

2. Research

This section outlines the strategies and methodologies employed in the research process. It includes the selection and review of relevant literature, the design and implementation of surveys, and the analysis of data collected from these sources. The goal of this section is to provide a comprehensive overview of the methods used to gather and interpret data, ensuring the research is reliable, valid, and applicable to the project's objectives.

2.1 Literature Review

The literature review section provides a critical analysis of existing research relevant to the project. It includes a review of studies on ADHD, time management, and the use of technology in managing ADHD symptoms. This section aims to identify gaps in current knowledge and research, inform the project's direction, and provide a theoretical framework for the study.

Research has shown a significant gap in the field of neurodivergent-led research into technological solutions for individuals with ADHD. This lack of representation can impact the outcome of research and the types of systems being developed within Computing and HCI. It's crucial to involve neurodivergent individuals in the research and development process to ensure that the resulting solutions are tailored to their unique needs and experiences. This insight underscores the importance of user-centred design in the development of the proposed application [3].

Another study evaluated why individuals with ADHD struggle to find effective digital time-management tools. The research identified several areas for improvement in these tools, highlighting the need for more research in this area to better understand the unique challenges faced by this population. By investigating different strategies used by adults with ADHD, the study provides valuable insights that can inform the design and development of more effective digital tools. These insights can also help to identify useful features and strategies used by current solutions, which can be incorporated into the prototype to better serve individuals with ADHD [6].

Research into Activities of Daily Living (ADL) and the difficulties encountered by individuals with ADHD at managing and keeping track of ADLs was also conducted. The study presented five design principles devised by the researchers, aiming to help individuals track and manage their ADLs while being unintrusive. While the study focused on wearable devices, the design principles are highly relevant to this project. They can be implemented and possibly extended or modified as necessary to enhance the usability of the proposed application for individuals diagnosed with ADHD [7].

Jakob Nielsen's 10 Usability Heuristics, a set of 10 general principles for interactive design, were also reviewed for their relevance to this project. These principles cover different aspects of usability and aim to guide the design of an efficient, usable user experience (UX) and user interface (UI). By following Nielsen's usability heuristics, the application can be designed to ensure that it is easy to use and navigate, with clear and concise instructions, minimal cognitive load, and a visually appealing interface. The effectiveness of these heuristics will be evaluated through a heuristics evaluation and user feedback, allowing for future refinement and improvement of the application [8].

Research still to add:

- Good survey methods / questionnaires
- More on usability and HCI.
- Research on existing features
- ADHD in students?
- Mention primary vs secondary research, qualitative & quantitative
- For each source, add my thoughts on the research and validity / relevance.
- Research on tools & frameworks, alternatives etc:
 - Full-stack web approach.
 - Different stacks I could have used: MEVN, FEVN, etc.
 - Vue.js, React, Angular for front-end.
 - Mongo, RxDB, Firebase for database.
 - Node.js and co for back-end.
- Software development methodology (waterfall).

2.2 Similar Applications Analysis

This section provides an analysis of three existing ADHD time management applications, highlighting their pros and cons.

2.2.1 Structured – Daily Planner

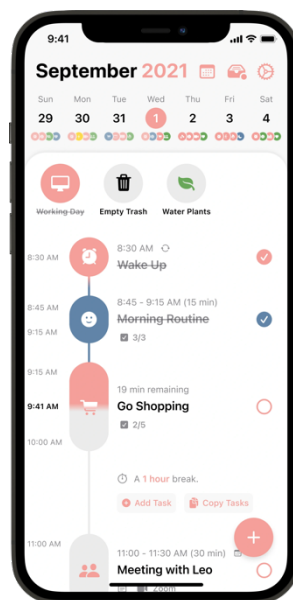


Figure 1: Structured - Daily Planner User Interface

Structured (Figure 1) is an application designed to help individuals with ADHD manage their time effectively. The application's strengths lie in its simplicity and user-friendly interface, making it easy for users to plan their day and track their tasks. However, it lacks advanced features such as data visualisation and progress tracking, which could provide users with more insight into their current time management habits. Additionally, the app is mobile-only, limiting its accessibility for users who prefer to use other devices [4].

2.2.2 Todoist

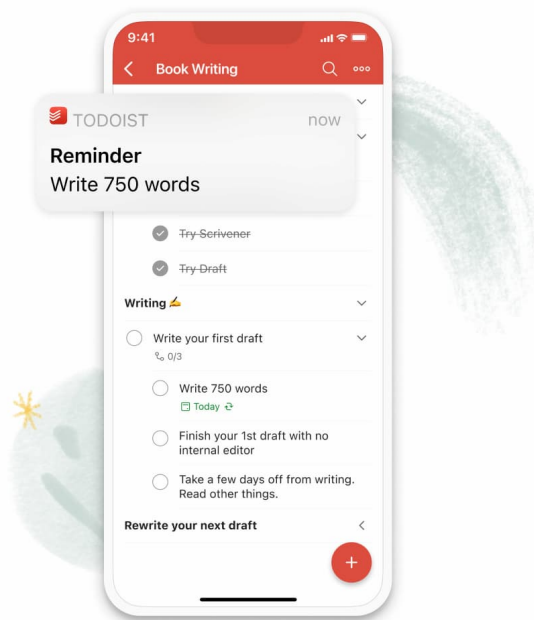


Figure 2: Todoist User Interface

Todoist (Figure 2) is a comprehensive task management app that allows users to create, manage, and organise tasks and projects [9]. It offers features such as due dates, priority levels, and labels, which can be particularly helpful for individuals with ADHD. However, while Todoist is feature-rich, its interface can be overwhelming for some users, especially those new to digital task management. Furthermore, some of its advanced features are only available in the paid version, which may be a barrier for some users.

2.2.3 Tiimo

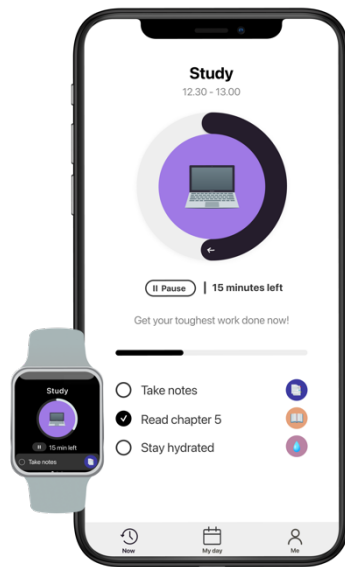


Figure 3: Tiimo User Interface

Tiimo (Figure 3) is a mobile application specifically designed for individuals with ADHD and autism. It offers visual schedules and reminders to help users structure their day, manage tasks, and build routines. The app's visual and auditory cues can be particularly beneficial for individuals with ADHD. However, some users may find the app's design and colour scheme less appealing. Additionally, while Tiimo offers a free version, some features are only available in the paid version [10].

The analysis of existing ADHD time management applications - Structured - Daily Planner, Todoist, and Tiimo - has provided valuable insights into the strengths and weaknesses of current solutions. It is evident that simplicity, user-friendly interfaces, and features tailored to the unique needs of individuals with ADHD, such as visual schedules and reminders, are crucial for the success of these applications. However, the analysis also highlighted areas for improvement, such as the need for more advanced features like data visualisation and progress tracking, and the importance of making all features accessible in free versions of the apps. These insights will inform the design of the questionnaire, guiding the selection of questions to better understand users' needs and preferences. For instance, questions could be included to gauge the importance of different features identified in the app analysis, and to explore any challenges users have experienced with existing apps. This will ensure that the questionnaire captures comprehensive data to inform the design and development of a more effective and user-friendly ADHD time management application.

