which combines the theories and practices from include psychology, sociology, and so on. HCI is a design that creates a match between the user of the computer and the service that is required to achieve quality and optimization. It defines what constitutes a context-appropriate design.

Human-Computer Interaction (HCI) is defined by Association for Computing Machinery (ACM) Special Interest Group on Computer-Human Interaction (SIGCHI) in this study, the authors focused on design rather than usability assessment, with this study, the design is user-centered.

Human-Computer Interaction is situated interdisciplinary of computer science, behavioral science, design, media studies, and several other areas of research.

From the journal's launch in 1985 through the millennium, his achievements to Human-Computer Interaction are evaluated. The famous research "Psychology of Human-Computer Interaction" from 1983 focuses on three key causes: goal, user, and computer. major psychological conclusion HCI studies only apply to writers from the United States who wrote in investigative journals during the time period in question. European research on information technology and humans might vary significantly.

2.1 Interaction Design Research

The reasons for variances in skier attendance at Norwegian ski resorts are being properly investigated for the first time in this study. The authors make use of a distinct data set that shows the daily attendance at a particular ski resort from 2007/2008 to 2013/2014. The key conclusions point to a substantial relationship between the number of daily visitors and the weather, day of the week, and holidays. The demand pattern and particular non-linear correlations between visitors

and wind chill temperature are highlighted by the time series regression analysis. According to the study, an increase in temperature has a beneficial impact on daily visitation if the wind chill is below 9.5 C, similarly if the wind chill is higher than 9.5 C, on average, a lower number of skiers visit when the temperature is greater. These findings can be used by tourism service providers to make decisions, plan, and oversee ski resort operations. The results might also act as a motivation to use creative pricing strategies. More than 2000 resorts compete for skiers' visits each year in the highly competitive world of alpine skiing (Vanat, 2015). Vanat (2015) asserts that the alpine ski market has been experiencing a trend of stagnation for many years.

I can provide users the greatest solutions when I conduct research since I can ascertain their particular needs in the course of my investigation. Your skiing forecasting app can employ UX at any stage. The goal of the study is to provide my subjects with the best skiing experience possible. With features like one-day weather forecasts that anticipate the amount of snowfall in each region in locations with documented snowfall, with a system that enables users to register their addresses before skiing, where they reside also plays an essential role in the activity.

This application of mine has been accompanied by functions such as snow forecast, account login to help users register membership in clubs, allocate energy or update weather during the week. temperature of the day, information notification or even snow volume chart.

If you produce the product quickly and test it. That is just for people who want to ask questions half-heartedly in an effort to demonstrate value by accelerating output. Testing too soon may be expensive and resource-intensive. Though it might help you improve your concept, testing a new product won't put you on the proper path to finding a solution.

These studies are based on comparisons of similar products that I have cited, and I want to make a scientific argument here about how the only way to approach and seek for design complexity is to approach it that way. Instead, the argument I'm making focuses on producing outcomes that prove the effectiveness of a design strategy that strives to serve the audience. With the help of the aforementioned innovations, we are able to provide our readers with the features we have been seeking, much to the delight of those who are persuaded.

2.2 Interaction Design Theory

In the subject of human computer interaction, systems that allow people to interact and conduct research are designed, assessed, and put into use. Designing items is thus made more convenient by interacting on the computer.

Despite Backer and Buxton's and Backer's definitions from 1978, there is no exact definition of human-computer interaction. Information and machine technology, social sciences, and other

subjects all fall under the umbrella of human-computer interaction. The multidisciplinary aspect of HCI is not fully or specifically mentioned in any of the reference books on HCI technology and applications. With the help of HCI models and frameworks, I can put several strategies to use that help me succeed in my studies.

User interface design patterns are also known as interaction design patterns or HCI. Patterns have been utilized as a delivery and usability tool by both software developers and designers. Patterns may be seen in a variety of ways as reusable components that can be combined to create new systems. Despite its present potential, the use of the template has not yet approached the degree of universal applicability of its forebears Christopher Alexander. Based on the analysis and use of the present samples, we have come to several recommendations and thoughts regarding the lack of use in the current usage procedure and the underutilization of the samples' full potential. once again, in order to increase usability, accessibility, and fusion with other devices and applications. The utility, importance, and usability of the patterns that data patterns provide are supported by HCI.

For us in the modern day, the mix of language and human-computer interaction is not all that odd. I believe there are several methods for humans and machines to communicate, but software programmers have more access to multi-modal communication. Each of us engages in multimodal engagement on a daily basis. We talk, move, gesture, and engage in many other interactions that are also extremely successful. These days, there are a lot of concepts about leveraging human interactions to connect with computers that make it simpler for us to communicate with computers in a variety of ways.

2.2.1 Relation to cognitive psychology

Cognitive psychology is even more intimately tied to computer design than to traditional technologies such as automobiles and household appliances. There are several explanations for this. For starters, new information technology is so adaptable that functions change at an alarming rate. Relying on the presence of competent operators is getting increasingly difficult. Unlike typewriters and automobiles, it is doubtful that non-mechanical information of the future will remain stable long enough for public institutions to teach students for permanent jobs based on its utilization.

Such ease of learning or operation is obviously very crucial. Second, and most importantly, jobs for which computers are tools are often ones in which human cognitive functions are encouraged. The evolution of computer applications is propelling us in this direction. The initial employment for computers comprised basic information chores such as accountancy, where machine functions

formerly handled by people could simply be taken over by machines. Computers are increasingly being utilized to assist dynamic interactive jobs such as text editing and financial simulations, where the user's mind is a significant and important component of the overall system. Designing instruments for this sort of work is a perceptual process - a cognitive behavior. Its accomplishment cannot be viewed as first building a machine to perform something, then inventing controllers with which the operator commands the machine.

2.2.2 Design principles and Design patterns

When it comes to maintaining design information for subsequent reuse, design patterns play a significant role. Design patterns are a popular technique in the Human-Computer Interaction (HCI) field for exchanging design knowledge among user interface (UI) designers and experts. non-UI specialist An HCI design pattern is made up of various components. The first component is a pattern's structure, which includes a description of the problem, its context, and the pattern's suggested solution. When design patterns are utilized in pattern management technologies, relationships and meanings are key. To guarantee that the produced templates satisfy their users, the content of the templates must be evaluated and validated.

For my design, I consulted and utilized several appropriate design patterns to produce the most ideal functionalities for users to let people have the greatest experience with the interface we designed beyond.

3. Design Process

3.1 Conceptual Design

I have done extensive web research and information gathering for the existing design. However, in order to fully satisfy customer needs, it is crucial that we comprehend exactly what they are looking for in a product. to begin applying the product design process, acquire the data required.

I started coming up with concepts and a quantitative technique to help collect data, then analyses the results and offer recommendations after gathering all the data required for the objective of building an app for skiers. The appropriate histogram distributes the appropriate quantity of snow to help the skier, and then additional data analysis is performed for statistical purposes to get the appropriate outcomes.

Following the introductions I read about the aforementioned app's features, the brainstorming process demands a detailed analysis of what needs to be done and how to go about figuring it out. It must be truly connected to one another in order to address that problem. Usability and user experience must be mentioned. To improve the efficacy and experience connected to the user's intensive contact with the application, human performance needs to be addressed to the perceptual,

emotional, cognitive, behavioral, and cognitive processes that strongly affect the experience process.

