Mental Health Care System

A PROJECT REPOT

Submitted by

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in partial fulfillment of requirements for the award of the course

AGB1211 – DESIGN THINKING

in

ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING

K. RAMAKRISHNAN COLLEGE OF TECHNOLOGY

(An Autonomous Institution, affiliated to Anna University Chennai and Approved by AICTE, New Delhi)

SAMAYAPURAM – 621 112

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K. RAMAKRISHNAN COLLEGE OF TECHNOLOGY (AUTONOMOUS)

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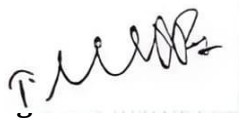
BONAFIDE CERTIFICATE

Certified that this project report on **" MENTAL HEALTH CARE SYSTEM"** is the bonafide work of **ABISHEK P(2303811714821001), AJMAL AHAMED J (2303811714821001), AKASH S (2303811714821004), AKILAN K (2303811714821005)** who carried out the project work during the academic year 2024 - 2025 under my supervision.



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INTERNAL EXAMINER

EXTERNAL EXAMINER

DECLARATION

I declare that the project report on "**MENTAL HEALTH CARE SYSTEM"** is the result of original work done by us and best of our knowledge, similar work has not been submitted to "**ANNA UNIVERSITY CHENNAI**" for the requirement of Degree of **BACHELOR OF ENGINEERING**. This project report is submitted on the partial fulfillment of the requirement of the award of the **AGB1211 – DESIGN THINKING.**

Signature

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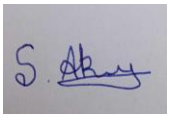

AKASH S

AKILAN K

Place: Samayapuram

Date: 5/12/2024

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It is with great pride that I express our gratitude and indebtedness to our institution, **"K. Ramakrishnan College of Technology (Autonomous)",** for providing us with the opportunity to do this project.

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I wish to express our special thanks to the officials and Lab Technicians of our departments who rendered their help during the period of the work progress.

VISION OF THE INSTITUTION

To serve the society by offering top-notch technical education on par with global standards.

MISSION OF THE INSTITUTION

- Be a center of excellence for technical education in emerging technologies by exceeding the needs of industry and society.
- Be an institute with world class research facilities.
- Be an institute nurturing talent and enhancing competency of students to transform them as all- round personalities respecting moral and ethical values.

VISION AND MISSION OF THE DEPARTMENT

To become a renowned hub for AIML technologies to producing highly talented globally recognizable technocrats to meet industrial needs and societal expectation.

Mission 1: To impart advanced education in AI and Machine Learning, built upon a foundation in Computer Science and Engineering.

Mission 2: To foster experiential learning equips students with engineering skills to tackle real-world problems.

Mission 3: To promote collaborative innovation in AI, machine learning, and related research and development with industries.

Mission 4: To provide an enjoyable environment for pursuing excellence while upholding strong personal and professional values and ethics.

PROGRAM EDUCATIONAL OBJECTIVES (PEOS)

PEO 1: Excel in technical abilities to build intelligent systems in the fields of AI & ML in order to find new opportunities.

PEO 2: Embrace new technology to solve real-world problems, whether alone or as a team, while prioritizing ethics and societal benefits.

PEO 3: Accept lifelong learning to expand future opportunities in research and product development.

PROGRAM OUTCOMES

Engineering students will be able to:

1. **Engineering knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
2. **Problem analysis:** Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
3. **Design/development of solutions:** Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
4. **Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
5. **Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.
6. **The engineer and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
7. **Environment and sustainability:** Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
8. **Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

9. **Individual and team work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
10. **Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
11. **Project management and finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
12. **Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

PROGRAM SPECIFIC OUTCOMES (PSOs)

PSO 1: Expertise in tailoring ML algorithms and models to excel in designated applications and fields.

PSO 2: Ability to conduct research, contributing to machine learning advancements and innovations that tackle emerging societal challenges

ABSTRACT

The Mental Health Care Project aims to develop a comprehensive mobile application designed to address various mental health challenges faced by individuals across different demographics. This project focuses on providing accessible, affordable, and effective mental health support through a user-friendly platform. Key features include mood tracking, guided meditations, AI-powered chatbots, professional support, and community forums. The app is tailored to meet the unique needs of diverse users, such as working parents, teenagers, and the elderly, ensuring personalized care and support.