2.3 Questionnaire

This section outlines the design and implementation of the questionnaire used to gather data from the target population. A comprehensive guide on designing effective questionnaires was reviewed to inform the design of the survey [11]. The questionnaire was designed to be clear, unambiguous, and easy to understand, ensuring that it effectively gathered the necessary data to support the research objectives.

2.3.1 Carrying out the Questionnaire

Considering ethical guidelines and the importance of safeguarding participant privacy, an online questionnaire was deemed the most suitable approach. This method ensures respondents can maintain anonymity while facilitating the automatic organisation of result data. The choice of an online questionnaire platform over in-person interviews or focus groups was motivated primarily by the necessity for anonymity and the available time constraints. Conducting interviews or focus groups would require significant setup time and data recording efforts, potentially yielding a lesser quantity of data. The next stage was to determine the questions to be used in the survey.

2.3.2 Tools and Technologies

The following tools and technologies were used for the questionnaire and design section of the dissertation.

Microsoft Forms

Microsoft Forms has been chosen for the purpose of conducting an online survey. The primary reasons for choosing Microsoft Forms include its cost-free nature and its ability to generate a cover page – a feature not available in Google Forms. This cover page can serve as a platform to disclose the survey's brief and ethics, and to obtain consent from respondents.

Adobe XD

Adobe XD is a very powerful wireframing and prototyping tool which is perfectly suited to this project. Unlike alternatives such as Balsamiq, it is very easy to quickly create components from scratch and reuse them throughout your designs. Prior experience with Adobe XD will also speed up the design process.

Draw.io

Draw.io is a tool that will be employed for the creation of high-quality diagrams such as an ER diagram, UML class diagram, and a user flow diagram.

2.3.3 Questionnaire Flow

In order to obtain more useful data from the questionnaire, the branching feature will be added. This allows condition-based flow through a questionnaire depending on the responses given. The flow for the questionnaire is as follows:

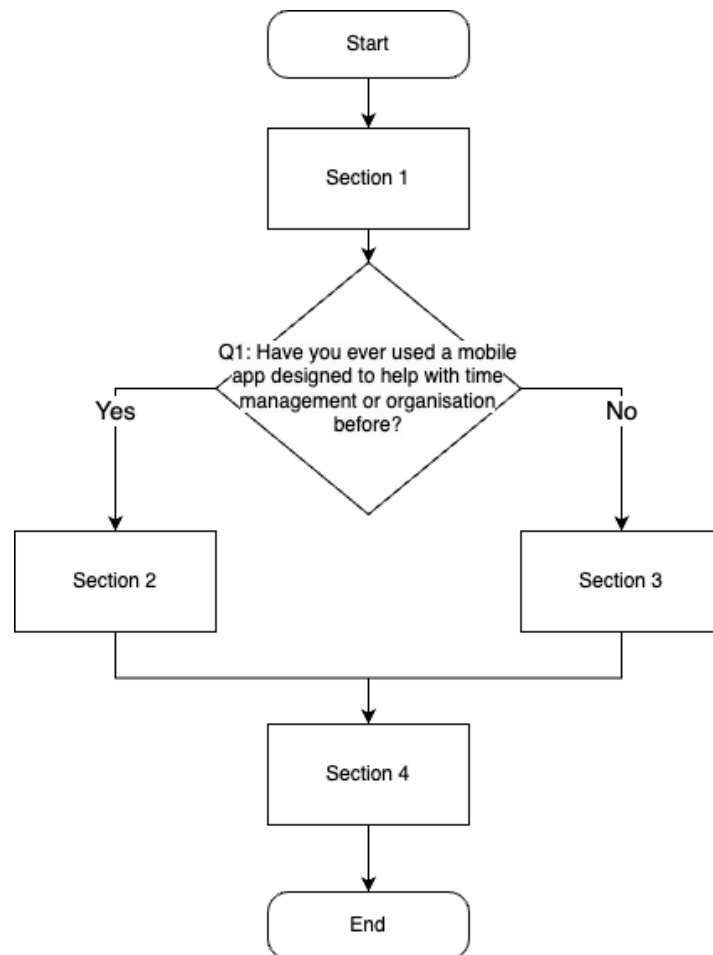


Figure 4: Questionnaire Flow Diagram

2.3.4 Section 1.

Question 1.

Have you ever used a mobile app designed to help with time management or organisation before?

Rationale

This question is designed to establish whether the respondent has used a time management or organisational app before. It's a critical first step in understanding the respondent's previous experience with such applications, providing context for their subsequent answers. This question can provide insights into how prevalent these types of apps are among the target demographic. According to the principle of learnability in HCI, users should be able to operate a system after learning it once [12]. Therefore, understanding the user's prior experiences can provide insights into how quickly they may adapt to a new app.

2.3.5 Section 2.

The second section is for participants who have used time management or organisation apps before.

Question 2.

Which features of these apps have you found most beneficial?

Rationale

This question aims to identify the features that users find most useful in current time management apps. By aligning the features of the new app with those that users find beneficial, the developers can enhance the principle of satisfaction [12], which refers to the user's subjective satisfaction when using the system.

Question 3.

What challenges, if any, did you face when using these time management / organisation apps?

Rationale

Question 3 seeks to understand the pain points and difficulties that users experience with existing apps, providing valuable information to avoid these issues when designing the new application, enhancing its usability [12].

2.3.6 Section 3.

Section 3 is for participants who have not previously used a time management or organisation application.

Question 4.

Would you use a time management / organisation mobile application?

Rationale

The only question in this section asks if they would use such an application. This question aims to gauge the interest and potential demand for the proposed app.

2.3.7 Section 4.

The fourth section is aimed at all participants.

Question 5.

Which three features are most important to you in a time management / organisation application?

Rationale

The fifth question asks participants to choose the three most important features in a time management or organisation app. This question is based on the concept of prioritising user needs and ensuring that the most essential features are included in the application [13].

Question 6.

Would you find a priority ranking system for tasks beneficial?

Rationale

This question aims to understand if users would find a specific feature useful, following the principle of utility in HCI, which refers to whether the system provides the features you need [12].

Question 7.

What type of visual design and layout would be most appealing to you in a time management app?

Rationale

The next question addresses visual design and layout preferences. Aesthetics and visual design play a significant role in the overall user experience and can impact the usability of the application [12] [14]. Aesthetic design can affect a user's perception of usability, while minimalist design reduces cognitive load.

Question 8.

What would make an application easy for you to navigate?

Rationale

Question eight focuses on navigation preferences, as navigation is a key aspect of usability [13].

Question 9.

How important is the ease of use when you select an application?

Rationale

The penultimate question assesses the importance of ease of use when selecting an application. This question helps to understand how significant usability is for the target user group [12].

Question 10.

Are there specific features or improvements not mentioned earlier that you think would be beneficial for a time management and organisation application targeted for individuals with ADHD?

