Human-Computer Interaction
Presentation

November, 2021

MoodIt

Team #3

David Buzatu
Chi Lung Wong

Stanimir Velichkov
George Baker

Ethan Paterson-Barker

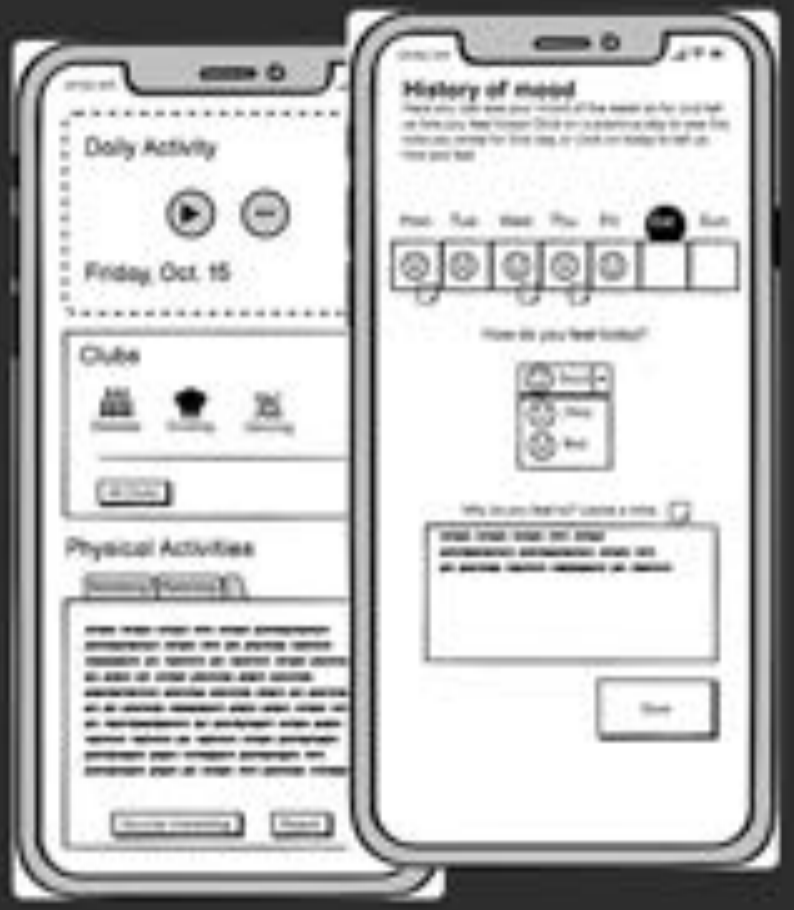
Introduction

Our design challenge solution is **a mobile app** we called Moodit.

The purpose of this app is to **help people with mental health issues** and **social media addiction**.

It does this by providing **an all-in-one place for mental health support** e.g., **mood tracking**, **activity suggestions**, and **information about professional local support**.

The user can **choose to share their social media data** which our app then analyses in order **to get a better picture of the user's mental state** — the app can then use this data to **provide more personalized content and suggestions**.



Team #3

David Buzatu
Chi Lung Wong

Stanimir Velichkov
George Baker

Ethan Paterson-Barker

Stage I: Empathising

Brainstorming: Problem Identification

We started by identifying common wellness topics such as **exercise**, **nutrition**, **motivation**, **loneliness**, **depression**, **anxiety**, and **stress**.

We agreed that we would **focus on mental wellness** since people are more concerned about this than ever.

The problem that we identified and wanted to solve is **problematic social media use**. We chose this because it's a problem we all struggle with ourselves when it comes to our own wellness.

Team #3

David Buzatu
Chi Lung Wong

Stanimir Velichkov
George Baker

Ethan Paterson-Barker

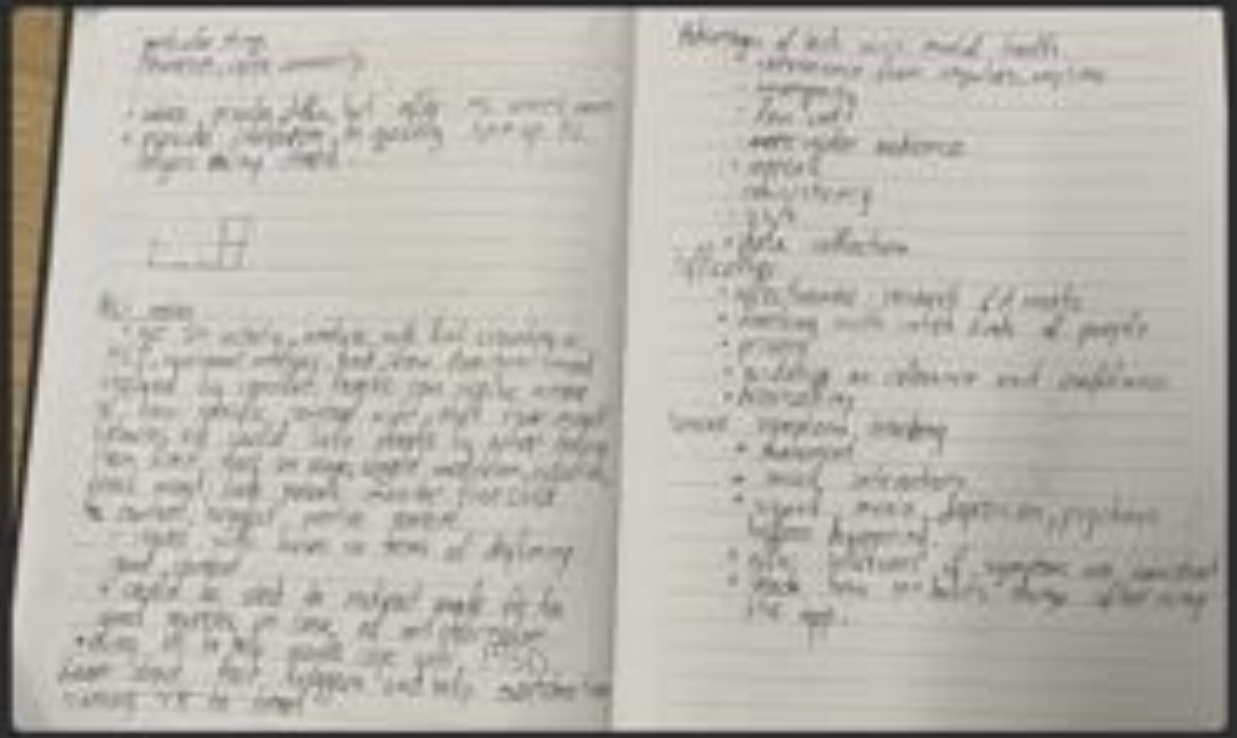
Stage I: Empathising

Brainstorming - Problem identification continued

We discussed multiple different project ideas focussing on their pros, cons, and technicalities.

One of our members suggested creating **a mental health tracking application** which could **recommend** and **suggest** certain **activities based on the user's mental state** and **usage of social media**.

After going through a few other ideas, we decided that we all wanted to pursue **a mental health tracking** app further.



Team #3

David Buzatu
Chi Lung Wong

Stanimir Velichkov
George Baker

Ethan Paterson-Barker

Stage I: Empathising

Brainstorming - Product idea

We proposed creating **a mobile app** that could **help with problematic social media usage**.

We were interested in **using data from social media**, **streaming services**, **fitness devices**, and **user feedback** to analyse how it affects mental state.

We could then use that data to give the user **personalised suggestions** and **guidance** within the app that could improve their mental state.

Also, we assumed that many users may decline to share their data, thus we decided to investigate privacy concerns further

However, we realized that it would be difficult to correlate certain pieces of data e.g., watching a sad film does not necessarily mean that the user is down

Team #3

David Buzatu
Chi Lung Wong

Stanimir Velichkov
George Baker

Ethan Paterson-Barker

Stage I: Empathising

Brainstorming evaluation

We faced a couple of challenges in the brainstorming session:

- Once we had a good idea, we found it hard to deviate from it i.e., generate different and unrelated ideas.
- We found it **hard to limit the scope of our solution** i.e., we had so many ideas about what our app could do that the initial solution ended up being bloated with too much technology without targeting the problem of social media usage.

Although we did not know each other before this brainstorming session, we worked very well together as a team by giving each other a chance to contribute equally.

Team #3

David Buzatu
Chi Lung Wong

Stanimir Velichkov
George Baker

Ethan Paterson-Barker

Stage I: Empathising

Literature Review

We researched papers related to mental health, with a specific focus on the impact of technology e.g., social media and online support.