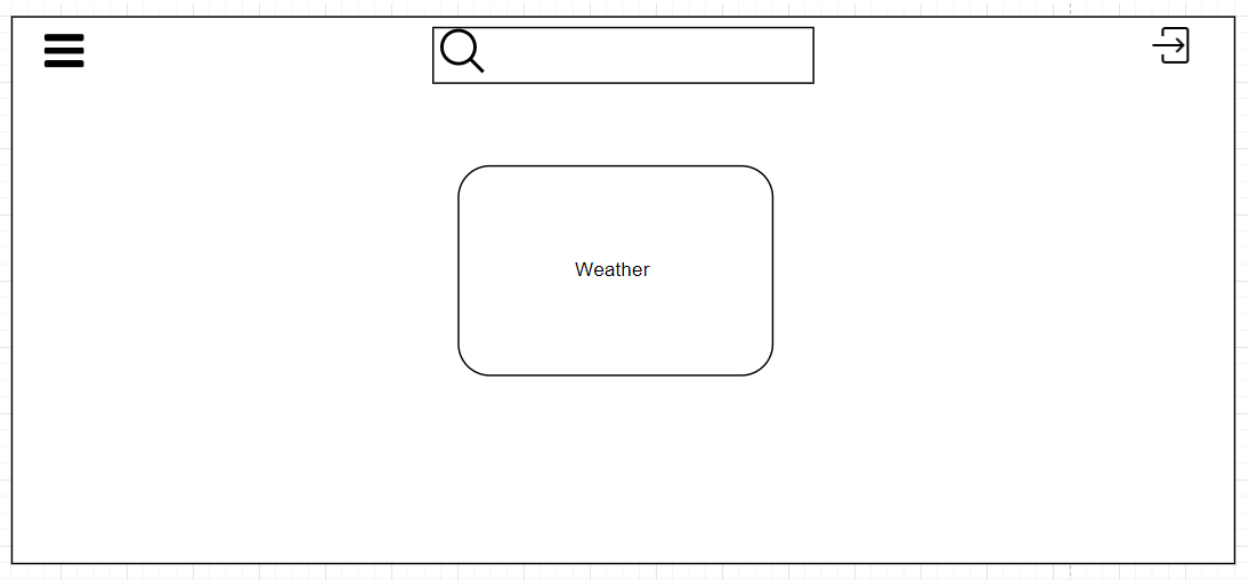

Figure 1 Conceptual Design Home

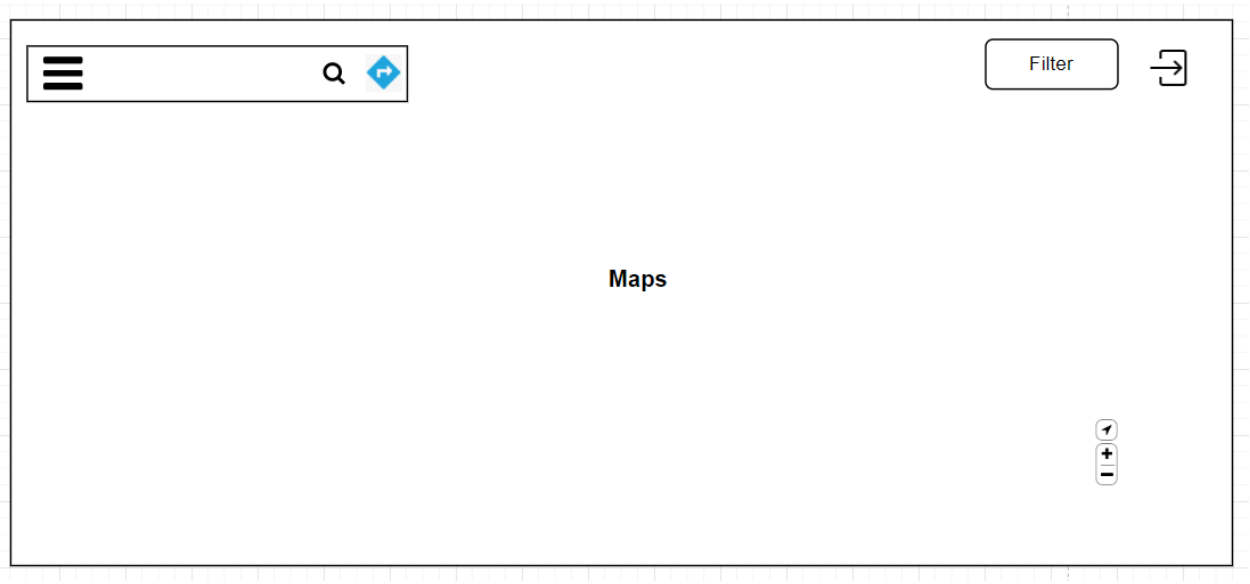

Figure 2 Conceptual Design Maps

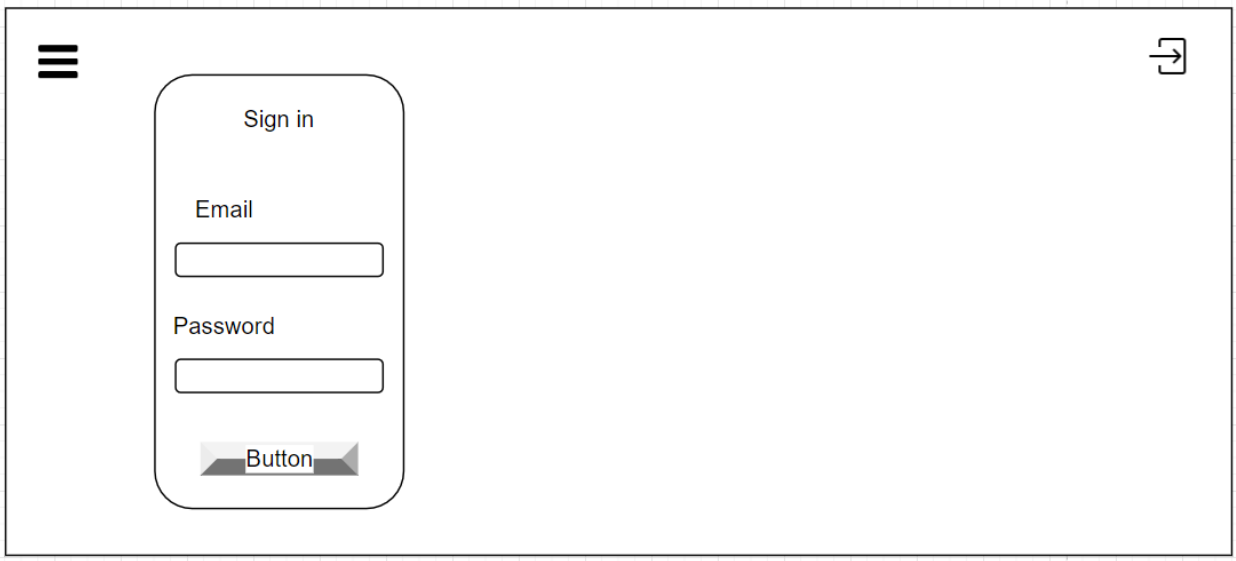

Figure 3 Conceptual Design Login

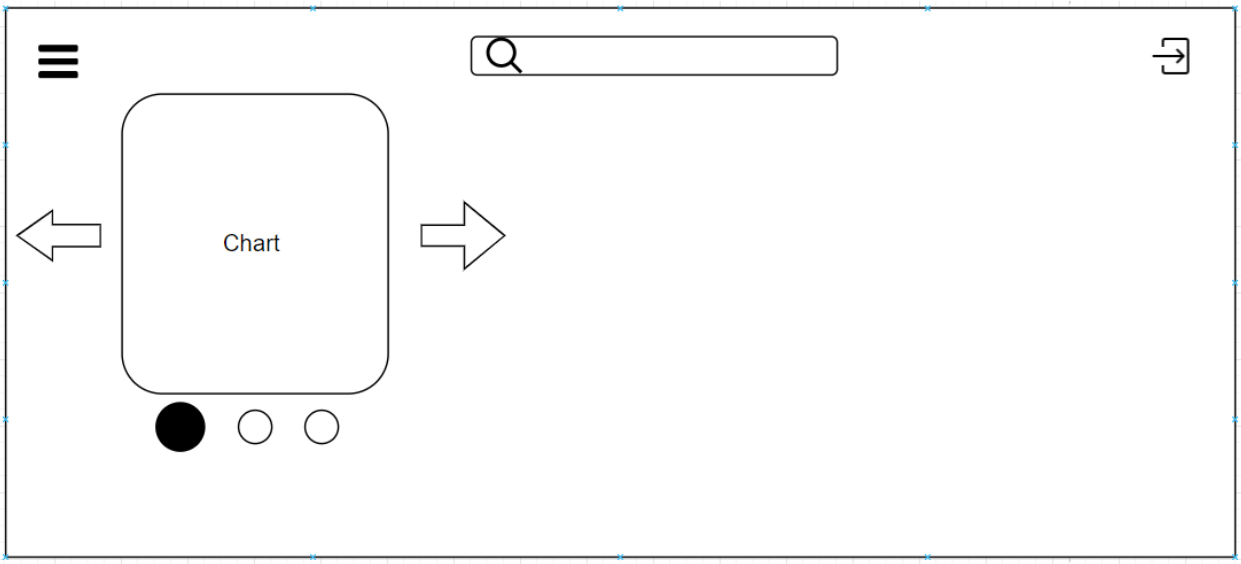

Figure 4 Conceptual Design Charts

3.2 Five Dimension of Interaction Design

Methodological and attitudinal processes are combined in interaction design. A process is a broad framework for designing anything, such an iterative, spiral, or waterfall process. Compare the design and user-centered approach to lag methodology.

In the introduction Interaction Design, Gillian Crampton Smith and Kevin Silver that there are fifth dimension to an interaction design language. The five dimensions of the language of interaction design are: word, visual representations, physical objects or space, time, behavior.

1D Word: it is easiest to use for human-computer interaction because word is a language for communication.

2D Visual representation: include diagrams, icons, and other graphics which users' interaction.

3D Physical objects or space: in order to control the user's spending, it is related to the mouse, keyboard, and other devices.

4D Time: For interactivity, such as music, animation, or other methods of providing the user with information and other experiences

5D Behavior: It involves a responsive action that is readily adaptable to the user to assist the platform application resemble the system for simple user interaction.

With five dimensions of the language of interaction design, they've been applied to a lot of my design.

This dimension "Word" used to show semantics, meaning and nature of interactions. Words have a great influence because we have the ability to process information quickly when relying on semantics, implications and profound influence on the content we mention. Using words intelligently makes it easy for users to interact. With what I said above, the terminology we need to use must be familiar to the audience we are targeting must be consistent with the product as a whole.

The next dimension is "Visual representation" When I employ this dimension, it's not like the items above; instead, I use more potent aspects that are verbally silent but nevertheless assist us digest information and comprehend meaning more quickly. concepts quickly and efficiently, and there may be deeper meanings associated with them that we as designers want users to comprehend fully. We are all familiar with 2D pictures nowadays since they offer instant benefit and explanation.

The third dimension is "Physical objects or Space" this is tangible means of control, such as keyboard, mouse, keypad, … Most user objects interact with the computer through controls that make it easier to interact with the computer, it also makes it more convenient for the user to interact.

Activities, representations, or responses of the aforementioned that are largely visual are included in this dimension. By synchronizing the user and the system, we can quickly change it so that the answer is the same while engaging with the system.

Designers interact with people through offering products and services. Understanding what the designer is attempting to convey to the user is made simpler by better design. The five dimensions of the interaction design language are the tools we have at our disposal to communicate to users that clicking the "login" button is what we want them to do. When we use words that are poorly

chosen, images, symbols, and styles that are simple to misinterpret, when we use tangible interactive devices that are not appropriate for the task at hand, when the user's time is cut short or their behavior is negatively impacted, the user experience is impacted, as are potential customers who continue to use it. due to the fact that they enable you to effectively and strongly interact with people.

4. Prototype

I'll offer a quick overview of the mid-level prototype in this part. This medium prototype contains restrictions and can only be used when a certain spot is clicked. This is how my prototype is set up for scripting or user planning. For my mid-level prototype, just a few of the key features and information for the product I'm developing are offered. This means that we only concentrate on key aspects like the weather prediction for skiers, geography, and local characteristics because design compatibility is everything. Wireframes are almost certainly connected to form interactions.

The medium prototype offers interactions that are the answer, and the prototype's final product is for testing so that others may judge whether or not my proposal is sound. In order to provide the most genuine interactions for them, we have gathered information when investigating the prototype mid-level. With the help of the information above regarding a mid-level, I can filter out superior ideas.

We learned a lot about the design during this stage of the project, as well as about the benefits of working at a medium degree of realism. As follows:

- Working with a medium level of fidelity permitted us to rapidly and efficiently (in terms of time invested) build a digital simulation environment in which we could test concepts directly related to functionality and feature sets without requiring either ourselves or users to consider the look and feel.
- Working with this medium quality tool in particular (Balsamiq) allowed us to combine several user flows and features into a single environment where the look and feel would be consistent, eliminating user distractions from variances in drawing ability.

Working with this prototype has just one genuine drawback: although I can simulate the digital world, the user cannot interact with the final product in its actual context. We are thus quite irate about the design features that are also a major cause for concern while employing this kind of prototype.

While consulting the documentation connected to the app and using the information from the previous part, I learned new capabilities for my system and designed it to be user-friendly for skiers. I've been considering, looking into, and posing questions about how we may add some extra features to the app to make it more user-friendly for users to perform several heart rate health checks. I have discovered and researched it in order to easily match or engage with them, whether it be body temperature when skiing.

From the application's use and support. We can build interactive, working web page prototypes thanks to the program. I need to put my attention first on being an expert widget user before coming up with concepts and developing my website.

The goal of this design prototype is to help skiers. Since skiing is a sport that can be highly dangerous for participants and involves many different factors, I built it to assure skiers' safety while they are participating in the activity.

