Prompt-Powered Kickstart: Building a Beginner's Toolkit for Streamlit

1. Title & Objective

Technology Chosen: Streamlit

Reason for Choice: [e.g., "Streamlit allows rapid prototyping of Python apps with minimal code and easy deployment."]

End Goal: [e.g., "Build a simple interactive web app that displays user input and visualizes data."]

2. Quick Summary of Streamlit

Description: Streamlit is an open-source Python library that allows developers to create interactive web applications for data science and machine learning projects with minimal coding.

Use Cases / Where It's Used: Data dashboards, ML model demos, interactive reports, quick prototypes.

Real-World Example: Companies like Spotify and Netflix use Streamlit internally for rapid data dashboards.

3. System Requirements

Operating System: Windows / Mac / Linux

Tools / Editors Needed: Python (3.9+), VS Code / PyCharm, Terminal / Command Prompt

Packages / Dependencies: streamlit, pandas, matplotlib, plotly (optional)

Install Streamlit

pip install streamlit

4. Installation & Setup Instructions

Create a virtual environment (optional but recommended):

python -m venv venv source venv/bin/activate # On Mac/Linux venv\Scripts\activate # On Windows

Install Streamlit:

pip install streamlit

Run your app:

streamlit run app.py

Open the URL shown in terminal (usually http://localhost:8501)

Include screenshots of your app running if possible.

5. Minimal Working Example

Description: A simple app that takes user input and displays it along with a plot.

import streamlit as st import pandas as pd import matplotlib.pyplot as plt

App title

st.title("My First Streamlit App")

User input

name = st.text_input("Enter your name:") st.write(f"Hello {name}!")

Sample data visualization

data = pd.DataFrame({ 'x': [1, 2, 3, 4], 'y': [10, 20, 25, 30] }) st.line_chart(data)

Expected Output / Behavior:

Displays a greeting based on user input.

Shows a simple line chart of sample data.

6. AI Prompt Journal Prompt Used AI Response Summary Helpfulness Notes / Iterations "Guide me to build a simple Streamlit app that takes user input and plots a chart" Step-by-step instructions and example code Very helpful Needed minor tweaks for Pandas dataframe

Reflection: AI helped me scaffold the Streamlit app and provided tips on plotting and user input handling, speeding up my learning process.

7. Common Issues & Fixes Issue Cause Solution / Reference Streamlit command not recognized Virtual environment not activated Activate the venv and reinstall Streamlit App not updating after code changes Cache or browser issue Clear cache with streamlit cache clear and refresh browser
8. References

Streamlit Official Docs

Streamlit Tutorial Video

Helpful Blog Post

9. Codebase Submission

GitHub Link or Zipped Folder: [Include here]

README File Instructions:

pip install -r requirements.txt streamlit run app.py