

# SMART INDIA HACKATHON 2025

- **Problem Statement ID** – SIH25092
- **Problem Statement Title** - Development of a Digital Mental Health and Psychological Support System for Students in Higher Education
- **Theme** - MedTech / BioTech / HealthTech
- **PS Category** - Software
- **Team ID** - 24
- **Team Name** - The Girl Code



# ABOUT THE PROBLEM STATEMENT



## SOLUTION / IDEA

- (Gen) AI powered **interactive** chatbot for regular talks
- **Survey** (GAD-7, BDI-2 etc) : initiates chat based on responses
- Book **anonymous** **appointments** with counsellors
- Journal with **personalized lock**



## EXPLANATION

- Asks first time-user to fill surveys and **initiates** conversation based on responses
- AI analyses the replies and detects **severity** of stress/anxiety etc based on **terminologies** used in chat
- Sends alert to the admin interface regarding the user (in case of **detection** of severe conditions)

- **Resources** : PDFs/ Audios/ Affirmations : **downloadable**
- Mini activities/games as temporary stress busters
- IKS aligned therapy audios/mini games
- **Admin** dashboard with live-time insights and **anonymous statistics**



## HOW IS THE PROBLEM ADDRESSED

- AI detects **contradicting** answers to prevent fake inputs
- Students **freely express** themselves - no fear of being judges
- Mini games and music reduce acute stress
- Data is kept private and anonymous
- **Analyses** the conversations and via regular surveys, **help detect pre-symptoms**
- AI chatbot sends **alerts** to admin interface (in extreme cases) to **prevent worsening** of conditions.



## INNOVATION & UNIQUENESS

- **Gamified system** - credits system : achieve credits and redeem them on institute level (canteen/library/store)
- Mini games to deal with acute stress/anxiety
- IKS aligned resources (audios/pdfs /yoga) to **promote cultural awareness**
- Induces **discipline** in daily practice - hence maintain streak
- **Login inactivity** can help detect potential issues

# TECHNICAL APPROACH

## 1. Frontend (UI)

- ✧ **React.js** → Interactive website.
- ✧ **Tailwind CSS** → Quick and clean styling without writing lots of CSS.

## 2. Backend

- ✧ **Node.js + Express.js** → For requests, stores data, connect frontend with database.

## 3. Database

- ✧ **MongoDB** → Flexible storage for user profiles, journal entries, streaks, AI chat logs

## 4. AI

- ✧ **BERT LLM** → Relevant AI chatbot replies
- ✧ **Gen-AI**

## 6. Admin Dashboard Analytics

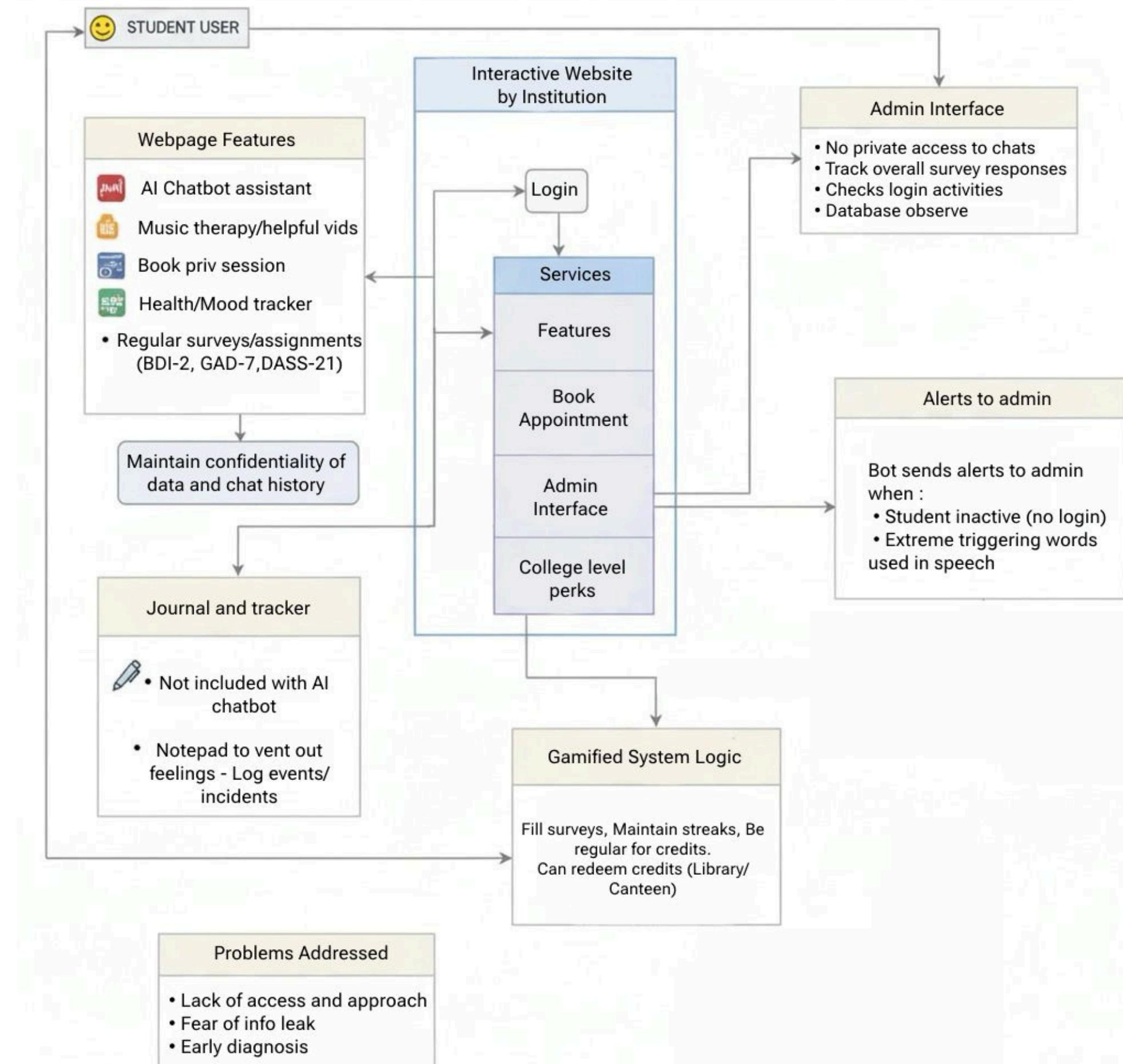
- ✧ **React + Chart.js** → Show trends like moods, streaks, and stress levels in charts.

