

HCI Team Assessed Exercise: Report

Matthew Biggins (2135573B)
Laura Moreby (2167714M)
Frances Ramirez (2168154R)

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1 Introduction

1.1 Overview of Design Task

This assessed exercise involves designing, developing and evaluating an interactive system which allows people to monitor, understand and support good health, either physically or mentally. The task asks for health data to be used to make the user's life more enjoyable, and has to be either a multimodal, CSCW or information visualisation system. This report shows our stages of design, information about implementation and the evaluations we did along the way. Finally we reflect on the project and suggest how it may be improved for the future. Note we have included diagrams throughout but included larger versions of these in the Appendices.

1.2 App Concept

App Concept: Our idea is an app to allow users to track and improve their mental health, and then make changes to their lifestyle according to patterns seen in the app, in order to make their life more enjoyable. The user would add data to the app each day, which include their mood on a scale from 1-5, and the activities they had done that day for example socialising, cleaning, cooking, studying, listening to music etc. The user also has the option of adding notes, so that they can use the app as a journal. The app would then use the user's data to produce statistics and interactive visualisations to give the user insight into the activities which were causing their mood to be the happiest. For example, if the user saw that their mood was happiest on days when they exercised, they would learn that exercising is one of the best things to do in order to retain their happy mood, and likewise if they learned that their mood was lowest when they stayed indoors all day, they would know that staying indoors may be a possible cause of their low mood and they should leave the house. Sometimes it is not obvious what activities you do help increase your mood; exercise and cleaning being good examples because they are activities which people generally associate with negative emotions, but actually increase your mood without you realising. Once users do realise this, they can change their lifestyle to include more of the activities which cause them to be happier throughout the day.

Literature Review Research: When researching whether our app would be effective or not, we found several studies to show that it would be. Research has shown that tracking data using mobile technology leads to users increasing their self-awareness by discovering triggers of their positive and negative moods (Cristol [2018]). Another study showed that stress management and mood tracking apps support reflection well when they present patterns of data which guide users on what to focus on (Nora Ptakauskaite [2018]). This study however found that apps were not effective at encouraging users to keep doing certain actions, for example trying to *encourage* them to exercise each day, so we decided not to include this

in our app. The purpose of our app would merely be to inform them of the link between exercise and their moods and then let the user make the choice about how to spend their time. Another study that analysed thousands of reviews of similar mood tracking apps showed that users also use the data to share it with family members and healthcare professionals, giving another use case of this app (Clara Caldeira [2016]). Whilst there are other apps on the market that allow a user to track their mood, the information visualisation aspect of these apps is poor. Our app will have more informative visualisations, and a greater variety of them which is what will make our app unique.

Dataset: The app will use the users' own data to produce visualisations. We decided to use this data as opposed to any other data sets because it is only the user's own data that can provide meaning to the user. The user is unlikely to be able to benefit their lifestyle by observing other data sets which they may not relate to. In addition to this, we could not find any possible datasets that would be useful in some way.

Target Audience: The audience of the app will be anyone of any gender, any age who is having mental health problems or who simply wants to gain an insight of which of the activities they do improve their mood the most. Anyone can get benefit out of the app, and there is not a specific demographic that are likely to get more use out of it than anyone else. Healthcare professionals and therapists may also value the app if they want to encourage their patients to use it as a diary which can then provide insight in meetings.

2 Initial Designs

2.1 App Identity and Functionality

Our app will be called "Moodie". We created a simple logo using Pixelmator Pro:



The list of functionality is as follows:

- Users will be able to create an account and log in
- Users will be able to make a list weekly goals which can be referred to throughout
- Users will be able to input data in the form of their mood on a scale from 1-5 (i.e. a Likert Scale)
- Users will be able to input data in the form of their activities every day
- Users will be able to input data by writing text to describe their thoughts in an optional journal section
- Users will be able to view generated graphs depending on their own data in order to see trends
- Users will be able to view conclusions based on the analytics of their data, for example what activities they did on days they were happiest

- Users will be able to see all of their data in a calendar-format
- Users will be able to edit all of their past entries
- Users will be able to add and delete activities based on their lifestyle

This list of functionality may change as we get user feedback along the way, as we will receive feedback on functionality as well as design.

2.2 User Stories

We created some user stories in order to explain the functionality and the rationale behind it. (We've used the word 'user' instead of something more specific because we recognise that the user can be anyone and not a specific demographic or profession)

- As a user, I want to be able to track my mood each day, so that I can see my progress over time.
- As a user, I want to be able to write down any thoughts I have about the day, so that I can use the app as a journal and get things off my chest.
- As a user, I want to be able to list my weekly goals, so that I am reminded of them each day and can remember to work towards them.
- As a user, I want to be able to view generated graphs and view statistics and conclusions, so that I can come to see what activities make me happiest and I can make informed choices about what better to spend my time on in order to maintain a happy mood.
- As a user, I want to be able to add and delete activities, so that I can adapt the app to suit my lifestyle.
- As a user, I want to be able to edit my past entries, so that I can easily add things I forgot to add previously.

2.3 Context, User Needs and Initial Design Choices

Before starting to draw paper prototypes, we discussed context, user needs and how this would affect our initial design choices. The context would be users using the app for a short amount of time at the end of each day. The app would therefore need to be really quick and intuitive to use. The value of the app comes from consistent use of the app, so if it was difficult to use in any way then users would not want to continually use it, and the aim would not be achieved. Usability comes from simplicity, so we would need to make sure that we did not make the app or the visualisations too complicated. Additionally, the fact that the users may be upset or worried further shows the need for clarity. We opted to use the colour blue as the main colour, because blue is associated with positivity and calmness, values which we hope our app reflects.

We have chosen to produce a web app which is also mobile optimised as opposed to a mobile app because it means that users will be able to use the app on both a normal computer and also their mobile phone if desired. When we spoke to potential users of the app at the very beginning of the design process, some said that they like to get away from their mobile phone at the end of the day, and some said it would be convenient to use the app if it was accessible on a mobile phone and may make the journal functionality easier to

use with a proper keyboard. Having a mobile-optimised web app allows for both of these possibilities allowing the user to easily fit the app into their lifestyle, especially given the speed and versatility of modern mobile web browsers.

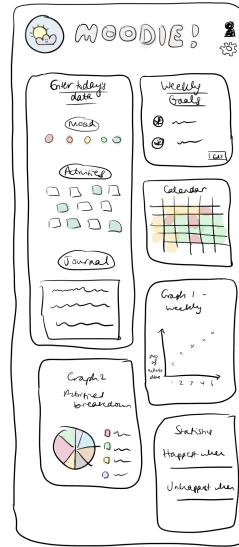
2.4 Design 1: Initial Paper Prototypes

When we started drawing up paper prototypes, we drew several different designs, with the intention of evaluating each one before choosing the design to take forward to the next design stage. The main decision was whether to design the app to be displayed on several different screens (tabular design), or display all of the data on one main screen (infinite scrolling). Both designs have their benefits and challenges which will be discussed when evaluating them in the next section.

