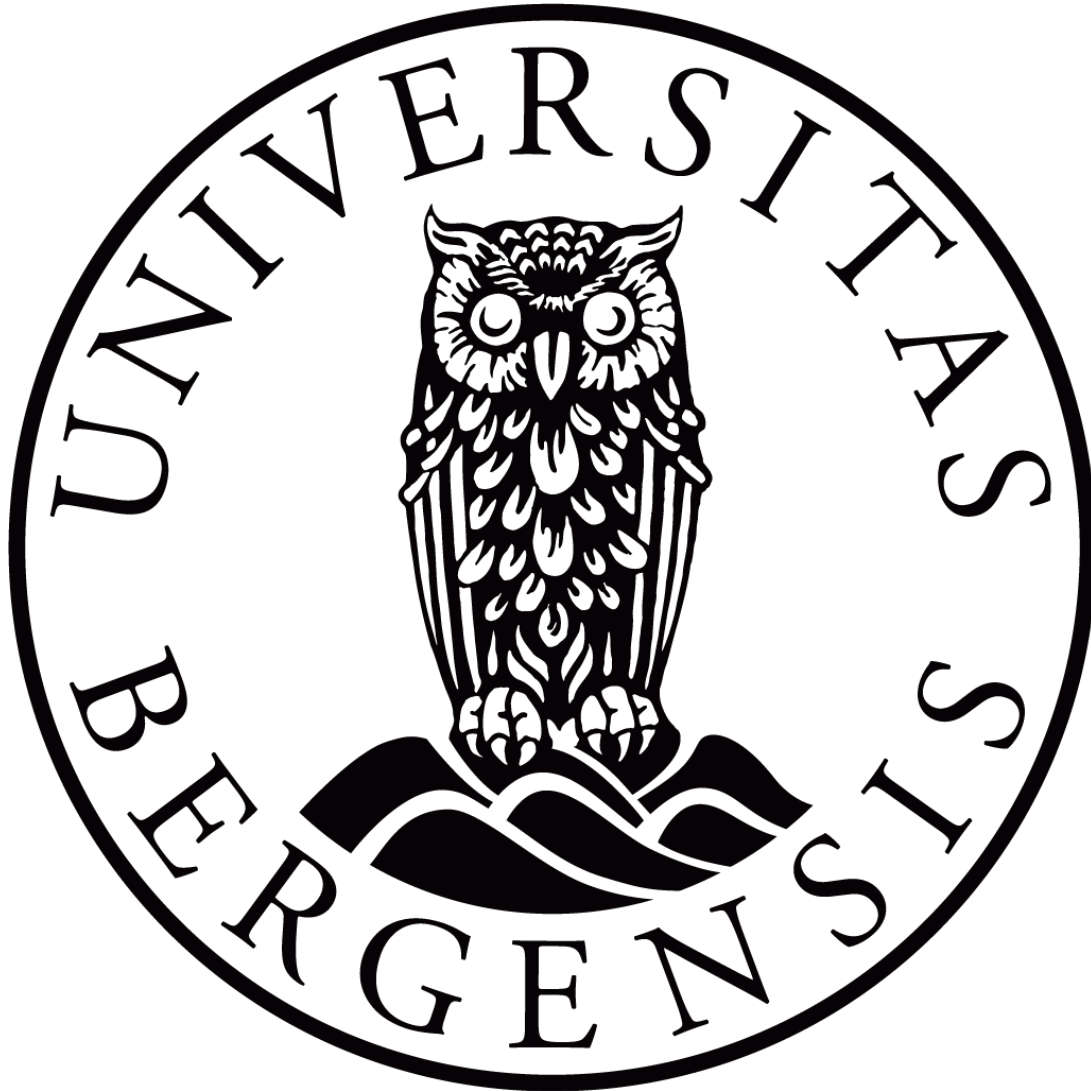# Semester Assignment
INFO162 - Human Computer Interaction

Candidate numbers: **292, 291, 137 & 122**
Word count: 4593

Table of contents

1 Introduction

The semester assignment was to design an interactive product and thereby carry out all four phases of the interaction design lifecycle. There are several factors to consider when designing interactive products, such as understanding what kind of products attract users and if the product is useful. Other concerns are how and when the product is going to be used, and by whom. Different ideas, with a real-use context, were explored (Sharp et al., 2019, p. 7). As we are students, we decided on an idea we thought would be useful and attractive for other students, namely: Hot Spots.

The report is divided into 5 chapters. We begin by outlining our vision, the problem space, the intended target group, and similar solutions. Chapter 3 establishes the requirements for the product, methods for data collection, and an analysis of the results. Chapter 4 introduces the low-fidelity prototype, followed by chapter 5, which contains the evaluation of both the low- and high-fidelity prototypes. Lastly, there is a short discussion and concluding remarks.

2 Vision

2.1 Problem space

The idea of Hot Spots arose from a discussion concerning Bergen's nightlife. Most students go out on the weekends, whether they are attending a birthday party or doing something with their student organization. A general problem is a lack of information about different places, such as the atmosphere, how long the lines are, or clientele. Different spots have varying reputations, nightly specials, or play a certain kind of music, some nights the lines are so long that it's impossible to get in. All these aspects have an impact on the choice of bar or club, and how much fun the clientele has at them.

The discussion concluded that many students find one or two spots they enjoy and keep going back there, even if they are annoyed with the aforementioned problems. We hope to minimize lines and improve clients' experiences by creating an interactive product with information about the venues and a recommendation system that matches their mood.

2.2 Target group

The intended target group is everyone between the ages 18-28, however, the main user base will likely be students, as Bergen is a student city. Additionally, most bars and clubs target this age group themselves, which made 18-28 a natural choice.

First, many students move to Bergen to study, and they are often unfamiliar with the city or nightlife. As the app aims to gather and make information more accessible, as well as encourage exploration, students are therefore a fitting target group. Although there is a high probability that the main user base will consist of students, no one enjoys long queues or bad music so the application may be appealing to others.

Second, it is worth noting that the nightlife industry is a part of the target group. Bars and clubs get free advertising and promotion through the app, which in turn may enhance competition resulting in better nightlife alternatives. However, because of the assignment's limitations, the report focuses on the user (consumer) side of Hot Spots.

2.3 Similar solutions

Hot Spots is inspired by other similar solutions and the concept of "word of mouth". There are existing ways for the target group to access information about the nightlife in Bergen; a Google search can provide information about different venues, locations, opening hours, and more. Additionally, a network of friends may function as a source of information. Despite this, one can argue that the information is often somewhat incomplete, the ratings and reviews may not be reliable, and the search process may be tiresome. To better explain these problems and the appeal of Hot spots, a short discussion of similar existing solutions (as well as Hot Spots itself) is necessary.

2.3.1 TripAdvisor

The most well-known similar solution is probably TripAdvisor. TripAdvisor is one of the world's largest "travel guide" platforms. The site enables users to search for bar and restaurant options,

attractions, hotels, etc., as well as both write and read reviews of said places. The site shows an extensive list of clubs and bars in Bergen, but the number of reviews varies from bar to bar. Few reviews imply that each review is more important for the overall rating, resulting in a possible bias. Additionally, the ratings may potentially be written by users outside Hot Spots' intended target group. If this is the case, it is likely that their preferences (and therefore reviews) deviate from the target groups' opinion. Lastly, the reviews tend to be somewhat diffuse and lacking in detail, beyond a general statement such as "good atmosphere" (TripAdvisor, 2022). Also, the reviews could be fake.

2.3.2 VisitBergen

A similar platform is VisitBergen. The website lists restaurants and a handful of bars. However, the list is lacking relative to the existing bar and club choices in Bergen city. Like TripAdvisor, the user base seems to be outside the intended target group, which does not make it an optimal source of information (VisitBergen, 2022).

2.3.3 Google results

Another option for retrieving information is Google results. There is available information about opening hours, menus, venues, and websites are linked and expected traffic is documented. Although the results are seemingly informative, there is little information about the actual atmosphere, such as music genre, if there is a dance floor, etc. Secondly, there is a potential problem with the GPS tracking system because of the data collection. If a bar or club is located near a residential area, or close to another venue it may falsely portray the traffic flow. Thirdly, the bars and clubs can pay to be featured on the search page, which may lead to biased results (Google results, 2022).

2.3.4 Word of mouth

The last concept Hot Spots is based on is word of mouth. Word of mouth is an individual's account of the venue or night out, which has further implications. A person's experience is affected by their taste in music, what clientele they wish to meet, their group of friends, and more. Talking to a person with the same preferences as oneself will in other words be a huge factor. Word of mouth also relies heavily on having an actual network consisting of people with similar preferences.