Rationale

Finally, the last question inquires about any specific features or improvements not mentioned earlier that the participants think would be beneficial for a time management and organisation application targeted for individuals with ADHD. This open-ended question allows participants to provide valuable insights and feedback that may not have been covered in the earlier questions [15].

2.3.8 Questionnaire Results

In total, 15 responses were recorded. Ideally a higher number would be better however, given the participant requirement of having an ADHD diagnosis, 15 should be more than enough. The questionnaire was distributed through Instagram stories.

Question 1.

1. Have you ever used a mobile app designed to help with time management or organisation before?

[More Details](#)

 Insights

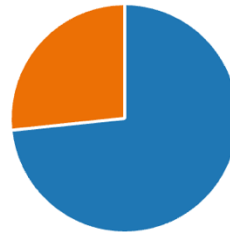


Figure 5: Questionnaire Question 1 Results

A high number of participants responses (73%) suggested that they already use or have tried to use a time management / organisation application.

Which features of these apps have you found most beneficial?



Secondly, the ability to create, manage, and prioritise to-do lists was highly appreciated. It was evident that this feature assists in the organisation of tasks and helps to structure students' work. It also allows for effective prioritisation based on importance or urgency, thereby enabling efficient allocation of time and effort.

The incorporation of focus or time management tools, such as a focus timer, was also acknowledged as beneficial. These features aid in concentration and time management, both of which can be challenging for students with ADHD.

Question 3.

What challenges, if any, did you face when using these time management / organisation apps?

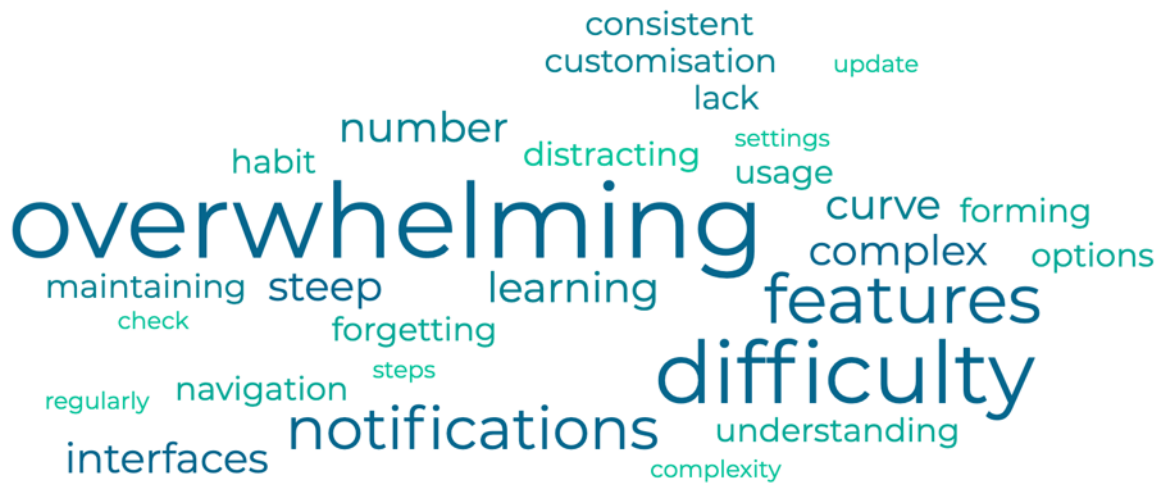


Figure 7: Questionnaire Question 3 Results

In analysing the survey responses to question 3, a number of challenges experienced by students with ADHD when using time management and organisation apps were identified.

One of the most prominent issues reported was the complexity of these apps, often due to a multitude of features and options. This complexity not only made the apps difficult to navigate, but also overwhelming for the users. This response suggests that overly complex interfaces can inhibit the effectiveness of the app and may deter consistent use.

The aforementioned complexity contributed to another significant challenge, which was the learning curve associated with these apps. Many students reported that it took considerable time and effort to understand and navigate the features of the apps effectively. This initial difficulty could cause frustration and potentially affect the regular usage of the app.

Interestingly, a feature often praised in the previous question – notifications and reminders – was also identified as a challenge. Some respondents found the volume of notifications overwhelming, to the point of being counterproductive, and in some instances, a source of distraction. This suggests that while reminders are beneficial, there needs to be a balance or the ability to customise to prevent them from becoming a nuisance.

Question 4.

4. Would you use a time management / organisation mobile application?

[More Details](#)

Yes	4
No	0
Maybe	0

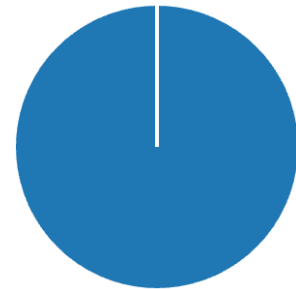


Figure 8: Questionnaire Question 4 Results

Out of those identified in question 1 that have not used a time management / organisation application before, 100% responded that they would use one if a suitable application became available.

Question 5.

5. Which three features are most important to you in a time management / organisation application?

[More Details](#)

Focus Timer	8
Todo List	15
Timetable / Planner	10
Progress analysis / Reports (a br...	6
Gamification	1
Reminders	5
Other	0

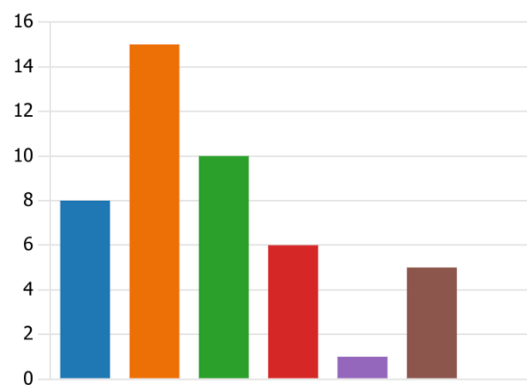


Figure 9: Questionnaire Question 5 Results

The most favoured features in a time management/organisation application, as indicated by the survey respondents, were the "Todo List" (15 selections), "Timetable/Planner" (10 selections), and "Focus Timer" (8 selections). These tools are evidently valued for their ability to aid in task organisation, time management, and maintaining focus. "Progress analysis/Reports" and "Reminders" were also selected by a subset of participants (6 and 5 respectively), indicating their usefulness for tracking productivity and remembering tasks. "Gamification" was chosen by only one participant, suggesting it is not a critical feature for this user group. No participants selected the "Other" option.

Question 6.

6. Would you find a priority ranking system for tasks beneficial?

[More Details](#)

 Insights

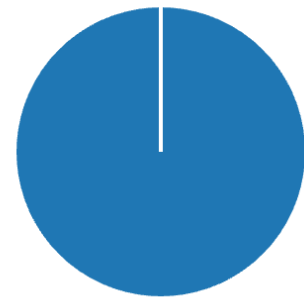


Figure 10: Questionnaire Question 6 Results

In response to question 6, 100% of participants indicated that they would find a priority ranking system for tasks beneficial. This aligns with responses from question 2 which suggested respondents appreciated having the ability to prioritise tasks based on importance.

Question 7.

