

Rhein-Waal University of
Applied Sciences

Usability Engineering

PROJECT REPORT

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The state of equilibrium where a person equally prioritizes the demands of one's career and the demands of one's personal life

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ABSTRACT

This project report presents the development journey of "Balancify", aimed at helping users achieve an optimal work-life balance by providing personal feedback, insights, analysis, and associated emotions about planned activities. We used a Human-Centred Design process and various UX methods to develop a forward-thinking and intuitive product with the goal of bolstering high usability. Interviews and analysis of the competition provided insights into the user's issues and their context of use. Personas and empathy maps were then used to determine user needs. Subsequently, a low-fidelity digital prototype and a high-fidelity prototype were created. Finally, the prototypes were assessed using Usability Tests.

The result is an app that offers features such as planning tasks, tracking progress, and recording feedback. The app generates insights into a user's productivity and emotions, enabling self-reflection and improvement. The project is aimed at providing a tool to aid users in managing emotional burnout/mental pressure due to an unorganized life, and could potentially be used as a tool for psychologists for consultations.

INTRODUCTION

1.1.The task

At the beginning of the project, we were assigned the task to develop a system/interface implementing the usability engineering lifecycle where the main focus would be on the User Requirements.

1.2. Our idea

Our team gathered for a brainstorming session to propose a few ideas each. We evaluated and eliminated ideas until we reached an idea with a common interest. Our aim with this project mainly included an in-app calendar where users could plan their schedules.

Secondly, the app needs to have user-defined and/or suggested Areas-of-life with their intentions of spending time on each of them in terms of percentage in their total available time. We were keen on offering users the ability to record their emotions, sense of achievement, and the sense of pleasure they experience during the execution of a planned task. This would be recorded by prompting the users to kindly share feedback about the task.

All the data recorded would be shown then as visual statistical graphs. With all these capabilities provided, we hope users make use of them to track and improve their lifestyles.

1.3.The team



Klavdiia Borgontsoeva

was the project manager and since has a specialist's degree in Clinical Psychology, she doubled as a UX researcher. She was responsible to keep track of all the activities, set agendas for meetings, and maintaining the project plan.



**Mohammed Hamza Nazar
Mohammed Madoo**

With his background in Computer Science and Software Development, Hamza was responsible for content creation, design ideation, and developing a prototype. He was the team's main observer and was therefore motivating the team.



Rahul Prakash

Due to his interest in designing and his technical background with a bachelor's degree in Information Science and Engineering, Rahul was responsible for prototyping and validating in-app content and experience.

PROJECT OVERVIEW

2.1. Description of the idea

In deciding our area of interest, we were motivated to help users to deal with emotional burnout / mental pressure due to unorganized life. We wanted them to be able to organize their day in a better and smoother way aiding in achieving their ideal lifestyle.

The team decided to work on the ideation and the outcome was a mobile phone application that would offer the users to:

- make daily/weekly/monthly plans, and set reminders for planned tasks;
- set an ideal Sphere-of-life representing time investment in each of the Areas of Life;

- track their sense of pleasure, sense of achievement, and emotions felt during a task;
- have analysis/comparisons between the ideal plan and what they were able to achieve;
- have statistics of the most satisfying and pleasurable activities, and the most frequent emotions felt during the day/week/month.

2.1. Description of the idea

With the data of users' list of important areas of life, and state of mind during and after the task was completed we see tremendous potential in self-reflection and improvements of daily schedule based upon the values of users and analysis provided with the app. This app could potentially be a useful tool for aiding psychologists in analyzing the day of their clients. We feel our application would nudge users in the direction of being accountable to themselves.

The app has to appeal to the users in the long run, we hence aim in making the application prioritize user-friendliness and design it to be as intuitive as possible.

2.2. Approach

We decided to employ a user-centered designing process as user-friendliness was a priority. The selection of User Experience (UX) methods in a Human-centric Design (HCD) project is determined by the project's specific goals and objectives, as well as the availability of resources and limitations of the project team. The primary consideration in selecting a specific method is its suitability to the objectives of the project. Another factor considered when choosing UX methods is their alignment with the project's available resources and limitations.

2.2. Approach

On the other hand, certain UX methods may be excluded from an HCD project if they are not deemed necessary or appropriate for the project's goals and objectives. Additionally, if the project team lacks the skills or resources to execute a certain method, it may be excluded from the project. Furthermore, if a certain method is not compatible with the project's budget or schedule, it may also be excluded (Nielsen, 2016).

In our case, we had fewer (3) team members, a low project budget, and less project completion time. Accordingly, we started to decide the UX methods we would like to choose or exclude.

We chose to conduct interviews and analyzed them for steps ahead in the user-centered design approach. The insights paved the way to start making empathy maps, user personas, user stories, problem statements and how might we (HMW) technique. Next, we planned to design a wireframe, get user feedback and eventually build a low-fidelity prototype.

With the Low-fidelity prototype in hand, we needed to conduct a usability test with a few participants. This would give us enough data to work on redesigning and hence end up with a high-fidelity prototype ready to be presented.

2.2. Approach

User-centric design is used because it focuses on the user's needs and preferences, rather than the goals of the company or designer. By understanding the user's goals, context, and behavior, designers can create products and services that are more intuitive, efficient, and satisfying to use. This approach leads to better user engagement and satisfaction, which in turn leads to increased revenue, customer retention, and loyalty (Nielsen, 2016).

Additionally, user-centric design helps to identify and solve problems early on in the design process, reducing development costs and time.

By involving users in the design process, designers can validate their decisions through testing and feedback, leading to a more robust and effective design (Nielsen, 2016).

The User-Centred Design process of ISO 9241-210 is iterative, focusing on involving the user during all stages of the project. The pillars of User-Centred Design (UCD) are the following activities:

- understanding and specifying the context of use;
- specifying the user requirements;
- producing design solutions;
- evaluating the design.

2.2. Approach

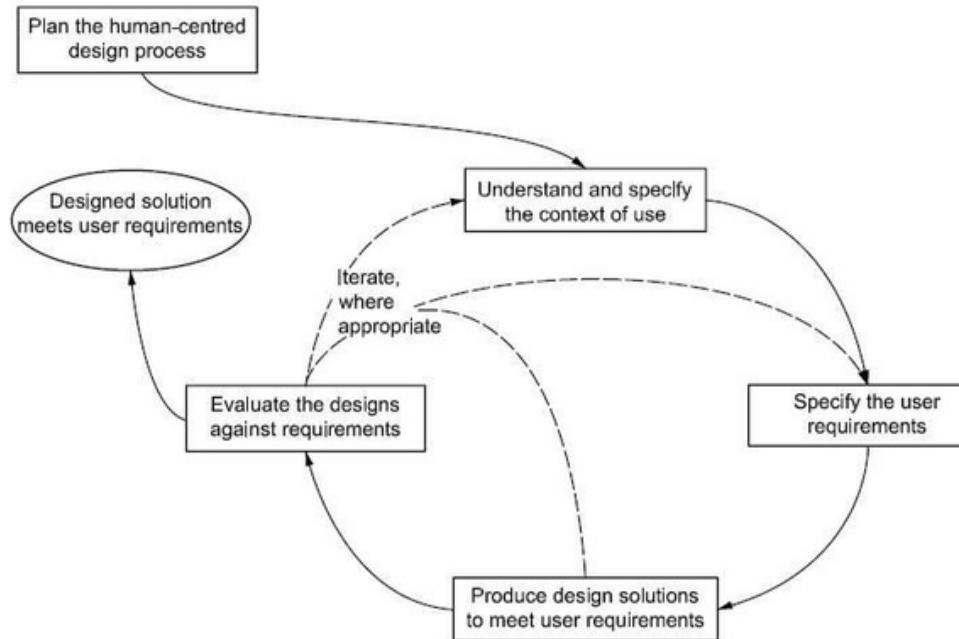


Fig. 1: Interdependence of human-centred design activities

Fig. 1 shows users must be involved in each of those stages for user-centered design to succeed. By adhering to this idea, the system is easier for its users to understand, their productivity and satisfaction are increased, and hence the quality of the end result is improved. Iterative design is the fundamental method used in user-centered design, which indicates that tasks should be repeated until a final product is produced that satisfies the user's needs and requirements.

2.3. Context of Use: chosen methods of research

Context of use refers to the specific circumstances in which a product or service will be used by the user. This includes factors such as the user's environment, tasks, and goals. Understanding the context of use is important to design products that are tailored to the needs and preferences of the user. For example, a mobile app designed for use in a busy city may have different design considerations than an app designed for use in a rural area (Nielsen, 2016). It is defined as "users, tasks, equipment (hardware, software, and materials), and the physical and social environments in which a product is used"(ISO 9241-11, 1998).

We conducted interviews, more specifically a **semi-structured interview** to gain insights about users' experiences with the problem of planning their time fruitfully. We asked them when they might need a planner, how they make use of it or at least plan to use it, what kind of tasks they perform with it, and with whom they share specifics. Ultimately we needed to understand the use cases. We found their use cases, their experiences, their needs, their expectations, and their pain points.

2.3. Specifying the User Requirements: chosen methods of research

We chose to learn, perform and make use of a few UX methods for our project constraints; they are as follows:

An **empathy map** is a tool used in user experience (UX) design and research to gain a deeper understanding of the needs, wants, and pain points of a specific group of users or customers. It is a visual representation of the user's attitudes, behaviors, and emotions, and is often used to inform the design of products or services. Empathy maps can be created through user interviews, surveys, or observations, and are typically organized into four quadrants: thoughts, feelings, actions, and pain points (Brown, 2014).

According to Cooper, Reimann, and Cronen (2007), **user personas** are fictional characters created to represent a specific group of users for whom a product or service is designed. User personas are an effective tool for understanding and empathizing with the needs, goals, and behaviors of real-world users. They play a critical role in informing the design and development of user-centered products and services.

2.3. Specifying the User Requirements: chosen methods of research

User stories are a widely used method in UX (user experience) for describing the desired functionality and behavior of a product or feature from the perspective of the end user. These stories follow a specific format, such as "As a [user], I want [goal or task] so that [benefit]." User stories are particularly popular in Agile development methodologies and are typically created by the product owner or stakeholders (Cohn, 2018; Leffingwell & Widrig, 2011).

A **problem statement** in UX refers to a clear and concise statement that identifies a specific problem or issue related to user experience. This statement should clearly outline the problem, the target audience, and the desired outcome. A good problem statement should be actionable and measurable, allowing designers to focus their efforts on solving the specific problem at hand (Nielsen, 2014).

2.3. Producing design solutions: chosen methods

The "**How Might We**" technique in UX is a design thinking approach that helps to identify and reframe problems in order to generate innovative solutions. The technique involves asking the question "How might we" followed by a statement of the problem or opportunity being addressed. This question prompts team members to think creatively and generate a wide range of potential solutions (Brown, 2009).

Wireframes in UX (user experience) refer to low-fidelity visual representations of a website or application's layout and interface. They are used to communicate design ideas and functionalities to stakeholders, such as developers and designers, and to gather feedback from users. Wireframes are typically created early in the design process and are used as a blueprint for building the final product (Nielsen, 2000).

2.3. Producing design solutions: chosen methods

A **low-fidelity prototype**, also known as a "lo-fi prototype," is a rough representation of a user interface or product design that is typically created quickly and with minimal detail (Nielsen, 2017). It is often used in the early stages of a design process to test basic concepts and gather feedback from users before moving on to more detailed designs. Low-fidelity prototypes are often created using simple tools such as paper and pencil, or basic wireframing software.

A **high-fidelity prototype** in user experience (UX) is a detailed, functional representation of a product or system that closely resembles the final product in terms of functionality, layout, and design. High-fidelity prototypes are typically used during the later stages of the design process to test user interactions and gather feedback before the final product is developed (Nielsen, 1994)

2.3. Evaluation: chosen methods

User experience (UX) researchers employ **usability testing** to measure how convenient and satisfactory a system or product is to use. This method of testing typically involves a limited number of people who are asked to finish certain duties while researchers document and watch their interactions with the product. There are multiple forms of usability testing, such as in-person testing, distant testing, and online surveys. The purpose of usability testing is to identify any problems or areas for improvement in the product, and to suggest strategies to enhance the user experience (Nielsen, 1994).



CONTEXT OF USE PHASE

3.1. The method: Interviews

Interviews refer to the process of gathering qualitative data through one-on-one conversations with users to understand their needs, goals, and behavior in relation to a specific product or service. These interviews can be conducted in various formats, such as face-to-face, telephone, or online (Nielsen, 2018). UX interviews are conducted to understand user behavior, preferences, and requirements. The objective is to use this information to design and develop products and services that meet the needs of users (Holtzblatt & Beyer, 2018).

Structured interviews are pre-determined, formal interviews that follow a set of specific questions.

They are often used to gather specific information from users, such as their demographics or usage patterns (Nielsen, 1994). Whereas **unstructured interviews** are informal, open-ended interviews that allow participants to discuss their experiences and opinions in their own words (Kvale, 1996).

A **semi-structured interview** has an open structure, even though some themes and questions have been prepared for the interviewee. Instead of being a sequence of questions, the conversation is more like a discussion. This sort of interview allows the applicant more latitude to express themselves.

3.1. Interviews: selecting of participants and preparation

To gain a deep understanding of the users, three sets of interviews were performed each of which was based on the method of semi-structured interviewing. Each of us interviewed two students and one professional employee. We tried to be more efficient by recording the interviews with the interviewees' consent and hence our team was able to conduct 9 interviews. We selected students based on their regular usage of a day planner. Professional users used some kind of planner either because their work demanded it or for personal use.

Brainstorming for the questionnaire and agenda for the interview was set by sticky notes, deducing our ideas, we were able to have an idea of what we needed to know about our app's usage by the users. Our questions had a few agendas like knowing a user's actual mode of planning, advantages of planners used by them, what they didn't like, about their use-case, their needs, and expectations. They were also asked a few questions to know their willingness and enthusiasm for self-reflections or self-analysis. Context of Use Report can be found in Annex C.

3.2. Interviews Analysis

We further combined and grouped interview answers and did a thematic analysis which is shown in the figure in Annex D.2. Next, a key point synthesis of the thematic analysis was done as shown in Annex D.3.

Ultimately, the results from the interviews were analyzed and we found four grouping umbrellas for them into an affinity diagram. They are as follows:

Needs

- To be able to estimate the time needed on tasks planned;
- Intuitiveness and helpfulness in learning how to use a planner;
- Be supported to continue planning as users find it easy to lose interest;

- Know how much time was spent productively and the opportunity to minimize unproductive activities;
- Change the way of organizing time, improve and streamline the process;
- Complete tasks on time;
- Minimal time to spend on planning;
- Dedicate time to different areas of life;
- Introduce some kind of reward system.

Advantages of planners which are being used:

- Prior arrangement of tasks to make better plans and develop new hobbies;
- Eco-system of planners where they let a user synchronize team meetings, and events;

3.2. Interviews Analysis

- Predefined templates where a user has to enter his plans and schedule without worrying about the creation and arrangement of data itself;
- Possibility to view the list of tasks accomplished for the sense of accomplishment.

Disadvantages of planners which are being used:

- UI wasn't intuitive enough for some users, and they don't find it comfortable to switch between different devices;
- Takes time to join meetings, extra steps are needed in case their planner doesn't support event synchronization;
- Users liked the reminder feature but was annoying after a while;

Suggestions from Users:

- Tips on how to use a planner;
- Tips on how to plan better;
- Ability to see expected and actual hours;
- Real-time statistics about time spent, on what most of the time was spent;
- A way to prioritize tasks;
- Ability to divide tasks into sub-tasks;
- Reminders to stop doing unproductive activities;
- Grouping of tasks into areas in the sphere of life;
- Record satisfaction and mood after a task is done;
- Rewards after task completion;

Please refer to the figure in Annex D.4 for the results being grouped.

USER REQUIREMENTS CONCEPT DEFINITION

Introduction

Our first sprint aimed at dealing with analyzing and understanding the user needs and specifying the user requirements, hence managing our expectations and separating need-to-haves and want-to-haves. These are the first two activities of the User Centered Design process.

For achieving a deep understanding of potential users, we recognized our application to cater to **two user groups** namely students and employed professionals. Three courses of interviews were performed each and theoretical research was done.

Based on the insights gathered, empathy maps, personas, user stories, and problem statements were developed to clearly define the needs and requirements of the users.

4.1. Competitive Audit

We realized that brainstorming was most productive after we had done a thorough investigation of our competition. Initially, we had to identify our goals ahead of delving into the details of the audit. The purpose of the competitive audit was to compare the experiences of users on each of our competitors' apps, so we could come up with our unique selling point and give users a better experience.

Step 1. Outline the audit goals

It became obvious that utilizing similar terminology to evaluate rival items could result in more consistent feedback and also aid in our ability to "rate" rivals. We assigned each element for analysis a score

between the following table 1.

Step 2. List competitors

We wanted to get insights into where our product would fit in the industry, hence we planned to note if the competitor is a direct or an indirect competitor.

Companies that are directly competing with us have the same type of products and aim for the same crowd. On the other hand, those that are indirectly competing have similar offerings but focus their attention on a different market, or they have different types of items but target the same demographic.

4.1. Competitive Audit

Score	Description
Needs work	The feature is not usable, and users aren't getting what they need from this aspect of the app.
Okay	This aspect has some issues, but with some work, it could meet user needs.
Good	This aspect works well, but doesn't always provide users with the necessary information easily.
Outstanding	This aspect feels consistent, and it meets or exceeds the user's needs.

Table 1. Scores to evaluate competitors

4.1. Competitive Audit:

Step 3: Select the particular competition features to compare.

We concentrated on the following categories and rated the same for each application we considered:

- First impressions, Interaction
- Visual Design, Content

Step 4. Research each company

Expanding on the previous step, we further categorize them to gain an in-depth analysis of the competitors.

We used the applications and analyzed the following:

- Product offering Price, Business size
- Target audience, Unique value proposition

- Desktop and App experience
- Features, Accessibility
- User flow, Navigation

Brand identity, Tone, Descriptiveness.

Step 5. Summarize findings in a report

We used a Microsoft Excel sheet to list and analyze each application based on the categories and sub-categories mentioned.