2.3.5 Solution

As the critique above suggests there are several issues to be addressed. Hot Spots aims to make the user's life easier regarding retrieving information about Bergen's nightlife and having an enjoyable night out. The application will function as a platform where all "necessary" information is collected, stored, and displayed easily. It will include an exploration page, as well as a search engine where you can tick off different attributes you want the place you are going to to have: For example, the price point and music played. A user will be able to make a profile or browse as a guest, writing and reading reviews. Ideally, the club- or bar-specific sites will be based on both user reviews as well as reports from the clubs themselves. Further requirements are established later in the following chapter.

What differentiates Hot Spots from other solutions is the easy access to information, specialization in nightlife, and the rating system with live updates. By providing the option of different preferences the hope is to offer a platform that can give customized recommendations to its users, more exploration, and a more enjoyable time out.

3 Establishing requirements

Before gathering data, it is necessary to identify a plan and goal for the data gathering. The product's goal, as described, is clear: Hot Spots will ideally make the users' life easier and eliminate frustrations with going out. One can argue that the product is designed to achieve this. Nonetheless, data collection is needed not only to map the intended target group, their response, and interests when it comes to functionality but also to check if the product is appealing.

First off, different methods of data gathering are presented. Followed by a brief description of what type of information the chosen method retrieved, as well as a description of the data gathering process. Finally, the results and personas are presented.

3.1 Techniques for data gathering

Data gathering is an essential part of creating interfaces, as the information provided by the data can contribute to discovering requirements and evaluation. There are two types of data: Quantitative and qualitative. The first refers to concrete numbers and the second to more in-depth answers that can provide some form of understanding of the quantitative data.

There are three main techniques for gathering data: Interviews, questionnaires, and observation (Sharp et al., 2019, s. 259-267). As we are not going to use observations, this method is not explained any further due to the assignment's limitations.

3.1.1 Interviews

The first method for data collection is interviews. Interviews can be conducted both in person and remotely. How an interview is structured may vary; it can be open-ended, semi-structured, or structured. How structured an interview is, refers to which degree the interviewer imposes control on the conversation.

When the interview is unstructured, the conversation is to a large extent exploratory, the questions are open-ended, and the answers are often in-depth. A fully structured interview implies that the

interviewer exerts control over the conversation, resulting in fewer in-depth answers. The questions usually facilitate yes or no responses. A semi-structured interview combines the two methods. The interviewer will in most cases provide structured guidelines or topics which are covered during the interview, with both open-ended and closed questions (Sharp et al., 2019, s. 268-277).

3.1.2 Questionnaires

Another method for data gathering is questionnaires. These are used to gather demographic data and the user's opinions and are usually a selection of open-ended and closed questions. Questionnaires can be beneficial because they are easily distributed to a large group of people in multiple locations. The method is therefore better for collecting larger amounts of data. The main issue with questionnaires is the questioning and design, for example in what order the questions are asked and their format. Are the questions structured as rating scales, checkboxes, or other forms of rating? It is often worth considering whether sending different versions of the questionnaire to various populations is beneficial. Lastly, providing clear instructions for how the questionnaire should be answered is important (Sharp et al., 2019, s. 278-286).

3.2 Data Collection

As the data collection aims to map the intended target group, interest in Hot Spots, and functionality we chose to send a questionnaire. The chosen method enables a larger data collection, which is necessary to get a more complete overview of the market and target group.

The questionnaire is divided into two parts. Part 1 asks questions about the participant to get information on their persona, for example, age and routines for going out. Part 2 inquires about their interest in Hot Spots, such as what information and preferences they value, as well as the probability of using the platform.

3.3 Analysis

3.3.1 Results

Figure 12-15 in appendix A shows what features potential users would be interested in, and how they would use the app. Figure 4-11 in appendix A shows the questions from part 1 of the questionnaire, where the answers show the participants' habits. Most respondents get their information about clubs from friends, almost no one answered by Google search, as *figure 1* shows.

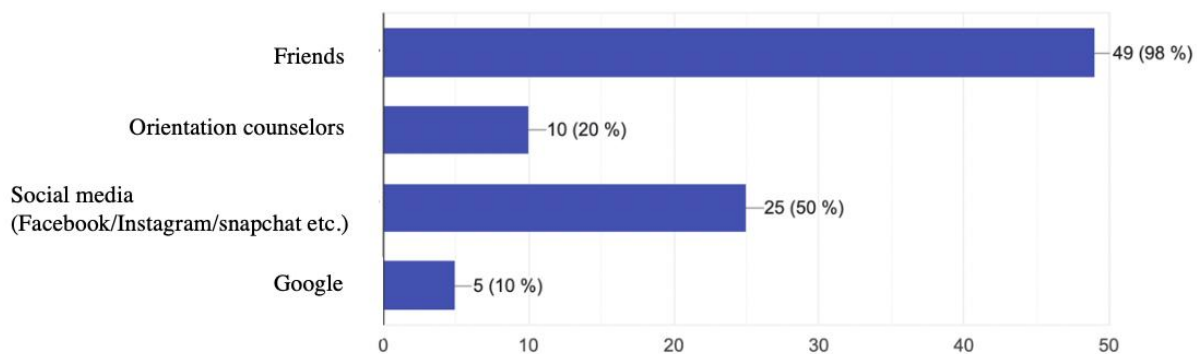#### How do you get information about the nightlife in Bergen?

Figure 1

Furthermore, approximately ¾ answered that they usually go to the same couple of places each time (see *figure 9* in Appendix A). More than 95% of the participants placed themselves on the upper end of the scale when it came to how often they are dissatisfied with a visit to a club, as seen in *figure 2*.

How often are you dissatisfied with some aspect of the bar or club you went to? (Music, lines, drink selection, etc.)
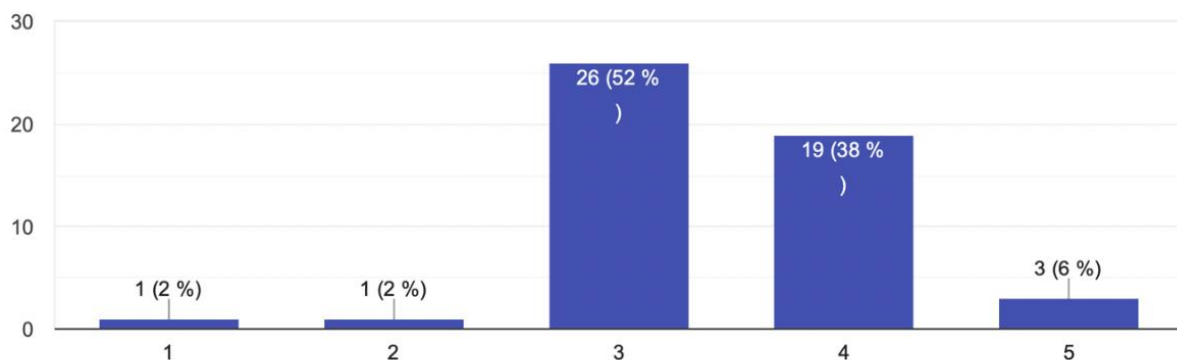

Figure 2

The same distribution goes for how heavily people consider queues when deciding to go out. Lastly, most people either decide when to leave for a club based on assumed lines or try a different place if there is a long queue (see *figure 7* and *8* in Appendix A).

3.3.2 Persona

One primary and one secondary persona is derived from the most common answers from the questionnaire. These personas are made to help designers understand their user base and how to best design the project (Sharp et al., 2019, p. 404).

The intended target group is based on the results of the questionnaire. Amelia is a 21-year-old student in Bergen and a freshman at university. She has just moved to Bergen. Amelia's friend group has mainly received nightlife recommendations from friends or social media. Their knowledge is however limited since all of them are new to Bergen. This results in them going to the same few spots every time, despite wishing to branch out. Their habits are in other words solely based on word of mouth and their own experience at these bars and clubs.

Alex is also included; he is a third-year student. Even though he has lived in Bergen for a few years, his friend group still does not know where to go to best match their preferences, especially due to their low tolerance for long lines.

