

## **Focus Friend: AI Assistant for ADHD Management**

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## **Focus Friend: AI Assistant for ADHD Management**

Focus Friend is an app and virtual assistant specifically designed for those with Attention Deficit Hyperactivity Disorder (ADHD) that offers a holistic approach to managing distractions, staying organized, on-task, and on-time. Focus Friend includes a planner/calendar with specific features to help individuals combat chronic lateness, a task matrix and to-do list that helps users visualize their priorities to be more effective with their time, focus sessions with additional features for managing distractions and staying present, and a series of guided mindfulness sessions that have been demonstrated to improve ADHD symptoms for the vast majority of individuals. While there are several apps on the market that specialize in individual features, Focus Friend is distinguished by its cross-feature integrations, flexibility, and emotionally supportive user experience.

### **Idea: Focus Friend**

There is an unmet need in the landscape of productivity and time management apps to consider the specific needs of individuals with ADHD. The mission of Focus Friend is to provide a suite of features specifically designed to address some of the key struggles individuals with ADHD navigate on a daily basis in order to improve quality of life, self-esteem, and productivity.

ADHD has been said to be primarily a disorder of executive functioning (Tuckman, 2021; Roth & Saykin, 2004). Executive functions enable individuals to plan, focus attention, remember instructions, and manage multiple tasks. 90% of individuals with ADHD struggle with executive dysfunction, which impairs goal-directed behavior such as planning, problem-solving, organization, and time management (Rodden, 2021). This executive dysfunction causes individuals with ADHD to experience time differently and to struggle with anticipating future rewards and consequences, as well as with taking actions that will benefit them in the future, and

thus, often find themselves scrambling to complete tasks at the last possible minute (Tuckman, 2021). This strategy (or lack thereof) is both stressful and ineffective, creating a cycle of frustration and exhaustion in constantly shifting from one emergency to the next (Saline, 2021).

Since individuals with ADHD experience what is known as “time-blindness,” which means they are unable to comprehend time as clearly as others, and they benefit greatly from seeing time externally rather than relying on internal judgment (Tuckman, 2021; Saline, 2021). Planning and prioritizing are executive functions closely intertwined with time management, organization, and initiation, and improving these skills can lead to a reduction in stress and increase in productivity (Saline, 2021). Additionally, treatment and management of ADHD symptoms have demonstrated significant improvements in self-esteem and social functioning (Harpin, et. al., 2013). Pharmacotherapy (stimulant-medication) is the main-line therapy for ADHD, however many individuals continue to struggle with the impairments of ADHD despite treatment with medication, while others simply would prefer alternative methods (Mitchell, Zylowska, & Kollins, 2015).

This is where Focus Friend comes in: Focus Friend’s Planner and Tasks features work together in a synchronized fashion to allow users to plan, prioritize, and visualize how to spend their time, while the app’s artificial intelligence (AI) learns users’ habits to help them improve their skills and increase their success through tailored nudges. The Focus feature creates a supportive environment for users to dedicate focused time toward completing important tasks and goals, with added features to help manage distractions as they arise. Finally, the mindfulness feature incorporates mindfulness training and exercises which have demonstrated clinically

significant reductions in ADHD symptoms which will allow for increased effectiveness in focusing attention, as well as overall wellbeing (Mitchell, Zylowska, & Kollins, 2015).

### **Target User Analysis: Attention Deficit Hyperactivity Disorder**

ADHD is the most common childhood onset psychiatric condition with an estimated prevalence of 5-7% worldwide (Harpin et. al, 2016). An additional 5% have significant difficulties with overactivity, impulsivity, and inattention that are just shy of meeting the diagnostic criteria for an ADHD diagnosis. Estimates vary across the globe and have been increasing over time, but ADHD remains largely under-recognized and under-diagnosed, particularly when it comes to girls and older children (Sayal et. al, 2018). 90% of children with ADHD will continue to struggle with its symptoms and impairments into adulthood (Pesantez, 2021; Sibley et. al, 2021; Sayal et. al, 2018). Along with this comes increased risk factors for other mental health disorders and negative outcomes such as educational underachievement, employment difficulties, interpersonal difficulties, and criminality when ADHD is not adequately managed (Sayal et. al., 2018; Harpin et. al, 2013). ADHD has been shown to have a significant negative impact on both social function and self-esteem in children and adolescents. The effects on self-esteem include increased negative beliefs about the self, which can lead to development of maladaptive coping strategies such as procrastination and avoidance (Harpin, et. al, 2018). It has been estimated that children with ADHD may receive up to 20,000 more negative messages about themselves than their peers by age 10 (Watson, 2020).

While ADHD has historically been considered a disorder of school-aged boys, more recent research has demonstrated a virtually non-existent gender disparity in prevalence in adults (Barkley, 2002; Babinski et. al, 2011). However, recent research has demonstrated that women with ADHD struggle with a number of socio-emotional difficulties not seen in men and it has

been posited that individuals with gender atypical disorders face greater difficulties of a broader variety than those with gender typical disorders (Babinski et. al, 2016). Another key difference between men and women with ADHD is that women tend to present with less hyperactivity, but greater cognitive impairment than males (Babinski et. al, 2011).

A study of 201 college students with ADHD compared against 205 neurotypical students demonstrated significantly poorer outcomes in terms of GPA, progress toward graduation, and self-reported study skill strategies (DuPaul et. al., 2021). Several variables were studied as predictors of student performance and results suggest that support services for students with ADHD that focus on improving executive functioning skill increase the odds of academic success, particularly when initiated prior to matriculation (DuPaul et. al., 2021). In light of this evidence, one core group in Focus Friend's target user demographic will be college students and college-bound adolescents with ADHD, with the goal of establishing good habits with the app prior to enrollment.

Because the effects of living with ADHD are ever-present from childhood throughout adulthood, the full target user demographic for Focus Friend will encompass adolescents and adults of all ages with ADHD. Girls and women are more likely to have undiagnosed ADHD due to the lesser recognized inattentive type versus hyperactive presentation more often seen in males (Solden, 2021), and so an additional emphasis will be placed on reaching women who struggle with symptoms of ADHD but may not have an official diagnosis.

## **Product Features & Literature Review**

The four key features Focus Friend offers are Planner, Tasks, Focus, and Mindfulness. These features split the home screen into four quadrants for quick navigational access, and are

also accessible from the hidden navigation menu anchored at the top left corner of the screen. At the center of the four quadrants, the user is greeted with Fred the Focus Friend mascot, an anthropomorphized cloud. As the face of the company, Fred is ready to assist the user at any point in the experience, shifting from the center of the home screen to anchor at the bottom right corner of all other screens.

