Digital Detox and Mental Wellbeing Application

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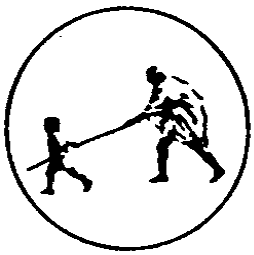

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

Mahatma Gandhi Mission's College of Engineering, Nanded (M.S.)

Academic Year 2025-26

A Project Report on

"Digital Detox and Mental Wellbeing Application"

Submitted to

DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE

in partial fulfillment of the requirement for the degree of

BACHELOR OF TECHNOLOGY

in

COMPUTER SCIENCE & ENGINEERING

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Academic Year 2025-26

Certificate

This is to certify that the project entitled

"Digital Detox and Mental Wellbeing Application"

being submitted by ***Ms. Vedika Vijay Lohiya, Ms. Aditi Nilesh Mane, Ms. Vedanti Nagesh Lavekar, Ms. Isha Shivraj Jadhav*** *to the Dr. Babasaheb Ambedkar Technological University, Lonere, for the award of the degree of Bachelor of Technology in Computer Science and Engineering, is a record of bonafide work carried out by them under my supervision and guidance. The matter contained in this report has not been submitted to any other university or institute for the award of any degree.*

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ACKNOWLEDGEMENT

We are greatly indebted to our project guide, **Mr. Pankaj P. Pawar**, for his able guidance, and we would like to thank him for his help, suggestions, and numerous helpful discussions.

We gladly take this opportunity to thank **Dr. A. M. Rajurkar** (Head of Computer Science and Engineering, MGM's College of Engineering, Nanded).

We are heartily thankful to **Dr. G. S. Lathkar** (Director, MGM's College of Engineering, Nanded) for providing facilities during the progress of the project and for her kind guidance and inspiration.

Last but not least, we are also thankful to all those who helped directly or indirectly in the complete and successful development of this project.

With Deep Reverence,

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ABSTRACT

The rapid growth of smartphones and digital platforms has significantly transformed modern lifestyles, improving convenience and connectivity while simultaneously increasing screen dependency and negatively impacting mental well-being. Excessive use of digital devices has been linked to reduced productivity, emotional stress, poor concentration, and unhealthy behavioral patterns across all age groups, including adults and children. Addressing this growing concern requires solutions that go beyond basic screen-time tracking and focus on long-term behavioral change and mental health support.

This project presents the design and development of a Digital Detox and Mental Well-Being Mobile Application that provides a comprehensive, user-centric approach to managing digital habits. The application is built using Flutter for cross-platform compatibility and Firebase services for secure authentication, real-time data synchronization, and scalable cloud storage. The system integrates multiple modules, including Adult Mode for mood tracking, journaling, guided meditation, and affirmations; Kids Mode for parental control and supervised screen-time management; Detox Mode for voluntary app blocking, timers, and gamified habit formation; and a Detox Buddy System that promotes accountability through social collaboration.

By combining principles of behavioral psychology, gamification, and mental wellness practices, the proposed system encourages mindful technology use rather than enforcing rigid restrictions. The application empowers users to understand their digital behavior, build emotional awareness, and develop sustainable healthy habits. Overall, this project demonstrates how thoughtfully designed digital tools can promote balanced technology usage, enhance mental well-being, and contribute to responsible digital citizenship in today's technology-driven society.

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INTRODUCTION

Due to the fast development of mobile phones and electronic platforms, the way that humans live, work, and communicate with each other has drastically changed. Technology has simplified a large portion of our daily tasks and offered opportunities that were previously unavailable to us, however, it has also increased our dependence on screens and our time spent looking at those screens. Today, many people are accidentally spending large amounts of time using apps (for entertainment), watching videos or scrolling through social media. Due to this trend, digital well-being has become an important area of interest as we become aware of how it is affecting our relationships, productivity and mental health over the long term.

Digital Detoxing has been a growing interest among many people to help them find ways to bring back a balance between how they use their technology and how to enjoy being active in the real world. Rather, the idea of digital detoxing does not mean completely stopping all your use of any technology, it means knowing how to use technology mindfully, and having controlled uses of technology in your life. This includes being aware of your own behaviours, developing appropriate boundaries that allow you to be healthy when using technology and regaining your ability to focus and be productive again in your everyday life. Digital Dependency is increasing among people of all ages, from adults through to teens, and even children. With this increase comes the need to create tools that will enable people to use their devices in a more healthy and balanced way.

The Digital Detox & Mental Health app will have unique functions for three major user demographics: adults, kids, and teens. This app will also provide self-improvement tools for users through a combination of parental control features and the ability to play games that can help people reduce their time spent on platforms designed to provide entertainment. In order to achieve this, we will create the app using a methodology that combines behaviorist psychology with user-friendly technology and enables users to take increased control over their digital lifestyles and ultimately achieve a higher quality of life.

1.1 Motivation, Necessity and Background of a Digital Detox

In recent years, the increasing number of users utilizing smartphones and other computer-based platforms has allowed for a fundamental shift in the ways we communicate, learn, and work. Technology has helped create an easier life and created a high level of access to many sources of information due to the easy user interface. However, as technology has become easier to access, users have begun to use technology at an excessive level. The result is that many individuals spend hours each day scrolling through their favorite social media platforms, playing video games or engaging in Digital entertainment.

These individuals are so attached to their devices that they are unable to concentrate on anything else, have difficulty sleeping, become emotionally drained and struggle to manage their time effectively. Because of this growing concern across all demographic groups, Digital detox has emerged as a necessity for those who want to break free of this pattern of excessive use of technology. Since children and adolescents have a shorter time to interact with their family and friends than do adults, they are at greater risk of developing "screen addiction" due to being exposed to screens for longer periods of time. Adults are also struggling with a balance between how often they use devices for work and how often they use them for entertaining themselves. As a result of this growing awareness of digital wellness, there is now increased urgency for the establishment of programs that focus not only on raising awareness of one's digital habits, but also on helping individuals to build an intentional mindset about how they are utilizing their screens.

Digital wellness systems are becoming increasingly available in the marketplace, but the vast majority of current systems do not provide sufficient resources for both the overall mental health and emotional well-being of each individual, as well as the capacity of users to motivate and control themselves, and their family members, through digital tools. Therefore, it is important to create a comprehensive and holistic digital wellness system that provides digital tools, including mood tracking, meditation guides, journals, and detoxifying empowerment features, in order to allow users to successfully live a healthy lifestyle.

1.2 Aim and Objective

Digital device usage has reached unprecedented levels, and with the increasing availability of the technology to deliver fun, entertaining experiences, more people are now interacting

digitally than ever before. This increase in digital device usage has created problems, including reduced productivity and impaired mental well-being and has contributed to the development of unhealthy digital habits.

Most people cannot effectively manage their screen time when using engaging platforms such as Instagram, YouTube, and video game applications. Children and teenagers are at a higher risk of creating early patterns of digital dependency because of a lack of proper monitoring by their parents or guardians. Thus, there is a demand for a method to assist people with understanding how their digital habits affect their lives.

While existing applications offer to track or enforce limits on digital usage time, they do little to assist individuals in identifying and correcting the underlying emotional and behavioural issues related to excessive consumption of digital media. Because of this lack of personalized digital utilization tools, even when users are given feedback about their digital habits, they will not have any means of creating sustainable behavioral change. This scenario indicates a large research gap. Specifically, it highlights the need for a single integrated platform to address the multifaceted nature of digital detoxing behavioral motivation for individuals, mental well-being, parental monitoring of children, and voluntary habit formation.

1.3 Scope of the Application

There are two major functions for the Digital Detox and the Mental Wellbeing Mobile Application. The first function is to provide an incentive-based structure designed to enhance the user's relationship with technology and promote emotional stability. The second function is to increase users' self-awareness, develop mindfulness practices and direct users on how to conduct themselves differently. The App will provide each user with multiple options tailored to their unique circumstances (age & goals). The Multi-Levels of the App are intended to decrease reliance on screens for users and to enhance mental clarity and productivity on a daily basis.

The primary purpose of the App is to provide users with the ability to improve their mental health through Mood Tracking, Journaling, Guided Meditations and Daily Affirmations. The combination of these activities will enable users to better recognize their emotional patterns and build coping strategies to manage the stress and anxiety that occur

due to prolonged use of their devices. In addition, users will be able to give their children with Safe and Secure Parental Controls.

The technology can be used for many different types of users and purposes, including personal wellness, family, and self-improvement journeys. Customizable Limits is built on Google's Flutter mobile development platform, which allows users to access the app from different devices seamlessly. The overall vision of this application supports a balanced approach to merging the technical aspects of developing a usable and functional product with a positive user experience while meeting long-term health, wellness, and fitness goals in today's Digital Age.

1.4 Significance for Mental Well-Being and Society

Rising connectivity from where we live to the very popular digital platforms is causing increased concern regarding mental health. With an increase in the volume of communication each day through online means, many people have an emotional overload and find it much harder to be "off" and to have a mental recuperative period. This application was designed to help encourage mental wellness by establishing structured methods for users to connect to nature and disconnect from their busy lives, while giving them the opportunity to build internal habits and create tools for building Emotional Resilience.

By offering parents a safe way to monitor their child's activity through secure features, as well as customizable parental controls, the system promotes healthy habits for youth and decreases exposure to harmful digital experiences at an early age. By teaching youth how to manage their time and attention in the present and future, they will grow up with an understanding of how to manage their time and attention effectively, which will be increasingly relevant in the future in a technology-based world.

Digital habit changes have benefits for the individual that are seen in the workplace, classroom and within their social lives. Individuals who improve their digital habits will be more able to concentrate on the task at hand and will form better relationships with others, leading to lower levels of emotional stress. Digital habit changes are not only an individual benefit, but they provide a positive impact on the development of a more balanced and mindful culture towards digital usage. The project will also provide users

with the tools to create a lasting change toward more responsible digital citizenship as well as towards their own personal well-being.

1.5 Organization of the Report

This report outlines a comprehensive understanding of the Digital Detox & Mental Well-Being Application through its chapters as they lead readers from base concepts through the design specifics of the digital wellness tool. The report starts with a discussion of the project and motivation & continues with details regarding the technical components of the application. By following this path, the reader will better understand how the ideas in this report developed, & how the decisions that made up the application were made.

In Chapter 1 of this report, there is a comprehensive overview of what is covered in this report such as the context of this project which includes; background, need for this project, research gap, objectives, and significance. Chapter 2 builds on chapter 1 and introduces the literature regarding digital addiction, mental well-being, and current available wellness tools to support your well-being by outlining the gaps within the current tools that have inspired the proposed solution. Chapter 3 describes how the system has been architected; what are some of the users' requirements; and how the various functional components have been designed to support the intended operation of the application, forming the basis for how the application works. In Chapter 4 the design methodologies, module structures, database designs, and user interface considerations related to the construction of the application are described.

The fifth chapter of this project will not only outline the success we expect from our working model but also provide guidelines for measuring success within the Working Model of the proposed solution, and the specifics needed to create a more robust solution in the future. The combined result of this report is to show how technology will change the way in which we are connected and communicate with one another, and how this will affect this project. The other area where this project can be helpful is as a starting point for developing Digital Detox and Mental Wellness Applications, with information on actions that can be taken to address the negative impact of too much digital technology on an individual’s emotional health, day-to-day routine, physical and emotional wellness, and social interactions. Chapter five also took an in-depth look at numerous data points and metrics to gain insight into the increasing need for structured approaches to help individuals

manage their digital behavior. The chapter has not only thoroughly examined the components of digital wellness products but it also established what is still needed within digital wellness products. In addition, the chapter identified the current gap in research that will be addressed through this project.

The identified goals and objectives of this project, as shown through an overview of the project scope, demonstrate that the project will produce a complete user-centered digital wellness system that supports mental wellness through guiding individuals in their digital behavior and responsible use of technology across all age groups. In addition, Chapter 1 will provide a sufficient foundation to understand the importance of developing healthier digital behaviors for individuals and communities. As such, Chapter 1 summarizes the components noted in Chapter 1 and thus prepares the reader for the in-depth literature review and system analysis discussed in subsequent chapters.

Chapter 2

LITERATURE REVIEW

Digital technology has become part of life so rapidly that individuals have begun to do many research projects on how humans' behaviors, mental health and lifestyles are all affected by ongoing access to or use of technology. Smartphones & online platforms are constantly improving & are providing increased opportunities to communicate & educate oneself, but they are also creating increased risk factors associated with excessive use/dependence on technology.