We selected 3 applications from the Google Play Store:

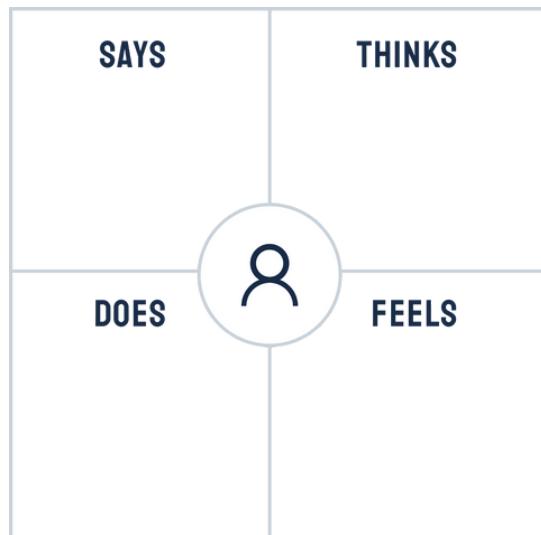
1. Work-Life Balance
2. Work-Life Balance - no stress
3. Balanced ME Toolbox.

We have attached a screenshot with all the results of our competitive audit in Annex B.

4.2. Requirements Definition

4.2.1. Empathy Maps

While developing a common understanding of user needs and requirements for “Balancify”, empathy maps have been considered to empathize with user groups, their context, thought-process, actions, and feelings.



We conducted nine interviews in total and based on the gathered information we developed an individual empathy map for every participant. We added the opinions in the “Says” quadrant. For example, the following are certain quotes received while taking interviews for “Balancify”:

- “In my opinion planning is important for productivity”;
- “Writing things is a good habit for reminders”;
- “I would like to change the way I spend my time”;
- “Usually I don’t analyze my time”.

4.2.1. Empathy Maps

The user's activities are contained within the “Does” quadrant. According to the study, what does the user actually do? How does the user approach the task? For example, the following actions were captured:

- Checks every day which tasks have been done and which are needed to be transferred to the next day;
- Occasional plans, only for important tasks;
- Does long-term planning.

The user's emotional state is reflected in the “Feels” quadrant, which is frequently represented by an adjective and a brief sentence for context.

What troubles the user, you might wonder? What causes the user to become enthusiastic? What impressions does the user have of the encounter? For instance,

- Confused: underestimate/overestimate tasks;
- Guilty: if fails to deliver on time;
- Overwhelmed: with a lot of information.

After creating individual empathy maps we aggregated them into two empathy maps, one for each user group. This way these aggregated empathy maps helped us in creating personas for each user group.

Detailed information on the expert's empathy map and the student's empathy map is given in Annex E.

4.2.2. Personas

Once we had all the information regarding users and user groups through interviews and empathy maps we were in a good position to create personas for each user group. We not only included the background data like age, gender, lifestyle, and profession but also added users' needs, concerns, and goals. Persona creation was a very crucial part during the context of the use phase, as this helped us understand how specific traits, mindsets, and expectations could impact the use of interactive systems. This process helped us to form a shared objective and concentrate our design efforts in one direction. Two personas have been created to identify the core objective of user

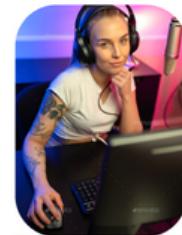
groups about operations while using "Balancify".

Process

We first searched for user-attributed and ethnographic data. Then we grouped these data and qualities to establish distinct characters. Any similar categories were combined and the less concerned information was eliminated. Once all the information started to take a shape, we added the specifics to make the persona realistic and unique. For example, the persona of a student Silvia (Fig. 2) has the following details.

The second persona can be found in Annex F.2.

4.2.2. Personas



Silvia Dimitrova

22 years · Gamer, Student

Organised Hard working Productive Curious



Verbatim

The only thing I need in my life is a good Time management, I want to be in control! As Twisted Fate puts it "Only a fool plays the hand he's dealt."

Main Goal

She wants to achieve an optimal work-life balance. Being a student and a gamer, she hasn't been able to sleep well lately.

Digital culture

Estimation of the user's abilities to use digital tools

IT & Internet



Software



Mobile Apps



Social Networks



Gaming Apps & networks



Goals

List of user goals for Balencify

- Set and keep track of planned tasks
- A gentle reminder before a task
- Support in following plans in every step
- Determine the quality of the day
- Help switch between learning, gaming and sleep
- Review daily / weekly / monthly activities' status

Expectations & needs

List of things that may be required to use Balencify

- Simpler interface, intuitive navigation
- Not spending a lot of time in planning, making inputs
- Grouping tasks and ordering them
- Keep track of past activities for future reference
- Information about wasted time and suggestions to avoid it
- Record satisfaction level / mood

Pain points & objections

List of points of frustration that the user has encountered

- Overwhelming UI and design decisions
- Reminders can get annoying sometimes
- Doesn't motivate to follow through the plans once the streak of task completion breaks

Applications friendly

List of apps she knows and likes

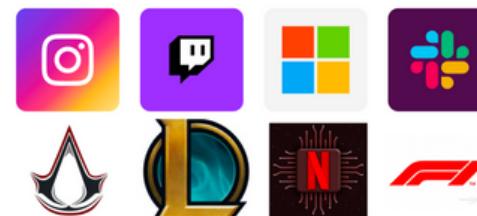


Fig. 2: Persona

4.2.3. User Stories

A user story specifies a specific user goal. Hence it is a way to define an action done by a user in a specific context to reach a specific outcome. These stories help designers to find the space and need for new user needs and requirements.

Once we had personas with us we created user stories based on the information we categorized during the process of creation of the persona. Information like the context of use, roles and responsibilities, goals and aspirations, and fears and constraints, helped us in realizing user stories for every user group. There are three entities in the description of a user story including the user/stakeholder, the goal/action, and the outcome.

User Stories are expressed using the following short sentence:

“As a [persona], I [want to], [so that]”:

- As a [persona]: ethnographic data, role
- I [want to]: actions and associated desires
- [so that]: goals, outcomes from an action.

Therefore, for each of the predefined user groups, a user story was created to empathize with the user's personality and understand immediate actions and desired goals, when it comes to planning and productivity. Both user stories are available in Annex G.

4.2.4. Problem Statement

Once we prepared user stories, we were in a great position to identify the problems associated with the aspiration of users. Hence, we started to develop problem statements. We analyzed the constraints, fears, and problems which were stopping users from accomplishing their goals and the issue faced by them. These investigations helped us to define problem statements in the exact context. The problem statement has been an exceptional tool for us to bring all the stakeholders on the same page and define the needs and requirements. Furthermore, it helped us to direct our efforts to innovate the interactive system.

The problem statements explain various aspects of the problem. First of all, it describes the context of the problem where stakeholders become aware of the sources leading to this problem. The other aspect is the user group which is getting affected because of the problem. Ultimately it describes the impact of the problem and the ripple effect due to that impact on the organization and business. Detailed problem statements are available in Annex H.

A simple structure for a problem statement that includes three components:

1. User
2. Need
3. Goal

4.2.5. Requirements' Specification

After going over various methods to empathize with and understand users, we reached the stage where we defined the requirements for the interactive system. These methods involve interviews, empathy maps, personas, user stories, and problem statements. After careful consideration of every aspect, the entire team decided on several requirements based on user needs. We used these requirements to guide us in taking a user-centered approach to designing the solution. Before beginning the project development, we documented user needs, requirements, and system requirements. The process of specifying requirements helped us in understanding the users

expectations, business goals, and removing ambiguity. We defined the user requirements derived from user needs, they are shown in table 2. User Requirements Report can be found in Annex K.



User Needs	User Requirements
Users want to group tasks.	The product shall allow users to group tasks
Users think that adding and associating feedback with a task would help in planning a similar task more properly for the next time (want to estimate the time needed on tasks more accurately).	The product shall allow users to associate the feedback with a concrete task.
There should be an option to analyze completed tasks.	The product shall provide analyzed data based on the inputs of users.
Users want to be supported to continue planning and get rewards for efforts made.	The product has to have a feature to support people to continue planning
Users want to avoid spending too much time making plans.	The product shall allow users to plan fast, providing a clear user flow.
Users want to understand easily how to use a planner.	The product shall provide users with instructions and additional information where it is needed.

Table 2. Needs and Requirements Specification

4.3. Concept Definition

We concluded that “Balancify” would be a planner with a feedback mechanism that would help people to plan in a way that can help people to stick to their values while planning, and be able to improve their quality of life including all important things in a schedule not focusing only on professional growth only e.g., but also devote time to hobbies, rest, and whatever is important for a person. This could eventually help them to form atomic habits. The feedback mechanism would be self-driven. So, after the completion of every task, the user would provide feedback regarding the task completion status, and what emotion the user felt during the task.

On a scale of 1 to 10, how was the sense of achievement and sense of satisfaction? Also, whether the user was successful in the competition of the task or the task has been partially completed and if the user wants the task to be transferred to some other day. Users could also plan their desired circle of life. Meaning, users create several categories/ areas of life and associate each task with an area of life. This is how users could achieve work-life balance. Once the feedback has been received the app should be able to reveal the insights to the users.

4.3. Concept Definition

The major insight would be the comparison between the “Desired”, “Planned”, and “Actual” distribution of activities among various areas of life.

Additionally, the most frequent emotions felt during different activities would be revealed to users, so that they can observe the dynamic of the mood during different periods and reflect more about their state of mind during performing activities. Moreover, the most/least satisfying/pleasurable activities would also be shown to users because they influence the state of mind, that should be taken into consideration in planning the future.

Lastly, a profile section had been decided where users change their credentials and set a notification for feedback. This section would be helpful in future enhancement of the application to perform more personalization and provide aid in a more individualistic way.

When the initial interviews were conducted and we tested the concept with the collective intelligence of the users and their usage patterns we realized how important user research is while initiating product development. We collected a lot of feedback through interviews and various UX methods to take a user-centric approach while developing this user-centric product.

4.3. Concept Definition

Hence we could validate our assumptions, once the user research has been completed, the majority of assumptions were validated; however, some assumptions were refused by users and some were updated.

For example, users suggested a new path of onboarding for the “Balancify” application. First of all, users have asked to add an onboarding flow where they can select their preferred areas of life with which they want to plan their time. So, we received the feedback that instead of providing predefined categories, the users should be allowed to select their preferences.

Secondly, users rejected the idea of a logical grouping of the tasks, according to users this would increase the cognitive load of the creation of grouping, whereas it is not adding any additional value and decrease the usability of the product.

Lastly, users asked us to change the pattern of providing feedback after every task. Users felt that the analysis of planned tasks should be done once a day and hence the feedback should be provided only once a day for all the planned tasks for that day.

DESIGN AND EVALUATION PHASE 1

Design & Evaluation 1

5.1 How Might We

After creating problem statements, we started to think about how to solve these problems. Hence, we thought of brainstorming over how might we questions. The practice of the "How might we" technique sparked many creative ideas. These questions enabled us to consider multiple avenues for innovation while also reinforcing the fact that we are still exploring the problem and solution space. Moreover, we were reminded of the fact that we should all work collaboratively to develop a shared understanding of the problem and pool our resources to devise a joint solution.

Additionally, we had a broad focus on the desired outcome. We tried to phrase the questions with a positive tone.

Below are some How Might We questions:

- How might we help users organize their time more satisfactorily?
- How might we improve the mood dynamic of users?
- How might we help users continue with the rest of the tasks after failing one?
- How might we help users to get better at planning?
- How might we help people to analyze their day/week/month?

Detailed information is available in Annex L, which shows question-gathering.

Design & Evaluation 1

5.2. Information Architecture

Once the requirements are specified and the concept is defined, the stage was set to transform these details into an information architecture so that an infrastructure of features could be formed. This infrastructure not only contained features and descriptions but also included navigation and behavior of the application. We worked on information architecture in many iterations so that it eventually became an intuitive structure. It was a two-stage process: firstly, we created content inventory. After this, we performed an audit to check the efficacy, usefulness, correctness, and tone of the content.

Then, we performed a grouping of the available information. After grouping, we developed terminologies to establish uniform naming conventions. At last, we developed descriptive information to present relevant metadata. Following the above-mentioned steps and principles, the Information Architecture has been drafted for the “Balancify” Application. Clarity and Positivity of the tone have been the prime focus while the naming convention was being developed. Information gathered from users and their understanding of the product has been the crucial deciding factor for information grouping. Balancify’s Information Architecture is mentioned in Annex M.

Design & Evaluation 1

5.3. Paper Wireframe

After specifying requirements and establishing information architecture, we started our design process with a paper wireframe. In this process, we created a representation of the interactive system on paper with free-hand drawings. We created these sketches to realize the initial conceptual model of the interactive system. Furthermore, The paper prototype helped us in testing our initial design idea without much cost, time, and effort. Furthermore, it served us as an initial document of design, and providing feedback and adapting changes was very easy.

Although our team decided to go with a paper prototype for the initial iteration, the paper prototype was created for crucial functionalities like feedback and insights. For the other screen, we decided to go with a digital prototype. The paper prototype design could be found in Annex N.

Design & Evaluation 1

5.4. Digital Wireframe

Once we created the paper prototype and realized the initial idea of design, we continued our process of design with digital prototyping. We designed the digital prototype using "Figma" software. The creation of a digital prototype helped us in many ways. First of all, we had the opportunity to work on the same file simultaneously. This collaboration helped us in realizing the collective potential and design intelligence. Additionally, the creation of navigation links is possible with the digital prototype, with this we could test the prototype with CTA (call to action).

As the "Figma" software is freely available, there was no cost involved in the creation of the digital prototype. Hence we could quickly achieve a professional appearance for the interactive system. Also updating the design and performing tests were possible in a shared environment.

We created digital wireframes for almost all the screens/interactions/paths which were realized in the concept definition. The digital prototype for the "Balancify" can be seen in Annex O.

Design & Evaluation 1

5.5. Low-Fidelity Prototype

After the creation of paper and digital wireframes, we entered the next stage of designing with a low-fidelity prototype. At this stage, we started to define views and controls so that we can transform the users' specifications into the system's specifications. We created a system simulation of the user interface through prototyping. The idea was to define the elements of the interactive system and the expected functionalities associated with user actions. We used the low-fidelity prototype to test the feasibility and usability of the design concept. We used "Figma" software to create this prototype.

The idea behind the creation of a low-fidelity prototype was to test the prototype extensively to check if the design is aligned with the user's expectations. We transformed the wireframes into tangible and testable artifacts using the low-fidelity prototype design method so that users can perform functionalities with mouse clicks. We realized that the low-fidelity prototype was inexpensive and quick to make. Also, it was easy to collaborate while creating the prototype and it manifested the design concept. Annex P. shows a snapshot of our lo-fi prototype.

Design & Evaluation 1

5.6. Usability Testing

At first, we started to create a script for the tasks. For that, we first defined few basic tasks to be performed. Then we wrote the introduction and briefing for the participants. So that they could understand the purpose of this study and test. For every task, we designed a few follow-up questions to understand the behavior and perception of the participants. At the end of the script, we defined several statements and a system usability scale to rate those statements. Also, we went with the method of "Think aloud" so that we can record and analyze their thought process and understanding.

After defining the script we recruited several participants for these tests. The participants were from the user groups we defined that includes students and professionals.

The method of usability testing we chose was in-person moderated usability testing. Also, we had the goal of conducting this test in a way that could help us in collecting both qualitative and quantitative data. Whereas to collect quantitative data we recorded click path, time to complete a task, number of errors, and system usability scale.

Detailed information is available in Annex R.

Design & Evaluation 1

5.6.1. Findings from Usability Test of Lo-Fi prototype

For the analysis of gathered data, we used manifest analysis, which means we stuck to the concrete original quotes of participants while searching for problems and possible improvements to the prototype. Quotes of users are located in the second column of Table 3. According to the opinions of users, we identified the main types of problems/ areas for improvement. Based on the types of problems we concluded that the main improvements are needed in such spheres as labeling, navigation, and customization. For making needed improvements we discussed what changes we need

to make. Besides, we got several positive feedbacks from users, which are related to the concept of the app, its design, and existing features:

- “Good, easy to handle. Good navigation”.
- “Loved feedback page”.
- “It`interesting app, because I need to reflect more about my actions, and how I felt during and after performing a task. Usually I don`t do this”.
- “Good design”.
- “Analysis of week, day, the month is impressive”

In Annex R. the results of the SUS questionnaire are shown.

Type of a problem	Opinions of users	Possible solution
Customization	"It would be great to have possibility to set several notifications".	We can add multi selection for notifications.
Labeling	"I would like to have a tip what percentage does mean (is it what I set up already as desired percentage or it is about percentage of time which I have devoted to different areas of life".	Change hint text from "ratio" to a more understandable one.
Navigation	"Could have list of tasks in the same page as calendar".	We could change the homepage, add list of tasks below the calendar for the current date.
Customization	"I would like to be able to choose icons for the areas of life also, not only colors".	Due to fact that the feature of choosing the areas of life is customized, every user can change the list of areas, Providing the possibility to choose icon seems not realistic and also can lead to cognitive overload.
Navigation	"The Field to record emotions in the feedback page should be more evident by adding an emoji there".	A symbolic emoji to be added with emotion option.
Labeling	"I find pleasurable activities and satisfying activities to be the same, it seems unnecessary to have both".	It is worth to add information what both scales mean, what is the difference between them.
Labeling	"Analysis should be called Insights/Notes".	Review terminologies we've used. Most importantly, convey meaning of words.
Set of features	"Dont need frequent emotions".	It is worth to change feedback page with emotions: to link them with activities / show the dynamic / provide comparative Analysis.
Labeling	"Language could be better: generic, simple, straight. Ex: field of interest instead of area of life".	We should check the consistency of vocabulary within the app.
Navigation	"Main Feature should be in center of bottom navigation bar"	"Plan" tab could be placed in center.

Table 3. Findings from the usability test of the Lo-Fi prototype

DESIGN AND EVALUATION PHASE 2

Design & Evaluation 2

6.1. Redesign of Lo-FI prototype

Based on the findings of the usability test we performed a few changes. Examples are listed below:

- Multi-selection for notifications and choice of emotions felt during the performance of a task has been added.
- We have changed the homepage, adding the list of tasks for the chosen date below the calendar.
- In the field of leaving feedback about emotions by users we changed the color of the text from grey to black and changed the size of the font from 15 to 18 to make it more visible.
- Information dialogue with the description of the scales was added.

- We created the graph with a frequency of emotions to achieve a better visual representation of information and to provide a comparative analysis of the frequency of felt emotions.

The table in Annex S. outlines the data collection, analysis, and all implementation steps we took as we revised our prototype in response to user feedback.

Design & Evaluation 2

6.2. High-Fidelity prototype

The Hi-Fi prototype presents all the interface, graphics, and spacing components. Regarding interactivity, many or all elements in the hi-fi prototype are clickable. The visual feel and look are similar to the final product (Mwangi, 2023).

Based on redesigned Lo-Fi prototype, the Hi-Fi prototype was created. For that, we changed the user interface: colors, navigation bar (the footer), and added a notification reminder about leaving feedback in the profile's settings.

