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Agentic AI Day

Build the next generation of intelligent agents

Powered by **I2S**

Team Details

- a. Team name: EduSakha
- b. Team leader name: Shabbir Talib.
- c. Problem statement: Empowering teachers in multi-grade classrooms.

Paathshaala : AI for Every Teacher

Paathshaala is a multilingual AI assistant that helps teachers in multi-grade classrooms turn **voice, text, or syllabus** into **complete, grade-wise lesson kits** using everyday materials.

Where other solutions stop at generating worksheets or summaries, Paathshaala goes further by producing:

- **Smart Planning:** Generates weekly lesson plans, grade-wise worksheets, and assessments from uploaded syllabus or textbook photos.
- **Hands-on Learning:** Creates DIY model instructions, chalkboard-friendly diagrams, and activity suggestions using local materials.
- **Cultural Context:** Explains topics through folk stories, analogies, and rhymes in regional languages for better understanding.
- **Student Tracking:** Analyzes quiz results and voice inputs to build personalized learning insights and progress plans.

Built with Gemini AI and Firebase, Paathshaala empowers teachers **without needing smartboards, advance tools, or technical skills.**

Opportunities

- **Multi-grade & Single: Teacher Classrooms:** Over 10.2% of schools in India have one teacher handling multiple grades. This puts enormous strain on one teacher to deliver different lessons simultaneously.
- **Critical Learning Gaps:** Only half of rural Grade 5 students can read Grade 2-level texts, highlighting the urgent need for **assessments, personalized learning, and speech fluency support**.
- **Teacher Overload & Burnout :** With each lesson often requiring 60–90 minutes of prep, your app's **auto-generated plans, activities, and game ideas** can significantly reduce prep burden and improve efficiency.
- **Digital & AI leap:** Over **82%** of rural teens aged 14–16 know how to use smartphones, and **57% use them for education**, showing strong digital engagement potential, especially via **installable offline-capable PWAs**.
- **Policy & Linguistic Alignment:** NEP 2020 emphasizes **mother-tongue instruction**, and programs like “Bhasha Sangam” support content in local languages—your app's **voice + localized stories, rhymes, and assessments** align perfectly with these policy goals.

How It Solves the Problem ?

- **Instant, high-quality lesson plans:** AI turns voice prompts or textbook photos into full lesson kits — reducing prep time from 90 minutes to 90 seconds.
- **True differentiation:** Generates differentiated worksheets and activities for each grade from a single input — perfect for single-teacher multi-grade classroom format.
- **Cultural-linguistic relevance:** Explains topics through folk stories, analogies, and rhymes in the teacher's native language, making concepts easier to grasp.
- **Hands-On, Low-Cost Activities:** Suggests DIY models and games using everyday classroom items, encouraging interactive, experiential learning.
- **Prototype-ready with Google tools:** Using Vertex AI's pre-built templates, Gemini APIs, and Firebase Studio can be ran as a PWA on any smartphone, works offline, supports local languages, and requires zero tech skills to use.

