

EMPATHIA

"Empowering Minds, One Chat at a Time."



Alreal

VEERESH | MOULYAA | BHARGAV | ABILASHA



Empathia

AIreal



VEERESH SK
FRONTEND
DEVELOPER



ABILASHA MANNE
FRONTEND
DEVELOPER



MOULYAA
MOHANKUMAR
BACKEND DEVELOPER



BHARGAV R
BACKEND
DEVELOPER

ABOUT EMPATHIA

EMPATHIA

Our mental health chatbot empowers the student to overcome issues regarding wellbeing by providing community connectivity, game-based relaxation skills, tools for the management of time, and personalized motivational inspiration.

The application is supportive, yet it encourages the emotional well-being of an individual by using engaging features along with actual-time guidance.



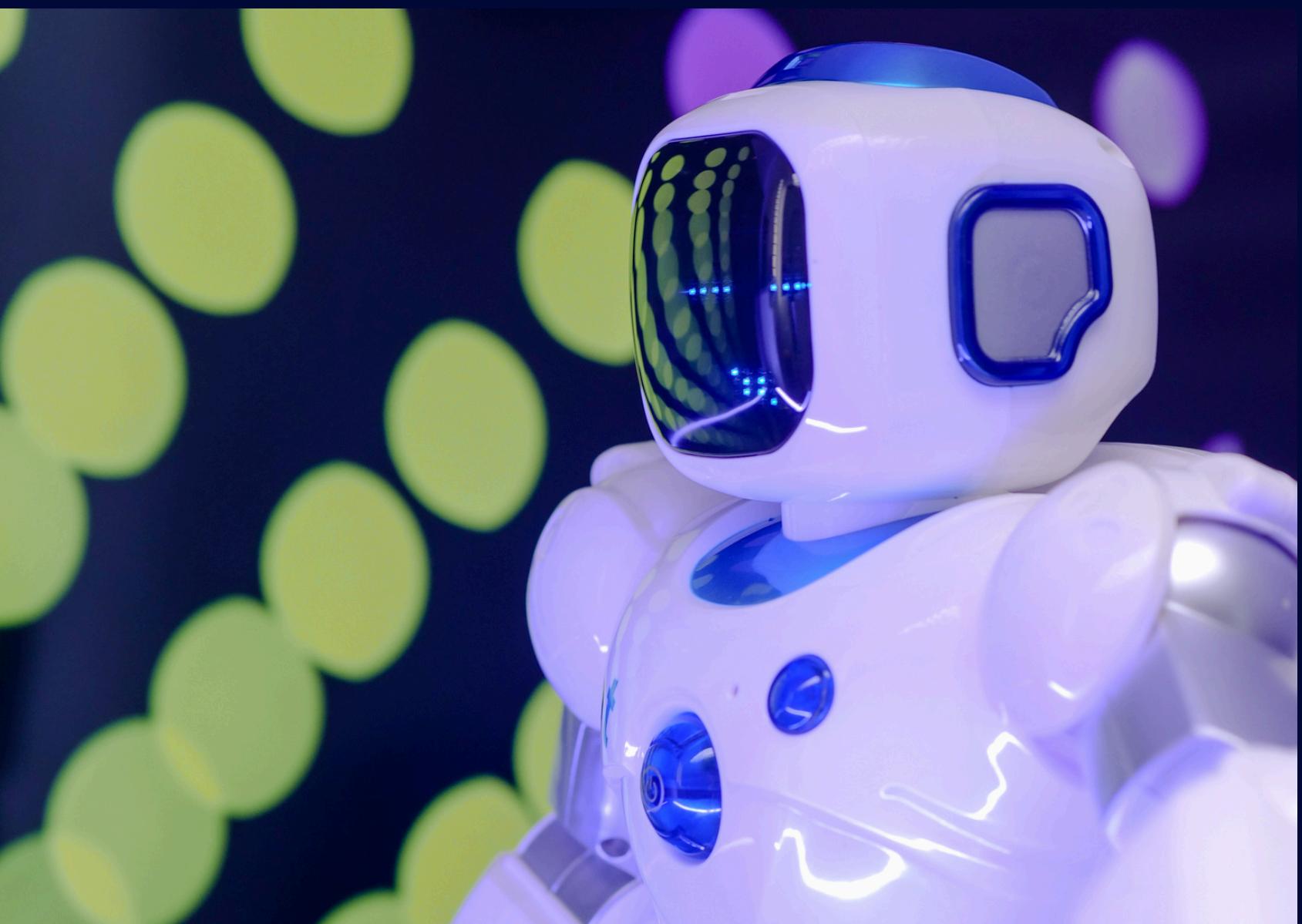
OUR VISION

01

We will leverage advanced algorithms to provide custom coping strategies based on the unique situation of each user. This is achieved by analyzing interactions and emotional cues through interactions, with our chatbot eventually advising on the most effective breathing exercises, mindfulness techniques, workshops and productivity tips for them to use

02

We will engage a system for feedback from users on the rating of interaction with the chatbot. This will enable our chatbot to learn and adapt to the responses and to relate with how there are changes in students' needs and preferences





OUR VISION

03

In the crisis management plan, our chatbot is designed to identify the severity of situations and immediately escalate for users in distress to be given access to professional aid that facilitates timely support.

04

Facilitate a sense of belonging by connecting users to peer support groups or online forums. This feature can promote shared experiences, encourage dialogue among students, and help reduce the stigma surrounding mental health issues, fostering a supportive community environment.

PROBLEM STATEMENT

Burnout:

Through Educational Psychology It is understood that nearly half the students suffer from high stress burnout, thus harming their well-being as well as their academics. Our AI-powered chatbot tackles this issue by inculcating resilience and helps students with mental health problems.

Stress levels

According to the American Psychological Association survey, 61 percent of college students reported feeling overpowered by aspects of their academic or social life. Overcoming these stressors is essential for developing resiliency and wellbeing in students, so it becomes an area of prime concern for our AI chatbot solution.

Time Management

The most significant stress factor for students would be lack of time management and the consequent poor performance. Our AI chatbot will also integrate tools for scheduling, reminding and encouraging self-care breaks, which enhance good habits and balance.

Depression

The student feels inadequate, depressed, hopeless, and also isolates them from reaching achievement either academically or socially. Our AI chatbot provides daily check-in about mood, as well as positive affirmations and professional resources, in an effort to reduce symptoms of depression.