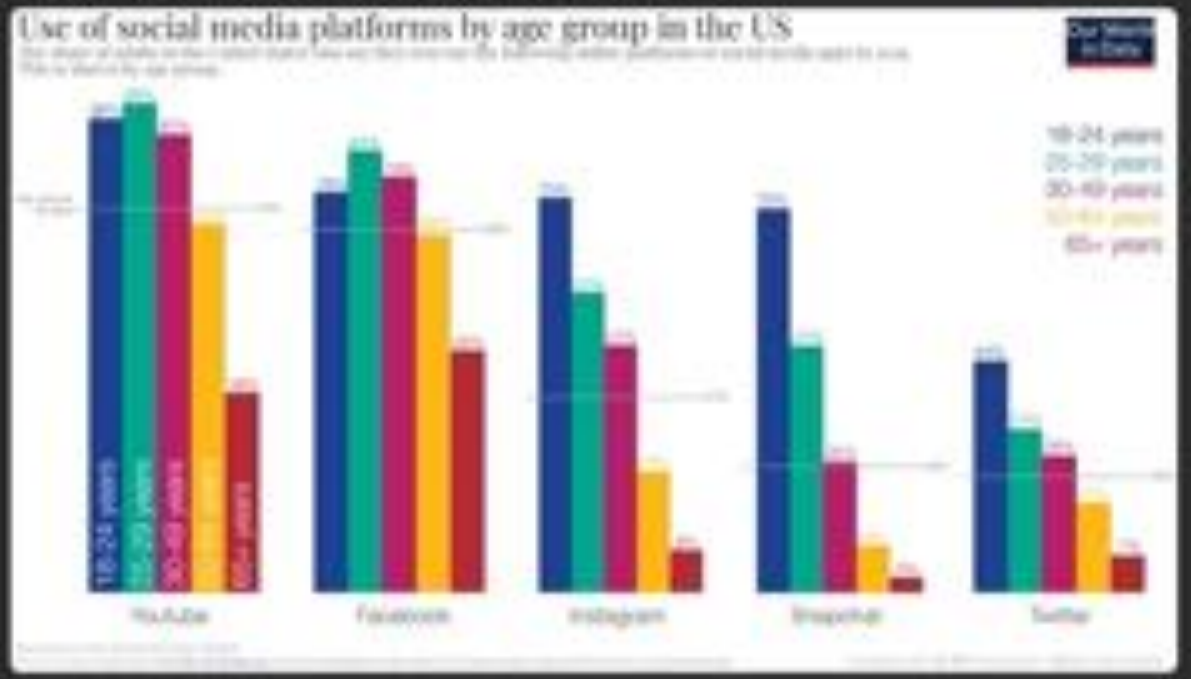
More than 50% of teenagers spend an average of one hour per day on social media [4, 10].

We found out that **all age groups use social media**; in fact, according to a 2015 study, it's **used by almost 2/3 of Americans**. Even the older generation's usage (over 65s) had a 33% increase compared to previous years [8].

Moreover, social media has a **global audience** [8], thus identifying issues with it could positively impact the lives of many.

*See Apendix 1 for references

*Courtesy of Esteban Ortiz-Ospina for Our World in Data - 2019 [18]
A more recent study on the use of social media usage.



Team #3

David Buzatu
Chi Lung Wong

Stanimir Velichkov
George Baker

Ethan Paterson-Barker

Stage I: Empathising

Literature Review Continued

Twitter has been shown to affect the subjective well-being of its users depending on which accounts they follow [2].

People tend to follow and interact with people who have a similar level of well-being i.e., happy users interact with **happy users and sad users with other sad users** [2].

Moreover, individuals with certain mental illnesses—e.g., depression—find it useful to share their experiences on social media because they can find support and interact with other users going through a similar situation [6].

The benefits of social media are that it **connects family and like-minded people** and provides users with content that suits their interests.

The negatives of social media are that it's **addictive** by nature, some people view it as an **invasion of their privacy**, and the content can have a **detrimental impact on user's mental health** e.g., hate speech.

**See Apendix 1 for references*

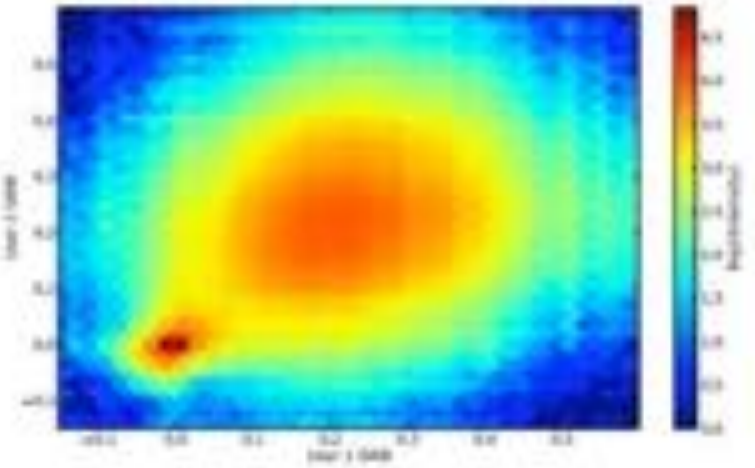


Figure shows results of subjective well-being association (SWB) in Twitter users [2]. The plot shows how people with SWB values in a range are preferentially connected with people within the same range.

Team #3

David Buzatu
Chi Lung Wong

Stanimir Velichkov
George Baker

Ethan Paterson-Barker

Stage I: Empathising

Literature Review Continued

It's clear from our research that technology has had a dual effect on mental health:

- On the one hand, because social media hasn't existed for long, **people have been slow to understand its effects on mental health** [1].
- On the other hand, technology has made it **easier for clinicians to reach people remotely** — an advantage for people in isolated areas — and to provide cheaper and more convenient support [5].
- E.g., medical support can now be provided through instant messages , health monitoring apps—using the sensors on one's device—or habit tracking apps [7].

- Thanks to the internet, there are also now online services like Mind and Kooth which provide access to professional help.

*See Apendix 1 for references

Team #3

David Buzatu
Chi Lung Wong

Stanimir Velichkov
George Baker

Ethan Paterson-Barker

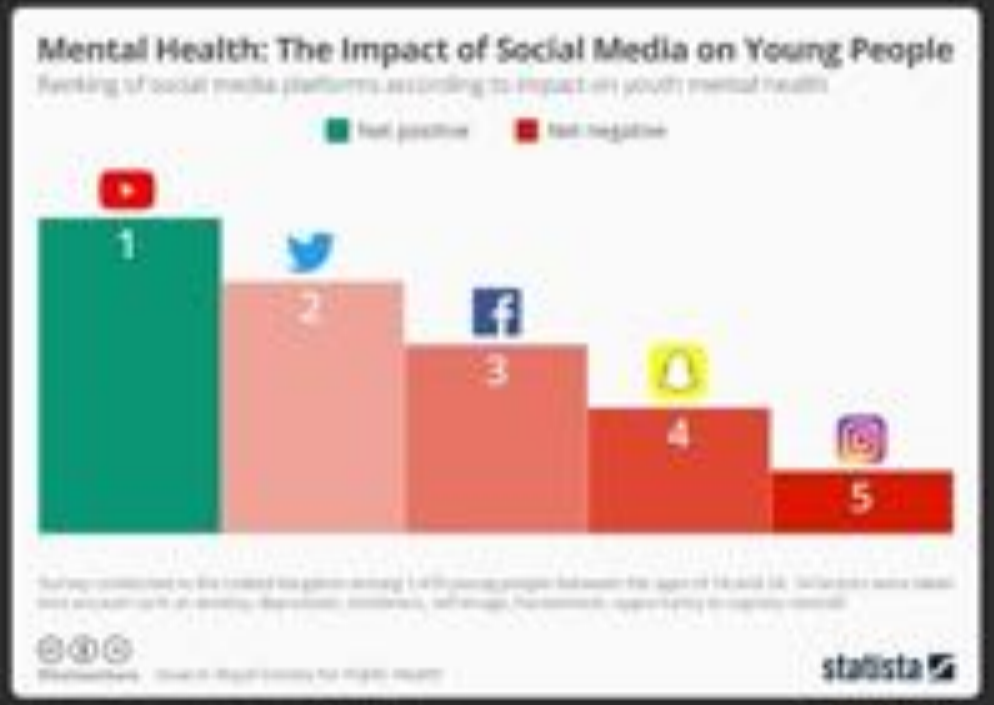
Stage I: Empathising

Literature Review Continued

Mental health apps have offered an alternative to in-person clinical treatment by **providing 24/7 access to a more private**, **anonymous**, and **convenient experience** [7].

From our research, no application seemed to make use of social media interaction to help with mental state.

We think that social media interaction could provide a lot of information about one's mental state which is why our platform informs users about their social media usage, the content they interact with, how that might influence their well-being, and how they can start mitigating these effects.



*See Apendix I for references

Team #3

David Buzatu
Chi Lung Wong

Stanimir Velichkov
George Baker

Ethan Paterson-Barker

Stage I: Empathising

Literature Review Evaluation

Our research helped us to **better understand the problem of mental health**, **how social media affects it**, and **how people currently look for support**.

It also **helped us identify existing solutions**, so that we could avoid reinventing the wheel.

Team #3

David Buzatu
Chi Lung Wong

Stanimir Velichkov
George Baker

Ethan Paterson-Barker

Stage I: Empathising

Existing novel solutions: Screen Time

Both iOS and Android have a screen time feature which provides the user with **insights into which apps and websites they visit the most**.