The Hot Spots app can accommodate both Amelia's and Alex's problems. Amelia would benefit from the search engine to find new clubs and bars she has never heard of. While Alex might enjoy this feature, it is likely he would be more interested in the reviews of clubs he already frequents, which he can find through the app as well.
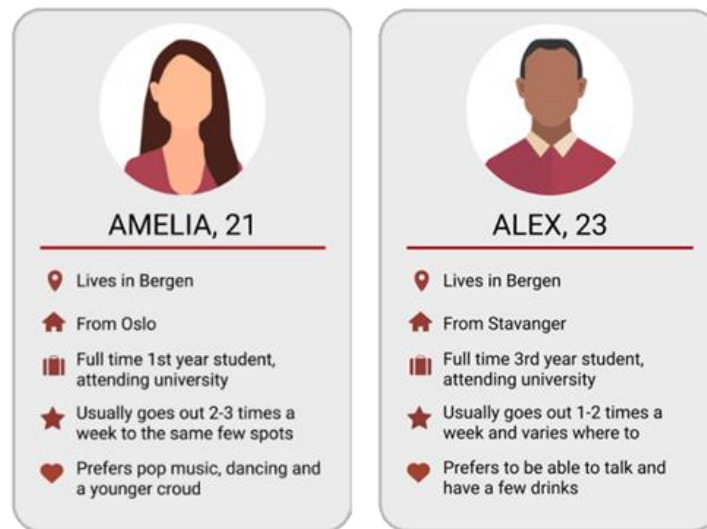
Figure 3

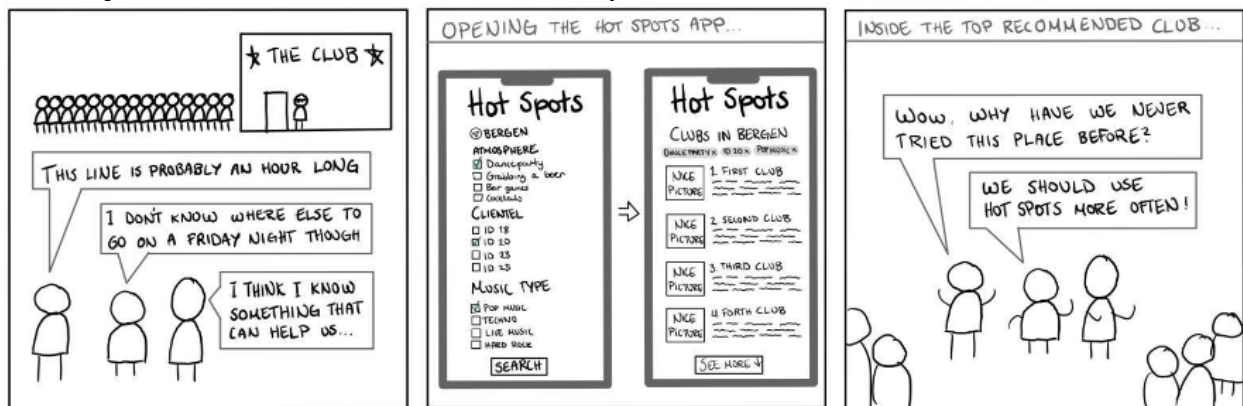The storyboard visualizes a scenario where our platform could be useful.

Figure 4

4 Requirements and low-fidelity prototype

4.1 Requirements

According to Sharp et al. (2019, s. 387), a requirement is a statement about an intended product that specifies what it is expected to do or how it will perform. Requirements can be categorized into two main groups: Functional and nonfunctional. Functional requirements describe what the product will do, while nonfunctional requirements describe the characteristics of the product (Sharp et al., 2019, s. 390). The results of the questionnaire were considered to establish these requirements, and to give the user a better experience.

4.1.1 Functional requirements

Hot Spots aims to give users an overview of different bars and clubs in their area and present them with top picks based on their preferences. Users would be separated into registered accounts and guest accounts. When opening the app, you would be presented with a login page. Here you can choose to log into an existing account, register a new one, or continue as a guest. The intention is to not limit the use of Hot Spots to only registered users in case someone downloads it for a specific night and wants to use it right away.

The main page will consist of a list of preferences you can choose from to find your top choices. User registration gives the possibility of saving your preferences, eliminating the need to check these off every time.

The recommendations will be presented in both a map viewing and as a prioritized list so the user can choose the option that best suits them. Based on the answers from the questionnaire, desired information includes the venue's address, queue length, how crowded it is, price range, music genre, and clientele. Some of these attributes such as music and clientele will come from user reviews and star ratings.

4.1.2 Non-functional requirements

One important focus of Hot Spots is that it is easy to navigate and use. The interface needs to have a simple layout with clear instructions and view of what their options are. Given that the purpose

of this app is to help you choose which bar or club you are going to visit that night, the chances of the user being intoxicated are high. Therefore, it must be easy to understand how to choose preferences and what the top recommendations are.

4.2 Low-fidelity prototype

The first step towards creating the final product is making a low-fidelity prototype. The prototype works as a sketch, providing examples of how the app potentially would work and what type of functions it might possess. However, this is not the layout and design of the final product (Sharp et al., p. 426).

At this point, the prototype's main focus is to visualize the app's intentions rather than the perfect design and functionality. The low-fidelity prototype consists of the 8 different pages that are currently considered to be of the most importance.

The low-fidelity prototype visualizes the pages where you log in by email and password (user), continue as a guest, or register a new account (see figure 1 & 2 in Appendix B). By continuing as a guest, the user is sent to the explore page (see figure 3 below). If the user either creates a new account or logs into an old one, they are sent to the "Mood page" (see figure 4 below), where they select their current preferences for a night out. After the selection, the application sends the user to the recommendation pages (figures 5 and 6 below) where they can see the bars and nightclubs best suiting their wishes. The prototype then shows what happens if the user clicks on "Brage's Bar". The user is sent to the club profile of Brage's Bar (figure 7, appendix B), where the reported aspects of the bar are visualized, as well as the address and the opportunity to read and write reviews (figure 8, appendix B).
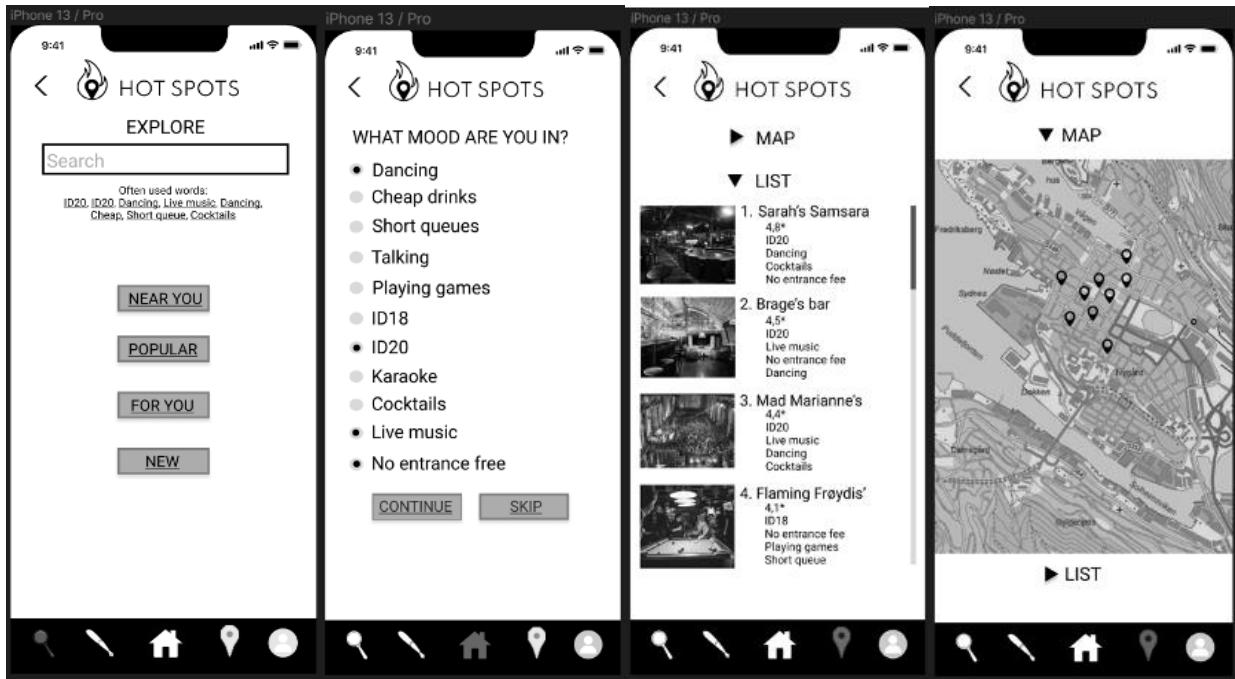
| Figure 5 | Figure 6 | Figure 7 | Figure 8 |

The app was intentionally designed to look similar to other solutions on the market, such as Tripadvisor, Foodora, and more. If the application feels and looks familiar, the likelihood of people using it increases compared to having to learn how to navigate through a whole new system. All pages contain a footer with shortcuts to the main pages; "Explore", "Review", "Home", "Recommendation" and "Profile". These are included to make it easier to navigate the application. Additionally, there is always an arrow in the top left corner allowing the users to go back to their last visited page.

5 Evaluation

Evaluation is an essential part of the design process. It allows the designers to get feedback on the functionality and user experience from a potential user. The interest in Hot Spots was established before the evaluation through the initial questionnaire, however, the feedback was solely based on the concept, and not the product design or functionality. The evaluation aims to reveal any issues, or missing elements, and receive comments on aspects or requirements that might not have been discussed. This is the foundation and mainframe for the evaluation of both the low-fidelity and high-fidelity prototypes (Sharp et al., 2019, s. 499).

