

Smart Study Companion

A personalized learning assistant that generates structured study plans and real-life examples using Google's Gemini AI. This project helps students create effective study materials and understand complex topics through practical examples.

Features

- **AI-Powered Study Plans:** Generate personalized learning paths using Gemini AI
- **Real-World Examples:** Get practical examples for better understanding
- **PDF Export:** Download study materials in well-formatted PDF
- **Responsive UI:** Built with Tailwind CSS and Radix UI
- **TypeScript:** Type-safe codebase for better development
- **Modern Stack:** React.js, Node.js, Express.js

Screenshots

- Dashboard with progress tracking
- Study plan generation
- Notes creation with AI assistance
- Interactive quizzes
- Real-world explanations

Tech Stack

- **Frontend:** React, TypeScript, Tailwind CSS, Shadcn UI Components
- **Backend:** Node.js, Express
- **AI Integration:** Google Gemini API
- **State Management:** React Context, localStorage
- **Charts:** Recharts for data visualization

Getting Started

Prerequisites

- Node.js v18 or later
- npm v8 or later
- Google Gemini API key

Installation

1. Clone the repository

```
git clone https://github.com/Trushar30/Smart_Study_Companion.git
cd Smart_Study_Companion
```

2. Install dependencies

```
npm install
```

3. Create environment file

Create a `.env` file in the root directory with the following content:

```
GEMINI_API_KEY=your_gemini_api_key_here  
PORT=3000  
NODE_ENV=development
```

4. Install required packages

```
npm install dotenv pdfkit @types/pdfkit cross-env
```

Configuration

1. Get Gemini API Key

- Visit [Google AI Studio](#)
- Create a new API key
- Copy the key to your `.env` file

2. Update environment variables

- Make sure your `.env` file has all required variables
- Double-check there are no spaces around the equal signs

Running the Project

Development Mode

```
npm run dev
```

Production Mode

```
npm run build  
npm start
```

How to Use

1. Create a Study Plan

- Go to the Study Plan Generator page
- Enter your subject, exam date, and study time preferences
- Click "Generate Study Plan" to create a personalized schedule

2. Generate Notes

- Select a topic from your study plan
- Choose detail level and format
- Generate AI-powered notes for focused study

3. Take Quizzes

- Select a topic to test your knowledge
- Answer the AI-generated questions
- View your score and track improvement over time

4. Get Real-World Explanations

- Select a complex topic
- Get practical, real-world examples to better understand concepts

5. Track Progress

- Visit the Dashboard to see your overall progress
- Mark topics as completed
- Monitor quiz scores and topic coverage

Project Structure

```
SmartStudyCompanion/  
├── client/  
│   ├── src/  
│   │   ├── components/  
│   │   ├── pages/  
│   │   └── main.tsx  
│   └── index.html  
├── server/  
│   ├── routes/  
│   ├── index.ts  
│   └── vite.ts  
├── .env  
├── package.json  
└── README.md
```

Troubleshooting

Common Issues

1. GEMINI_API_KEY not found

- Check if `.env` file exists in root directory
- Verify API key is correct
- Restart the server

2. Port already in use

```
# Windows
netstat -ano | findstr :3000
taskkill /PID <PID> /F
```

3. Build errors

```
# Clear node modules and reinstall
rm -rf node_modules
npm install
```

Authors

- Trushar Patel - *Initial work* - [Trushar30](#)

Acknowledgments

- Google Gemini AI for providing the AI capabilities
 - OpenAI for inspiration
 - All contributors who helped with the project
-