Here are the wireframes for the tabular design with the information split across multiple different pages (larger images shown in Appendices):



Here is the wireframes for the infinite scrolling design with the information all on one page (larger image shown in Appendices):



2.5 Evaluating the Initial Paper Prototypes

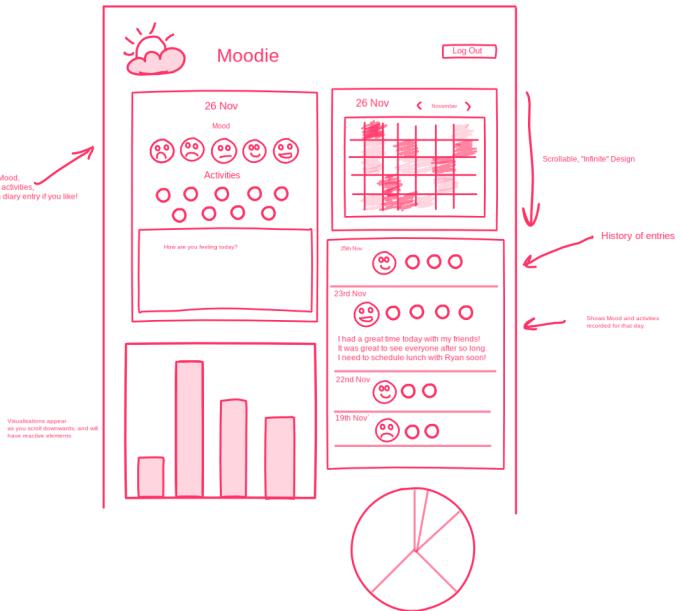
Methodology: We decided to use Heuristic Evaluation to evaluate the paper prototypes. Heuristic Evaluation is a usability inspection method where evaluators are presented with

a user interface design and asked to comment on it, with the aim of identifying usability problems (Jakob Nielsen [1990]). This is a good method to use because it is a quick and easy way of identifying problems in your design, ensuring you use multiple evaluators in the process. We selected some "heuristics", which are metrics used to assess various aspects of the interface, using some from Jakob Nielson's list and some we decided ourselves which fit in with the project and what we wanted to get out of the heuristic evaluation. The heuristics we used from Nielson are as follows: visibility of system status, user control and freedom, consistency and standards, error prevention, flexibility and efficiency, aesthetic and minimal design, and help and documentation. Heuristics we added ourselves were minimising perceived workload, because this is an important factor that would lead users to continue using the app, and meaningful/valuble visual experience, again important for users to find the app useful. Each member of the team assessed both designs using each heuristic, and chose a "winning design", and then we came together to agree on the winner.

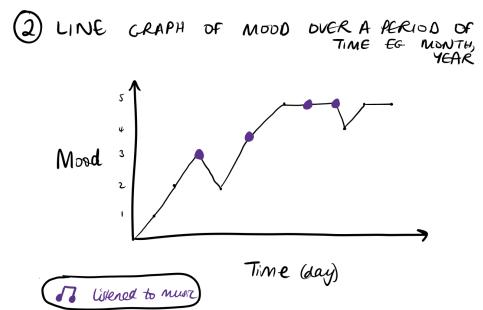
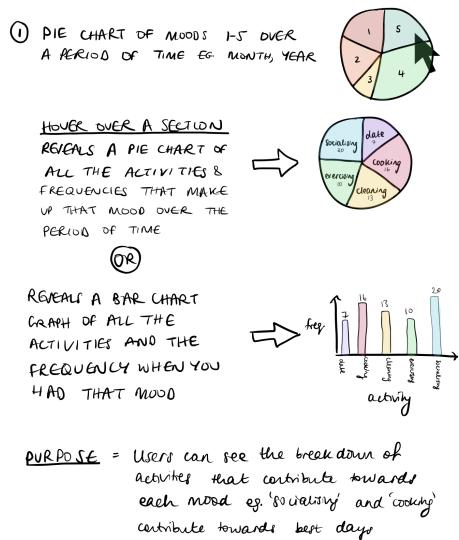
Results: The results from the Heuristic Evaluation are included in full the Appendix (with green and red highlighting the winner and loser respectively) but to summarise, the infinite scrolling design won in efficiency and minimalist design, because there would be only one page to navigate around. The infinite scrolling design also won error prevention based on the fact that the multiple tab design may cause a user to click on the wrong tab trying to find something, and visibility of system status because all components are included on the same page. We thought the multi tab design would be better in terms of consistency and standards, because of the separation of features, whilst the one page design would be more inconsistent with the 'boxes' on the page being different sizes, and the user would have to try harder in a way to work out which section meant what. However despite this, because of the advantages found in the infinite scrolling design, we decided to proceed with that.

2.6 Design 2: InvisionApp Wireframes and Graph Proposals

Prototype: After deciding that we wanted to proceed with the one page design, we decided to create another prototype, but this time a more formal wireframe on InvisionApp (www.invisionapp.com). This prototype was interactive, with users being able to click on a mood and flick between the weeks on the calendar. It also allowed the user to hover over the graphs in order to see different data, which is a feature we planned to implement with the graphs. The InvisionApp wireframe is as follows (larger image shown in Appendices):



Graphs: At this point we also designed four graph proposals based on what we thought would be the most interesting and informative for the user. Each graph is included with a justification of why the graph would add meaning to the users' data. (Larger images shown in Appendices.)



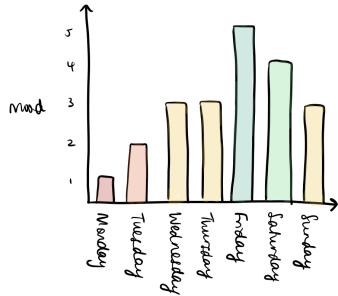
PURPOSE = Users can see what effect the activities have on their mood

③ WORD CLOUD SHOWING RELATIVE FREQUENCIES OF ACTIVITIES AND AVERAGE MOOD WHEN DID THAT ACTIVITY

STAYED INDOORS
SHOPPING
RELAX
EXERCISING
SOCIALISING
COOKING
GOOD MEAL
DATE
PARTY
WORK

PURPOSE : ALLOW USERS TO SEE AT A GLANCE WHICH ACTIVITIES HAVE THE MOST POSITIVE EFFECT ON AVERAGE DAILY MOOD AND WHICH HAVE THE MOST NEGATIVE EFFECT

④ AVERAGE DAILY MOOD



PURPOSE : SEE WHICH DAYS OF THE WEEK HAVE THE HAPPIEST AND LEAST HAPPY MOOD

Statistics: In terms of the statistics we are planning to provide, we are planning to give average daily mood in the form an emoji, activity breakdown where the count for each activity is seen, and same with the mood count.

2.7 Evaluating the InvisionApp Wireframes and Graph Proposals

Methodology: In order to evaluate the InvisionApp wireframes and the graph proposals, we decided to get some user feedback using the query technique of informal interviews. This would be a useful technique at this stage of the project because open-ended questions would give us detailed qualitative data, which we could then use to improve our app. We gathered users of all ages and genders who would use the app in real life, deciding if a user was suitable if they answered yes to one of the following questions: "Have you ever struggled with mental health problems/low mood?" or "Has a family member or friend ever struggled with mental health problems?". All users gave consent at the beginning of the interview to participate and for their feedback to be used. The structure of the interview was as follows:

- One of our team members began by giving a basic description of what the app is supposed to do, followed by the user testing the prototype on their own with as little instruction given as possible, so that we could see how intuitive our app was to users who had never used it before.
- Users were encouraged to comment aloud as they used the app and together with the questions we asked at the end, we collected a large range of qualitative and descriptive information
- When the user was ready, we asked the following questions regarding the prototype: "What do you like about the design?", "What do you dislike about the design?", "Are there any functionality you would like to add or take away?", and "Is it immediately clear to you what each section is for?". Recognise that the first two sections are regarding design and the second two are on functionality.
- After explaining the graphs in more detail using the diagrams above, we asked the following questions regarding the graph proposals: "Which graphs would you find most useful?" and "Which would you find the least useful?" This would give us a

priority in terms of which graphs to implement first and if there were some that would not actually add value for users. We will also ask about the usefulness of the statistics compared with the graphs.