5.1 Evaluation method

There are several methods for evaluation and interface design. Some are in a controlled or natural setting involving the user, and any setting not directly involving the user.

5.1.1 Controlled setting involving users

A controlled setting involving the user is an evaluation method that entails controlling users' activities to test hypotheses and analyze certain behavior through usability testing and experiments. The primary goal is to determine the interface's usability for the intended target group, usually by observing how the user performs tasks. Observing the individual's reaction to different designs can help designers identify potential issues with their interface. The method has traditionally been applied in lab experiments, with an increasing share through interviews and questionnaires (Sharp et al., 2019, s. 500-503).

5.1.2 Natural setting involving users

The method of natural setting involving the users relies on field studies. The studies can be either conducting observations, interviews, or interaction logging. The interviewer or designer records the interaction beneficially without being disruptive. The method can be used to identify opportunities for new technology, establish requirements for a new design, or inform about an existing one (Sharp et al., 2019, s. 504-505).

5.1.3 Settings not directly involving the users

Settings not directly involving the users involve the researcher or designer imagining and modeling how an interface is likely to be used. Inspection methods are developed to predict a user's behavior and thereby uncover usability issues. An example of this method is heuristic evaluation, where experts use a rule of thumb to determine potential problems (Sharp et al., 2019, s. 505-506).

5.2 Evaluation of low-fidelity prototype

The evaluation of the low-fidelity prototype combined both controlled and natural settings. The potential users from the target group were given a cognitive walk-through to get their initial thoughts and reactions to the design. After showing them the prototype, they were interviewed in a semi-structured manner. The feedback formed the baseline of changes made to improve the prototype.

5.3 High-fidelity prototype

After evaluating the low-fidelity prototype, the first change was implementing the design's color scheme. The two main elements of the Hot Spots logo are a flame and a map pin, both of which are often colored red. The color was therefore a natural choice, affirmed by the association between the word "hot" and red. It needed to be deep enough to pass the AA criteria for color contrast ratio (Adobe, n.d.). The main color of the app, therefore, ended up being #AA0000, which in combination with white made the contrast ratio 7.75:1, thus passing the AAA criteria as well (Adobe, n.d.)

To give the prototype a more finished look, all icons in the navigation bar at the bottom were replaced with a more uniform set of icons to better fit the scheme. After researching different applications typical layouts, some features such as rounded button corners and a solid background without any borders were implemented.
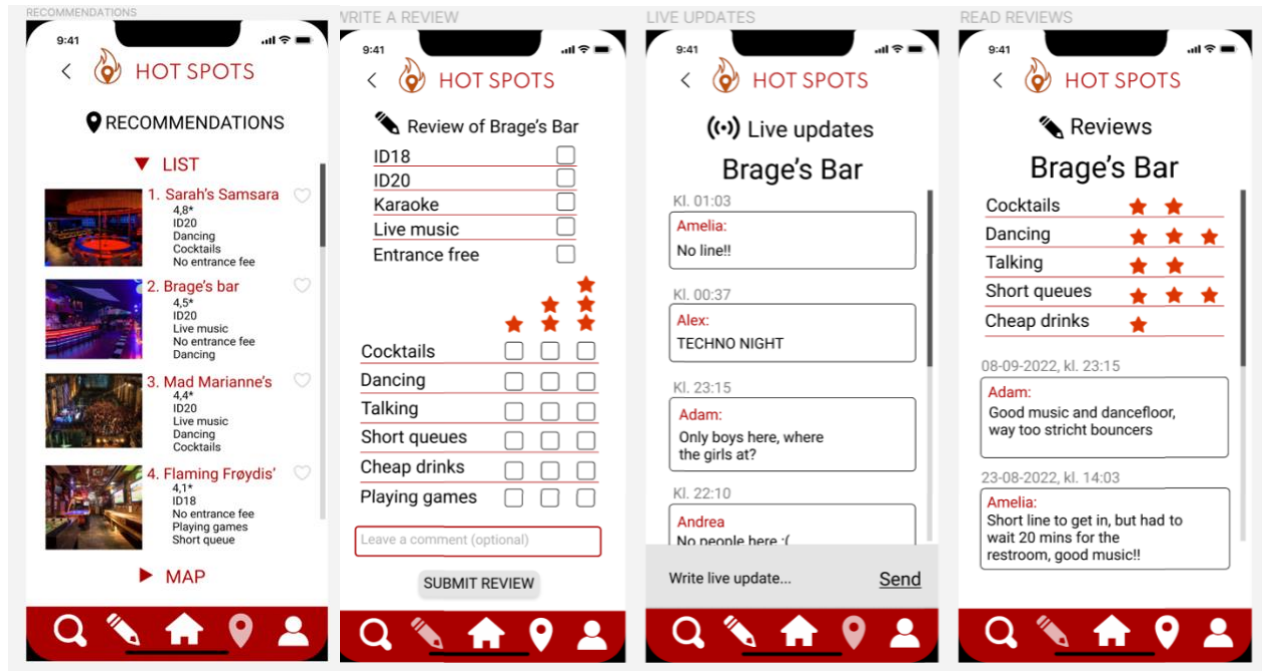
| Figure 9 | Figure 10 | Figure 11 | Figure 12 |

After the evaluation, it was discovered that the app was missing some features. One of them being live updates where you can write and read short messages about the current state of the location, similar to a group chat with your friends (see *figure 9*). These messages can be about queues, music, bouncers, etc. In addition, the rating system was changed from the numbers 1, 2, and 3 to one, two, and three stars (see *figure 8* and *9*). This was changed due to feedback that the numbers were confusing, as it was hard to understand whether 1 or 3 was the best. As there is a common understanding that more stars equal a better rating, this was the chosen solution. Lastly, a heart was added so you can save your favorite location, making it easy to find next time (see *figure 7*).

The high-fidelity prototype is also interactive to give the user a better feel of the final product. To make the most of the interactive design we added some more pages to better visualize its functions (se Appendix C).

As mentioned earlier the simple design is a deliberate choice. The layout therefore has limited options, without many distracting elements. Considering the human factor of inebriated users, timestamps on the reviews and live updates were also considered important.

5.3.1 Evaluation of high-fidelity

After implementing the realistic changes from the interview feedback of the low-fidelity prototype, it was necessary to evaluate the high-fidelity. The evaluation utilizes an alternative method to the heuristic evaluation, namely a cognitive walkthrough, to examine usability as well as determining potential problems for future users (Sharp et al., 2019, p. 561). The main difference between the two is that heuristic evaluation focuses more on the product as a whole, while the walkthrough more closely examines specific tasks. The method is based on Brad Dalrymlpe (2018) article on cognitive walkthroughs.

A cognitive walkthrough consists of three parts. 1) identifying the user goal, 2) identifying the tasks the user has to complete to accomplish this, and 3) documenting the experience while completing tasks (Dalrymple, 2018). The goal of interest in the case of Hot Spots is finding a club recommendation and reading a user review. The next step is identifying the tasks the user must complete to achieve this. In Hot Spots there are several ways for the user to reach this goal, the walkthrough will focus on the most efficient one.

Steps in Hot Spots:
1. Open the app.
2. Write your email and password.
3. Log in.
4. Check off preferences.
5. Click continue.
6. Click on one of the recommendations.
7. Click on read a review button.

According to Dalrymple (2018), a few questions have to be asked during the walkthrough:
- Will users understand how to start the task?
- Are the controls conspicuous?
- Will users know the control is the correct one?
- Was there feedback to indicate you completed (or did not complete) the task?

The controls are believed to be easy to understand, as creating cohesive and intuitive design choices has been a priority throughout the whole process. The application's goal is getting recommendations, writing, or reading reviews, and sending or reading live updates. As the functions are limited to these specifically, there is a low probability of "getting lost" in them or being distracted by other features. The footer at the bottom of the screen with "easy to understand" icons further enables the user to reach their desired page. Additionally, details such as changing the color of the icons to indicate which page the user is viewing, as well as using identical icons in the header (on each page) and footer, simplifies the app.

The walkthrough showed that there are few possibilities for uncompleted tasks, however, there might be an error if a user does not check any preference boxes on the "mood page". As of now, there are no solutions or indications of the result on the recommendations page if this is the case. Despite that, it is believed that a first-time user could easily navigate the app in general (affirmed by the questionnaire in appendix D).

A drawback of the cognitive walkthrough as an evaluation method is that it mainly focuses on the ease of learning, rather than usability directly. However, earlier research predicts a correlation between usability, functionality, and ease of learning, which means the latter functions as an indicator (Polson, P. et al., 1994).

5.4 Conclusion and potential for further prototyping

The assignment was to create an interactive product and thereby carry out all four phases of the interaction design lifecycle. The result of the project is the high-fidelity prototype for Hot Spots. The prototype is in the early stages of development, despite this the feedback was very positive, especially regarding the changes made from low- to high-fidelity, regarding both design and usability.