### ***Planner***

The Planner feature is an integrated calendar that not only schedules events, appointments, and other important dates and reminders, but also brings together and coordinates the other app features, though those features function just as wholly independent of the Planner. Dates can be imported from an external calendar app or created within Focus Friend, and can be viewed in monthly, weekly, and daily formats, allowing users to visualize their time both in breadth like a timeline and in depth like a scheduler. The daily view, in particular, uses color-coded time blocks to visualize the allocation of time in the day by the minute, making it easy for users to see where their time is going, at a glance. Colors differentiate different categories of entries – such as but not limited to all-day events, appointments, and tasks and errands – which can be specified when the entry is created or edited. Categories unique to Focus Friend include Focus sessions and Mindfulness sessions – to be discussed in the following sections – which can be directly scheduled into the Planner. Furthermore, Focus Friend allows entries to be scheduled with buffer times, preempting logistical considerations. This is crucial for individuals with ADHD, who have a tendency to let time slip away and often suffer from chronic lateness due to challenges with estimating time and conceptualizing the future (Adamou, 2021; Gutman & Szczepanski, 2004; Nadeau, 2005; Tuckman, 2021; Wasserstein, 2005).

## **Tasks**

The Tasks feature not only organizes tasks but also prioritizes them by urgency and importance. This categorization method is borrowed from the Eisenhower Matrix, a widely used framework that optimizes decision-making for prioritization, productivity, and time management (Clear, 2020; *Introducing the Eisenhower Matrix*, 2017; Kirillov, 2015; Scroggs, 2021; Victorino, 2020). The Eisenhower Matrix sorts tasks in a 2-by-2 matrix – with columns labeled “Urgent” and “Not Urgent,” and rows labeled “Important” and “Not Important” – making apparent which tasks should be prioritized: those that are both urgent and important. These categorizations can be specified in Focus Friend’s Tasks feature when the task is created or edited, or the user can leave the task unsorted; in some cases, the urgency or importance of a task may be ambiguous, in which case it would be counterproductive to expend extra cognitive energy to determine a categorization. The concept of urgency, in particular, can be surprisingly complicated for individuals with ADHD, because they do not feel pressure for non-immediate deadlines the same way neurotypicals do (Lasky, 2021; Low, 2020; Tuckman, 2021). To cater to this, Fred the Focus Friend – who is always visible toward the bottom of the screen – prompts the user about the urgency of a task when it is created based on its due date, but ultimately leaves the decision to the user. When it comes to AI assistants such as Fred, it is essential that the technology does not undermine the user’s agency, but rather, assists (Sloman & Fernbach, 2017).

Focus Friend offers two Tasks views – the matrix view and list view – with a simple toggle at the top of the screen. The matrix view displays a square Eisenhower Matrix, and users can tap on each quadrant of the matrix to bring it forward; unsorted tasks are listed below the matrix. The list view displays a traditional list, which can be sorted alphabetically or by due date.

However, once the task is itemized, there is no guarantee that the user will return to it. This is a significant challenge that individuals with ADHD face when managing long-term projects, in particular (Rodden, 2021; Tuckman, 2021). To address this, the Tasks feature incorporates a unique function derived from cognitive behavioral training techniques: the 5-Minute Habit (Allen, 2017; Bariso, 2018; Bonior, 2014; Cole et al., 2016; MacKay, 2017; Nee, 2021). When creating each task, users have the option to opt into the 5-Minute Habit, whereby users commit to devoting five minutes of each day to making progress on a task, prompted by daily notifications. Users have the option to respond to these notifications by selecting “Start now,” “Remind me later,” “Already done!” or “Not today.” Depending on the user’s response and in consideration of the Planner, Fred’s AI can learn best how to time these notifications; he can also track how many tasks the user has committed to and inform the user if they may be overcommitting. In any case, just five minutes a day can overcome procrastination and spur gradual progress, and may inspire users to devote longer sessions to focus on a task.

### ***Focus***

The Focus feature structures focused work sessions and not only improves productivity but also nurtures a supportive work environment. Upon beginning the Focus session, the user is prompted by the question “What are you working on?” to focus their attention by articulating their intention (Hanson, 2014; Tabaka, 2016; Toli et al., 2015). Users have the option to type out their answer in the blank provided or select an intention from a list displayed beneath the blank, integrated from the Tasks feature. Users also have the option to skip this step for whatever reason. For example, if the user is short on time or already clear about their intention, they may not want to bother with typing out or selecting an intention. The purpose of this feature is to offer users options to streamline their workflow, not to hinder them or persuade them to use every

feature of the app. That said, even the choice to skip this step is an intentional act, so while the user is not formally articulating their intention, intentionality is still practiced, as subtle as it may be. A more overt practice is a suggestion by Fred to kick off the Focus session with a brief Mindfulness session to meditate on the intention and set the tone before the Focus session begins; this option can be quickly accepted or declined with a tap on Fred's speech bubble.

Next, users have the option to set the length of their work session and length of their work intervals. The default is a 2-hour work session with intervals of 25-minute focus periods followed by 5-minute breaks that repeat until the end of the work session. This default is borrowed from the Pomodoro Technique, which is a proven technique to optimize focus and productivity (Cirillo, 2006; Scroggs, 2021; Tabackman, 2021). The concept is to block out time for intense work sprints followed by breaks that make these work sprints sustainable; tasks that do not require a full 25-minute focus period are encouraged to be grouped with other small tasks for greater efficiency, and time leftover reserves space for thoughtful reflection. Although the 25/5 interval is most common, some studies have shown promise with 52/17 intervals and 90/20-30 intervals as well (Schwartz, 2017; Scroggs, 2021; Thompson, 2014). That considered, users have the option to customize their intervals and can also adjust the default from the app's settings, but regardless of the specific interval, utilizing time blocks has proven to be remarkably effective for productivity. This technique is helpful for anyone but especially for individuals with ADHD because time blocks help instill a sense of urgency by creating immediate deadlines for tasks that may otherwise feel too far in the future to inspire action. In other words, time blocks break up big tasks into manageable chunks and ground the future in the present, which is often challenging for individuals with ADHD to conceptualize (Manos et al., 2007; Tuckman, 2021).