The impacts of digital technology on daily lifestyle behaviors must be understood through the lens of extensive digital literature which has been developed by a variety of people/countries, & informs digital addicts about how people respond when they are addicted to a digital device, & what wellness strategies many cultures are adopting to deal with digital addiction & digital behaviors. Evaluating previous studies has informed the development of the theoretical framework needed to create an effective way to develop digital detox programs.

By comparing various solutions to current digital detox tools, the chapter highlights the gap between what is currently being developed to promote long-term behavior change and what works effectively to support long-term behavior change of digital users. The synthesis of research study findings, behavior theories, fun activities related to digital wellness and currently available digital wellness programs creates this chapter's foundation for the solution being proposed. The review has shown how digital detox is a concern and demonstrates how a holistic approach that includes features such as Mental Wellness, Parental management of screen time use, and using Gaming techniques as part of the detox experience can fill the gaps of current technology in order to create a better consumer experience.

2.1 Digital Addiction: Definition and Global Trends

Digital Addiction is a behavioral pattern in which individuals have an uncontrollable, excessive desire to use digital devices, web-based applications, or digital content; however, unlike conventional addictions that consist of substances, digital addictions develop from the compulsive engagement in which users desire to seek stimulation from digital devices

to obtain entertainment or validation. Such activities often interfere with everyday activity, distract the user from being able to think clearly and create a challenge for them to separate their physical world from their digital world. Scientists believe that Digital addiction is a modern-day behavioral issue caused by the accessibility of Digital devices and Instant Gratification, as well as notifications from Digital devices.

Digital addiction is a growing global issue due to the increasing number of people using smartphones and accessing the internet. In countries with a high level of technology adoption (for example, USA, India, China, and South Korea), there are increasing numbers of children, adolescents, and employed adults who are dependent on screens. Research has shown that users of all ages are spending many hours each day on apps that are made to get their attention, which includes social media, short video platforms and games. The increase in the amount of time that users spend in this way has resulted in the World Health Organization (WHO) and other mental health researchers recognizing that the excessive use of technology poses a threat to emotional and cognitive health.

The growth of digital addiction is part of a change in the way we live our lives, where people are engaging with technology instead of having in-person interactions, being physically active and taking the time to recharge (or rest) their brains. There are now established patterns of growth in global average daily screen time that continue to increase each year. Thus, as this issue has worsened, it has become a significant public health issue. The increased awareness of this problem has created a need for the creation of digital wellness tools, educational programmes and policy-level guidance to assist in balancing the use of technology. The understanding of these patterns is important for further developing the creation of programs to help establish healthier patterns of digital behavior.

2.1.1 Impact of Excessive Smartphone Use

The usage of smartphones can affect an individual in numerous ways, such as physically, emotionally, mentally, and socially. The people who have a habit of using smartphones frequently come across a problem such as a lack of attention and inability to focus on a particular task which takes a considerable amount of time to complete. Apart from this, this habit of frequently switching from one application to another makes an individual mentally tired. Excessive usage leads to disruptions in sleep cycles because of the blue

light produced by smartphones, resulting in poor sleep and various health problems such as stress and a weak immune system.

Fig 2.1 Daily average screen time per person worldwide (2013-2024)

The above graph Fig 2.1 shows Global Trends in Digital Usage and Addiction. The first chart tracks the daily average screen time per person worldwide, serving as a key indicator of increasing digital dependency. Emotionally, excessive smartphone usage can be associated with an increase in anxiety levels, especially when people have a habitual desire to be connected or up to date. Users experience a 'fear of missing out' (FOMO) due to which they keep checking social sites and messaging sites. Such sites make people moody and pharmacologically dependent on social validation. In younger people, excessive exposure to fast-paced digital content impacts their handling of emotions and impulsive behavior.

On a social level, excessive usage of smartphones leads to a degradation of the quality of social communications. As a consequence, people prefer online communications to actual social communications, leading to a degradation of social relationships and social isolation of people. In addition, children and teenagers will withdraw into cyber space in order to indulge in playing games, watching videos, and using social sites.

2.1.2 Behavioral Psychology Foundation

The awareness regarding digital addiction is heavily grounded in behavioral psychology, which defines how digital experiences lead people to exhibit behavior related to seeking rewards. A large number of apps function in a manner where infinite scroll, notifications, and personalized content are incorporated, which work under the stimulation of the reward

centers in a human brain when these elements come into interaction with people. As people make use of these elements, they immediately experience a burst of pleasure.

Additionally, behavioral psychology puts emphasis on reinforcement processes. Variable reinforcement with randomly observed rewards is a major element in digital addictive behavior. Some people will keep on refreshing their social media page for expected likes, comments, or posts.

2.2 Mental Well-Being and Technology Usage

As smartphones, social media, and the internet have become integral to the way we live our lives each day, the impact of technology on mental health continues to grow. Even though the convenience of using technology is great, being continuously connected to digital content creates an environment of overstimulation. The digital world creates habits of continually needing to respond, scroll, and remain "in the know," which breaks down natural cognitive rhythms, resulting in users having minimal opportunities for uninterrupted periods of cognitive recovery and ultimately causing gradual deterioration of emotional table and increase in mental distress."

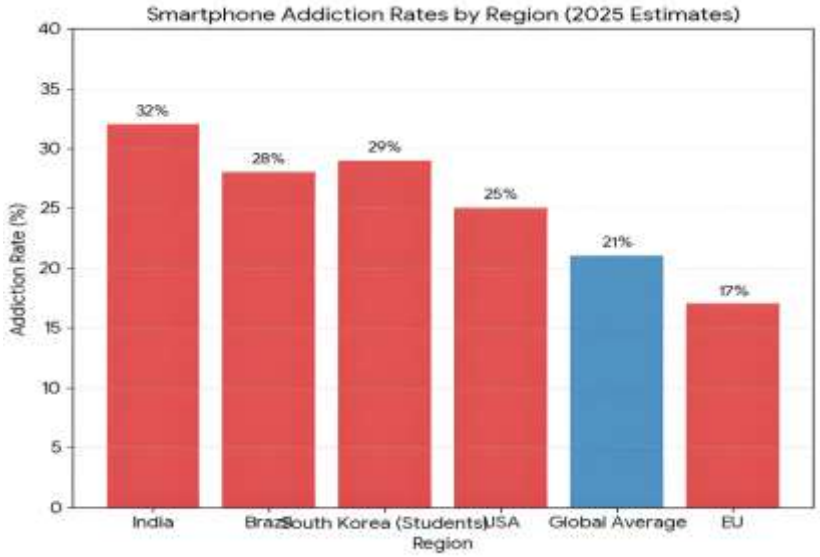

Fig 2.2 Percentage of Smartphone addiction rates by Region

Above Fig 2.2 shows highlights the percentage of the population meeting the criteria for smartphone addiction in selected regions as of 2025 estimates. Online emotional abuse creates another type of circumstance. Most online social platforms can create an unrealistic and filtered reality for an individual or end up making a person compare their lives to other people in order to end up with a sense of inadequacy, anxiety, and discontent. If a kid builds

a self-image based on such kinds of comparisons when they are using online social sites, this will definitely affect their social conduct and self-perception when they are not on the internet. Moreover, adults go through emotional fluctuations based on getting social validation from connections in social sites they are in. Such interaction with the online world is an indication of how strong online influence can be in terms of dealing with emotional issues.

In spite of such difficulties, technology can be a positive force when used in a planned way. A variety of research studies have emphasized the benefits of technology such as cognitive support for mental well-being. Some such benefits include cognitive assistance in 'guided meditation apps, mood-tracking systems, and digital journals.' Such technology assists with self-reflection and self-regulation if it is used in a planned manner in people's lives. Being aware of both the negative and positive effects of technology is an important step in creating an application for a digital detox to improve people's mental well-being by using technology in a mindful way.

2.3 Digital Detox Approaches: Existing Techniques

Several ways of detoxing digitally have gained popularity as many people nowadays understand the need to take care of their relationship with technology. Among the most common approaches is making deliberate breaks from digital devices, often by scheduling specific "offline periods" in the day. These simple yet effective strategies promote a sense of control and reduce the urge that makes one repeatedly want to check their devices.

Another critical method involves the minimization of digital overstimulation through changes in the way people interact with their gadgets. Disabling non-essential notifications, limiting times for social media, or changing the display to grayscale reduces impulsive phone use. The person will, in due course, become more aware of emotional and situational patterns, like boredom or stress, which affect their digital consumption and can apply mindful use more effectively.

Aside from personal approaches, technological tools have risen as an organized intervention for digital detox. Focus timers, website blockers, & screen limitation apps build an environment where digital boundaries are easily maintained. Group-based & community-driven detox practices have also gained traction, especially among young adults & professionals seeking accountability.

A collaborative aspect is given to the process through participation in digital detox challenges, wellness groups, or mindfulness programs. These various methods incorporate social encouragement, shared goals, and peer influence to make digital detox both more palatable and more 'sustainable'. These methods collectively prove that digital detox encompasses much more than device restrictions alone: it includes behavioral awareness, emotional regulation, and supportive tools that favor long-term digital well-being.

2.4 Survey of Existing Digital Wellness Application

As concerns surrounding excessive screen time and reliance on digital devices have increased, digital wellness apps have grown into a solution to resolve these issues. Digital Wellness Apps typically provide users with an understanding of their digital habits through detailed screen time reports, activity summaries, and personalized usage data. The below Fig 2.3 illustrates common digital wellness strategies adopted by users, highlighting the growing role of app-based tools in promoting healthier screen habits and mental well-being. It visually emphasizes how structured interventions such as screen-time control, wellness tracking, and habit-forming incentives are increasingly used to manage digital behavior.

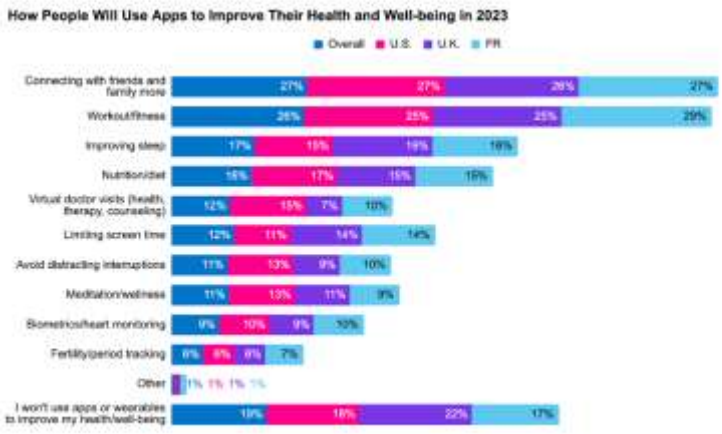

Fig 2.3 Health and Well-Being App Usage Patterns in 2023

These new ways of visualizing and representing data give people an awareness of their own digital behaviors, and allow them to identify any areas where they may want to change.

Many of these apps help users limit their access to distracting apps by creating timeclocks or providing incentives to stay off their devices for set periods of time. Many offer rewards such as virtual trees, streaks, or progress badges to encourage continued growth toward this

goal. These apps aim to help users break their habit of checking their phones impulsively by providing them with structured support to remain engaged with offline activities.

Apps that offer emotional wellness and psychological wellness fall within the definition of digital wellness. The same would hold for apps that enable users to manage their screen time. There are many companies that provide various forms of mindfulness such as Calm, Headspace, Mood path, etc. They also help users to create a positive mental state through guided meditations, journaling, and tracking emotions.

Another area of focus within the digital wellness space is parental control applications. These applications give parents tools to monitor their child's use of devices/additional screen time, install restrictions and filters on their devices and monitor app usage. Applications like Google Family Link, Qustodio, Safe Lagoon, etc. allow parents to establish clear digital limits for their children by providing a safer environment for their children in terms of their devices. Regarding parental control apps, while the purpose of the majority of these applications may be to place restrictions on devices, some are designed to help develop positive behavioral patterns and assist in developing emotional health; however, these applications still provide added benefits for the parent to monitor their child's device usage.

2.4.1 Comparative Feature Analysis

Digital wellness tools can be compared and categorized by method/type a user gets used from that tool. Types of apps include: monitoring screen-time, enhancing productivity, supporting mental health, and parental control. Google Digital Wellbeing and Apple Screen Time do very well in tracking a user's app usage and providing accurate numbers regarding the amount of time a user spends on each app, regardless of device. You can also set timers for each app and swap to "Focus Mode" so except only specific apps, you can't use any other app, so you won't get distracted by anything else on your phone.

