**“MENTAL HEALTH COMPANION”**

**A**

**Project Report**

***Submitted by***

**Ansh Saraswat**

**22BCON416**

***In partial fulfilment for the award of the degree***

***of***

**BACHELOR OF TECHNOLOGY**

**IN**

**COMPUTER SCIENCE & ENGINEERING**

******At**

**JECRC UNIVERSITY, JAIPUR**

**MAY 2025**

# Table of Contents

DECLARATION

CERTIFICATE

ACKNOWLEDGEMENTS

ABSTRACT

LIST OF TABLES

LIST OF FIGURES

LIST OF SYMBOLS

LIST OF ABBREVIATIONS

CHAPTER 1 – INTRODUCTION

CHAPTER 2 – LITERATURE SURVEY

CHAPTER 3 – SOFTWARE REQUIREMENT SPEC

CHAPTER 4 – SOFTWARE DESIGN

CHAPTER 5 – SOFTWARE & HARDWARE REQUIREMENTS

CHAPTER 6 – CODING/CODE TEMPLATES

CHAPTER 7 – TESTING

CHAPTER 8 – OUTPUT SCREENS

CHAPTER 9 – CONCLUSION

CHAPTER 10 – FUTURE ENHANCEMENTS

REFERENCES

APPENDICES

**Candidate’s Declaration**

I, Ansh Saraswat, bearing roll number 22BCON416, hereby declare that the work which is being presented in the Project, entitled “**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**” in partial fulfilment for award of Degree of “**Bachelor of Technology**” in Department of **Computer Science Engineering** is submitted to the Department Computer Science & Engineering, JECRC University is a record of Project work carried under the Guidance of **Guide name**, Department of Computer Science & Engineering.

I have not submitted the matter presented in this work anywhere for the award of any other Degree.

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**CERTIFICATE**

Certified that the Project Report entitled “**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**” submitted by **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** bearing roll no.\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in partial fulfilment of the requirements for the award of the degree of Bachelor of Technology at JECRC University, Jaipur is a record of the student’s own work carried out under my supervision and guidance. To the best of my knowledge, this Project work has not been submitted to JECRC University or any other university for the award of the degree. It is further understood that by this certificate the undersigned does not endorse or approve of any statement made, opinion expressed or conclusion drawn therein but approve Project for the purpose for which it is submitted.

**Guide Name**

(Project Guide)

**Tushar Vyas Dr. Gajanand Sharma**

(Project Coordinator) (Dy. HOD, CSE)

**Acknowledgements**

Many people have supported me, in different ways, during the work with the thesis. I’d like to thank my guide \_\_\_\_\_\_\_\_\_\_\_ & HOD \_\_\_\_\_\_\_\_\_\_\_\_\_ for their kind and active support and valuable guidance during the work process. My family has as always offered me their unconditional support, thank you! I have taken efforts in the Project. However, it would not have been possible without the kind support and many individuals and organizations. I would like to extend my sincere thanks to each and every members related to JECRC University.

Student Name

Registration No.

*<You may update this or add names as per your convenience>*

# Abstract

Mental health is a fundamental aspect of overall well-being. With increasing mental health challenges worldwide, there is a need for accessible digital tools. The project “Mental Health Companion” is a frontend web-based application using HTML, CSS, and JavaScript aimed to support mental wellness through journaling, guided meditation, mood tracking, and interactive games. This report discusses the development process, features, design decisions, and future potential for expansion into a more robust platform.

# CHAPTER 1 INTRODUCTION

Mental health has gained prominence in recent years due to rising awareness and increasing reports of anxiety, depression, and stress among different age groups. This chapter explores the definition of mental health, its importance, the stigma surrounding mental health treatment, and the opportunities technology provides in bridging gaps in access and awareness. The Mental Health Companion project is envisioned as a supportive digital environment to facilitate daily mental well-being practices.

**Concepts in mental health**

Mental health is a state of mental well-being that enables people to cope with the stresses of life, realize their abilities, learn well and work well, and contribute to their community. It is an integral component of health and well-being that underpins our individual and collective abilities to make decisions, build relationships and shape the world we live in. Mental health is a basic human right. And it is crucial to personal, community and socio-economic development. Mental health is more than the absence of mental disorders. It exists on a complex continuum, which is experienced differently from one person to the next, with varying degrees of difficulty and distress and potentially very different social and clinical outcomes.

Mental health conditions include mental disorders and psychosocial disabilities as well as other mental states associated with significant distress, impairment in functioning, or risk of self-harm. People with mental health conditions are more likely to experience lower levels of mental well-being, but this is not always or necessarily the case.

**Determinants of mental health**

Throughout our lives, multiple individual, social and structural determinants may combine to protect or undermine our mental health and shift our position on the mental health continuum.

Individual psychological and biological factors such as emotional skills, substance use and genetics can make people more vulnerable to mental health problems. Exposure to unfavourable social, economic, geopolitical and environmental circumstances – including poverty, violence, inequality and environmental deprivation – also increases people’s risk of experiencing mental health conditions.