Some of the changes are reflected in Fig. 3-7.

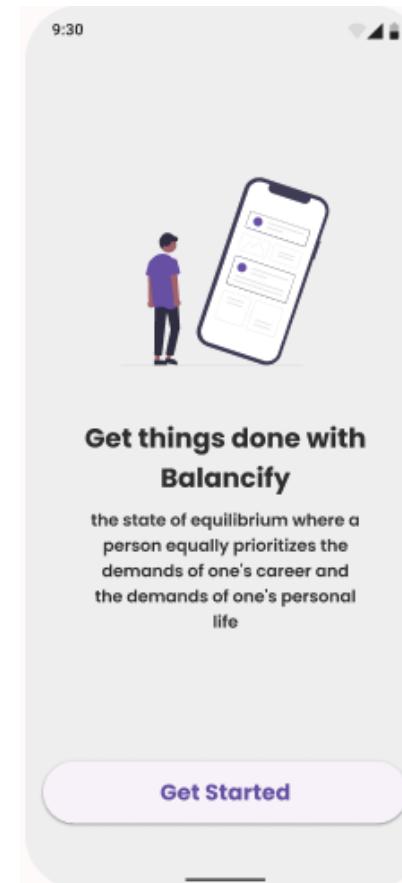


Fig. 3: Lo-Fi prototype

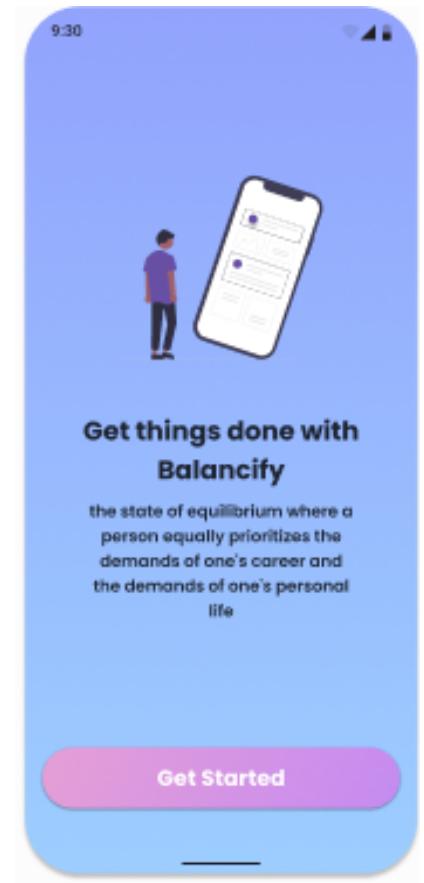
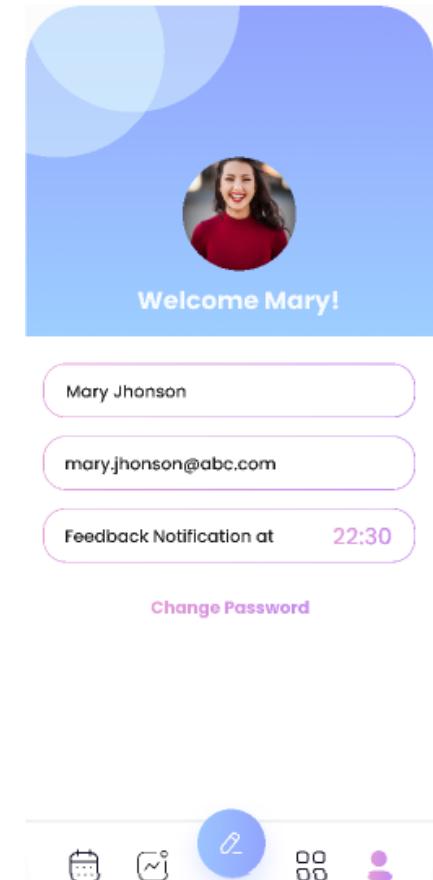
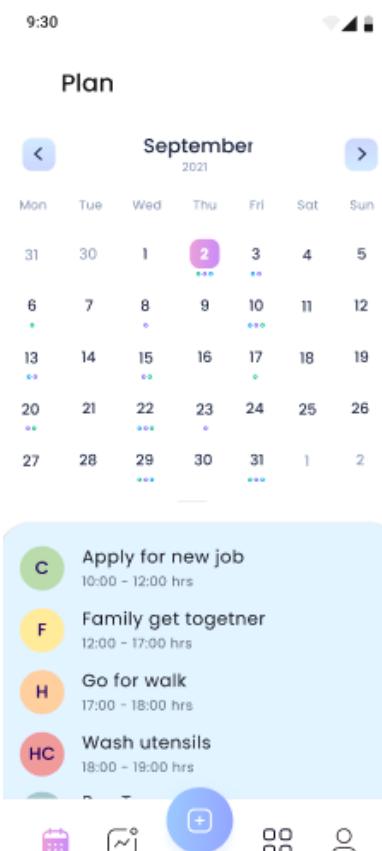
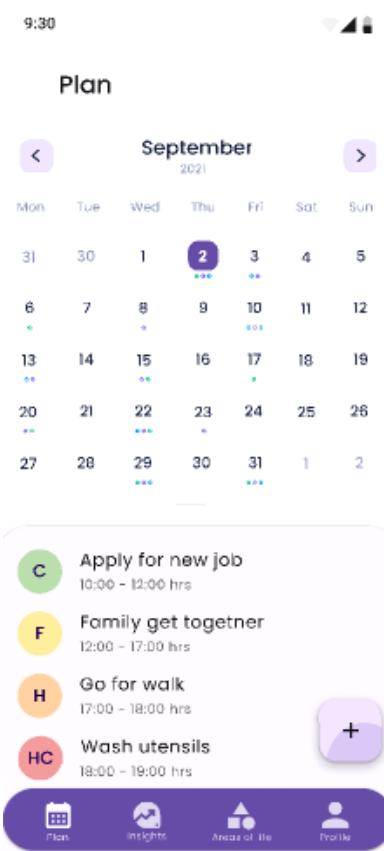


Fig. 4: Hi-Fi prototype

Design & Evaluation 2



Design & Evaluation 2

6.3. Usability Testing of Hi-Fi prototype

The purpose of the evaluation was to identify usability defects and usability problems. The usability test was conducted as a moderated in-person usability test by each of the team members individually without note-takers.

The total number of participants was 5 people aged between 24 and 41. All of them are students two of them combine work and study and are considered professionals according to predefined user groups.

Each of us identified usability problems and strengths. After we reviewed individual findings, the team agreed on a common set of usability findings.

The test tasks were defined to test the most important functions based on specified user needs and requirements. The set of tasks included 6 tasks, some of them have scenarios and included subtasks (the script is in Annex R). The usability of the test tasks and the instructions for participants were pre-tested.

Data to be collected:

1. Task completion rate;
2. User errors and frequency of occurrence;
3. Click path;
4. User-reported qualitative data (“think aloud” quotes and answers to the questions).

Design & Evaluation 2

6.4. Findings from Usability Test of Hi-Fi prototype

The main information which was analyzed is click path, use errors, and qualitative data ("think aloud" quotes and answers to the questions).

After analysis of each participant's answers, tendencies were found and reflected below in table 3.

Based on observed errors, click path, and feedback from users we categorized errors and came up with probable reasons behind them and recommendations on what should be changed to fix found issues.

Moreover, the usability test showed us not only usability problems but also the strengths of the prototype:

- Placement and design of features "Add/change/delete areas of life": "Add/make settings for a new task" were satisfying, and performing these tasks were intuitively easy for users.
- The concept and idea of the app were appreciated by 3 users out of 5: "It's a good app to use if you want to change your scheduling stuff. The main idea of the app is pretty useful. I would be able to schedule my life better" / "I like the whole idea of providing user statistics and overall".

Findings - N of participants	Type of use error	Observation / quote	Interpretation	Recommendation
Login process seems to be unfair difficult for 2 users of 5 (task 1).	Navigation	"After I've registered it should directly take me to this page "	Users need to go directly to the homepage after the registration process.	Allow users to directly go to the homepage after registration without a login process.
2 users need more context about the app concept, functions after registration (task 1).	Content	"Need more context. Didn't understand what was mentioned"	The page with the fields of life after registration were unexpected for users. Aim of this page wasn't understood.	Make a few pages with explanation of the app's functionality / Provide informational pop ups for some buttons/ functions with short instructions.
2 users didn't find the feature to leave feedback from the 1st attempt (task 4).	Navigation	"Quite difficult, no right onboarding from the app"	For leaving feedback users need to go to the concrete task. .	Make direct way for leaving feedback from homepage.
The difference between desired and planned time-spending wasn't understood by 2 participants (task 5).	Content	" I can't understand the difference between planned and desired proportion".	Both desired and planned proportions mean for users that percentage that they set on "areas of life" page.	Remove planned or desired proportion from the graph or provide information about the difference between them.
The graph for representing information about the frequency of emotions was hard to understand for 3 users (task 5).	Visual representation of information	What does the line shows? (graph with emotions frequency). Can't understand the scale, what numbers mean (percentages?).	Graph doesn't deliver needed information in a simple way. No headings for axes.	Change the graph.
Reminder to leave feedback wasn't found or it was difficult to find by 3 of 5 users (task 6).	Navigation	Users searched for this feature in other pages. Even if they checked the profile page, they didn't notice needed field with setting of the reminder. "I would've never searched for it in profile. Seems hidden"	Field with the reminder looks like a text field in the profile page that's why users don't pay attention to it.	Change the visual representation of this feature or change the placement of this feature.

Table 4. Findings from the usability test of the Hi-Fi prototype

RESULTS

7.1. Final concept

The "Balancify" app's final concept as well as other development options will be discussed in this part. The marketing strategy for promoting the app will also be covered.

Due to the users' mostly positive response to the idea, the final concept will not change. According to the usability test of the HI-Fi prototype, some adjustments are required, including:

- improvements to the authorization process;
- changes in the visual representation of information about emotions felt during performing activity;
- alterations to the location and layout of the reminder to provide feedback

adjustments in the proportion of time spent that was desired, planned, and attained;

- alterations to how users can provide feedback after completing a task.

Also, generally, the app should provide more instructions and clarity about the functions offered.

7.2. Marketing plan

The marketing plan timeline is essential for tracking progress, achieving objectives, and executing marketing activities efficiently. This report will provide a comprehensive marketing plan timeline that includes specific deadlines, success metrics, and necessary adjustments to achieve our goals.

The timeline for the different steps/phases is as follows:

1. Assessing our current situation

2. Defining our target audience

We decided on having 2 user groups:

- Students in their bachelor's or Master's degree who have a lot of courses to keep track of, feel they could use some help to be in control of their academic

and personal life;

- Working professionals who feel emotional burnout / mental pressure from the workload and have to resort to limiting time for their personal life.

3. Demographic analysis

We used Google Trends to see how frequently a specific search term is used, as well as how its popularity has evolved. We identified 7 keywords as queries of our target audiences to search for and to which we plan to offer solutions. The keywords are as follows:

1. Daily planner 2023,
2. Self-reflection,
3. Procrastination,
4. Personal organize,

7.2. Marketing plan

- 5. Work-life balance,
- 6. Occupational burnout,
- 7. Planner app.

We listed the top 12 countries that have high traffic in searching these terms individually, an example is shown in the following table 5. The data was collected for the time interval of a year from 12/10/21 - 12/10/22.

Rank	Country	Interest over time
1	Australia	100
2	South Africa	100
3	Canada	93
4	New Zealand	90
5	United States	73
6	Malaysia	49
7	Singapore	48
8	United Kingdom	36
9	Philippines	14
10	Germany	13
11	India	10
12	Christmas Island	7

Table 5. Top 12 countries interested in the topic of work-life balance

7.2. Marketing plan

We listed countries that were in the top 12 of each of the 7 search term results. We then took an intersection of the countries. Finally, we counted the number of search terms that were common in each of the countries, and ranked them by arranging them in decreasing order of their strength ie., the number of common terms. This can be seen in Fig.8

Numbers on the graph don't represent absolute search volume numbers, because the data is normalized and presented on a scale from 0-100, where each point on the graph is divided by the highest point, or 100.



Fig. 8: Ranks of countries based on search-term results

7.2. Marketing plan

4. Setting our goals

We imagined having a budget of ~ \$500 over a period of 7 days to promote our advertisements online. We chose a 7-day time window for our promotions as it would potentially aid us in the following:

- Testing: Shows how our target audience responds to your advertisement. This can help us to gather data on the effectiveness and to make optimization changes to future campaigns based on the results.
- Quick Launch: Whether our brand awareness increased and yielded more interest among our planned demographic

- Time-Sensitive Offer: We recognize and keep track of early adopters and Beta testers, offering them gratitude by giving them the first 15, one-time transferable psychologist consultations free as soon as we launch new updates.

- Budget Constraints: This proves to be an efficient strategy considering Return On Ad Spend (ROAS) with potentially reaching ~90,000 users from our target audience.

Further, we employed the "SMART" goals framework to specify our ideas and establish our objectives. The framework is based on setting specific, measurable, attainable, relevant, and time-based goals.

7.2. Marketing plan

Specific:

- Complete tasks as planned in time-schedule to keep the budget in control.
- Advertise a single image ad on LinkedIn for 7 days with the objective of Brand awareness.

Measurable:

- Reach a 36,000- 120,000 target audience with a daily budget of \$100, which might cost \$390-\$700.

Attainable:

- Offer initial users an opportunity to join our Beta testing program with the added benefit of having access to our paid features down the line.

Relevant:

- Choose the target audience linked in,

based on attributes of users: Students from specific degree programs, working professionals with work experience of 1-4 years, and psychologists.

Time-based:

- We plan to advertise for 7 days on LinkedIn with a cost per 1,000 member accounts reaching: \$9.08 - \$13.62.

5. Target Application Fields

- Health and wellness
- Potential for the medical field
- Productivity

7.2. Marketing plan

6. Brainstorming and defining tactics

Our goal-achieving strategy is laid out in our marketing plan. They can be summarized as follows:

- Ads on Linked-in for users
- Market research for audience demographics
- With users' consent, we could share their psychological state of mind with their psychiatrist/psychologist, giving an in-depth insight into the day-in-lives of users. Strategies for setting and accepting payments for this process.
- Share the app on social media, and interest groups for free

7. Setting a budget

We considered having a \$1000 budget for our marketing strategy, the first stint of our ads for 7 days would cost us ~\$500 and would give us insights about the performance.

8. Evaluating the results

Finally, we get to see analytics elaborating on the data. We can observe the number of target audiences our advertisement reached and how many of them went through with the process and converted into our customers. Based on the demographics, we would know things that we did right and improve on certain aspects to have a positive yield in the next stint.

7.2. Marketing plan

9. Price of our app

We plan to sell it as a stand-alone app, further down the line, create a new interface in the app for Psychologists that can be a helpful tool to work with their clients. We chose the Freemium pricing model for our application. The freemium pricing model provides us with an app that can be downloaded without any cost and users can also have the option to purchase extra features, tiers, or advantages inside the app.

Out of the three main types of freemium apps, we have decided to give away our app for free for a certain period with all its functions and features.

Afterward, to keep using the app like before, the user will have to pay.

CONCLUSION

To complete this project, our team had to go through several steps beginning with the Ideation, Defining user needs and requirements, Prototyping, Testing the concept and Lo-Fi, Hi-Fi prototypes, and developing a marketing plan. We had full autonomy on how to handle these processes and set up teamwork. It was a great chance to learn new things, develop useful skills, and obtain a broader understanding of how Human-Centered Design is used in real-world settings.

A lot of time was spent on our first ideation phase—we held three or four meetings before making a final decision—but it was worthwhile because, as we had discussed from the beginning, our idea

needed to be inspiring for all of the team members to keep them engaged in developing it through to completion.

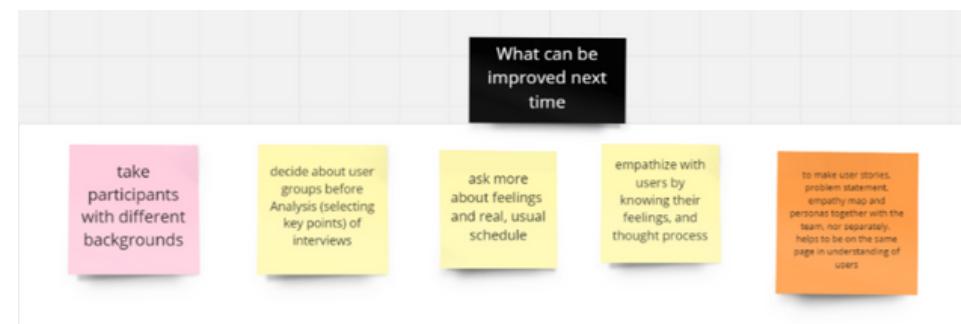
The "Balancify" app's concept came to be as it did because all of the team members are interested in psychology, and both team members and user testing participants found the idea of assisting people in better organizing their lives based on current psychotherapy techniques from the Cognitive-Behavioral approach (CBT) to be appealing.

The most crucial lesson we've learned is that to properly listen to users' perspectives, every UX researcher and designer must be willing to let go of their thoughts and opinions about the products they are creating.

In some sense, this kind of detachment yourself from your idea enables you to implement adjustments that end users demand.

Additionally, we as a team have learned how to organize work better through time, we tried different roles, changing them on our way, searching for the most efficient and useful way of dividing responsibilities. Planning, setting deadlines, and keeping track of work was a crucial part of teamwork. These important tasks required all members to be flexible, reliable and have proper communication skills.

While working on this project, the last-mentioned capabilities were also growing. Also, in the process of work we maintained tradition to point out moments which we could do better and discussed how. Moreover, one of the most impactful things in teamwork for the professional growth of team members is sharing high-quality feedback. That's why we made every effort to provide feedback to one another after each activity was completed in addition to the feedback of our professors.



Final personal impressions of the team members

Hamza: This journey has been a roller coaster ride. From brainstorming to manifestation, this ride taught me a lot of things. Most importantly I learned to understand and empathize with people. Understanding people (users and teammates from their perspectives) is the biggest takeaway for me. You can only understand others' experiences when you walk in their shoes.



Klavdiiia: It was fascinating to experience the embodiment of the idea into reality by our team when in the end it is possible to see almost the real app on your mobile phone. Every step was done for the first time, with new for me people, but now every step seems well-known as my team members started to be not only colleagues but also friends. This is a memorable and valuable experience.



Rahul: In the course of working with my teammates, I've observed the importance of planning and documentation, efficient team meetings and teammates being open to exploring new avenues for better results. My teammates have taught me the importance of being bulletproof with accountability and explainability of my actions, as well as being open to criticism. I believe that when we all work together, we can do amazing things.