Although these tools give good information about your habits and behaviors, they do not turn that information into actionable behaviours or systems to help motivate users toward better behaviours. The apps referencing productivity such as Forest, Stayfree, and Freedom have more an "interactive" aspect to them. They track your time on your devices as well as other phones in your area. They will cut you off completely from the outside world (no emails, texts, etc.) for a fixed time or until you achieve a fixed level of focus.

Apart from time tracking, they have other game elements such as rewards to encourage you to put down your device. They appear to be very good at keeping you focused a short time and do not have any elements of helping someone with their emotional well-being or self-reflection in regards to digital balance. They are more controlling over your existing level of productivity rather than being used to improve productivity in a way that can address your digital dependency over an extended time.

The other set of apps which focus on mental wellness include Calm, Headspace, and Mood path. When these apps are considered collectively, it is evident that none of them allow a combination of motivational assistance with behavioral change, emotional wellness, detoxing, and parental control in a unified interface, thus establishing a need for a well-rounded application with a multifaceted approach such as this project.

2.4.2 Limitations of Current Solution

The number of Wellness Apps that have emerged has increased dramatically since their introduction; however, the vast majority of currently available Apps do not provide a holistic solution to Digital Dependency. Many of these Apps limit their functionality to tracking "screen-time" statistics or allowing the setting of basic timers, which gives people an idea of their Digital Usage, but does not typically facilitate positive Behavioral Change over the long-term. Most of the current Apps do not address the underlying Psychological or Emotional Triggers that result in a user overusing a specific App, therefore making it nearly impossible for a user to build a lasting, Mindful Digital Routine. Ultimately, as a result of these deficiencies, the use of many of these tools tend to diminish shortly after the initial motivation to use them has expired.

Productivity Apps and App Blockers offer greater control over the Digital Environment in the Short-Term, however they do not offer functionality that supports the user's Emotional Well-being or Self-Awareness. They simply restrict access to a Digital App for a specific period of time, and do not encourage the user to reflect on their Digital Usage Patterns, nor do they provide insight into the user's underlying state of Mind.

Likewise, Wellness Apps (Apps offering Meditation or Mood Tracking) operate independently without relying on Detoxing functions, thus providing an Isolated Experience for all users in different Apps. Absent an Integrated Environment where Users

are linked with their Application of Emotional Awareness, a User cannot establish a relevant connection between Digital Activity and Mental Wellbeing.

The downside on the other hand is offered by parental control apps because they put more focus on restricting and supervising, rather than guiding children towards good habit formation. As much these apps assist parents in dealing with digital exposure, they do not integrate motivational elements or educational elements that help children behave in a responsible way when using digital technology.

2.5 Research Gap and Justification for Proposed System

The existing body of literature and digital wellness applications indicate that most existing solutions support either one or more isolated aspects of digital dependency. Some tools measure screen time usage while others help users become productive, improve their emotional well-being or assist parents with controlling what their children do on devices. Digital addiction is classified as a multidimensional problem that encompasses behavioral patterns; emotional regulation; triggers presented by the environment; and habitual behaviours. As the lack of a comprehensive framework that encompasses all of these factors has created a gap in research, a single tool to manage digital addiction does not exist. In addition, since each current tool functions independently of one another, a user must use a combination of the tools needed to accomplish multiple aspects of digital addiction which will ultimately decrease its effectiveness and curb long-term engagement.

The existing applications do not consistently apply behavioural psychology principles in support of achieving the desired outcome for users. A variety of platforms are available for tracking usage or a platform can prevent access to a platform or application, however, few platforms provide motivation or offer a gamified mechanism by transforming a detoxification process into a rewarding, enjoyable experience. The research indicates that a user will develop long-lasting habits when they are able to perform a behaviour voluntarily and in a gamified manner instead of adhering strictly to limitations imposed by the platform.

For example, the majority of parental control applications have been set up to provide a very strict level of parental supervision; however, these parental controls do not include any type of education for children as to how they can build healthy digital habits or understand the results of excessive usage .Up until now, the majority of research has not

yet explored the ability to combine digital detoxes and mental well-being applications and create solutions tailored for each age group.

We have proposed the Digital Detox and Mental Well-Being Application as a comprehensive solution that has the ability to provide a multi-modal approach to addressing the gaps in our current system. By offering multiple methods for tracking moods, providing mindfulness meditation sessions, allowing for journaling to reflect on emotions, providing parental control features for parents to monitor their children's activity, and adding gamification to encourage the use of the detox tools, our proposed application creates a bridge between controlling behaviours and promoting emotional well-being.

Our product will cater to all our consumers, whether they want self-regulated usage environments or monitored usage environments for their children. With our attempt at providing a completely integrated solution, we are incorporating a critical piece of the puzzle that will allow our consumers to establish better digital habits with a focus on emotional well-being.

A broad insight into this realm of research is presented in chapter 2 in terms of the present knowledge available on 'wired addiction', including the psychology behind this phenomenon. The statistics suggest that electronic overuse is more than a behavior; in fact, it is a multifaceted experience influenced by a combination of emotional stimuli, reward functions, and various global lifestyle shifts. As described in this chapter, because a better understanding of global trends and human behavior is available, digital over-dependence is turning out to be a problem in itself, thus requiring efficient intervention strategies. The usage of these systems is not short-term; in fact, a variety of apps have to be used in order to accomplish this.

Chapter 3

SYSTEM DESIGN & REQUIREMENT ANALYSIS

In this chapter, the proposed Digital Detox & Mental Well-Being application will be described in-depth, from a system design & requirements point of view. This chapter is quite different than the previous chapters because it is focused on how the solution has been developed & put together to meet user needs. The main section will discuss the primary modules of the application, & outline the architecture allowing for the application to operate seamlessly across device and user types.

A multi-modal system incorporates distinct functionalities for adults who wish to achieve greater Emotional Wellness through Therapeutic Activities, Children who need to be exposed to various media types in a guided manner, and Individuals who have chosen to reduce their Digital Engagement Levels by following an intentional Detox Program. All modules will be designed to specifically target users' behavioral tendencies, while providing an equivalent User Experience across the entire application. Therefore, in addition to the application being built using Firebase services and Flutter UI components, Users will have the ability to customize their application preferences, thereby enabling them to create a dynamic, protected and scalable Device Environment.

By identifying stakeholders through stakeholder identification and creating use case descriptions, the interaction flow (between different system components) and the user roles have been demonstrated within this section. At the end of the chapter, there is a brief description of the technology stack chosen to build the application and there are detailed explanations about how the two tools, Flutter, Dart and Firebase Authentication/Cloud Firestore, as well as the text-to-speech services, together provide a comprehensive and user-focused digital wellness solution.

3.1 Overview of the Proposed Application

The Digital Detox and Mental Well-Being App creates a new way for users to create a healthy relationship with technology through a personalized ecosystem based on their lifestyle, as well as providing them with a wide variety of ways to develop their relationships with their devices. The app takes a multi-modal approach that caters to the

diverse needs of three different groups of users, i.e., adults, parents/kids, and those interested in pursuing detoxification.

The app includes modular designs that separate it into three major sections that serve different purposes; Adult, Kid and Detox programs. These three areas serve three different methods of utilizing technology and subsequently, three different methods of engagement with screen-based content. The Kid section of the app supports parental control over children's screen use through feature sets that include the ability for parents to create limits (how long kids can spend on screens), and how parents have control over how kids access the content on screens, using encryption. The Detox section of the app is designed as a Behavior Change Model that uses gamification to encourage Users to reduce their screen time by providing a countdown timer and motivational messages tracking their progress toward reducing screen time.

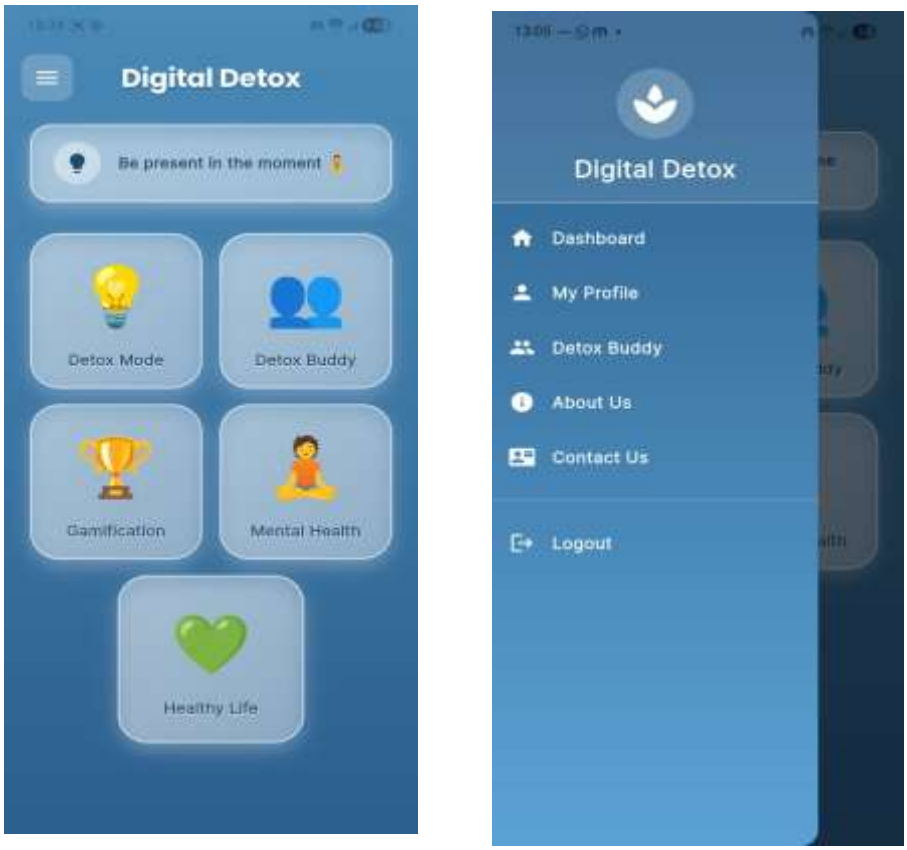

Fig 3.1 Dashboard

The above Fig 3.1 depicts the user interface of the Digital Detox application, showcasing the main dashboard with core wellness features such as Detox Mode, Detox Buddy, Gamification, and Mental Health, along with a navigation menu for easy access to profile

and support options. The design highlights a clean, calming layout intended to promote mindful interaction and seamless navigation within the application.

In summary, the application possesses all of the elements needed to be a comprehensive digital wellness resource that can provide users with emotional support (through culturally sensitive materials), parental support (through content that is easy to understand and apply), and a foundation for developing positive behaviour through behaviour modification techniques. Users will have the flexibility to select the mode of their choice that meets their individual needs, so whether the user wants to be more mentally clear and focused, manage a child's digital consumption pattern, or take on the challenge of reducing an excess amount of time spent on screens, the user can create the right fit for them. By combining advanced technology with sound design principles, this application meets the growing need for balanced digital habits and improves mental health.

3.2 Key Functional Modules

The Digital Detox and Mental Well-being App utilizes a systematic series of functional modules that are individually designed to meet the various requirements of different types of consumers. Instead of trying to be all things to all people with a single module, the module structure allows users to access only those app functions which are relevant to them. Each module is comprised of three different modes, each addressing a particular type of user's digital interactions with technology.

The technical features and behavioral components of all modules adhere to the principles of Holistic Design set forth for the application. Each module recognizes that the effects of Digital Addiction on individuals may be different, therefore functionality has been incorporated that will help assist users with their emotional, mental and environmental challenges through structure (Adult Mode, Kids Mode, and Detox Mode) with an aim of creating a Customized Digital Experience that meets the specific needs of each user and continues to support their development of healthy habits over time.

All modules work together to provide an environment where users can actively engage in Mindful Technology Use, support the development of healthy technology use routines, and empower users to develop better technology-related habits. The descriptions of the purposes, Major Features, and Design Rationale of each of the three modes will follow in the next sections.

3.2.1 Adult Mode

While the Adult Mode is intended to assist users in developing positive digital habit-forming activities, it is also intended to promote positive emotional and mental health for adult users. Adults are often faced with challenges of meeting their professional obligations while balancing their personal use of technology, as well as providing themselves with time away from technology in order to rest and recoup. The Adult Mode is designed to provide the user with the tools necessary to promote healthy behaviors toward technology while not necessarily restricting access to those behaviors.

