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SMART INDIA HACKATHON 2025

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- **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

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ABOUT THE PROBLEM STATEMENT

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SOLUTION / IDEA

- (Gen) AI powered **interactive** chatbot for regular talks [2]
- **Survey** (GAD-7, BDI-2 etc) : initiates chat based on responses [2]
- Book **anonymous appointments** with counsellors
- Journal with **personalized lock**
- **Resources** : PDFs/ Audios/ Affirmations : **downloadable** [2]
- 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.

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)
- For **temporary** stress ; it suggests **mini games/activities/quests etc**
- Admin analyzes the **anonymized** data (eg: % of sleep deprived students etc) and can **plan events** for the same

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

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TECHNICAL APPROACH

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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.

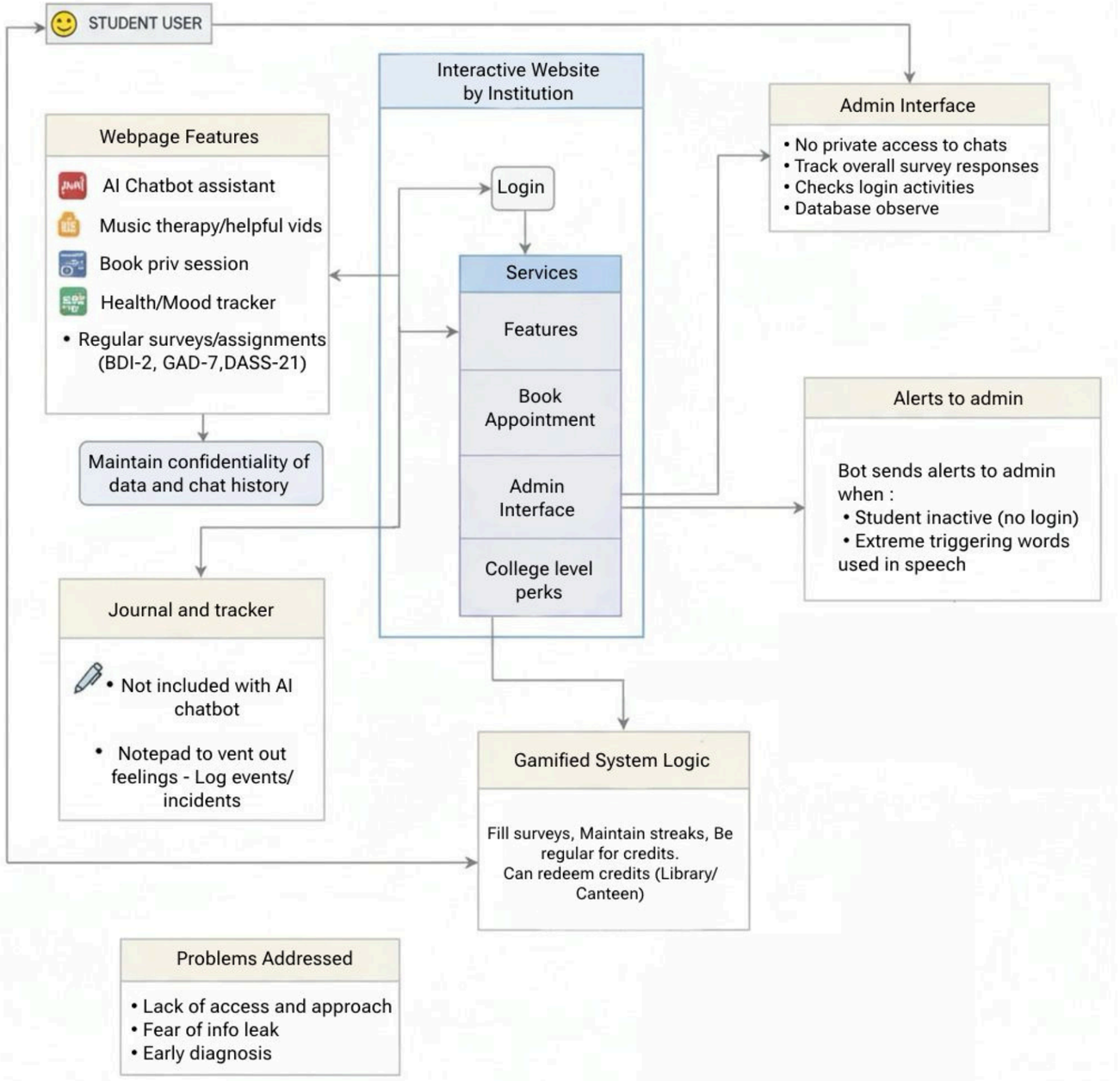
3. Database
✧ **MongoDB** → Flexible storage for user profiles, journal entries, streaks, AI chat logs

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.



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FEASIBILITY AND VIABILITY

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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

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

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IMPACT AND BENEFITS

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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**

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REFERENCES

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[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/**

[3] World Health Organization, "Adolescent mental health," 2021. **https://www.who.int/news-room/fact-sheets/detail/adolescent-mental-health**

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