The features are designed to **inform the user about how they spend time on their devices**.

The user can also **set daily limits on certain apps** and **websites**.

*Android screen time *iOS screen time

Team #3

David Buzatu
Chi Lung Wong

Stanimir Velichkov
George Baker

Ethan Paterson-Barker

Stage I: Empathising

Existing novel solutions: Breeze

Breeze is an iOS app which has **a daily mood tracker** to understand which situations/contexts trigger an emotional reaction.

The app's main features are based on concepts from cognitive behavioural psychotherapy e.g., mood tracker, negative thoughts tracker, and tracker of cognitive distortions.

Team #3

David Buzatu
Chi Lung Wong

Stanimir Velichkov
George Baker

Ethan Paterson-Barker

Stage I: Empathising

Existing novel solutions: Daylio

Daylio is a free iOS and Android journaling app and mood tracker.

It works by **prompting the user to pick their mood** and **add activities** they have been doing during the day.

The app features **a mood and activity history** so the user can notice if a certain activity is negatively impacting their mood.

Team #3

David Buzatu
Chi Lung Wong

Stanimir Velichkov
George Baker

Ethan Paterson-Barker

Stage I: Empathising

Existing novel solutions: Misü

Misü is an app that automatically tracks your mood throughout the day.

This is done through an **emotion detection AI** that **detects mood through facial micro expressions** — e.g., frowning.

The AI was trained 500k times by people who agreed for an app to take photos of them in the background whilst they reported their mood.

Since the AI is already trained, Misü doesn't need to store the pictures it takes to detect the user's mood—offering the mood detection service whilst respecting the user's privacy

Team #3

David Buzatu
Chi Lung Wong

Stanimir Velichkov
George Baker

Ethan Paterson-Barker

Stage I: Empathising

Idea concretisation

After going through the literature review process and researching existing solutions, we decided on what our solution could do to help with problematic social media use:

- **Suggesting activities based on location** that get the user away from their phone e.g., going for a walk in their local park.
- **Tracking the user's mood** and suggesting that they take a break from social media if they consistently report a low mood.
- If the user agrees to share their data, our app will provide a thorough analysis of their social media usage.

Improvement
Optional functionality for users comfortable with sharing their data
Provide means of blocking apps
(see questionnaire evaluation)

Later idea
Providing content such as movies
(see questionnaire analysis)

Later idea
Providing access to local charities or volunteering hubs
(see ideation)

Later idea
Informing the user about local professional help as quickly and easily as possible
(see questionnaire analysis)

Team #3

David Buzatu
Chi Lung Wong

Stanimir Velichkov
George Baker

Ethan Paterson-Barker

Stage 2: Define

Designing the questionnaire

We researched **opinions on mental health**, **current solutions**, and **sharing personal data**.

We wanted to find out what personal information people are willing to share, and **whether people are more willing to share their data** if they know it will be used **for the purposes of improving their mental health**.

We wanted to make sure that people only answered questions if they were comfortable doing so; therefore, we made certain questions optional.

We used **Linkert charts** instead of open-ended questions because quantitative data is easier to analyze.

Where appropriate, we **provided descriptions about what we were asking**, and **example answers**.

We tried to be as specific as possible to **avoid causing confusion** and **ensure we had data we could analyse**.

Team #3

David Buzatu
Chi Lung Wong

Stanimir Velichkov
George Baker

Ethan Paterson-Barker

Stage 2: Define
Questionnaire

Dry-run

Before we published the questionnaire publicly, we gave it to select people to dry-run the questionnaire.

Several things were picked up, such as:

- Some questions **used language that was confusing**.
- Some follow up **questions weren't specific** about the question they follow.
- We realised geographic location might be useful, as some respondents might not be UK based. However, we did not want to get involved with data policies, and did not add such a question.
- We **switched questions from open-ended** responses to **Linkert charts** to get more quantifiable data.

Team #3

David Buzatu
Chi Lung Wong

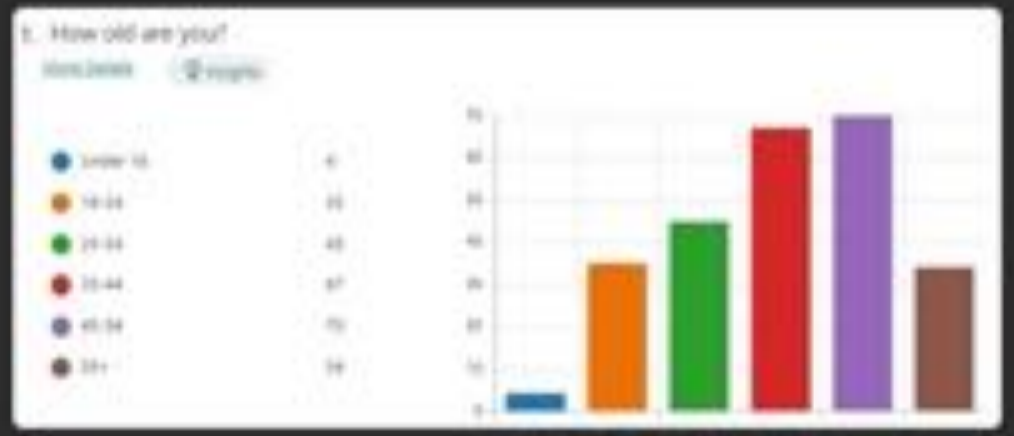
Stanimir Velichkov
George Baker

Ethan Paterson-Barker

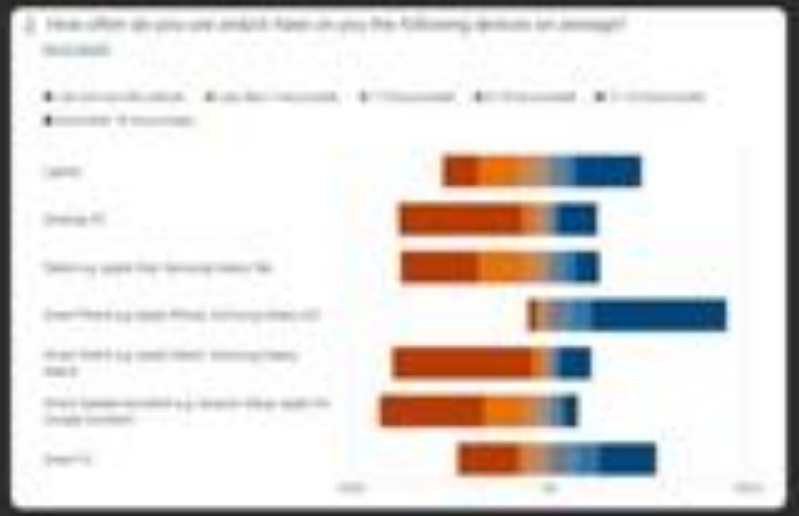
Stage 2: Define
Questionnaire

Questionnaire demographic

The general demographic of the questionnaire was quite varied in terms of age — **over 50 % of people were between 34 and 54**.



As expected, **most people** who answered the questionnaire **use a smartphone as their primary device**.



Team #3

David Buzatu
Chi Lung Wong

Stanimir Velichkov
George Baker

Ethan Paterson-Barker

Stage 2: Define
Questionnaire

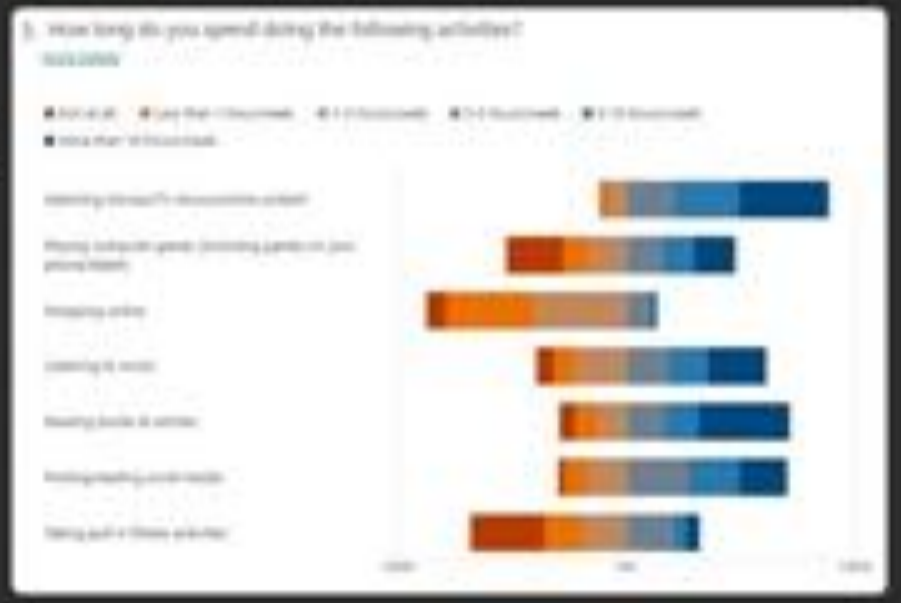
Questionnaire demographic continued

We were surprised by how little time people spend shopping online.

