**. AI-Powered Recipe Generator**

* **Skills**: MERN Stack, Machine Learning (NLP), Recipe API
* **Details**: Create an app that generates personalized recipes based on users' dietary preferences, available ingredients, and dietary restrictions. Integrate with an API for recipe data and use machine learning to generate unique recipes or provide ingredient substitutions.

AI-Powered-Recipe-Generator/

├── client/ # Frontend application

│ ├── public/ # Public assets (images, icons, etc.)

│ ├── src/

│ │ ├── components/ # Reusable components

│ │ │ ├── RecipeCard.js # Component to display recipe details

│ │ │ ├── IngredientInput.js # Component for user input on ingredients

│ │ │ └── PreferencesForm.js # Component to collect dietary preferences

│ │ ├── pages/

│ │ │ ├── HomePage.js # Home screen with recipe generator

│ │ │ └── RecipeDetail.js # Detailed view of a specific recipe

│ │ ├── services/

│ │ │ └── api.js # API service for making requests to backend

│ │ ├── App.js # Main React app component

│ │ ├── index.js # Entry point for the React app

│ │ └── styles.css # Main styles

│ ├── package.json # Client dependencies and scripts

│ └── vite.config.js # Vite configuration

├── server/ # Backend application

│ ├── controllers/ # Controller logic for handling API routes

│ │ ├── recipeController.js # Logic for recipe generation and API requests

│ │ └── ingredientController.js # Logic for managing ingredients

│ ├── models/ # MongoDB schemas

│ │ └── UserPreferences.js # Schema to store user preferences and history

│ ├── routes/ # API route definitions

│ │ ├── recipeRoutes.js # Recipe-related endpoints

│ │ └── userRoutes.js # User-related endpoints

│ ├── ml/ # Machine learning models and data processing scripts

│ │ └── nlp\_model.py # NLP script to analyze and substitute ingredients

│ ├── config/ # Configuration files

│ │ └── db.js # Database connection settings

│ ├── server.js # Main Express server setup

│ ├── package.json # Server dependencies and scripts

│ └── .env # Environment variables (API keys, DB URI)

├── README.md # Project documentation

└── .gitignore # Git ignore file

**Client**

# Create required folders

mkdir -p src/components src/pages src/services

# Create files in the src folder

touch src/components/RecipeCard.js src/components/IngredientInput.js src/components/PreferencesForm.js

touch src/pages/HomePage.js src/pages/RecipeDetail.js

touch src/services/api.js

touch src/App.js src/index.js src/styles.css

# Return to the main directory

cd ..

**Set Up the Server Structure**

mkdir -p controllers models routes ml config

# Create server files

touch server.js package.json .env

touch controllers/recipeController.js controllers/ingredientController.js

touch models/UserPreferences.js

touch routes/recipeRoutes.js routes/userRoutes.js

touch ml/nlp\_model.py

touch config/db.js

**Start the Vite Development Server**:

npm run dev

**Set Up the Express Server**:

node server.js