However, one of the largest challenges is perhaps the reliance on network effects, as mentioned earlier, which is highlighted by the "dependability" issue showed in appendix D. The application needs additional enhancement of existing features, and there are some areas that would benefit

from further exploration. Potential aspects for future prototyping are more accurate tracking systems than the "live updates", for example a direct queue-tracking feature where the user can check the current line. The question is how to execute this in a secure way and in alignment with privacy legislation. Another potential feature is a social function where users can befriend each other, similar to Instagram and Snapchat, enabling them to send live updates and their location.

Additionally, the finished product would focus more on the business side of the application, such as cooperation with the nightlife. For example, submitting information on drink selections, listing events, possibly updating about lines and crowdedness themselves or advertisements. The challenge is avoiding the bars posting false information about the atmosphere to draw customers, rather than it being a helpful user-based platform. However, as it would be beneficial for the bars to be on the site the initial idea is that the free advertisement and the reviews would incentivize them to post accurate information.

6 Contributions

Candidate 292: 1, 2.3 (2.3.1, 2.3.2, 2.3.3, 2.3.4), 3.1(3.1.1, 3.1.2), 3.2, 5 (5.1, 5.1.1, 5.1.2, 5.1.3), 5.4, design high-fidelity

Candidate 291: 2.3.5, 3.3 (3.3.1, 3.3.2), 5.3.1, design low- and high-fidelity, appendix D

Candidate 137: 2.1, 3, 4.2, 5.2, design low-fidelity-and high fidelity, appendix D and made high-fidelity prototype interactive

Candidate 122: 2.2, 4.1 (4.1.1, 4.1.2), 5.3, design low- and high-fidelity

We each wrote different chapters; the list above refers to the work on the rough draft. We all read, revised, and proofed each other's work for the final product.

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Appendix

Appendix A

Results from initial questionnaire
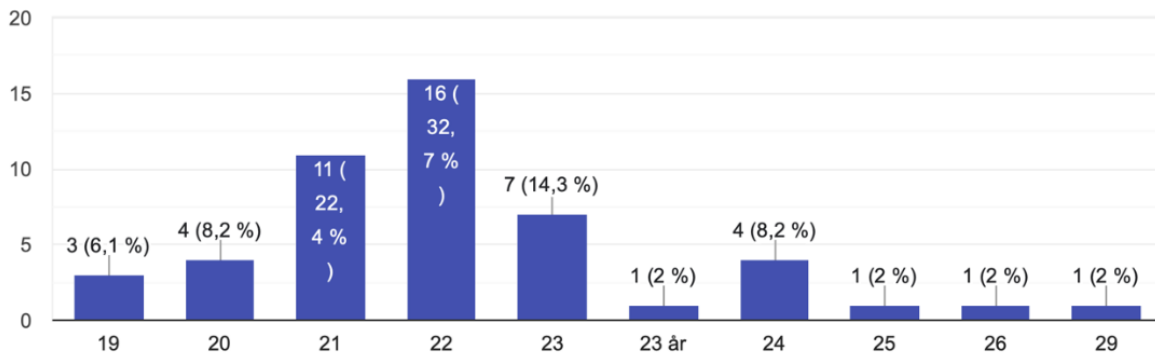
How old are you?

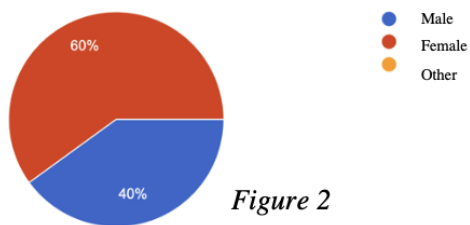

Figure 1

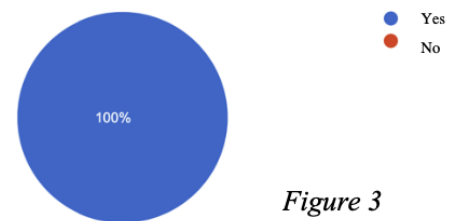What sex are you?

Figure 2

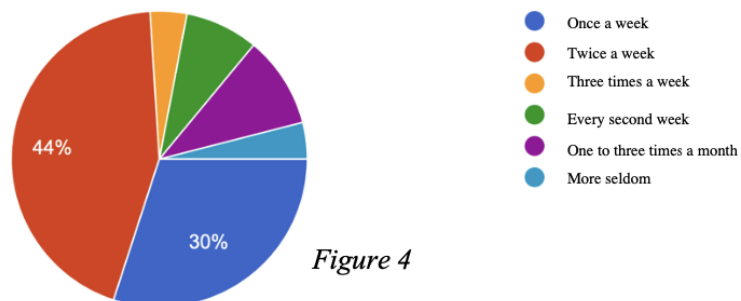Are you a student?

Figure 3

How often do you go out?

Figure 4

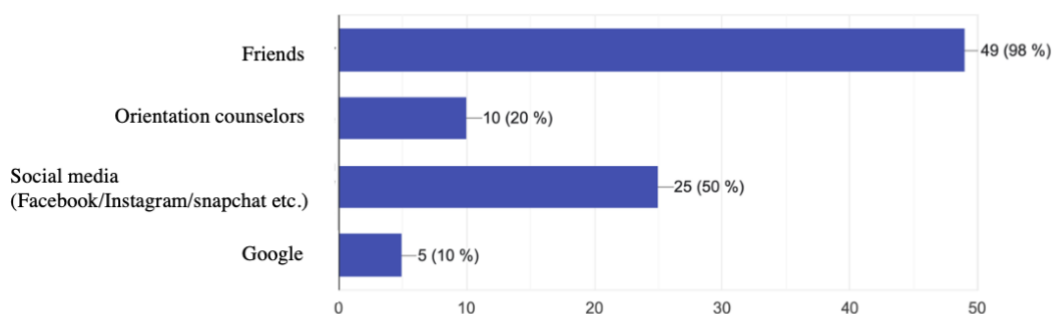How do you get information about the nightlife in Bergen?
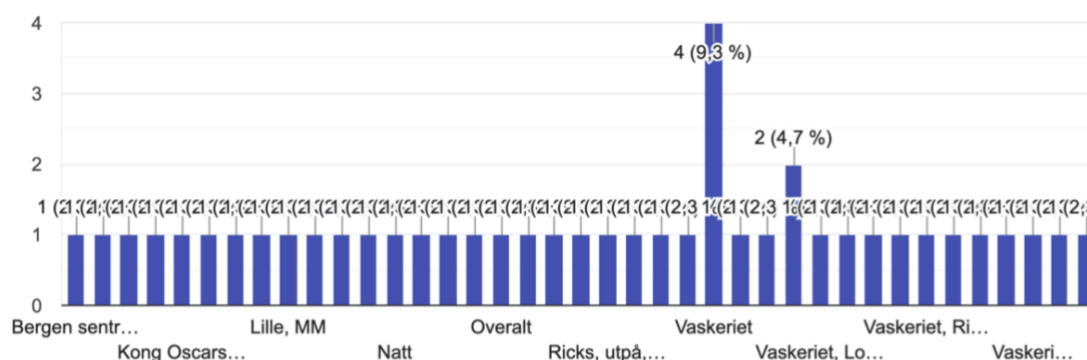

Figure 5

Where do you usually go out?

Figure 6

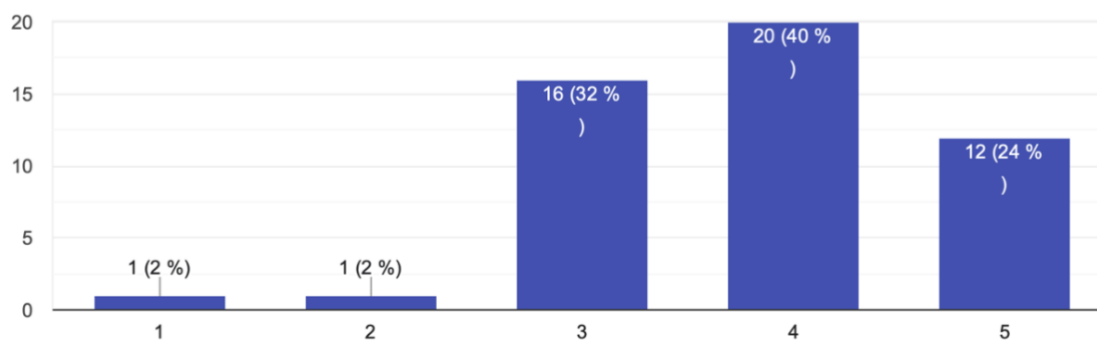To what degree do you consider the estimated line when deciding when and where to go?