Annex

- | | |
|---------------------------|---------------------------------|
| A - Project Plan | J - Requirement Specification |
| B - Competitive Audit | K - User Requirements Report |
| C - Context of Use Report | L - How Might We |
| D - Interview materials | M - Information Architecture |
| E - Empathy Maps | N - Paper Wireframe |
| F - Personas | O - Digital Wireframe |
| G - User Stories | P - Low-Fidelity Prototype |
| H - Problem Statements | Q - High-Fidelity Prototype |
| I - User Needs Report | R - User Evaluation Report |
| | S - Redesign of Lo-Fi prototype |

Annex A. Project Plan

TASK	Responsible	PROGRESS	START	END	Claudia		Hamza		Rahul		Overall
					Expected	Actual	Expected	Actual	Expected	Actual	
First Steps											
Ideation process	All	100%	10/12/22	10/16/22	4	6	4	6	4	6	18
Planning, Time-Schedule	Claudia	100%	10/15/22	10/16/22	2	5	0,5	0,5	0	0,5	6
Making Presentation	Hamza	100%	10/16/22	10/18/22			1	1			1
Competitive Audit	Claudia, Rahul	100%	10/15/22	10/18/22	3	4			2	2	6
Presentation of the idea, plan	All	100%	10/19/22	10/19/22	0,3	0,3	0,3	0,3	0,3	0,3	0,9
Making Short Description	Rahul, Hamza	100%	10/19/22	10/20/22			1	1	2	2	3
Context of Use											
Preparations for Interview	Claudia	100%	10/30/22	10/31/22	4	4	4	4	4	4	12
Providing Interviews	Rahul	100%	10/31/22	11/1/22	2	1,5	2	1,5	2	1	4
Making Presentation	Hamza	100%	10/16/22	10/18/22			1	1			1
Presentation: Project Progress	All		11/2/22	11/2/22	0,3	0,3	0,3	0,3	0,3	0,3	0,9
Interview Analysis	Claudia	100%	11/1/22	11/6/22	4	5	4	3	4	3,5	11,5
Requirements Definition											
Defining User Groups	Claudia	100%	11/7/22	11/7/22	3	1	3	1	3	1	3
Empathy maps	Hamza	100%	11/8/22	11/10/22			3	4			4
Personas	Rahul	100%	11/8/22	11/10/22					3	3,5	3,5
User Stories	Claudia	100%	11/8/22	11/10/22	2	1					1
Problem Statements	Claudia	100%	11/10/22	11/11/22	2	1					1
Ideation process											
How Might We technique	Claudia	100%	11/15/22	11/16/22	3	1	3	1	3	1	3
Preparations for the presentation	All	100%	11/16/22	11/16/22	1	0,7	1	0,7	1	0,7	2,1
Presentation: Project Progress	All	100%	11/16/22	11/16/22	0,3	0,3	0,3	0,3	0,3	0,3	0,9

Design & Evaluation 1											
Ideation process	Claudia	100%	11/16/22	11/16/22	2	1	2	1	2		2
Paper Wireframe	Rahul	100%	11/17/22	11/18/22	4	2			4	2	4
Digital Wireframe	Hamza	100%	11/19/22	11/23/22	4	3	10	20	4	4	27
Feedback from users about Wireframe	Hamza	100%	11/23/22	11/23/22			2	3			
Lo-Fi Prototype	Hamza	100%	11/24/22	12/5/22	3	4	20	25	3	4	33
Preparations for Usability Testing	Claudia	100%	11/24/22	11/28/22	5	5					5
Presentation: Project Progress	All	100%	11/30/22	11/30/22	0,5	0,5	0,5	0,5	0,5	0,5	1,5
Usability Testing	Claudia	100%	12/6/22	12/9/22	2,5	1,5	2,5	2	2,5	1,5	5
Wrap-up of Testing	Claudia	100%	12/10/22	12/10/22	4	4	4	4	4	4	12
Documentation	Rahul	100%	11/17/22	12/10/22	2	3	2	5	5	10	13
Design & Evaluation 2											
Brainstorming	Claudia	100%	12/10/22	12/10/22	3	1	3	1	3	1	3
Preparations for the presentation	All	100%	12/10/22	12/12/22	2	3	2	3	2	3	9
Presentation of Low-Fidelity	All	100%	12/14/22	12/14/22	0,3	0,3	0,3	0,3	0,3	0,3	0,9
Redesigning of Lo-Fi Prototype	Claudia	100%	12/14/22	12/19/22	6	10			3	4	14
Marketing Plan	Rahul	100%	12/24/22	12/31/22					3	6	6
Documentation	Hamza	100%	12/10/22	12/31/22	2	3	20	25	15	20	48
Design & Evaluation 3											
High-Fidelity Prototype	Hamza	100%	01/14/23	2/4/23			10	15	10	5	20
Preparations for Usability Testing	Rahul	100%	2/2/23	2/3/23	2	3			5	8,5	11,5
Usability Testing	All	100%	2/5/23	2/7/23	1	1	0,5	0,5	1	2	3,5
Usability Testing Analysis	Claudia	100%	2/7/23	2/9/23	4	4	2	2	1	1,5	7,5
Documentation + design of the Doc	Claudia	100%	2/6/23	2/20/23	15	30	5	5	2	12	47
Preparations for the Final presentation	Hamza	50%	2/21/23	2/24/23	3		3		3		
Submission: Final Report	All		2/17/23	2/21/23							
Final Presentation: HiFi prototype	All		2/24/23	2/24/23							

Annex B. Competitive Audit

Competitive audit goal: compare the user experiences of each competitors' apps										UX (rated: needs work, okay, good, or outstanding)			
	General information				First impressions		Interaction			Visual design		Content	
	Competitor type (direct or indirect)	Price (\$ - \$100)	Link for download	Target audience	Unique value proposition	App or mobile website experience	Features	Accessibility	User flow	Navigation	Brand identity	Tone	Descriptiveness
Work Life Balance	indirect	free	https://bit.ly/2S8LqXZ	potential clients of the Android app development company "Softeks"	The aim of the app doesn't match with the needs of a user. It seems to be the way to promote the company	Needs work - It's hard to understand the proposal of the app, design is old-fashioned - Too much information which I don't need at all;	Needs work + possibility to save a favourable article	Needs work - no screen reader technologies - only english	Needs work - it's hard to understand quickly the aim of the app - it's difficult to read articles because of the size of window	Needs work - There is no any segments of the info, just names of articles without order	Needs work - No brand identity at all - low quality pictures	Poite, a bit formal	Needs work - too descriptive
Work Life Balance - no stress	direct	free	https://play.google.com/store/apps/details?id=com.danlevyapps.worklifebalance	People, who are interested in improving their life-style	The aim of the app is to improve the quality of life. They intend to do this by: 1) Encouraging users to design and track daily activities of different life areas for a more balanced momentum in all life areas. 2) Motivating people to target productive work and serene life. 3) Helping people escaping boredom and depression and ignite the hope of happiness.	NEEDS WORK + Pleasant colors, +comprehensive +Reasonably intuitive + easy access to detailed Q&As + Audio feedbacks try to improve the experience (?)	OUTSTANDING + well defined life areas + Lets users to add and keep track of new habits + possible to log past activities together + Good display of statistics on demand + In-app journal with questions seem meaningful	NEEDS WORK + A lot of options, but they are searchable	NEEDS WORK - Need to have achieved a few daily goals to earn an in-app currency which is necessary to log in activities. On logging in the activities, we get awarded some points. Very inconvenient.	OKAY + Not very difficult to learn navigating for a function - Needs 6-8 clicks to log an activity, spanning over 3 windows, demands attention. (Is probably subliminally training the users to have more patience? XD)	NEEDS WORK - Very boring background image, it's a low clarity picture of sea and a very fake boat sailing on it. - Stars as buttons for 6 functions in the bottom looks out of place	Poite, a bit formal	Good + contains everything we might need - Too descriptive, requires a lot of time to be invested
Balanced ME Toolbox	direct	free with paid functions	https://play.google.com/store/apps/details?id=com.schubert.balancedme	People, who are interested in improving their life-style	Making different notes (creative list, decision list, to do list) and gratitude, life journals in one place which can be seen in their calendar.	NEEDS WORK + you can see on the calendar all your notes; + you need register before evaluating the app, then you need to pass a test which doesn't understand all the functions simply; initially you have to pass the test, which results are not friendly formulated	OKAY + you can see on the calendar all your notes; + possibility to make audiorecords and add photos in journals; possibility to export date	NEEDS WORK - no screen reader technologies - only english	NEEDS WORK - tips are not available; it takes time to understand functions	OKAY + names of buttons in the menu, pictures on journals, logical categories - some functions are hidden in the settings	NEEDS WORK - too simple, old-fashioned	Unfriendly, formal	OKAY + Short and to the point - Too brief at times

Annex C. Context of Use (ISO/IEC 25063:2014)

The mobile application designed to aid users in organizing their daily life falls under the technology and lifestyle industry, catering to the growing demand for digital tools that promote a balanced and stress-free lifestyle. The proposed mobile phone application for organizing daily life has the potential to benefit two user groups, namely students and employed professionals, who are often under immense emotional burnout and mental pressure. The application aims to help users create personalized daily, weekly, and monthly plans with reminders for tasks, while also offering features such as mood tracking, analysis, and habit-building to promote a balanced lifestyle. The intuitive design of the application prioritizes user-friendliness, making it an ideal tool for aiding psychologists in analyzing the daily schedules of their clients. By providing a comprehensive analysis of the most satisfying and pleasurable activities, this application would nudge users in the direction of being accountable to themselves, and ultimately, achieving their ideal lifestyle.

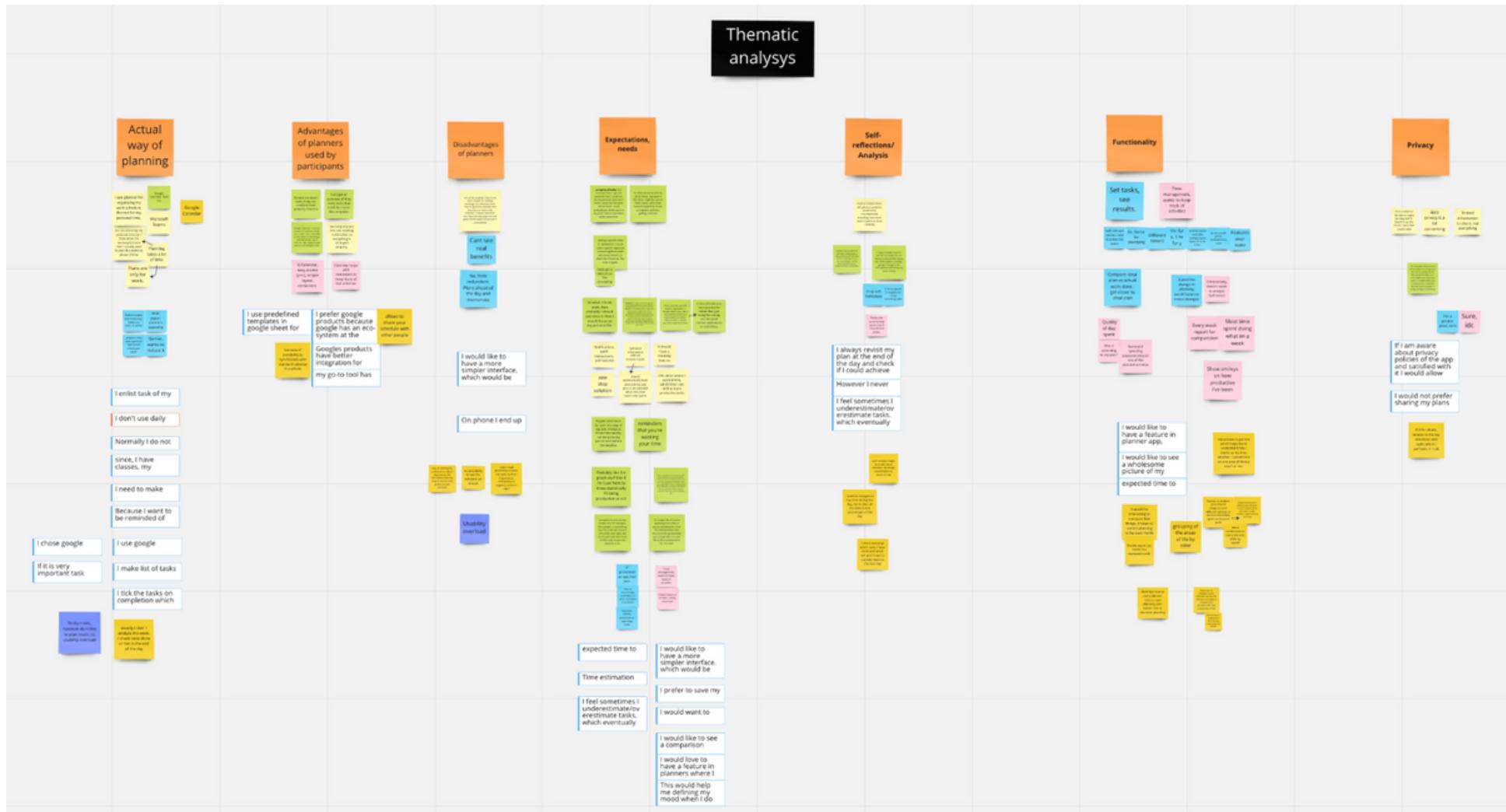
Context of use Element	Group 1: Students	Group 2: Employed professionals
System, product or service	A mobile application for organizing daily life who are in need of tools to help them manage their busy schedules and achieve a balanced lifestyle.	A mobile application for organizing daily life who are in need of tools to help them manage their busy schedules and achieve a better work-life balance.
General title of user group	Undergraduate or Postgraduate students	Employed professionals
Example job titles	Students from different academic fields, such as engineering, medicine, or arts.	Employed professionals from various industries, such as finance, healthcare, or technology.
Demographic data*	Two user groups based on their needsStudents who need to self-reflect on their choices and performancesStudents who need their daily data to be shared with their psychiatrists.	Two user groups based on their needsEmployed professionals who need to self-reflect on their lifestyle and performancesEmployed professionals who need their daily data to be shared with their psychiatrists.
Goal	To help students organize their daily, weekly, and monthly tasks, assignments, and projects, and keep track of their progress and deadlines.To aid students in achieving a balanced and healthy lifestyle, by allowing them to set goals for their physical, emotional, and social well-being, and track their progress over time.To encourage students to reflect on their habits and behaviors, and make positive changes in their daily routines, by providing them with insightful data and analysis of their mood, emotions, and satisfaction levels.	To help employed professionals manage their workload, schedule, and priorities, and optimize their productivity and efficiency.To aid employed professionals in achieving a work-life balance, by allowing them to set goals for their personal and professional development, and track their progress over time.To encourage employed professionals to reflect on their work habits and behaviors, and make positive changes in their daily routines, by providing them with insightful data and analysis of their mood, emotions, and satisfaction levels.
Assumed tasks to be supported and assumed task competence	Assumed tasks to be supported:Creating and managing daily, weekly, and monthly plans, and setting reminders for tasks and appointments.Tracking mood, emotions, and satisfaction levels during tasks and activities.Analyzing and comparing planned versus actual achievements, and identifying areas for improvement.Building and maintaining new habits, and tracking progress over time.Reviewing statistics and insights about the most satisfying and pleasurable activities, and the most frequent emotions felt during the day/week/month.Assumed task competence:Basic familiarity with mobile device usage, including touch screen gestures, buttons, and menus.Basic proficiency in typing and using text input fields.Ability to understand and navigate simple app interfaces and workflows.Familiarity with task planning and organization tools, and willingness to use them to manage daily routines.Willingness to reflect on and analyze personal habits and behaviors, and make positive changes based on the insights provided by the app.	Assumed tasks to be supported:Creating and managing daily, weekly, and monthly plans, and setting reminders for tasks and appointments.Tracking mood, emotions, and satisfaction levels during tasks and activities.Analyzing and comparing planned versus actual achievements, and identifying areas for improvement.Building and maintaining new habits, and tracking progress over time.Reviewing statistics and insights about the most satisfying and pleasurable activities, and the most frequent emotions felt during the day/week/month.Assumed task competence:Basic familiarity with mobile device usage, including touch screen gestures, buttons, and menus.Basic proficiency in typing and using text input fields.Ability to understand and navigate simple app interfaces and workflows.Familiarity with task planning and organization tools, and willingness to use them to manage daily routines.Willingness to reflect on and analyze personal habits and behaviors, and make positive changes based on the insights provided by the app.
Assumed organizational/ social environment	The assumed organizational/social environment for the proposed mobile application includes personal, work/ non-work use on a mobile device with internet connectivity, as a supplementary tool for personal productivity and self-improvement. The user group has a variety of personal interests and goals, and the application is designed to be adaptable and customizable to different lifestyles and preferences, in a private and non-intrusive setting.	The assumed organizational/social environment for the proposed mobile application includes personal, work/ non-work use on a mobile device with internet connectivity, as a supplementary tool for personal productivity and self-improvement. The user group has a variety of personal interests and goals, and the application is designed to be adaptable and customizable to different lifestyles and preferences, in a private and non-intrusive setting.
Assumed physical environment	The assumed physical environment for the app is one that is compatible with mobile devices and allows users to plan their day and track their progress in a quiet, peaceful, and accessible workspace, whether they are students or employed professionals.	The assumed physical environment for the app is one that is compatible with mobile devices and allows users to plan their day and track their progress in a quiet, peaceful, and accessible workspace, whether they are students or employed professionals.
Assumed equipment used for task completion	The assumed equipment used for task completion with the app is one that is compatible with mobile devices, allows users to track their mood and progress, and provides them with flexibility and customization. The app can be used in conjunction with other tools, such as headphones, notebooks, computers, or wearable devices, to enhance the user's experience and help them achieve their ideal lifestyle.	The assumed equipment used for task completion with the app is one that is compatible with mobile devices, allows users to track their mood and progress, and provides them with flexibility and customization. The app can be used in conjunction with other tools, such as headphones, notebooks, computers, or wearable devices, to enhance the user's experience and help them achieve their ideal lifestyle.