With the setup complete, the Focus session can begin. During this session, notifications, apps, and websites can be temporarily blocked as customized in the app's settings. At the top of the Focus session screen, the user's intention is displayed as a reminder, and below is a visualization of the time that is passing: a numeric countdown is enclosed in the shaded outline of a circle – that is, the shape of an analog clock – with the shaded fill decreasing counterclockwise around the outline as time passes until the interval is over. Users can swipe the timer horizontally to view completed and upcoming focus and break timers, and acknowledge the progress they have made as well as the work they can look forward to for context. These visualizations help individuals with ADHD manage time-blindness by externalizing the concept of time (Tuckman, 2021).

In addition to those components, the unique functions that set Focus Friend's Focus feature apart from other focus apps on the market are the Encouragement function and Note to Self function, which are displayed as buttons below the timer. These functions contribute to fostering a supportive and holistic work environment distinct from the usual task manager. This is particularly important for individuals with ADHD, who often suffer from low self-esteem and toxic shame due to negative messaging – i.e. “Pay attention!” “Stay still!” “Why can’t you remember?” – that can feel personally targeted, especially as many people are oblivious to the challenges that individuals with ADHD face due to executive function deficits – even those with ADHD themselves (*ADHD and Self-Esteem*, 2019; Cole et al., 2016; Cook, 2014; Harpin et al., 2013; Hoermann, 2009; *How Does an ADHD Diagnosis Affect Self-Esteem?*, 2019; Newark et al., 2012; Sinfield, 2019).

If the user is feeling overwhelmed or otherwise discouraged during the Focus session, they can tap the Encouragement button to receive encouraging words, productivity tips, and

mindfulness tips from Fred. Fred also serves as an accountability buddy who periodically checks in with the user to ask, “Are you still working on your task?” Users have the option to disable this function in the app settings if they find it too distracting, but the more the user uses the app, the better Fred’s AI can learn when the user might need a nudge, both in the general sense as well as the technical sense of behavioral economics, which refers to motivating incentives that influence human behavior (Schweyer, 2017). This can be learned through AI tracking when the user pauses the timer, asks for encouragement, or adds a Note to Self.

The Note to Self function is essentially a distraction manager. However, the button is deliberately labeled “Note to Self” as opposed to “Distraction,” due to the negative connotations of the latter term. By choosing innocuous terminology, users are less likely to be discouraged by the negative messaging associated with distractibility, encouraged to acknowledge the new thought that enters their mind, and able to move forward with the task at hand, unburdened from guilt, anxiety, or otherwise frenzied energy (Mark et al., 2017). When the user encounters a new thought irrelevant to the current task, rather than acting upon it, they can file it away as a Note to Self and return to completing their Focus session. This is especially important for individuals with ADHD, because individuals with ADHD are grounded in the present and prone to act upon their distractions immediately (Tuckman, 2021). However, by filing away their new thought, the app offers a sense of security that the thought will not be forgotten if postponed and can be returned to at the end of the Focus session.

Before exiting the Focus session, users can look back on all the notes they left for themselves and decide how to manage them, such as by integrating the notes with their Tasks. Users can also update their progress on their task if they selected their intention from their Tasks at the beginning of the Focus session. Last but not least, users are asked to reflect on their Focus

session by rating their emotion on a scale of anthropomorphized clouds (mini Freds), a playful format that mitigates cognitive load – compared to that required of typing out sentences, which users might be tempted to skip – while still cultivating a habit of mindfulness.

### ***Mindfulness***

While the previous features approach time management directly, the Mindfulness feature takes a more holistic approach. Mindfulness is all about directing attention with intention, and benefits not only productivity, but also attention/cognition, emotion, and stress management (Davidson et al., 2006; Hariri et al., 2000; Ochsner & Gross, 2005; Urry et al., 2005; Zylowska et al., 2009). All of these conditions are affected in individuals with ADHD, so mindfulness practices are especially beneficial for them.

Focus Friend's Mindfulness feature offers several mindfulness exercises for users to choose from and highlights a meditative 5-Minute Breathing activity on its main screen for quick access. These exercises are adapted from the 8-week Mindful Awareness Practices for ADHD Program (MAPs), which has proven to reduce ADHD symptoms in 78% of participants (Dixon, 2016; Mitchell et al., 2015; Zylowska et al., 2009). To build trust with users and thus increase user satisfaction (Choi et al., 2011; Pu & Chen, 2006; Siau & Wang, 2018), a simple, unintrusive text link – “Adapted from MAPs for ADHD” – to the research is provided at the bottom of the main screen.

Foundational to MAPs is the daily 5-minute breathing exercise, which is appropriately reflected in Focus Friend's own Mindfulness feature. Designed similarly to the Focus session, the Focus Friend's 5-Minute Breathing activity displays a 5-minute timer with a visualization of the time that is passing and additionally displays a visualization of breath. The breath visualization animates a pulsing color gradient in the background of the timer for the user to sync

deep inhalations and exhalations to, which not only promotes self-awareness for a user's own physiological state but also regulates it (Stepanova et al., 2020; van Rooij et al., 2016). The simplicity and brevity of this exercise incentivizes ease and regular practice for the common user (Schweyer, 2017). Users who seek more guided practice can choose from a variety of thematic meditative exercises adapted from MAPs – such as but not limited to Mindfulness of Body, Mindfulness of Emotion, Mindfulness of Kindness, Mindfulness of Presence, and Mindfulness of Walking – as well as community created meditation videos.

## **Competitive Analysis**

While there are several apps on the market that specialize in individual features, Focus Friend is distinguished by its cross-feature integrations between the Planner, Tasks, Focus, and Mindfulness features. In comparison, competitors such as Evernote only offer note taking and task organization capabilities, and require an upgraded plan for calendar integration (*Evernote Personal Features*, 2021); Priority Matrix offer task organization with email and calendar integration, but nothing similar to Focus Friend's Focus and Mindfulness features (*Priority Matrix*, 2021); Focus offer structured focus sessions and basic task organization capabilities without calendar integration (*Focus*, 2021); Headspace offer solely guided meditation for mindfulness (*About Headspace*, n.d.); and Inflow, too, offer only mindfulness practices (*Inflow*, n.d.). Of Focus Friend's key competitors, only Inflow is specifically designed for individuals with ADHD. Considering these competitors, a stark gap in the market emerges, separating productivity-oriented apps like Evernote, Priority Matrix, and Focus from health-oriented apps like Headspace and Inflow. This is the gap that Focus Friend bridges. Not only does Focus Friend unite the functionalities of productivity-oriented apps and health-oriented apps, but it also brings the supportive and encouraging environment characteristic of health-oriented apps to

productivity-oriented goals, which are often approached by singularly-oriented productivity apps in a more businesslike manner.

