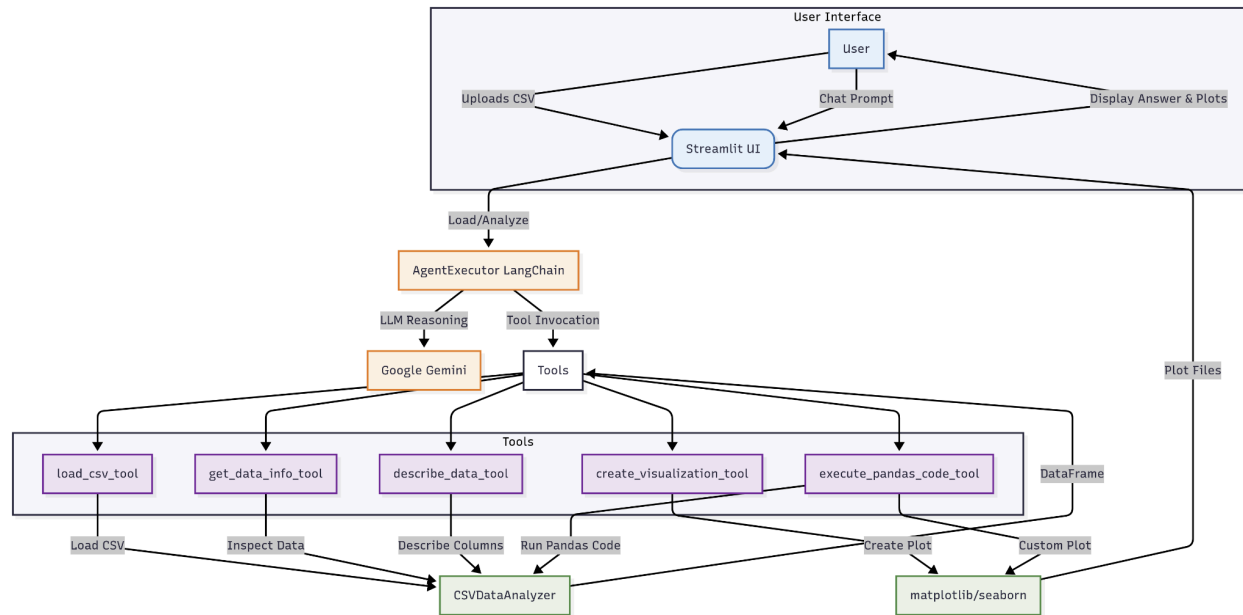


CSV Analysis Agent

Flow Diagram



Tools

Tool Name	Functionality	Input Model	Output Example
load_csv_tool	Loads a CSV file and stores it for analysis	LoadCSVInput	Success/error message, shape, columns
get_data_info_tool	Returns shape, columns, dtypes, null counts, memory usage	DataInfoInput	Dataset info summary
describe_data_tool	Describes numeric/categorical columns, top values, stats	DescribeDataInput	Numeric/categorical description
create_visualization_tool	Generates plots (histogram, scatter, bar, box, heatmap) and saves as PNG	VisualizationInput	Visualization filename or error
execute_pandas_code_tool	Runs custom pandas code securely, supports plotting, blocks dangerous ops	PandasCodeInput	Code output, plot filename if any

Tool Flow

- **Agent** (LangChain + Gemini) receives user prompts and chat history.
- **Agent** selects and invokes the appropriate tool(s) based on user request.
- **The tool** processes the request, interacts with the loaded DataFrame, and may generate plots.
- **Streamlit UI** displays results and any generated plots.

Module Overview

- `streamlit_app.py`: Streamlit UI.
- `src/agent.py`: LangChain agent with Gemini LLM and tool suite.
- `src/tools.py`: Tools for loading CSVs, inspecting data, describing columns, creating visualizations, and executing pandas code.
- `src/csv_analyzer.py`: Logic for loading and storing CSV data.
- `src/models.py`: Pydantic schemas for tool inputs.