Table 1: Context of Use

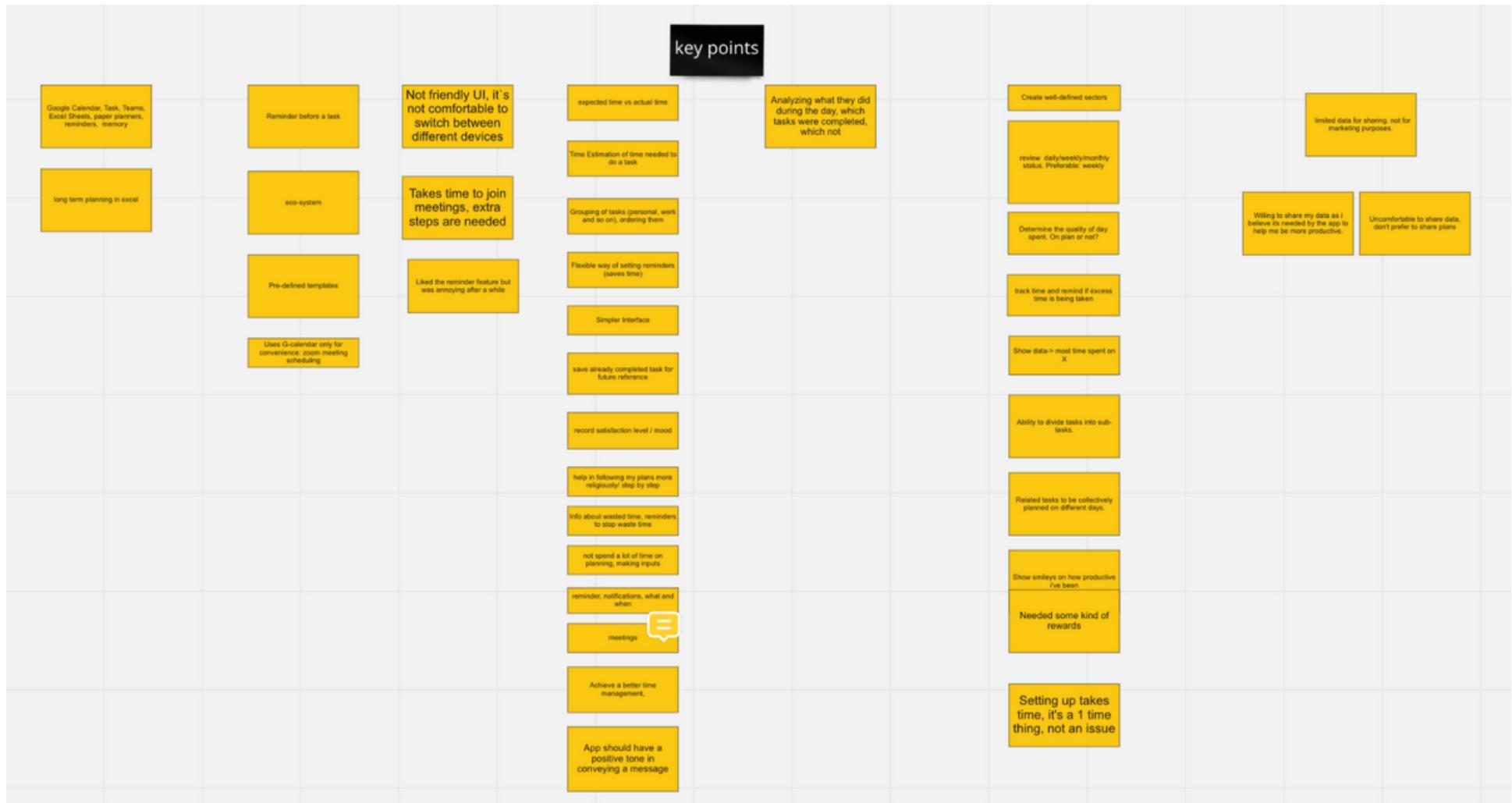
Annex D.1 Interview Questions

- Are you using a planner for organizing your time?
- What planner do you prefer? Why?
- What are the disadvantages of the planner which you are using?
- To what extent is it important for you to devote time to different spheres of life, not to a single one (health, relationships)
- Do you analyze the way you spent your day/week?
- In which way do you analyze your time-spending? / the level of satisfaction of different parts of life?
- What changes would you want to see in your way of spending time?
- What expectations do you have from a work-life balance application?
- What are the most important features for you in a planner, or organizer?
- Would you like to see a comparison between your ideal plan and actual work done in a day/week/month?
- To what extent is it important for you to observe changes in your mood during the day/week?
- What information would you like to get about yourself based on your way of time spending? (Potential needs)
- How comfortable are you in sharing your personal info for making future enhancements?

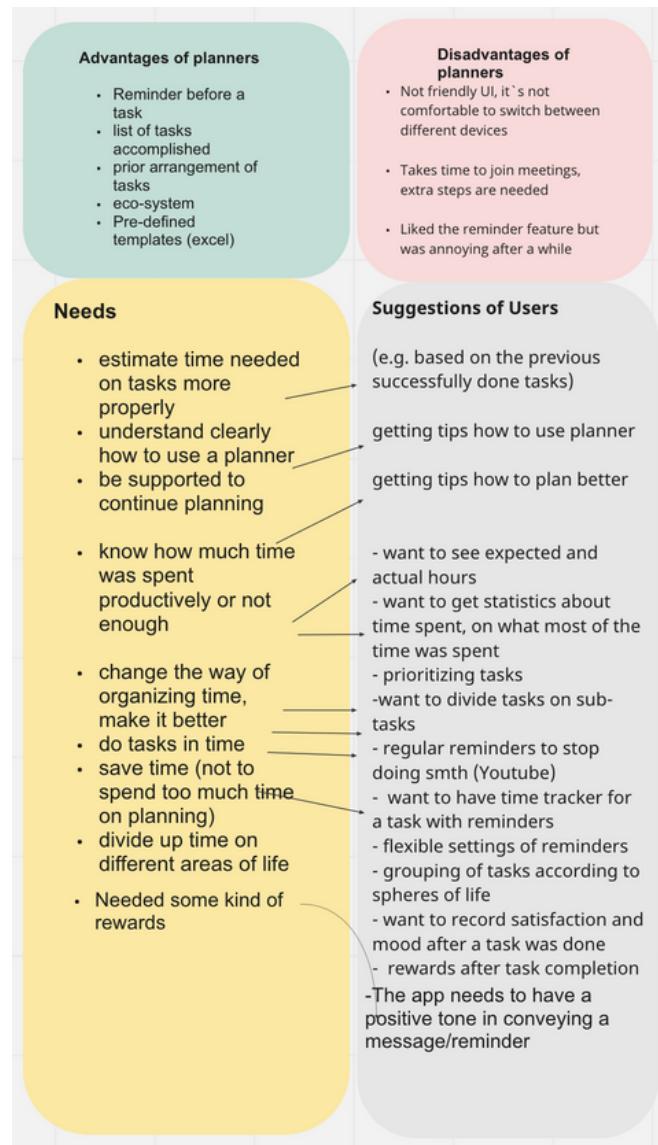
Annex D.2 Interview Thematic Analysis



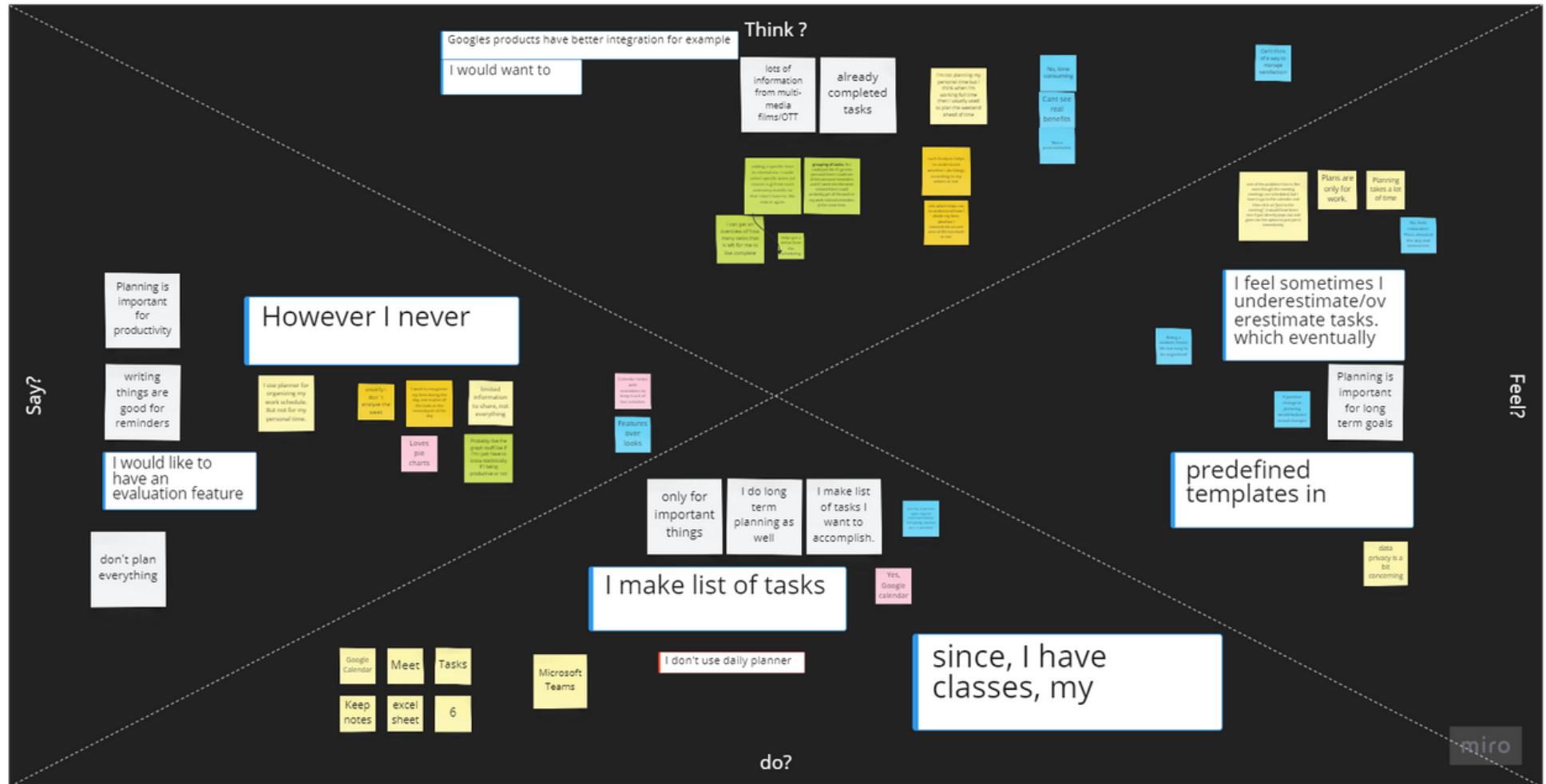
Annex D.3 Interview Key Points



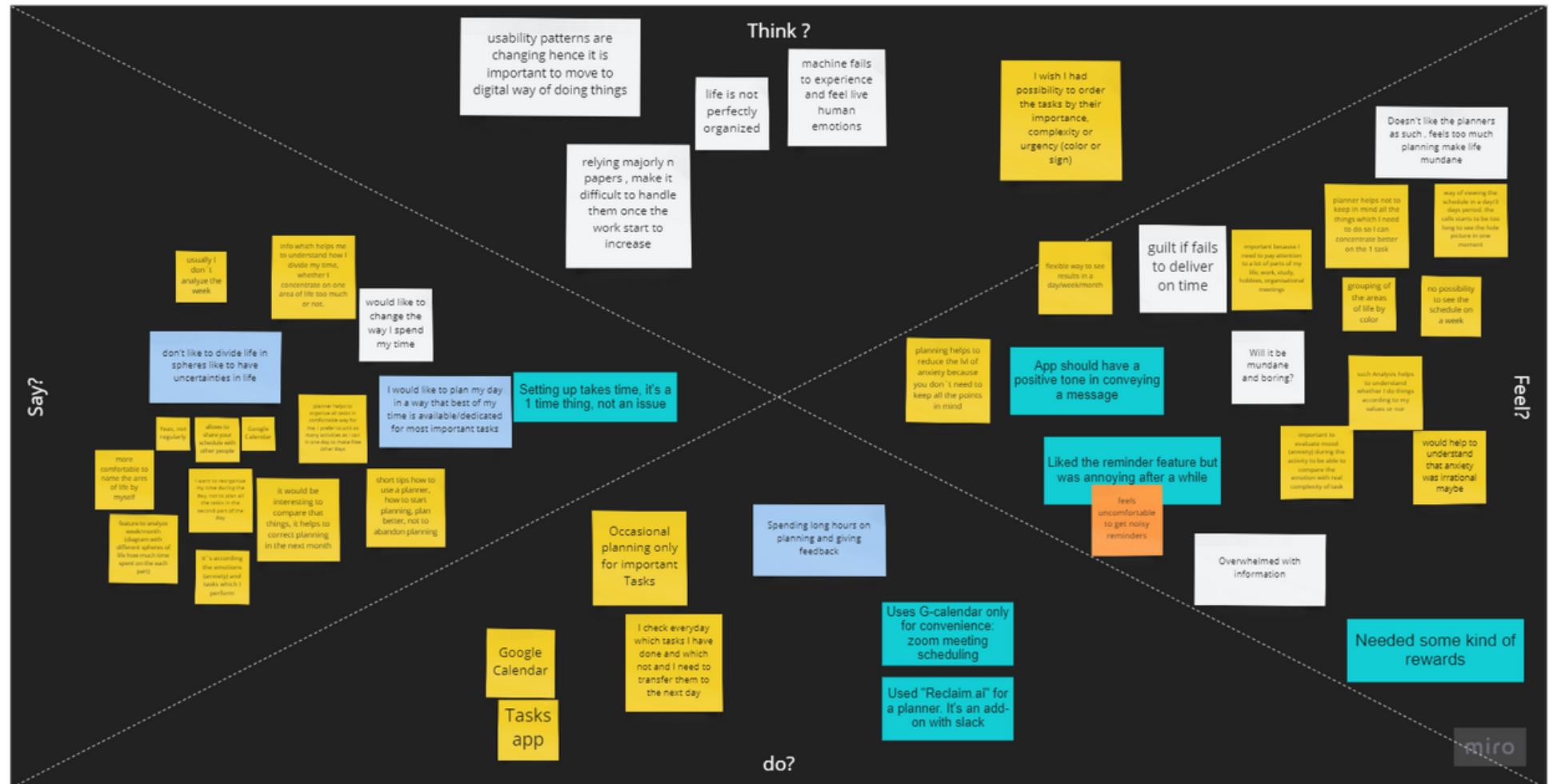
Annex D.4 Interview Affinity Diagram



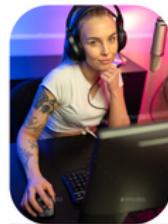
Annex E.1 Empathy Map of Students



Annex E.2 Empathy Map of Professionals



Annex F.1 Persona of Students



Silvia Dimitrova

22 years · Gamer, Student

Organised Hard working Productive Curious

“ Verbatim

The only thing I need in my life is a good Time management, I want to be in control! As Twisted Fate puts it “Only a fool plays the hand he's dealt.”

Main Goal

She wants to achieve an optimal work-life balance. Being a student and a gamer, she hasn't been able to sleep well lately.

Digital culture

Estimation of the user's abilities to use digital tools

IT & Internet



Software



Mobile Apps



Social Networks



Gaming Apps & networks



Goals

List of user goals for Balencify

- Set and keep track of planned tasks
- A gentle reminder before a task
- Support in following plans in every step
- Determine the quality of the day
- Help switch between learning, gaming and sleep
- Review daily / weekly / monthly activities' status

Expectations & needs

List of things that may be required to use Balencify

- Simpler interface, intuitive navigation
- Not spending a lot of time in planning, making inputs
- Grouping tasks and ordering them
- Keep track of past activities for future reference
- Information about wasted time and suggestions to avoid it
- Record satisfaction level / mood

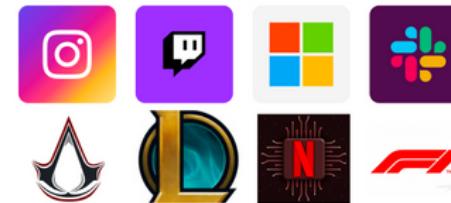
Pain points & objections

List of points of frustration that the user has encountered

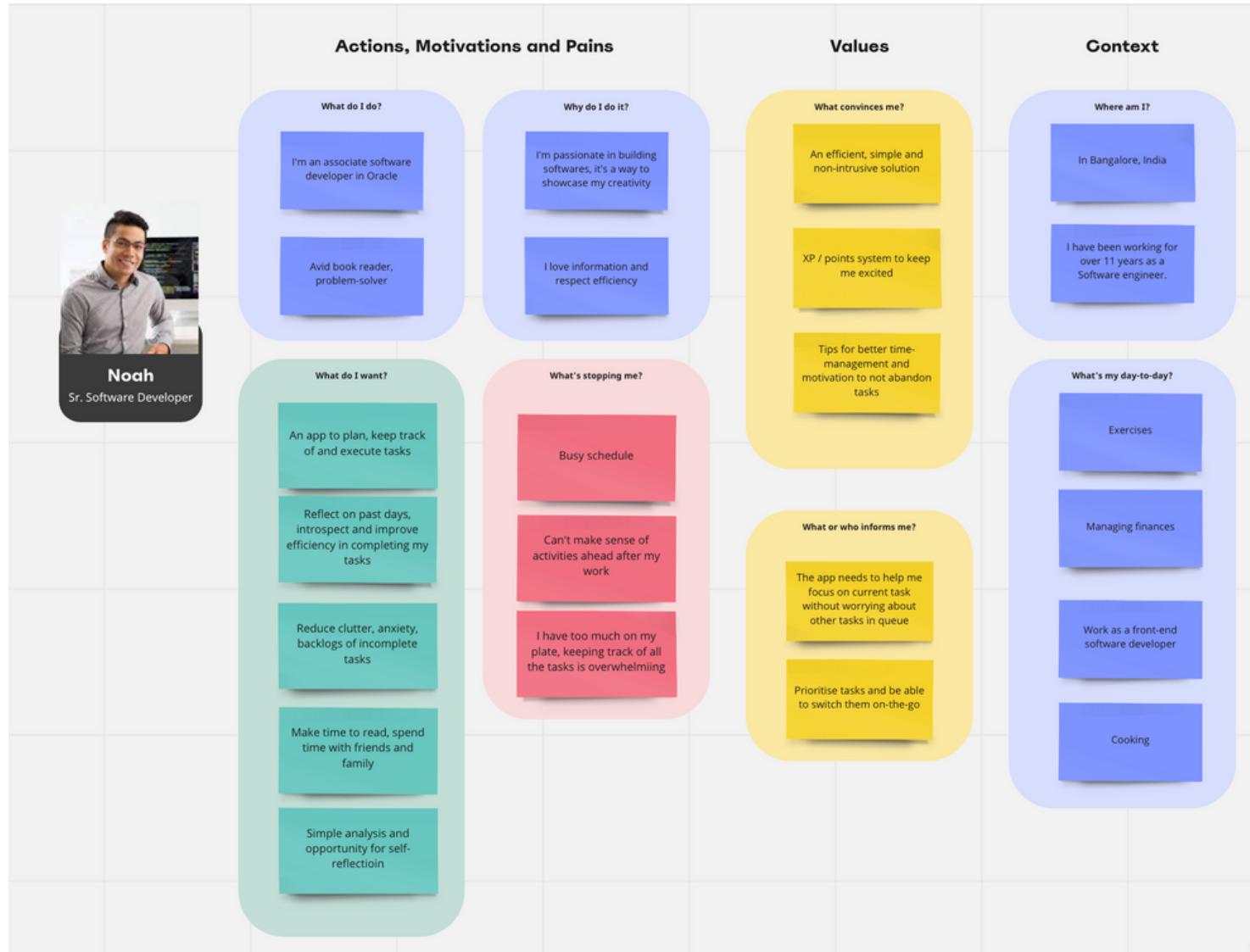
- Overwhelming UI and design decisions
- Reminders can get annoying sometimes
- Doesn't motivate to follow through the plans once the streak of task completion breaks

Applications friendly

List of apps she knows and likes



Annex F.2 Persona of Professionals



Annex G. User Stories

USER STORY

[Silvia]

As a/an master student who is keen on games
type of user

I want to keep track of my schedule very attentively
action

so that it helps me to be graduate from Uni successfully and continue support my hobbies.
benefit

USER STORY

[Noah]

As a/an Software developer
type of user

I want to introspect my time spending and emotions easy
action

so that I can devote time to family and friends, leisure time and feel less anxiety.
benefit

Annex H. Problem Statement

PROBLEM STATEMENT

Noah _____ is a/an _____ software developer
user name _____ user characteristics _____

who needs	analyze time spending and emotions easy, quickly
	user need

because he wants to be efficient and satisfied with different areas of life

PROBLEM STATEMENT

Silvia is a/an student and gamer

who needs	to stick to deadlines and to have enough time for personal interests
	user need

because she wants to graduate university successfully and keep her interests

Annex I. User Needs Report (ISO/IEC 25064)

Introduction:

This is the Balancify User Needs report in compliance with (ISO/IEC 25064). We created this report in order to create a solution for a work-life balancing planner based on the stated user needs. As a result, the purpose of this report is to produce a digital solution for the identified user demands so that users may do all tasks in the proper context without difficulties and prevent frustrations and pain points with the assistance of a solution.