Focus Friend's comprehensive approach and cross-feature integrations make it competitive in the market, but more importantly, make it distinctively well suited for individuals with ADHD. It is entirely possible for anyone to find their favorite productivity-oriented apps and health-oriented apps for each individual need, but at a certain point, more apps only leave users more vulnerable to overstimulation, distractibility, and disorganization. This is particularly true for individuals with ADHD whose ADHD symptoms are correlated to such conditions (Christakis et al., 2018; Louv, 2005; Ra et al., 2018; Zimlich, 2018). Focus Friend's solution as an all-in-one destination is simple but effective and uniquely holistic.

## **Execution Plan**

### ***Team***

The Focus Friend team will require specialized developers to ensure an efficient workflow. These developers include a mobile app developer for software; a backend developer for database and operating system integration; a DevOps specialist to run, test, and debug code; a frontend developer and designer for the interface; a quality assurance specialist to vet the final product; and a project manager to oversee the team and delegate the project components (Rodrigues, 2020). The technical team will also require a data scientist to analyze the AI component of Focus Friend (WebFX, 2021). Beyond the technical team, Focus Friend will hire an external digital marketing agency that has the infrastructure to manage every step required to deliver Focus Friend to the hands of consumers, and will also partner with six social media influencers to promote the app and generate content for ADHD awareness and mindfulness.

## ***Tools***

Focus Friend will need access to app stores, social media platforms, a mobile app analytic tool, AI, a hosting platform, focus groups, and a payment tool. Major app stores including both the Apple App Store and Google Play Store are essential not only for product distribution and consumer reach in order to maximize profit, but also for accessibility and inclusivity, which are values Focus Friend is predicated on. With regard to accessibility, social media is a powerful yet affordable tool for marketing that has the potential to take Focus Friend beyond just a product and build a supportive community of users who can share tips and resources amongst each other, and which Focus Friend can formally incorporate into future iterations of the app as well. To cater to an expanding user base, a mobile app analytic tool and AI can be utilized to measure, analyze, and anticipate the unique needs of each user in a scalable way and elevate the user experience by learning user behavior for personalization. A robust hosting platform like Amazon AWS or Google Cloud will be needed to store Focus Friend's media-rich data, including but not limited to user account information, feature data, and tracking data (Dogtiev, 2021). However, as much as can be learned with AI, it is important not to prioritize technology over direct feedback from users. Focus groups can offer valuable insight about which features are used and useful, which can be improved upon, and what needs exist for which there may not be a feature for. To ensure the longevity of Focus Friend in order to see those changes through, a consideration of how to make a profit is unavoidable. A free trial will be offered to users, after which users will need to pay for monthly subscriptions. Because app stores take 30% of transactions, Focus Friend will be listed as a free download with in-app purchases in order to circumvent that fee

(Gronholm, 2019). In-app purchases, then, can be made on an external website rather than through the app store.

### ***Budget***

The initial budget for Focus Friend is \$1,128,440 for the first year. This accounts for 135 hours and \$72,000 in development for the app itself, app store integration, and in-app payment method (Cleveroad, 2018; Z1, n.d.); \$766,737 for the technical team's salary, covering six developers and one data scientist (Zippia, n.d.); \$1,200 for six social media influencers paid at \$100/hr for two hours worth of content creation each (Gallant, 2021); \$13,500 for the external digital marketing agency paid at \$100/hr for 135 hours (Viebrock, 2021; MilesHerndon, 2018); and \$153,000 for custom AI development (WebFX, 2021). After the initial expenses, more money will need to be budgeted for app maintenance into the future. Software maintenance covering analytics, bug fixes, and customer support will cost 20% of that of initial development, which comes to \$14,400/yr (Dogtiev, 2021); hosting will cost \$2,340/yr; licensing will be managed in-house costing \$80,600, which include using the devOPS person to manage the system, being \$59,400/yr for the software (Dogtiev, 2021; Helppi, n.d.).

In total, app maintenance and salaries will come to \$842,877/yr for the subsequent years.

### ***Roadmap***

Focus Friend is expected to launch within six months of research and development (Ellison, 2021), accounting for – in series and in parallel – two weeks for proposals; five weeks for research; six months for design sprints, prototyping, and development; and two weeks for app store deployment (Barrow, n.d.). Post-launch, the team will monitor app engagement and assess the success of features. Small bugs can be quickly fixed, and major bugs can be addressed

around the same time as major feature updates, as is common in the tech industry (3 Sided Cube, 2020). The first major update will likely come six months after the initial launch, considering two weeks of development per feature, several weeks of iterations, and two weeks for app store approval (3 Sided Cube, 2020). The priority for the first major update will be launching a desktop version of the app to allow for greater accessibility, integration, and convenience. Greater account customization – such as thematic background color schemes like Midnight, Dawn, and Sunrise – is another update Focus Friend intends to offer. To remain competitive, Focus Friend aims to have one million users within the first year of operations.

### ***Go-to-Market Strategy***

To reach target users, Focus Friend will partner with social media influencers and educational institutions. Social media influencers will be given early access promotional codes offering their followers a two-month free trial celebrating Focus Friend's beta launch, which will occur two months into initial development. This leaves time for more testing, iteration, debugging, and research before the official launch date six months into operations. All the while, with the beta version in front of consumers' eyes, social media influencers along with early users can generate buzz through word of mouth before the product is officially launched while developers continue to perfect it, working out kinks that appear in real-world conditions that might not have otherwise been noticed in development. Partnerships with educators at academic institutions would work similarly, with the additional benefit of providing an immediate context where Focus Friend can offer users practical and observable advantages: completing schoolwork and adopting mindful habits while doing so. In solidarity of students and in support of their

education, Focus Friend will incentivize students with a bargain at 50% off utilizing their school email and until they graduate.

### ***Financial Model***

The pricing for Focus Friend will be a subscription of \$4.99/month following a generous two-month free trial. This scheme places Focus Friend as one of the most affordable amongst its competitors (see Appendix B). The extended trial period serves to give a prospective consumer time to integrate Focus Friend into their daily routine so that by the time the free trial ends, it would feel only natural to continue using the app. To break even with the initial budget, Focus Friend will need 225,688 paid subscriptions, then another 168,574 paid subscriptions per year to keep the app running, with annual maintenance and salaries in consideration. Given Focus Friend's impressive cross-feature integration and affordable pricing, reaching and even surpassing these numbers is feasible.

### **Conclusion**

Focus Friend is the first app of its kind to help individuals with ADHD optimize productivity and health in tandem. A cross-feature integration solution like this is ripe for future expansion, and while new feature integrations will continue to lay the foundation of the app, Focus Friend has the potential to be so much more than just a product. Its impact can unify a supportive community of users who can recognize and validate each other and the everyday challenges they face that are often devalued as personal deficiencies. Focus Friend, then, has the potential to become a resource for education about ADHD.