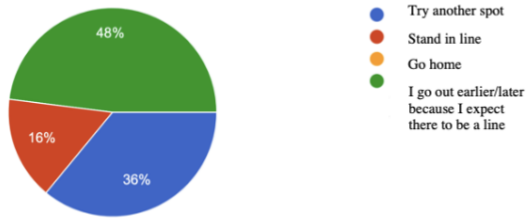*Figure 7*

If there is a line, what do you do?

49 (98 %)

48%

16%

36%

- Try another spot
- Stand in line
- Go home
- I go out earlier/later because I expect there to be a line

Figure 8

Do you usually explore new venues?

26%

72%

- I usually go to the same spot(s)
- I go to the same place every time
- I usually vary
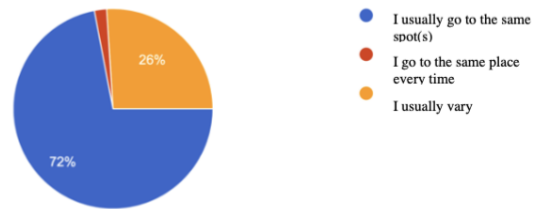
Figure 9

What kind of mood are you looking for when you go out?

Dance party — 49 (98 %)
Cheap beer — 29 (58 %)
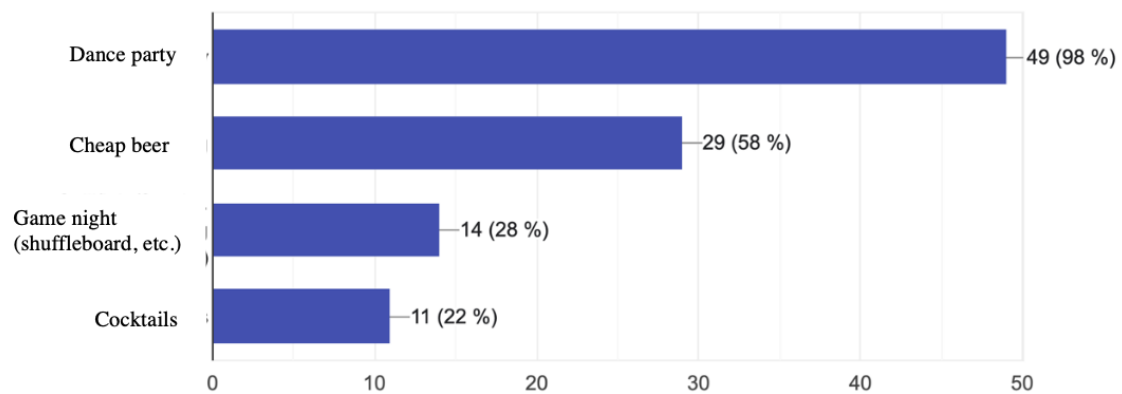Game night (shuffleboard, etc.) — 14 (28 %)
Cocktails — 11 (22 %)

Figure 10

How often are you dissatisfied with some aspect of the bar or club you went to? (Music, lines, drink selection, etc.)

1: 1 (2 %)
2: 1 (2 %)
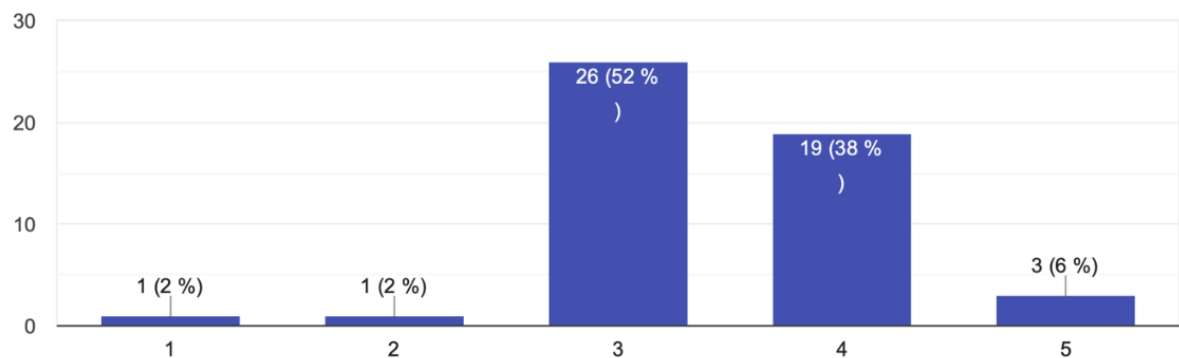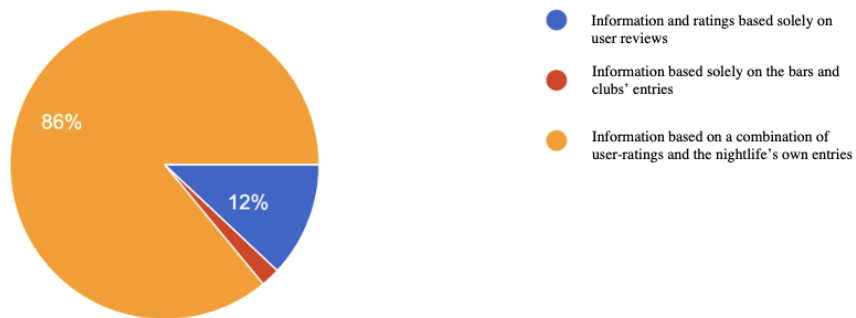3: 26 (52 %)
4: 19 (38 %)
5: 3 (6 %)

Figure 11

25

What would you prefer?

Legend:
- Information and ratings based solely on user reviews
- Information based solely on the bars and clubs' entries
- Information based on a combination of user-ratings and the nightlife's own entries

86%

12%

Figure 12

What functions would you like the app to have?

Function	Value
Map viewing of nightlife	39 (78 %)
Points and rating-system	41 (82 %)
Write a reviews	26 (52 %)
Overview over crowds	41 (82 %)
Information about lines	40 (80 %)
Social functions	26 (52 %)
Information about clientele	34 (68 %)
Information on price points	44 (88 %)
Information on price points	19 (38 %)
Rating of bouncers etc.	23 (46 %)
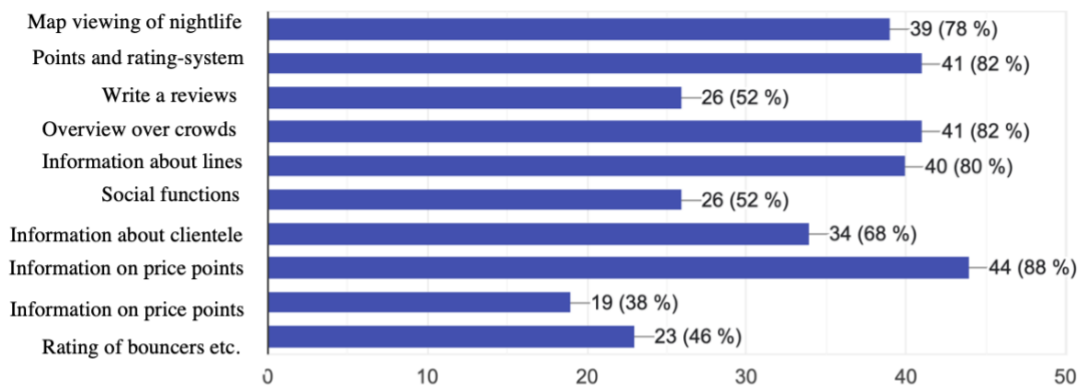
Figure 13

Which rating system do you prefer?

Legend:
- Stars
- Roll of the dice
- Percentage points

14%

30%

56%
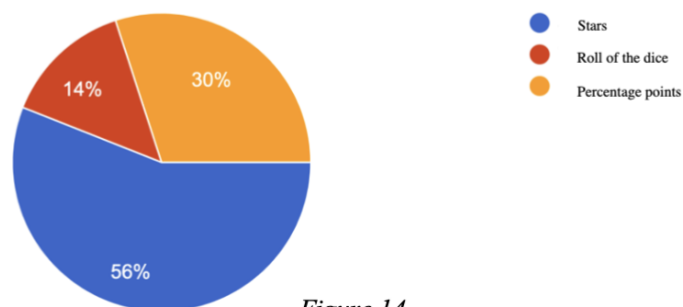
Figure 14

Would you register as a user on the app?