We wanted to use data from online shopping services to infer the user's mental state, **however 89.6% of respondents said that they spend less than 2 hours per week shopping online**.

67.4% of respondents said that they watch 6 hours or more of content per week.

Similarly, listening to music and social media both were expected results with **42.8% of respondents said that they listened to music for 6 hours or more per week**, whilst 43.2% said that they use social media for that same period.



Team #3

David Buzatu
Chi Lung Wong

Stanimir Velichkov
George Baker

Ethan Paterson-Barker

Stage 2: Define
Questionnaire

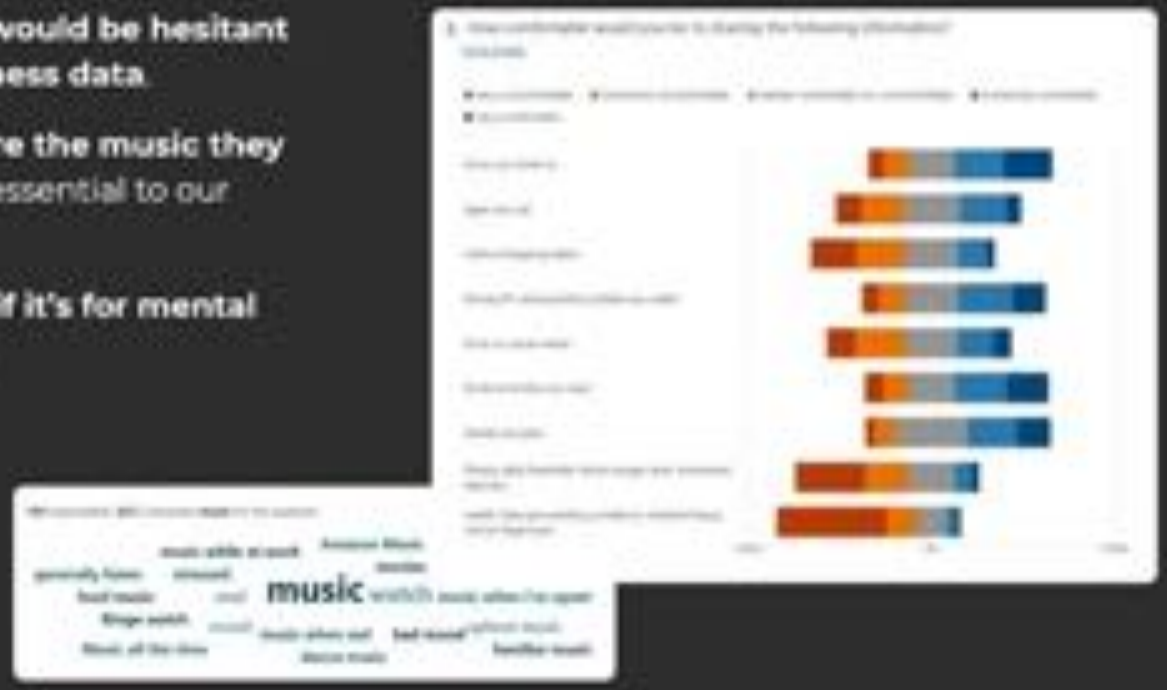
Analysing questions - Online Presence

Many of these results are expected, as **we knew that people would be hesitant to share highly personal information** such as **health** and **fitness data**.

However, **we were surprised by people's willingness to share the music they listen to**, **the apps they interact with**, and — things that are essential to our solution.

People on average **said they are more willing to share data if it's for mental health purposes** providing it's not shared with third-parties.

42% of respondents listen to music when they are in a particular mood, with 15% of respondents mentioning that they like to use different services like music or streaming when they are stressed.



Team #3

David Buzatu
Chi Lung Wong

Stanimir Velichkov
George Baker

Ethan Paterson-Barker

Stage 2: Define
Questionnaire

Analysing questions - Personal data

We used a **Linkert chart** to understand how willing people are to share their personal data.

On average, **people thought that their mood changed based on their online behavior.**

As expected, **people are uncomfortable with sharing their personal data online** with only 4% of people answering 8 or above.

However, we were surprised to see that **people would drastically change their opinion if they knew their data would be used for the purposes of improving their mental health**, with over 24% of people saying that it would change their initial decision.

Moreover, respondents were more willing to share data that has already been collected by other apps and services—e.g., Netflix—with 70.9% of people responding between 3 to 7.

Team #3

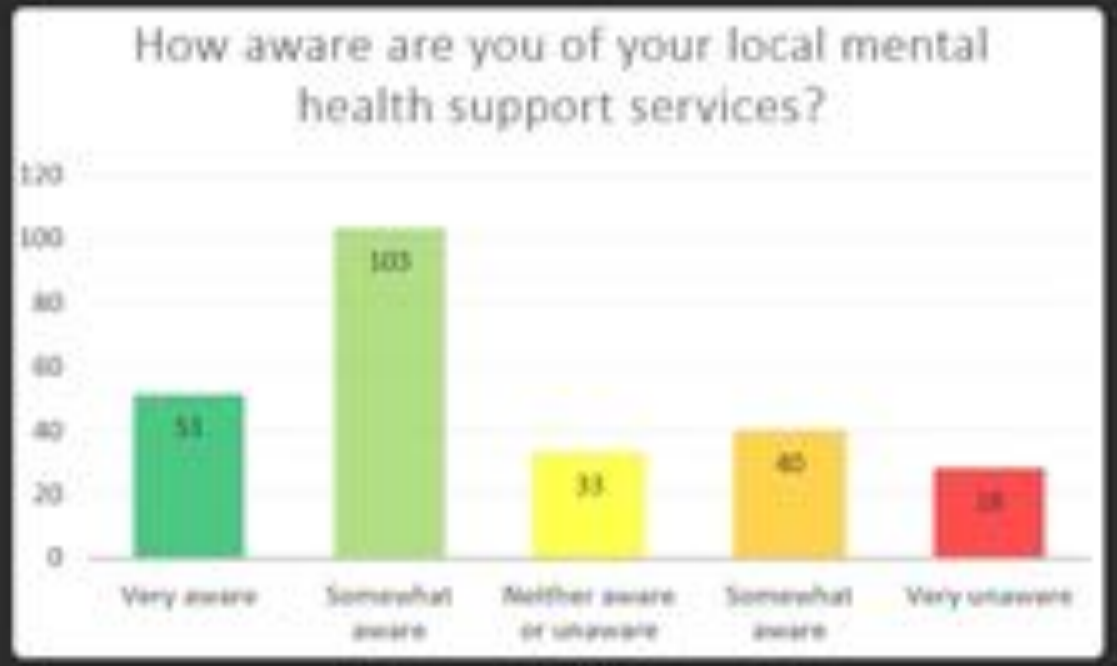
David Buzatu
Chi Lung Wong

Stanimir Velichkov
George Baker

Ethan Paterson-Barker

Stage 2: Define
Questionnaire

Analysing questions - Mental health



As expected, **most of our respondents agreed upon the importance of mental health** — averaging between 9 and 9.5.

Around **60.3% of respondents said they were somewhat aware of their local mental health support services**, however **10.9% of respondents said that they were very unaware** about local services.

People wrote about issues with **scheduling**, **price**, **availability**, and **stigma when trying to access local services**.

Around 51.7% of people said that they are somewhat comfortable speaking to someone about how they are feeling.

Team #3

David Buzatu
Chi Lung Wong

Stanimir Velichkov
George Baker

Ethan Paterson-Barker

Stage 2: Define
Questionnaire

Analysing questions - Mental health - continued

When respondents were asked about any mental health issues that they feel need more awareness, **most people mentioned different forms of anxiety and depression**.

Our respondents had mixed feelings about notifications alerting them about their current mental state.

Many of our respondents expressed that they wouldn't be comfortable with an app inferring their mood from online activity **unless it alerted them about a serious issue**.

On the other hand, they thought that it would be helpful to have an app that helps maintain their mental health.

Team #3

David Buzatu
Chi Lung Wong

Stanimir Velichkov
George Baker

Ethan Paterson-Barker

Stage 2: Define
Questionnaire

Evaluation of Questionnaire

One of the biggest findings from our questionnaire is that **lots of people are uncomfortable with sharing their data** — especially if they don't know how it will be used.

Interestingly, we noticed that the same participants would be more comfortable with sharing their data **if they knew it would be used for the purposes of improving their mental health**.

People are hesitant about an app that could infer their current mood, with many **expressing concern about removing humans out of the equation**.

However, many respondents indicated that they would find it helpful for the app **to alert them about a serious and immediate mental health issue.**

Since **1/10 of our respondents were unaware about local mental health support,** we decided that highlighting these services in our app could be useful.

Team #3

David Buzatu
Chi Lung Wong

Stanimir Velichkov
George Baker

Ethan Paterson-Barker

Stage 2: Define

Personas

We based our personas on the feedback we got from our questionnaire.

Our primary persona is addicted to social media and does not mind sharing their data with our app in order to get insights into how her usage is affecting her mood.

