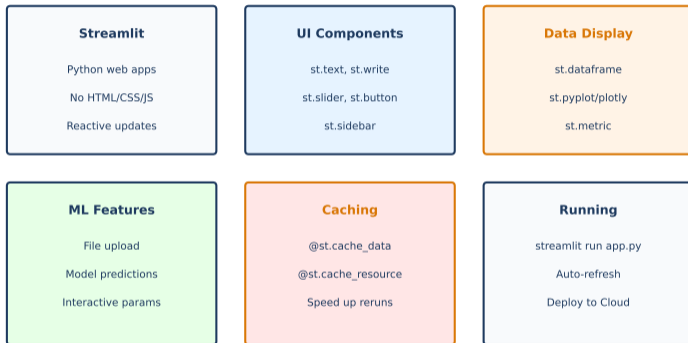


## Lesson 43 Summary: Streamlit Dashboards

Data Science with Python – Key Concepts

Data Science Program

## Streamlit for ML Dashboards



# Why Streamlit?

## Key advantages:

- **Pure Python:** No HTML/CSS/JS needed
- **Reactive:** Auto-updates on changes
- **Fast:** Prototype to production in hours

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The fastest way to build ML demos

## Built-in widgets:

- **Input:** `st.slider`, `st.selectbox`, `st.text_input`
- **Display:** `st.write`, `st.dataframe`, `st.metric`
- **Layout:** `st.sidebar`, `st.columns`, `st.expander`

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Rich component library out of the box

## Chart integration:

- **Matplotlib:** `st.pyplot(fig)`
- **Plotly:** `st.plotly_chart(fig)`
- **Built-in:** `st.line_chart`, `st.bar_chart`

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Seamless integration with plotting libraries

## Performance optimization:

- **@st.cache\_data:** Cache data transformations
- **@st.cache\_resource:** Cache ML models
- **Effect:** Skip expensive recomputation

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Cache models and data for fast reruns

### Essential Commands:

Task	Code
Display text	<code>st.write("Hello")</code>
Slider input	<code>st.slider("Value", 0, 100)</code>
Show chart	<code>st.pyplot(fig)</code>
File upload	<code>st.file_uploader("CSV")</code>
Run app	<code>streamlit run app.py</code>

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Streamlit democratizes ML app development