OUR TECH STACK

The main platform is Bubble.io: an impressive no-code all-in-one platform for building web applications with a visual programming interface that makes complicated logic and database operations accessible and efficient.



This would enable the Gemini API, which relies on advanced natural language processing and generation abilities, to fathom user queries for a more effective response. In addition, with these integrations, users' interactions with one another will be enhanced since they will be receiving responses relevant to context, thus allowing for a more engrossing and supportive course for students.



Vector database: Relevance AI is a managed low-code vector database that integrates really well with no-code platforms. Relevance AI offers advanced capabilities, such as vector search, clustering, and embedding functionalities, to help our chatbot generate very relevant responses—thus helping in the enhancement of understanding user intent and tailoring support given by the chatbot. These integrations are improved to favor user experience, and access to real-time, personalized, and context-aware help is made available to students to improve support for mental health.

Key Features & Uniqueness

1. We are adding a unique feature called Chat with buddy where. A User(student) answering another users question and as a friend.
2. AI will track there data and get to know the behaviour. According to that they will receive the response. To there next prompt.
3. We added another feature called Community. Students come and discuss mental health issues, Technology, they will get to know the solutions also.
4. Daily Maintaining streaks is mandatory and keep the students engage will organize events for students regarding solution for mental health issues. Games will be there.
5. Invitation will be sent only for user who maintaining streaks.
6. For mindfulness, we are adding games and binary musices.
7. We will suggest time table according to the students remaining days for exam and syllabus. They are completing.
8. Right recommendation will be given, Yoga and Meditation will suggested of necessary.

TECHNICAL DIFFICULTIES

To overcome the issue of Natural Language Processing (NLP): We will clearly define our chatbot's intents and associated entities. By using frameworks with pre-trained models, we can effectively handle common language patterns and customize these models for our specific needs to enhance performance.

To overcome the issue of bias, ethics and safety: To reduce bias in our chatbot, we'll collect training data from diverse backgrounds and regularly check for biased language in responses with regular fine tuning for emotional empathy. We will be transparent about the data we collect and obtain user consent for data usage. To ensure safety, we'll implement filters to block harmful content and allow users to report issues for human escalation. Our chatbot will also use inclusive and respectful language.