Fig 3.2 Mental Health Tools

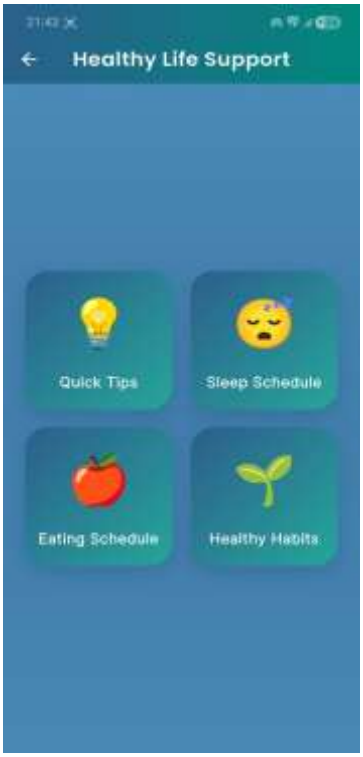

Fig 3.3 Healthy Life Support

The above Fig 3.2 presents the Mental Health Tools section of the Digital Detox application, showcasing features such as meditation, journaling, mood tracking, and affirmations that help users manage stress and improve emotional awareness. In continuation, the next Fig 3.3 illustrates the Healthy Life Support section, which focuses on daily wellness through tools like sleep scheduling, healthy eating guidance, quick tips, and habit-building features to promote a balanced and healthy lifestyle.

Along with the wellness tools, the Adult Mode provides the user with a method of self-regulating their use of technology by encouraging intentional and mindful use of

technology, rather than restricting that use; this module's intent is to promote a healthier routine of using technology that allows the user to gain focus, clarity, and mental stability. User mood tracking under an Adult Mode allows users to correlate their moods with various periods of time spent using technology and other forms of interaction (e.g., social media). Due to excessive time spent in front of a computer/display, excessive stress created by digital media, and also by tracking usage, users will have a greater awareness of their technology usage patterns. Tracking their technology enables the user to make more informed decisions regarding the type of technology being used.

The sessions are created for the purpose of relieving stress, balancing emotional states, and improving mental focus through releasing emotional energy into the session and by journaling to encourage users to keep track of their daily life experiences and record emotional reactions. Users of Adult Mode can feel empowered to get rid of negative thoughts by being exposed to Daily Affirmations via TTS Technology and will be able to foster a new mindset regarding one's Emotional Strength and Positive Thought Processes and ways of dealing with what has occurred in their daily life through the use of TTS and Journaling.

The indicators have access to a personal wellness coach rather than merely the device encouraging users to cut back on the time spent with their digital devices. Additionally, Adult Mode has created a way for users to relate their digital experience to their feelings about what is happening with them and how they feel emotionally. Adult Mode has combined Mindfulness and Psychological Insight into one application in order to create a Healthy and Equilibrious digital lifestyle. Adult Mode was created to assist adults by providing a means to connect the Negative and Positive Effects of Digital Addiction.

3.2.2 Kids Mode

The Kids Mode was developed as a method of providing a safe and structured digital space for children, since children are at a greater risk for the negative effects of too much screen time than adults, and lack the ability usually to self-regulate their screen time usage. Kids Mode allows parents and guardians the ability to monitor and guide how their child uses his/her device within a safe and customizable format. Additionally, Kids Mode is intended to support healthy digital growth instead of simply putting limits on a child's screen time.

The primary feature of the Kids Mode is the parental control system, which is secured using encrypted access as well as Firebase Authentication so that only authorized guardians can adjust screen time settings or access restricted areas of the app.

Parents can establish daily screen time limits for their children, restrict or permit certain applications, adult guardian, whilst remaining non-intrusive for the child, also track their children's use patterns to ensure that their child maintains a healthy balance of screen time. Finally, the design of Kids Mode is intended to be user-friendly for Ultimately, the Kids Mode module serves an important role in teaching children about the concept of digital discipline while they are still developing their identity. In addition to providing tools for protecting younger device users, Kids Mode also provides many ways for families to develop healthy technology usage habits together. With the inclusion of firmly placed parental controls and time-based restrictions, this module will greatly help to cultivate healthy technology behaviors in future generations of children.

Fig 3.4 Kids Mode Pin Setup

Fig 3.5 Kids Mode Timer Setup

The above Fig 3.4 demonstrates the initial configuration of Kids Mode, where a parent defines a secure 4-digit PIN to manage restricted access. This is followed by the Fig. 3.5 screen-time selection interface, which allows parents to choose a specific duration for device usage, helping enforce time-bound and supervised digital interaction for children.

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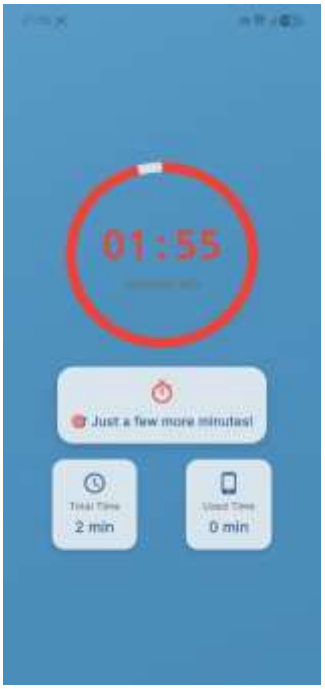

Fig 3.6 Kids Mode Timer Screen

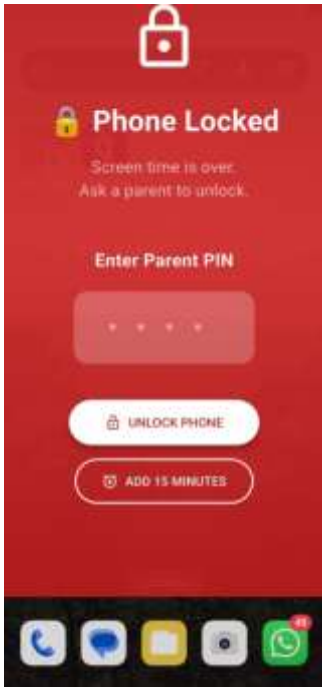

Fig 3.7 Parent PIN Verification Screen

The above Fig 3.6 displays the active Kids Mode countdown screen, showing the remaining screen time through a visual timer along with usage details to keep the child informed. Once the allotted time expires, the next screen Fig 3.7 presents an automatic lock interface

that restricts access and requires a parent PIN to unlock or extend usage, ensuring controlled and supervised device interaction.

3.2.3 Detox Mode

To support users in creating self-imposed screen time limits, Detox Mode provides goal-oriented intervention strategies for accomplishing this objective. The philosophy underpinning this module is that creating a sustainable relationship with technology requires self-direction rather than punitive approaches. As such, the Detox Mode allows users to declare their intent to reduce usage by identifying particular applications that yield excessive engagement and committing to limiting them. The countdown timer feature is one of the key components of the Detox Mode. Users can schedule for how long they want to refrain from using selected applications.

During the countdown, the timer will display the remaining duration on a full-screen interface that provides a distraction-free environment in order to reinforce the user's commitment to limiting their digital interactions. The incorporation of motivation messages, progress indicators, and visual cues deliver an enjoyable and engaging experience for users and keep them focused on their detox goal. Unlike many detoxification tools that utilize a system-level blocking approach, the mode utilizes a behavioral reinforcement method for the achievement of conscious self-regulation.

Detox Mode utilizes aspects of gaming, including streak tracking and the achievement of levels, while offering users suggestions and support during their detox process, making the overall detox process a fun and engaging experience and encouraging users to stay motivated and continue their journey. By blending voluntary participation with subtle motivational tactics, users will feel less deprived than if they were participating in a more restrictive screen-time management programmatic method supports behavior modification theory by promoting a positive motivation for making changes rather than relying solely on punitive measures.

Additionally, by serving as an active support for those wishing to change their digital behaviors, Detox Mode assists users in becoming aware of the ways in which they have been dependent on technology as well as helping them create realistic goals for reducing their dependency on technology and celebrating the steps taken to achieve those goals.

Fig 3.8 App Usage Control Screen

As illustrated in the above Fig 3.8, the Detox Mode interface allows users to select specific applications to limit and clearly displays real-time usage details, remaining time, and blocked status once limits are exceeded. Visual indicators such as progress bars and warning labels make it easier for users to recognize overuse and adjust their behavior accordingly. This transparent and interactive design reinforces accountability and motivates users to stay within their set boundaries, thereby promoting effective and sustainable digital detox practices.

Detox Mode is designed to provide a structured environment for digital detoxification by helping users consciously manage and reduce their screen usage. It enables individuals to identify high-engagement applications and set predefined usage limits, encouraging more mindful interaction with digital devices. By presenting clear usage statistics and time-based controls, the feature supports the development of healthier behavioral patterns and helps users regain control over impulsive app usage. The emphasis is on self-discipline supported by visual feedback rather than complete restriction.

3.2.4 Detox Buddy System

The "Detox Buddy System" is a wonderful means to keep oneself accountable and motivated during a detox period. With the help of the Detox Buddy System, individuals may invite a dear friend, a family member, or a companion to cooperate with them in their detox journey. When the friend becomes a source of support, the detox becomes less isolating and more interesting.

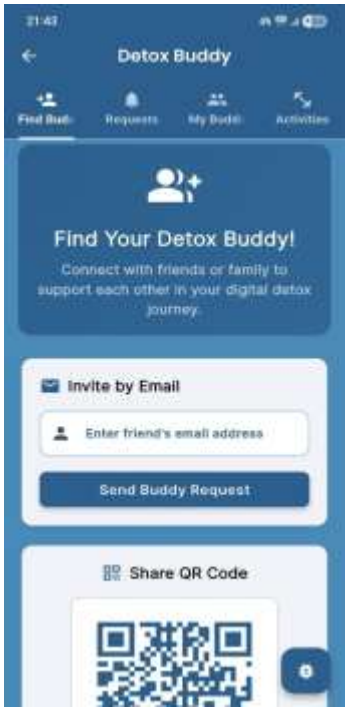

Fig 3.9 Detox Buddy

As shown in the above Fig 3.9, the Detox Buddy interface allows users to easily find and connect with a detox partner through email invitations or QR code sharing. The simple and accessible design promotes seamless collaboration, making it easier for users to engage in a joint detox journey. By integrating social interaction into the detox process, this feature amplifies the psychological impact of digital detoxification and helps users remain loyal to their goals through mutual encouragement and accountability.

One of the key features of the Detox Buddy module is the real-time visibility of detox progress among connected users, which strengthens motivation through shared accountability. Using the application, friends or family members can view each other's streaks, completed detox sessions, and ongoing challenges, creating a sense of collective responsibility. This shared awareness makes users feel accountable not only to themselves

but also to their chosen partner, encouraging consistency and commitment toward their detox goals. The inclusion of motivational prompts and periodic reminders further enhances this cooperative experience, reinforcing positive behavior through social support.

By way of keeping account, the Detox Buddy System also brings in the vibe of community as well as shared success. Users definitely can challenge one another, commemorate milestones together, and keep a mutually supportive digital space going. Social interaction being part of the detox process this module basically self-regulation transforming into a cooperative work. It intensifies the behavioral side of digital addiction issue, which is user engagement, and local-only intervention approaches, which are less effective, by means of a user treatment/local-only intervention approach. Through a mixture of companionship, motivation, and peer support, the system thus becomes a vehicle for the user to develop long-term habits of self-regulation in the digital sphere.

3.3 Proposed Model Architecture

The system framework for the Digital Detox and Mental Well-Being Application is designed to work across different platforms, be safe, and easily expandable. Being a Flutter framework-based app, it follows a cross-platform approach. From the perspective of the layout, it is modular and corresponds to the system components which are Adult Mode, Kids Mode, Detox Mode, and Detox Buddy System, in other words, each feature is like a different branch of an independent tree though still the efficient workflow is the main trunk connecting these branches. The modular design of this architecture provides functionalities that can be extended in the future and at the same time ensures that no existing functions will be interrupted.

On the other side, Firebase is the main engine that powers the Digital Detox and Mental Well-Being Application backend, taking care of authentication, data management, and real-time synchronization. Its cloud-based architecture is what makes it possible for the app to be updated to the latest version at all times regardless of the device since all features such as mood tracking, journaling, detox timers, and buddy-based progress sharing need to be up-to-the-minute across different gadgets. By utilizing Firebase Authentication, it is guaranteed that users' information remains confidential and is only accessible to the person who has their identity. On the other hand, Cloud Firestore is the main database that

is responsible for storing the data of interactions, the logs, and the preferences of the users in a structured manner.