While Focus Friend is created specifically for the benefit of individuals with ADHD, it is generally the case that when designing for disability, all of society benefits (Abrahams, n.d.; Roy,

2015). Sidewalk cut-outs, initially created to make it easier for people in wheelchairs to get around have made life easier for anyone pushing a stroller or pulling a wheeled suitcase, and for delivery people with wheeled dollies (Abrahams, n.d.; Roy, 2015). The same can be said for wheelchair access ramps into buildings or establishments. Automatic doors also benefit anyone who has their arms full, the lack of contact with the door handle is more hygienic, and they can save buildings money on heating since they can open when needed instead of being propped open (Abrahams, n.d.). When it comes to disability design benefiting all, Focus Friend is expected to be no different.

In today's economy, nothing is more valuable than capturing attention, and technologies have evolved to exploit every advantage by tapping into aspects of human psychology, leading to an era of perpetual digital distraction (*The Attention Economy*, 2021). Contemporary society exists in an era of constant information bombardment, and this repeated exposure to online media drives a cognitive shift from in-depth intellectual processing such as focused, critical thinking toward rapid autopilot processes like skimming and scanning. This involves shifting brain activity from the hippocampus (the region associated with deep thinking) to the prefrontal cortex (the region associated with rapid subconscious processes). This results in a shift toward favoring speed over accuracy, and impulsivity over deliberate, thoughtful judgment, with the end result being a degradation in attention that causes ADHD-like behaviors even in neurotypical individuals (Chamorro-Premuzik, 2014). Focus Friend's primary mission will always be to support individuals managing the impacts of ADHD on their lives, but it will likely provide similar benefits to the general public in this age of never-ending distraction.

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## **Appendix A**

### Contributors

The concept for Focus Friend was directly inspired by Kimberly Hardy's personal experience with ADHD. Together, Hardy, Audrey Lin, and Taylor D'Ambrosio compiled a comprehensive document of literature about ADHD, identified and defined key challenges facing individuals with ADHD corroborated with Hardy's personal experience, and brainstormed the four key features of Focus Friend. Hardy led the initial sketches, upon which the team of three discussed each feature to more fully realize them. Following, Lin iterated upon the sketches and designed the Prototype and design elements, making adjustments as suggested in team discussions. For the paper, Hardy authored the Executive Summary, Idea, and Target User Analysis, and co-authored the Conclusion; Lin authored the Product Features & Literature Review and Competitive Analysis, and co-authored the Conclusion; and D'Ambrosio authored the Execution Plan. While all team members were involved in all aspects of the project, D'Ambrosio took the lead with the Execution Plan, breaking down the logistics and visualizing a practical strategy to present Focus Friend to the world.

## Appendix B

Company	Features				Pricing (minimum plan)
	Planner	Tasks	Focus	Mindfulness	
<b>Focus Friend</b>	X	X	X	X	\$4.99/mo
<b>Evernote</b>	(X - with next tier pricing)	X			Free (Next tier: \$7.99/mo)
<b>Priority Matrix</b>	X	X			\$8.00/mo
<b>Focus</b>		X	X		\$4.99/mo
<b>Headspace</b>				X	\$12.99/mo
<b>Inflow</b>				X	\$22.49/mo

Appendix B. Competitive analysis.

## Appendix C

<b>Position</b>	<b>Salary ( US Dollars per year)</b>
Mobile App Developer	118,000
Back-end Developer	114,608
DevOPS Specialist	176,468
Designer/Front-end Developer	93,661
Quality Assurance Specialist	76,000
Project Manager	94,000
Data Scientist	94,000
<b>TOTAL: 766,737</b>	

Appendix C. Salary breakdown by position.

## Appendix D

Expenses	Amount (US Dollars)
Salary	766,737
AI	153,000
Licensing	80,600
App Development	72,000
Software	59,400
Maintenance	14,400
Digital Marketing Agency	13,500
Focus Group	8,000
Hosting	2,340
Influencers	1,200
<b>Overall Budget: \$1,971,317</b>	

Appendix D. Overall budget for Focus Friend.

## Appendix E

Objectives	Timeframe
Writing the proposal of Focus Friends. Hire a digital marketing agency to work alongside through everything.	2 weeks
Researching for Focus Friends Development, including using a focus group to find which ideas are successful with the target audience.	5 weeks
Creating Sprints and Solidify the Idea	7 weeks
Developing and Prototyping the App. Start promotion with influencers and Focus Friend's social media account, have a marketing plan.	8 weeks
Deploying the App to App Store	2 weeks
Monitoring the App	10 weeks
Designing Feature Update	2 weeks
Getting Approval for Update in App Store	2 weeks
Achieving 1 million users	1 year

Appendix E. Roadmap breakdown.

## Appendix F

### Prototype

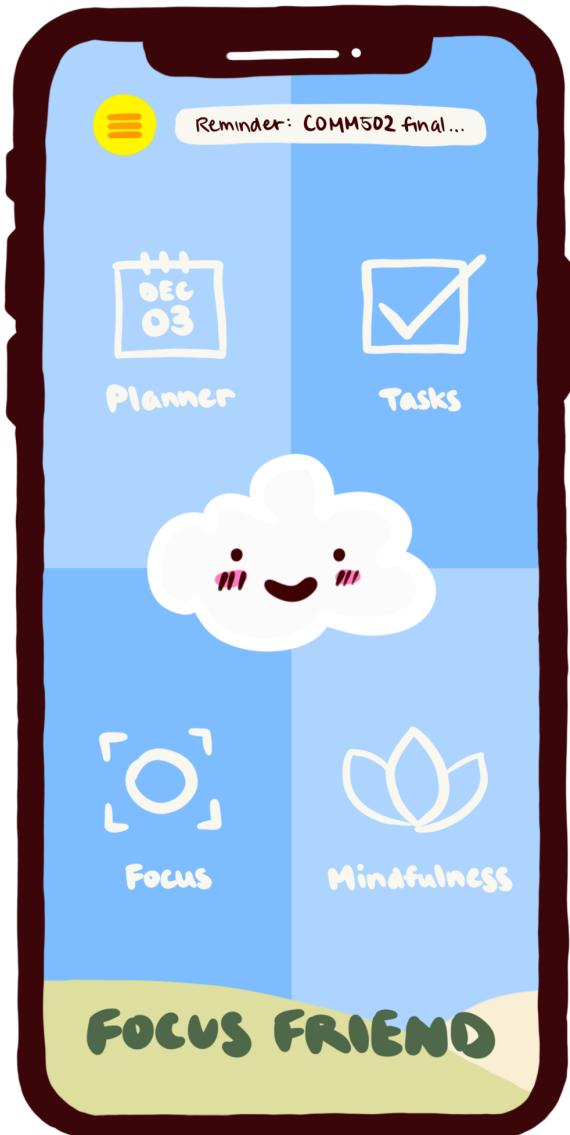


Figure F1. Home screen.

