Week1

**Goal:**

|  |  |
| --- | --- |
| Task | Time |
| Initialize Flask backend, configure API server | |  | | --- | |  |   0.5 day |
| Develop /chat API, integrate GPT-4-turbo | 1 day |
| Set up React frontend, build basic UI | 1 day |
| Connect backend, test chat functionality | |  | | --- | |  |  |  | | --- | | 1 day | |
| Implement keyword extraction & spell check | 0.5 day |

Week2

**Goal: Implement voice input, text-to-speech, and AI image generation.**

|  |  |
| --- | --- |
| Task | Time |
| Integrate Whisper speech-to-text (STT) | |  | | --- | |  |   0.5 day |
| Test Whisper voice input (frontend + backend) | 1 day |
| Integrate Edge TTS / Azure TTS for text-to-speech | 1 day |
| Optimize voice input-output interaction | |  | | --- | |  |  |  | | --- | | 1 day | |
| Integrate DALL·E AI image generation | 0.5 day |

Week3

**Goal: Improve UI, add character system (child-friendly), and ensure safety.**

|  |  |
| --- | --- |
| Task | Time |
| Add story mode (children can choose fairy tales/adventure/pets) | |  | | --- | |  |   1 day |
| Implement character voices (male/female/child voice options) | 1 day |
| Filter sensitive content (violence/adult/religious themes) | 0.5 day |
| UI design enhancements (animations, colors, buttons) | |  | | --- | |  |  |  | | --- | | 1 day | |

Week4

**Goal:** Comprehensive testing and deployment to cloud platforms (Vercel + Railway).

|  |  |
| --- | --- |
| Task | Time |
| Code optimization (reduce API call load) | |  | | --- | |  |   1 day |
| Ensure compatibility across devices (PC + mobile) | 1 day |
| Deploy frontend and backend (Vercel + Railway) | 0.5 day |
| Optimize user experience | |  | | --- | |  |  |  | | --- | | 1 day | |

1. Frontend

React

1. Backend

Flask

1. keyword extraction

spaCy

NLTK

Transformers (allow more language)

1. Spelling correction

SymSpell

GPT

1. AI pic generate

OpenAI DALL·E API

DeepAI API (more styles)

1. Voice input

Whisper API

1. TTS

Azure Speech

Edge TTS

**Specific implementation plan**

1. Front end: Interactive Children's Education Interface

Input box: Children can input answers

Keyword List: Extract important words and display them

AI image generation: Call AI to generate images based on input content

Spell Check: Mark spelling errors and provide suggestions

New question prompt: Generate new questions based on the conversation to facilitate continued interaction

UI: Designed with animation and cartoon style

1. Backend: Handling AI interactions

Receive user input

Keyword extraction&spelling check

Call AI to generate images

Generate new questions and continue the conversation