## 7. Hosting / Deployment

- ✧ **Vercel** → Host frontend
- ✧ **Render / Railway** → Host backend + MongoDB

## 8. Offline assistance

- ✧ **IndexedDB** → Save journal or streaks when offline sync later to MongoDB.



# FEASIBILITY AND VIABILITY

## FEASIBILITY AND VIABILITY

### TECHNICAL FEASIBILITY :

- Gen-AI and BERT LLM can generate relevant questions/responses
- Chart.js provides Admin dashboard with anonymous statistics and updates

### OPERATIONAL FEASIBILITY :

- Simple web interface for students and anonymized dashboards for authorities enable tracking and future planning for relevant help/guidance/events.

### SOCIAL FEASIBILITY :

- Ensuring privacy within chats (stigma free engagement) promotes high usage among students

## POTENTIAL CHALLENGES

- AI can misinterpret user's emotions - hence provoking dull feelings (potential self harm)
- Scalability of users
- Incorrect responses by students irrespective of their current emotions
- Unavailability of professional help on campus during emergency



STIGMA AND HESITATION



DATA PRIVACY  
AND CONFIDENTIALITY



OVER-DEPENDENCE  
ON CHATBOT

## OVERCOMING CHALLENGES



Create awareness campaigns to reduce stigma and build trust

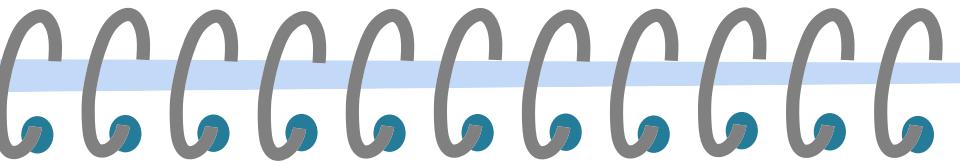


Provide clear referral options to counselors and helplines



Regular expert supervision to improve chatbot responses

# IMPACT AND BENEFITS



## POTENTIAL IMPACTS

- **Early detection** before escalation
- **Temporary stress reliever** through activities
- Visible user progress
- **24/7 Chatbot support**
- Increased self awareness and hence seek help when needed



## SOCIAL BENEFITS

- **Regional language** support and **offline access**
- Positive campus culture and relaxed atmosphere improves performance

## ECONOMIC BENEFITS

- Free to access **digital therapy** : cost cutting
- Reduces expenses due to credit system

## ENVIRONMENTAL BENEFITS

- Decrease in documentation, paperwork related waste
- This in-turn **reduces carbon footprints**

# RESEARCH AND REFERENCES

[1] H. Liu, S. S. Sundar, B. Li, and D. Lee, "Using AI chatbots to provide self-help depression interventions for university students: A randomized trial of effectiveness," \*Internet Interventions\*, vol. 27, p. 100494, 2022.  
<https://doi.org/10.1016/j.invent.2021.100494>

[2] A. Madrid-Cagigal, C. Kealy, C. Potts, M. D. Mulvenna, M. Byrne, M. M. Barry, and G. Donohoe, "Digital mental health interventions for university students with mental health difficulties: A systematic review and meta-analysis," Early Interv. Psychiatry, vol. 19, no. 3, p. e70017, Mar. 2025.  
<https://pmc.ncbi.nlm.nih.gov/articles/PMC11876723/>

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