Legend:
- **Yes, I would register as a user and write reviews, and add my preferences to get personal recommendations** (blue)
- **Yes, but I would only use it as a guest to read other people's reviews** (red)
- **No, I would not use it** (orange)

Pie chart values: 50%, 44%
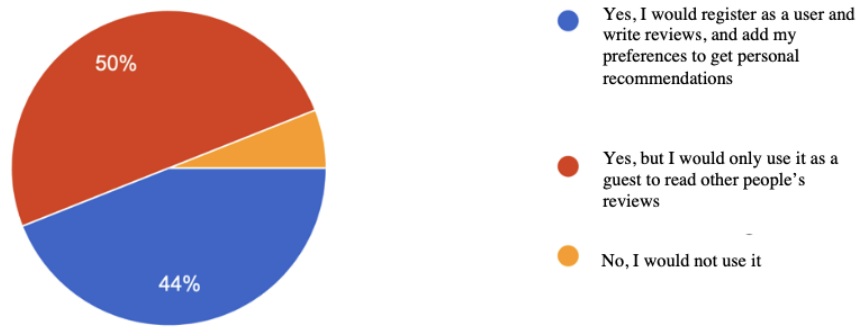
Figure 15

Appendix B

Low fidelity-prototype
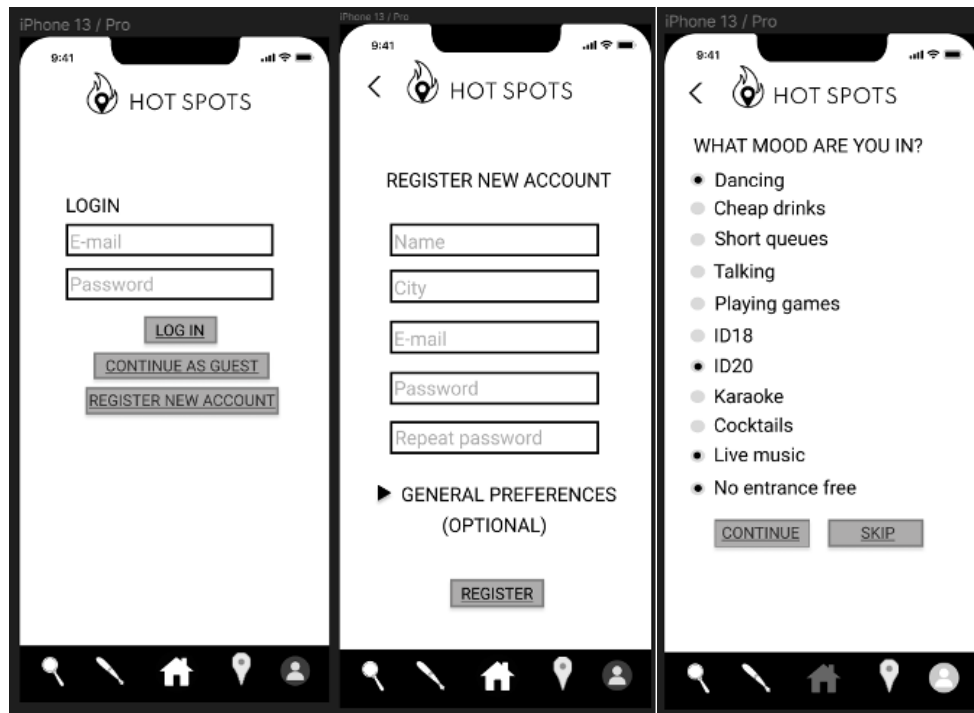
| Figure 1 | Figure 2 | Figure 3 |
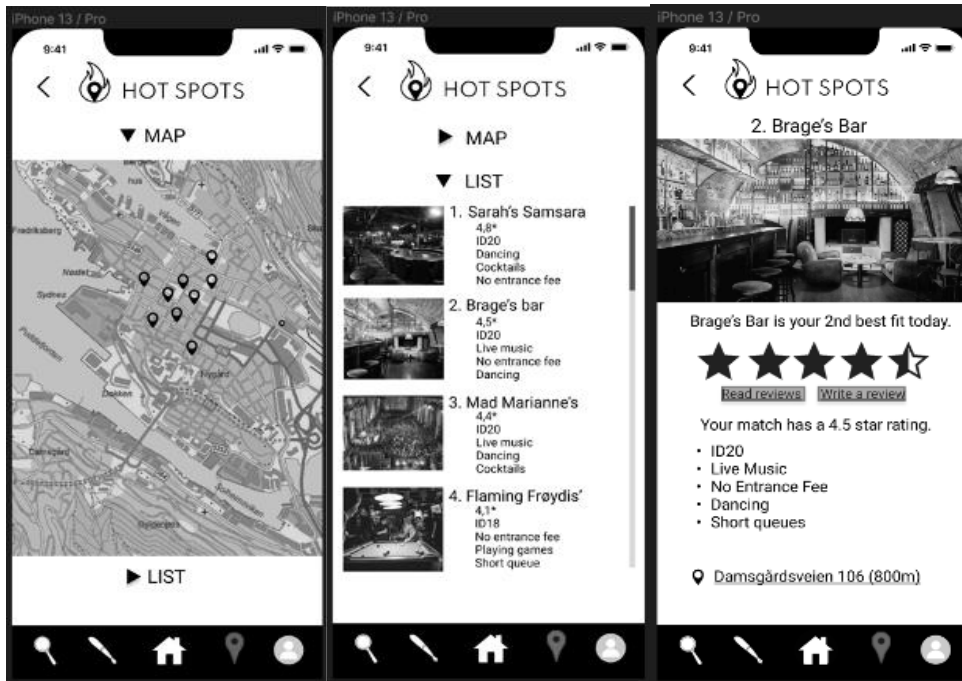
Figure 4   *Figure 5*   *Figure 6*
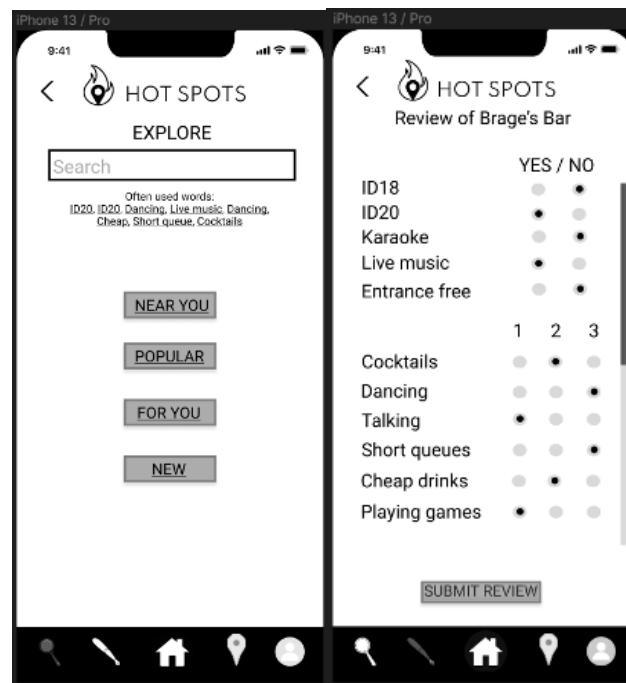

Figure 7   *Figure 8*

Link to figma-file:

https://www.figma.com/proto/pMwguH0QYLtqW2mbV0tDwe/Untitled?scaling=scale-down&page-id=0%3A1&node-id=1%3A2&starting-point-node-id=1%3A2
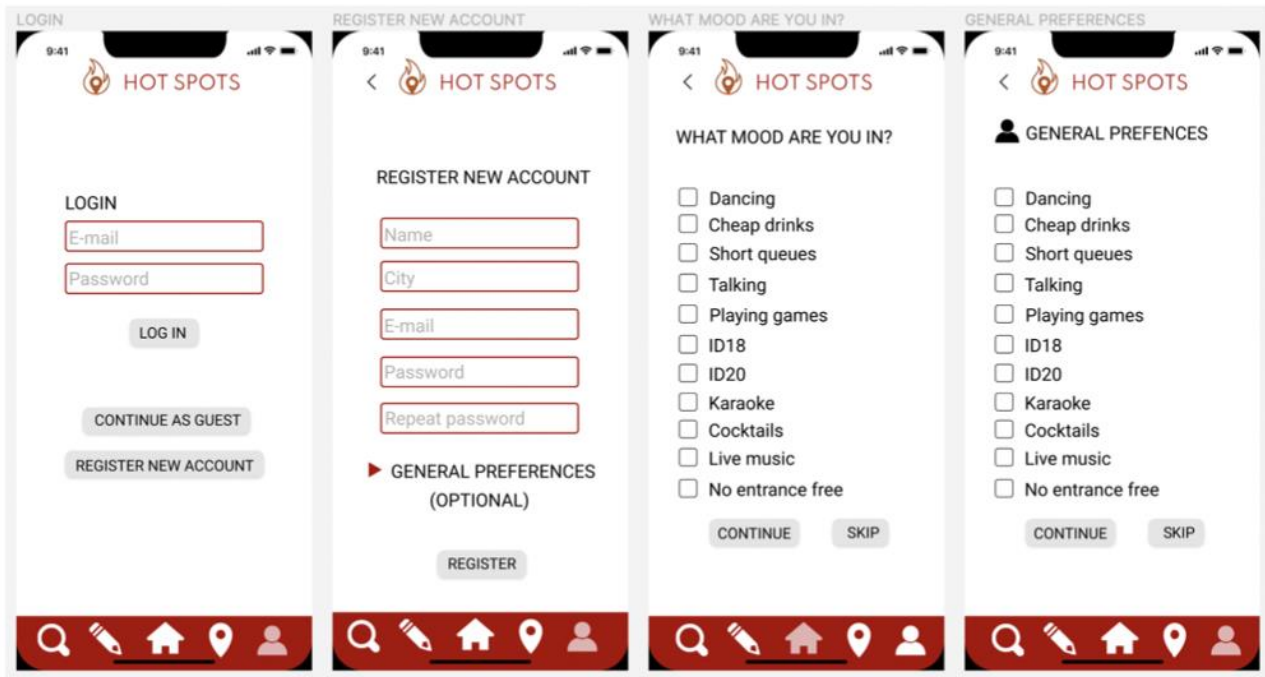
Appendix C

