

# AI BUDDY FOR KIDS

## Project Report

### 1. Executive Summary

**AI Buddy for Kids** is a social-impact initiative that leverages Generative AI to support the emotional well-being of underprivileged children. It provides a friendly AI companion via WhatsApp to engage in daily mood conversations, generate personalized personality summaries, and detect distress trends.

### 2. Vision & Objectives

#### ► Vision

To build a scalable, accessible, and empathetic AI-based buddy for children who lack consistent emotional support.

#### ► Objectives

- Conduct friendly AI conversations with children over WhatsApp.
- Identify recurring patterns of emotional distress.
- Alert caregivers when signs of sadness or emotional decline are detected.
- Create positive, supportive experiences through personality reflections.

### 3. Target Audience

- Children aged 6–16 in NGOs, schools, or orphanages.
- Teachers, social workers, volunteers.
- Mental health professionals.

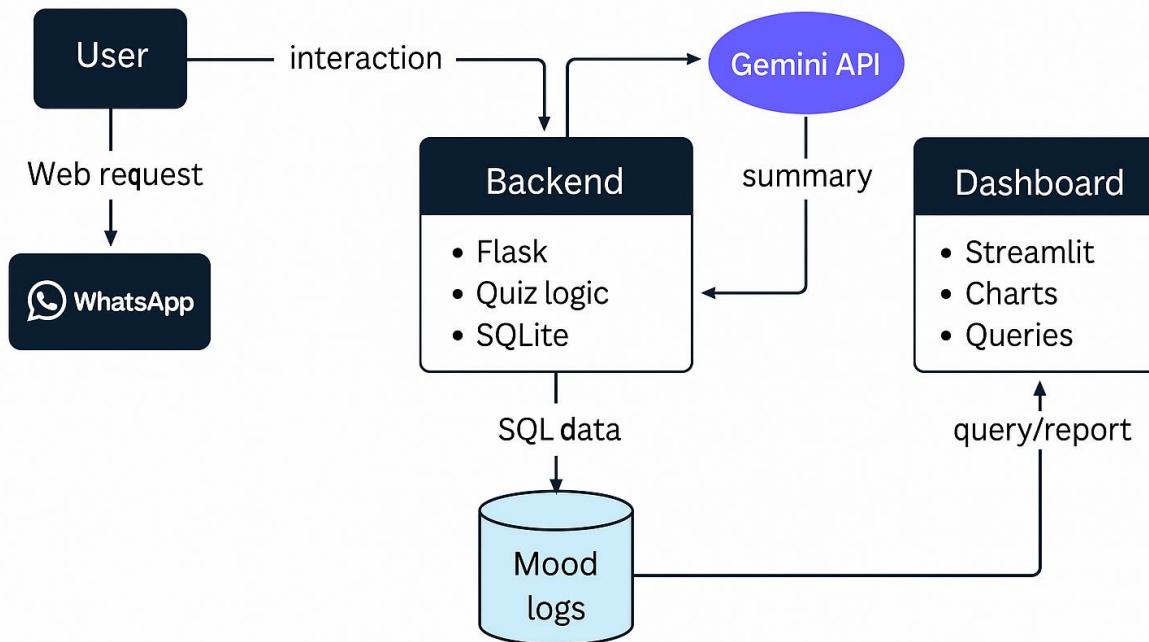
### 4. System Architecture Overview

#### Key Components

- **Flask Backend:** Processes WhatsApp messages (via Twilio).
- **Gemini AI (Google):** Generates questions, summaries, mood inference.
- **SQLite:** Local storage for logs and alerts.
- **Streamlit Dashboard:** Provides caregiver interface.
- **Ngrok:** Exposes backend locally for testing.

## Data Flow Diagram

# AI BUDDY FOR KIDS



1. WhatsApp message sent by child.
2. Flask handles state & user session.
3. Gemini processes the child's response.
4. Data is logged in SQLite (with mood & intent).
5. Alerts are generated if sadness recurs.
6. Streamlit dashboard displays activity.

## 5. Core Features

Feature	Description
WhatsApp Chatbot	Children interact with the AI buddy via Twilio.
Personality Quiz	Randomized Gemini-generated questions to infer personality.
Mood Check-in	Daily check-in question to detect mood.
Mood Inference	Gemini infers the emotional tone from child responses.
Alert System	Notifies if "sad" mood appears 2+ times over different days.
Streamlit Dashboard	Visualizes logs, moods, alerts for teachers/volunteers.
SQL Chatbot	Gemini interprets teacher queries into SQLite syntax for insights.

## 6. Technology Stack

Layer	Tools / Frameworks
Backend	Flask, Twilio API, dotenv
AI Engine	Google Gemini 1.5 Flash
Database	SQLite
Dashboard	Streamlit
Scheduling	Python schedule (optional)
Dev Tools	Ngrok (for localhost testing)

## 7. Database Schema

### Table: mood\_logs

- user\_id (TEXT): Child's phone number
- message (TEXT): Child's response
- step (INTEGER): Step in quiz
- direction (TEXT): 'user' or 'bot'
- mood (TEXT): AI-inferred mood
- intent (TEXT): AI-inferred intent
- timestamp (TEXT): ISO 8601

### Table: alerts

- user\_id (TEXT)
- reason (TEXT)
- timestamp (TEXT)

## 8. MVP Goals Achieved

- Twilio integration for WhatsApp messaging
- Gemini-based personality quiz generator
- Mood inference + logging system
- Sad mood alert mechanism
- SQLite for local message tracking
- Streamlit dashboard for visual analytics
- AI chatbot to query logs via natural language

## 9. Roadmap

### Short-Term Goals (0–1 months)

- Dashboard login for teachers/NGOs
- Switch between quiz and check-in mode
- Streamlit Cloud or Render deployment

### Mid-Term Goals (1–3 months)

- PostgreSQL for scalable backend
- Add Hindi, Telugu language support
- Enable export to CSV / PDF from dashboard

### Long-Term Vision (3–7 months)

- Mobile app for NGO field workers
- School integrations + regional pilots
- Validation in collaboration with psychologists

## 10. Social Impact Metrics

- Identify and log emotional trends in children
- Alert volunteers to potential distress
- Deliver personality feedback in encouraging language
- Create a system that is safe, non-judgmental, and AI-powered

## 11. Team & Contact

**Founder:** Vamsi Kalyan Reddy

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## 12. Appendix

### Sample Gemini Prompt:

"You are a friendly AI for kids. Based on the answers below, write a short, cheerful personality summary."

### Sample Mood Input:

"I feel like nobody wants to play with me anymore."

### Inferred Output:

Mood: sad

**Let's build AI that protects, listens, and uplifts.**