- In total we interviewed 5 users at this stage, as we found by that point that users tended make the same points regarding the design and graphs.

Results: The feedback from the informal interviews was very useful. To summarise the feedback, we gathered some positive comments regarding the design, namely appreciation for the one page design as it was really intuitive to pick up and understand, and it was clear what each section was for. Several users found that there were no navigation issues and the calendar was a useful feature. They suggested that a quick way to jump back to the current date after flicking through the months would be a useful feature, and also adding of activities which we had planned to do anyway. In terms of the feedback for the graphs, participants found the pie chart (1) and the bar chart (4) to be the most useful. Some said that the line graph would be useful if it was labelled clearly as two people misinterpreted what the line graph was representing when the first looked at it, with one participant thinking that the x-axis was representing time of day instead of day. Additionally, two participants said that the word cloud was an interesting idea but has the potential to be confusing in terms of what it was representing, again showing the need for clear descriptions. One user said that it may be problematic if the user's eyes are drawn to red as opposed to green as red stands out more as a colour, so we need to make sure that the shade of red we choose does not seem more prominent than the green. When comparing the usefulness of the graphs and the statistics we chose to potentially implement, all users agreed that graphs are easier to understand and interpret, but statistics may also be useful to allow the user to see broad overviews of their progress. Overall, we gained some useful insight from the informal interviews into the most important functionality and graphs to implement, and identified potential problems that may have arisen from lack of clarity.

3 Implementation

3.1 Technologies Used

Throughout the project, we used a variety of technologies. Some we had used before and were familiar with, for example HTML and Git, but some we had to practice and research in order to become competent in whilst working on the project, for example Javascript and the D3 framework.

- We used HTML, CSS, JavaScript and the D3 JavaScript framework to develop the application. D3 was a good choice because it allowed us to produce the interactive data visualisations (relatively) easily.
- We used Git and GitHub for version control and to make sure everyone had the latest versions whilst working on the app.
- We tested the app using Google Chrome and Safari internet browsers, however the app works better on Google Chrome. We also tested the app on both laptops and mobile phones.

- We used InvisionApp (<https://www.invisionapp.com>) to create and gain feedback on the second stage of prototypes.
- We used Pixelmator Pro to create the logo.
- We used Google Drive for access to shared documents and Google Forms to create the questionnaire.

3.2 Approach and Process

Our rough approach when implementing the app was as follows: firstly we learned about D3 from online tutorials, and eventually managed to implement our own graphs. After learning D3 basics, we set up the project using a CSS template (from <https://github.com/puikinsh/notika>, adapted from <https://colorlib.com/>) and adjusted the template to suit our needs, namely creating one main page for all of our components. Once this was set up, we added our functionality and graphs. We spent the rest of the implementation period making sure the graphs were displaying properly, refining the layout and making finishing touches. We also changed a few elements after getting the feedback from the next stage.

4 Evaluation

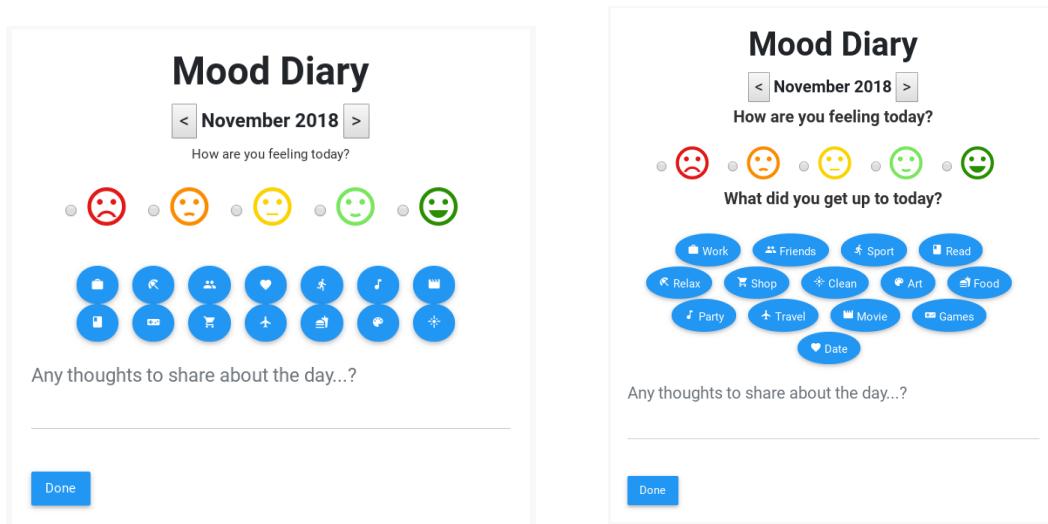
4.1 Usability Evaluation on Product and Resulting Changes Made

Methodology: For the usability evaluation of the final product, we decided to use a combination of the Think Aloud method and a questionnaire with 10 questions; 5 for design and 5 for functionality. The structure of the evaluation would be similar to that described above for the Informal Interviews, with the user being explained a brief summary of the purpose of the app, and then allowed to explore it with no intervention, followed by a questionnaire. We decided to use the Think Aloud method because it's very simple, provides useful insight as the user is saying their thought processes, and shows how a user would use the system having had no prior experience. We decided to use a questionnaire as opposed to an interview for this stage because we would be using more participants and getting a greater amount of feedback, and it would be much easier to analyse the data if we received it in the form of questions answered using a 1-5 scale. We kept the questions as open-ended as possible to avoid bias, and had an optional comment box for each question for the user to add any thoughts should they have any. For this evaluation stage, we had 12 participants because we thought that this would be a good number in order to see a trend in the data received from the questionnaire, and any problematic points would almost certainly be raised using this number. We were thinking of using the NASA Task Load Index during the questionnaire, but decided against this as this system is used to assess the usability of one particular function, whereas we wanted to collect responses relating to all of the functionality and design. We allowed the participants to test the app on different devices, so some tested on a laptop, some a tablet and some their mobile phone.

Results: We got a lot of feedback as a result of the questionnaire, and saw patterns with what people thought when observing them through using Think Aloud. In terms of the design, participants generally found it easy to work out what each section was for, liked the

colour scheme and layout, and found the app to be responsive. In terms of the functionality, participants found it easy to add daily data, and found the graphs useful. All of the participants were impressed at the interactive visualisations and commented that they were much better than having normal graphs. However analysing the results of the questionnaire, we found that there were mixed opinions about how easy it was to analyse the graphs. Additionally, several of the participants thought that a legend for the pie chart would be useful, or some way of making it easier to understand immediately what each section was for. This is something we would have added if we had more time. Many of the participants also needed the line graph explaining to them, showing that this could definitely be explained in a clearer way.