The project leverages advanced technologies like AI and machine learning to offer immediate assistance and personalized recommendations. It also integrates educational resources to promote mental health awareness and reduce stigma. By offering remote consultations and a wide range of self-help tools, the app aims to bridge the gap in mental health care accessibility, especially in underserved areas.

The development process involves a thorough requirement analysis, iterative design and development, rigorous testing, and continuous improvement based on user feedback. The project addresses real-time problems such as limited access to mental health services, high costs, stigma, and the shortage of mental health professionals. By providing a holistic and integrated approach to mental health care, this project aspires to enhance the overall wellbeing of its users and foster a supportive community

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CHAPTER 1

INTRODUCTION

12.1 INTRODUCTION

The Mental Health Care Project aims to provide accessible, affordable, and effective mental health support through a mobile app. It offers features like mood tracking, guided meditations, AI-powered chatbots, professional help, and community forums, catering to diverse groups such as working parents, teenagers, and the elderly. The app uses advanced technologies to deliver personalized care, promote mental health awareness, and reduce stigma. Ultimately, it strives to improve overall well-being by addressing barriers to mental health services and creating an inclusive support system.

12.2 PROBLEM STATEMENT

Mental health support is often inaccessible due to stigma, high costs, and a shortage of professionals.

Lack of personalized tools and resources makes it hard to manage mental health across different demographics.

Stigma prevents individuals from seeking help, worsening mental health conditions.

12.3 OBJECTIVE

TThe project aims to create an accessible mobile app offering personalized mental health support through AI tools, mood tracking, and professional guidance. By leveraging advanced AI and data-driven insights, the app will provide tailored recommendations, helping users manage their mental health effectively. It seeks to reduce stigma surrounding mental health by fostering open, supportive conversations and offering discreet, private access to resources. Additionally, the app will promote well-being by encouraging healthy habits, offering coping strategies, and integrating mindfulness practices.