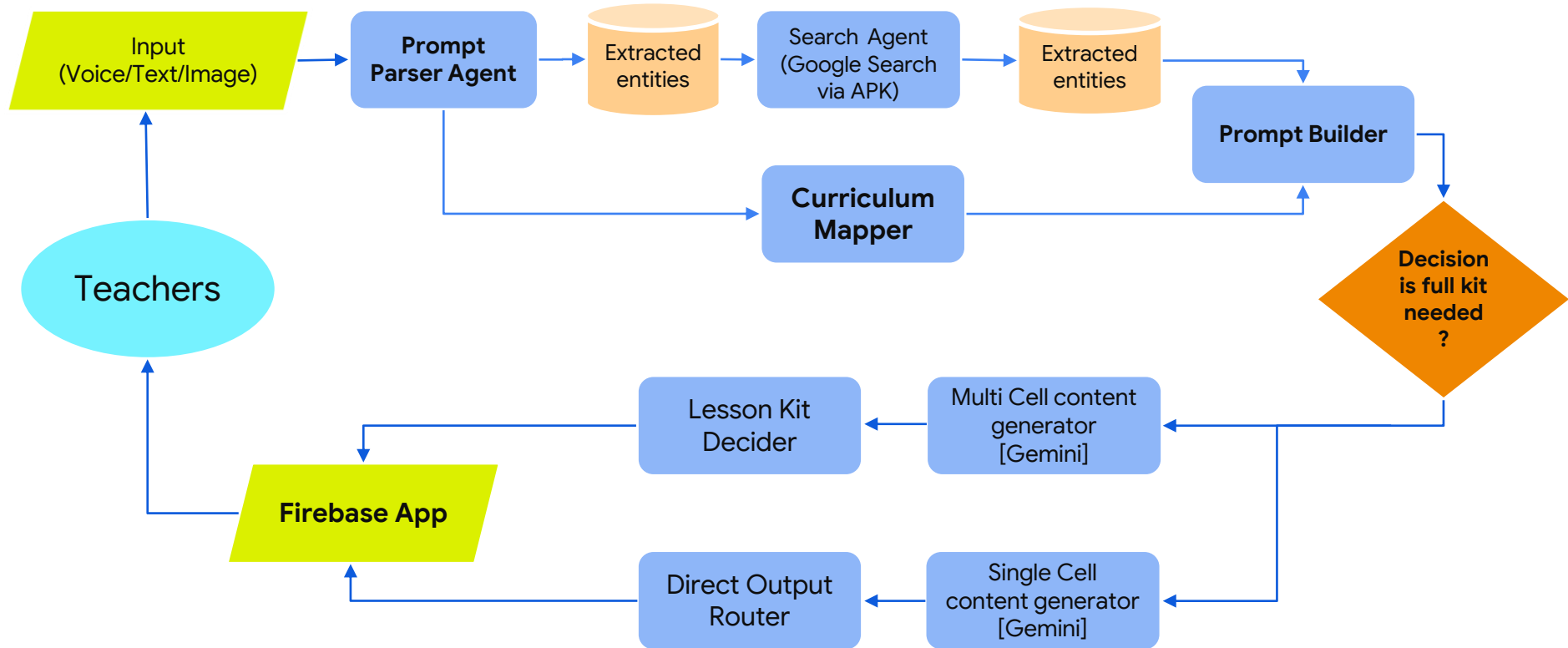
How Paathshaala Solves the Problem (with Unique Edge) ?

- **From Voice to Full Lesson Kits:** Teachers can simply speak a topic or upload a textbook photo or syllabus file, the AI generates a complete kit with chalkboard diagrams, localized stories, DIY models, and grade-wise worksheets in seconds.
- **Smart Planning & Assessment Integration:** Auto-generates weekly teaching plans, quizzes and exams, tracks responses, and builds personalized development paths for each student based on performance and progress.
- **Culturally Local, Hands-On Learning:** Concepts are explained through folk analogies and regional rhymes, and paired with DIY activities using scrap materials — making learning tactile, familiar, and fun.
- **True Multi-Grade Differentiation:** For every topic, Paathshaala creates customized outputs per grade — letting a single teacher effectively teach multiple levels in the same class with just one prompt.
- **Tech-Light by Design:** Deployed as a PWA, Paathshaala runs smoothly on low-end Android phones, can be installed without the Play Store, and supports voice/image input keeping the interface simple for teachers.

Features Offered by Paathshaala

- **Voice & Image Prompts:** Speak in your local language or snap textbook/blackboard photos to generate lesson content instantly.
- **Auto Weekly Planning & Assessments:** Upload syllabus to get tailor-made weekly plans, Google Form quizzes, and mock tests.
- **Multi-Grade Differentiation:** Single input yields grade-specific worksheets and activities for every class level.
- **Chalkboard Diagrams & DIY Kits:** Provides black-and-white visuals plus step-by-step guides for hands-on models using scrap materials.
- **Cultural Context Injection:** AI weaves in folk stories, analogies, and rhymes drawn from regional culture and festivals.
- **Student Progress Tracking:** Analyzes quiz and speech data to map learning gaps and generate personalized improvement plans.
- **PWA on Firebase:** Installable on any smartphone, with caching, real-time updates, and easy setup for teachers.