7. What type of visual design and layout would be most appealing to you in a time management app?

[More Details](#)

 Insights

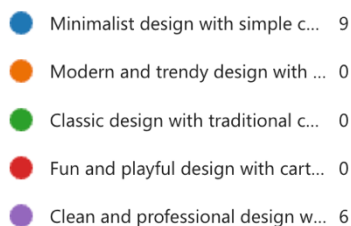


Figure 11: Questionnaire Question 7 Results

The majority of respondents, nine in total, expressed a preference for a minimalist design with simple colour schemes. This suggests that the students value simplicity and clarity in the user interface of the app. A minimalist design can help reduce cognitive load, which might be particularly beneficial for students with ADHD, as it can make the app more **intuitive** and easy to navigate [8].

Six participants expressed a preference for a clean and professional design, emphasising functionality over aesthetics. This suggests that these students value an application that is straightforward and practical, and does not distract from its primary purpose of helping them manage their time and organise their tasks.

Interestingly, no respondents selected a modern and trendy design with bright colours and bold typography. Similarly, no participants favoured a classic design with traditional colours and fonts, or a fun and playful design with cartoonish characters or illustrations. These preferences could be interpreted as a desire for a design that is not overly stimulating or distracting, which could be especially important for students with ADHD who might find such designs overwhelming or distracting.

Question 8.

8. What would make an application easy for you to navigate?

[More Details](#)

 Insights





	Swipe-based pages	8
	Navigation bar	7
	Menu	0
	Other	0








Figure 12: Questionnaire Question 8 Results

Based on the results, respondents appear divided between “Swipe-based pages” (53%) and “Navigation Bar” (47%). As a result, the final navigation implementation will attempt to incorporate both aspects in order to make it as easy to navigate as possible for all users.

Question 9.

9. How important is the ease of use when you select an application?

[More Details](#)

	Extremely important	15
	Somewhat important	0
	Neutral	0
	Somewhat unimportant	0
	Extremely unimportant	0

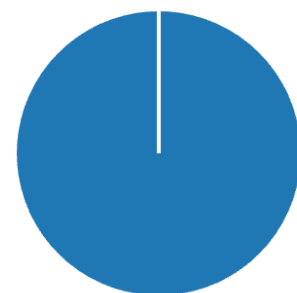


Figure 13: Questionnaire Question 9 Results

Question 9 also further reiterates the findings from question 2 that complexity is unpopular in users diagnosed with ADHD. 100% of participants answered that ease of use is extremely important when choosing a time management / organisation application.

Question 10.

Are there specific features or improvements not mentioned earlier that you think would be beneficial for a time management and organisation application targeted for individuals with ADHD?



Figure 14: Questionnaire Question 10 Results

An analysis of the responses to question 10 reveals a variety of suggested features and improvements that the participants believe would be beneficial for a time management and organisation application specifically targeted at individuals with ADHD.

A recurring theme among the responses was the suggestion for a feature that allows users to break down larger tasks into smaller, more manageable subtasks. This feature would potentially help users to manage overwhelming tasks more effectively by providing a step-by-step approach, making it easier to focus and progress towards completion.

Another commonly suggested feature was the incorporation of a progress tracking system, with an emphasis on visual representations of accomplishments. This could provide motivation and a sense of achievement, enhancing engagement with the app. Some respondents further suggested that this progress tracking could be paired with a rewards or incentives system, thereby introducing a gamified element to encourage task completion.

Notifications and reminders were also highlighted as potentially beneficial, not only for tasks but also for other important aspects such as medication intake. This indicates a desire for customisable notifications that can support a variety of needs in individuals with ADHD.

Several participants proposed features related to time management techniques, such as time-blocking or chunking tasks into manageable portions. These techniques can help maintain focus and avoid overwhelm, which can be particularly beneficial for individuals with ADHD.

2.4 Requirements

This section outlines the necessary features and characteristics that the proposed application should include. These requirements were determined using the results gathered from the user survey, ensuring that the application is designed to meet the specific needs and preferences of its intended users. The user survey provided valuable feedback for the features and design choices of the application, as well as their experiences with existing solutions. This feedback was instrumental in defining both the Functional and Non-functional requirements, defining the direction of the application's design and development.

2.4.1 Functional Requirements (FRs)

No.	Requirement	Priority (H, M, L)
FR01	Users should be able to create an account.	H
FR02	Users should be able to login to an account.	H
FR03	The application should support creating tasks, as well as setting priorities.	H
FR04	The application should support deleting tasks.	H
FR05	The application should support setting a task as completed.	H
FR06	Users should be able to set reminders for upcoming tasks.	M
FR07	The application should provide configurable timers that allow users to focus for a period of time with visual and/or auditory cues used as an alarm and also the option to pause or reset the timer if needed.	H
FR08	The app should provide an interface to create, edit, and view their schedule.	H
FR09	The application should track users' progress on tasks and display visual representations of their productivity over time. Users should be able to view this progress in the form of charts.	H
FR10	Users should be able to customise the appearance, and settings to ensure a personalised experience.	M
FR11	Users should earn awards for completing tasks or multiple tasks to encourage increased engagement with the application.	L
FR12	Include educational resources and practical tips on time management and organisation strategies for students with ADHD.	L

Figure 15: Functional Requirements Table

2.4.2 Non-functional Requirements (NFRs)

No.	Description	Priority (H, M, L)
NFR01	The application should consider and implement Jakob Nielsen's Usability Heuristics where suitable to improve the usability experience [8].	H
NFR02	The application should adhere to industry-standard security practices to protect user data and maintain privacy. This includes encryption of data in transit and at rest and secure authentication mechanisms.	H
NFR03	The application should be supported by at least two mobile platforms in order to allow the application to be accessed by a wide range of users.	M
NFR04	The application should be designed to work well on different screen sizes and resolutions, providing a consistent and enjoyable user experience across various devices.	M

Figure 16: Non-functional Requirements Table

3 Design

3.4 Plan

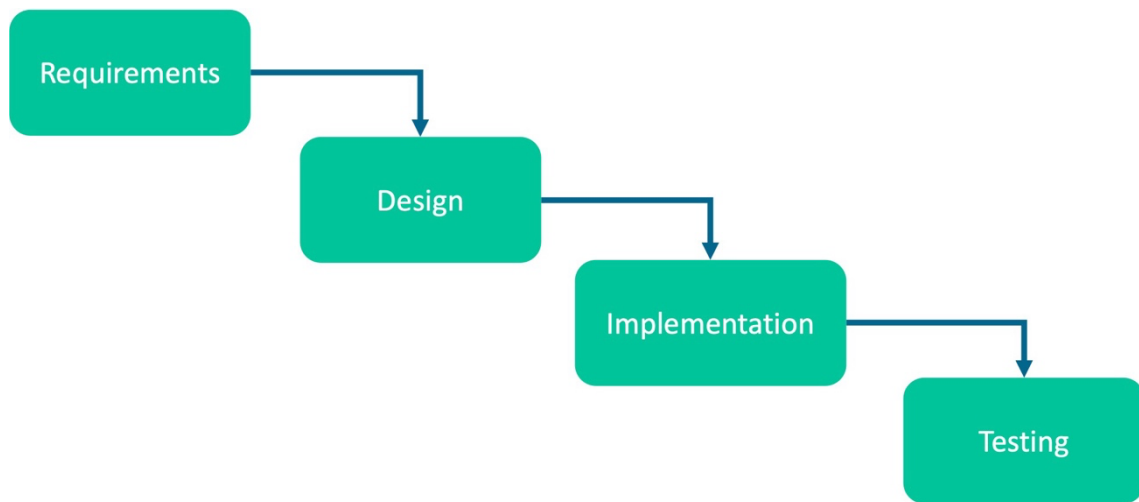


Figure 17: Waterfall SDLC adaptation

Following a comprehensive investigation into a range of software development methodologies, the waterfall development methodology [10] has been adapted and will be used during the development process. This approach segments the project into four principal stages – Requirements, Design, Implementation, and Testing. The rationale behind selecting this particular development methodology lies in the restricted timeframe at hand. Alternative methods, such as Agile, prove to be less suitable due to the excessively brief nature of each iterative phase, potentially leading to an overly convoluted, tight schedule that may adversely affect the project's quality. The waterfall method aligns well with this project since the survey findings were used to determine the requirements as well as to shape the foundational design of the application.