CHAPTER 2

PROJECT METHODOLOGY

2.1 BLOCK DIAGRAM

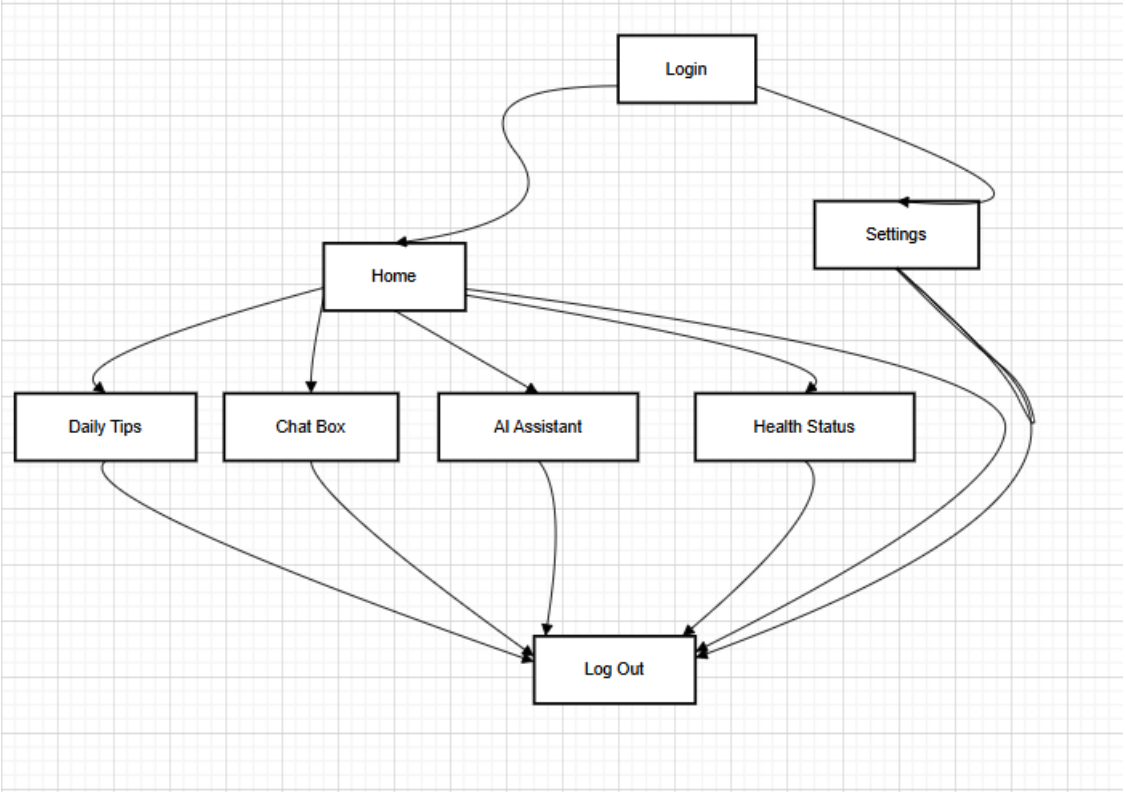

FIG 2.1 Flow Chart

The flowchart represents the user journey in a "Mental Health Care System" app. After logging in, users can access the Home page or Settings. From the Home page, they can navigate to Daily Tips, Chat Box, AI Assistant, or Health Status, with the option to log out from any page.

CHAPTER 3

KEY PHASES OF DESIGN THINKING

3.1 EMPATHIZE

Understand user needs through interviews, surveys, and empathy mapping. Identify barriers like stigma, cost, and accessibility to mental health support. Use tools like questionnaires and cue cards to gather insights from diverse user groups (working parents, teenagers, elderly). Analyze data to create targeted solutions that address the specific challenges faced by each group. Ensure the solutions are inclusive, considering cultural, geographical, and socio-economic factors to improve accessibility and effectiveness of mental health resources for all users.

3.2 DEFINE

Synthesize insights to create a clear problem statement (e.g., barriers to mental health access). Map out key user groups and their specific challenges. Use the 5W and 1H matrix to define the scope of the problem and how the app can address it. Identify the root causes of these barriers and prioritize them based on their impact on users. Develop solutions that are tailored to each user group, ensuring the app effectively meets their unique needs and provides meaningful support for overcoming mental health challenges.

3.3 IDEATE

Brainstorm features that address user pain points (e.g., AI chatbots, mood tracking). Organize ideas using affinity links and mind mapping. Evaluate potential solutions with OIOR tables and prioritize based on impact and resources using SOAT/SOAR analysis. Refine the most promising features by considering technical feasibility and user feedback. Ensure that each feature aligns with the overall goal of

improving mental health support, making the app both user-friendly and effective in addressing the identified pain points.

3.4 PROTOTYPE

The Soft Prototype phase involves creating basic visuals of key screens (Home, Dashboard, Search, AI Chat, Settings) to represent the app's design and flow. These visuals serve as an early visual framework, helping to visualize the user interface and the overall user interaction with the app. In the Medium Prototype phase, an MVP (Minimum Viable Product) is developed with core features like mood tracking and the AI chatbot. A Proof of Concept (POC) is built, and the Information Architecture (IA) is refined for user flows and navigation to ensure the app's structure is intuitive and accessible. The Final Prototype phase focuses on creating a fully functional app with all features integrated, including AI, mood tracking, and support functionalities. During this phase, usability and interactivity are tested extensively to ensure the app performs optimally, providing valuable feedback for adjustments and improvements in the final product.

3.5 TEST

Feedback involves collecting user insights through surveys, interviews, or usability tests to evaluate the app’s design and functionality. This feedback helps identify areas for improvement and ensures the app aligns with user needs. User Test Content consists of conducting testing sessions to observe how users interact with the app’s features, allowing the identification of any usability issues. These insights are crucial for refining the app’s functionality and improving the overall user experience, ensuring the final product is both intuitive and effective in addressing user needs.

CHAPTER 4

MODULE DESCRIPTION

4.1 User Authentication Module

This module handles the login and authentication process, ensuring secure access to the app for users. It includes user registration, login, and password recovery functionalities.