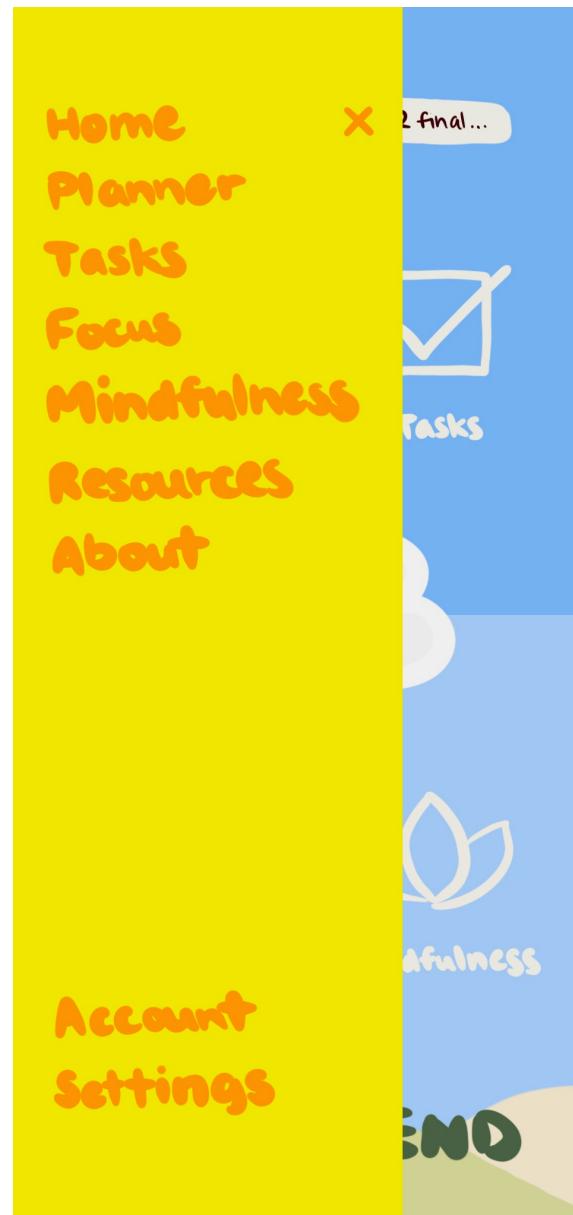


Figure F2. Home screen overlaid with expanded hidden menu.



Figure F3. Planner screen: daily view.

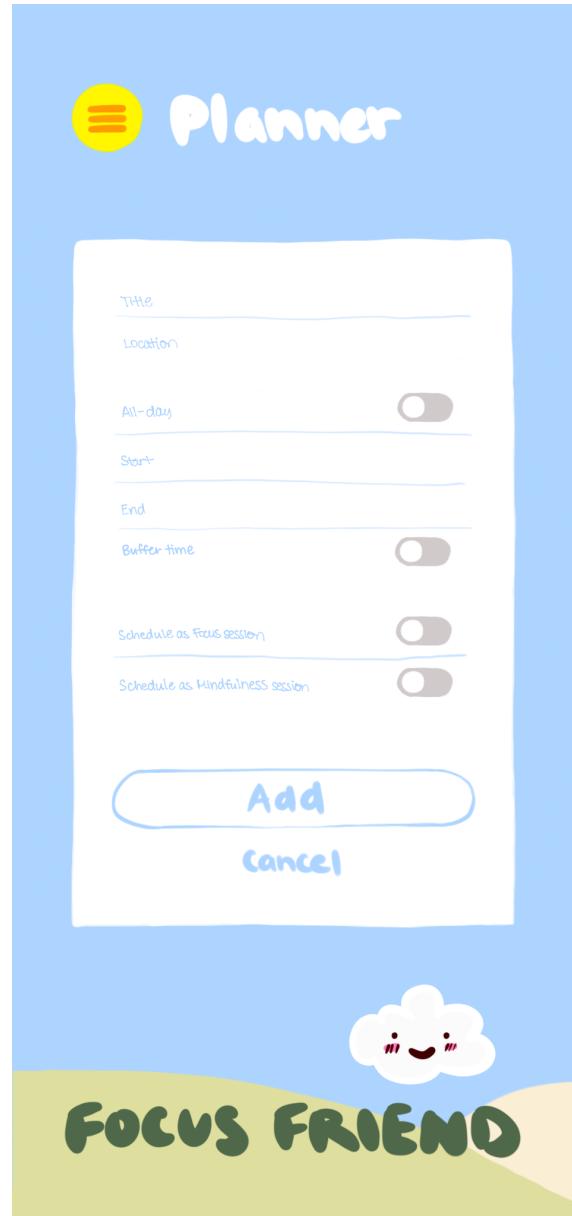


Figure F4. Planner screen: add entry.