We also created an anti persona who is reluctant to share their personal data because we wanted to understand whether our solution would be helpful to them without having access to their data.

The structure of our personas is as follows: name, summary, key characteristics, goals, and challenges.

Stage 2: Define
Personas

Connor Schrader

Summary

Computer science student who is enthusiastic about technology related to mental health. He spends his free time listening to music, playing games, and using social media. Since he is unaware about how his social media usage affects his mood, he would like to use a tool which would provide him with an analysis of his usage. He is happy with his data being used for the purposes of improving his mental health.

Key characteristics

- Age 20.
- Single.
- Computer Science student.
- Tech savvy.
- Spends more than 50% of his time on a device.
- Uses multiple social media platforms e.g., Instagram, TikTok, and Twitter.
- Open to trying out mental health apps.
- Happy with sharing his personal data for the purposes of improving mental health.

Goals

- Find out about how his social media usage affects his mental health.
- Avoid spending too much time on social media apps.

Challenges

- Struggles with his high university workload.
- Digitally dependent.

Team #3

David Buzatu
Chi Lung Wong

Stanimir Velichkov
George Baker

Ethan Paterson-Barker

Stage 2: Define
Personas

Udo Ngozi

Summary

Udo is is a personal assistant with a heavy workload due to the company's organisational setup. She struggles to cope with a difficult company culture, and she relieves her stress by binge-watching TV shows and browsing social media. Whilst she likes using social media, she has noticed that the negative news and opinions impact negatively on her mental health. Due to her overwhelming stress, she tried using the counselling services provided by her company. However, she did not feel comfortable discussing her issues within the company—fearing repercussions.

Key characteristics

- Age 28.
- In a relationship.
- Personal assistant.
- Competent using technology.
- Frequent social media user.
- Uses multiple social media platforms e.g., Facebook, Snapchat, and Instagram.
- Open to using an online mental health support service.

Goals

- Find ways to reduce the stream of negative information from social media.
- Curb social media usage and find alternatives ways to spend her time.
- Keep track of her mood.
- Find new ways to maintain good mental health.
- Find personalised professional mental health support.

Challenges

- Sceptical about health support from technology due to privacy and data security concerns.
- Often stressed by work.

Team #3

David Buzatu
Chi Lung Wong

Stanimir Velichkov
George Baker

Ethan Paterson-Barker

Stage 2: Define
Personas

Shu Ming

Summary

Shu is a mother of two who works at a large bank as an HR manager. She finds it difficult to focus on her professional and personal life because of her excessive smartphone usage-especially on social media apps. This doesn't leave her with enough time to spend with her family or on hobby and leisure activities. To gain a healthier relationship with social media, she tries to follow online advice and use time management tools such as Google Calendar. She does not have any concerns about sharing her data and is open to trying new technologies and solutions that would meet her needs.

Key characteristics

- Age 41
- Married and has children.
- HR manager.
- Excessive social media user.
- Wants to improve her lifestyle by trying something new, including a mobile app that could help with her addiction.
- Does not mind sharing her personal data.

Goals

- Build an effective daily routine.
- Improve her diet and physical health.
- Spend more time with her family.
- Try out different activities.

Challenges

- Finds it difficult to stay organised.
- Limited technical knowledge.
- Doesn't spend enough time with family.

Team #3

David Buzatu
Chi Lung Wong

Stanimir Velichkov
George Baker

Ethan Paterson-Barker

Stage 2: Define
Personas

Jenny Sanda

Summary

Jenny is an experienced and highly dedicated Aerospace Engineer. She is very focussed on her work and therefore does not have any social media accounts since she wants to avoid the distraction. When she uses a computer, she just wants to find relevant scientific content. Because of her job, she feels overwhelmed and stressed which is negatively impacting her interpersonal relationships.

Key characteristics

- 59 years old
- Engaged
- Aerospace Engineer
- High workload
- Competent with technology
- Isn't comfortable talking about her personal issues.

Goals

- Manage her time more effectively (at home and at work).
- Improve her interpersonal relationships.
- Improve her work-life balance.
- Manage stress.
- Maintain a healthy exercise routine.

Challenges

- Constantly stressed by her work life—a problem she brings home.
- Introverted.
- Overwhelmed by her busy work schedule.
- Mistrustful of automated mental health solutions.

Team #3

David Buzatu
Chi Lung Wong

Stanimir Velichkov
George Baker

Ethan Paterson-Barker

Stage 2: Define
Personas

Personas evaluation

Thanks to our questionnaire data, we were able to build realistic personas which **accurately represent the type of users who would use our solution**.

We were able to create four personas, each based on a different age group and notable characteristics from the responses.

When we identified certain characteristics of personas that had little to do with social media, some new ideas of what the app could provide without any online data from the user were brought about and discussed.

Our personas **helped us identify the usefulness of our solution to people with social media addictions** or **those seeking general mental health support**.

Moreover, it helped us **give an equal importance to the general mental health support functionality of our app** and **making the social media analytics an optional feature**.

Team #3

David Buzatu
Chi Lung Wong

Stanimir Velichkov
George Baker

Ethan Paterson-Barker

Stage 2: Define
Scenarios

Scenarios

Udo Ngozi and Connor Schrader

Udo and Connor meet at a coffee shop. Connor takes out his phone and opens Moodit. He goes through his social media analysis of the day and Jenny catches a glimpse of the app. She asks what the app is about, and Connor explains that it looks at his social media activity and analyses how the type of content he consumes might affect his mood.
Udo expresses concerns about the privacy of her data: she doesn't want apps to know what she has been browsing on social media. Connor assures her that the app does not share the data with any third-party apps and that the mood history is deleted after 7 days. Moreover, Connor tells her that the app can be used to control app activities without sharing any personal data and that when personal data is shared it's only used to suggest activities that might improve the user's mood.
Since Udo wants to work on her mental wellbeing, she considers using the app and even considers enabling social media analysis to give her insights on how it might affect her mental state.

Shu Ming

Shu is anxious about her day at work because she needs to interview ten candidates for a new position. She wants to avoid social media distracting her and therefore has chosen to use our solution to block specific apps during working hours. This helps her to avoid wasting time on social media throughout the day when she needs to use her phone for the purposes of interviewing e.g., phoning candidates.
After work, she wants to celebrate with her family and uses our app to check the 'activity of the day'. The app suggests going to a theatre for the night and so she finds a play that the whole family can enjoy.
At the end of the day, our app asks how her day went; her response indicates that she was in a positive mood.

Jenny Sanda

Jenny is using Moodit's mood tracker feature. The app notices that Jenny has reported a low mood on 4 of the last 7 days. As a result, the app has sent a notification asking if she would like some support. Jenny then taps on the notification, looks at her mood history, and notices that her mood has been low over the course of the week.
After looking at her mood history, she decides to review the suggestions offered to her by the app. Because the app notices her low mood, it suggests local professional mental health services, helplines she can call if she feels overwhelmed, and other activities such as meditation. Because Jenny declines to share her personal data, the app only offers generic professional help and activities.
After reviewing the app's suggestions, she decides to seek professional help from the suggested services. After booking an appointment, she also decides to take the apps' advice on meditating. She uses the app's resources to learn how to meditate effectively.

Team #3

David Buzatu
Chi Lung Wong

Stanimir Velichkov
George Baker

Ethan Paterson-Barker

Stage 2: Define
Scenarios

Scenarios Evaluation

Our scenarios were **beneficial** to our team because:

- They made us think about **the use-cases of our app** when the user opts out of sharing their personal data.
- **It highlighted the importance of clearly stating what the user's data would be used for and how it's stored.**
- It made us realize **how useful our app could be for people wanting a healthier relationship with social media.**
- The scenarios might have been more realistic if we had the help of an external party when creating them.

Team #3

David Buzatu
Chi Lung Wong

Stanimir Velichkov
George Baker

Ethan Paterson-Barker

Stage 3 Ideation

Ideation process

By analysing our questionnaire data, personas, and scenarios, we revised our initial solution.

We used the second stage of the **Double Diamond design model** — i.e., develop, test, deliver, listen — in our ideation process.

In the develop stage, we made use of various creativity techniques:

- **Brainstorming** helped us to produce **a list of ideas and features** — good and bad — to have as many starting points as possible. Ideas included **recommending local mental health services**, **notifications**, **analysis of data**, and **activity feed personalization**.
- We then explored and defined features by **categorizing them in specific pages**, **removing unnecessary ideas**, and **refining existing ones**. E.g., **we removed the idea of advertising local food** and **entertainment services** because these advertisements **not help with the user's needs**. We also agreed upon **making the professional help services easy to access** and **using our mood detection data to personalize recommendations**.

