

Building More Web Applications



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How to manage state

Add map to a page

How to manage page content

Module Overview



- **How many times did you click this button?**
- **How to keep state across multiple pages**
- **How to add a map**
- **Make the page more dynamic with placeholders**
- **How to organize a page**

How Many Times
Did You Click
This Button?

Upcoming Streamlit support for managing state

Workarounds to manage state

- **File**
- **Database**
- **Community contributions**

State for all users or per user?

Widgets States Across Pages and Users

Simple page

**Kept by default, except for
buttons**

Sidebar pages

State is lost when switching

All users

Shared state

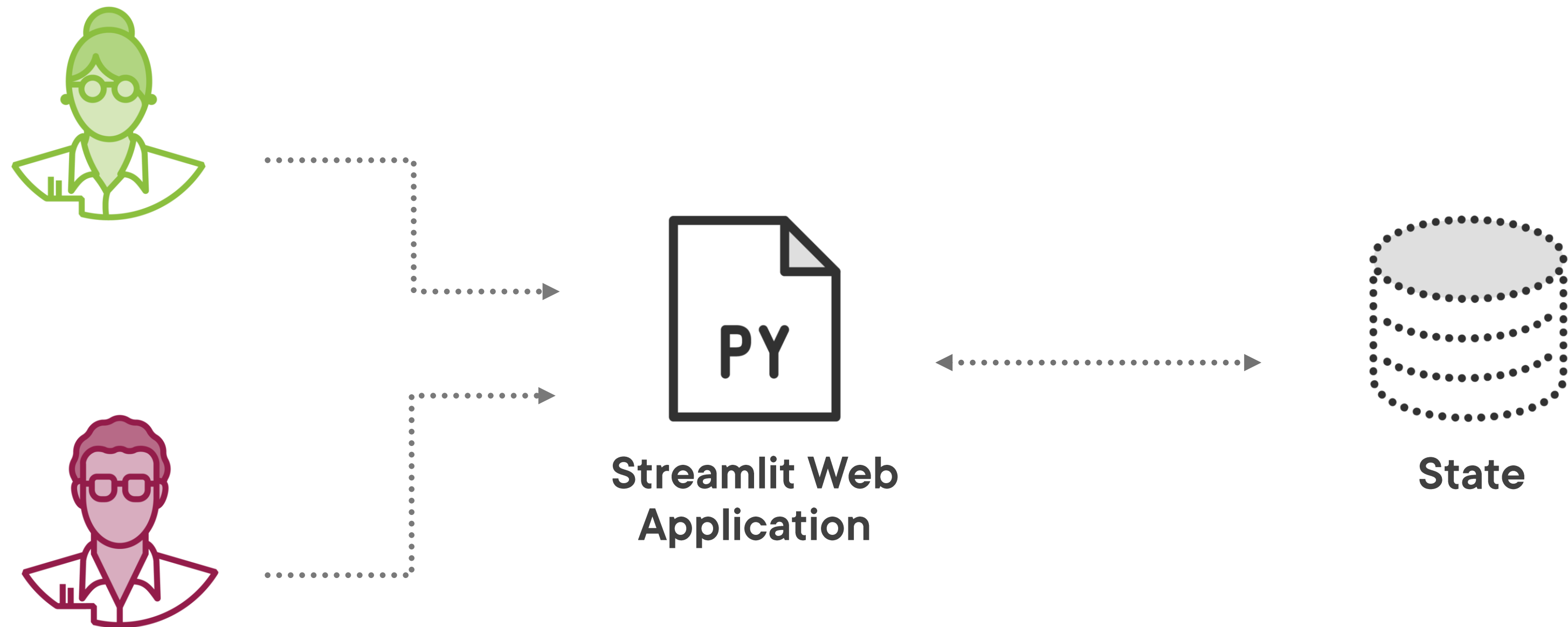
Per user

Dedicated state

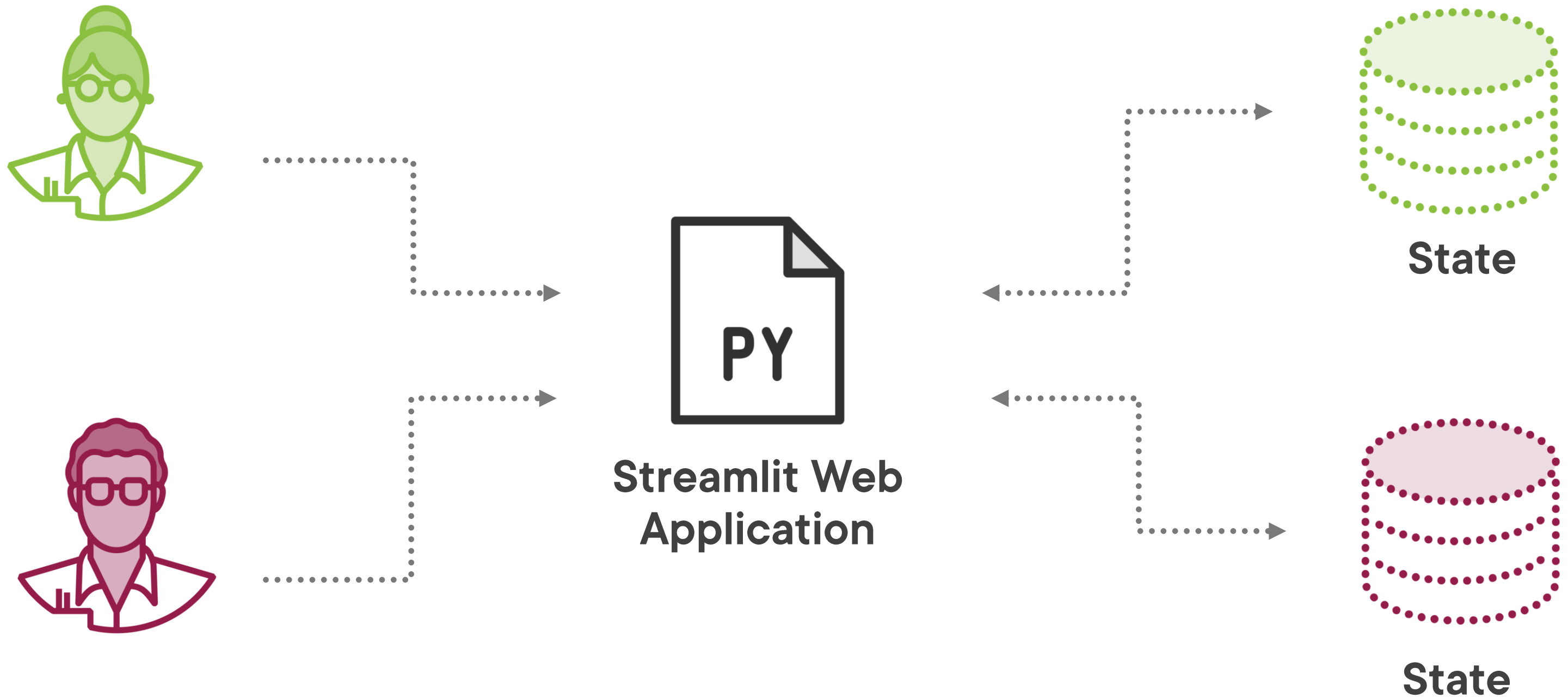
Managing State – One User



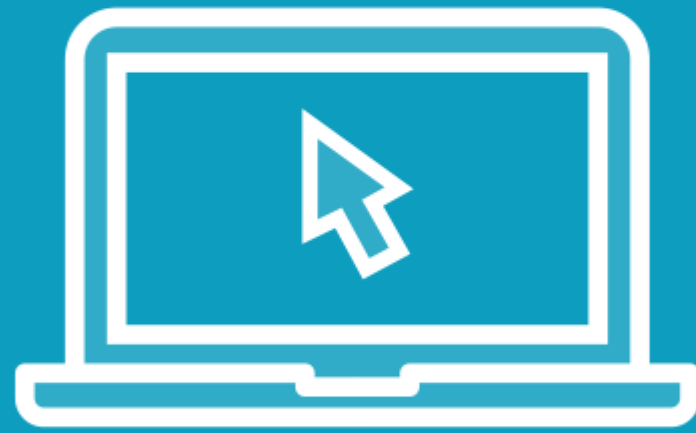
Managing State – More Users, Shared State



Managing State – More Users, Dedicated States



Demo



- Add dedicated state per user
- Restore state when switching sidebar pages
- Limitations
 - One session per user
 - Suitable for small, simple web applications
 - Other approaches exist

How to Add a Map to a Page

Simple maps

- Use `st.map()`

Flexible maps

- Use `st.pydeck_chart()`
- Check examples

Get a dedicated Mapbox access token

Make the Page More Dynamic

Display fast changing data

- Sensors
- Third party API
- Frames from a video

Placeholders

- Use `st.empty()`
- Update content without re-running the page
- Only one item per placeholder

Organize Page Layout

Container

**Holds more elements
Add elements at different
times**

Columns

**Containers as columns
A container holds more
elements**

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Up Next:

Extending Streamlit Web Applications