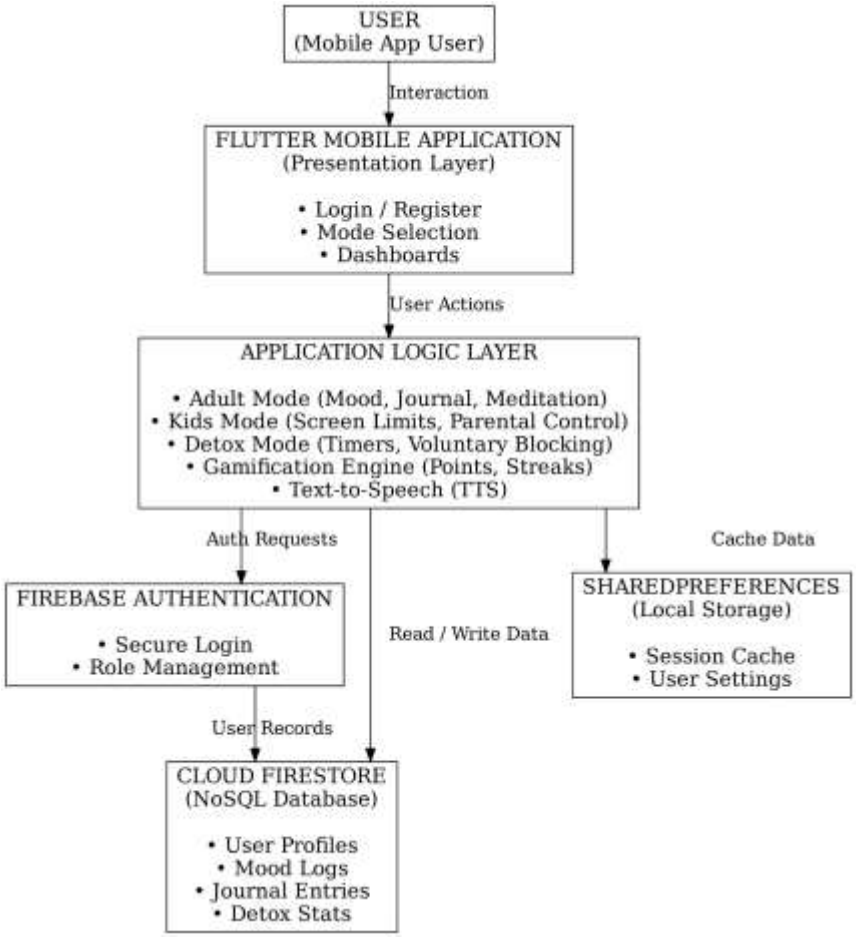

Fig 3.10 Model Architecture

The above Fig 3.10 depicts the high-level system architecture of the Digital Detox and Mental Well-Being Application, illustrating the interaction flow between the user, the Flutter-based mobile application, and the underlying system layers. It shows how user actions from the presentation layer are processed through the application logic layer, which manages different modes such as Adult Mode, Kids Mode, Detox Mode, gamification, and text-to-speech functionality.

The figure also highlights the integration of Firebase Authentication for secure login and role management, Cloud Firestore for storing user data such as mood logs and detox statistics, and SharedPreferences for local caching of sessions and settings, thereby presenting a clear overview of data flow and component interaction within the system.

Local data management is facilitated by Shared Preferences, which enables the app to save lightweight user-specific settings locally on the device. This not only provides quicker access to the most frequently used data but also extends the app's functionality with a kind of offline mode that allows users to access certain features even if they don't have an internet connection. The architecture thus strikes a compromise between cloud computing and local storage to keep both the application's performance and the data's integrity at a high level.

The system architecture, in general, revolves around the core principles of adaptability, security, and quick response. The use of Flutter's UI capabilities in conjunction with Firebase's backend services and local device storage makes the app a cohesive experience that is real-time functional, multi-user customizable, and data handling reliable. This architecture provides a solid technological basis for the practical and user-centric implementation of the system's digital detox, wellness, and parental control features.

3.3.1 Firebase Authentication

In order to manage encrypted user access in Digital Detox and Mental Well-Being Application, Firebase Authentication is utilized as the primary methodology. The system is made up of multi-user types: adults, children, and detox buddies, hence a robust identity management solution that respects privacy and guarantees authorized access to sensitive data is needed. As a result, through such ways as email-password login, phone number authentication, and token-based validation, Firebase Authentication ensures solid, cloud-based user verification. Therefore, only after unique identification and secure authentication of each user session, personalized features can be accessed.

Almost all other Firebase functionalities like Cloud Firestore and real-time database synchronization can be easily used with Firebase Authentication, which is one of the biggest merits of it. After the user is authenticated, their unique identifier (UID) will be the reference for saving and fetching not only their data but also parental and buddy-linked info, alongside detox progress and mood entries. This guarantees that there is no crossover of personal data between accounts and disallows any unauthorized access to one's private records. Moreover, the authentication credentials are transferred via encrypted channels so that the security aspect of the application is further strengthened.

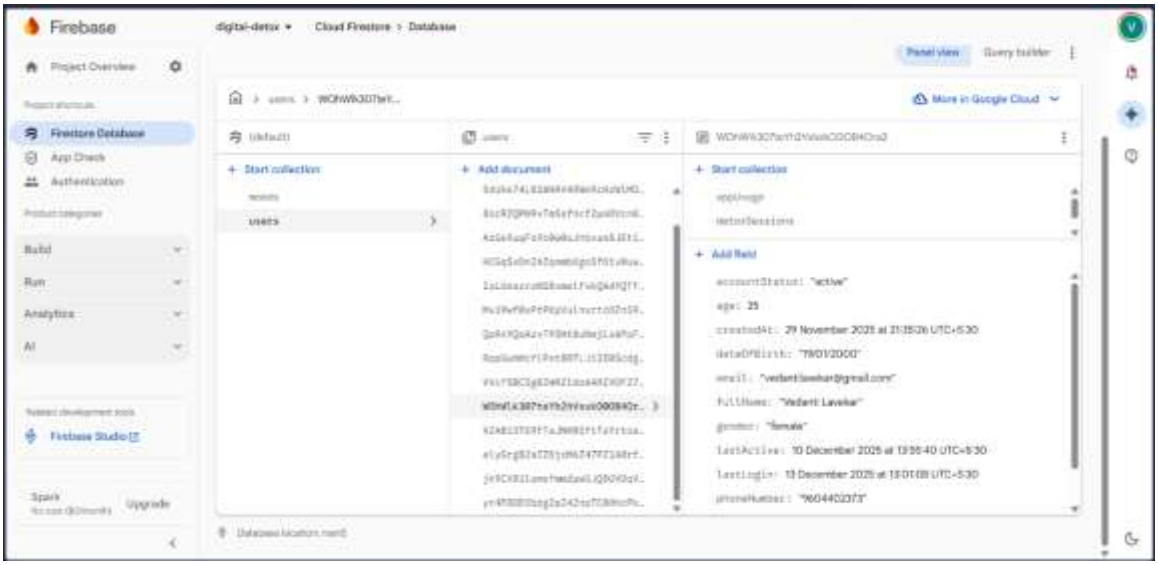

Fig 3.11 Firebase Authentication

The above Fig 3.11 depicts the Cloud Firestore database view used in the Digital Detox application, showing the structured storage of user data within collections and documents. It highlights how user profiles and related fields such as personal details, account status, timestamps, and screen-time settings are securely stored and managed in the NoSQL Firestore database for efficient data retrieval and synchronization.

An additional component within Firebase Authentication that controls the proper usage of Kids Mode is the enforcement of secure access permissions. The administration which is in the hands of parents entitles them with special powers through the separate authentication that grants them access modifying the screen-time settings, setting restrictions, or going through a child's digital activity. Hence, the multi-layer authentication mechanism prevents the misuse of the device by unauthorized users or neglecting the alteration of the control features. To sum up, Firebase Authentication constitutes a secure and expandable structure that accommodates well to the multi-modal arrangement of the application and simultaneously assures the users' trust and data confidentiality.

3.3.2 Cloud Firestore

Cloud Firestore is the main database of the Digital Detox and Mental Well-Being Application. It allows for quick storage, retrieval, and synchronization of user data across different devices. Being a NoSQL, document-based database, it is very well suited for apps that have varying and changing data types like mood logs, journaling entries, detox progress, parental control settings, and buddy-linked interactions. The data for each user is

in structured collections and documents, which makes it easy to separate different types of information and gives modular access that can be used by the functional components of the system.

The most important feature of Cloud Firestore is its real-time synchronization capability by which all changes made in the application reflect immediately in all connected devices. It is very useful for modules such as Detox Mode and the Detox Buddy System where countdown timers, streak updates, challenge progress, etc., have to be displayed consistently for all the users involved. Firestore's event-driven listener architecture enables the system to respond immediately to the changes providing partiality to time and thus, user engagement and accountability become stronger. Along with performance benefits, Cloud Firestore is also very secure due to Firebase's integrated rule-based access control. Developers may specify very detailed permissions that indicate which users have the rights to read or change particular data fields. It also protects sensitive information such as mood history or children's activity settings.

3.4 User Characteristics & Stakeholder Identification

The Digital Detox and Mental Well-Being application aims to be useful to a wide range of users that have different needs, ways of using the app, and levels of digital addiction. Knowing the users' characteristics is a must if we are to create a system that serves all and is effective in leading people to use technology in a healthy way. The main users of this app are adults looking for emotional stability, parents controlling their children's screen time, and kids being in digitally controlled environments. These user categories vary in age, digital literacy, level of responsibility, and are driven to a certain kind of behavior, which in turn significantly affects system and feature design.

Mostly adults are students, working professionals, and people who suffer from stress, anxiety, or lack of concentration and these problems are caused by excessive screen time. Normally these users have good digital literacy and they prefer the use of software without involvement from a guide, in order to manage their emotions, increase productivity, and lessen screen time. In this sense, functionalities like mood tracking, journaling & meditation are meant to give them the necessary mental support but at the same time not to be restrictive. The way they behave while using the app indicates that they want it to be adapted to their needs, flexible, and that they want to use it for self-reflection.

Parents or guardians, on the other hand, constitute a user group that is not only crucial but also very different, as they are both major direct users and supervisory stakeholders. Having safe access to Kids Mode is what they need the most so that they can do the following: impose limits, oversee the activity, and direct their kids to get accustomed to the use of technology in a healthy. These are the people who will benefit from the safest, most reliable, and easiest means of control that they can use to obtain detailed analytics or emotional tracking. Meanwhile, children are the app's indirect users, and the creators have deliberately simplified the children-app interaction to prevent the kids from being abused with and overexposed to technology through parents' guidance, and at the same time, it encourages the balanced use of technology under parental control.

Besides end users, the system design and its realization are also dependent on the people who have a stake in it. Among them are the app developers who are responsible for the app functionality, efficiency, and security. Then, we have academic evaluators, whose main roles are to assess the technical depth and the societal relevance of the project. Also, there are mental wellness advocates, whose principles become the behavioral foundations of the application.

3.5 Requirement Analysis

Requirement analysis is a crucial stage in the development of the Digital Detox and Mental Well-Being Application, as it describes how the system should be creating to meet both users' and stakeholders' needs. It achieves this primarily by identifying system features, performance limitations, usability goals, and even security aspects from the perspective of adult users, parents, and children. Proper requirement analysis can be considered as the fundamental plan for the system architecture to be in line with the project goals and, at the same time, it lowers the implementation risk level.

The app's requirements are the outcome of the study on behavioral changes due to overuse of digital devices, the perception of digital wellness solutions, and the multi-modal nature of the proposed system. By understanding user behavior and the contexts in which they find themselves, the app is expected to become a tool for emotional well-being, self-regulation, and safe digital engagement. Every module such as Adult Mode, Kids Mode, Detox Mode, and Detox Buddy System has its own operational requirements, however, all of them have to work together within the general framework. System requirements are

described here as both functional and non-functional requirements. Functional requirements detail the specific features a system should have, for example, parental controls, screen-time tracking, mood logging, and user authentication. Non-functional requirements describe the system's quality attributes, for instance, performance, security, scalability, and usability.

When merged, these requirements form a solid base for system realization, assessment, and future development. Functional requirements thoroughly depict in detail the operations the Digital Detox and Mental Well-Being Application should be able to perform to satisfy user needs. The system has to offer functionalities that meet these requirements in all its modules while still maintaining consistency and usability. Each individual requirement is aligned with the project objectives and is instrumental in the realization of the overarching goal, i.e. the promotion of well-being through digital means, with the focus on mental health. The below Fig 3.12 is of class diagram of the project.