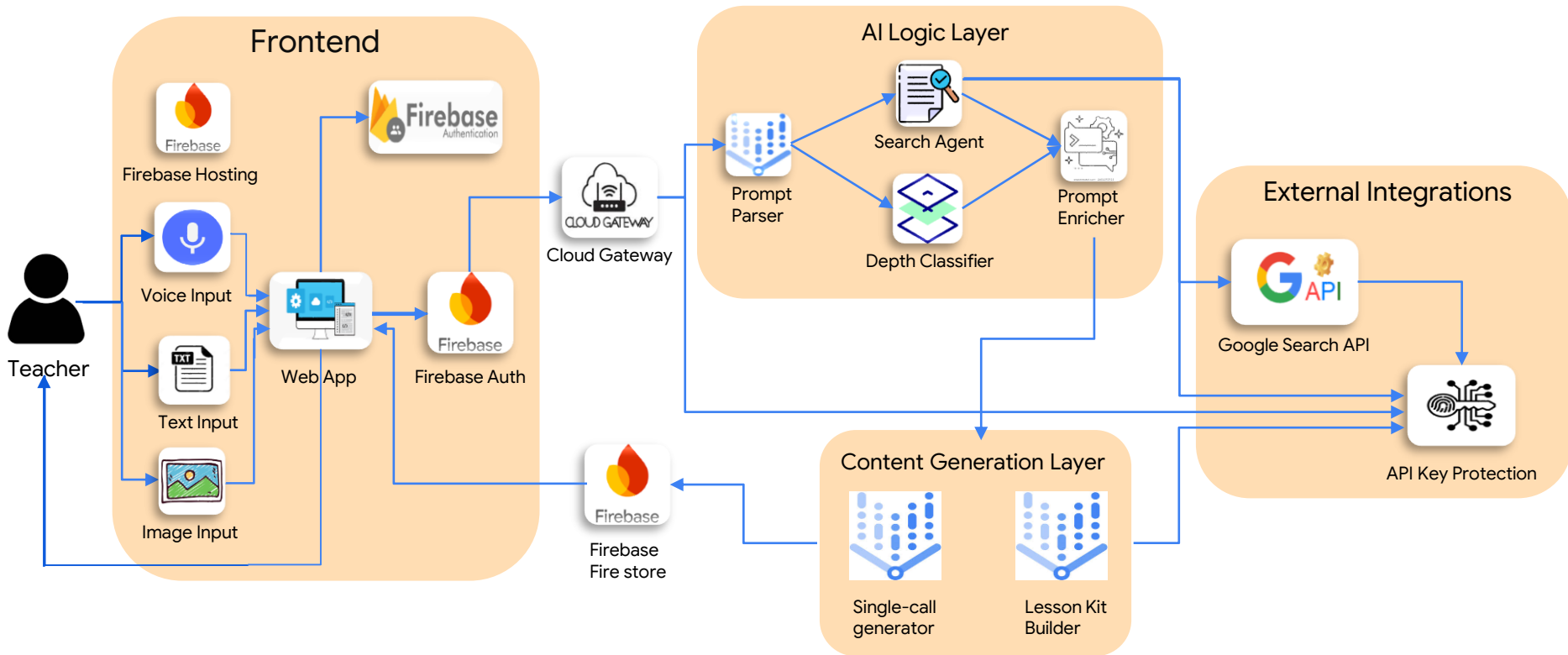
Process flow diagram or use-case diagram