3.5 Application Structure

3.5.1 Application Architecture

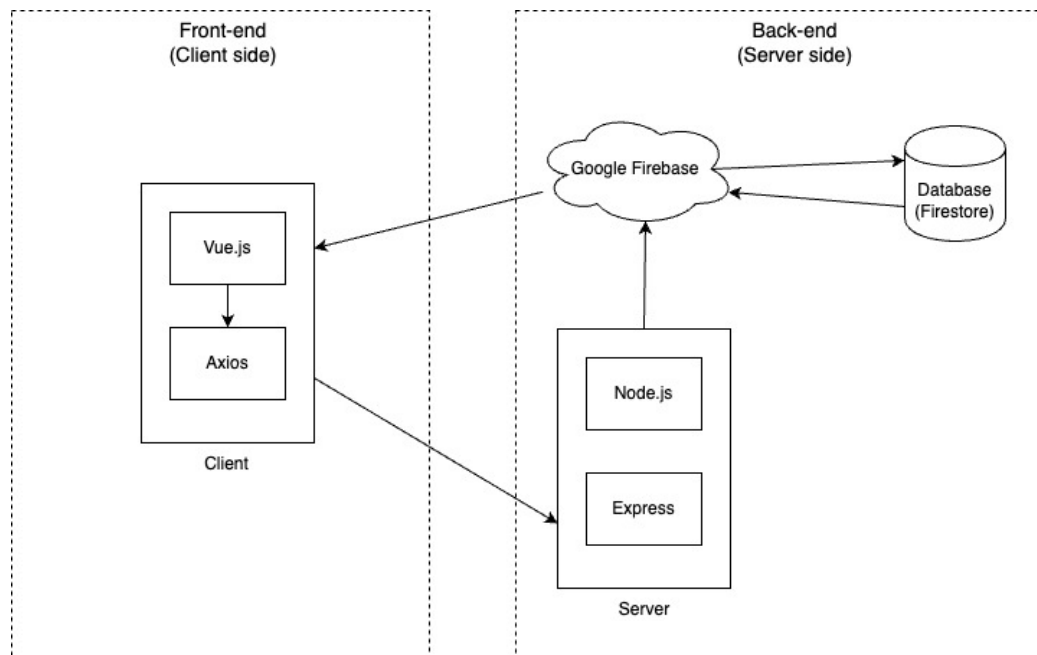


Figure 18: Application Architecture Diagram

As the project will be utilising a full-stack development approach, it will be split into two sections: the front-end and the back-end.

Front-end

The front-end will be built using the Ionic framework along with the Vue.js framework for rendering the user interface, whilst Axios will be used to perform any HTTP requests to the back-end. One advantage of using Vue.js is that it is reactive. This means that Vue.js automatically tracks JavaScript changes and can very quickly update the page to reflect these changes [16]. For example, UI components can be subscribed to a database and reflect any changes made in real-time without any need for refreshing, allowing for an interactive, fluid user experience. This is important as it relates to Nielsen's first usability heuristic: Visibility of system status, which states that any feedback from the system should be provided to the user as quickly as possible [8].

In most typical full-stack applications, the back-end API will provide GET methods which allow for data retrieval from a database. However, this is not necessary when using Google Firebase and Vue.js as it will be able to retrieve any data from the databases directly, circumventing the back-end. One benefit of this approach is speed, as the front-end is able to read the database without having to request the data through the back-end.

Back-end

The back-end will be developed using Node.js and Express in order to handle the API requests from the front-end. Node.js is a JavaScript runtime environment that allows for scalable server-side applications [17] and Express provides a flexible API for building HTTP servers, handling requests and responses, and routing URLs to specific handlers. It is possible to build an application using Vue.js for the front-end and Firebase for the back-end however, this approach does not scale well as it is platform dependant and will only allow for platforms supported by Google Firebase. The back-end developed, will host the API methods used to interact with the database, as well as any assets that may require it.

Database

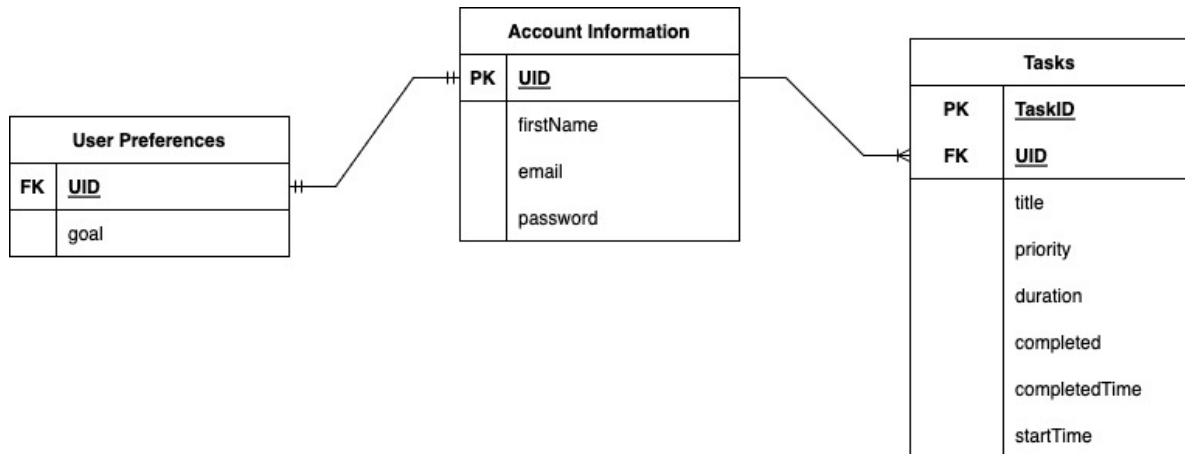


Figure 19: Entity Relationship (ER) Database Diagram

The database will use Firestore, a real-time database solution offered as part of the Firebase suite. It will consist of three tables: Account Information, Tasks and User Preferences. Figure 19 represents an abstraction of an ER diagram for the database, as there is no relationship feature, however relationships and retrieval of data can be achieved using unique IDs.

Account Information

Used to store the first name of the user, along with their email and password, however this is an abstraction as the Firebase authentication tools will be used to handle authentication which will store the hashed passwords separately and securely. Each user is assigned a UID upon creation which is used as a foreign key by the back-end for identifying user data throughout other tables.