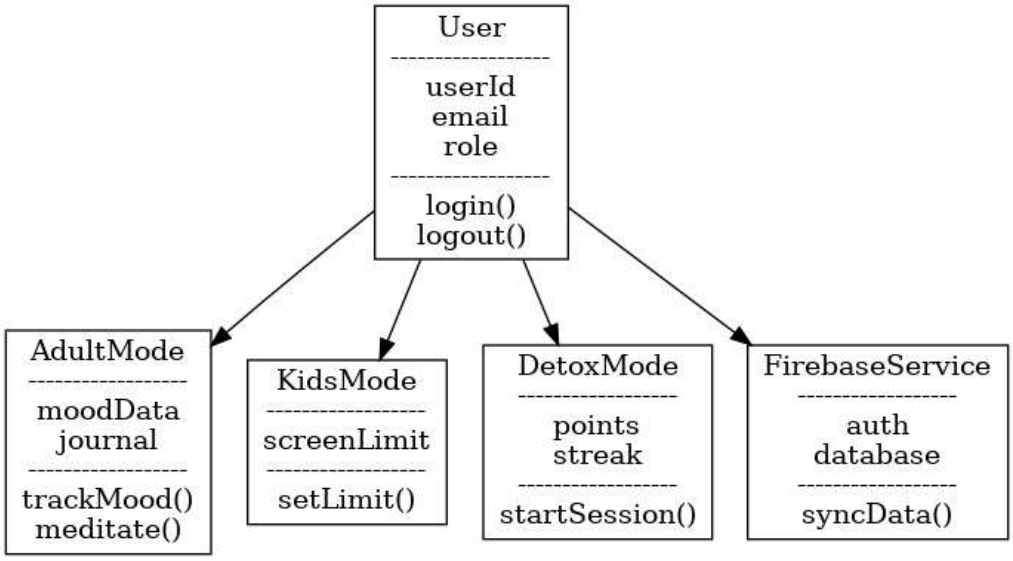

Fig 3.12 Class Diagram

Functional requirements specify the exact tasks and services the Digital Detox and Mental Well-Being Application have to perform to satisfy users' needs. These provisions confirm that the software successfully performs its intended roles across different modules and at the same time respects security, consistency, and usability principles.

Every single requirement is consistent with the project's goals and contributes to the main objective of the project, i.e. the promotion of mental health and the establishment of healthy digital habits. Firstly, the children mode system should provide the parents or

guardians with the possibility of setting screen time limitations, restricting application usage, and being informed of digital usage patterns. Meanwhile, these restrictions should only work effectively on those users who have been given permission thus ensuring child protection as well as data confidentiality. The application, in the other hand, in detox mode should offer the service that allows the users to select the apps for which a detox is wanted, set up countdown timers, see streaks and receive inspirational messages.

The Detox Buddy System, in addition, is designed to help the connection between the people, allow the communication of the progress, and hence, create local accountability-based interaction that would motivate the two participants. In fact, the whole system should be able to perform real-time updates, be compatible with the continuation of the session, and also provide an easy way to switch from one feature to the other, which is common in all the functionalities. Each functional requirement is directed towards enabling a smooth interaction of the users with the system which, in turn, is a technology trick through which the task of promoting responsible digital behavior is performed, but at the same time, the emotional well-being of the users is uplifted by providing system-based, structured, & user-centric interactions.

Non-functional requirements outline the quality features and set limits on the performance of the Digital Detox & Mental Well-Being Application. In brief, functional requirements explain what the system should do while non-functional requirements indicate how the system should behave under various conditions. These requirements guarantee that the app is reliable, secure, quick, and attractive to the users thereby contributing to both the app's efficiency and the users' approval of the app.

With regard to usability and maintainability, the application is to have a user-friendly interface by which users of different literacy levels will be able to navigate it without any difficulties. Besides, the system has to be expandable for the next updates, hence, developers will be allowed to enable new features or extend the existing ones without restructuring the architecture significantly. Also, being compatible with various kinds of devices and operating system versions is a must if the users are to have the same level of functionality and accessibility regardless of the device, they use.

3.6 Use Case Diagrams & Descriptions

Use case diagrams represent the various users' interactions with the Digital Detox and Mental Well-Being Application visually. Such diagrams reveal how different users utilize various functionalities of the system which helps to explain system behavior, user rights, and the limits of the functionalities. Use case modeling in this case study is a means of requirement confirmation and it is a guarantee that all user interactions match the set goals. The system's major characters are Adult User, Parent/Guardian, Child User, and Detox Buddy. Each character, based on their role and permissions, interacts with the application differently. The adult users can enjoy the different wellness features that include mood tracking, journaling, meditation, and detox tools. Whereas, the parents or guardians through the Kids Mode feature can set the screen-time limits and keep the track of the activity. A child user interacts with a limited version of the application that is customized for controlled use whereas a detox buddy through shared detox challenges and progress tracking may be involved.

The most significant use cases feature user registration and login, mode selection, mood logging, meditation access, journaling, screen-time management, app restriction, detox timer activation, progress tracking, buddy pairing, and logout. The relationships that exist between actors and use cases are well thought-out and defined so as to facilitate prevention of unauthorized access, particularly those of Kids Mode and parental controls, as well as other such areas or functions.

The chart showcases system limitations and guarantees an orderly flow of operations.

- **User Authentication**: It is a feature that helps users to securely register and log into the system using Firebase Authentication.
- **Manage Wellness Activities**: This feature empowers adult users to log moods, gain access to meditation and keep journals.
- **Parental Control Management**: Gives the power to the parents to set limits, restrict the use of apps and be able to check usage patterns.
- **Activate Detox Mode**: Feature that allows users to choose apps, set up timers and keep track of their detox journey.

- **Detox Buddy Interaction**: Facilitates the linking of users, enables seeing of common progress and thus, helping in keeping each other accountable.

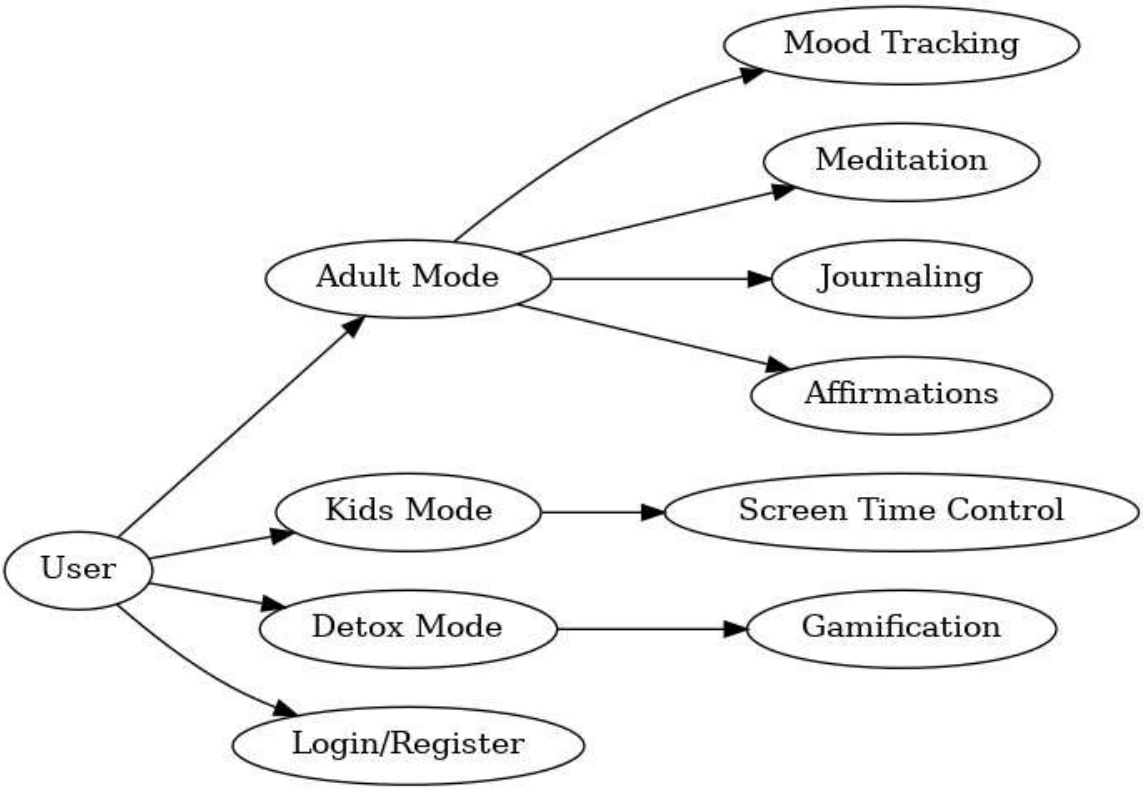

Fig 3.13 Digital Detox and Well-Being Use Case Diagram

Use case diagrams, as shown in above Fig 3.13 in general, are an indispensable instrument of communication between system designers and evaluators as they offer a simplified but still complete portrayal of system functioning. Those charts contribute to the validation of requirements, act as a roadmap for system implementation, and enhance the understanding of user-system interactions.

3.7 Technology Stack

The Digital Detox and Mental Well-Being Application have used a technological stack that is modern and scalable to develop it; which allows it to be deployed cross-platform, handle data in real-time, and support secure authentication. The technologies selected are in line with the functional requirements of the project and thus, assure the project's flexibility, maintainability, and performance efficiency. Each component of the stack is like a cog in the machine that delivers a prompt and user-friendly digital wellness solution. The application's front-end has been created using Flutter, a UI framework that is cross-

platform, thus, a user interface that is uniform is possible for both Android and iOS devices. Flutter's widget-based architecture is developer-friendly as it allows for rapid UI development, smooth animations, and customizable design, thus, technology meets the user's expectations. Application logic is done in Dart which is an asynchronous programming language and it is efficient for real-time updates such as detox timers and mood tracking data.

Firebase is the backend solution for the app which will handle authentication, data storage, and real-time synchronization. Authentication through Firebase offers the security needed for user login and role-based access control. Cloud Firestore is the central database, holding the structured user data like journaling entries, parental settings, and detox activity records. Shared Preferences is a local storage method that is used to keep user preferences and allow offline access which is great for the app's responsiveness and lessens the network dependency.

C*hapter 4*

IMPLEMENTATION & RESULTS

The system design phase is an important aspect of the digital detox and mental well-being application, which will convert the conceptual framework into a structured approach that can be implemented. In this chapter, we discuss how the requirements we identified in the previous chapter will be utilized to create design models that will describe how the system will operate, how data will flow through the system, and how users will interact with the system. By implementing these requirements in the design of the application, we will ensure that the design allows for scalability, maintainability, and alignment with both technical and user-centric objectives.

In this project, the design method is focused on having a modular structure to facilitate both clear function and ease of use. All of the functional modules (Adult Mode, Kid's Mode, Detox Mode, and Detox Buddy) are intended to be developed as separate, connected, and independent modules. This arrangement simplifies the development and testing phases of the application, which will enable easy iterations and additions of functionality without affecting the core system. The design also takes into consideration the usability of the application; therefore, the design allows for intuitive navigation through the application, regardless of the user's level of technical aptitude.

The design philosophy for this project promotes clarity and modularity. Each activity type in the app - Adult Mode, Kids Mode, Detox Mode and the Detox Buddy system - has been created as a section (with all other sections connected via links) that can be developed/tested independently and enhanced in the future without having an impact on other components of the application or the core system. In addition, the design priorities user-friendliness by enabling future users to use the app without having knowledge of how to navigate it based on their technical expertise.

In While the design focuses on workflow clarity, performance and compatibility with other platforms, the way the app was architected through the use of the Firebase services offered via Flutter, has a direct impact on the design decisions regarding how the app functions. An overview of how the methodologies of system design, user interfaces

and data flows work together to satisfy the digital wellness objectives of this app are provided in this chapter.

4.1 High-Level System Architecture

A high-level view of the Digital Detox & Mental Wellbeing application indicates a hybrid architecture model that includes a responsive Front-end, a structured logic layer, and Cloud based secure services. With this layered architecture, all functional components are able to work together seamlessly as a single unit, whether those components are related to wellness tracking, detox activities, or parental control features. The Front-end Interface is built on the Flutter Platform which allows for a unified look and feel as well as responsiveness across all types of devices. This will ensure that the end-user will have an intuitive experience while navigating throughout the application, receive real-time feedback, and transition smoothly between different application modules.

The Core Application Logic is what underlies the User Interface; it takes user's inputs and governs how the various system Modules interact with one another. For example, the Core Application Logic is responsible for managing user Mood Entries, creating Meditation Sessions via TTS, enforcing Kid's Mode Screen Time limits, and keeping track of a user's Detox Progress. The use of two distinct layers (presentation and logic) creates an environment that is scalable and easier to maintain. Each Module will have its own independent functions, yet they will use shared Design Principles. This permits the application to expand its Features without impacting already established Features.