This report was created under the supervision of Professor Kai Essig at Rhein-Waal University of Applied Sciences (Hochschule Rhein-Waal) for a project study (ARPA) undertaken by students (Hamza, Claudia, Rahul) for their coursework on the topic Applied Research Project A.

Executive summary:

This User Needs Report defines the needs of different user groups willing to find a perfect balance among various spheres of life. To generate this report two major user groups were identified and surveyed. These groups are classified as Professionals and Students. Online Interviews and In-Person Meetings were the methods used to get insights into the users' needs. Two major Needs are identified during the research: Planning with Feedback and Analysis of previous plans.

Initial indicators of the need for a system:

Initially, we came up with this idea to build a simplified process to provide a seamless experience for users for planning and better organization of their time so that they could strike a desired work-life balance. The idea is to provide a solution so that users could attain mental peace and satisfaction. It was discovered that many psychological issues happen because of ill-management of the plethora of tasks one has to look after in the modern world.

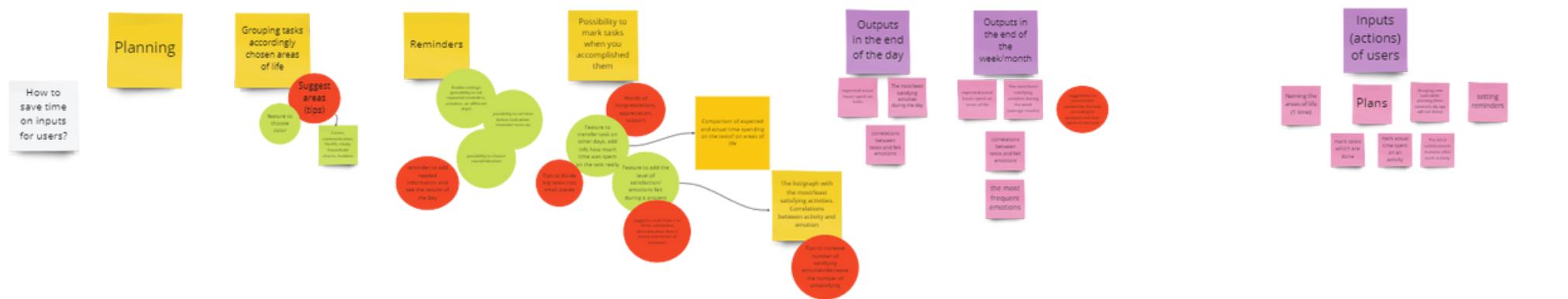
Methods and procedures:

The identified User Groups (Professionals and Students) were interviewed in order to gather information and analyze the user needs. Furthermore, we went on-site to the FlyingLab factory to have our own hands-on experience.

Identified user needs:

- Users want to group tasks.
- Users think that adding and associating feedback with a task would help in planning a similar task more properly for the next time (want to estimate the time needed on tasks more accurately).
- There should be an option to analyze completed tasks.
- Users want to be supported to continue planning and get rewards for efforts made.
- Users want to avoid spending too much time making plans.
- Users want to understand easily how to use a planner.

Annex J. Requirement Specification



Annex K. User Requirements Report (ISO/IEC 25065)

Introduction:

This is the ISO/IEC 25065 User Requirement Report for Balancify. We created this report to create a solution for a work-life balancing planner based on the user requirements to be identified. As a result, the purpose of this report is to finally develop a digital solution for the stated user requirements so that users may do all jobs in the proper context without encountering any issues and avoiding frustrations and pain spots with the assistance of a solution.

Identification of the interactive system:

This Report defines the requirements of different user groups eager to plan their lives with a balanced approach. Hence, an interactive system has been envisioned to provide a simple tool to assist in better planning and enhance productivity with constant feedback and insights.

Reference to the overall context of use:

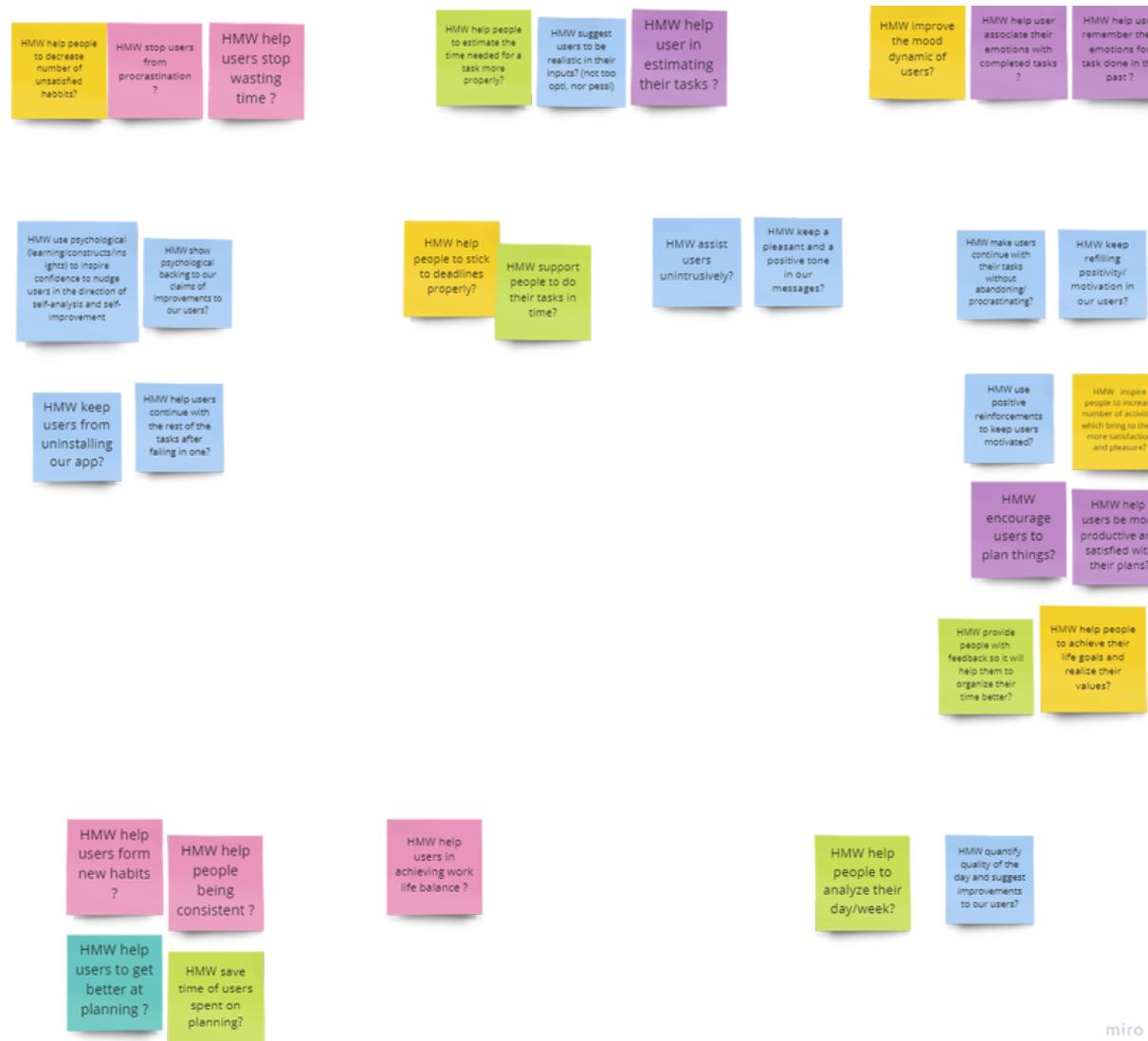
Strike a perfect balance while dealing with so many facets of life has been the biggest challenge for the people of this information edge. Therefore, people are struggling and dealing with mental pressure and psychological challenges. Even users of apps that operate in the domain of productivity were feeling that there is a need for a system that could associate human feelings with machines and could provide a way to add feedback to plans and planned tasks. So that users would be able to plan better based on insights into previous plans, experiences, and emotions.

User Requirements

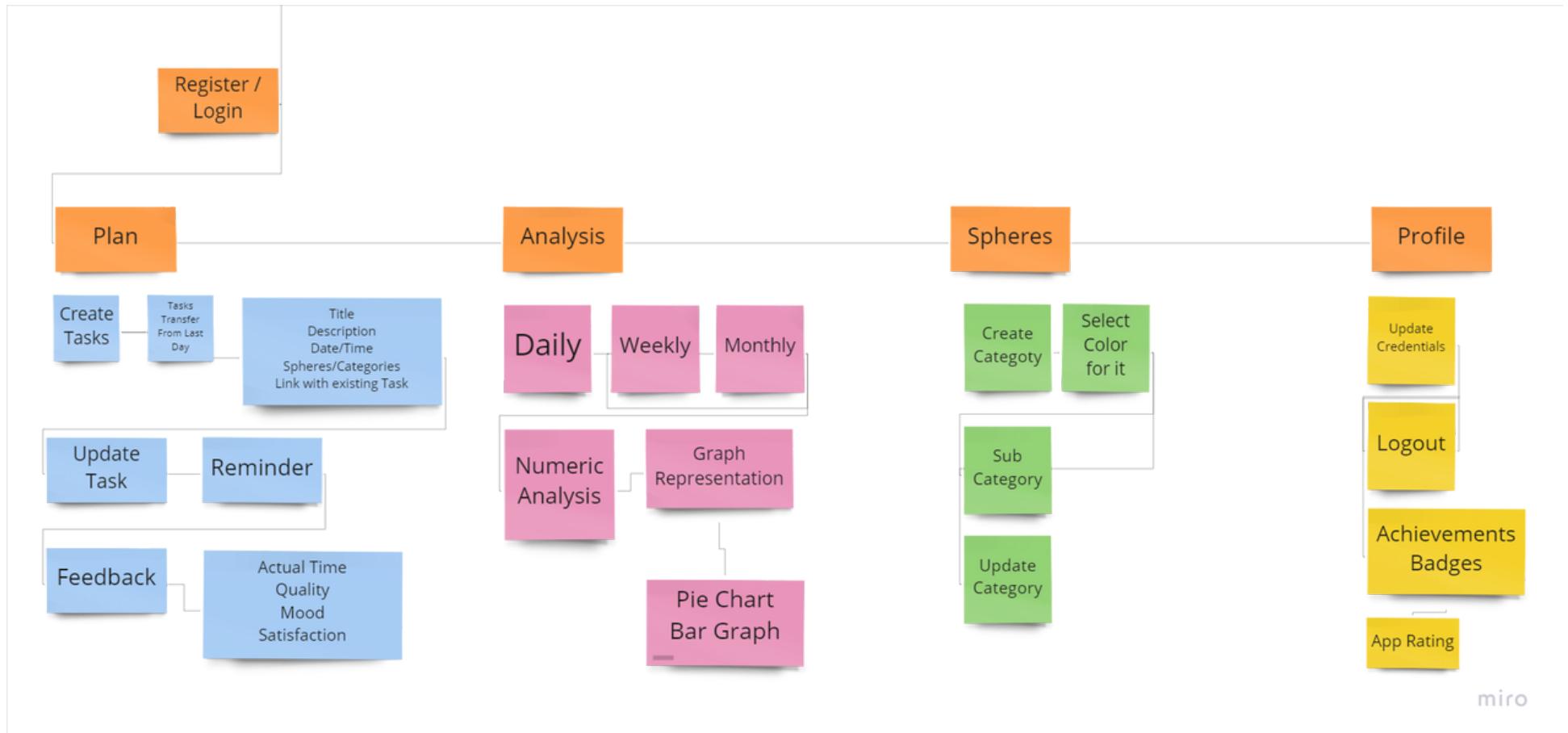
Goal	Provide a feedback-based tool for efficient planning with insights into previous plans and emotions associated with them.
Task	Assist users in allocating their time to various spheres of their lives in an efficient way.
User Groups	1. Professionals 2. Students
Pre-Conditions	1. Lack of awareness 2. Tedious Process 3. Lack of Insights 4. Missing Feedback Mechanism
Sub-Goals / Sub-Tasks	1. Provide Support for planning 2. Provide in-time information about previous tasks and emotions associated with them. 3. Provide continuous insights.
Requirements	<p>The product shall allow users to group tasks</p> <p>The product shall allow users to associate the feedback with a concrete task.</p> <p>The product shall provide analyzed data based on the inputs of users.</p> <p>The product has to have a feature to support people to continue planning</p> <p>The product shall allow users to plan fast, providing a clear user flow.</p> <p>The product shall provide users with instructions and additional information where it is needed.</p>

Table 2: User requirements

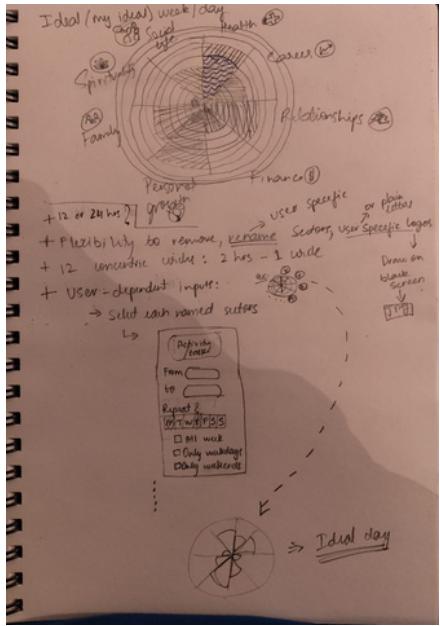
Annex L. How Might We



Annex M. Information Architecture



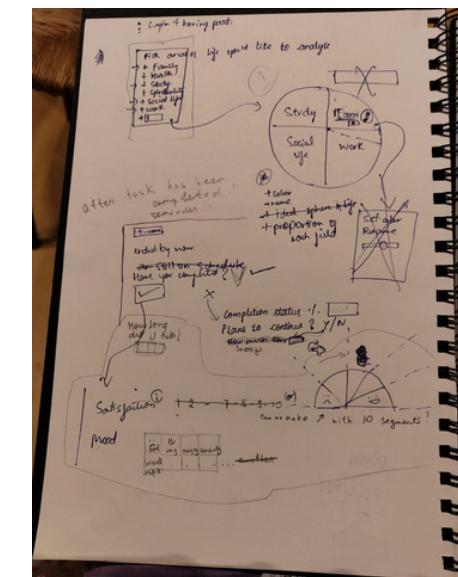
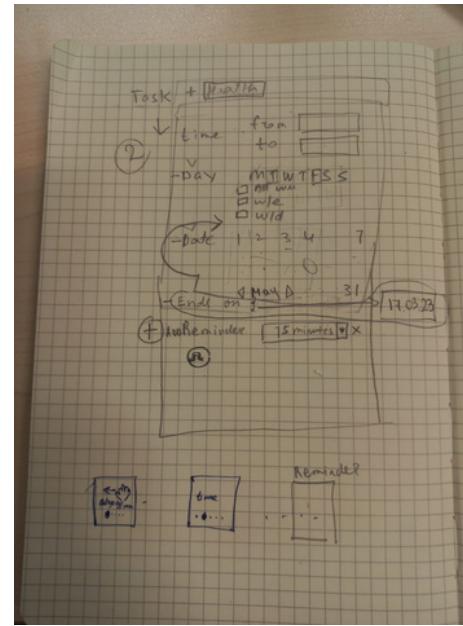
Annex N. Paper Wireframe