Resulting Changes Made: One of the changes that was suggested was providing text as well as icons to represent the activities, as it was sometimes unclear which icons corresponded to which activities and it took longer to choose the activities. We agreed with this feedback, and changed this part of the app. The left image below shows what the component was like before the change, and the right image is what we changed it to:

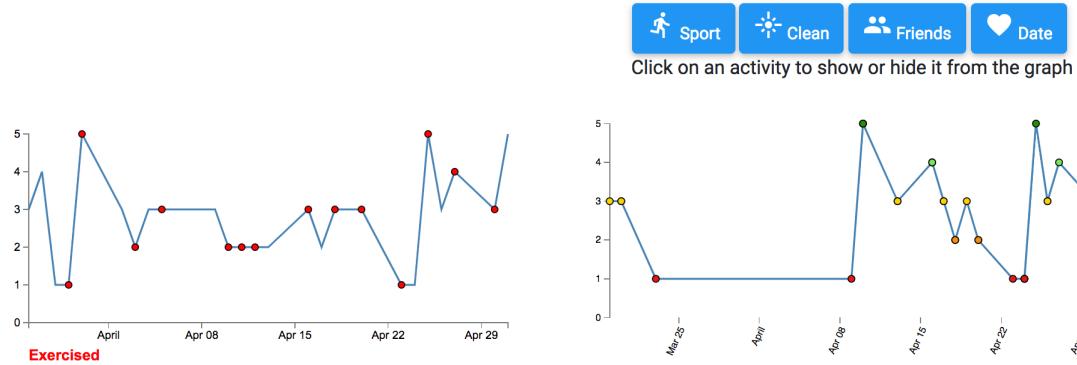


Again to do with the data entry, we had some feedback to say that there needed to be some feedback given to the user when they had entered their data. We agreed, and implemented a green tick to appear when they had successfully recorded their data, as shown below. We also received feedback that it would be good for the user to be able to edit today's entry once they had already completed it, so we also added this into the app.

28th Nov ✓

Another piece of feedback we received was concerning the line graph. Originally we planned to only be able to view the points where one activity took place, but one participant said that it would be easier to be able to see multiple points to be able to compare the activities.

We decided to implement this and use different colours to represent the different activities. On the new design, the user can use the legend to select which activities' points they want to be displayed on the graph. Below are before and after screenshots of the line graph to illustrate the change:



4.2 Reflection on App and Improvements for Future

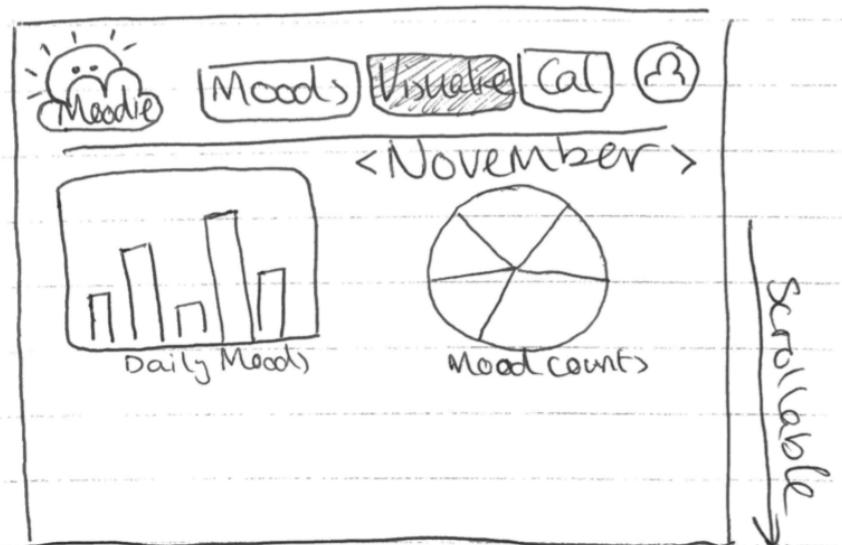
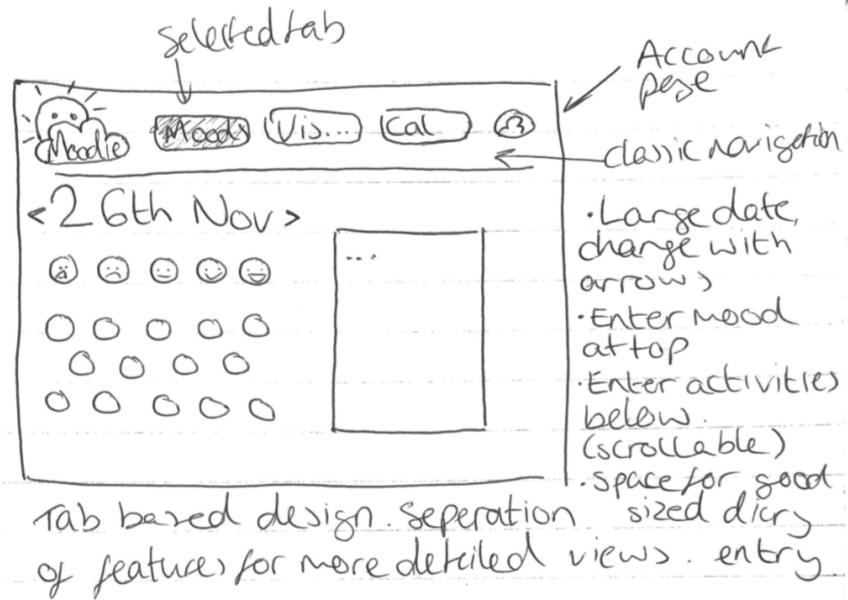
Overall we managed to implement most of the functionality we set out to do. There are some functions which we did not get a chance to do, for example a more clear legend for the pie chart, and add and edit activities. We would have also liked the word cloud diagram to be interactive, similar to the pie chart and line graph diagrams. We would have also added sign in/out functionality, potentially more graphs and more statistics. We would have worked to make the appearance more consistent and easy to understand for the user. Furthermore, if we had more time we would have gotten more participants to experiment with the app and take our questionnaire, in order to get more feedback. An example of a different functionality we would have implemented is a Breathing exercise feature which would use sound and/or haptic feedback in order to guide the user's breathing for a set amount of time. This would be useful because the user would be able to take some time to calm down at the end of the day, along with recording their thoughts and activities.