4.2 Home Dashboard Module

The central hub of the app where users can access various features such as daily tips, AI assistance, mood tracking, and health status. It offers easy navigation to other sections like Settings and the Chat Box.

4.3 Health Status Module

Allows users to track their mental health over time by logging their mood and health status. This module provides visualizations like mood charts or reports to help users better understand their mental well-being.

4.4 AI Assistant & Chat Box Module

This module incorporates AI-driven chatbots and live chat features to provide users with mental health support and guidance. It helps users with personalized tips, mental health advice, and real-time assistance.

4.5 Settings Module

Enables users to customize their preferences, manage notifications, and set up privacy options. This module ensures that the app meets individual needs, allowing for personalization based on user preferences.

CHAPTER 5
CONCLUSION

The development of this mental health care app represents a significant step forward in providing accessible, personalized, and comprehensive support for users. By integrating AI tools, mood tracking, and professional guidance, the app not only addresses the individual mental health needs of users but also promotes proactive self- care and emotional well-being. The use of artificial intelligence ensures that users receive tailored advice and recommendations, enhancing their ability to manage mental health challenges effectively. Additionally, the app's emphasis on reducing stigma and offering educational resources plays a crucial role in fostering an open dialogue about mental health, helping users feel more comfortable seeking help and learning about strategies to improve their mental wellness.

Furthermore, the project aims to create a sustainable, user-friendly platform that adapts to the diverse needs of various user groups, including teenagers, working parents, and the elderly. By focusing on inclusivity and accessibility, the app ensures that all individuals, regardless of their background or situation, can access valuable mental health resources. With ongoing updates and user feedback incorporated into future iterations, this app holds the potential to create a lasting impact on mental health care. It empowers users to take control of their mental health journey, offering not only immediate support but also long-term benefits through continuous improvement and personalization.