4.1 Prototype of Axure in Medium large

Home page

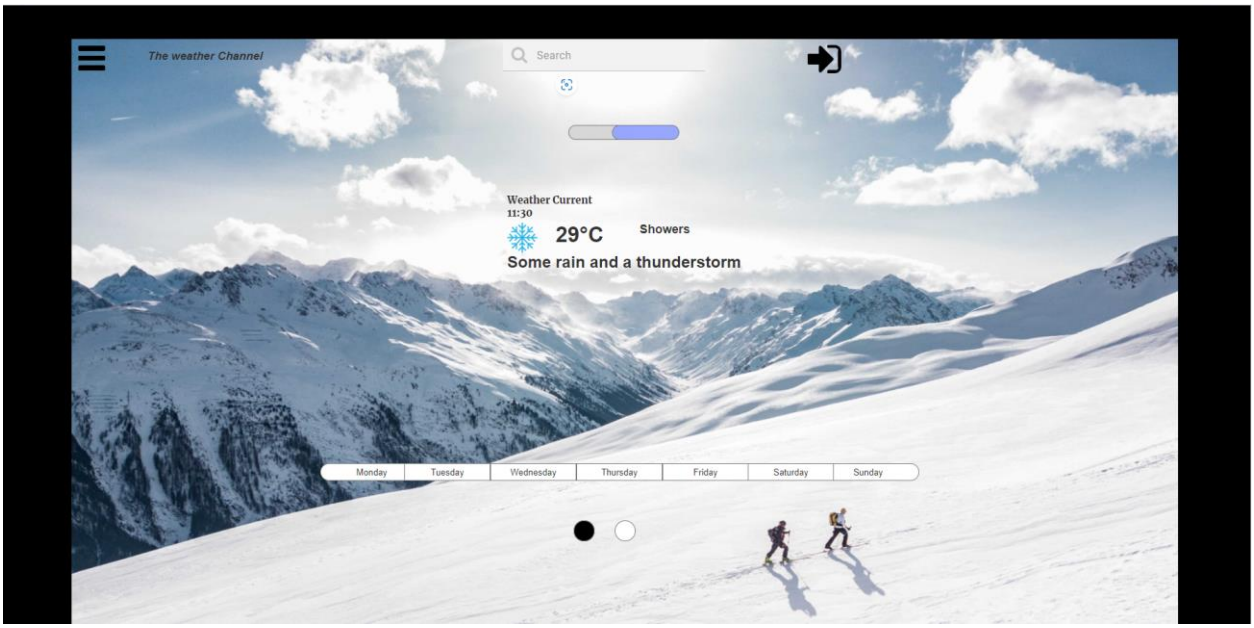

Figure 5 Home page

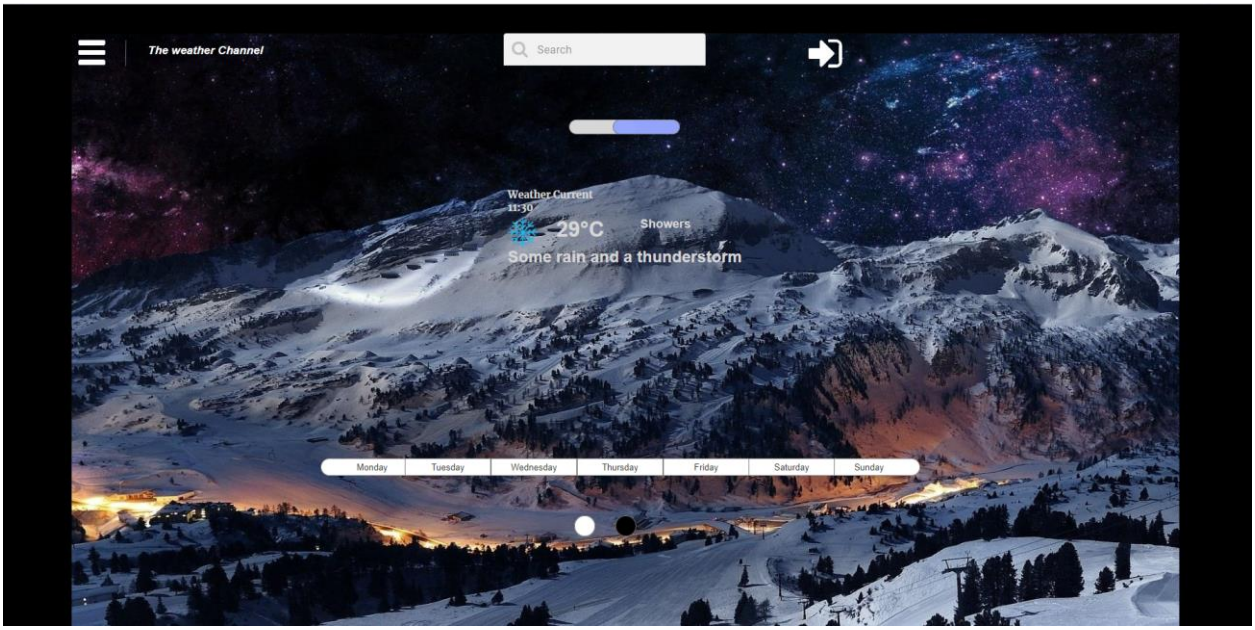

Figure 6 Home Page

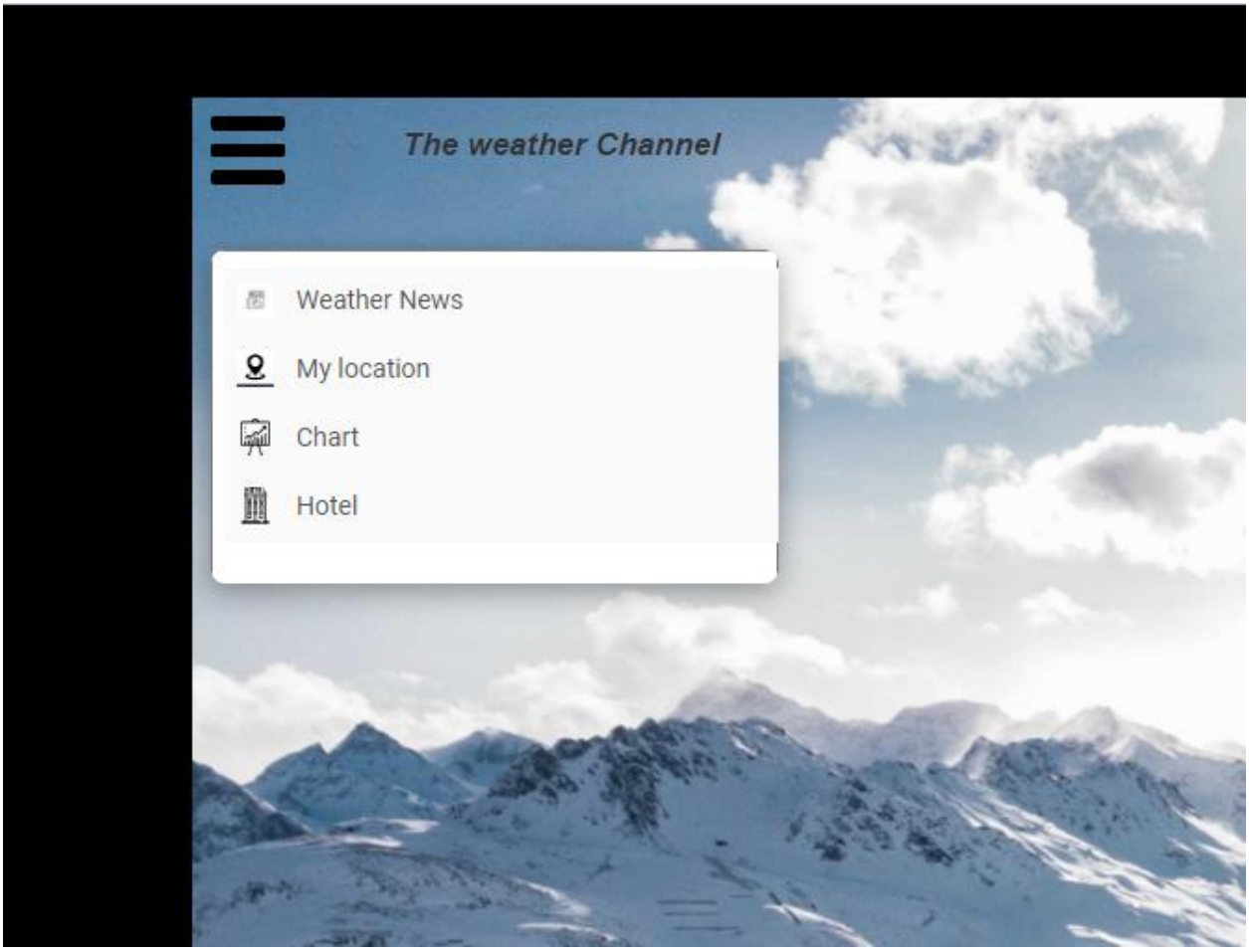

Figure 7 Menu

Maps Page

Figure 8 Maps page

Figure 9 Zooms button

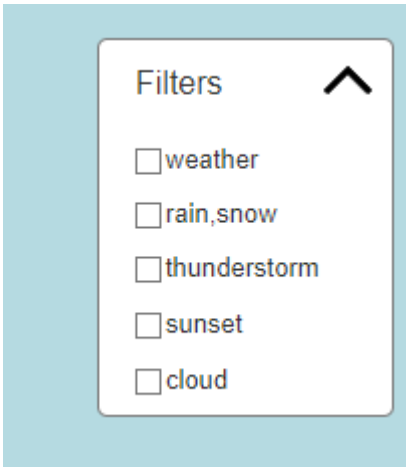

Figure 10 Filters check box

Figure 11 After check in the filters and show the icon

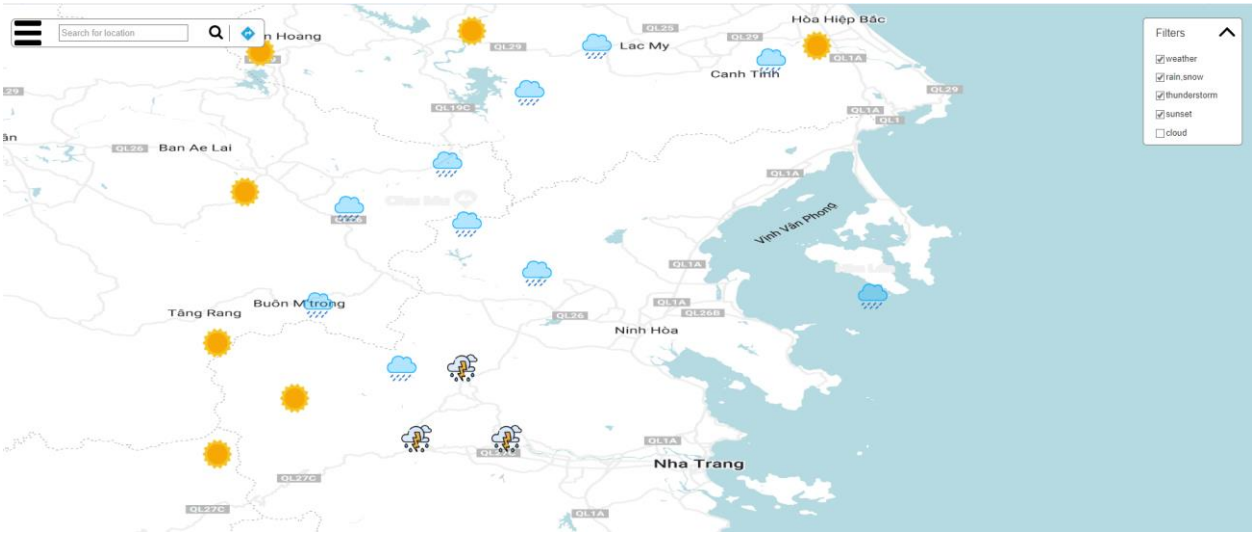

Figure 12 Show icon after click check box

Hotel Page

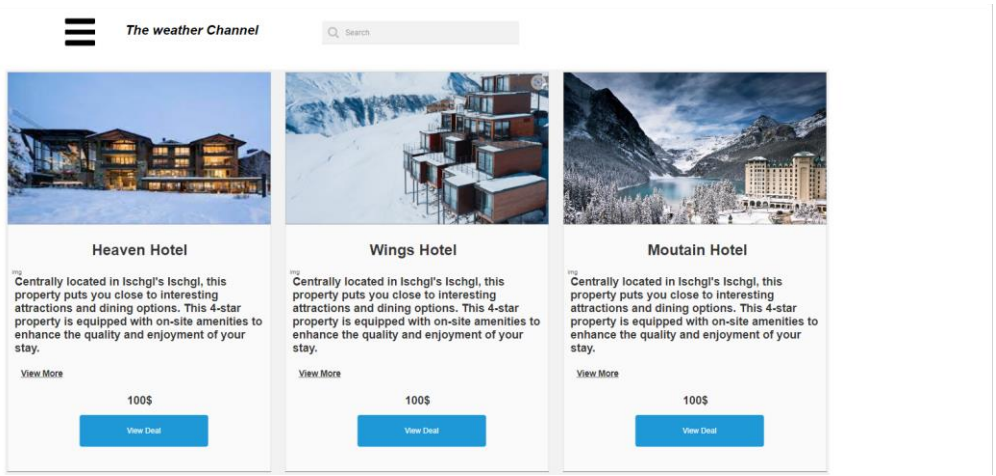

Figure 13 Hotel page

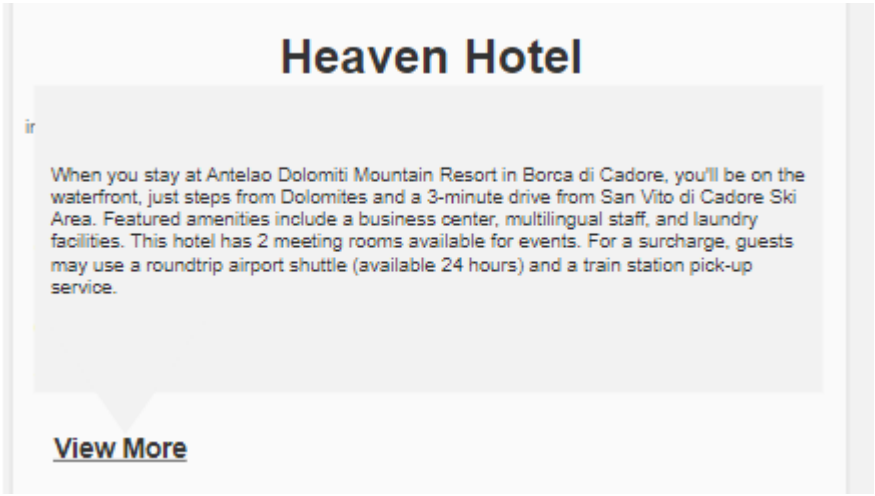

Figure 14 Interaction with View more

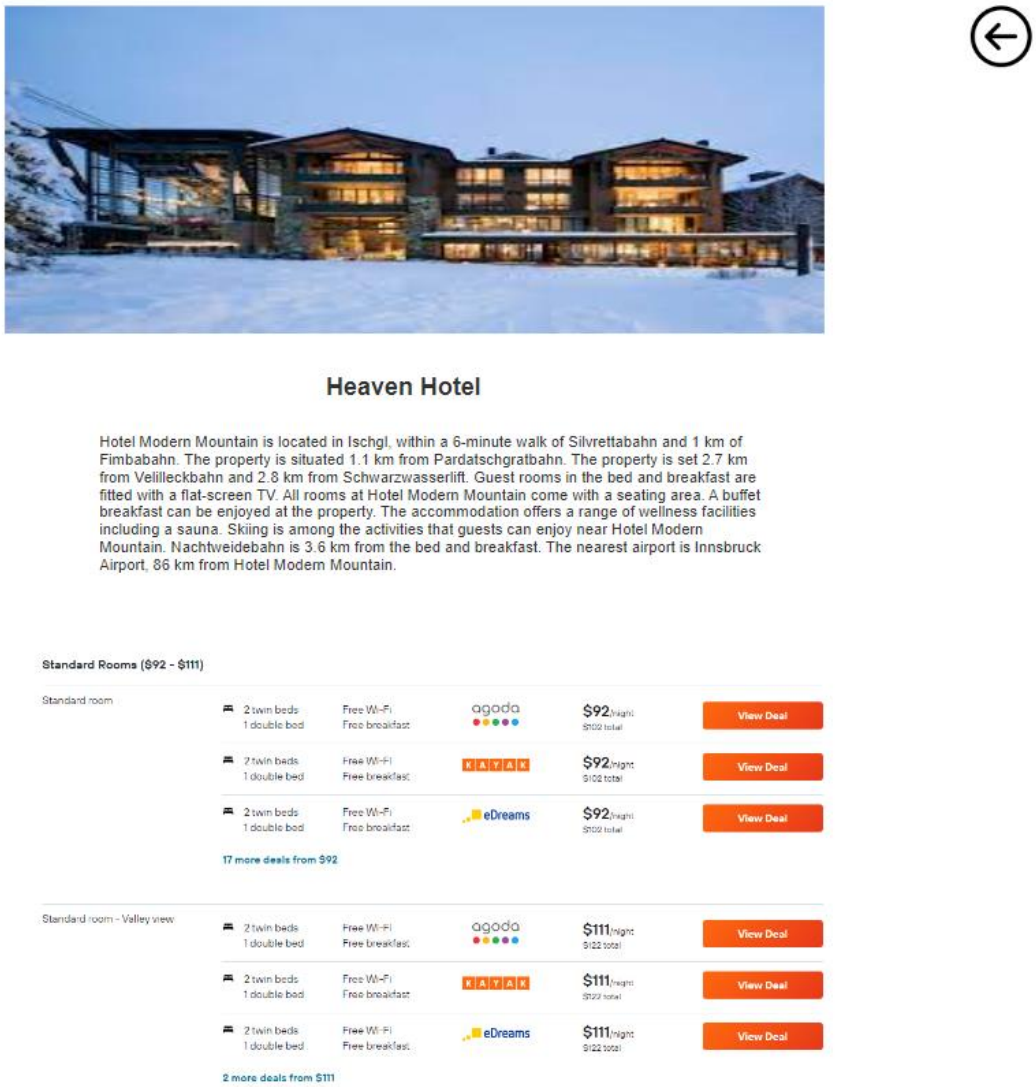

Figure 15 Hotel detail page

Chart Page

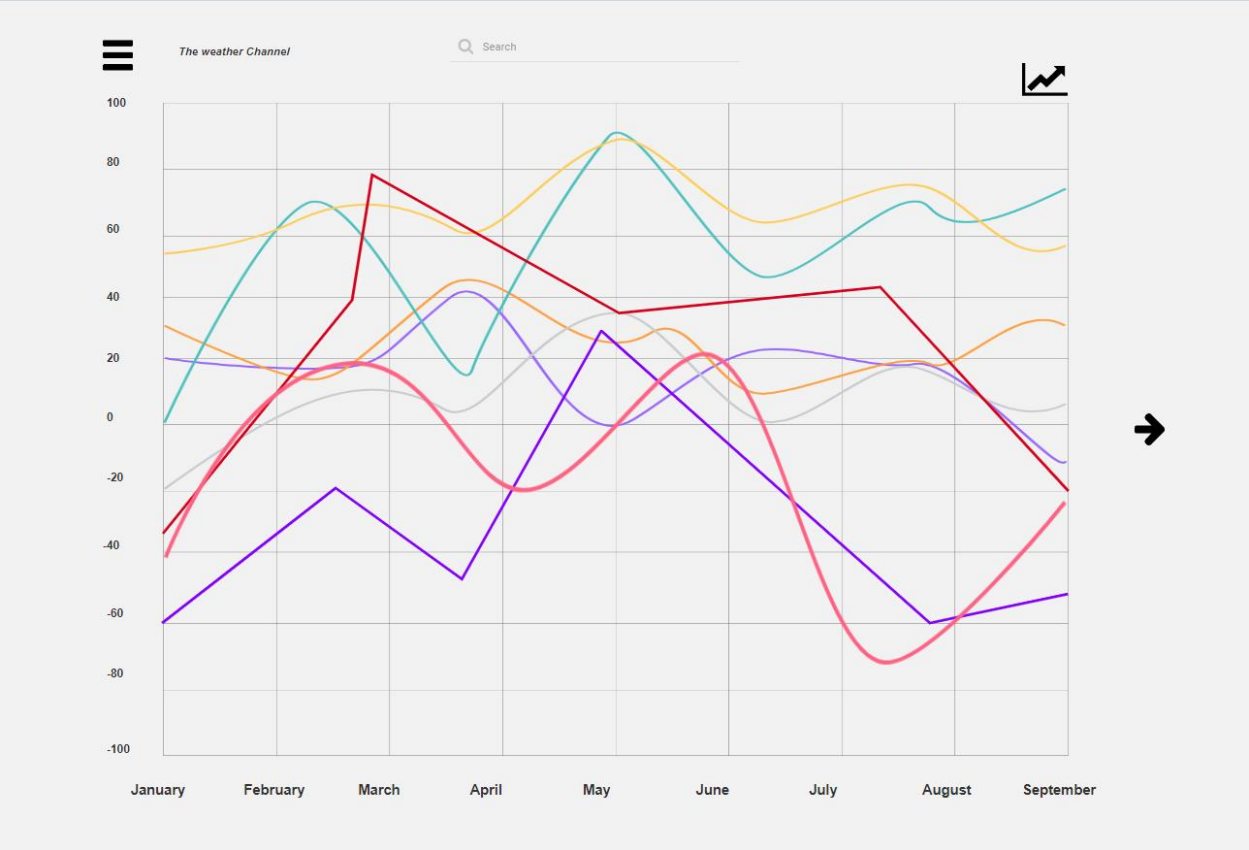