The backend of the application is built on Firebase services (User Authentication, Data Management, and Real Time Sync). All of the information, including Mood Logs, Detox Statistics, and Parental Settings, will be saved in the Cloud Firestore as structured documents. Any changes made to any of these documents will be automatically synced across all devices immediately, thanks to Firebase’s real-time capabilities. SharedPreferences is used on-device to quickly access frequently used preferences/settings and to provide offline access to the app’s functionality. The combination of Firebase and SharedPreferences provides a strong, stable and flexible framework for optimal app performance, data integrity and user experience.

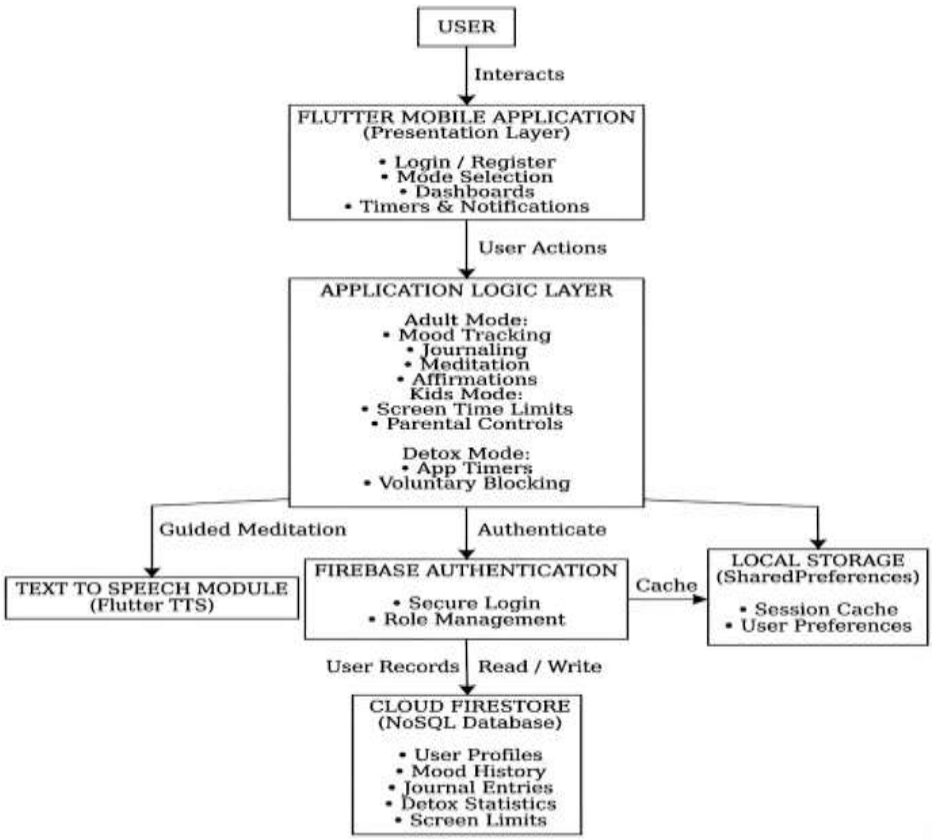

Fig 4.1. High Level System Architecture

The above Fig 4.1 illustrates the vertical high-level system architecture of the Digital Detox and Mental Well-Being application. It depicts the flow of interaction from the user through the Flutter-based presentation layer to the application logic layer, which manages core functionalities such as Adult Mode, Kids Mode, and Detox Mode. The diagram further shows the integration of supporting services including Firebase Authentication for secure access control, Cloud Firestore for persistent data storage, local storage for session caching and preferences, and the Text-to-Speech module for guided meditation. Overall, the figure provides a clear representation of component interactions, data flow, and layered organization within the system.

4.2 Detailed Module Design

The module design has been created to document the exact internal workings of the Digital Detox and Mental Well-Being Application. While the High-Level Architecture defines how everything works together, the Module Design focuses on its components (mood tracking, guided mediation, journaling, detox gamification, parental control), and how each component is designed to meet a specific purpose. Each component is designed based on

the user, to be practical and to have the highest level of responsiveness possible to help achieve the desired behavioural outcomes. By detailing the functional flow, how the user interacts with the module and how the module processes data, the overall application is designed clearly and will allow for the addition of new modules in the future.

4.2.1 Mood Tracking & Historical Analysis

Mood Tracker helps users analyze the relationship between mood patterns and their digital interactions. Users can input their moods into daily logs that are easily navigated through a user-friendly interface. Users can select predefined moods to indicate their mood at particular times, or enter a short description of their experience to allow them to analyze their mood over time. Mood entries are saved in the back end of the application, and therefore users will be able to observe changes in their emotional state over time.

Users will have access to historical summaries of saved mood entries, which will provide insight into their historical patterns of emotional health over an extended period of time. These summaries provide visual representations of user mood trends (weekly or monthly), allowing users to identify patterns of recurring emotions, triggers, and levels of stress. This analytical perspective also supports users in developing healthier habits by providing users with insight into how their screen time correlates with their emotional health. By incorporating the data into larger wellness frameworks, users will be able to develop greater emotional awareness and engage more mindfully with their digital devices.

4.2.2 Guided Meditation (TTS Integration)

Guided Meditation relies on current research supported resources for creating an ideal atmosphere for establishing emotional balance and achieving mental clarity through the application of TTS technology to develop dynamic instruction for meditative practice. The Guided Meditation Module eliminates the need for pre-recording audio files to use with this program by enabling adaptive modifications to the voice of a user's selected format (e.g., male, female, speed, tone). As a result, it provides complete flexibility in developing an interactive guided meditation service.

In addition, the Guided Meditation Module provides calming visual aspects (minimalist screens with gentle animation) to visually promote a sense of peace and relaxation. In this regard, Guided Meditation is available for use on demand for emotional

support or can be used regularly as part of the individual's wellness routine by utilizing the Adult mode of the Detox Program.

Fig 4.2 Meditation Dashboard

The above Fig 4.2 depicts the Meditation Center interface of the Digital Detox application, where users can select session duration, breathing patterns, and meditation styles. It also displays key progress indicators such as total meditation minutes, daily streak, and today's activity, encouraging consistent practice and supporting mindfulness and stress reduction through guided meditation sessions.

In addition, the Guided Meditation Module provides calming visual aspects (minimalist screens with gentle animation) to visually promote a sense of peace and relaxation. In this regard, Guided Meditation is available for use on demand for emotional support or can be used regularly as part of the individual's wellness routine by utilizing the Adult mode of the Detox Program. As a result, Guided Meditation is part of the Detox Program, which reduces the negative effects of technology overuse and heightens mindfulness-oriented practices.

4.2.3 Journaling & Affirmation System

The journaling component will help users to keep track and record their thoughts, emotions and day-to-day life experiences which together contribute towards overall emotional health and wellness. The clean minimalistic layout of the module creates an environment that fosters the greatest freedom of personal expression without any distractions. The journaling component allows for both the processing of emotional experiences, as well as the ability for users to identify recurring themes, events or emotional triggers that are strongly correlated with a user's digital behaviours and their overall health.

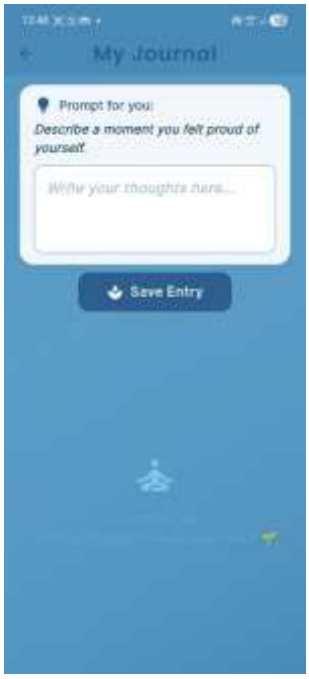

Fig 4.3 Journaling Dashboard

The accompanying Fig 4.3 illustrates the affirmations interface of the Digital Detox application, highlighting how affirmation prompts are displayed in a simple and calming layout to support daily motivation, mood development, and long-term mental well-being. Affirmations are delivered to users on a daily basis to uplift their mood throughout the process of building healthy habits and during other selected wellness activities at user-defined intervals. Users are encouraged to regularly add their own affirmations, creating a positive, uplifting, and supportive environment that reinforces consistent positive thinking and emotional growth.

By integrating affirmations into a user's daily routine, the app can provide a mindset of encouragement that can help users develop a more positive internal dialogue

and ultimately, increase the user's overall well-being. The combination of the journaling and affirmation tools align well with the focus of promoting positive emotional well-being and wellness, creating a pathway for individual self-awareness; emotional clarity; and creating healthy habits.

4.2.4 Detox Mode Gamification Framework

The detox mode gamification model adds a level of enjoyment and motivation through the use of game-like elements while decreasing the number of electronic devices being used and making users less dependent on mobile devices. Apart from imposing restrictions and limiting usage, this model also incorporates traditional gaming mechanics, including time-limited tasks, streaks, tracking how much progress is being made and when certain achievements are made along the way.

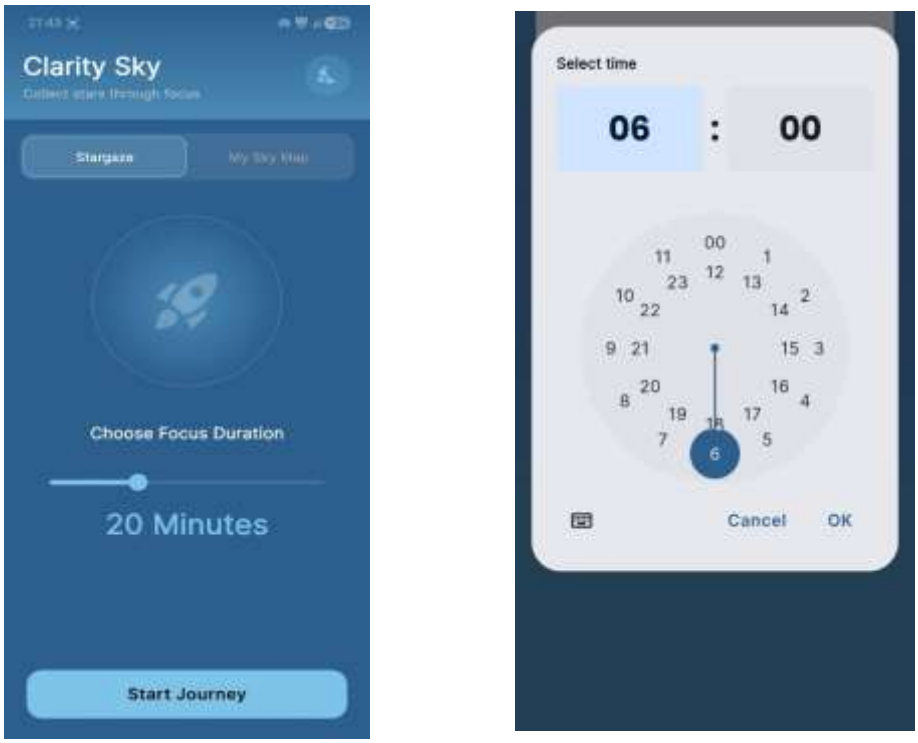

Fig 4.4 Gamification Dashboard

The above Fig 4.4 illustrates the focus-based gamification interface used in the Detox Mode of the application, where users select a specific focus duration to begin a distraction-free session. In continuation, the next screen shows the time selection interface that allows users to precisely configure their focus period, reinforcing intentional engagement and encouraging users to stay committed to their detox journey through structured and time-bound focus activities.

The detox timer is at the core of this gamification system. During the detox period, users are encouraged to avoid digital distractions for specified periods of time through a focused concentration mode. The structured environment in which the user operates allows for a gradual building of discipline and a more positive mindset about the detoxification process. Visual progress feedback, combined with subtle reminders of personal goals, helps sustain engagement and makes the detox journey feel interactive rather than restrictive. By blending behavioral psychology with gamified elements, this model supports gradual habit change and fosters a more mindful relationship with digital devices.

4.2.5 Kids Mode Parental Control Structure

The Kids Mode Parental Control Framework allows parents to provide a secure and organized platform to manage their children's digital use. The Kids Mode Parental Control Framework allows parents to create individual set screen times, limit their access to particular apps, as well as track their child's usage history. By providing administrators with verification mechanisms which will only allow authorized guardians to alter settings ensures that the integrity of the parental control remains intact. The combination of these features into a single structure allows families to help develop intentional and supervised digital behaviors for children.