Risks can manifest themselves at all stages of life, but those that occur during developmentally sensitive periods, especially early childhood, are particularly detrimental. For example, harsh parenting and physical punishment is known to undermine child health and bullying is a leading risk factor for mental health conditions.

Protective factors similarly occur throughout our lives and serve to strengthen resilience. They include our individual social and emotional skills and attributes as well as positive social interactions, quality education, decent work, safe neighbourhoods and community cohesion, among others.

Mental health risks and protective factors can be found in society at different scales. Local threats heighten risk for individuals, families and communities. Global threats heighten risk for whole populations and include economic downturns, disease outbreaks, humanitarian emergencies and forced displacement and the growing climate crisis.

Each single risk and protective factor has only limited predictive strength. Most people do not develop a mental health condition despite exposure to a risk factor and many people with no known risk factor still develop a mental health condition. Nonetheless, the interacting determinants of mental health serve to enhance or undermine mental health.

**Mental health promotion and prevention**

Promotion and prevention interventions work by identifying the individual, social and structural determinants of mental health, and then intervening to reduce risks, build resilience and establish supportive environments for mental health. Interventions can be designed for individuals, specific groups or whole populations.

Reshaping the determinants of mental health often requires action beyond the health sector and so promotion and prevention programmes should involve the education, labour, justice, transport, environment, housing, and welfare sectors. The health sector can contribute significantly by embedding promotion and prevention efforts within health services; and by advocating, initiating and, where appropriate, facilitating multisectoral collaboration and coordination.

Suicide prevention is a global priority and included in the Sustainable Development Goals. Much progress can be achieved by limiting access to means, responsible media reporting, social and emotional learning for adolescents and early intervention. Banning highly hazardous pesticides is a particularly inexpensive and cost–effective intervention for reducing suicide rates.

Promoting child and adolescent mental health is another priority and can be achieved by policies and laws that promote and protect mental health, supporting caregivers to provide nurturing care, implementing school-based programmes and improving the quality of community and online environments. School-based social and emotional learning programmes are among the most effective promotion strategies for countries at all income levels.

Promoting and protecting mental health at work is a growing area of interest and can be supported through legislation and regulation, organizational strategies, manager training and interventions for workers.

**Mental health care and treatment**

In the context of national efforts to strengthen mental health, it is vital to not only protect and promote the mental well-being of all, but also to address the needs of people with mental health conditions.

This should be done through community-based mental health care, which is more accessible and acceptable than institutional care, helps prevent human rights violations and delivers better recovery outcomes for people with mental health conditions. Community-based mental health care should be provided through a network of interrelated services that comprise:

* mental health services that are integrated in general health care, typically in general hospitals and through task-sharing with non-specialist care providers in primary health care;
* community mental health services that may involve community mental health centers and teams, psychosocial rehabilitation, peer support services and supported living services; and
* services that deliver mental health care in social services and non-health settings, such as child protection, school health services, and prisons.

The vast care gap for common mental health conditions such as depression and anxiety means countries must also find innovative ways to diversify and scale up care for these conditions, for example through non-specialist psychological counselling or digital self-help.

**WHO response**

All WHO Member States are committed to implementing the [“Comprehensive mental health action plan 2013–2030"](https://www.who.int/publications/i/item/9789240031029), which aims to improve mental health by strengthening effective leadership and governance, providing comprehensive, integrated and responsive community-based care, implementing promotion and prevention strategies, and strengthening information systems, evidence and research. In 2020, WHO’s [“Mental health atlas 2020”](https://www.who.int/publications/i/item/9789240036703) analysis of country performance against the action plan showed insufficient advances against the targets of the agreed action plan.

WHO’s [“World mental health report: transforming mental health for all”](https://www.who.int/publications/i/item/9789240049338) calls on all countries to accelerate implementation of the action plan. It argues that all countries can achieve meaningful progress towards better mental health for their populations by focusing on three “paths to transformation”:

* deepen the value given to mental health by individuals, communities and governments; and matching that value with commitment, engagement and investment by all stakeholders, across all sectors;
* reshape the physical, social and economic characteristics of environments – in homes, schools, workplaces and the wider community – to better protect mental health and prevent mental health conditions; and
* strengthen mental health care so that the full spectrum of mental health needs is met through a community-based network of accessible, affordable and quality services and supports.

WHO gives particular emphasis to protecting and promoting human rights, empowering people with lived experience and ensuring a multisectoral and multistakeholder approach.

WHO continues to work nationally and internationally – including in humanitarian settings – to provide governments and partners with the strategic leadership, evidence, tools and technical support to strengthen a collective response to mental health and enable a transformation towards better mental health for all.

# CHAPTER 2 LITERATURE SURVEY

Various mobile and web applications like Headspace, Calm, BetterHelp, and Talkspace have attempted to provide digital solutions for mental health. Studies show mixed effectiveness, highlighting the need for personalization and user engagement. This chapter reviews academic research and existing tools, analyzing their strengths and limitations, and how the proposed Mental Health Companion builds upon these insights by offering a simple yet effective tool using lightweight frontend technologies.