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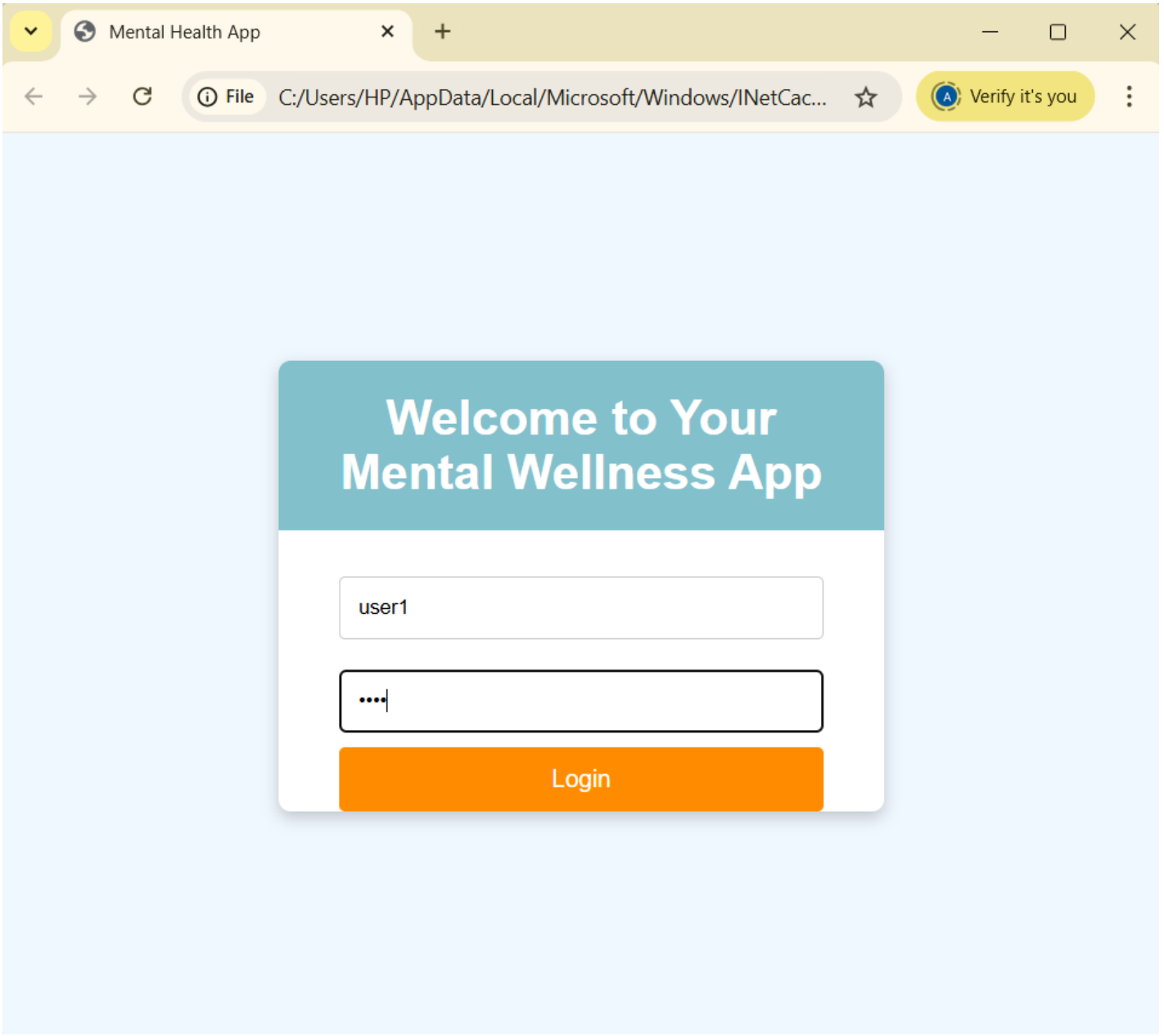
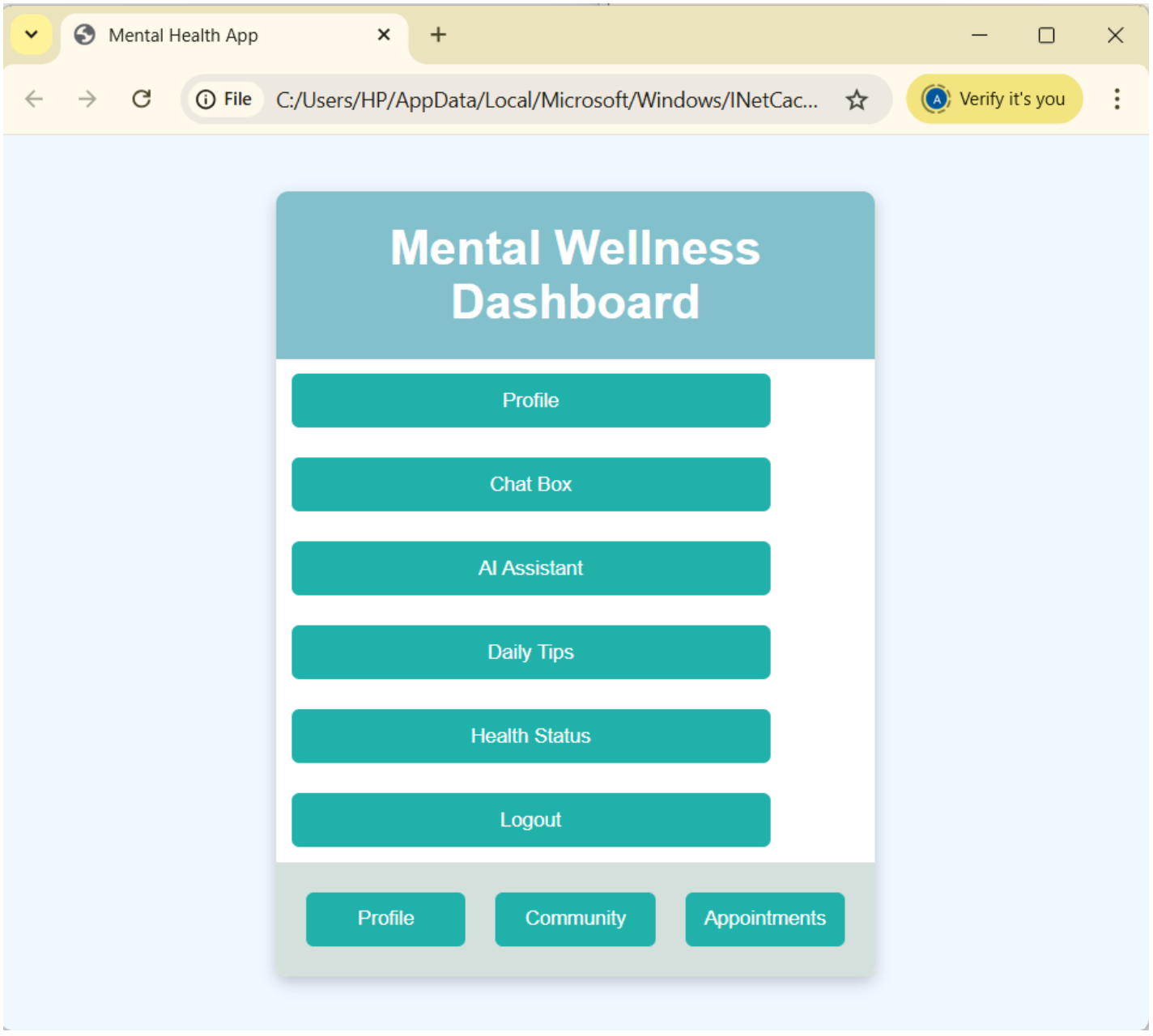
APPENDIX A – SCREENSHOTS