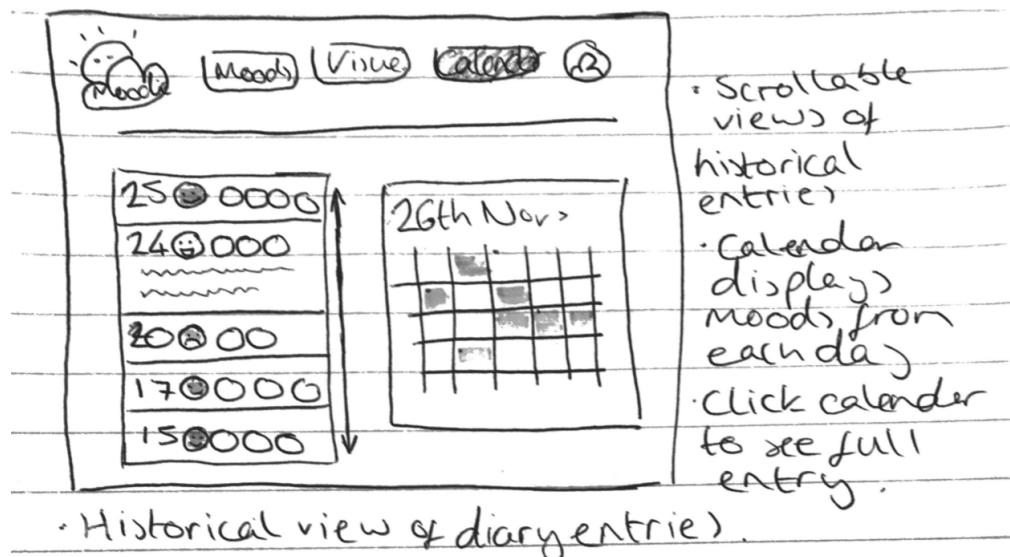
5 Conclusion

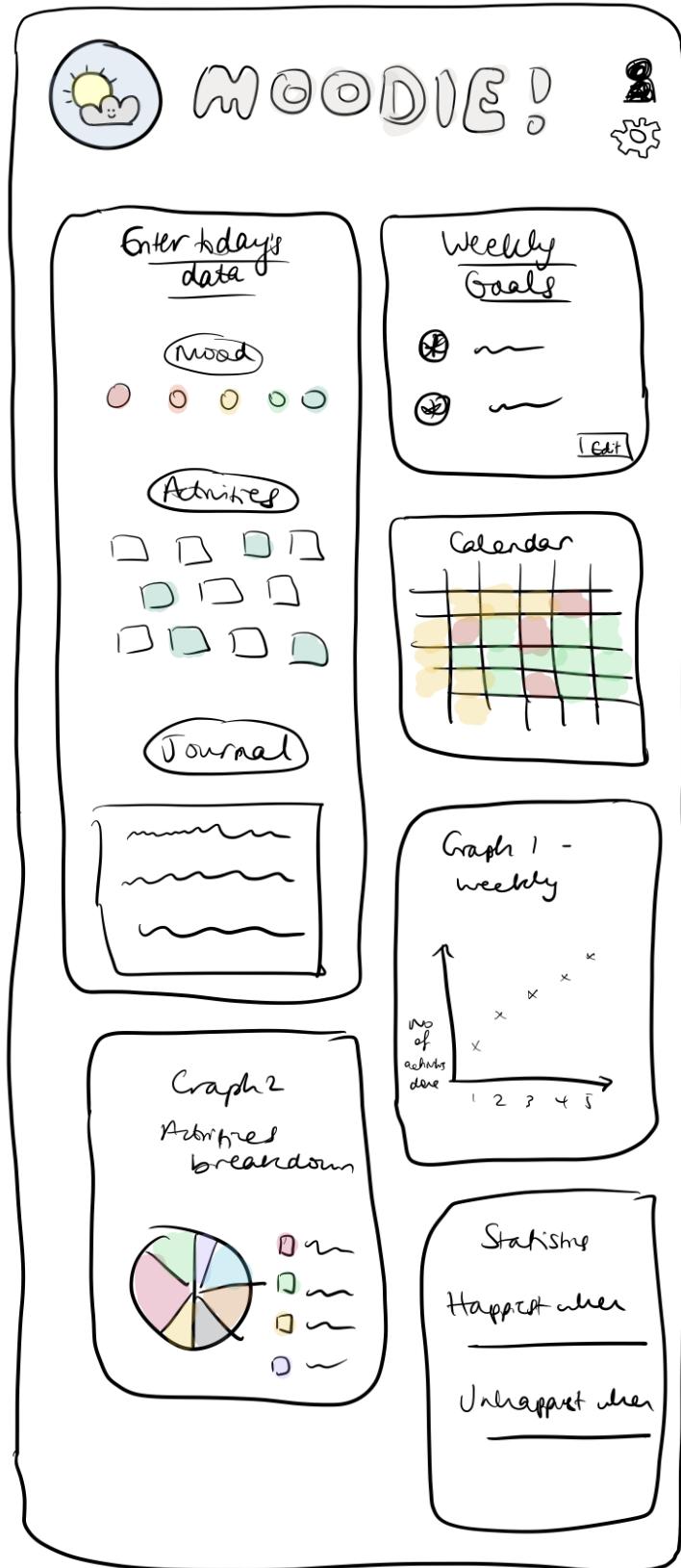
To conclude this report, we thoroughly enjoyed designing and developing this application, and believe the project to be successful. The evaluation stages throughout were vital in allowing us to design something which users would find easy to use and valuable. We got an introduction to the D3 framework when using it to create the visualisations, and experimented with new evaluation techniques such as Heuristic Evaluation and Think Aloud, giving us useful feedback which allowed us to adapt the app further. We identified every team member's strengths and weaknesses at the beginning of the project, which was important in allowing us to be as productive as possible. We are very happy with the end result and we hope you enjoy reviewing it.