**Introduction**

Mental health is an integral part of overall well-being, influencing emotions, thoughts, and behaviors. Various studies have highlighted the importance of companionship in improving mental health. Whether through human relationships or artificial intelligence-based companions, social support plays a crucial role in alleviating stress, anxiety, and depression.

**The Role of Companionship in Mental Health**

Research has extensively examined how companionship—whether through friends, family, pets, or AI-driven assistants—affects mental health. Studies indicate that social connections reduce feelings of loneliness and enhance emotional resilience. According to John Cacioppo’s (2008) work on loneliness, strong social bonds can help mitigate psychological distress and improve overall life satisfaction.

Companion animals have been widely recognized for their positive impact on mental health. A study by Herzog (2011) notes that pet ownership can reduce stress and promote emotional well-being. Similarly, technological advancements have introduced AI-based mental health companions that provide interaction, emotional support, and even therapy guidance.

**AI-Powered Mental Health Companions**

With increasing reliance on technology, AI-driven companions have gained attention for their potential in mental health care. AI chatbots designed for therapeutic interaction, such as Woebot and Wysa, use cognitive behavioral therapy (CBT) techniques to help individuals manage stress and anxiety. Studies by Fulmer et al. (2018) and Bendig et al. (2019) suggest that AI mental health companions can complement traditional therapeutic interventions.

**Gaps in Existing Research**

While studies acknowledge the benefits of companionship in mental health, challenges remain in integrating AI-based solutions effectively. Key concerns include the ethical implications of AI companionship, privacy issues, and the effectiveness of long-term AI interactions compared to human relationships. Future research should explore the balance between human support and AI interventions in mental health care.

**Conclusion**

Companionship, whether human or artificial, plays a crucial role in mental health management. Existing literature highlights the psychological benefits of strong social connections and the potential of AI-driven companions. As technology continues to evolve, further research can help refine AI interventions and maximize their effectiveness in promoting mental well-being.

# CHAPTER 3 SOFTWARE REQUIREMENT SPECIFICATION

Functional Requirements:  
- User journaling with local storage  
- Mood tracking system using emojis or icons  
- Simple guided meditation videos embedded  
- Interactive relaxation games  
- Simple AI chatbot simulation  
  
Non-Functional Requirements:  
- Responsive web design  
- Compatibility with modern browsers  
- Lightweight frontend implementation without backend  
  
Technology Stack:  
- HTML for structure  
- CSS for styling  
- JavaScript for interactivity

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Technology Stack:  
- HTML for structure  
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# CHAPTER 4 SOFTWARE DESIGN

The application is designed with a homepage that acts as a dashboard linking to various modules: journaling, mood tracker, meditation, games, and chat. Each module uses buttons, forms, and interactive elements powered by JavaScript. The design is minimalistic to avoid overwhelming users. The use of calming colors and simple navigation aligns with mental health app design best practices. UML diagrams, flowcharts, and wireframes are part of the design documentation for clarity and future scaling.

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# CHAPTER 5 SOFTWARE & HARDWARE REQUIREMENTS

Software:  
- Web browser (Chrome, Firefox, Edge)  
- Any text editor (VSCode, Sublime Text)  
  
Hardware:  
- Any PC or laptop capable of running a modern web browser  
  
No additional backend server or cloud infrastructure required for the frontend version.

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# CHAPTER 6 CODING / CODE TEMPLATES

The project uses a modular HTML structure where each section is separated into div containers. CSS handles responsive layouts and theme colors. JavaScript is used for DOM manipulation, storing journal entries in local storage, updating mood icons, and simple game logic.  
  
Example code snippet for adding a journal entry:  
```html  
<textarea id="journalEntry"></textarea>  
<button onclick="saveEntry()">Save</button>  
<script>  
function saveEntry() {  
 const entry = document.getElementById('journalEntry').value;  
 localStorage.setItem('entry\_'+Date.now(), entry);  
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# CHAPTER 7 TESTING

Testing was carried out through manual functional tests for all features, including:  
- Adding journal entries  
- Saving and retrieving mood tracker data  
- Navigating between modules  
- Validating JavaScript functions for expected output  
- UI responsiveness testing on different devices  
  
Black-box and white-box test cases were created to ensure stability and user-friendliness.

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# CHAPTER 8 OUTPUT SCREENS

The following screenshots represent the application modules:  
- Home Dashboard  
- Journal Entry Page  
- Mood Tracker Interface  
- Meditation Video Page  
- Relaxation Game Screen  
  
Screenshots demonstrate the interface simplicity and ease of navigation for first-time users.

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# CHAPTER 9 CONCLUSION

The Mental Health Companion successfully implements a basic mental wellness platform using only frontend technologies. It demonstrates the feasibility of low-cost, easily accessible digital tools to encourage positive mental health practices. Feedback indicates potential for adding more personalization and features in future versions.

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# CHAPTER 10 FUTURE ENHANCEMENTS

Possible enhancements include:  
- Adding user authentication  
- Saving journal entries to cloud databases  
- AI-powered chatbot with natural language processing  
- Expanded gamification features for engagement  
- Mobile app version development

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# APPENDICES

Full source code files included in appendix folder along with additional screenshots and diagrams.