In order to protect the data instead of cloud we use local storage centre.

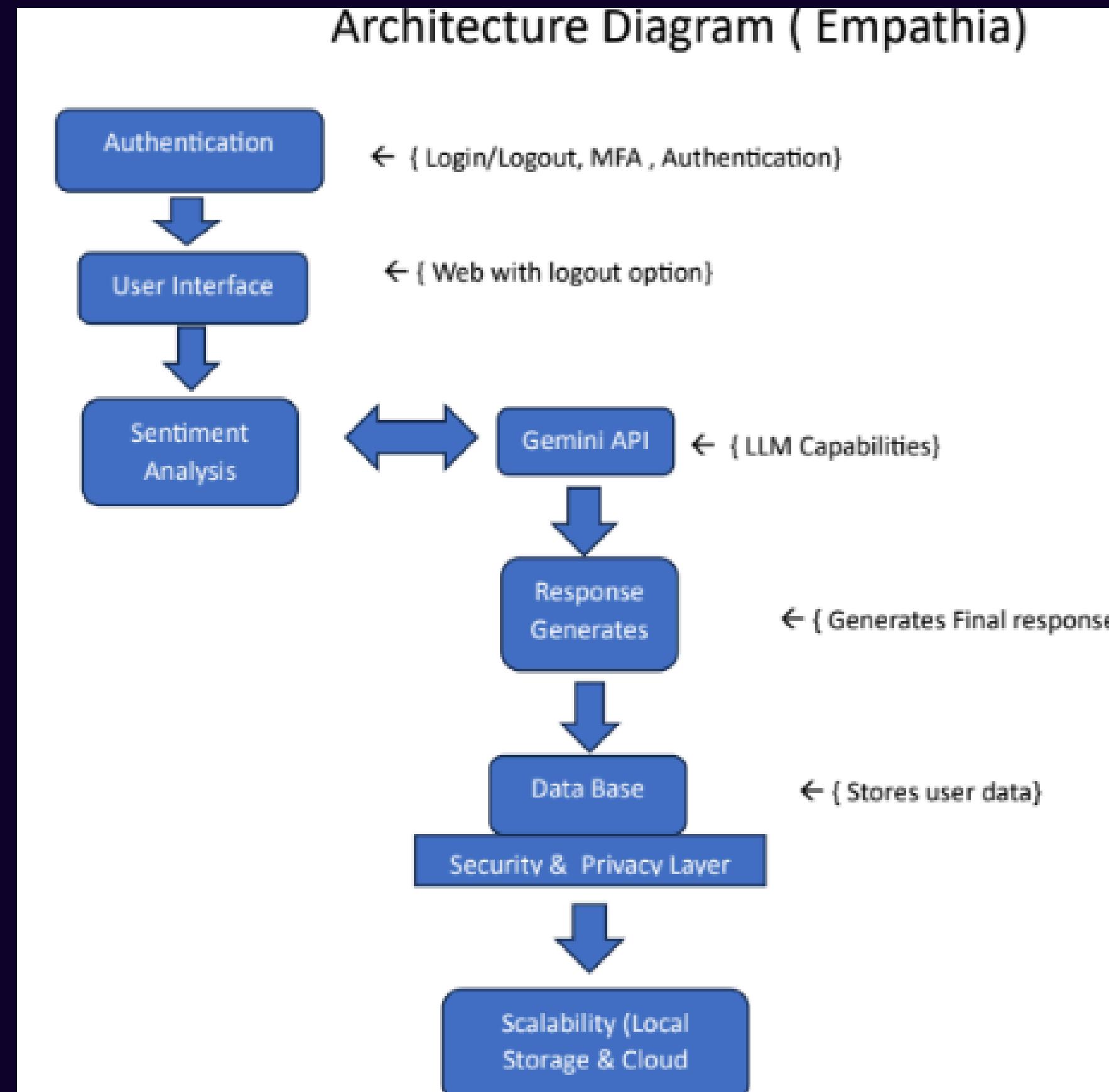
User Feedback Loop:

After interactions, we ask users for feedback through ratings, comments, or direct questions. Review this feedback to find common issues and suggestions. Use these insights to adjust our chatbot, such as refining responses or adding features. Test the updated chatbot with users to see if their experience has improved.