Team #3

David Buzatu
Chi Lung Wong

Stanimir Velichkov
George Baker

Ethan Paterson-Barker

Stage 1: Ideation

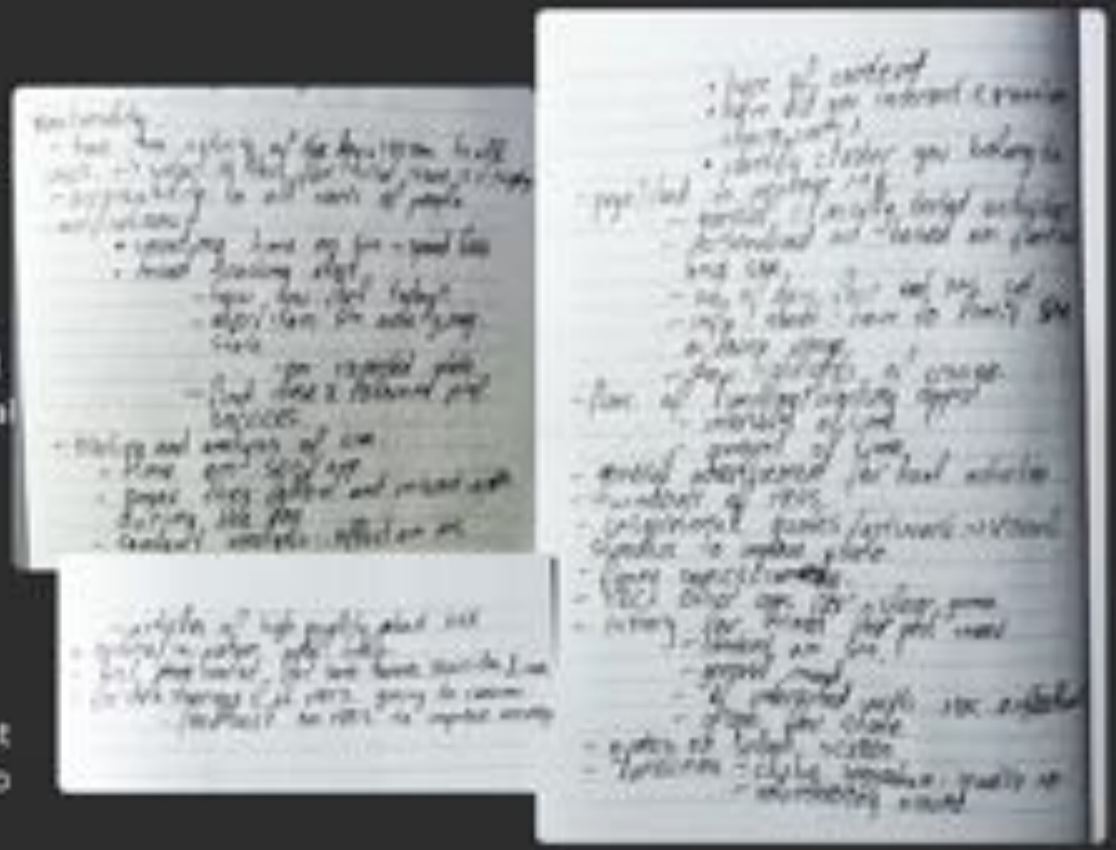
Ideation

Lateral thinking helped us to **narrow down our scope and make our ideas more concrete**. We also decided to recommend other specialised mental health apps rather than trying to make our app good at everything—e.g., breathing techniques and meditation.

Through **impossible combinations**, we took the idea of recommending local services e.g., food and entertainment, and added local volunteering and social clubs to our feed—however, we recognise that this might be difficult in practice.

Once we categorized our features into components, each of us focused on narrowing down the functionality of each part.

To get some inspiration, we made use of **Dribbble[21]** — a website for designers to show and inspire others with their work. We researched different **analytics apps**, **mood tracking submissions**, and **recommendation feeds** to get a better feeling on how to represent them as intuitively and easily as possible.



Team #3

David Buzatu
Chi Lung Wong

Stanimir Velichkov
George Baker

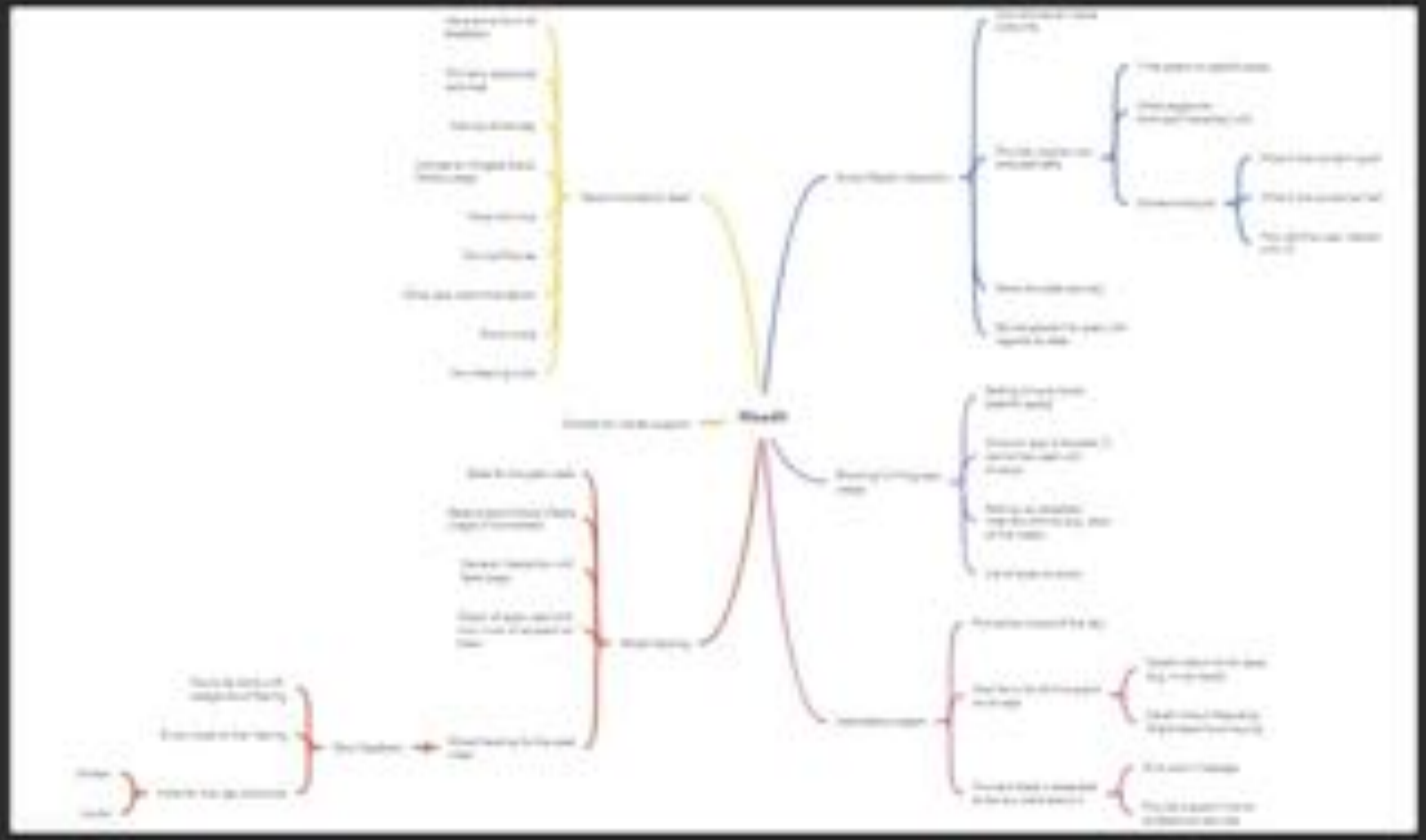
Ethan Paterson-Barker

Stage 1 Ideation

Feature map

We have jotted down our ideas on paper, categorized them and put them on a board.

However, to give a better representation of the features and functionalities, we have created a mind-map.



Team #3

David Buzatu
Chi Lung Wong

Stanimir Velichkov
George Baker

Ethan Paterson-Barker

Stage 1 Ideation
Sketches

Blocking apps ideation & sketches

Designing an intuitive way of blocking social media apps turned out to be quite a challenge. However, we decided to do it anyway knowing that **tackling the source of our problem — social-media interaction — would help to improve one's mental state.**

A study [12] has shown **a significant improvement in undergraduate's mental state after limiting social media interaction to a few minutes a day**. Another popular study showed **an increase in reports about mental health support for adolescents spending more time on social media** compared with their peers [13].

We decided on a vertical scrolling list of apps because this format follows the layout of both the Android and iOS Settings app.

