**Project Submission: Dream Picture Book**

* **Working Application:** [https://dream-picture-book.vercel.app/](https://www.google.com/url?sa=E&q=https%3A%2F%2Fdream-picture-book.vercel.app%2F)
* **Demonstration Video:** <https://youtu.be/psN1P8nOXks>
* **Public GitHub Repository:** [https://github.com/JianHengHin0831/dream-picture-book](https://www.google.com/url?sa=E&q=https%3A%2F%2Fgithub.com%2FJianHengHin0831%2Fdream-picture-book)

**Project Overview**

Dream Picture Book is an AI-powered interactive storytelling platform that transforms photos of your everyday objects into unique, illustrated fairy tales. It is designed to unlock creativity and provide a warm, healing experience for users of all ages. By simply uploading a picture, anyone can initiate a magical journey, co-creating a story through live conversation with an AI character and watching their adventure come to life with dynamically generated illustrations.

**The Problem We Solve**

In our fast-paced digital world, it's easy to lose touch with the wonder and magic hidden in our daily lives. Creative outlets often feel intimidating, requiring artistic or writing skills that not everyone possesses. This creates a barrier to personal expression and imaginative play. Dream Picture Book aims to solve this by making creative storytelling effortless, accessible, and deeply personal, turning passive screen time into an active, positive, and imaginative experience.

**Our Solution**

Our solution is a user-friendly web application that leverages advanced AI to serve as a creative partner. It bridges the gap between the mundane and the magical by:

1. **Finding Magic in the Ordinary:** It takes any real-world object and imbues it with a personality and a story, encouraging users to see their surroundings in a new light.
2. **Making Storytelling Interactive:** Instead of just generating a static story, our platform allows users to have a real-time conversation that shapes the narrative, making each experience unique.
3. **Providing a Healing Space:** The entire experience, from the gentle UI design to the AI's warm and positive personality, is crafted to be a comforting and uplifting escape.

**Key Features**

* **AI-Powered Story & Image Generation:** Upon uploading a photo, the app uses GPT-4o to analyze the image and DALL-E 3 to generate an initial story concept, a character, and a beautiful, storybook-style illustration.
* **Interactive Character Naming:** Users can name the AI-generated character, creating an immediate personal connection before the adventure begins.
* **Real-time Interactive Chat:** A core feature where users can have a live, streaming conversation with the character. The chat is powered by a custom "healing" system prompt that ensures all interactions are positive and encouraging.
* **Dynamic Illustrations:** As the conversation evolves, the AI can generate new illustrations on-the-fly that visually represent the ongoing story, which appear in a real-time image carousel.
* **Automated Story Summary:** At the end of the chat, the application generates a beautiful summary modal that includes a narrative of the entire conversation, a slideshow of all the generated images, and a warm farewell message from the character.
* **Responsive & Accessible Design:** The application is fully responsive, offering a seamless experience on both desktop and mobile devices.

**Technology & AI Integration**

* **Framework:** **Nuxt.js 3 (Vue.js)** was used as a full-stack framework. Its server engine, Nitro, powered our entire backend, handling API routes and server-side logic efficiently.
* **Styling:** **Tailwind CSS** was used to rapidly build a custom, responsive, and visually appealing design system.
* **AI Models & APIs:** We used the **OpenAI API** for all intelligent features:
  + **GPT-4o:** For its advanced multi-modal capabilities, handling the initial image analysis, story generation, real-time chat completion, and final story summarization.
  + **DALL-E 3:** For generating all high-quality, coherent, and context-aware illustrations.
* **Real-time Communication:** **Server-Sent Events (SSE)** were implemented to stream the AI's chat responses to the client, creating an engaging "typewriter" effect and ensuring a responsive user experience.

**How to Test the Application**

Our application is publicly accessible and requires no login credentials.

1. Navigate to [https://dream-picture-book.vercel.app/](https://www.google.com/url?sa=E&q=https%3A%2F%2Fdream-picture-book.vercel.app%2F).
2. Click the upload area and select an image of any everyday object from your device.
3. Wait a few moments for the AI to generate the initial story and the first illustration.
4. Enter a name for your character (2-20 characters) and click "Start the Adventure."
5. You will be taken to the chat screen. Type a message in the input box at the bottom to start talking to your character.
6. As you chat, notice how the AI responds in a warm tone and may generate new images that appear in the carousel on the left.
7. When you are finished, click the "End Chat" button.
8. A summary modal will appear, showcasing your complete story. You can then choose to create a new story.