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SMART INDIA HACKATHON 2024

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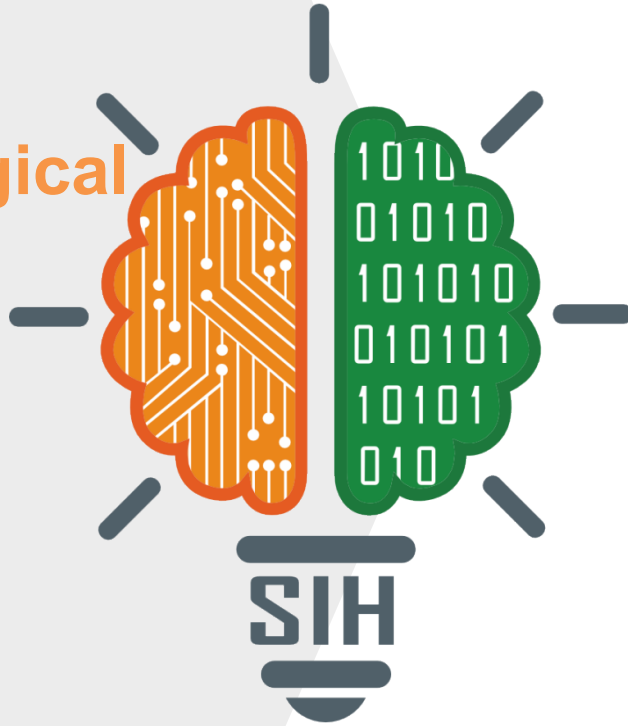
"SAHAJ" – Don't lose your way, Sahaj shows the way.

- **Problem Statement ID –** SIH25092
- **Problem Statement Title-** Mental Health and Psychological Support System
- **Theme-** MedTech / BioTech / HealthTech
- **PS Category-** Software
- **Team ID-** Black Order
- **Team Name-** Black Order



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SAHAJ

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“SAHAJ” is a **three-way solution** inclusive of **mobile app**, **website**, and **admin dashboard** to address **Mental Health** and **Psychological Disorders**. It offers **AI-guided support**, **music therapy**, **avatar-based therapy sessions**, and a **multilingual chatbot** with **anonymous peer support** and **personalized exercises**. **The admin dashboard** provides **anonymous analytics** for institutions to **spot trends**, **take timely action**, and **organize events** in collaboration with **psychiatrists and psychologists**.

❖ Proposed Solution

- **Unified** Digital Platform for Mental Wellness inclusive of both **Web** and **Mobile app**.
- **Anonymous Peer Platform** with AI-moderated, encrypted posts.
- **3D Avatar Therapists** conducting sessions with voice and text synthesis.
- **WhatsApp Bots** providing instant coping strategies and referrals 24/7.
- **One-Click Expert Access** connecting to mental health professionals in under few minutes.
- **PHQ-9/GAD-7 Mood Analytics** with ML predictions identifying depression patterns 72 hours in advance**.**
- **Mood** based **Music Generation** to enhance the mood.

❖ Uniqueness

•Providing therapy approaches adapted to **Indian social dynamics and regional contexts.**
•**Campus counselor** integration and academic calendar-based **stress management**.
•**Emotion-Responsive Music Therapy** using AI to generate real-time music based on mood patterns.
•**WhatsApp Bot Integration,** ensuring accessibility even for users without smartphones or reliable internet.
•**Anonymous Analytics Dashboard** providing administrators with population-level insights while maintaining complete user privacy.
•**Offline-Online Hybrid Functionality** with downloadable resources for areas with poor connectivity.