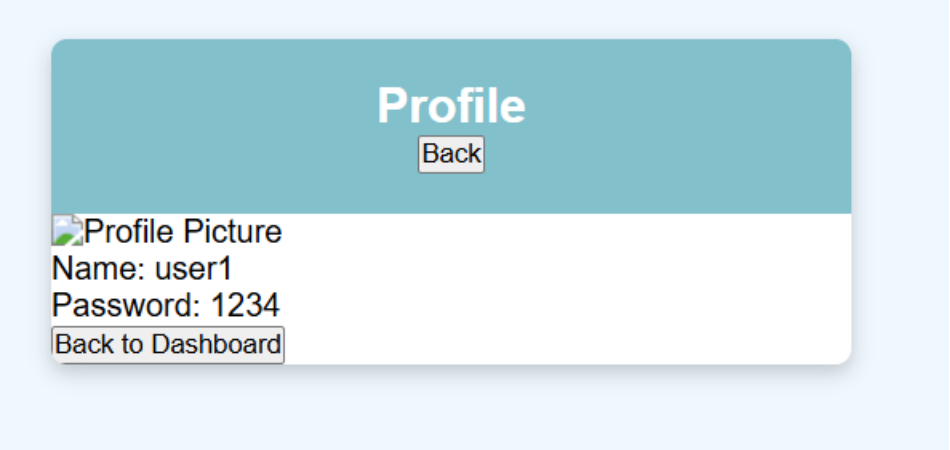
1)LOGIN PAGE



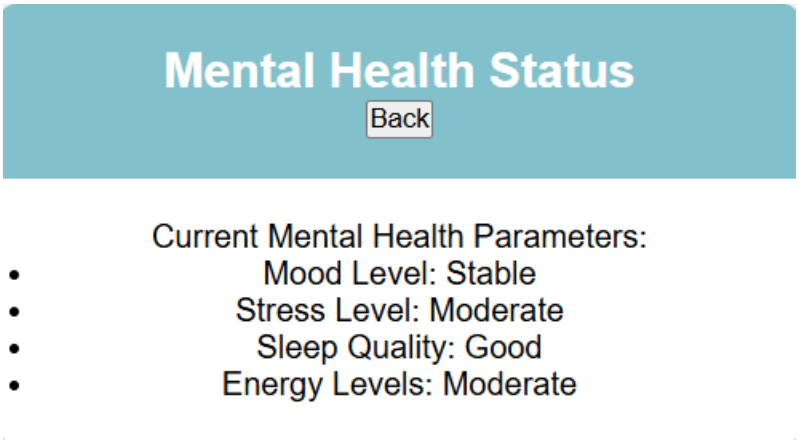
2) DASHBOARD PAGE



3) PROFILE PAGE



4) STATUS



5) TIPS