Tasks

Each user will be assigned their own Tasks table, allowing for data separation. Each task entry will contain a TaskID, used as the primary key along with the user UID as a foreign key for identification as well as the title, priority, duration, completed Boolean, completedTime and startTime.

User Preferences

The user preferences table will be used to store any user preferences saved by the user such as their goal. In the future this can be expanded as more customisation options and features are added to the application, for example dark mode. The reason behind storing this information in a database rather than locally is because it allows for a seamless user experience across platforms and reduces the risk of a user losing any progress or data should something happen to their device.

3.5.2 User Flow Diagram

With the features, non-functional and functional requirements determined, a user flow diagram of the application was produced (Figure 20). In the development of a prototype application, a user flow diagram serves as an invaluable tool for ensuring a seamless and intuitive user experience. By mapping out the various pathways users may take to complete tasks within the application, a user flow diagram will identify potential bottlenecks, redundancies, or points of confusion.

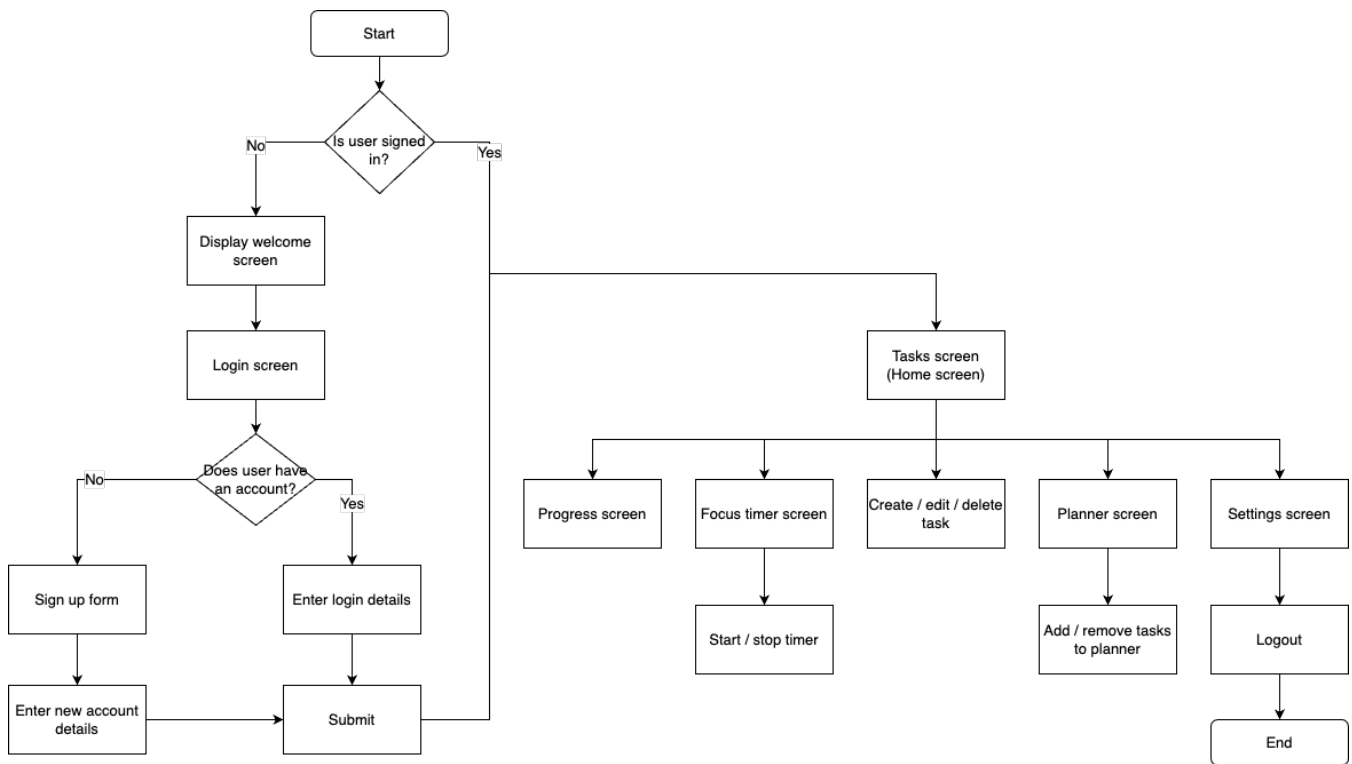


Figure 20: User Flow Diagram

3.5.3 UML Use Case Diagram

In addition to a user flow diagram, a UML use case diagram (Figure 21) has also been produced in order to aid development of the application.

