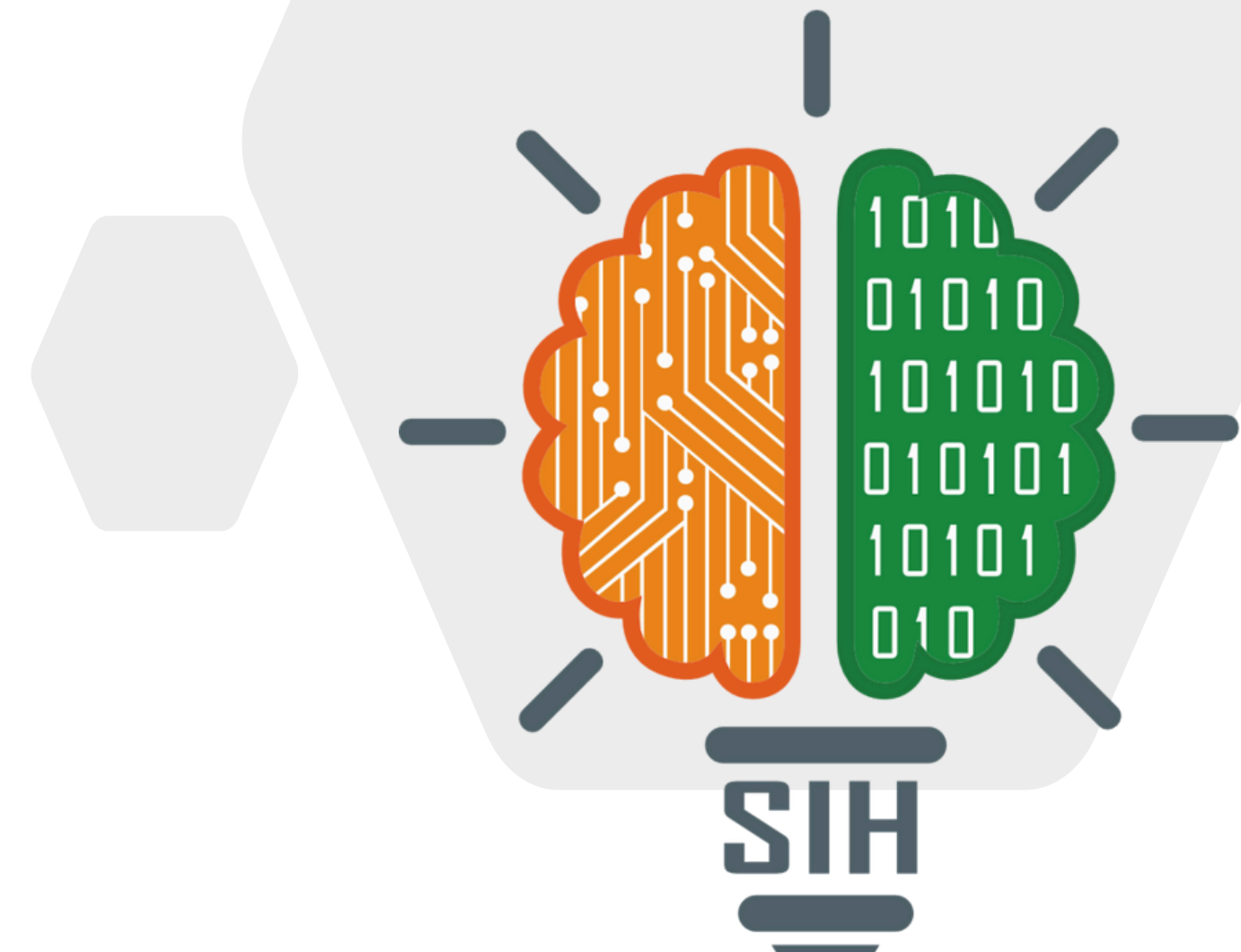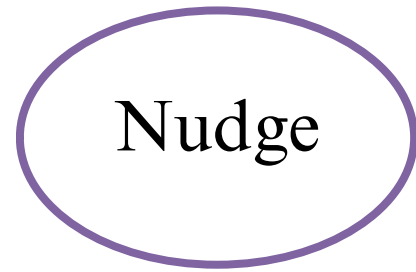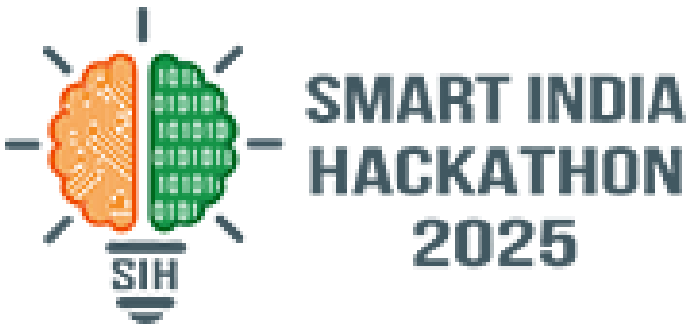# SMART INDIA HACKATHON 2025

TITLE PAGE

- **Problem Statement ID –** 25092

- **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-** Not assigned yet

- **Team Name-** Nudge

IDEA TITLE

Proposed Solution: Digital Mental Health Support System for Students

Solution

- AI-powered early detection of stress, anxiety, and depression
- 24/7 emotionally-aware chatbot for stigma-free support
- Web/mobile app with self-help tools, tele-counseling, and peer groups
- Personalized well-being plans for mindfulness and academic balance

How It Solves the Problem

- Private and anonymous self-checks help break stigma
- Accessible and affordable, beyond counseling limits
- Real-time intervention before crisis points
- Trend insights for institutions to improve wellness programs