Figure 16 Line chart

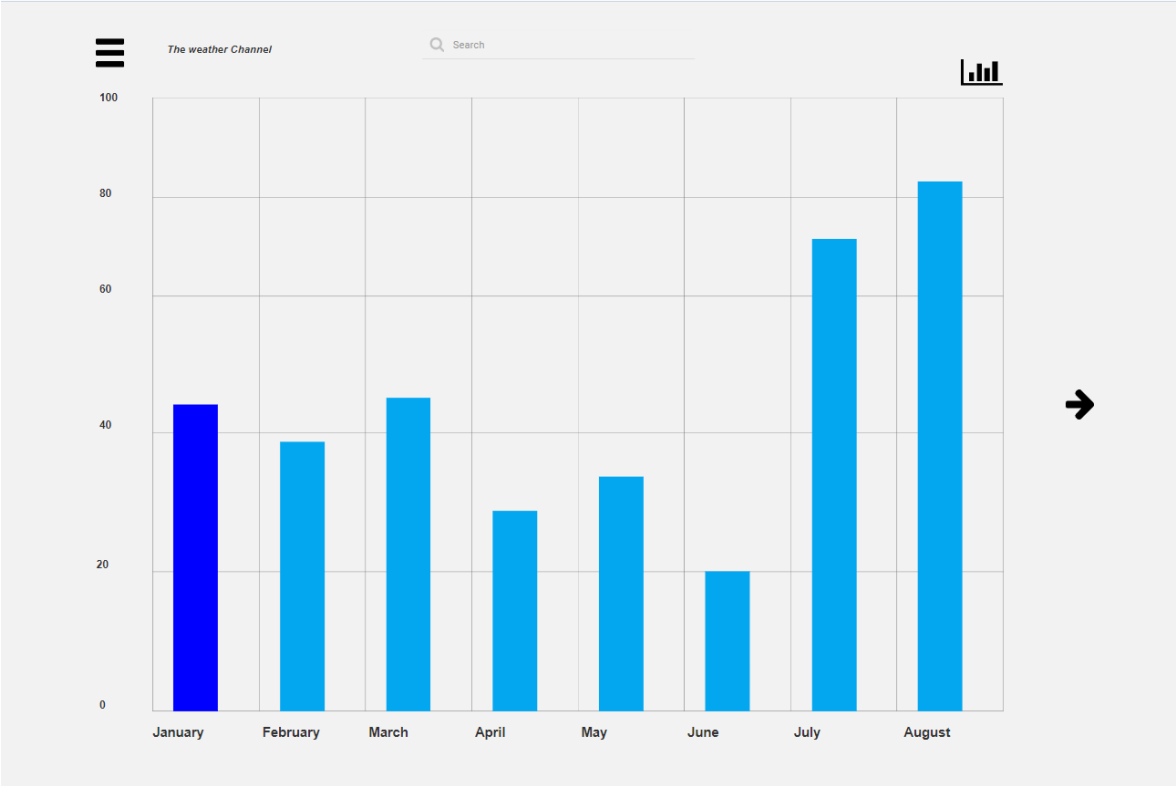

Figure 17 Bar chart

4.2 Prototype in another device

Home

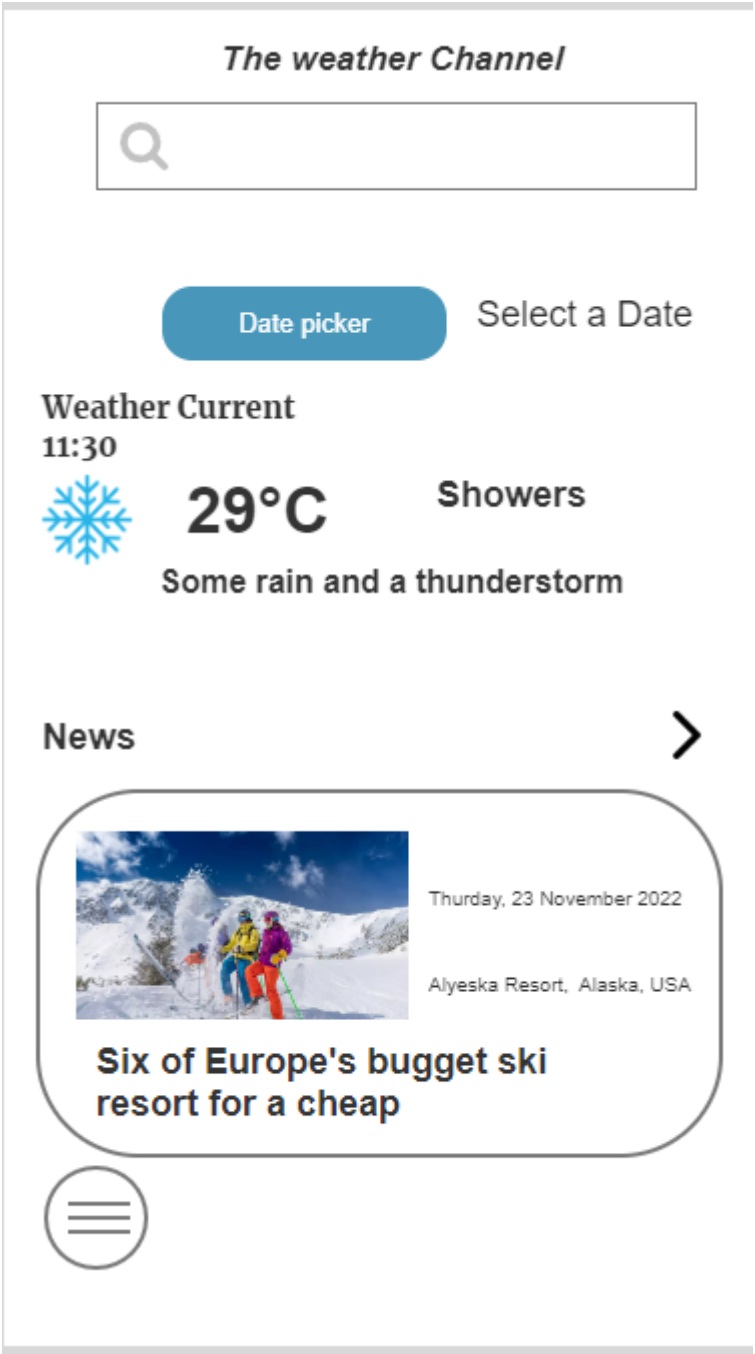

Figure 18 Home page in iPhone

Figure 19 Date picker

Menu

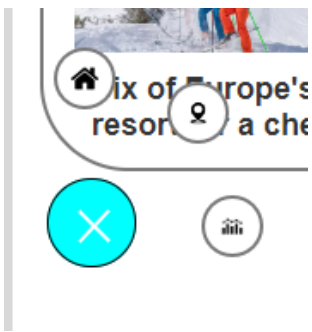

Figure 20 Menu

News page

Figure 21 News page detail

Health page

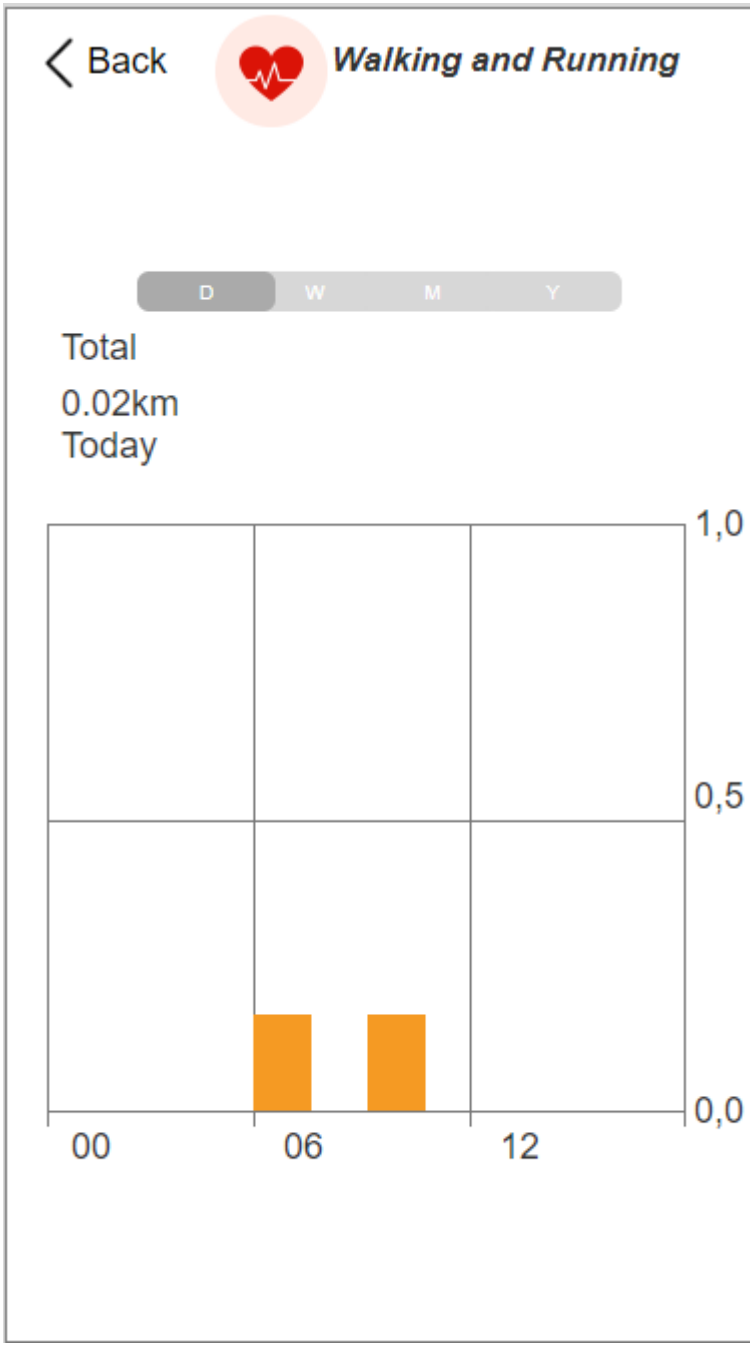

Figure 22 Bar chart in health page

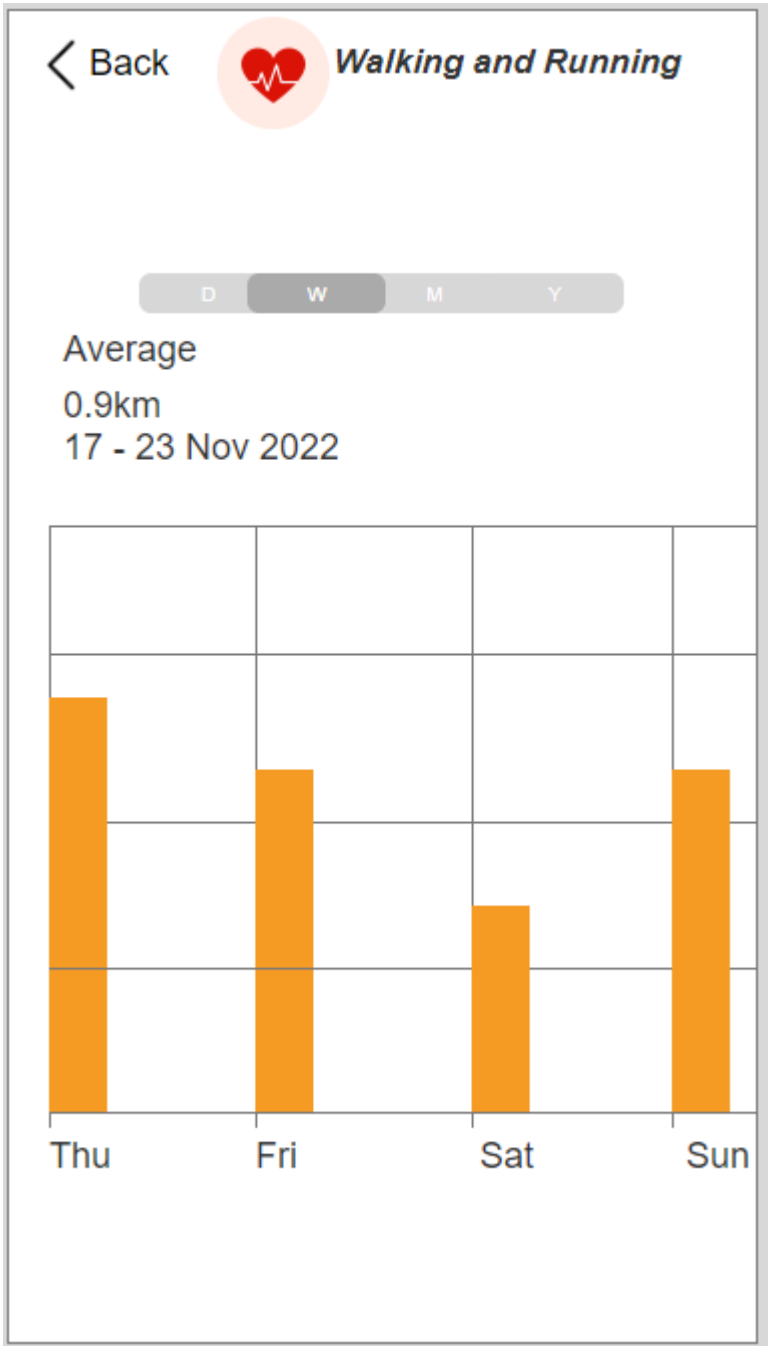

Figure 23 Bar chart in week

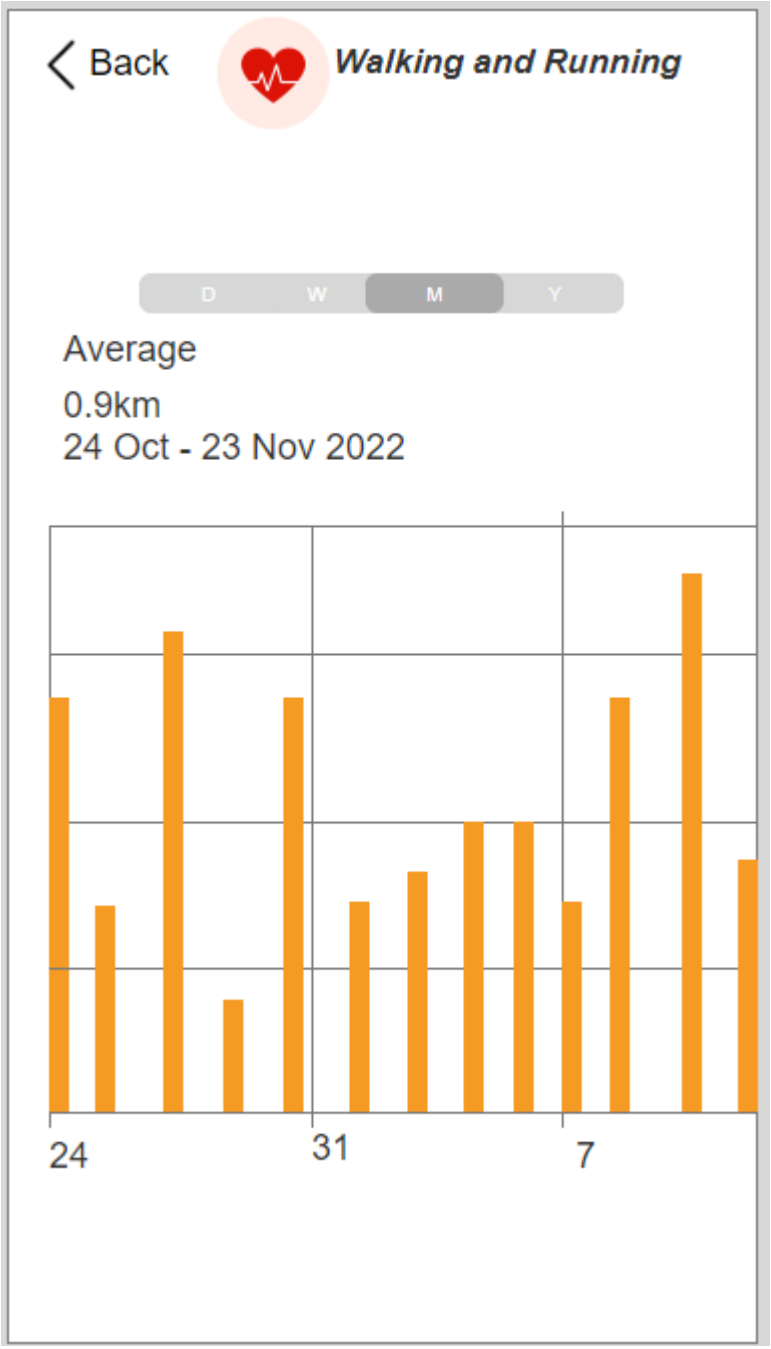

Figure 24 Bar chart in month

Map page

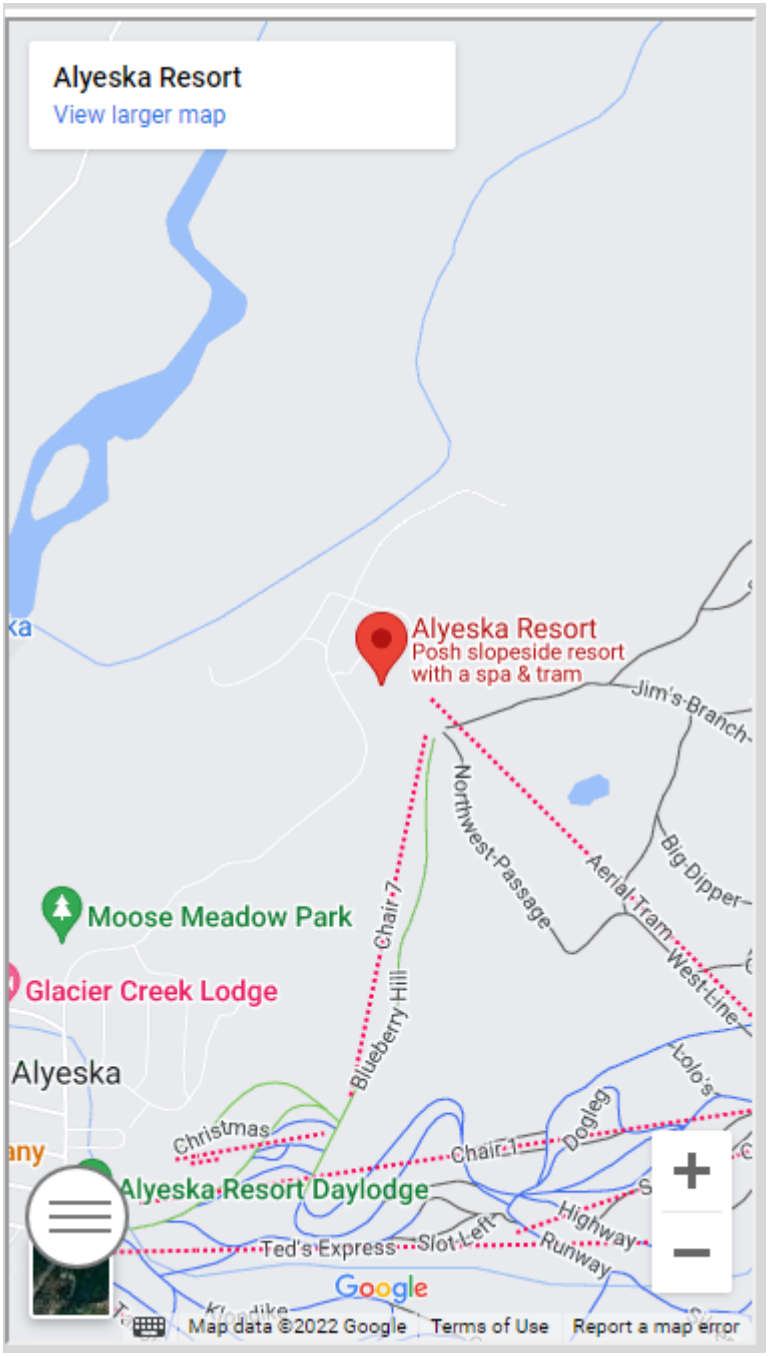

Figure 25 Maps page

Activity page

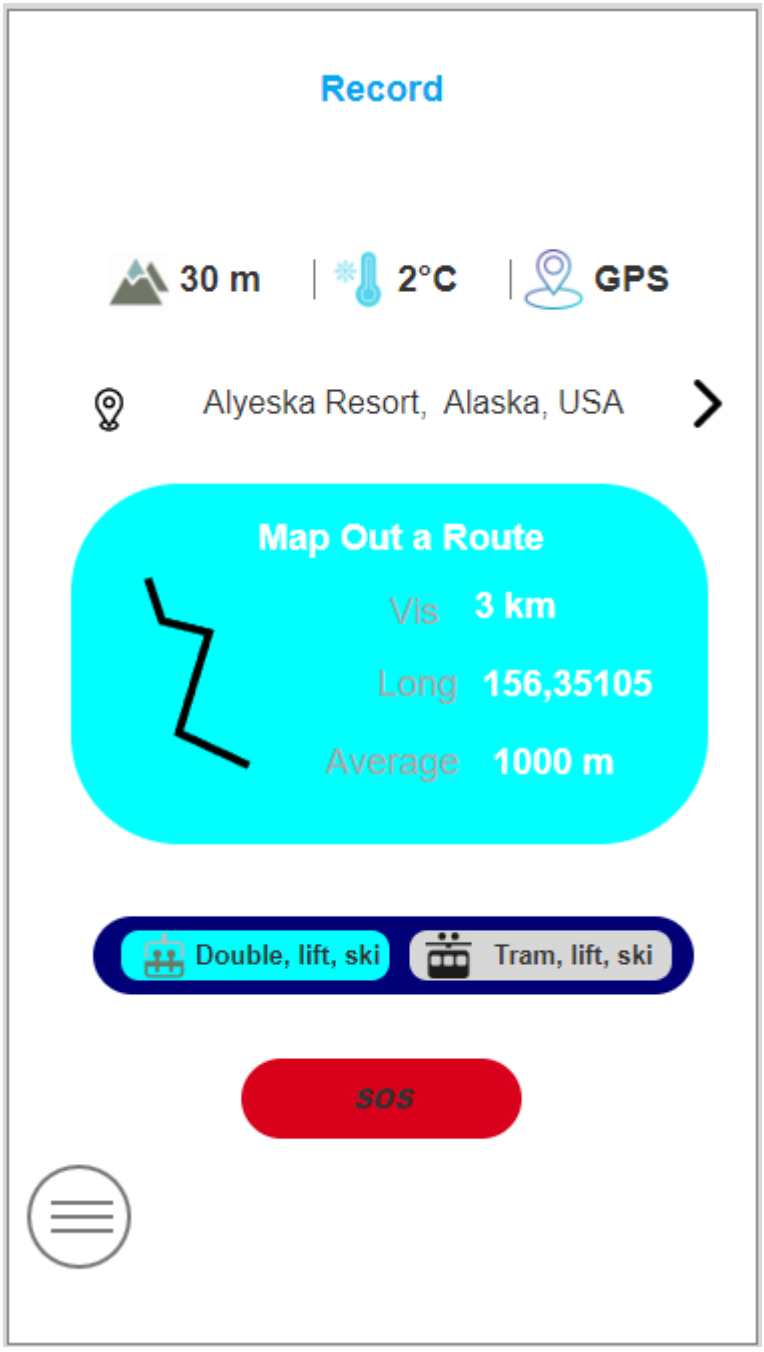

Figure 26 Activity page

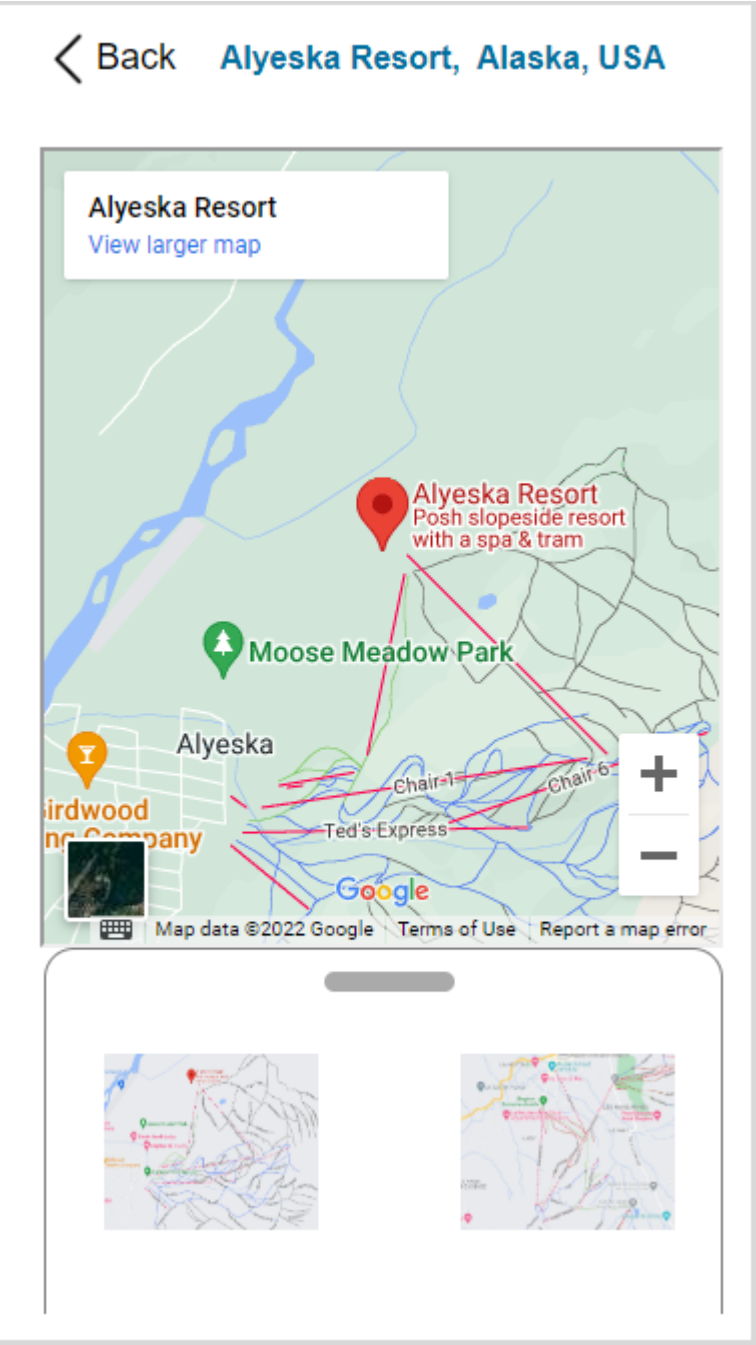

Figure 27 Maps page detail