The Kids Mode Parental Control Framework also offers flexibility and ease of use to parents. Through real-time updates and visibility into how children use their devices, parents can be alerted as to whether their child's usage has reached its limit and what time a parent should be making an informed decision on whether to extend or enforce a break. Parents are also assisted in their quest for an appropriate balance of education versus screen time through the allocation of productive and age-appropriate screen use by the framework. Ultimately, the Kids Mode Parental Control Framework supports a more responsible and healthy developmental routine for children by encouraging structure, responsibility, and consistency in their digital usage.

4.3 Database Design

The Digital Detox and Mental Wellness Application Database has been designed in such a way that it is built on a structured and scalable NoSQL model, enabling the storage of all aspects of this application, including mood logs, detox progress, journaling entries, parental controls, and buddy interactions. The NoSQL model will provide the application with

maximum flexibility to handle all types of user-generated content and to scale with increasing usage as users interact with the application. By keeping the data in logical, separate collections, the application can provide greater speed in retrieving records and synchronizing records across multiple components of the application.

The individual functional modules will store their respective information in documents that are logically located in a separate logical document and grouped together by functional module. Mood entries will be maintained in a chronological manner to allow for trend analysis, user detox logs will have timestamps and streaks associated with them, and journal entries will be stored securely in text records. The modular design of the parental control features is tied directly to each child's profile and allows for the ease of maintenance.

The use of this design enables the developer to add new features at any time without redesigning the existing database structure. Local caching allows users to access records while not connected to the Internet, and role-based permissions and encrypted handling will lessen the likelihood of sensitive data becoming compromised. Therefore, this design allows for a secure, quick, and easy database structure that effectively supports all components of the application by having the database built in a modular manner.

4.4 UI/UX Design Considerations

The Digital Detox and Mental Well-Being Application has been designed so that users have a visually peaceful and straightforward experience when using the application. The digital detox and mental well-being application have been designed so that it is easy to use, calming, engaging, and focused on wellness. We use a minimalist design approach to make it easier for our users to concentrate on their goals, with less visual clutter around them. The use of soft color palettes, clear fonts, and intuitive navigation for all age groups enables users to easily move between the different modules of the application, such as mood tracking, journal writing, and engaging in various detox activities.

The Digital Detox and Mental Well-being App is a user-centered app that aims to support users emotionally and to offer users clarity through app use. Accessibility was prioritized in the design process so that the app is available to all potential users, independent of their technology experience level, by creating a design and feature set that allows users to engage with the app, even if they aren't familiar with technology.

The design and features of the application are intended to allow individuals to interact with the application even if they are not familiar with technology. The TTS (text-to-speech) features are one way that we can enhance the accessibility of the application, particularly regarding the meditation and guided wellness features, because they allow users to listen to the guidance without having to read it.

The overall design of the Digital Detox and Mental Well-Being Application has been created in such a way that users can focus on their wellness journey without having to deal with high levels of cognitive load due to excessive animations and complex design layouts. This included standardizing design and visual elements, as well as layout patterns across all modules of the system to create a uniform experience for all users as they engage with new features within the app. Ultimately, the UI/UX design will assist with increasing the usability, emotional involvement, and long-term use of the app to develop healthy digital habits.

4.5 Security Considerations

The Digital Detox and Mental Well-Being Application is developed with a strong emphasis on security and user privacy, recognizing the highly sensitive nature of the personal, behavioral, and psychological data collected through the platform. The application manages data such as mood tracking records, journaling entries, screen-time usage, detox progress, and child activity controls, all of which require robust protection mechanisms to prevent unauthorized access, data leakage, or misuse.

To ensure secure access to user accounts, the application integrates Firebase Authentication, which provides a reliable and industry-standard authentication mechanism. Users are required to verify their identity through secure login methods, ensuring that only authenticated users can access their respective accounts. Upon successful authentication, each user is assigned a unique identity token, which is securely generated and managed by Firebase. This token-based authentication system ensures session integrity and prevents unauthorized entities from accessing user data or impersonating legitimate users.

All data communication between the user's device and cloud services is protected using end-to-end encryption protocols, such as HTTPS and SSL/TLS. This ensures that data transmitted over the network whether related to mental health logs, activity data, or parental control settings remains protected from interception, tampering, or man-in-the-

middle attacks. Encryption during transmission significantly reduces the risk of data breaches while maintaining data confidentiality and integrity. Special security provisions are implemented for sensitive application modules, particularly Kids Mode, which requires enhanced protection due to the involvement of minors. Access to parental control features is restricted through multi-layer verification mechanisms, including a parent-defined PIN or password. This prevents children from altering screen-time limits, disabling restrictions, or bypassing detox controls. The application follows a role-based access control (RBAC) approach, where only authorized guardians are permitted to create, manage, and modify child profiles. This separation of roles ensures that critical settings remain protected and that parental authority is strictly enforced within the system.

In addition to cloud-based security measures, the platform employs secure local data handling techniques to protect information stored on the user's device. Sensitive preferences, temporary session data, and cached content are stored in an encrypted or protected format using platform-level security features. This minimizes the risk of unauthorized access in scenarios such as device theft, loss, or compromise. Where applicable, sensitive data is stored only for the minimum duration required, adhering to data minimization principles.

Furthermore, the application complies with responsible data management practices by following privacy-by-design principles. User data is collected strictly for functional purposes, and access is limited to essential components of the system. Regular security updates, dependency checks, and secure coding practices are followed to reduce vulnerabilities. The system also supports secure logout and session expiration mechanisms to further safeguard user accounts.

Overall, the combination of secure authentication, encrypted data transmission, role-based access control, local data protection, and ethical data handling practices establishes a strong and trustworthy security framework. These measures not only protect user data but also build user confidence, promote responsible digital behavior, and ensure that the Digital Detox and Mental Well-Being Application remains a safe and reliable platform for users of all age groups.

Chapter 5

FUTURE ENHANCEMENTS AND IMPACT

It contains two sections with the first section presenting the projected impact and overall effectiveness of the Digital Detox and Mental Well-Being Application. The application was developed during Phase 1 of the project and builds upon the conceptual framework, system design and functional implementation presented in Chapters 1, 2, 3 and 4. The purpose of Chapter 5 is to evaluate how the Digital Detox and Mental Well-Being Application will influence user behavior, emotional wellness, and digital habits.

As such, Chapter 5 includes an evaluation plan for Phase 1, as well as initial testing strategies designed to assist with the determination of the usability and performance of features within the application. Chapter 5 outlines the limitations of the Phase 1 prototype and discusses the plans for future improvements to the Version 2 application. The information contained in Chapter 5 will allow readers to understand how this application will help users manage screen time and create healthier lifestyles through ongoing improvements.

5.1 Expected Impact

The goal of this application is to allow its users to better understand their digital usage by establishing awareness through mood tracking, screen time tracking, and detox progress tracking tools. It develops greater awareness of device routines and encourages users to reflect on how their use of devices influences their day-to-day functioning; therefore, over time, users will create more conscious, balanced decisions regarding their respective uses of devices, which will likely lead to greater levels of self-control regarding phone usage and decreased levels of impulsive use of phones or technology.

The application provides several different ways to support users' emotional health with its features, such as meditation guided and self-directed, journaling, and affirmation creation and completing. Users are encouraged to reduce their levels of stress, create healthier thought patterns, and improve their levels of focus as part of the wellness and detoxifier elements of the application. By combining wellness tools within a detoxification framework, the application enables users to eliminate distractions and establishes a

supportive environment to support the development of mental clarity and emotional stability.

Parents will utilize the "Kids Mode" feature to create healthy boundaries regarding screen time use and improve visibility and control over their children's usage of technology. Setting up this infrastructure creates the opportunity to provide early exposure to responsible use of technology. This will increase the chance of not developing habits of dependence on technology over the long run. In conclusion, both the detox and wellness components of the application should improve the overall wellbeing and employability of users, including children, families, and all other users, across multiple demographics.

5.2 Evaluation Plan

The main objective of this project was to address a clearly defined problem through a systematic approach, ensuring that each stage from analysis and design to implementation contributed meaningfully toward the desired outcomes. Throughout the project, careful attention was given to understanding the requirements and aligning the methodology to meet these goals. Each module or component of the system was designed to fulfill specific objectives, ensuring coherence and functionality.

Regular testing and evaluation were conducted to validate the results, confirming that the project not only met its initial objectives but also maintained consistency in performance, reliability, and accuracy. Additionally, users of the wellness tools (e.g., guided meditation and affirmations) will have an opportunity to provide feedback through short surveys and feedback forms regarding the extent to which they utilize the tools with their daily routines and find them valuable. We will also perform basic operations checks to ensure that all applications remain functional on all devices (i.e., responsivity, data syncing and error handling).

5.3 Limitations

The wellness and detox features offered by the application are great but have limitations that restrict their use. For example, the mood tracker, journal and detoxify Tools all predate the frequency and accuracy with which users input their information. If users do not regularly update their mood or engage with detoxification programs, then the application will not accurately reflect users' habits or their overall wellness.

In addition to this, the application relies solely on user self-regulation. Therefore, users with a propensity to engage in addictive behaviours will find it hard to adhere to goals without additional support or management from third parties. Although the application is designed not to require intrusive permission for security and ethical reasons, this also impacts the application's ability to monitor device usage and monitor through technical controls.

Finally, since user behaviour, device type, and network connectivity can vary widely, the overall performance of some features (for example, real-time updates, guided meditations, and synchronization of data) may be impaired if connectivity is weak. Therefore, future iterations of this application should consider additional refinements and adaptation systems to address these challenges.

5.4 Future Enhancements

Future versions of the app plan to build on the personalization and engagement features of the current version. New features planned for the app will include new analytical tools that allow the app to analyze how long people spend on their smartphones in the long term; analyze what emotional state they are in when using their smartphones; develop predictive analytics that would allow it to suggest content to people based on how often they use their phones; create personal reminders for users; use machine learning techniques to determine specific detox goals for users that would be best suited for them as individuals.

New Features that will support richer and more interactive experiences will be developed as enhancements to the main modules. New features that will be developed for Detox Mode may include additional gamification opportunities; additional challenges that can be customized by the user; and more ways to visualize the progress users are making. The function of the Detox Buddy System may include expanded group challenges, shared milestones, and community support for users. New Features developed for Kids Mode may also include more detailed activity data for parents; educational information the parent can use to guide their child to appropriate uses of technology that encourage positive digital habits.

To make the application perform better technically, future versions will develop features that help the application run faster and be more secure and transfer data in a more seamless manner between devices. Additionally, new features that improve the offline

capability of the app, develop bilingual support, and develop the ability to work with fitness wearables will help users track their overall wellness more easily. The end goal of future enhancements of the app will be to become a more intelligent, customizable, and complete digital health and wellness platform.

In addition to these feature expansions, future development will also focus on building a more cohesive user ecosystem that unifies all modules under a consistent, intuitive interface. By strengthening cross-module communication such as allowing detox insights to inform wellness recommendations or enabling Kids Mode data to integrate with family dashboards the app will evolve into a holistic tool that supports healthier digital behavior across different life stages. This integrated approach will ensure that users experience not just isolated features, but a seamless and supportive wellness journey tailored to their needs.

CONCLUSION

This project encompasses a holistic approach to addressing modern problems of increased screen time and digital addiction experienced by individuals due to their digital lifestyle. The advancement of technology has gotten to the point where young people can no longer escape from their work and playtime through their digital devices; therefore, it is harder for them to establish healthy boundaries and establish a paced balance between work and play for them. Recognizing this fact, we have created an organized and supportive way to connect users through digital wellness, mindfulness, and responsible discipline in their usage of technology.

The design of this application combines principles from behavior psychology with technical features to create a user-friendly experience that also provides motivation, encouragement, and user-friendly. The various features of the application (i.e., mood tracking, journaling, guided meditation and digital detox timers) support users across multiple dimensions of their digital lives. The application is designed on the principle of modules, ensuring that the user gets more personalized services, whereas the backend services from Firebase ensure that the user interface is reliable and secure for the user. In the long run, the application will enable the user to analyze his online habits and will empower him to change for the better.

Currently, it appears that the current form of this program has been effectively serving its mission of enhancing online relations and emotional health among its users. However, there remain many opportunities for expansion, such as implementing advanced analytics, providing individualized product suggestions; allowing for increased gamification; and improving the experience of families through updates to the functionality of current programs, as well as offering new ideas that families may want to use to enhance their interaction with technology. The work achieved thus far has developed a basic structure from which to build a scalable and effective digital wellness solution that will promote balanced engagement with technology and promote healthy interactions between people and technology.

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