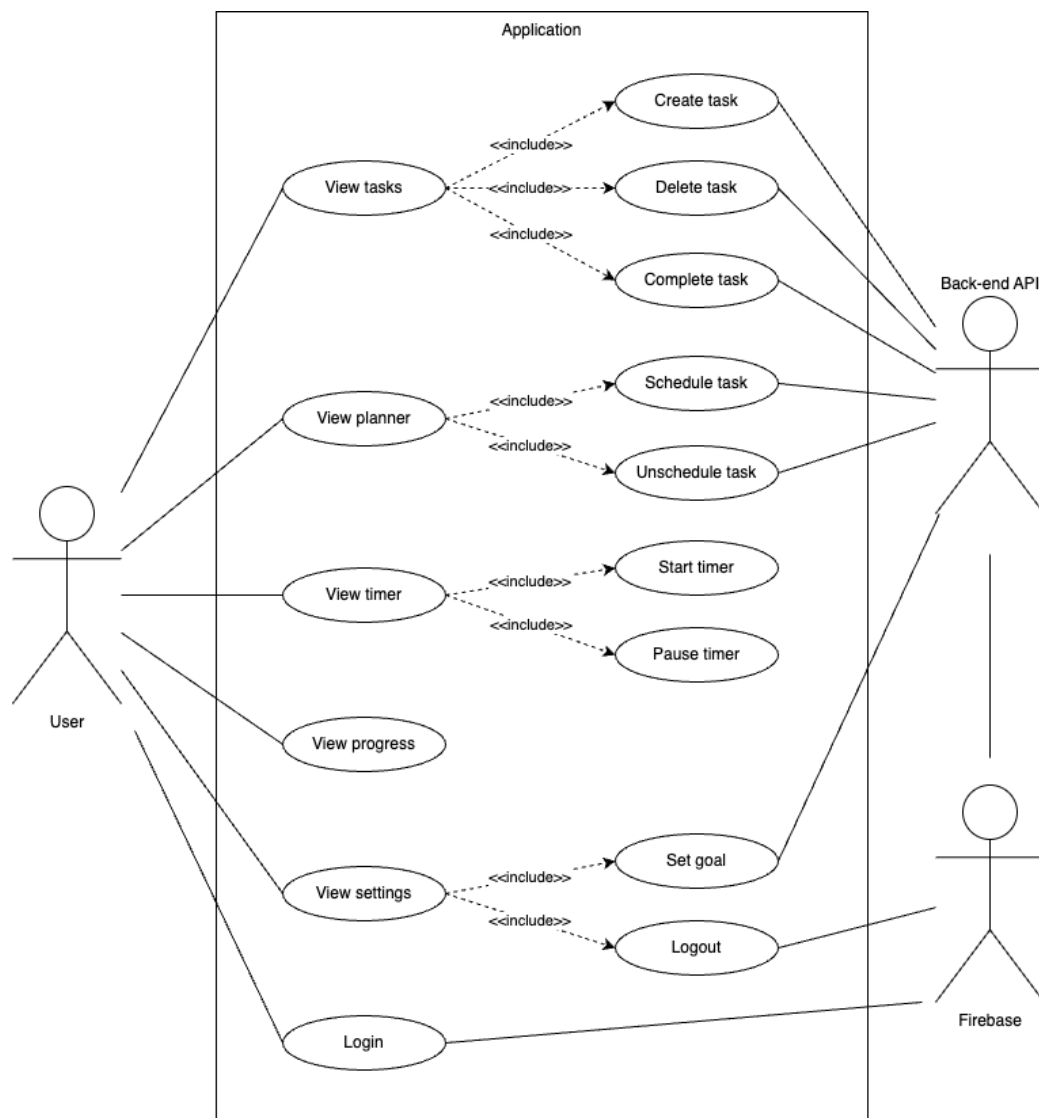


Figure 21: Use Case Diagram

3.6 Colour Palette

When creating the UI prototype, it was important to consider what colours to use for the final prototype. Ideally, this colour scheme needs to be consistent throughout, but also appropriate.

Adobe XD provides an integrated colour scheme tailored to each specific artboard. This feature not only promotes uniformity in design, adhering to one of Shneiderman's principles [18], but also facilitates the creation of visually appealing layouts. Moreover, the scheme enables swift alterations of individual colours for the purpose of experimenting with various themes. The ultimate colour scheme can be seen below in Figure 22.

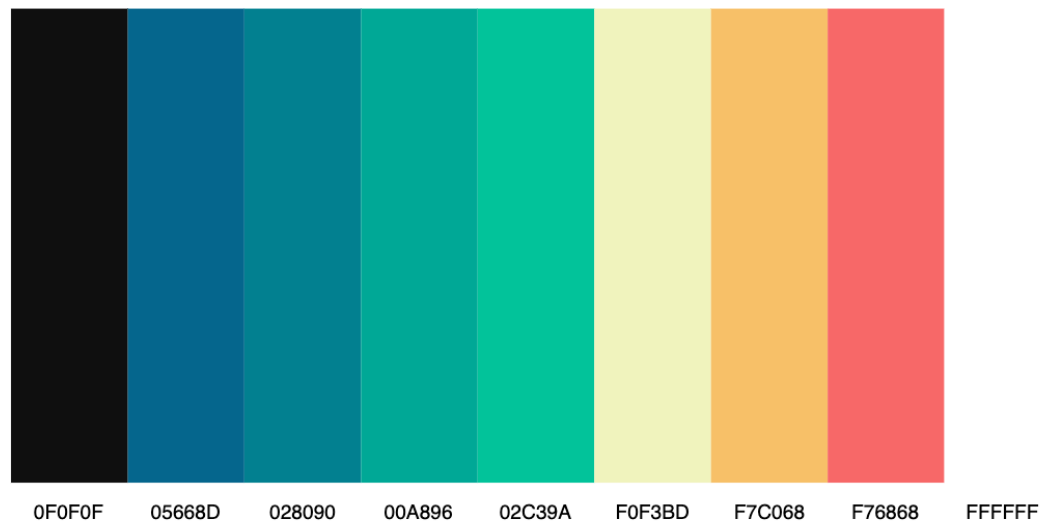


Figure 22: Prototype UI Colour Palette

As Figure 22 demonstrates, the colour palette uses a wide range of colours however, this palette includes status colours, background and font colours. The UI will predominantly make use of the colours 05668D to F0F3BD as shown above. By utilising a combination of blue and green throughout the user interface, users may associate the colours with calmness, growth, health and healing [19].

3.7 Mock-ups

In order to create the wireframes for the application, Adobe XD was used due to previous experience with the software, as well as ease of use. After determining the functional and non-functional requirements for the application based on the results from the questionnaire, the mock-ups for the application could be started.

3.7.1 Login Page

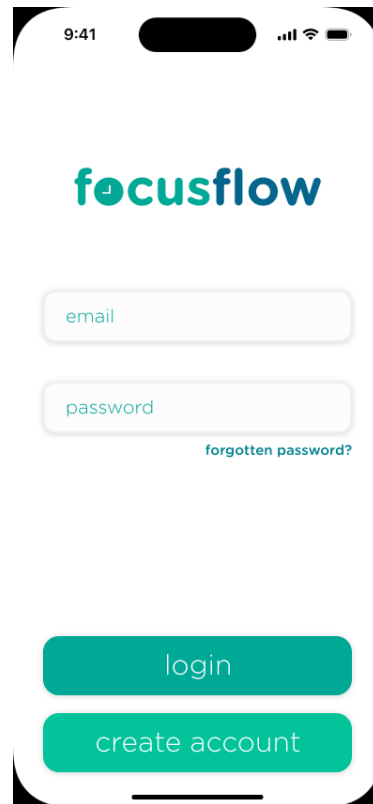


Figure 23: Login Page Mock-up

Figure 23 shows the mock-up login page for the app, displayed when a user is not logged in. When designing the login page, the decision was made to keep it simple and familiar to users in order to implement Nielsen's consistency and standards heuristic [8]. The logo has been centred near the top of the page which was created using Adobe Photoshop. Large, clear buttons have been used to complete actions whilst using flat colours from the colour palette making them easy to see. A mock-up for the create account page has not been produced, as it will be largely based on this login page design.