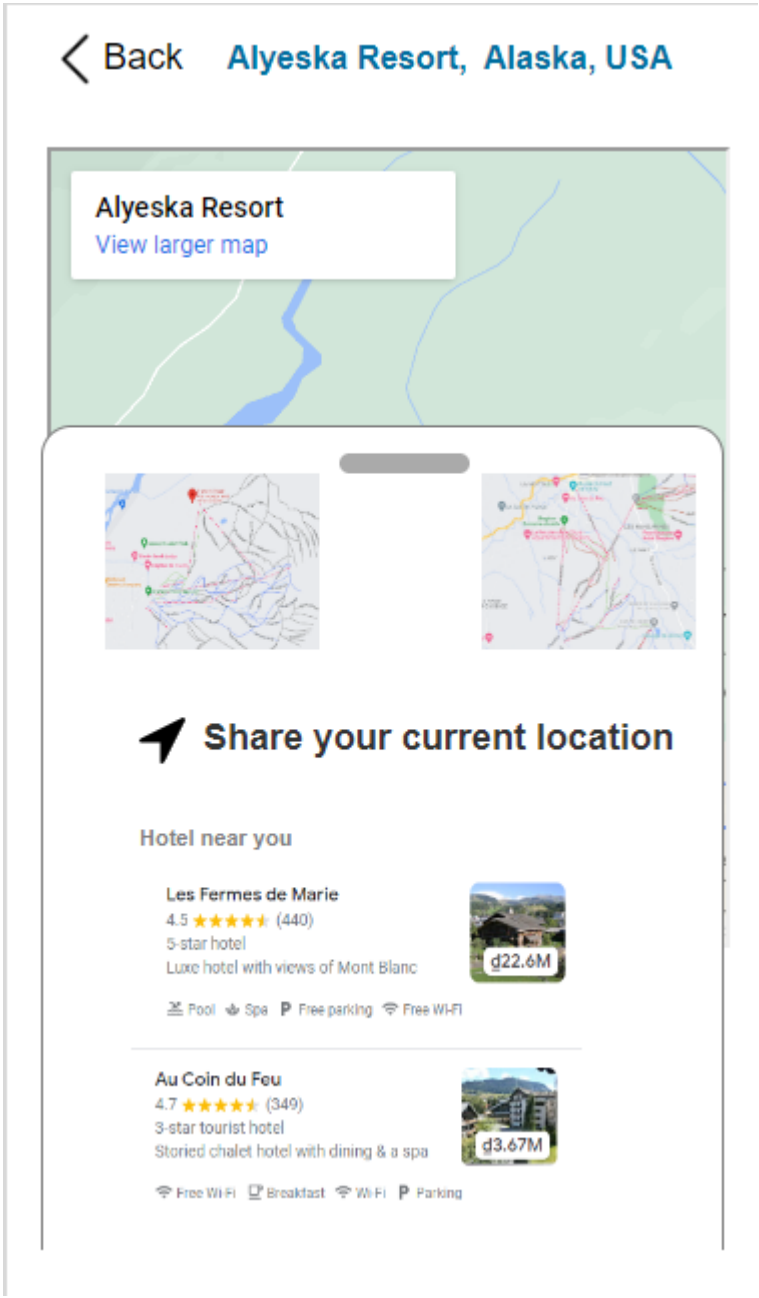

Figure 28 Show hotel near you

SOS Loading page

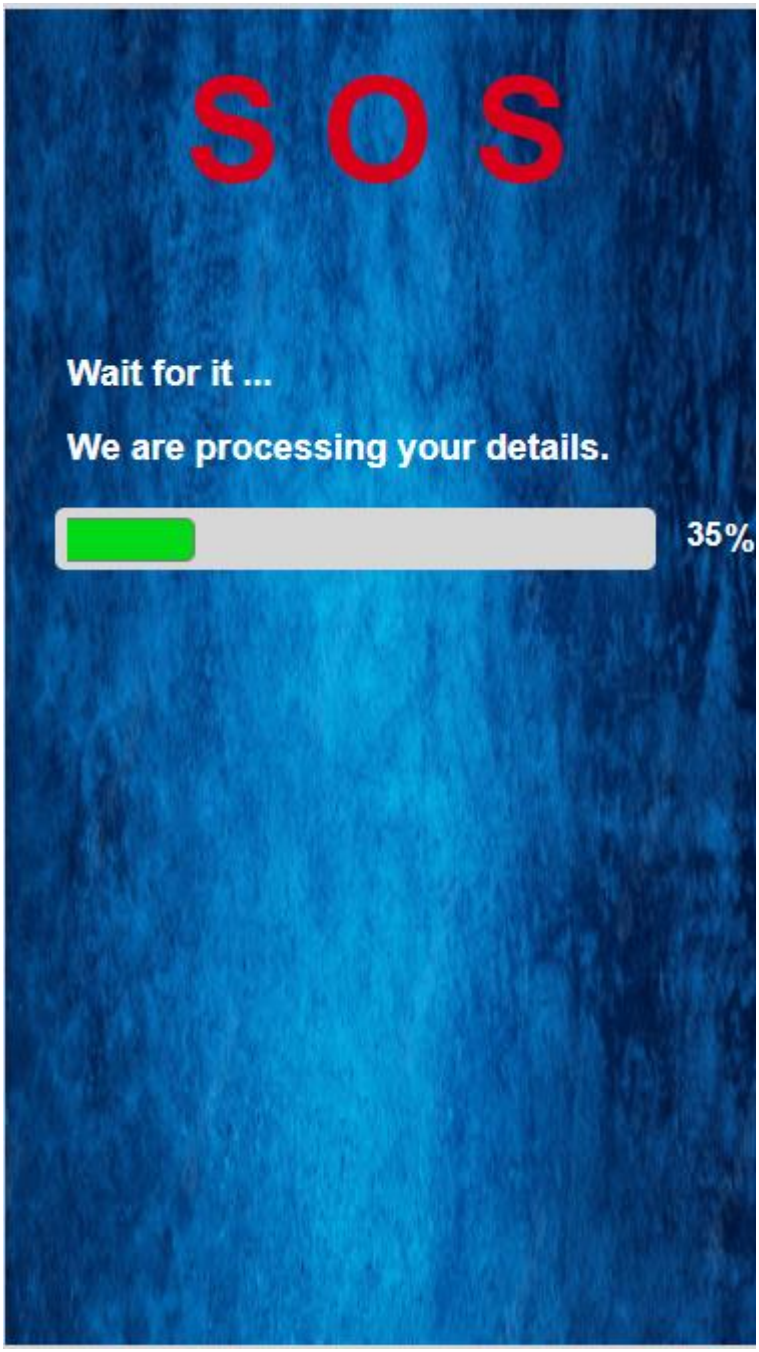

Figure 29 Sending the location SOS

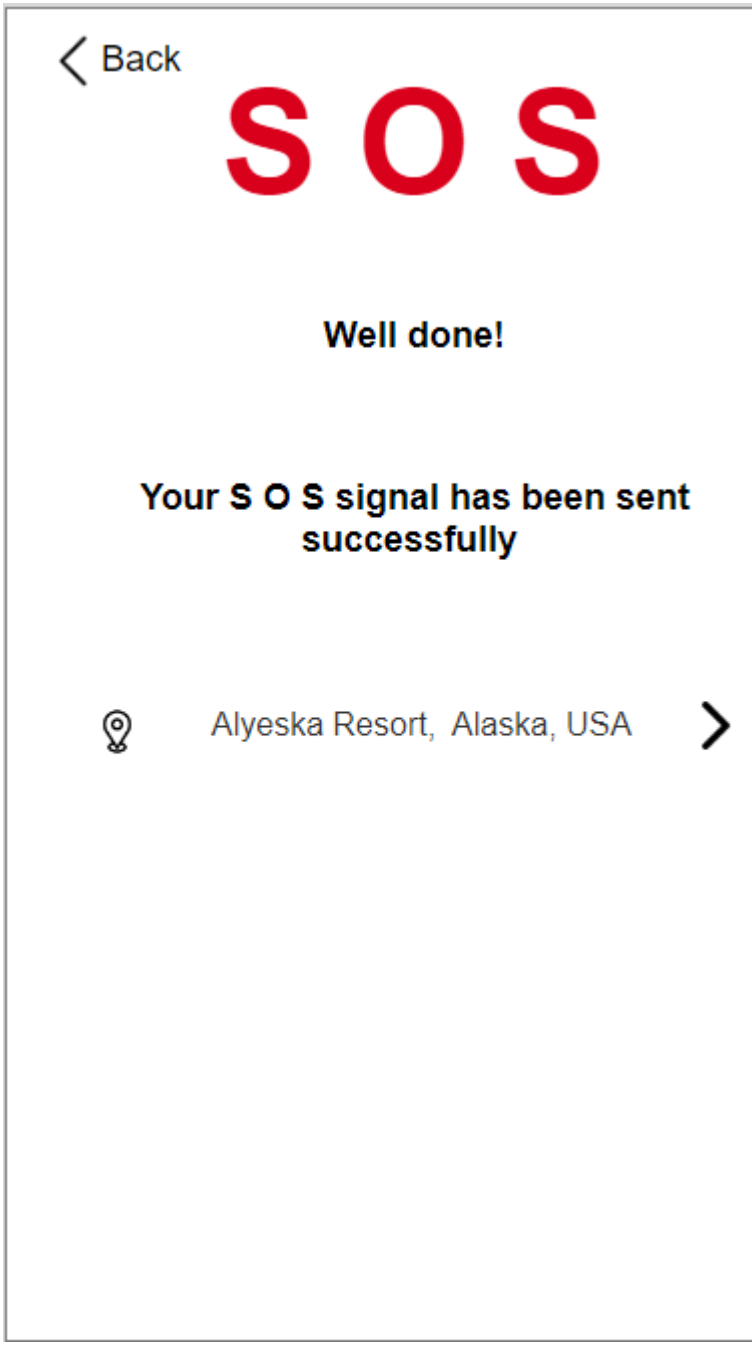

Figure 30 Page done

5. Research Study

Winter warming is a trend that has been projected in recent decades and is anticipated to get worse in the future, posing major problems for ski resorts and other locations. Winter is essential for tourism. The majority of the studies mentioned above focus on examining the consequences of climate change. We instead make advantage of thorough daily data. Calculate these effects as well as the impact of weather and snow in the mountains. provide insight into the problem-solving

methods of people. When arranging a trip, the majority of skiers consult the weather prediction, primarily online and on their mobile devices.

I observed that the majority of those who engage in this kind of sport are concerned about the issue of precipitation and precipitation variables because the study's findings show that they have a detrimental impact on the activity. Planning for snowmobile trails and road conditions is done, which may lead to the trip being postponed or canceled. These findings draw attention to the issue of rainfall as well as skier safety. Contribute as well so that I can keep learning new things from my research that will improve my ability to predict the weather and provide useful guidance for choosing a trip.

The following are questions about my research and what I learned from this survey:

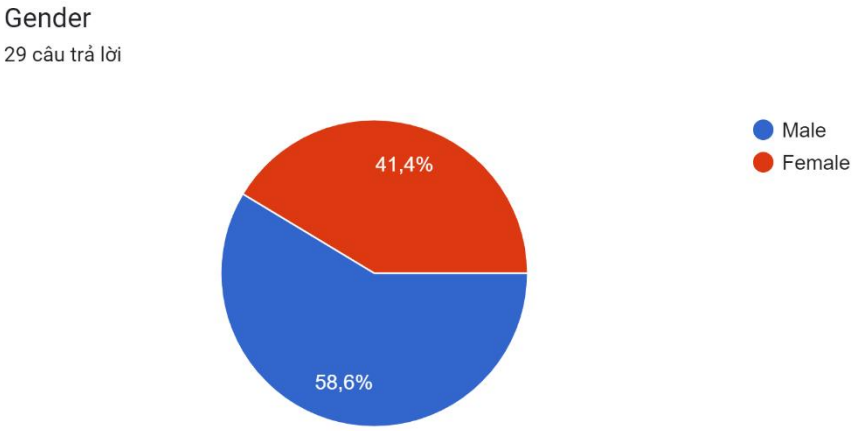

Figure 31 Pie chart survey

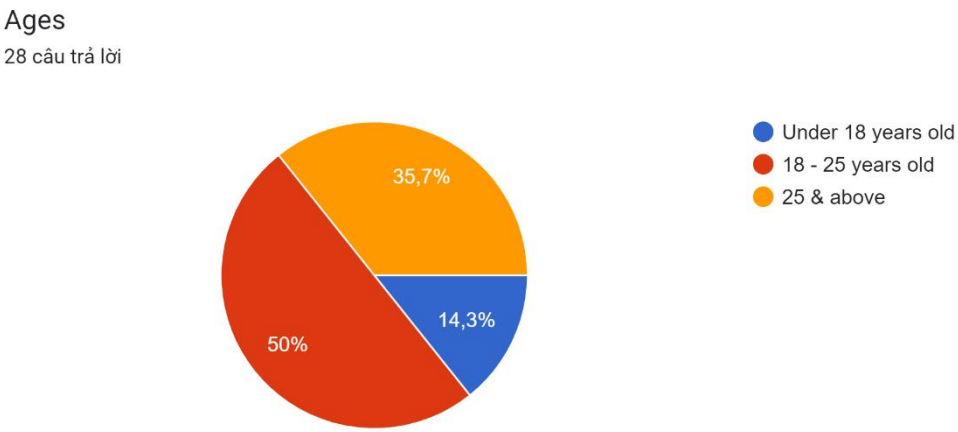

Figure 32 Pie chart survey

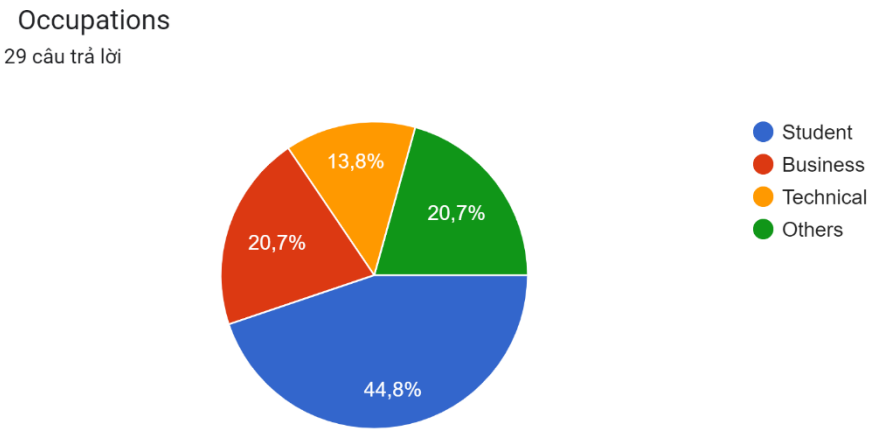

Figure 33 Pie chart survey

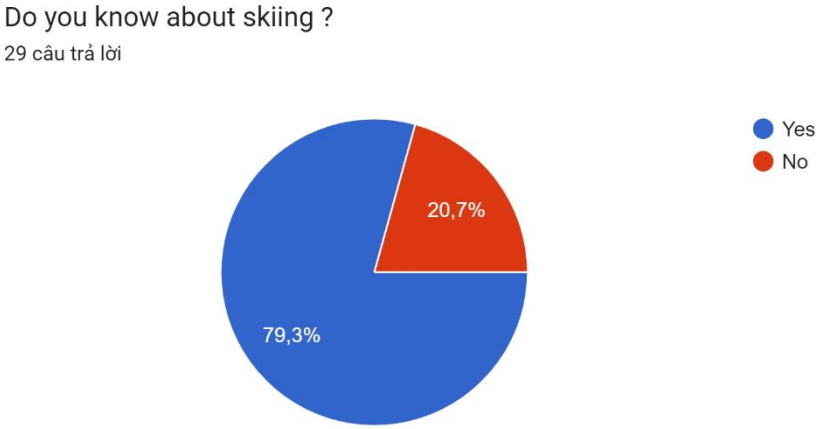

Figure 34 Pie chart survey

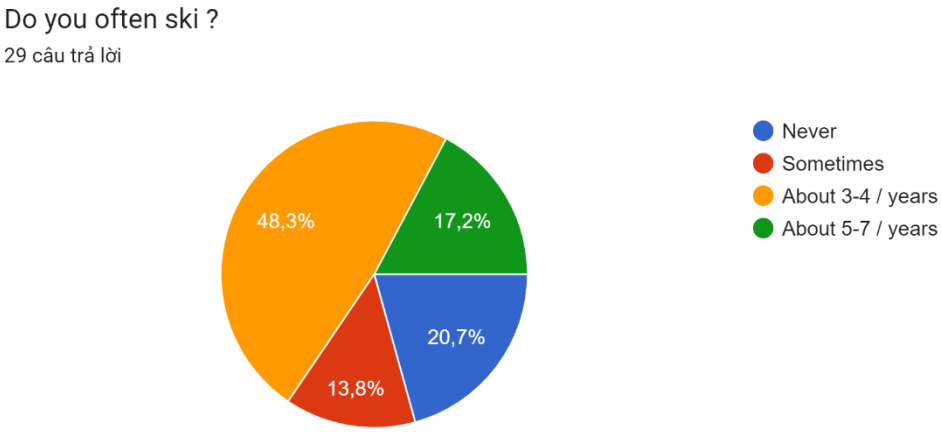

Figure 35 Pie chart survey

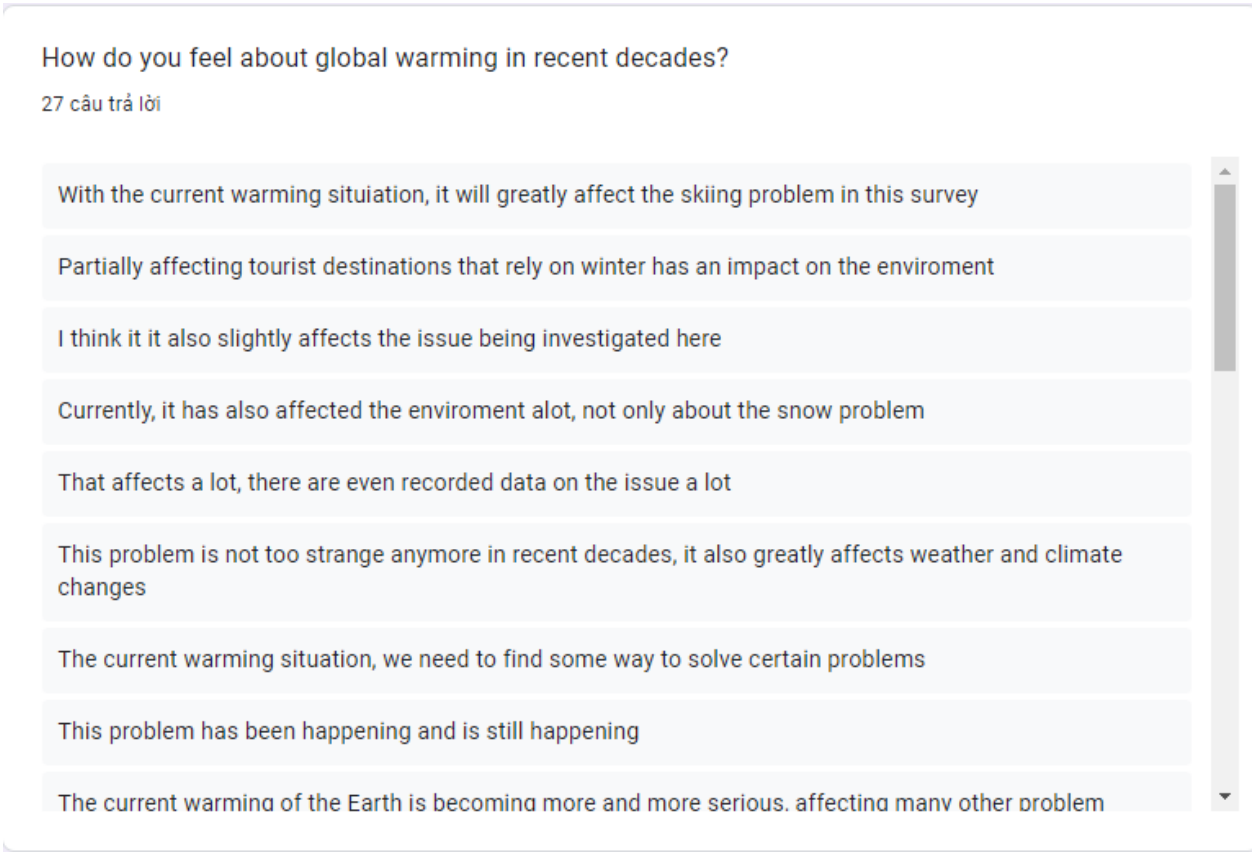

Figure 36 Answer the survey

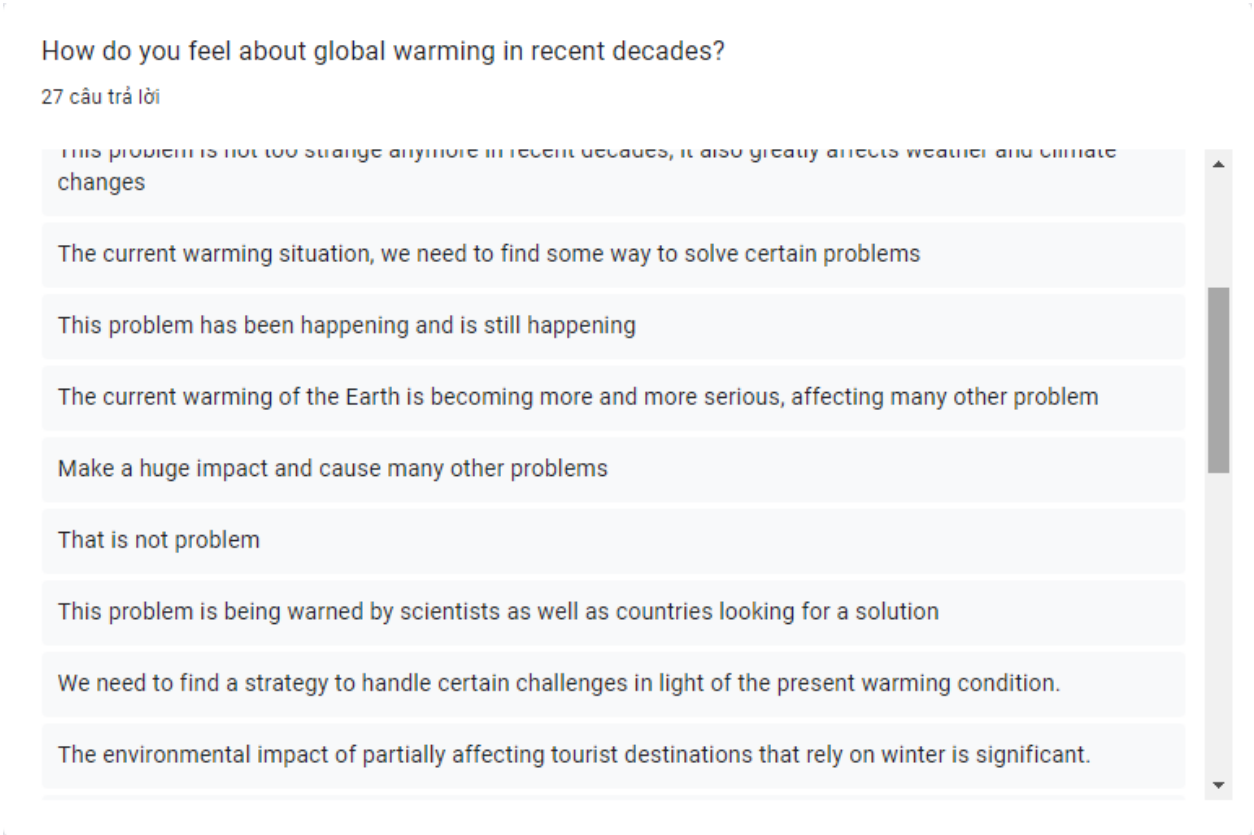

Figure 37 Answer the survey

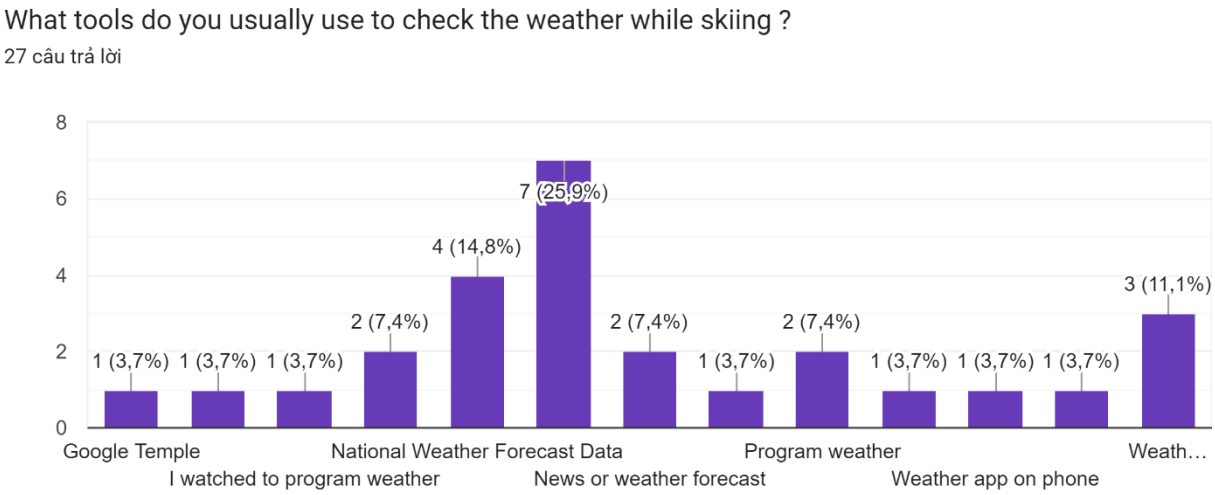

Figure 38 Bar chart the survey

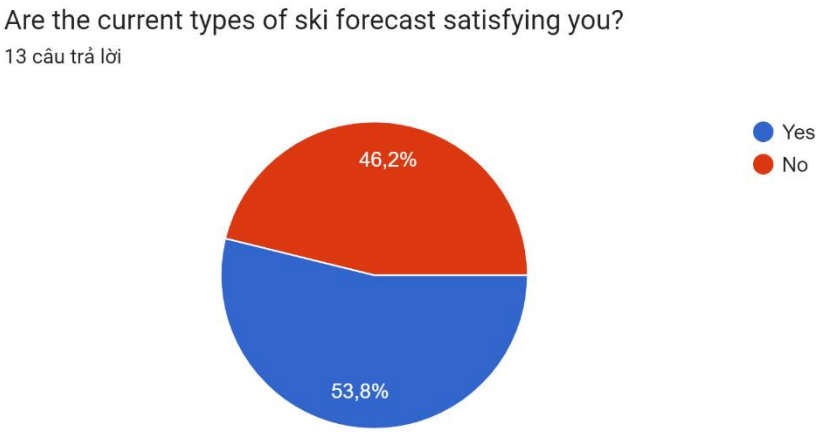

Figure 39 Pie chart survey

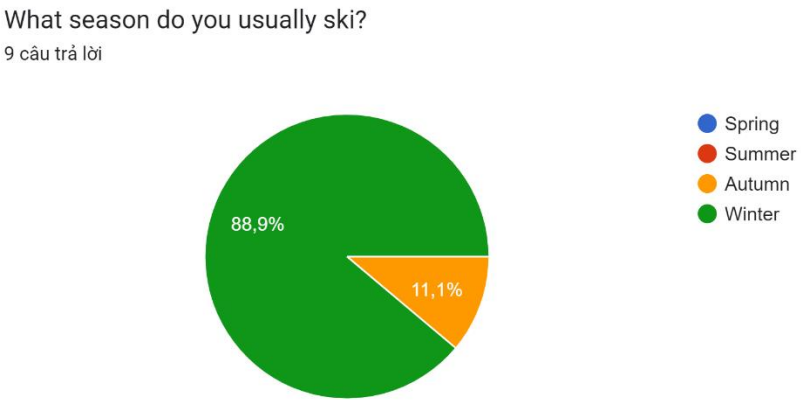

Figure 40 Pie chart survey

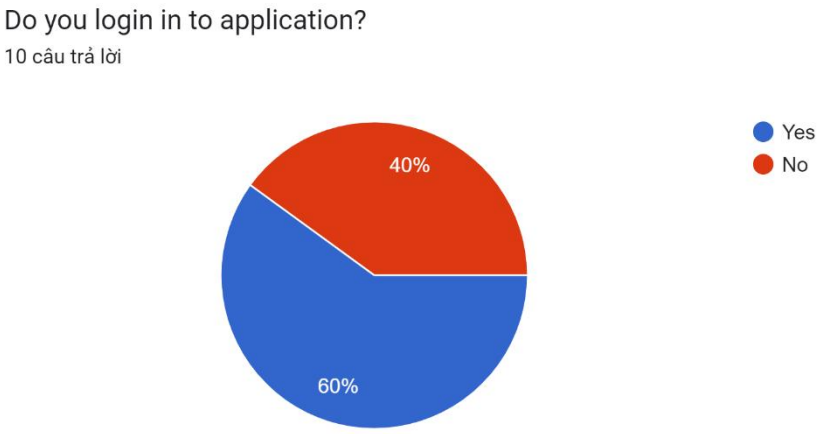

Figure 41 Pie chart survey

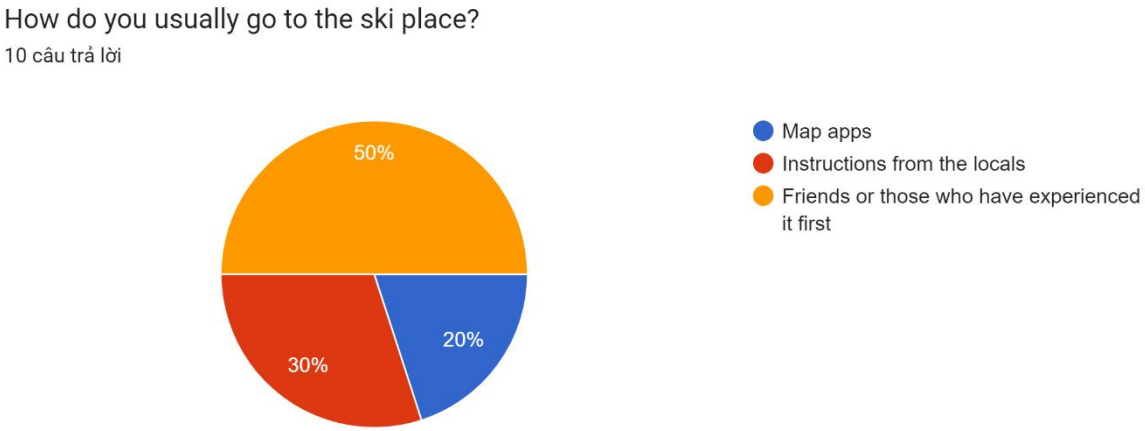

Figure 42 Pie chart survey

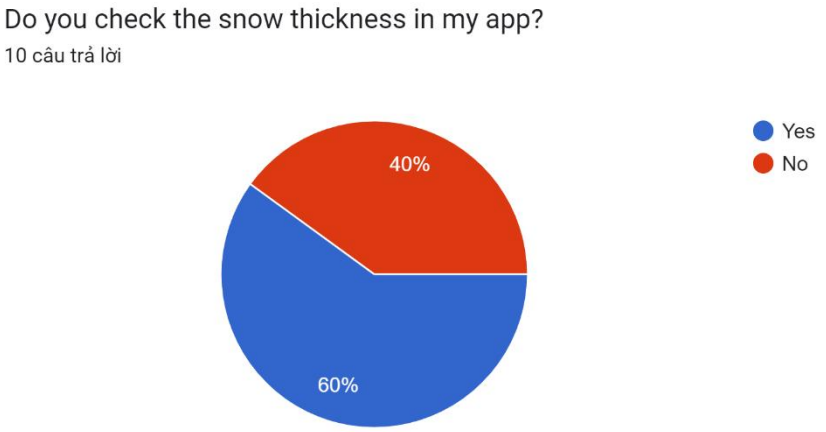

Figure 43 Pie chart survey

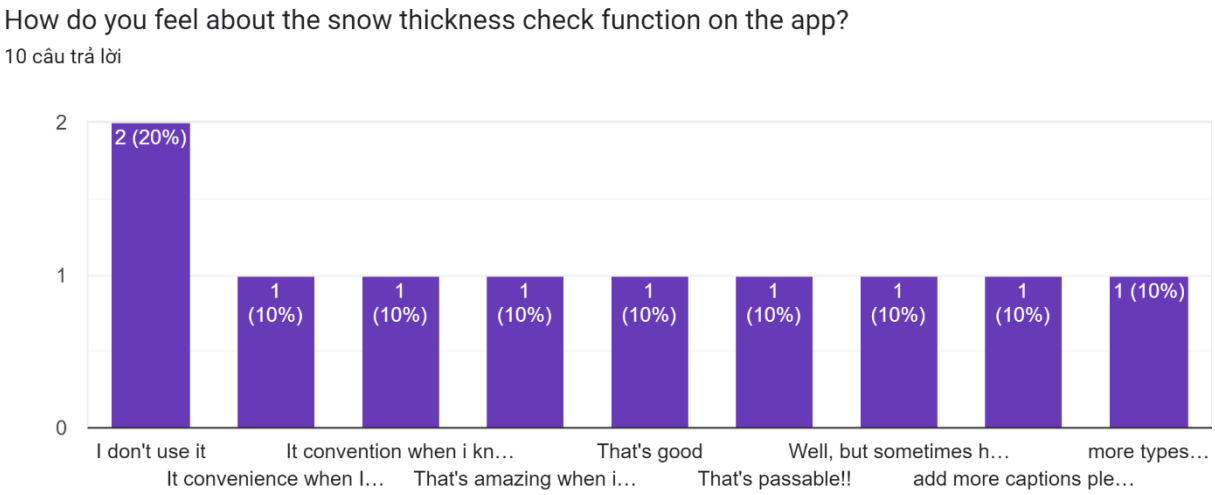

Figure 44 Bar chart the survey

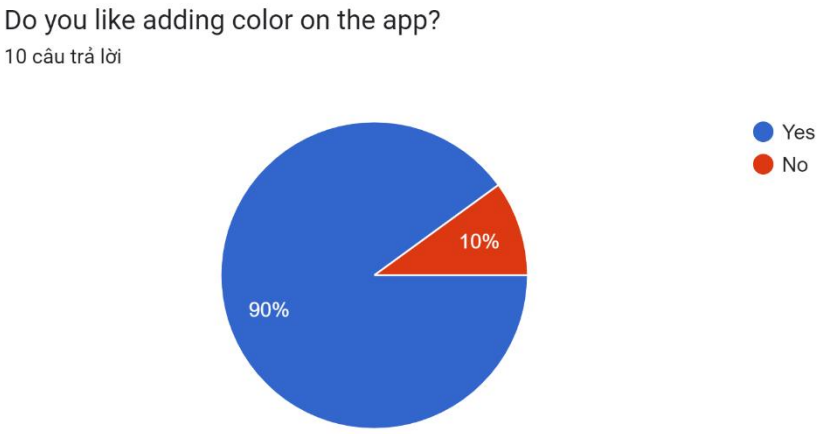

Figure 45 Pie chart survey

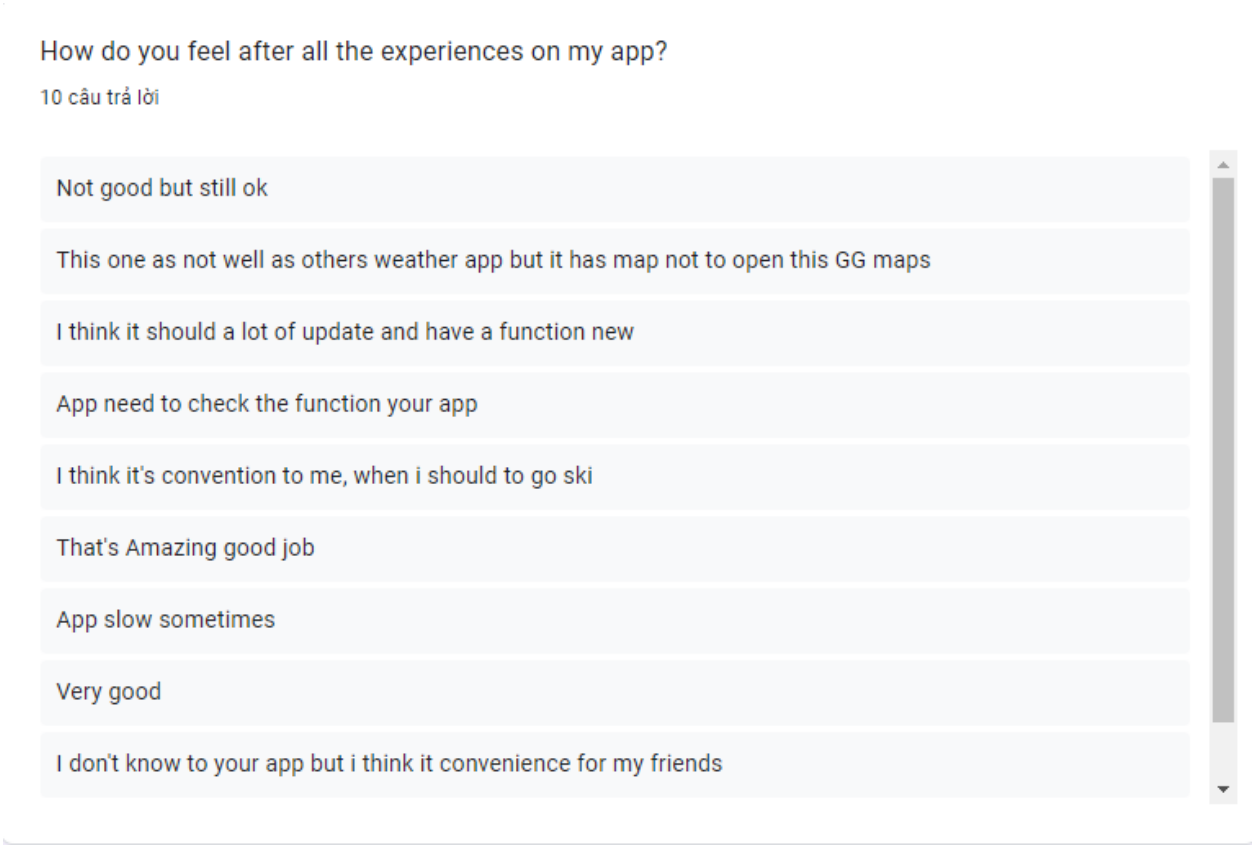

Figure 46 Answer the survey

According to the poll questions, the age of the profession demonstrates that everyone is interested in skiing and everyone appreciates the activity, but also because of some environmental challenges that are now impacting a portion of the population. As a result of that process, I explored methods to prevent those challenges, and I performed my study and came up with a weather prediction for skiers that worked for them.

Analyses based on research and surveys give information on the possible implications of climate change on the ski industry and the general preferences of ski resort tourists, however few of the factors measuring the ski index are so far consistent with the ski site climate. With a number of recent studies demonstrating the evolution of the ski climate index in conjunction with two elements of visitor satisfaction and snow dependability. Based on data acquired from previous publications, it is demonstrated that there is a function to assess the monthly attractiveness of different areas to different snow-related activities, the degree of covered by snow temperature, and the temperature of the holiday months coupled with the holidays.

The preceding statistics demonstrate that the rating of the level of skiing in these places is pretty high since virtually everyone wants to play this game and spend a lot of time on it. These statistics may be falsified because the accuracy level is low, as most individuals in this field evaluate. However, as my research shows, the industry's sensitivity is fast declining owing to the deployment

of snowmaking infrastructure. It has been demonstrated that ski resorts in Switzerland with 30% of their slopes equipped with snow making systems have 39% lower absolute sensitivity to natural depths than ski areas without. For optimal performance, large costs of increased water and power are required, as are low temperature requirements. These are predicted to rise as the climate warms.