6 Appendices

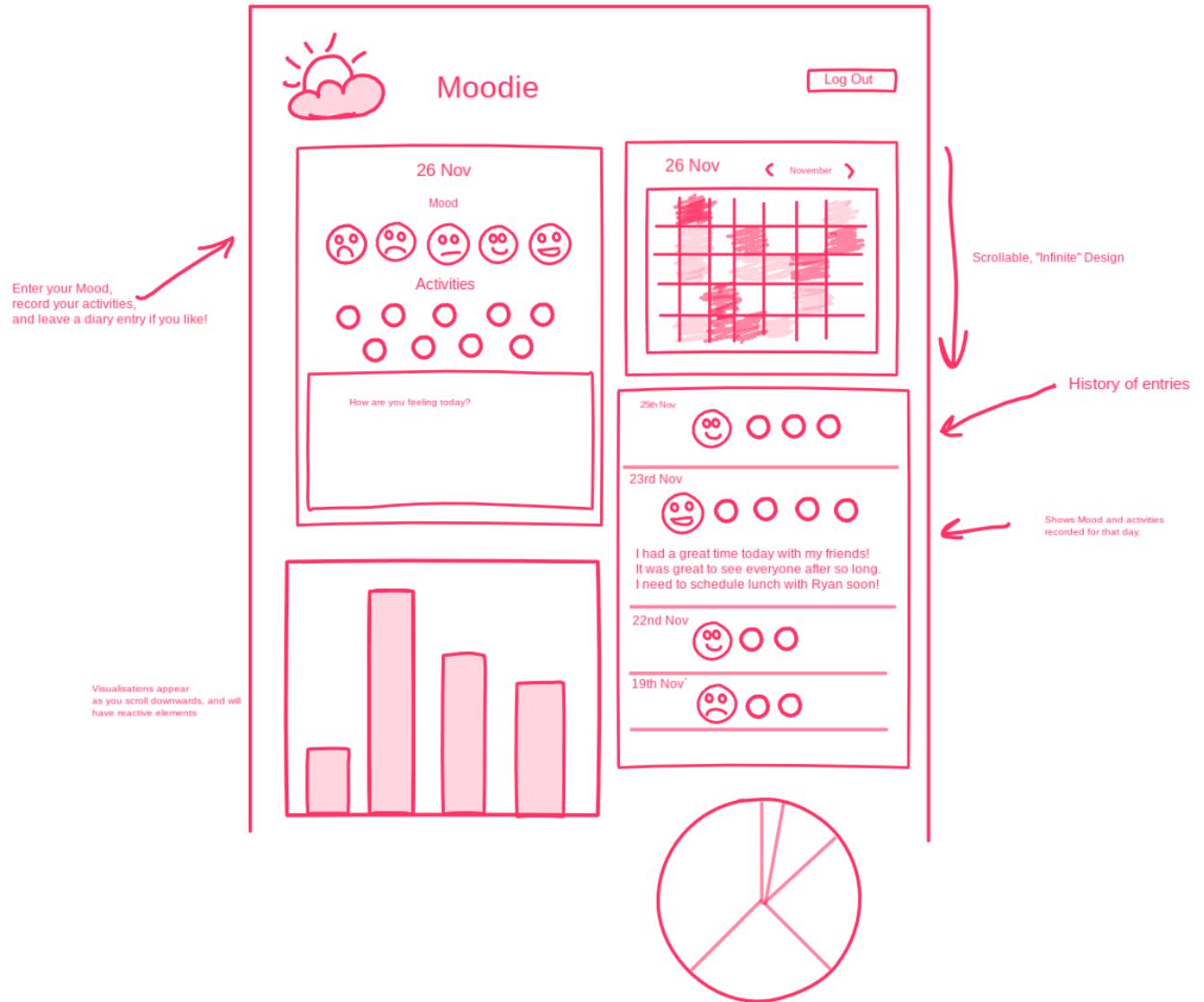
6.1 Paper Prototypes





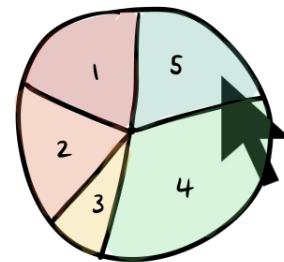


6.2 InvisionApp Wireframe



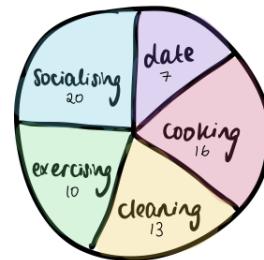
6.3 Graph Proposals

① PIE CHART OF MOODS 1-5 OVER A PERIOD OF TIME EG. MONTH, YEAR



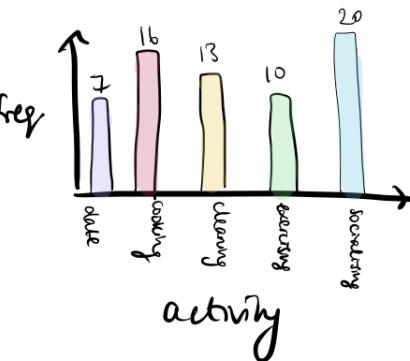
HOVER OVER A SECTION

REVEALS A PIE CHART OF ALL THE ACTIVITIES & FREQUENCIES THAT MAKE UP THAT MOOD OVER THE PERIOD OF TIME



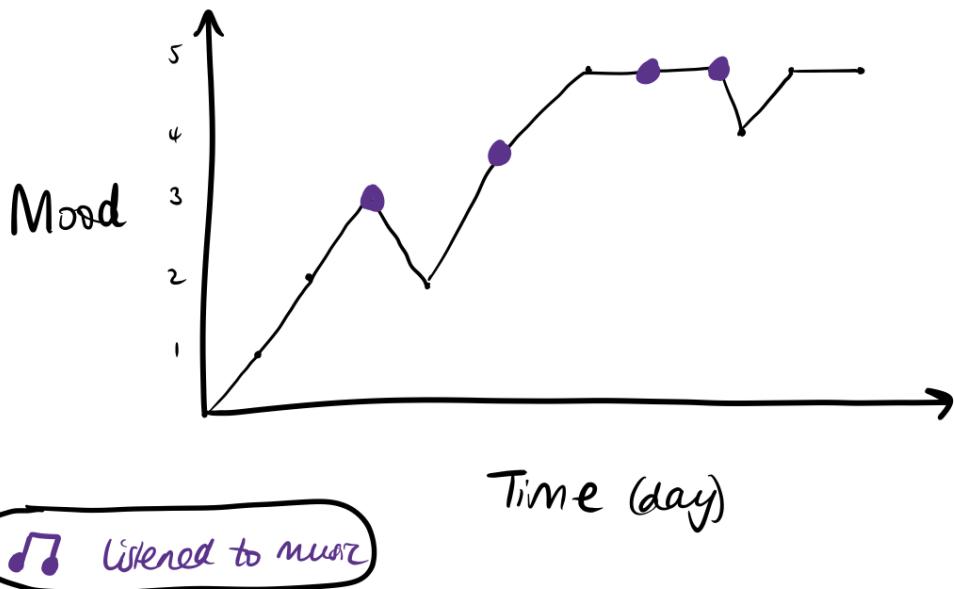
(OR)

REVEALS A BAR CHART GRAPH OF ALL THE ACTIVITIES AND THE FREQUENCY WHEN YOU HAD THAT MOOD



PURPOSE = Users can see the breakdown of activities that contribute towards each mood eg. 'socialising' and 'cooking' contribute towards best days

② LINE GRAPH OF MOOD OVER A PERIOD OF TIME EG. MONTH, YEAR



CHOOSE AN ACTIVITY

SHOWS POINTS ON GRAPH (IE. WHICH DAYS)
YOU DID THOSE ACTIVITIES

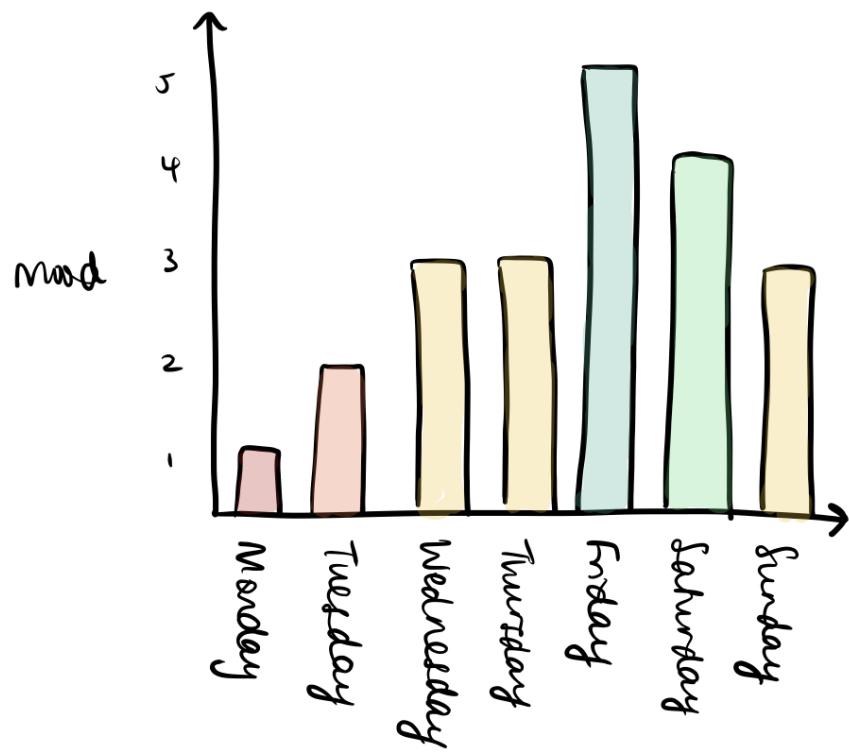
PURPOSE = Users can see what effect
the activities have on their
mood

③ WORD CLOUD SHOWING RELATIVE FREQUENCIES OF ACTIVITIES AND AVERAGE MOOD WHEN DID THAT ACTIVITY



PURPOSE : ALLOW USERS TO SEE AT A GLANCE WHICH ACTIVITIES HAVE THE MOST POSITIVE EFFECT ON AVERAGE DAILY MOOD AND WHICH HAVE THE MOST NEGATIVE EFFECT