Team #3

David Buzatu
Chi Lung Wong

Stanimir Velichkov
George Baker

Ethan Paterson-Barker

Stage 3 Ideation
Sketches

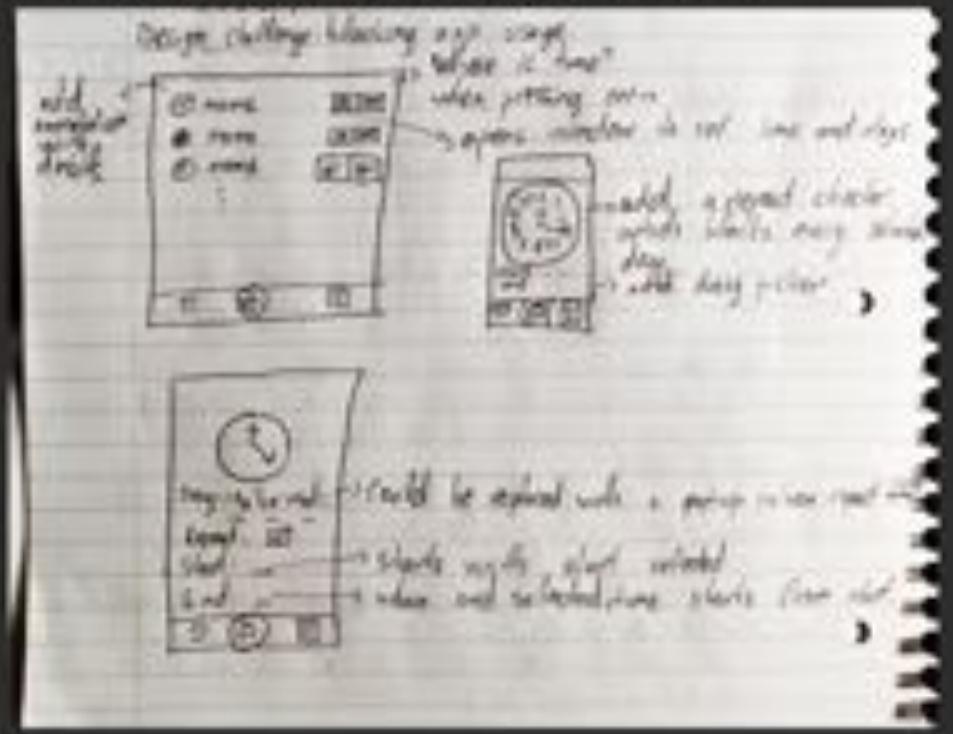
Blocking apps ideation & sketches continued

When it comes to blocking apps, we wanted to provide means for **selecting an interval of time or fixed duration in which certain apps should be blocked**. Furthermore, users may want to set a time limit and have that **repeated over multiple days**. Thus, we considered various variants of choosing time limits.

Initially, we thought of setting the **time and date for each individual app after tapping the 'on' button**. A screen with a clock and date would appear and users would set the date and time accordingly. However, it would quickly become difficult to do this for every single app without a way of generalizing.

Therefore, we decided to **remove some flexibility by applying the same time interval to each blocking action**. E.g., if a user blocks Facebook the app would block it for a fixed, specified time interval rather than setting individual time intervals.

We also considered **adding a message warning about the consequences of blocking a particular app** i.e., an app cannot be unblocked.



Team #3

David Buzatu
Chi Lung Wong

Stanimir Velichkov
George Baker

Ethan Paterson-Barker

Stage 1 Ideation
Sketches

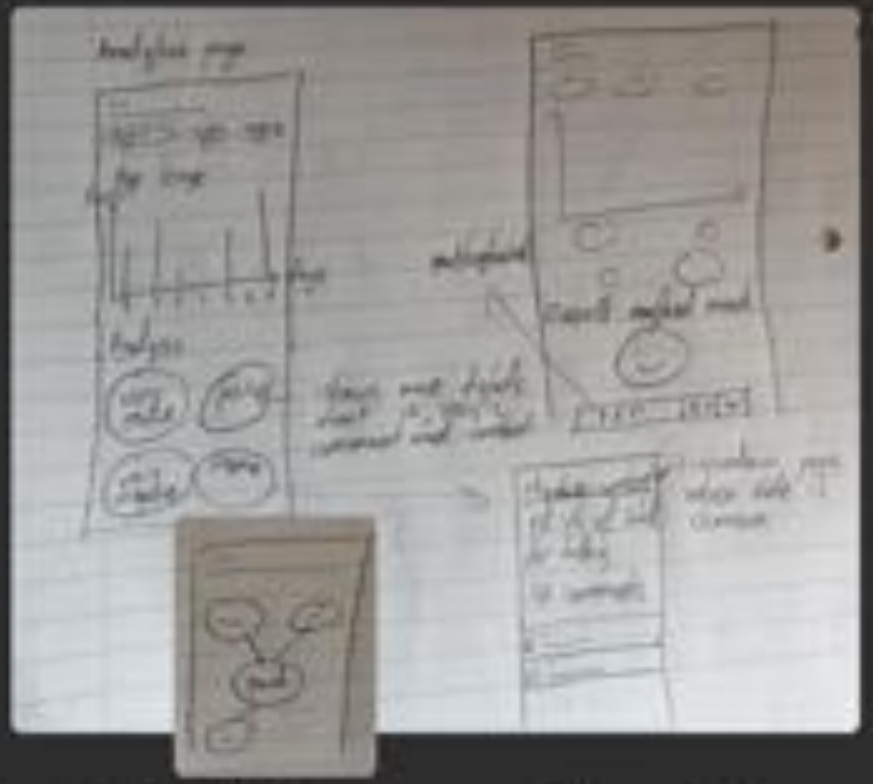
Social media analytics ideation & sketches

From the start of our design process, we aimed to inform users about how their interaction with social media apps could impact their mental health. Several studies point out the **benefits of social media** [14, 15, 16], whilst others warn about its **harmful effects on mental health** [17].

Based on the results of our questionnaire, we **identified that privacy concerns were bigger than we initially expected**. Thus, we decided to let the user choose whether to connect their social media accounts and inform them about how their data would be used, processed, and stored.

When we started sketching, we **aimed to find a simple and intuitive way** of representing the user's activity data.

E.g., we were initially thinking of creating a 3D map of all inferred mental state keywords, where tapping each keyword would give the user information about it. However, we decided that it would be too complicated to use, especially for our diverse range of potential users.



Team #3

David Buzatu
Chi Lung Wong

Stanimir Velichkov
George Baker

Ethan Paterson-Barker

Stage 3 Ideation
Sketches

Social media analytics ideation & sketches continued

Thus, we applied the **inspiration tray** technique to boost our creativity and **searched Dribbble[21]** for inspiration.

We realized that we could divide the page in **a few essential parts**:

- Firstly, **a page for connected and unconnected social media apps** where the user can choose a specific app to get insights into their usage.
- Secondly, a simple **graph about app usage**.
- Thirdly, an **indicator of inferred feelings from the social media content** the user has consumed.

Team #3

David Buzatu
Chi Lung Wong

Stanimir Velichkov
George Baker

Ethan Paterson-Barker

Stage 1 Ideation
Sketches

Mood history ideation & sketches

We wanted to capture a user's feedback as intuitively and easily as possible.

We also wanted to provide users with **a history of their mood**, and we chose a simple, tabular design that contains the state for each day in the past week.

We found that **emojis are a good representation of one's state** because people tend to use them a lot in their online interactions.

However, we also wanted to include **specific descriptions of states**: depressed, excited, and neutral. The combination of text and emojis turned out the best option in our case.

Because some people would like to know more about their state than the meaning a simple emoji can provide, we thought of adding an option of **a written or recorded note for the day**.

Team #3

David Buzatu
Chi Lung Wong

Stanimir Velichkov
George Baker

Ethan Paterson-Barker

Stage 1 Ideation
Sketches

Activity of the day/activities/socials, clubs Ideation & sketches

We decided to include a **daily activity recommendation** with our app's feed. These recommendations would be **tailored towards improving the user's mood based on their inferred mental state**. E.g., go for a walk in the park if the app infers that the user is feeling lonely.

Initially, we thought about tracking the activities—i.e., making the user start and finish them. However, we decided to include this as **a future feature** suggestion.

Since we know that social connection and exercise can improve mental health, we decided to recommend activities which could fulfil those needs. E.g., joining a sports club.

Team #3

David Buzatu
Chi Lung Wong

Stanimir Velichkov
George Baker

Ethan Paterson-Barker

Stage 1 Ideation
Sketches

Notifications and mental health support contacts ideation & sketches

We decided to notify the user to remind them about **logging their mood.**

We also wanted to include personalised notifications informing the user if the app **detects a fall in their mood based on an analysis of their social media activity** or if **the user is spending an unhealthy amount of time on social media**.

If our app **detects any suicidal content posted by the user**, it will immediately notify the user about getting **professional help** and who to contact.

Team #3

David Buzatu
Chi Lung Wong

Stanimir Velichkov
George Baker

Ethan Paterson-Barker

Stage 1 Ideation
Sketches

Content recommendations ideation & sketches

The content we consume every day has an impact on our thinking, behaviour, and emotions [20].

Therefore, we decided to include **content recommendations** within our app.

E.g., if our app notices that the user is stressed, it might recommend comedy films and shows.

In our initial design sketches, we decided to try out a sliding carousel with **dynamically populated film and show recommendations** — based on the mental state feedback our app receives from the user.

We decided to use a horizontal sliding carousel because it **saves space** for other content within our app; i.e. it's an uncluttered design.

Tapping a film or TV show in the carousel links to the relevant content in a different app or website e.g., Netflix.

Team #3

David Buzatu
Chi Lung Wong

Stanimir Velichkov
George Baker

Ethan Paterson-Barker

Stage 1 Ideation
Sketches

Content recommendations ideation & sketches continued

We also decided to include **mental health app recommendations**.

