📖 Drug Interaction Prediction App - Execution Guide

This guide provides step-by-step instructions on setting up and running the **Drug Interaction Prediction App** using **Streamlit** and **Jupyter Notebook**.

🛠️ Prerequisites

Before running the application, ensure you have the following installed:

1️⃣ Install Python (if not installed)

- Download and install Python (version **3.8 or later**) from Python's official website.
- Verify installation using:
- python --version

2️⃣ Install Required Libraries

Ensure that all necessary Python libraries are installed. Run the following command in the terminal or command prompt:

pip install streamlit pandas numpy keras tensorflow streamlit_option_menu jupyter notebook

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🚀 Steps to Execute the App

🔹 Running the Model in Jupyter Notebook

1️⃣ Open Jupyter Notebook

Run the following command in your terminal or command prompt:

jupyter notebook

or

jupyter lab

2️⃣ Navigate to the Notebook File

- Open your **Jupyter Notebook** (Untitled (1)-checkpoint.ipynb or your actual model file).
- Run each cell step-by-step to load the model and make predictions.

3️⃣ Ensure Model Files Are Available

- Make sure the following files are present in the correct directory:
    - final_model.keras (your trained model)
    - drug_list_processed.csv
    - drug_side_effects_targets.csv
    - drug_fea.npy
    - similarity_matrices.npy

4️⃣ Run the Model

- Execute all the cells in the notebook to test predictions on drug interactions.

🔹 **Running the Streamlit App**

1️⃣ Navigate to the Project Directory

Open the **Command Prompt (Windows)** or **Terminal (Mac/Linux)** and go to the project folder where your app.py file is located:

cd "C:\Users\adith\OneDrive\Desktop\AU\project"

2️⃣ Run the Streamlit App

Execute the following command to start the application:

streamlit run app.py

3️⃣ Open the App in Browser

Once you run the command, Streamlit will automatically launch the app in your default web browser. If it doesn't open automatically, manually open the displayed URL (e.g., http://localhost:8501/) in your browser.

📌 **Application Features**

- **Select Drugs:** Choose two drugs from the dropdown menu.
- **Predict Interaction:** Click the "Predict Interaction" button to check if an interaction exists between the two drugs.
- **View Side Effects & Target Sites:** The app displays side effects and target sites for both selected drugs.

- **Probability Score:** It shows the probability of interaction based on the trained model.
- **Enhanced UI:** Custom styling and background for better user experience.

🐞 **Troubleshooting Common Issues**

❌ ***ModuleNotFoundError: No module named 'streamlit'***

Run:

pip install streamlit

❌ ***ModuleNotFoundError: No module named 'streamlit_option_menu'***

Run:

pip install streamlit_option_menu

❌ ***Jupyter Notebook Error: ModuleNotFoundError***

Run:

pip install -r requirements.txt

or install missing libraries manually.

❌ ***Error: One or both drugs not found!***

- Ensure your **CSV files (drug_list_processed.csv, drug_side_effects_targets.csv)** are in the correct location.

🎯 **Conclusion**

Your **Drug Interaction Prediction App** is now ready to use in **Jupyter Notebook** and **Streamlit**! 🚀 If you face any issues, feel free to ask. Happy coding! 😊