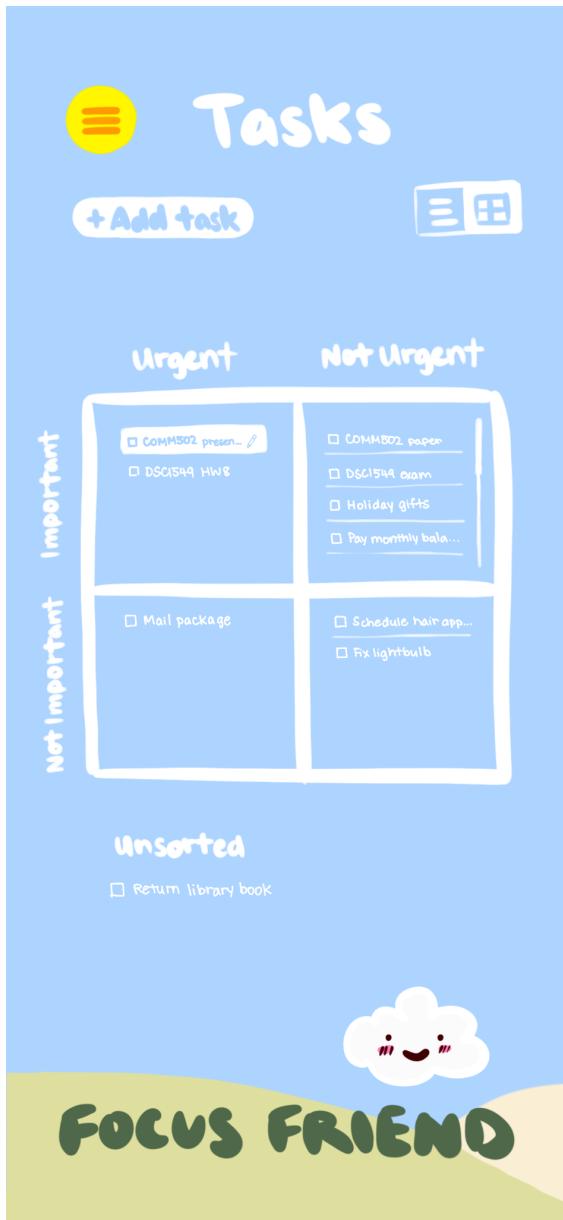


Figure F5. Tasks screen: matrix view.

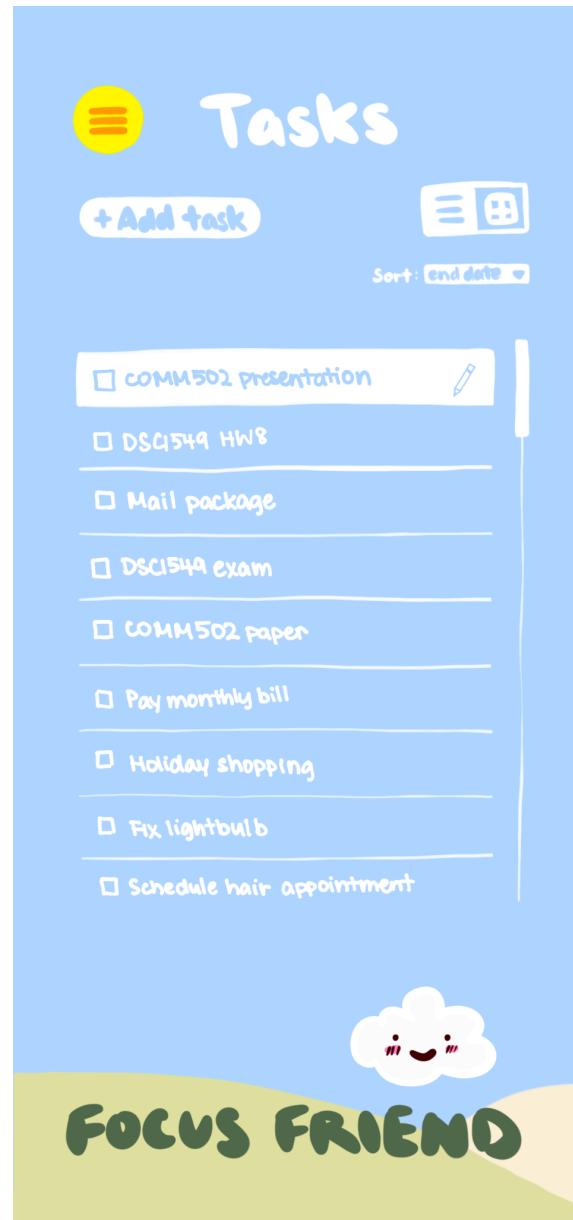


Figure F6. Tasks screen: list view.



Figure F7. Focus screen: Focus session setup with opening prompt.

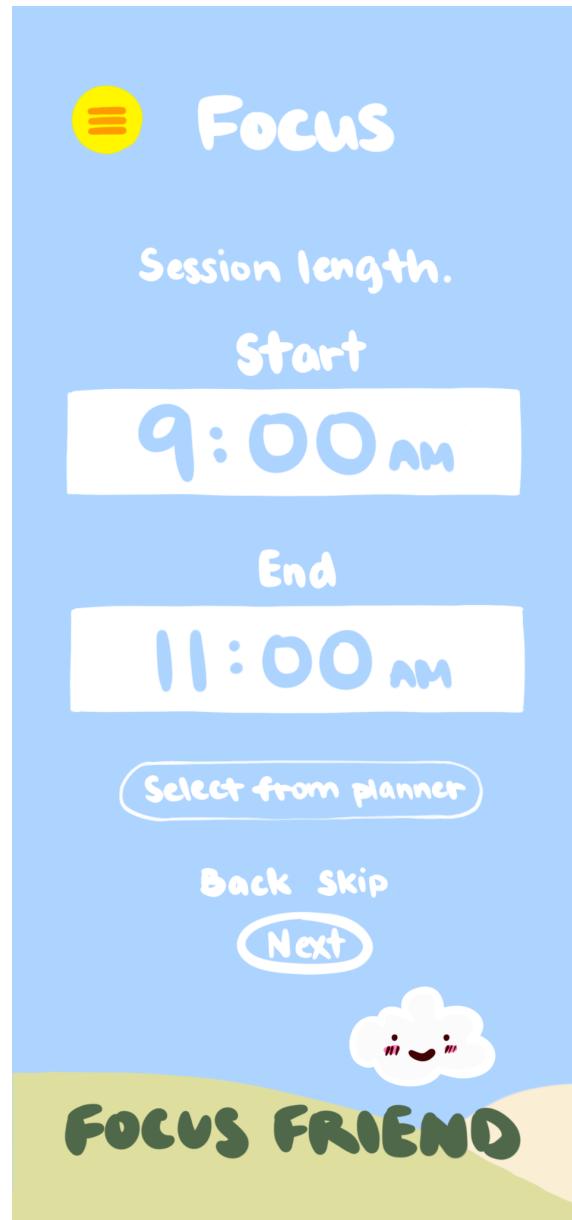


Figure F8. Focus screen: Focus session setup with session length.