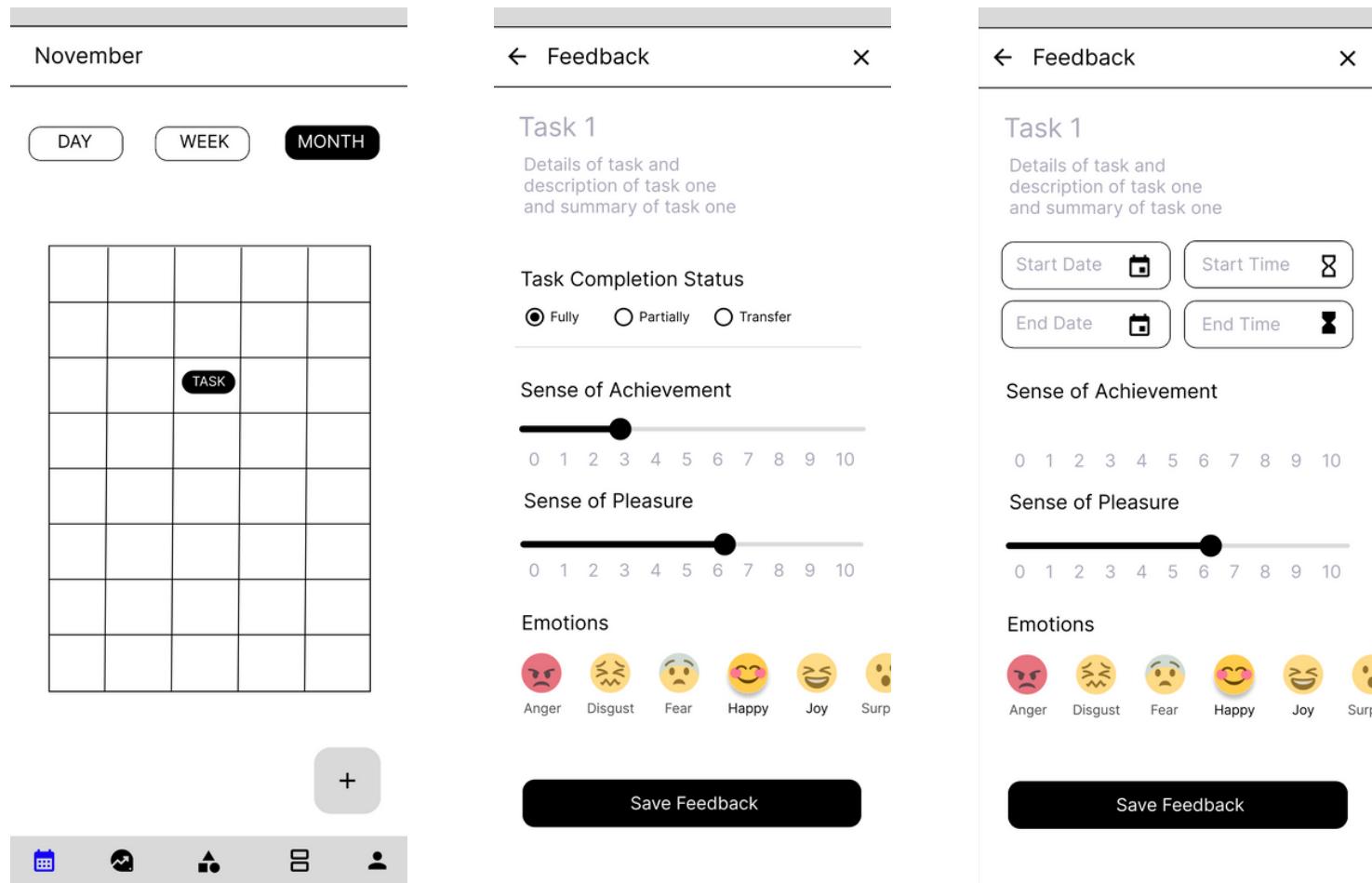
	Mon	Tue	Wed	Thu	Fri	Sat	Sun	
8								Week eng
9								
10								
11								
12								doctor
13								
14								
15								
16								
17								
18								
19								
20								

Annotations at the bottom:

- tests in areas
- grouped tasks
- Statistics



Annex O. Digital Wireframe

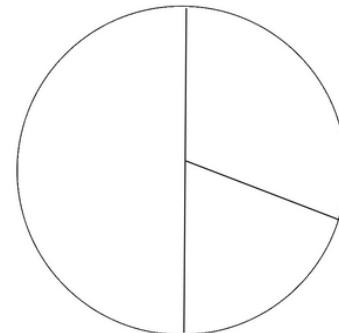


≡ Areas of Life

<input type="radio"/>	Family	X
<input type="radio"/>	Leisure	X
<input type="radio"/>	Spirituality	X
<input type="radio"/>	Learning	X

Analysis

DAY WEEK MONTH



Desired

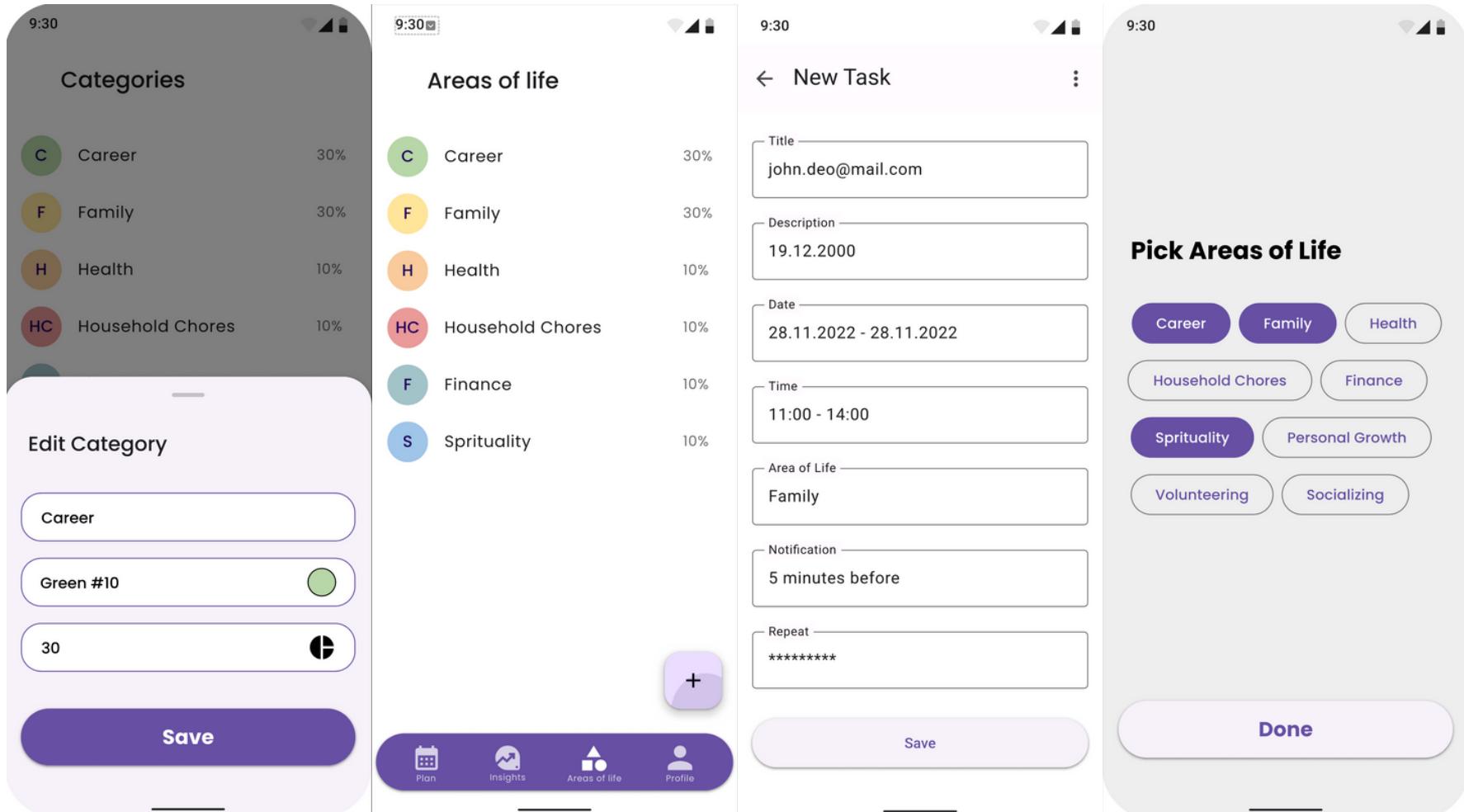


← Edit Balance

<input type="radio"/>	Family	30 %
<input type="radio"/>	Leisure time	30 %
<input type="radio"/>	Spirituality	20 %
<input type="radio"/>	Learning	20 %

SAVE

Annex P. Low-Fidelity Prototype



1. Insights Screen:

9:30

Insights

Last Month | Last Week | Last Day

Spirituality, Career, Family, Health, Finance

Desired Proportion

Frequent Emotions, Satisfying Activities, Pleasurable Activities

Plan, Insights, Areas of life, Profile

A pie chart visualizes the user's desired proportion across five life areas: Spirituality (blue), Career (green), Family (yellow), Health (orange), and Finance (dark blue). Below the chart are three buttons: 'Frequent Emotions', 'Satisfying Activities', and 'Pleasurable Activities'.

2. Onboarding Screen:

9:30

Welcome Onboard!

Lets help you in completing your tasks

Full Name: mary.elliot@mail.com

Email: mary.elliot@mail.com

Password: ****

Confirm Password: ****

Register

Already have an account? [Sign In](#)

Plan, Insights, Areas of life, Profile

The onboarding screen guides the user through basic profile setup, including full name, email, password, and confirmation. It includes a 'Register' button and a link for existing users.

3. Task Planning Screen:

9:30

Plan of 2 sep 2021

Apply for new job (10:00 - 12:00 hrs)
Family get together (12:00 - 17:00 hrs)
Go for walk (17:00 - 18:00 hrs)
Wash utensils (18:00 - 19:00 hrs)
Pay Tax (19:00 - 20:00 hrs)
Yoga (21:00 - 22:00 hrs)

C, F, H, HC, F, S

S, M, T, W, T, F, S

1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31

Cancel OK

The task planning screen shows a list of scheduled activities for September 2, 2021, categorized by color (C, F, H, HC, F, S) and time. A calendar view for August 2023 is also present.

4. Date Picker Screen:

9:30

New Task

Select date

Mon, Aug 17

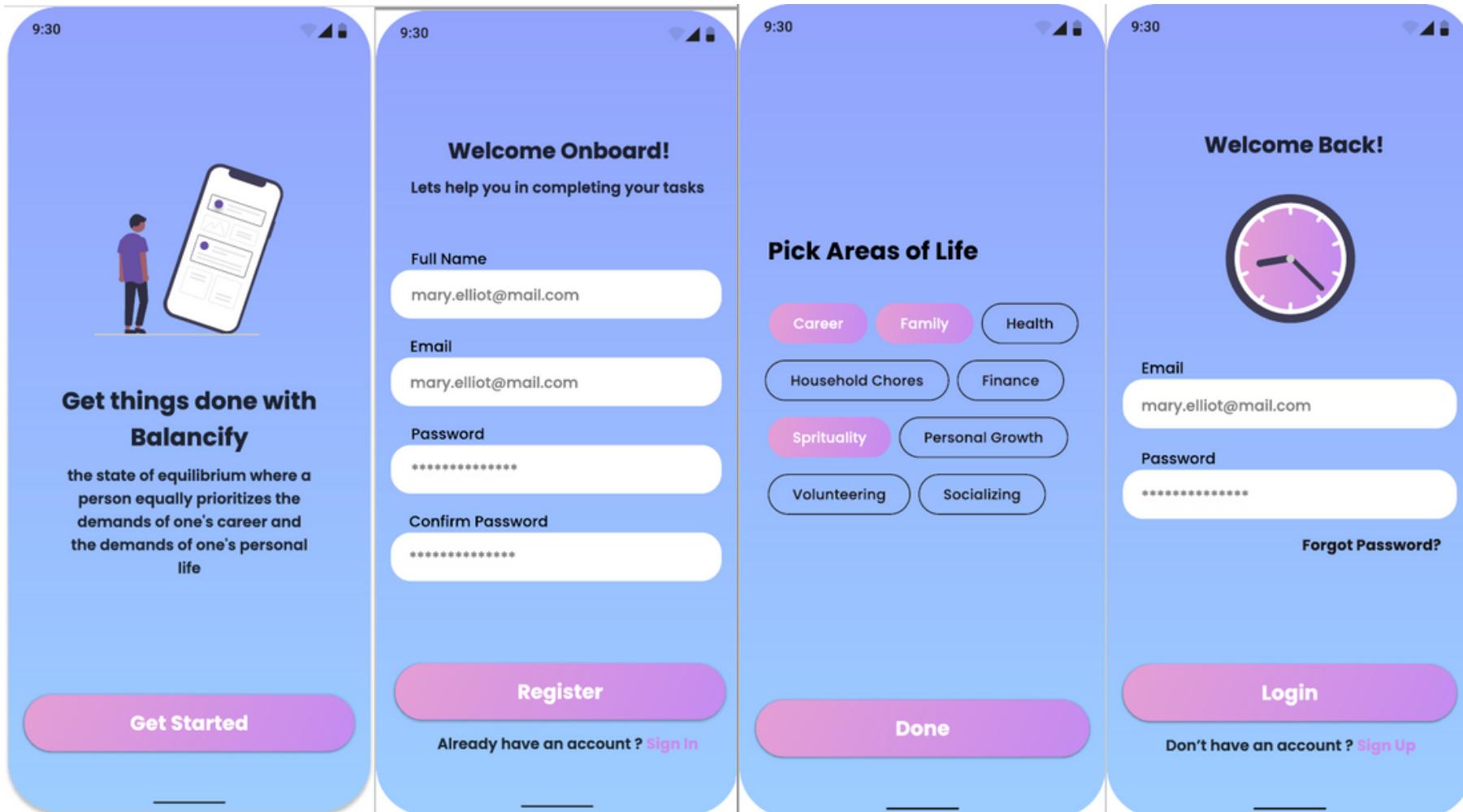
August 2023 ▾ < >

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

Create Task

This screen allows the user to select a specific date for a new task. The date 'Mon, Aug 17' is highlighted. A 'Create Task' button is at the bottom.

Annex Q. High-Fidelity Prototype



The image displays four screenshots of a mobile application interface:

- Login Screen:** Shows a "Welcome Back!" message, a clock icon, and fields for "Email" (mary.elliott@mail.com) and "Password". A keyboard is visible at the bottom.
- Plan Screen:** Displays a monthly calendar for September 2021. Specific tasks are listed below the calendar:
 - C** Apply for new job (10:00 - 12:00 hrs)
 - F** Family get together (12:00 - 17:00 hrs)
 - H** Go for walk (17:00 - 18:00 hrs)
 - HC** Wash utensils (18:00 - 19:00 hrs)
- New Task Screen:** A form for creating a new task with fields for Title, Description, Date, Start Time, End Time, Area of Life, Notification, and Repeat. A "Create Task" button is at the bottom.
- Category Selection Screen:** A list of categories with corresponding icons and checkboxes:
 - C** Career
 - F** Family
 - H** Health
 - HC** Household Chores
 - F** Finance
 - S** Sprituality
 - P** Personal Growth

Plan of 2 sep 2021

- C Apply for new job 10:00 - 12:00 hrs
- F Family get together 12:00 - 17:00 hrs
- H Go for walk 17:00 - 18:00 hrs
- HC Wash utensils 18:00 - 19:00 hrs
- F Pay Tax 19:00 - 20:00 hrs
- S Yoga 21:00 - 22:00 hrs

Plan of 2 sep 2021

September 2021

Mon	Tue	Wed	Thu	Fri	Sat	Sun
31	30	1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31	1	2

Feedback

Apply for new job
Apply for XYZ company with latest CV and Cover letter
2 sep 2021 10:00 - 12:00 hrs