④ AVERAGE DAILY MOOD



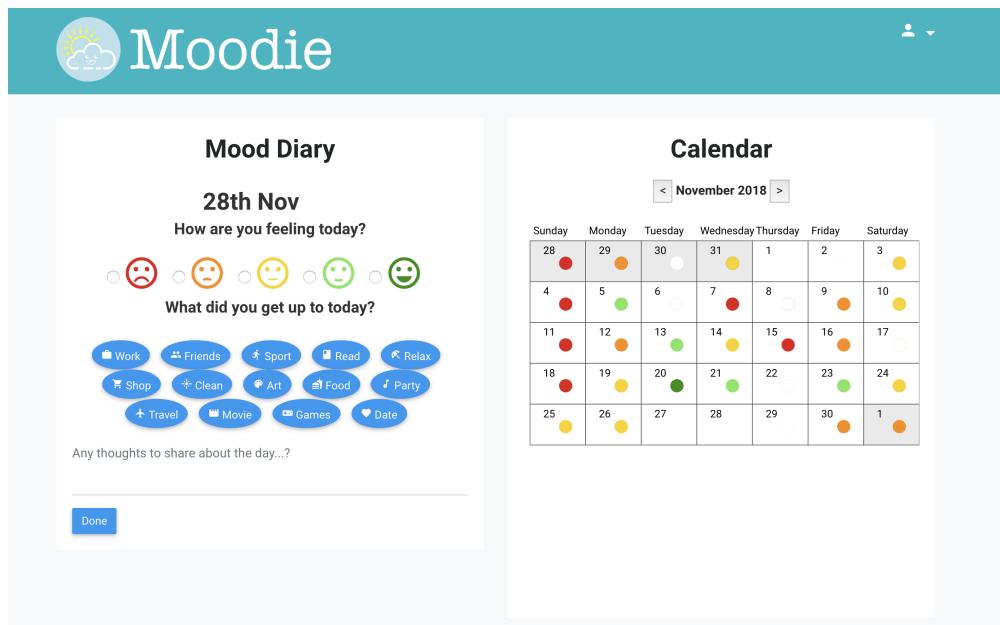
PURPOSE : SEE WHICH DAYS OF THE WEEK HAVE THE HAPPIEST AND LEAST HAPPY MOOD

6.4 Results from Heuristic Evaluation

Recall that the Heuristic Evaluation was the first evaluation stage, finding errors in the initial drawn prototypes in order to decide which route to follow; tabular design or infinite scrolling. Green signifies the winner according to the heuristic, red the loser and white signifies not applicable at this stage. Explanations are included within the table.

Heuristic Evaluation Stage 1 - Paper Prototypes	Prototype 1 (Tabular Design)	Prototype 2 (Infinite Scrolling)
Visibility of system status	This design does not allow for clearer system status because the components are spread across different parts of the app.	This design may be better because you can see all components at the same time.
User control and freedom	User should be able to edit any entries. User should be able to edit today's entry even if the box has 'greyed out' when completed.	Need to be able to edit mood entries for any given day. User should be able to edit today's entry even if the box has 'greyed out' when completed.
Consistency and standards	Design 1 has higher consistency due to separation of features - visual experience should stay the same on returning to any tab. Each individual component is consistent in style.	Would be more inconsistent as the boxes would be different size, would potentially change places and the user would need to try harder to work out what the focus of the box was i.e. goals, calendar, graphs
Error prevention	In each design, user input is limited and so should have high error prevention throughout. Users can easily edit if mistakes are made. In this design, user may click on wrong tab when navigating round the app.	Again, user input is limited enough to prevent errors being entered.
Flexibility and efficiency	Depending on setup of the homepage/workflow of the site, users may have to do more navigation to fulfill their intents.	Could have a higher efficiency because there is less navigation and less interaction required to get to anything as all elements are on one page. The user will be quicker at finding information once that have become accustomed to the app, as they will know where everything is.
Aesthetic and minimalistic design	Upper navigation bar is slightly outdated compared to newer and more minimal designs. Tab navigation is less aesthetically pleasing than an all-in-one design.	More minimalist and less cluttered design as everything is one page. Aligns with other modern apps that only involve scrolling down one page.
Help and Documentation	Not included in initial paper designs.	Not included in initial paper designs.
Minimising perceived workload	Tab navigation could be perceived as more work or setup for the user. Visual separation is nice, but with more overall pages comes more overall complexity for everyday use.	Could reduce workload because the simple design means everything is on one page. However if it takes the user more time to become accustomed to the design because of time taken to work out what each box represented, could be more work.
Meaningful/Valuable visual experience	Designs have potential depending on which visualisations are implemented.	Again, design has potential to be meaningful and give a valuable experience depending on visualisations chosen, and not overloading the user with information.

6.5 Completed App Screenshots



Moodie Entries

25th Nov
Went to the gym today! Had a great time.

24th Nov
It was so great to see everyone again!

22nd Nov

21st Nov
Today was okay. Need to call Mum soon.

22nd Nov
Got a lot of work done today! Project is ahead of time.

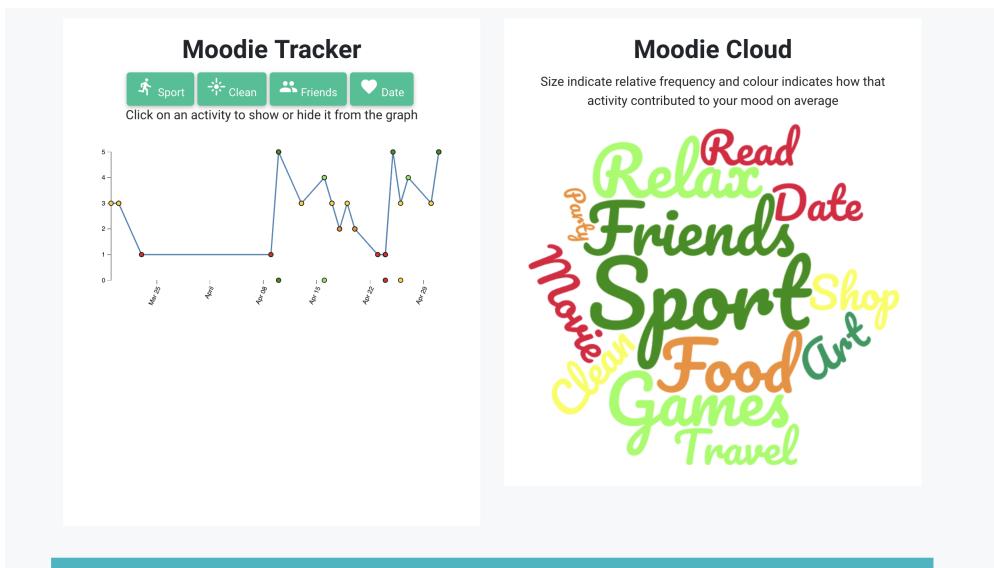
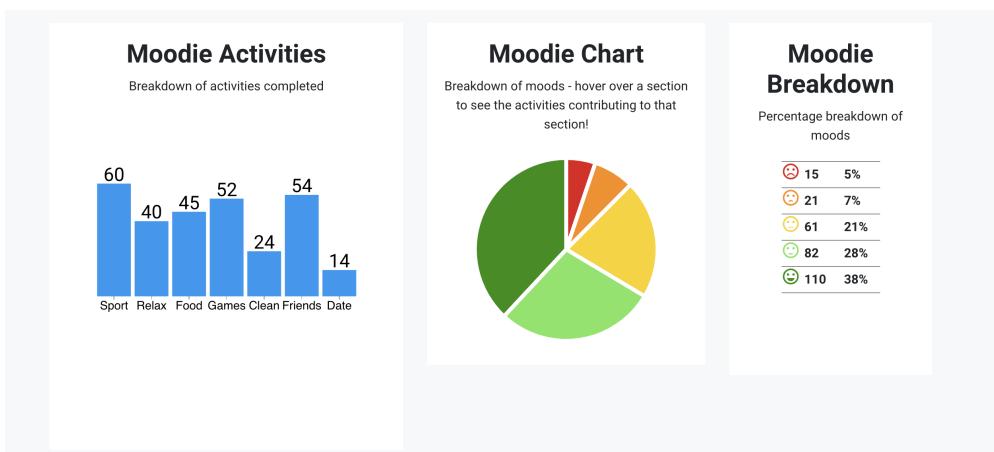
Moodie Goals

3 of 5 remaining [Archive](#)

- Finish my project
- Buy a card
- Wrap Greig's Birthday present
- Clean my room
- Phone Mum!