They learnt from the aforementioned polls and modified my UI to better fit the user experience. The interface design results will change depending on the device. On the computer screen, there will be support for registration login, and for mobile devices, there is additional software that supports registration. Once logged in, the interface design on the phone just requires one interface to connect to different software logins on the phone. Because our interface is still in the design phase, there are several problems in the design of unfinished layouts. If this project is completed, we will be able to improve in the future; this is a critical factor in the design of user interfaces and computer interactions.

According to the study results, consumers like to ski in various situations based on their level of experience. use. And the majority of people are concerned with what is happening right now. They also think our interface is highly intelligent and have a positive experience with the interface we develop. Almost everyone like using this UI. Furthermore, there are flaws that consumers point out in our design that require additional colors to be improved, as well as certain faults in the human-computer interaction process.

6. Conclusion

Although there are presently no data-informative indications of the extent of climate in various regions for skiing and other skiing activities, the indicators provided in this study provide value for an average evaluation of the circumstances for us to aim for when planning and operating. Recent studies have proven that what we have accomplished in the research is also partially fulfilled by collecting data, researching information, and delivering solutions or surveys to get data from users. We set out to create a strategy from the effort to collect the data and begin developing the most relevant prototypes to the experience of skiing weather predictions. Collect data from various regions and draw appropriate conclusions to ensure that you are on the right track.

Aside from the accomplishments, there are some drawbacks to the program, such as the issue of restricted data collection from many different regions of the world. Expand the poll to include additional individuals, such as international visitors or people from other ski locations, to expand the sample and make it more applicable for future improvements. Furthermore, the possibility for diverse experiences when utilizing it is dependent on the tastes of individual skiers and gives recommendations to be investigated.

We will continue to enhance the interaction with different devices. I worked on two interfaces with two separate devices, leveraging theory studies such as design patterns and cognitive psychology to build the correct interfaces. However, we are unable to fulfill all of our users' desires. However, we have investigated and developed the most common interfaces with the most important functionalities for each separate device; each device will have unique exceptional characteristics for human-computer interaction. Different gadgets will also result in different experiences. As a result, the design requires a great deal of care in our study.

In conclusion, using my experience of constructing prototypes, as well as other research related to my design, is also extremely useful in human-computer interaction.

Link Axure in Desktop Medium: **https://udij17.axshare.com**

Link Axure in iPhone 8: **https://tv9xe8.axshare.com**

Link Drive:
https://drive.google.com/drive/folders/1hAmOawTYq1iY0qZFxdFVYXwC0XaiDA0B?usp=sharing

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