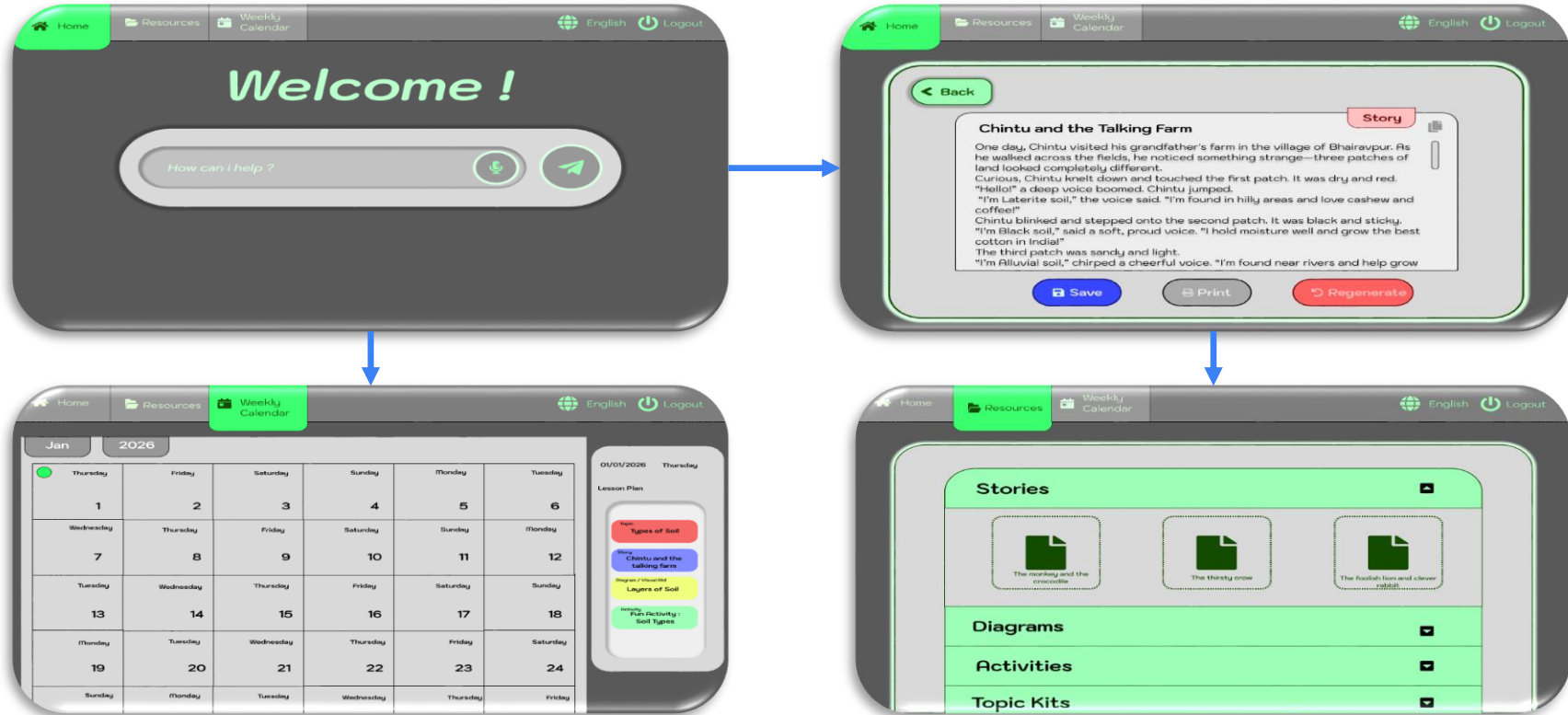
Technologies for Paathshaala

Layer	Technologies
Frontend	React.js, Vite, Tailwind, Web Speech API, Tesseract.js
Backend/API	Gemini 2.5, Firebase Functions, Google Document AI
Cloud/Infra	Firebase (Auth, Hosting, Storage, Analytics)
Progressive Web App	Vite PWA plugin, Indexed DB, Service Worker
Multilingual	Gemini / Cloud Translate, Web TTS

Architecture diagram of the proposed solution



Wireframes/Mock diagram of Paathshaala





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Thank you!