[Add new todo](#) [Add](#)

[View All](#)



6.6 Final Questionnaire Questions

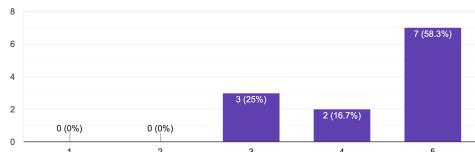
The questions for the questionnaire were as follows, and users were asked to give an answer on the scale 1-5, with 1 being no/not at all, and 5 being yes/very much. The first 5 questions are about appearance and the second 5 about the functionality. Each question had an optional comment section for any additional thoughts:

- I found it easy to identify what each section was for.
- I liked the colour scheme.
- I found the app to be responsive.
- I liked the layout of the app.
- I liked the overall design.
- I found it easy to add daily data.
- I found it easy to use the calendar.
- I found it easy to interpret the graphs.
- I found the graphs useful.
- I liked the overall functionality.

6.7 Questionnaire Results

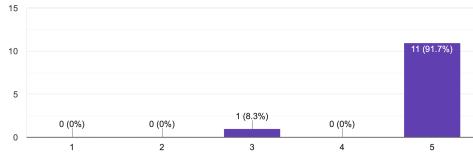
I found it easy to identify what each section was for.

12 responses



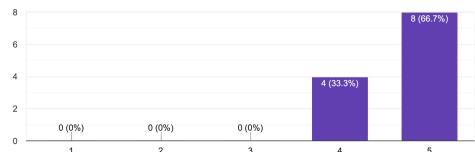
I liked the colour scheme.

12 responses



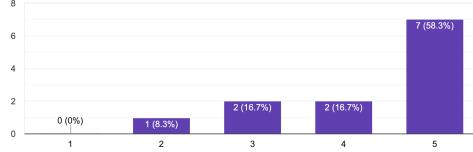
I found the app to be responsive.

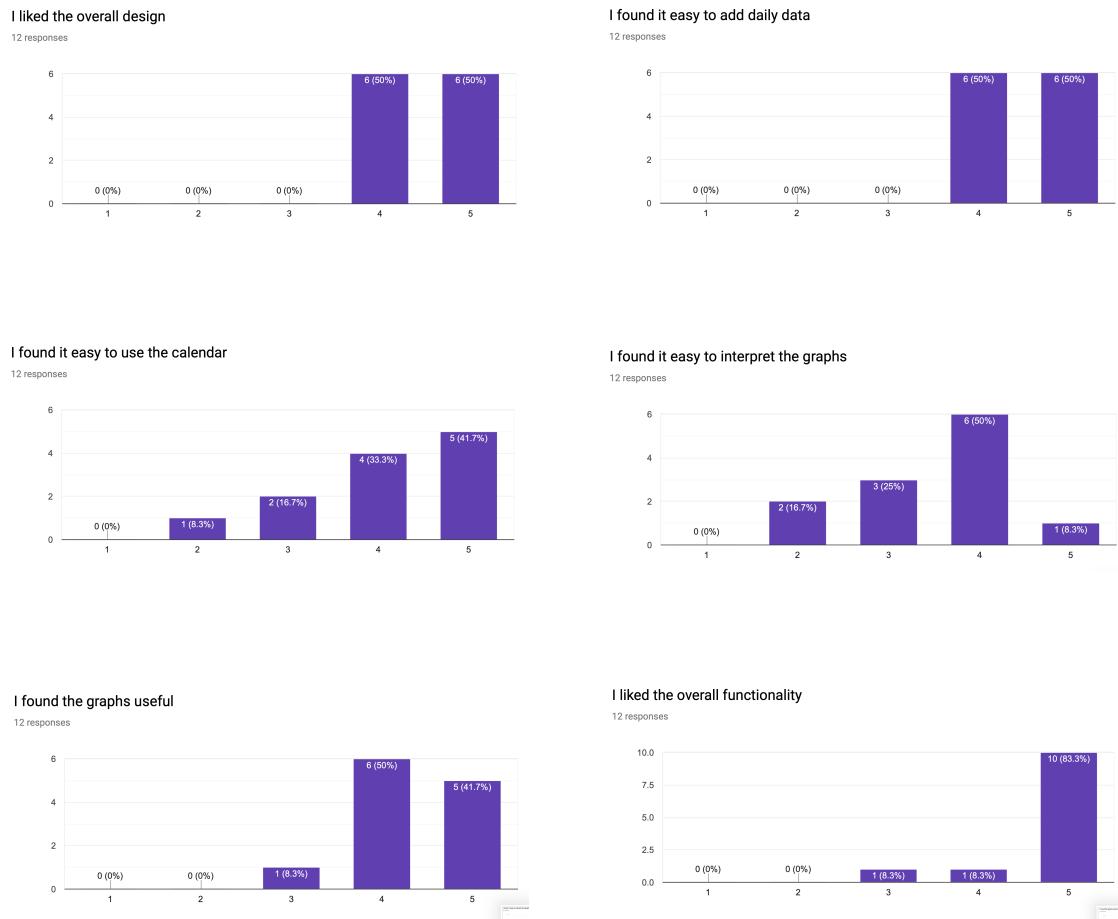
12 responses



I liked the layout of this app.

12 responses





Participant	DESIGN COMMENTS
1	really liked it, some aspects can be made more explicit like i said
2	graphs could be better labeled
3	Would be nice to have my name displayed at some stage to make the interaction more personal given the app context
4	The design is too long, it requires too much scrolling. This would be very difficult to implement on mobile. Perhaps you could use a sidebar with tabs for each section?
5	Nice to have all data on one page, makes it easier to interpret
6	Nice to have all data on one page, makes it easier to interpret
7	The word cloud with different colours is a good idea.
8	Some sections doesn't look like its properly aligned
9	I like the clean design and layout
10	It looks great, bright and vibrant (improved my mood looking at it). My only criticism is unselected items are blue (selected green), which didn't seem intuitive, especially in the graph. It would also be cool to be able to move each widget around, giving the user customisation options, even the ability to hide widgets, etc
11	Great design, sections are clear by white boxes
12	Box layout is really nice, graphs updating as you hover over other graphs is great too.

Participant	FUNCTIONALITY COMMENTS
1	extensive functionality
2	very responsive and useful
3	It's very good, great job!
4	Functionality is very good. I think that the graphs section though responsive is quite confusing, especially as the graph changes when you move the mouse away.
5	Useful to be reminded of goals and what to do to improve my mood
6	Useful to be reminded of goals and what to do to improve my mood
7	No
8	Would have liked to be able to click on the calendar to see the log on that day
9	No, it all looks good to me
10	It works well, and would be useful. If every element on the page was interactive, it would be perfect (click word wall, etc). The functions seem simple and straight-forward, which is great.
11	Interactive graphs are amazing!
12	Makes it really interesting to see activities associated with certain moods.

6.8 Deployment Link

Deployment Link: <https://mbigginsuog.github.io/moodiehosted/>

References

- Lesley Chan Vivian Pham Yunan Chen Kai Zheng Clara Caldeira, Yu Chen. *Mobile apps for mood tracking: an analysis of features and user reviews.* AMIA Annual Symposium Proceedings, 2016.
- Samantha Cristol. *Patient's Perspective on Using Mobile Technology as an Aid to Psychotherapy.* JMIR Mental Health, 2018.
- Rolf Molich Jakob Nielsen. *Heuristic Evaluation of User Interfaces.* CHI '90 Proceedings, 1990.
- Nadia Berthouze Nora Ptakauskaite, Anna L Cox. *Knowing What You're Doing or Knowing What to Do: How Stress Management Apps Support Reflection and Behaviour Change.* CHI'18 Extended Abstracts, 2018.