Task Completion Status

- Fully
- Partially
- Transfer

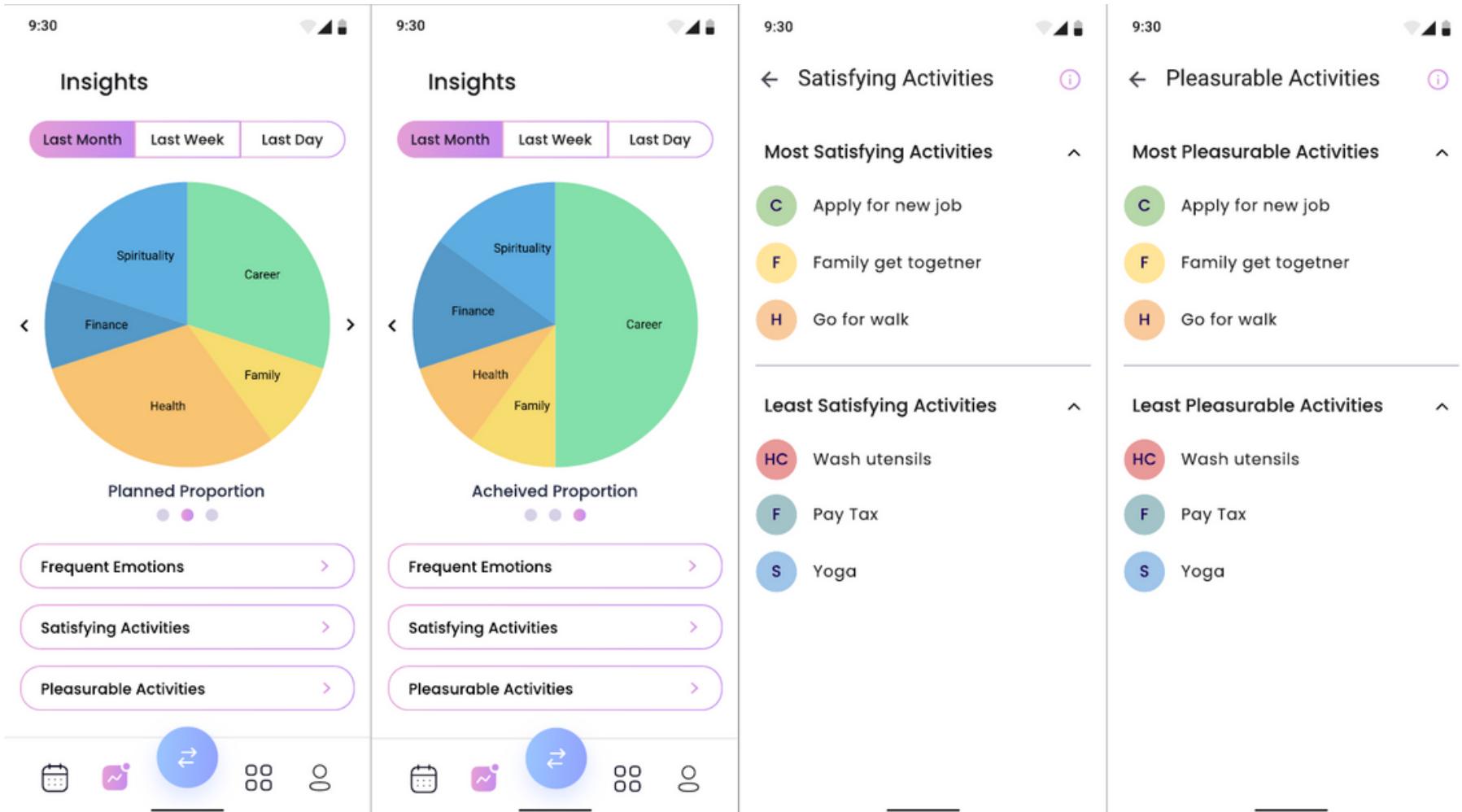
Completion Percentage

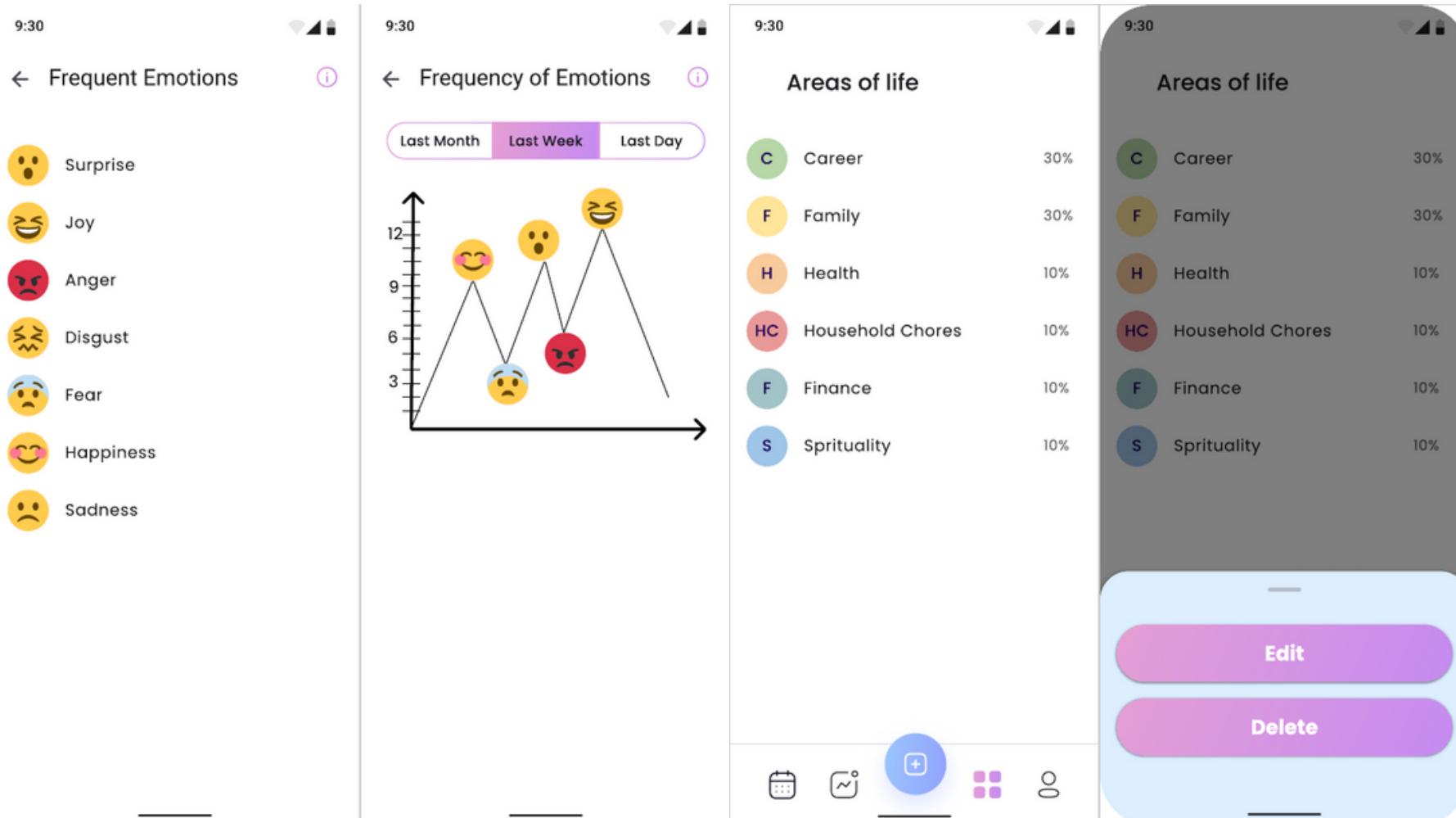
Sense of Achievement

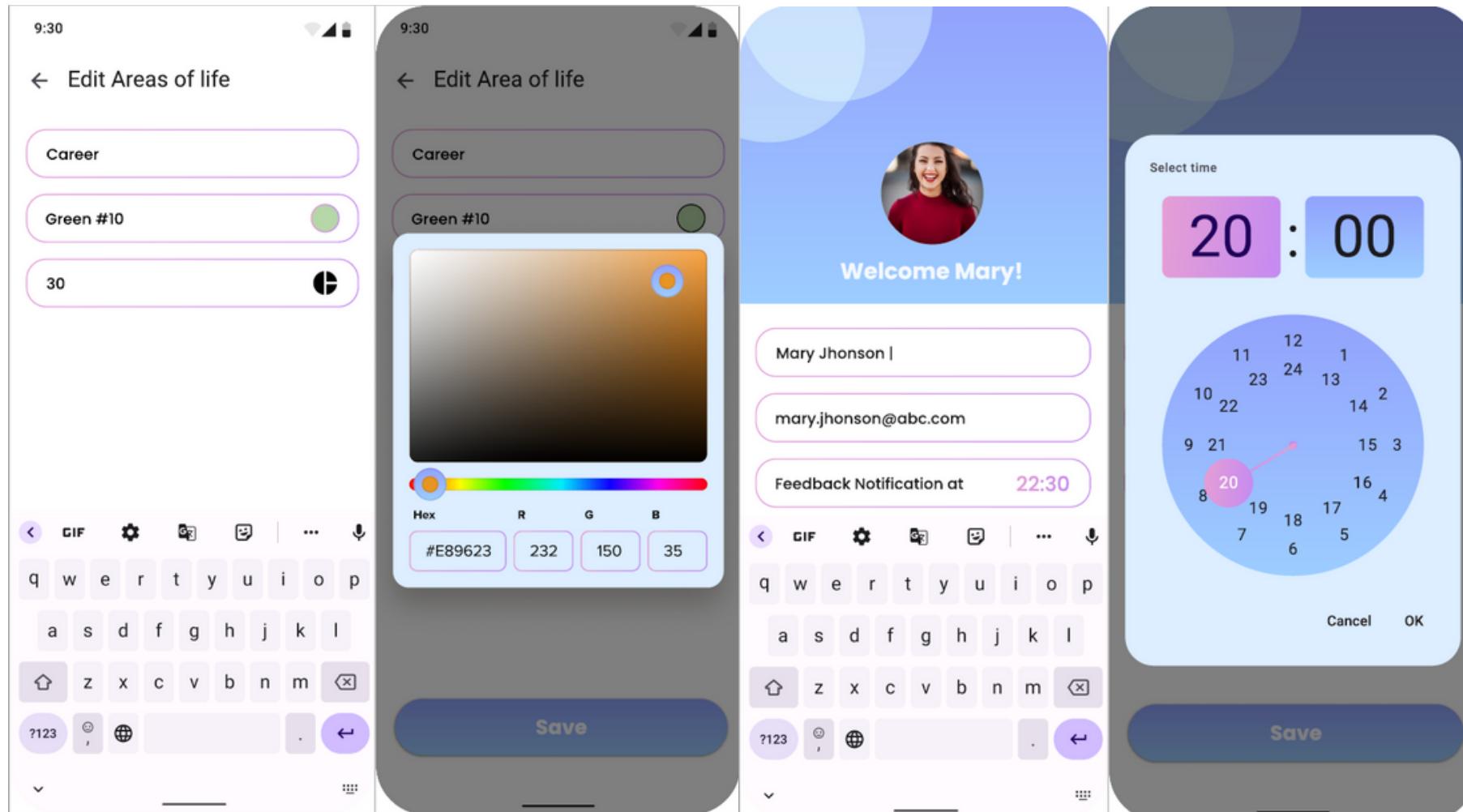
Sense of Pleasure

Feeling about the task ?

Save Feedback







Annex R. User Evaluation Report (ISO/IEC 25066)

Introduction

This is the ISO/IEC 25066 User Requirement Report for Balancify. The user evaluation has been done in two phases. The first phase of evaluation was right after the creation of the Lo-Fi prototype. The first evaluation was done using a moderated formative usability test. Where users were supposed to perform 5 tasks. While performing these tasks users were asked to think aloud so that this data could be used for further evaluation. During the test either a notetaker was taking the notes or the session was recorded with the consent of users to get insights afterward. The second evaluation test was performed after the Hi-Fi prototype was created to check whether the first evaluation test's findings are addressed properly. Furthermore, to check the overall Usability of Balancify. The methods and procedures used for the second evaluation test were the same as the first one.

First Evaluation Study:

Tasks:

1. Add to a calendar a new task

Follow-up question: How easy or difficult was this task to complete? Is there anything you would change?

2. Create a new area of life.

Follow-up question: How easy or difficult was this task to complete? Is there anything you would change?

3. Set a percentage of time that you want to devote to different areas of life.

Follow-up question: How easy or difficult was this task to complete? Is there anything you would change?

4. Record Feedback

- a. Mark the task as partially accomplished and choose the time spent on the task.
- b. Evaluate the sense of achievement
- c. Evaluate the sense of pleasure
- d. Choose emotions that you felt during the performing the task (just imagine).

Follow-up question: How easy or difficult was this task to complete? Is there anything you would change?

5. Check the statistics (results of the week/month)

Follow-up question: How easy or difficult was this task to complete? Is there anything you would change?

System Usability Scale

Five responses range from “Strongly Disagree”(1) to “Strongly Agree”(5) for the following statements.

1. I think that I would use this app frequently.
2. I find the app unnecessarily complex.
3. I think the app is easy to use.
4. I need the support of a technical person to be able to use this app.
5. I find the app easy to navigate.
6. There is inconsistency within the app.
7. I imagine that most people would learn to use this app quickly.
8. I feel confident using the app.
9. I need to learn a lot of things before I can start using this app.
10. The main user flow is clear.

Statement	Participant K	Participant A	Participant F	Participant I	Participant R	Average
1	4	3	1	3	3	2.8
2	1	2	1	1	1	1.2
3	4	4	4	5	4	4.2
4	1	1	1	1	1	1
5	4	3	5	5	5	4.3
6	2	3	1	2	1	1.8
7	5	4	5	5	3	4.4
8	4	5	5	5	5	4.8
9	1	1	1	1	1	1
10	4	4	4	5	4	4.2

Table 3: System Usability Scale Score for Lo-Fi Usability Test

Findings from the Usability Test of Lo-Fi prototype

For the analysis of gathered data, we used manifest analysis, which means we stuck to the concrete original quotes of participants while searching for problems and possible improvements to the prototype.

Quotes of users are located in the second column of Table 2. According to the opinions of users, we identified the main types of problems/ areas for improvement. Based on the types of problems we concluded that the main improvements are needed in such spheres as labeling, navigation, and customization. For making needed improvements we discussed what changes we need to make. They are shown in the third column of table 2. Besides, we got several positive feedbacks from users, which are related to the concept of the app, its design, and existing features such as given analysis of the time-spending of users.

Type of a problem	Opinions of users	Possible solution
Customization	"It would be great to have the possibility to set several notifications".	We can add multi selections for notifications.
Labeling	"I would like to have a tip on what percentage does mean (is it what I set up already as the desired percentage or it is about the percentage of time which I have devoted to different areas of life)".	Change hint text from "ratio" to a more understandable one.
Navigation	"Could have a list of tasks on the same page as the calendar".	We could change the homepage, and add a list of tasks below the calendar for the current date.
Customization	"I would like to be able to choose icons for the areas of life also, not only colors".	Due to the fact that the feature of choosing the areas of life is customized, every user can change the list of areas, Providing the possibility to choose an icon seems not realistic and also can lead to cognitive overload.
Navigation	"The Field to record emotions in the feedback page should be more evident by adding an emoji there".	A symbolic emoji is to be added with an emotion option.
Labeling	"I find pleasurable activities and satisfying activities to be the same, it seems unnecessary to have both".	It is worth to add information what both scales mean, what is the difference between them.
Labeling	"Analysis should be called Insights/Notes".	Review terminologies we've used. Most importantly, convey the meaning of words.
Set of features	"Don't need frequent emotions".	It is worth changing the feedback page with emotions: to link them with activities / show the dynamic / provide comparative Analysis.
Labeling	"Language could be better: generic, simple, straight. Ex: field of interest instead of the area of life".	We should check the consistency of vocabulary within the app.
The navigation	"Main Feature should be in the center of the bottom navigation bar"	"Plan" tab could be placed in the center.

Table 4: Findings from the Usability test of the Lo-Fi prototype

Positive statements from users about their experience of using the prototype are listed below:

- “Good, easy to handle. Good navigation”.
- “Loved feedback page”.
- “It’s interesting app, because I need to reflect more about my actions, and how I felt during and after performing a task. Usually I don’t do this”.
- “Good design”.
- “Analysis of week, day, a month is impressive”.

Second Evaluation Study:

Scenario: Imagine you have noticed that you are spending your time mostly on work and don't devote time to other important parts of your life. You want to change it and have found an app that can help you keep your life balanced.

1. Register in the app.

Q: How apt were the areas of life offered for you? How did setting up make you feel?

Scenario: You want to set important spheres of life.

2. Check the existing list and delete "Career" from them.

2.1. Create a new sphere of life.

2.2. Make changes in "Career".

Q: How do you understand percentages shown near the names of areas of life?

3. Add a new task to a calendar.

3.1. pick a date

3.2. set time required for the task

3.3. choose a category to which this task is related

3.4. set notifications

3.5. set repetition of the notification

Scenario: Imagine that you have finished performing the task. Reflect on the progress of performing the task in the app.

4. Record emotions felt during the task

4.1. read and compare information about the sense of achievement and the sense of pleasure.

Q: How do you understand the difference between the 2 scales? How did you feel after seeing the phrase “Well done”?

Scenario: Imagine that you have been filling out the feedback for the app during the last month and now you want to check your results.

5. Compare desired and achieved proportion of time devoted to different areas of life.

5.1. Check the emotions which you felt mostly.

Q: How useful do you find given statistics? Does it give you any idea of how you can plan your future month more properly?

6. Change your settings of getting notifications for leaving notes about the progress of performing a task.

Findings - N of participants	Type of use error	Observation/quote	Interpretation	Recommendation
Login process seems to be unfairly difficult for 2 users out of 5 (task 1).	Navigation	"After I've registered it should directly take me to this page"	Users need to go directly to the homepage after the registration process.	Allow users to directly go to the homepage after registration without a login process.
2 users need more context about the app concept, and functions after registration (task 1).	Information	"Need more context. Didn't understand what was mentioned"	The page with the fields of life after registration was unexpected for users. Aim of this page that wasn't understood.	Makes a few pages with an explanation of the app's functionality / Provide informational pop-ups for some buttons/ functions with short instructions.
2 users didn't find the feature to leave feedback on the 1st attempt (task 4).	Navigation	"Quite difficult, no right onboarding from the app"	For leaving feedback users need to go to the concrete task. .	Make a direct way for leaving feedback from the homepage.
The difference between desired and planned time-spending wasn't understood by the 2 participants (task 5).	Information	"I can't understand the difference between planned and desired proportion".	Both desired and planned proportions mean for users that percentage that they set on the "areas of life" page.	Remove planned or desired proportions from the graph or provide information about the difference between them.
The graph for representing information about the frequency of emotions was hard to understand for 3 users (task 5).	Visual representation of information	What does the line shows? (graph with emotions frequency). Can't understand the scale, what numbers mean (percentages?).	The graph doesn't deliver the needed information in a simple way. No headings for axes.	Change the graph.
A reminder to leave feedback wasn't found or it was difficult to find by 3 of 5 users (task 6).	Navigation	Users searched for this feature on other pages. Even if they checked the profile page, they didn't notice the needed field with the setting of the reminder. "I would've never searched for it in the profile. Seems hidden"	The field with the reminder looks like a text field on the profile page that's why users don't pay attention to it.	Change the visual representation of this feature or change the placement of this feature.

Table 5. Usability findings for a usability test of the Hi-Fi prototype.

Positive usability findings

- Placement and design of features “Add/change/delete areas of life”: “Add/make settings for a new task” were satisfying, and performing these tasks was intuitively easy for users.
- The concept and idea of the app were appreciated by 3 users out of 5: “It's a good app to use if you want to change your scheduling stuff. The main idea of the app is pretty useful. I would be able to schedule my life better” / I like the whole idea of providing user statistics and overall reflection”.

Annex S. Redesign of Lo-Fi prototype

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Opinions of users	Possible solution	Performed changes
"It would be great to have possibility to set several notifications".	We can add multi selection for notifications.	Multi selection for notifications and choice of emotions felt during the performance of a task has been added.
"I would like to have a tip what percentage does mean (is it what I set up already as desired percentage or it is about percentage of time which I have devoted to different areas of life".	Change hint text from "ratio" to a more understandable one.	We have changed label from "Ratio" to "Desired %" on the page for creation of a new area of life.
"Could have list of tasks in the same page as calendar".	We could change the homepage, add list of tasks below the calendar for the current date.	We have changed the homepage, adding the list of tasks for the chosen date below the calendar.
"The Field to record emotions in the feedback page should be more evident by adding an emoji there"	Change the field with feedback for emotions.	On the page for leaving feedback by users we made following changes to achieve better understanding of needed action.Changed the phrase from "Emotions" to "How did you feel during the process?"Changed the color of the text from grey to black.Changed the size of font from 15 to 18.
"I find pleasurable activities and satisfying activities to be the same, it seems unnecessary to have both".	It is worth to add information what both scales mean, what is the difference between them.	information dialogue with description of the scales was added.
"Analysis should be called Insights/Notes".	Review terminologies we've used. Most importantly, convey meaning of words.	Changed "analysis" on "insights" everywhere.
"Dont need frequent emotions".	It is worth to change feedback page with emotions: to link them with activities / show the dynamic / provide comparative Analysis	We created the graph with frequency of emotions to achieve better visual representation of information and to provide comparative analysis of frequency felt emotions.
"Language could be better: generic, simple, straight.	We should check the consistency of vocabulary within the app.	We changed everywhere "categories" to "areas of life
"Main Feature should be in center of bottom navigation bar"/ "Plan" tab could be placed in center.		Decided to keep the button on the same place (checked references and had a discussion with a designer).

Table 6. Changes of the Lo-Fi prototype

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