# Streamlit Multi-Page Dashboard — Comprehensive Patient Data Analysis

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**Project Overview:**  
This project is an interactive, multi-page Streamlit dashboard designed for analyzing merged patient health data — including demographics, medications, lab results, and lifestyle indicators. It allows real-time filtering, exploration, and visualization using advanced charting libraries such as Plotly, Matplotlib, and Seaborn.  
  
The application aims to simplify healthcare data interpretation by providing clinicians and researchers an intuitive, web-based interface for decision support and insights.

**Key Features:**  
• Multi-Page Navigation: Separate pages for different analysis domains (Demographics, Medications, Lab Tests, etc.)  
• Dynamic Filtering: Global sidebar filters by City, Gender, Age Range, Condition, and Doctor  
• Interactive Visualizations: Supports bar charts, scatter plots, box plots, and correlation heatmaps  
• Automated Insights: Summarizes patterns, top drugs, and health correlations  
• Lightweight Deployment: Runs locally or on the cloud via Streamlit

**Project Structure:**  
MINIPROJECT/  
│  
├── Finalminiproject.py # Main Streamlit script (entry point)  
├── merged\_patient\_data\_normalized.csv # Input dataset  
└── README.docx # Documentation (this file)

**How to Run the Streamlit Dashboard:**  
**Step 1: Folder Setup**  
1. Create a folder named MINIPROJECT on your system (e.g., C:/MINIPROJECT/).  
2. Place the following files inside:  
 - Finalminiproject.py  
 - merged\_patient\_data\_normalized.csv  
  
**Step 2: Install Required Packages**  
Run the following command:  
pip install streamlit pandas numpy plotly matplotlib seaborn  
  
**Step 3: Run the Application**  
1. Navigate to your project directory:  
 cd C:\MINIPROJECT  
2. Launch Streamlit:  
 streamlit run Finalminiproject.py  
  
**Step 4: View the Dashboard**  
Streamlit will open in your default browser.  
If not, manually visit http://localhost:8501

**Dashboard Pages:**  
1. Overview – Displays general statistics, patient demographics, and summary plots  
2. Conditions & Health Stats – Major conditions, BMI trends, and correlations  
3. Medications & Costs – Lists top drugs, adherence ratios, and cost distribution  
4. Lifestyle & Demographics – Smoking, alcohol, insurance coverage, and occupation  
5. Lab Tests & Results – Test frequency, normal vs. abnormal results  
6. Final Summary – Key insights and recommendations

Each page uses shared sidebar filters for unified control across the dashboard.

**Notes:**  
• Ensure dataset column names match those in the script (e.g., Patient\_ID, City, Age, Condition\_Primary, BMI, Drug\_Name).  
• Incorrect dataset path will show an error message.  
• Customize color themes, fonts, or page order directly in Finalminiproject.py.