**Study Buddy AI Documentation**

**Project Overview**

**Project Name:** Study Buddy AI

**Description:** Study Buddy AI is an intelligent web application designed to aid students in their studies by generating study ideas and quizzes. This tool utilizes the power of OpenAI and Replicate AI to provide personalized and engaging educational content. The application is built using the Next.js framework, ensuring a responsive and user-friendly experience.

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**Introduction**

Study Buddy AI aims to revolutionize the way students prepare for their exams and study sessions by leveraging cutting-edge AI technologies. By integrating OpenAI for idea generation and Replicate AI for quiz creation, the application provides customized content to suit individual learning needs.

**Technologies Used**

* **Frontend:**
  + Next.js
  + React.js
  + Tailwind CSS
* **Backend:**
  + Node.js
  + Express.js
* **Database:**
  + MongoDB
* **AI Integration:**
  + OpenAI API
  + Replicate AI API
* **Authentication:**
  + @clerk/nextjs

**Project Structure**

scss

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study-buddy-ai/

├── components/

│ ├── IdeaGenerator.js

│ ├── QuizCreator.js

│ └── ... (other components)

├── pages/

│ ├── api/

│ │ ├── generate-idea.js

│ │ ├── create-quiz.js

│ │ └── ... (other API routes)

│ ├── index.js

│ ├── login.js

│ └── ... (other pages)

├── public/

│ ├── images/

│ └── ... (public assets)

├── styles/

│ ├── globals.css

│ └── ... (other styles)

├── utils/

│ ├── api.js

│ └── ... (other utility functions)

├── .env

├── next.config.js

├── package.json

└── README.md

**Installation and Setup**

1. **Clone the Repository:**

bash

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git clone https://github.com/yourusername/study-buddy-ai.git

cd study-buddy-ai

1. **Install Dependencies:**

bash

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npm install

1. **Set Up Environment Variables:**

Create a .env file in the root directory and add your API keys and other necessary environment variables:

makefile

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OPENAI\_API\_KEY=your\_openai\_api\_key

REPLICATE\_API\_KEY=your\_replicate\_api\_key

MONGODB\_URI=your\_mongodb\_connection\_string

1. **Run the Development Server:**

bash

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npm run dev

Open http://localhost:3000 in your browser to see the application in action.

**Features**

* **Study Idea Generation:** Uses OpenAI to generate creative and personalized study ideas.
* **Quiz Creation:** Utilizes Replicate AI to create quizzes based on user input.
* **User Authentication:** Secure login and registration using @clerk/nextjs.
* **Responsive Design:** Ensures a seamless experience across all devices.

**Usage**

1. **Home Page:**
   * Overview of the application features.
   * Access to idea generation and quiz creation.
2. **Idea Generation:**
   * Input field for specifying topics or areas of interest.
   * Button to generate study ideas using OpenAI.
3. **Quiz Creation:**
   * Input field for specifying the topic or subject.
   * Button to create a quiz using Replicate AI.
4. **Authentication:**
   * Login and registration pages for user authentication.

**API Endpoints**

**Generate Idea**

* **Endpoint:** /api/generate-idea
* **Method:** POST
* **Description:** Generates study ideas using OpenAI based on the provided input.
* **Request Body:**

json

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{

"topic": "string"

}

* **Response:**

json

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{

"ideas": ["idea1", "idea2", ...]

}

**Create Quiz**

* **Endpoint:** /api/create-quiz
* **Method:** POST
* **Description:** Creates a quiz using Replicate AI based on the provided input.
* **Request Body:**

json

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{

"subject": "string"

}

* **Response:**

json

Copy code

{

"quiz": ["question1", "question2", ...]

}

**Authentication**

Authentication is handled using @clerk/nextjs, providing secure and seamless user login and registration.

**Future Improvements**

* **Enhanced Personalization:** Further refine the AI models to provide more tailored content.
* **Progress Tracking:** Implement features to track user progress and performance over time.
* **Mobile App:** Develop a companion mobile application for iOS and Android.

**Conclusion**

Study Buddy AI is an innovative tool designed to enhance the study experience for students by leveraging advanced AI technologies. With features like idea generation and quiz creation, it aims to provide a comprehensive and engaging learning platform.

**Repository:** https://github.com/Rizvi-Ahmed-Abbas-Nasir/Study-Buddy-AI

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