Innovation & Uniqueness

- Hybrid AI plus Human approach
- Emotionally-aware chatbot
- Gamified engagement for consistent self-care
- Data-driven dashboards for collective stress patterns
- Student-focused design

TECHNICAL APPROACH

Frontend:

- React Native (mobile app)
- React.js (web platform)

Backend & APIs:

- Node.js + Express
- REST APIs
- WebSocket (real-time chat)

AI & ML:

- Python (TensorFlow, PyTorch, scikit-learn)
- NLP (BERT, GPT-based sentiment analysis)
- Emotion Detection (speech and text-based)

Database & Cloud:

- MongoDB (user data & chat storage)
- AWS (hosting, AI services)

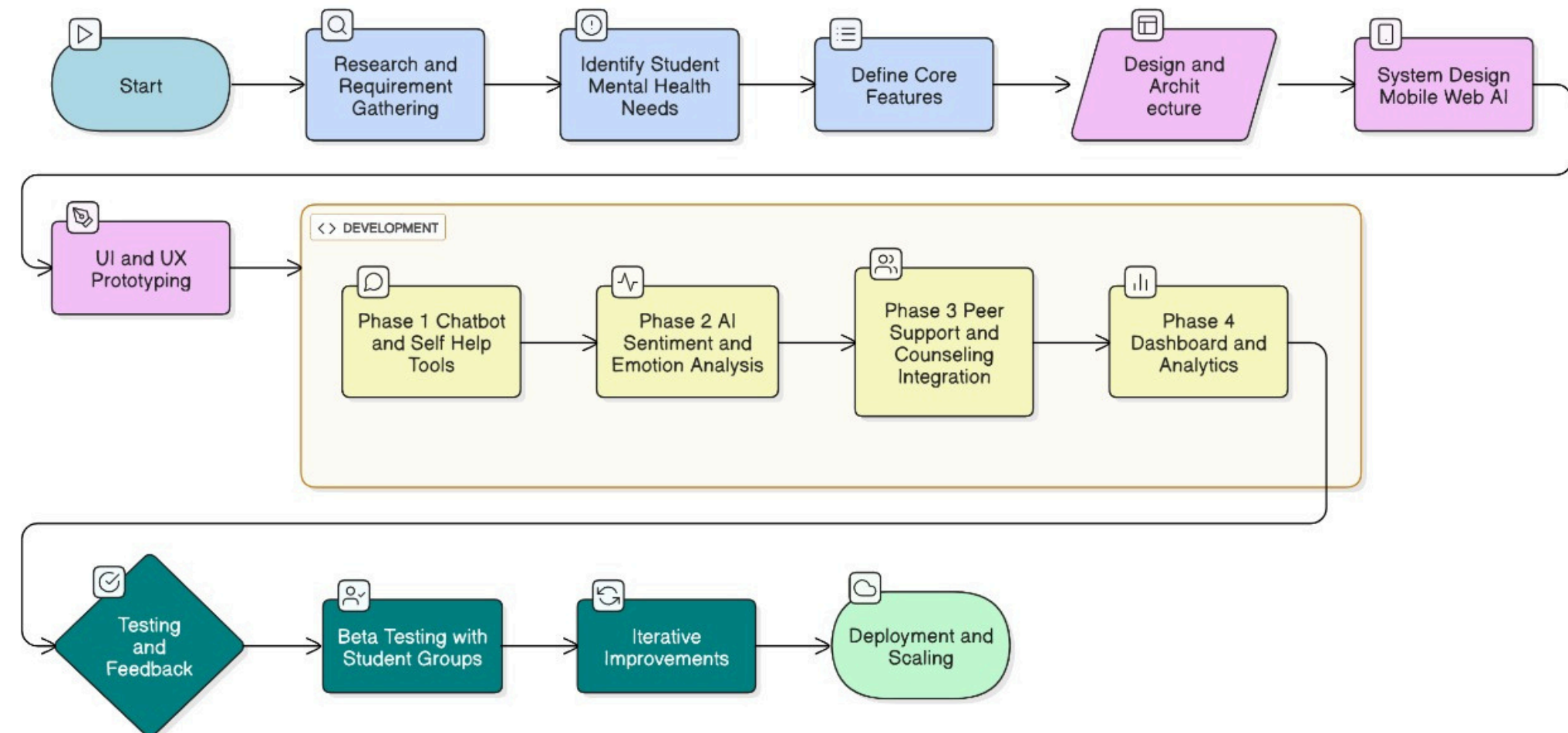**Security & Privacy:**

- End-to-End Encryption (SSL, AES)
- OAuth 2.0

Figure 1: Methodology Flowchart

FEASIBILITY AND VIABILITY

Feasibility

- High demand: rising student stress and limited counselors
- Scalable: we can start with a chatbot, and then expand to a full ecosystem

Challenges & Risks

- Data privacy and security concerns
- Ensuring the accuracy of AI emotion detection
- User adoption and trust in digital support
- Risk of over-reliance on AI without human intervention

Strategies to Overcome

- End-to-end encryption & anonymized data storage
- Hybrid model: AI and professional counselors
- Awareness campaigns to reduce stigma & boost adoption
- Continuous model training and expert validation

IMPACT AND BENEFITS

Impact on Students (User base)

- Reduced stress, anxiety, and burnout
- Improved academic performance and focus
- Increased access to support
- Safer campus environment and stronger peer community

Benefits

- **Social:** Breaks stigma and promotes mental health awareness, which builds supportive student networks
- **Economic:** Affordable alternative to therapy, which helps reduce the institutional costs of dropouts
- **Environmental:** Digital approach reduces the need for physical infrastructure and paper-based resources

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