Crisis Detection:

Implementation of algorithms to identify keywords or phrases indicating severe distress or suicidal thoughts. Which will further notify users gently if distress signals are detected, offering to connect them with a support resource. Ensuring that all interactions are handled with confidentiality and sensitivity to protect our user privacy. Building an early-warning system that identifies signs of severe distress or suicidal ideation, integrating appropriate resources and immediate support options

Architecture Diagram





Gemini API

Personalised Response

Using natural language processing of the Gemini API, our chatbot will consult user inputs and provide responses that would be relevant in accordance with their emotional states-to offer support and resources that may be called upon to help them deal with what's going on-always providing space for deeper connection and personal experience for the whole user.

Mood Tracking and Analytics

Integrating mood tracking with the Gemini API will enable users to log emotions over time. The API will analyze trends, providing insights on mood correlations with external factors, promoting self-reflection and healthier coping mechanisms.

Resource recommendation engine

This will be created by our chatbot through the Gemini API- a resource recommendation engine which recommends articles, exercises, and services a user may be in need of; thus, always in a position to offer time-appropriate support for the proactive steps toward managing mental health and wellbeing.

Scalability & Impact

- Target Audience: The chatbot can serve millions of students across universities, online platforms, and schools globally, helping address mental health concerns
- Scalable reach = Local: A single university can have 20,000-100,000 students.
 - National: Multiple institutions can reach millions.
 - Global: With multi-language support, the chatbot can reach 20-30 million students worldwide.
- Mental Health Impact:
 - Provides 24/7 support to manage stress, anxiety, and emotional well-being.
 - Reduces stigma through anonymous, non-judgmental interactions.
 - Offers personalized care with proactive interventions, improving mental health outcomes.
- Reducing Load on Counselors: Acts as first-line support, helping mental health professionals focus on severe cases while the chatbot handles common issues.
- Long-Term Benefits: Improved mental health leads to better academic performance, retention rates, and overall well-being in the student population.

Scalability & Impact

1. Cloud Infrastructure: By using platforms like AWS, the chatbot can scale automatically, handling increasing traffic with elastic load balancing and auto-scaling.
2. Microservices Architecture: Independent scaling of services (NLP, API, database) allows efficient resource management. Docker and Kubernetes ensure smooth scaling and deployment.
3. Optimized AI Models: Horizontal scaling and response caching optimize performance during peak usage. Batch processing handles heavy workloads efficiently.
4. Scalable Databases: Distributed databases like MongoDB or Relevance AI for vector data storage and retrieval allow handling large volumes of data through sharding and replication, ensuring fast read/write operations as users grow.
5. Load Balancing: Distributing user requests across multiple servers maintains low response times and ensures system redundancy for high availability.

Future Roadmap

Short Term goals.

Expand Functionality :- Implement more complex features like question-answering, summarization, and creative writing.

Integrate with external APIs for real-time information

Personalization :- Allow users to customize the chatbot's personality and behavior.

Track user preferences and tailor responses accordingly.

- Evaluation and Improvement:- Continuously gather user feedback and conduct A/B testing to identify areas for improvement.
- Update the chatbot's knowledge base and algorithms regularly
- Multimodal Interaction: Enable the chatbot to understand and respond to voice input, images, and other modalities.
 - Explore integration with virtual reality or augmented reality platforms.
- Emotional Intelligence :Improve the chatbot's ability to recognize and respond to emotions more accurately.
 - Develop features for emotional support and counseling.
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- Integration with Other Systems :Integrate the chatbot with existing systems (e.g., learning management systems, student portals) for seamless access.

Future Roadmap

1. Kaizen will be the 1st step.
2. Scalability and profitability. Is the key focused area. We will keep engaging the students.
3. Introducing this to Collages, universities and schools for better mental health of students.

Our Goal

Our goal :- Whenever a student feels. Stress, Anxiety, or Motivation-less. He should 1st choose our chatbot. To find solution and become mindfulness. First thought should be Empathia(AI chat bot) this can solve my mental health issue. They should feel secure and feel free to use our AI chat bot.



Thank You

FOR YOUR ATTENTION

CONTACT :- veeresh.sk.s67@kalvium.community
Phone :- 8296574978