To give the user context, one of our initial sketches includes a star rating from the app store — so the user knows that the app is well reviewed and a highlighted review from the app store.

Alternatively, a simpler sketch just tells the user the app name, and its description from the app store.

Team #3

David Buzatu
Chi Lung Wong

Stanimir Velichkov
George Baker

Ethan Paterson-Barker

Stage 1 Ideation
Sketches

Sketches and ideation evaluation

The process of creating our initial sketches allowed us to try out **different design ideas** which we could later refine in the lo-fi prototyping stage.

We found the various techniques—e.g., **Lateral Thinking** and **Inspiration Tray**—to be extremely useful because they provided us with **new approaches to solve our problem**.

Sketching specific parts of our app individually — i.e., not in a group —enabled us to produce **a diverse range of designs** which we then developed through **group feedback**.

Team #3

David Buzatu
Chi Lung Wong

Stanimir Velichkov
George Baker

Ethan Paterson-Barker

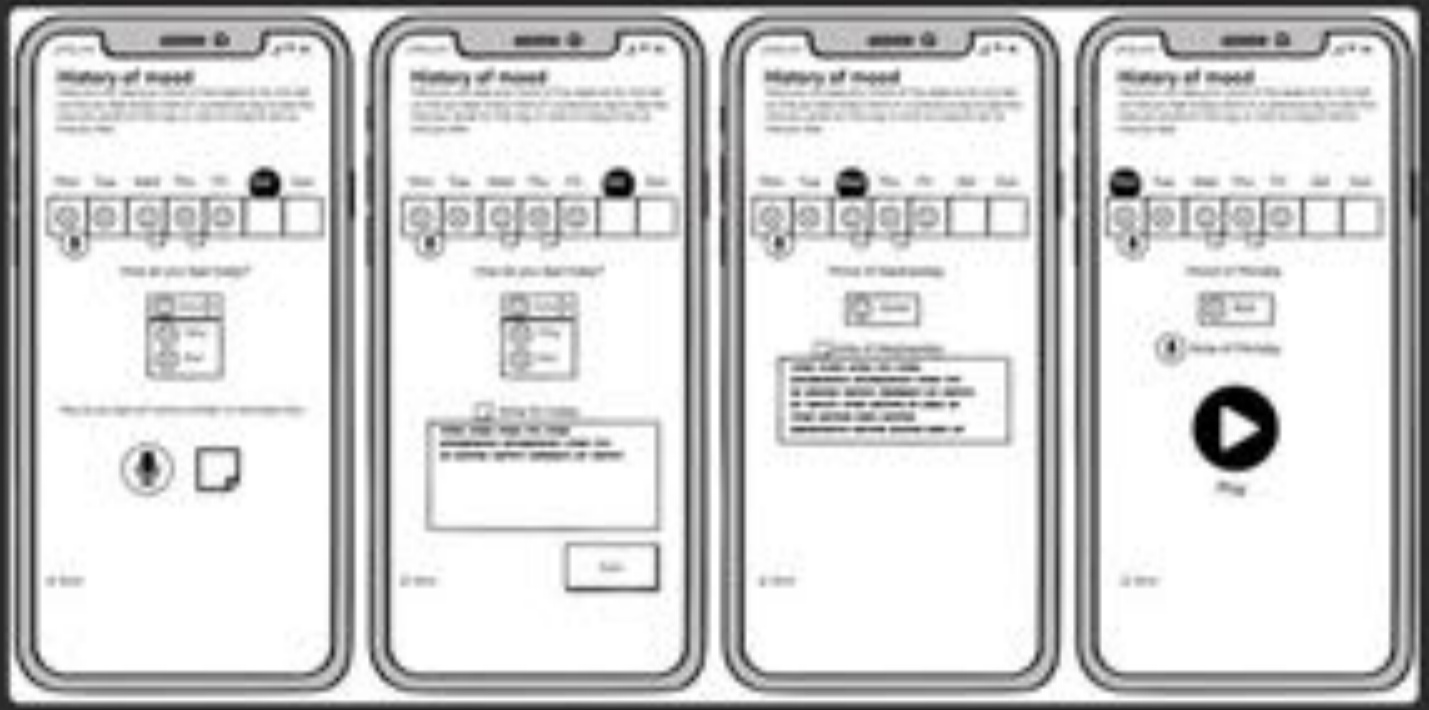
Stage 4. Prototype
Lo-fi prototyping

Mood history and feedback - Lo-fi prototyping

We kept the lo-fi design largely **consistent** with the original sketches

The user could choose to **leave either a recorded or written note** for the day which they could access later, as a form of **self-reflection** and subsequently **facilitate emotional self-regulation**.

The idea of further categorising specific mood for the user to choose from was scrapped as we decided an open-ended note is more versatile.



Team #3

David Buzatu
Chi Lung Wong

Stanimir Velichkov
George Baker

Ethan Paterson-Barker

Stage 4. Prototype
Lo-fi prototyping

Activities feed

The recommendations will be **personalised** so that the user only sees activities they may be interested in.

We **gave up on the idea of tracking activities** after our first iteration because we found it tedious to keep track of from a user's perspective.

The activities are categorised by type, including physical activities and clubs.

Team #3

David Buzatu
Chi Lung Wong

Stanimir Velichkov
George Baker

Ethan Paterson-Barker

Stage 4. Prototype
Lo-fi prototyping

Social media analytics

Iteration 1 Iteration 2 Iteration 3 Final Iteration

We created some different ways of displaying a user's **overall inferred mood**. In the end, we liked the emoji design the best because it's easy to understand and is consistent with the Feedback History part of the app.

We used **Dribbble[21]** to get inspiration on how to display such metrics and used the final iteration to create our hi-fi prototype.

Team #3

David Buzatu
Chi Lung Wong

Stanimir Velichkov
George Baker

Ethan Paterson-Barker

Stage 4. Prototype
Hi-fi prototyping

Activities feed

We used **Figma** — a professional prototyping tool—to create a realistic mock-up of our app.

To create a **consistent** design, we decided to apply the vertical scrolling card idea from our content recommendations lo-fi prototype to every section in the feed.

Tapping an element brings up a modal with more details e.g., after tapping an activity, **information about that activity would appear on top of the rest of the content**.

Team #3

David Buzatu
Chi Lung Wong

Stanimir Velichkov
George Baker

Ethan Paterson-Barker

Stage 4. Prototype
Hi-fi prototyping

Social media analytics

Based on our lo-fi prototypes for social media insights, we created a more polished and refined prototype.

We decided to go with the **bar chart design** from our lo-fi prototypes because we think it's the most **intuitive** way of presenting the information.

We colour coded the inferred mood chart — **green** for positive, **yellow** for neutral, and **amber** for negative.

Team #3

David Buzatu
Chi Lung Wong

Stanimir Velichkov
George Baker

Ethan Paterson-Barker

Stage 5: Testing

User evaluation

We showed our hi-fi prototype to 5 prospective users in our target audience and managed to get some really good feedback.

Positives:

- *"notifications are a really good idea because sometimes you're not aware how much time you're spending on social media"*
- *"the insights are really good because they quantify how much negative content you view on social media"*
- *"I like how information about my data usage is clearly stated"*
- *"the recommendations are really good because if I'm bored, sometimes I don't know what to do apart from go on my phone"*

Improvements:

- *"you could recommend self-help books to do with mental healthbecause I feel like sometimes I want to come off a screen"*
- *"if they like certain activities, you should recommend that if their mood is low"*

Team #3

David Buzatu
Chi Lung Wong

Stanimir Velichkov
George Baker

Ethan Paterson-Barker

Stage 5: Testing
Reflection

Teamwork

We used several collaboration tools throughout our project:

- Jira to create, assign, and manage tasks.
- Discord to communicate online.
- OneDrive to share files and collaborate on this slide deck.

We met 2-3 times per week to discuss our progress, give each other feedback, and assign tasks.

Overall, we worked really well as a team and each of us contributed equally to the project.

Team #3

David Buzatu
Chi Lung Wong

Stanimir Velichkov
George Baker

Ethan Paterson-Barker

Stage 5. Testing
Reflection

Project reflection

What went well:

- Our questionnaire had many participants, and the results had **a huge impact** on our solution design; e.g., it informed us about the **importance of privacy**.
- We found the creation of our scenarios useful because it made us think about the **different types of users** that might use our solution and what challenges we might face in the relationship with our users e.g., **willingness to share personal data**.
- Due to our **iterative process** and **evaluation**, we were able to create multiple different designs in our lo-fi prototyping stage which allowed us to refine our solution.

Would have been good if:

- We could have made **more use of user feedback** at each stage of the design process e.g., after our initial sketches.

Future development:

- Track more user content consumption e.g., Spotify and Netflix and infer the impact it has on the user's mood.
- Add book recommendations.

Team #3

David Buzatu
Chi Lung Wong

Stanimir Velichkov
George Baker

Ethan Paterson-Barker

Extras

Appendix

I. References

[illegible]