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TECHNICAL APPROACH

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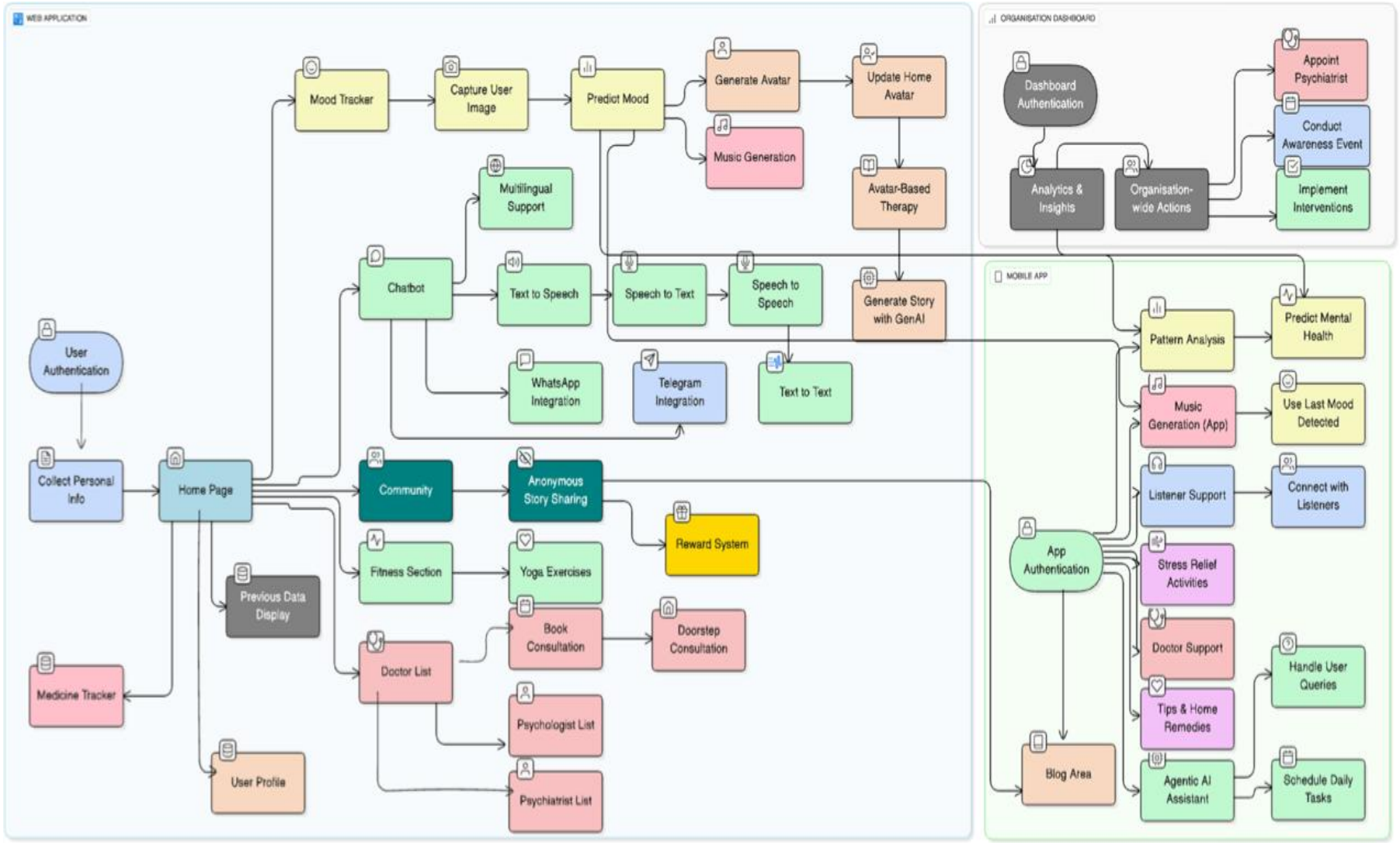

❖ Tech Stack

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FEASIBILITY AND VIABILITY

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❖ Feasibility of the idea

•**Technical Feasibility** – Existing AI/ML frameworks make implementation possible with seamless integration; cloud APIs further reduce complexity.
•**Operational Feasibility** – Simple UI/UX ensures ease of use, deployable on both web & mobile; requires minimal training for adoption.
•**Economic Feasibility** – Low initial investment.
•**User Acceptability** – Addresses real pain-points; early user testing indicates strong adoption potential.
•**Risk Feasibility** – Major risks identified (data, adoption, tech), with clear mitigation strategies; compliance with legal/ethical norms ensured.
•**Scalability** – Can expand from pilot deployment to global level, modular design supports feature upgrades.
•**Network-Resilient Design** – PWA with offline-first architecture and SMS fallback for zero-connectivity emergencies; ensures uninterrupted critical support.

❖ Potential challenges & Overcomes

•**Inaccurate detection** → solved with validated tools (PHQ-9, GAD-7); continuous AI learning improves accuracy over time.
•**Privacy issues** → managed with anonymization & encryption; GDPR and HIPAA compliance strengthen trust.
•**User adoption due to stigma** → anonymous participation & gamification encourage engagement; peer-support features reduce hesitation.
•**Low engagement** → overcome with avatar therapy & personalization; push notifications and habit-forming nudges sustain usage.
•**Scalability during peak stress** → regional load balancing.
•**Cultural Intelligence Integration** → therapy tailored to Indian contexts; multilingual chatbot ensures inclusivity across regions.

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IMPACT AND BENEFITS

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❖ Potential Impact

- **For Students**: Accessible, stigma-free, 24/7 psychological support.
- **Data-driven institutional policy making** helping colleges identify mental health trends and allocate resources effectively.
- **Early intervention system** preventing severe mental health episodes through predictive analytics and mood monitoring.
- **Stigma reduction in mental health discussions** by normalizing therapy through anonymous, AI-powered initial support.
- **National mental health transformation** creating a scalable model for 40+ million college students across India.
- **Long-Term**: Scalable across **all educational institutions** and adaptable to workplaces, creating a **culture of mental wellness** beyond colleges.

❖ Benefits of the solution

- **Comprehensive mental health ecosystem** covering prevention, intervention, and ongoing support in one integrated platform.
- **Seamless multi-platform operation** working across mobile apps, web browsers, and messaging platforms even in low-network areas.
- **Valuable analytics for stakeholders** providing insights to improve campus mental health strategies and resource allocation.
- **Comprehensive Care**: From self-help (yoga, music, exercises) to professional therapy.
- **Culturally-adaptive therapy delivery** using regional languages and context-aware AI to provide relevant mental health guidance.
- **Robust privacy and security framework** with end-to-end encryption and anonymization, ensuring users feel safe while sharing sensitive mental health data.

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RESEARCH AND REFERENCES

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