3.7.2 Tasks Page

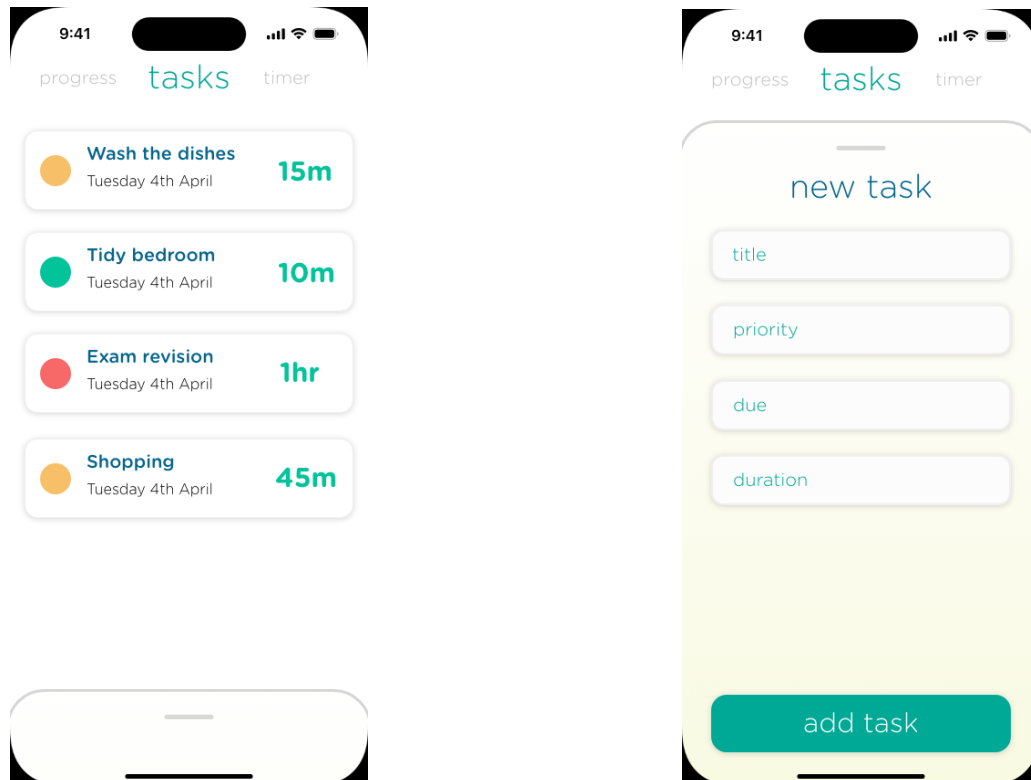


Figure 24: Tasks Page Mock-ups

The most important screen of the app is the tasks page. The tasks page will serve as the home page for the application when a user is signed in and will allow a user to quickly view any tasks they have to complete, along with the duration and priority, displayed as a coloured circle. When a user swipes up from the bottom of the tasks page, a 'drawer' will open allowing a task to be easily created and added to the tasks list. When designing this feature, simplicity and ease of use were the main design considerations taken into account to ensure its intuitive for the end user. When a user clicks on a task, it will direct them to the timer view for that task and allow the user to start a focus timer for the predetermined duration assigned by the user.

3.7.3 Timer Page

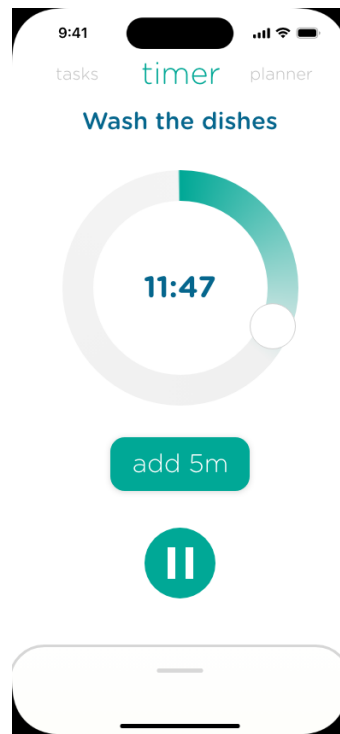


Figure 25: Timer Page Mock-up

For the timer page, the same design principles of simplicity and ease of use were used. As this is meant to be a focus timer, the page should be free of any distractions or clutter. The timer element is designed with a circular progress bar with the remaining time in the centre, which is an appropriate method of visualising time as it is similar to a dial-based kitchen timer, something users will be familiar with. Two HCI principles met by this design are recognition rather than recall and visibility of system status. Additionally, there is also a button which allows users to add 5 minutes to the timer if they have not allocated enough time should they need it, and a button to pause or resume the timer if necessary.

3.7.4 Planner Page

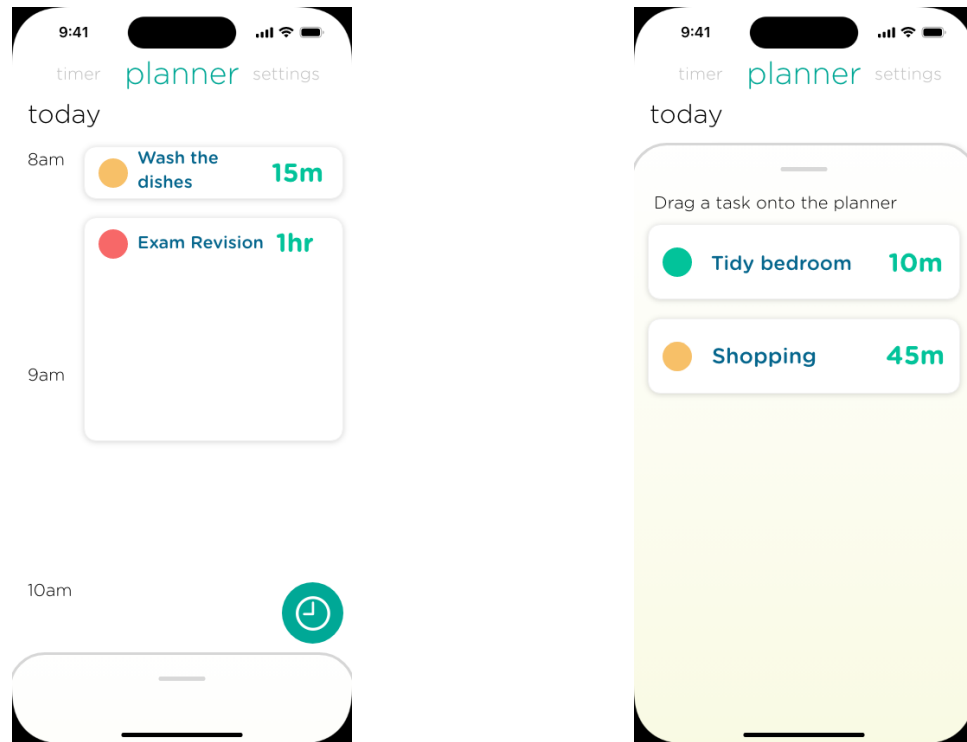


Figure 26: Planner Page Mock-ups

The planner page will provide users with a visual plan / timetable of their day and allow users to plan tasks throughout the day based on their duration. By swiping up or tapping the bottom of the display, the task drawer will be revealed displaying any user created tasks. Users will then be able to drag and drop a task onto the planner, allocating a time slot for the task. The height of the task will automatically be scaled depending on the duration allocated for the task. Users can also create “Breaks” by tapping the floating clock button which will allow them to easily and quickly add a break to the timetable.

3.7.5 Progress Page

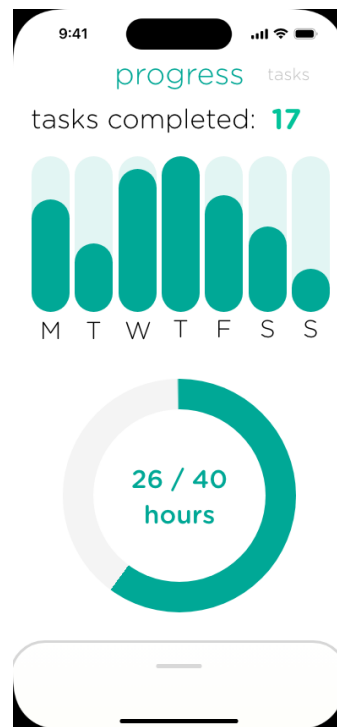


Figure 27: Progress Page Mock-up

Finally, the progress page will allow users to view their progress within the application, giving them a day-by-day breakdown of the number of tasks completed, as well as the number of hours spent on tasks against a goal specified by the user. This allows users to instantly assess their productivity levels and patterns throughout the week, offering a significant advantage over textual or numerical data representations. This design decision is rooted in the HCI principle of recognition rather than recall [8], aiding the users to understand the information more easily and swiftly. It may be possible to include the ability for weekly comparisons, as well as viewing monthly progress in the future, furthering the usefulness of this feature. The mock-up produced fulfils **FR06 – progress tracking / reports.**