# BioQuest Project Setup and Usage Guide

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## 1. Project Directory Structure

Ensure your project directory is organized as follows:  
BioQuest/  
├── biology-teaching-frontend/  
│ └── index.html  
├── biology-teaching-backend/  
│ ├── app.py  
│ ├── database.py  
│ ├── quiz.db  
│ ├── venv/  
│ └── .env

## 2. Backend Setup

1. Navigate to the backend folder:  
 ```bash  
 cd /path/to/BioQuest/biology-teaching-backend  
 ```  
2. Create a virtual environment:  
 ```bash  
 python -m venv venv  
 ```  
3. Activate the virtual environment:  
 - macOS/Linux:  
 ```bash  
 source venv/bin/activate  
 ```  
 - Windows:  
 ```bash  
 venv\Scripts\activate  
 ```  
4. Install dependencies:  
 ```bash  
 pip install -r requirements.txt  
 ```  
5. Create a `.env` file with the following content:  
 ```  
 OPENAI\_API\_KEY=your\_openai\_api\_key  
 UNSPLASH\_ACCESS\_KEY=your\_unsplash\_access\_key  
 YOUTUBE\_API\_KEY=your\_youtube\_api\_key  
 ```  
 Replace the placeholders with your actual API keys.

## 3. Frontend Setup

1. Navigate to the frontend folder:  
 ```bash  
 cd /path/to/BioQuest/biology-teaching-frontend  
 ```  
2. Start a local HTTP server:  
 ```bash  
 python -m http.server 8080  
 ```  
3. Open your browser and go to:  
 [http://localhost:8080](http://localhost:8080)

## 4. Running the Application

1. Start the backend server:  
 ```bash  
 cd /path/to/BioQuest/biology-teaching-backend  
 python app.py  
 ```  
2. Ensure the backend is running at [http://127.0.0.1:8000](http://127.0.0.1:8000).  
3. Access the frontend at [http://localhost:8080](http://localhost:8080).

## 5. Testing the Project

1. Open the frontend in your browser.  
2. Enter a topic (e.g., 'photosynthesis') and click "Get Explanation".  
3. Verify the following:  
 - Explanation is displayed (retrieved from OpenAI API).  
 - An image is displayed (retrieved from Unsplash API).  
 - A video link is displayed (retrieved from YouTube API).

## 6. Uploading the Project to GitHub

1. Initialize a Git repository:  
 ```bash  
 cd /path/to/BioQuest  
 git init  
 ```  
2. Add all project files:  
 ```bash  
 git add .  
 ```  
3. Commit the changes:  
 ```bash  
 git commit -m "Initial commit for BioQuest project"  
 ```  
4. Create a new repository on GitHub and copy its URL.  
5. Link the local repository to the remote repository:  
 ```bash  
 git remote add origin https://github.com/your-username/BioQuest.git  
 ```  
6. Push the project to GitHub:  
 ```bash  
 git push -u origin main  
 ```