High-fidelity prototype

| Figure 1 | Figure 2 | Figure 3 | Figure 4 |

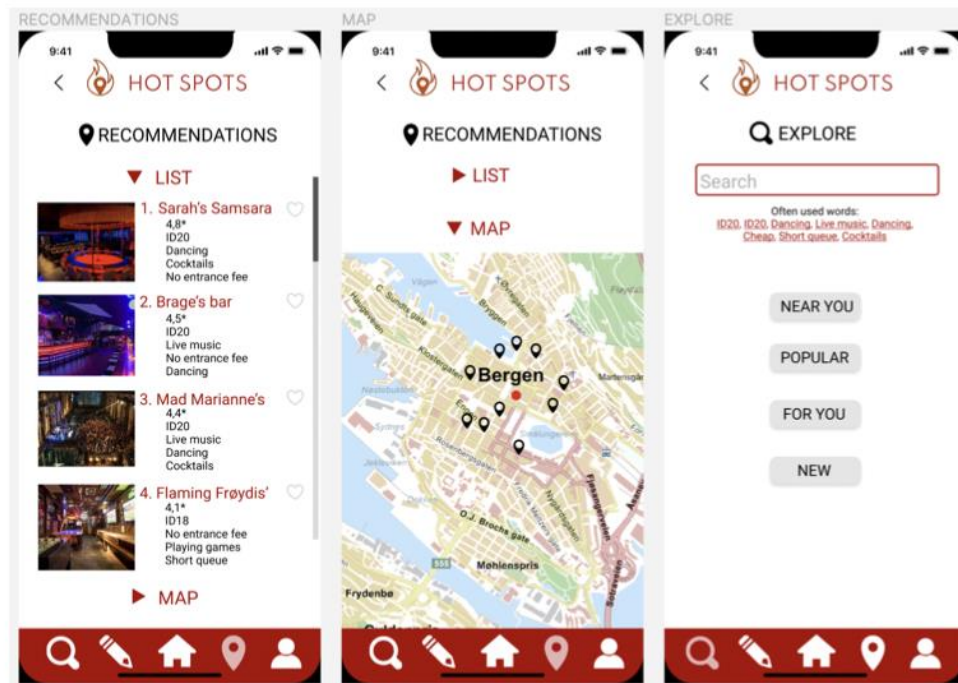| Figure 6 | Figure 7 | Figure 8 |

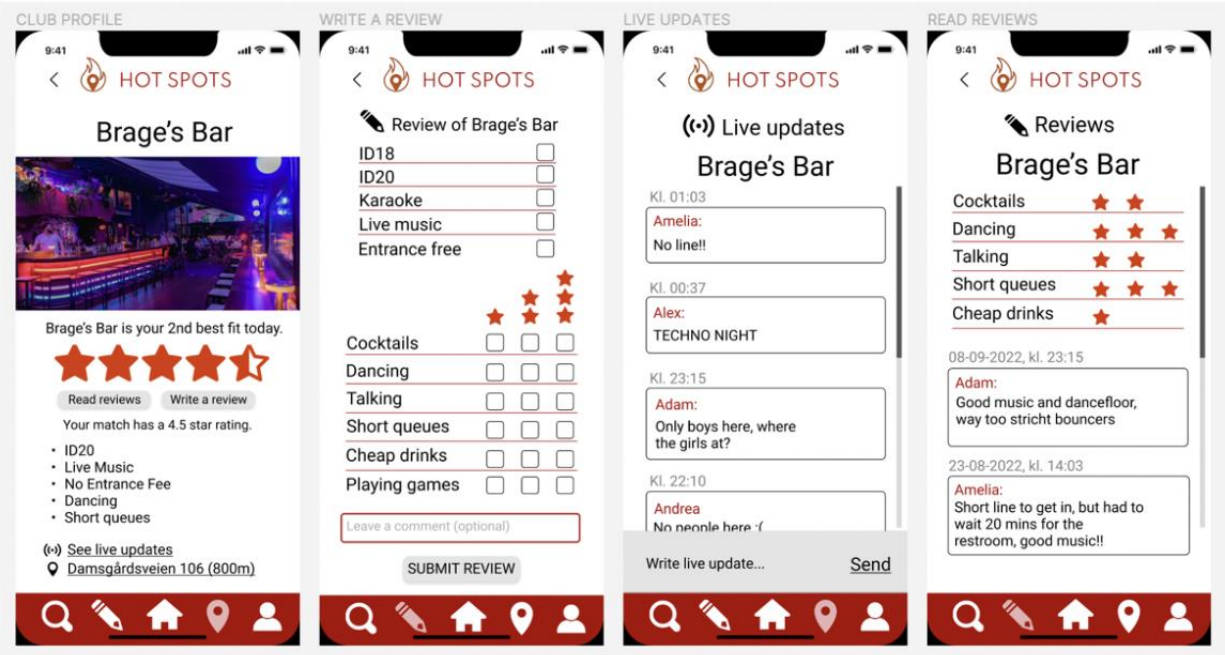*Figure 9*   *Figure 10*   *Figure 11*   *Figure 12*

Link to figma-file:

https://www.figma.com/proto/1VrlRYP0MkgtP9PaY4VQ8J/Untitled?node-id=2%3A52&scaling=min-zoom&page-id=0%3A1&starting-point-node-id=2%3A52

Appendix D

Evaluation high-fidelity

A questionnaire was sent out to a selection of the target group (derived from the initial questionnaire) concerning the user experience. The questionnaire consisted of 25 questions.

The participants were presented with the problem space and idea, they were then left to maneuver the high-fidelity prototype themselves. They were allowed to ask questions, but to our surprise there were not many. They later answered the questionnaire.

The results reveal that the target group enjoyed both the idea and the solutions. The results were compared to data from 21175 people from 468 studies (Hinderks, A, 2018).
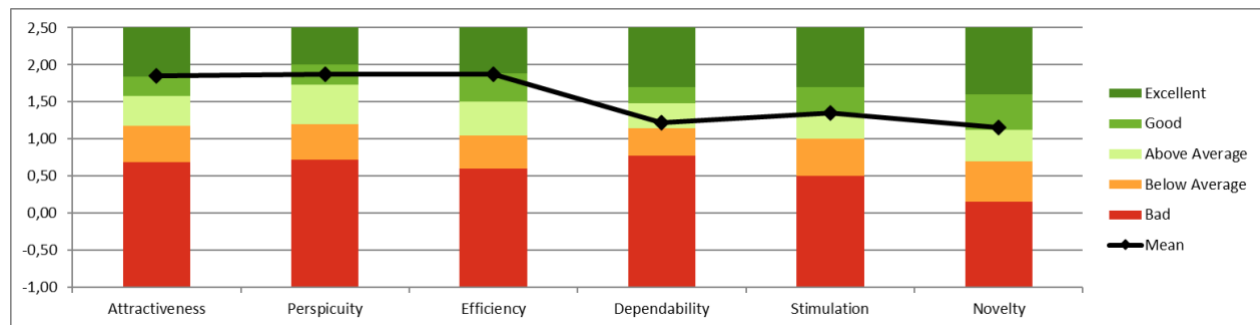
The graph shows the results from the prototype: It mostly scores above average on all points, but there is room for improvement. The prototype scores either "above average" or "good" in all general categories. The lowest score relative to the average is dependability (Hinderks, A, 2018).

UEQ Scales (Mean and Variance)		
Attractiveness	⬆ 1,850	0,14
Perspicuity	⬆ 1,875	0,34
Efficiency	⬆ 1,875	0,38
Dependability	⬆ 1,225	0,30
Stimulation	⬆ 1,350	0,31
Novelty	⬆ 1,158	0,16

Dr. Schrepp UEQ defines values between -0,8 and 0,8 represent as a neutral evaluation, while values above 0,8 represent a positive evaluation. The highest possible value is 3,0 and the lowest

value possible is -3,0 (Hinderks, A, 2018). As represented in the graphs above, the prototype did not receive a mean value below 1,1, however it did not score above 1,8 either.

The data implies that the prototype was well received by the target group, but there are still various aspects in need of further development.