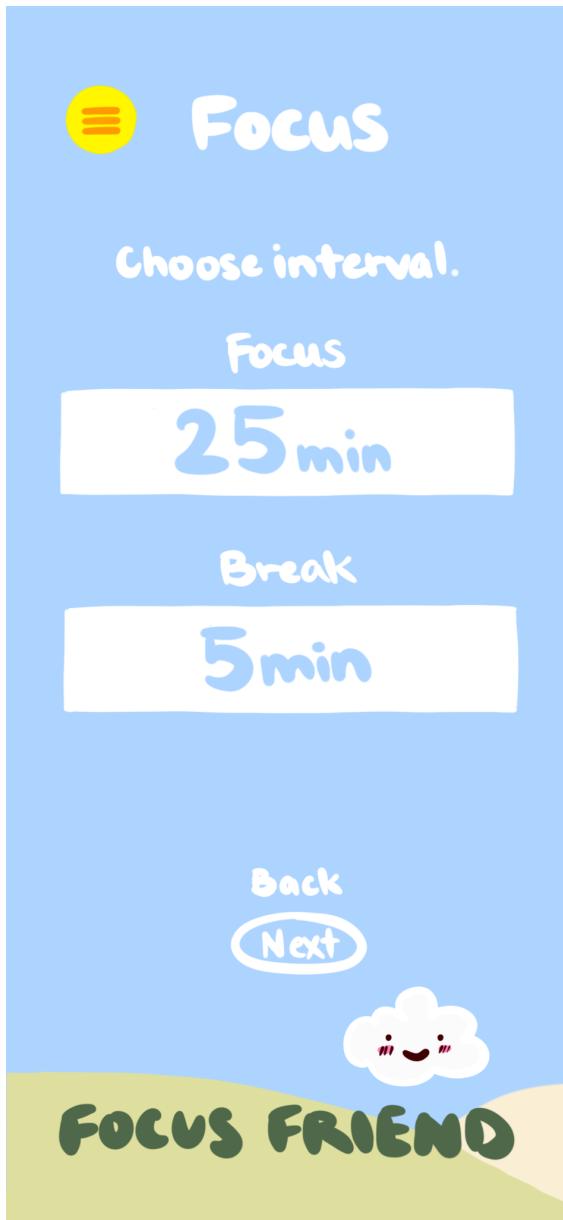


Figure F9. Focus screen: Focus session setup with interval length.

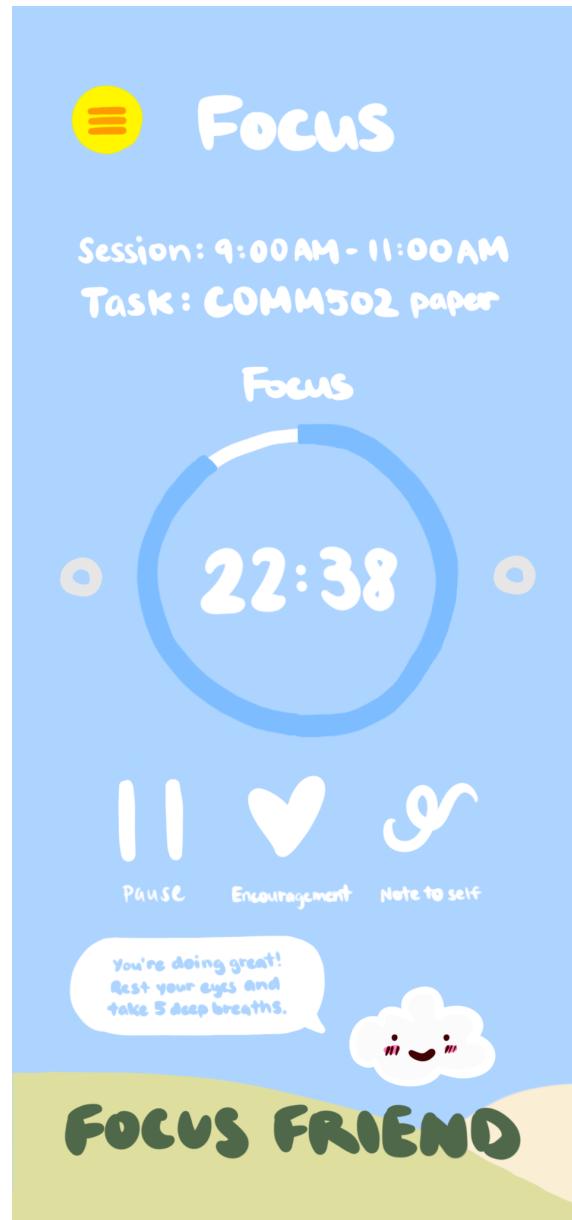


Figure F10. Focus screen: Focus session.

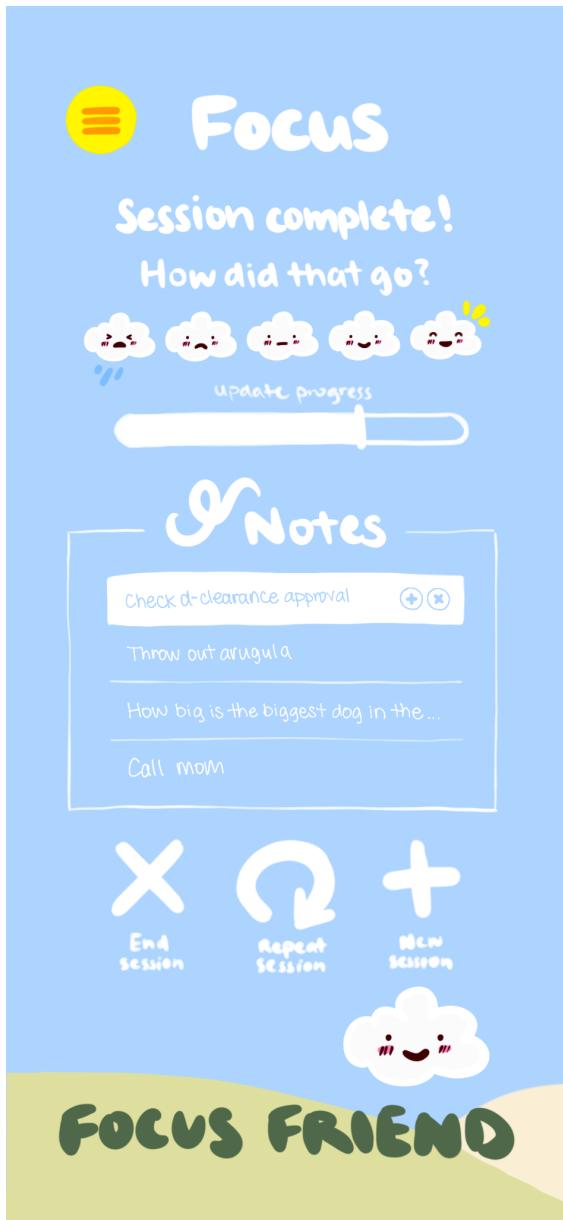


Figure F11. Focus screen: end screen.



Figure F12. Mindfulness screen: main screen.



Figure F13. Mindfulness screen: 5-minute breathing session.



Figure F14. Mindfulness screen: Exercises menu.