# Dynamic Web Map Services

Summer School on Digital Humanities
Course material available at
https://github.com/AugustoCiuffoletti/DHSS_2025

Augusto Ciuffoletti

8 giugno 2025

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- A local application does not facilitate map sharing
- We need an interactive web-based map service

- Web Mapping enables cartographers to maintain a shared map

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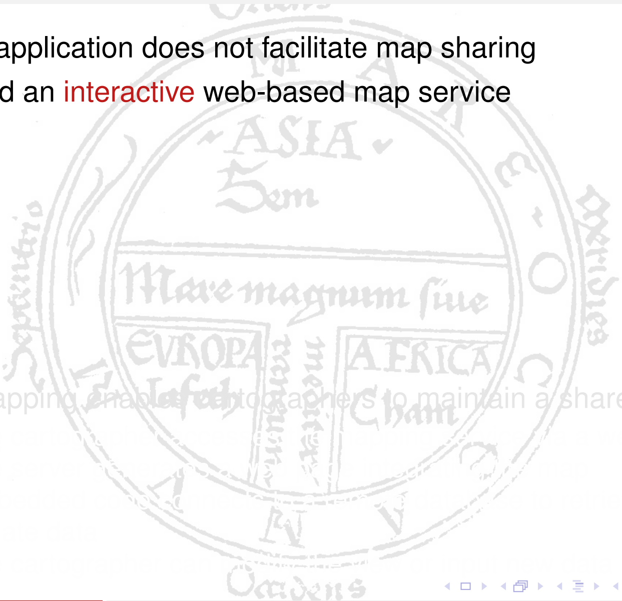

- Web Mapping enables cartographers to maintain a shared map
  - The cartographer accesses the mapping service via a web browser
  - The server generates a web page including the map
  - Embedded code connects to the map database to retrieve and update data
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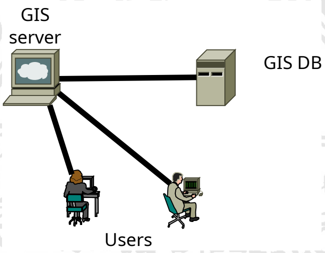

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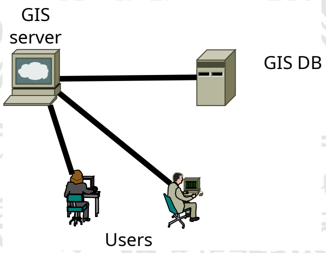

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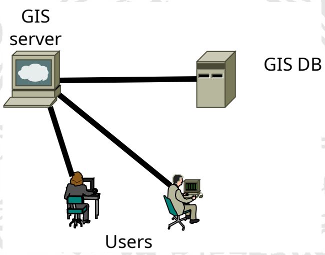

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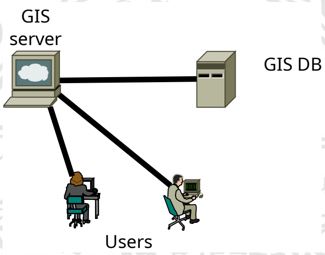

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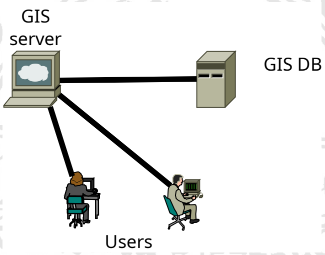

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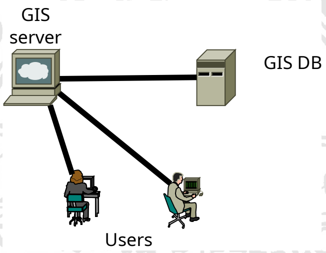

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## Web GIS vs. Desktop GIS Applications

- Compared to a desktop GIS application (like QGIS):
  - No installation required
  - No dependency on local computing power
  - Platform-independent (works on any OS)
  - Responsive design for different devices (PC, tablet, smartphone)
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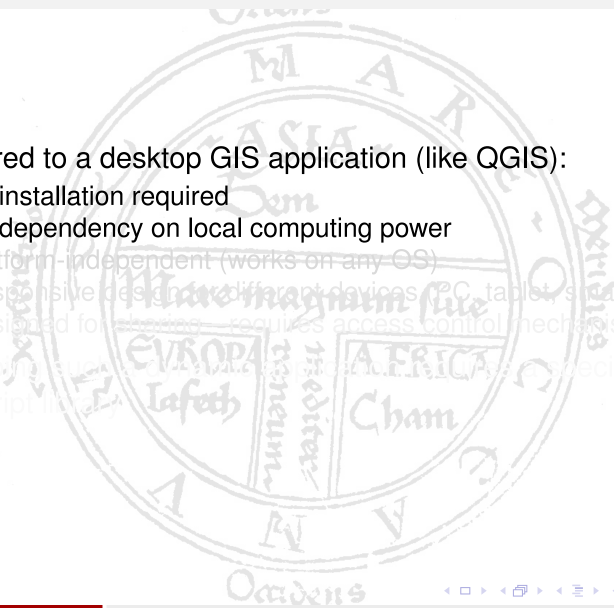

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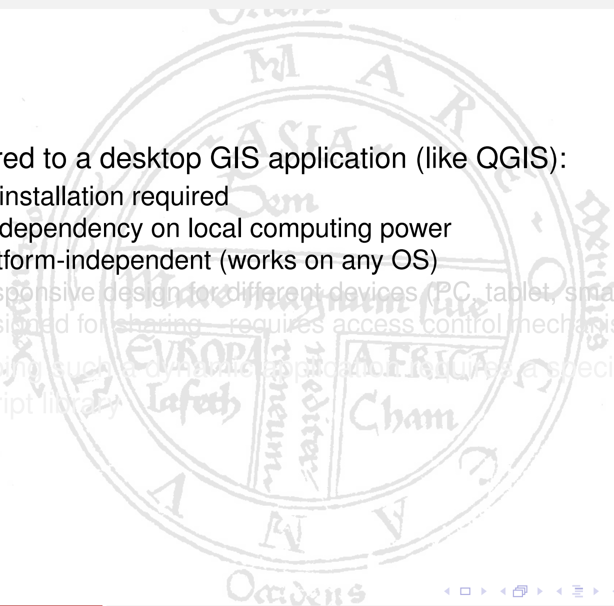

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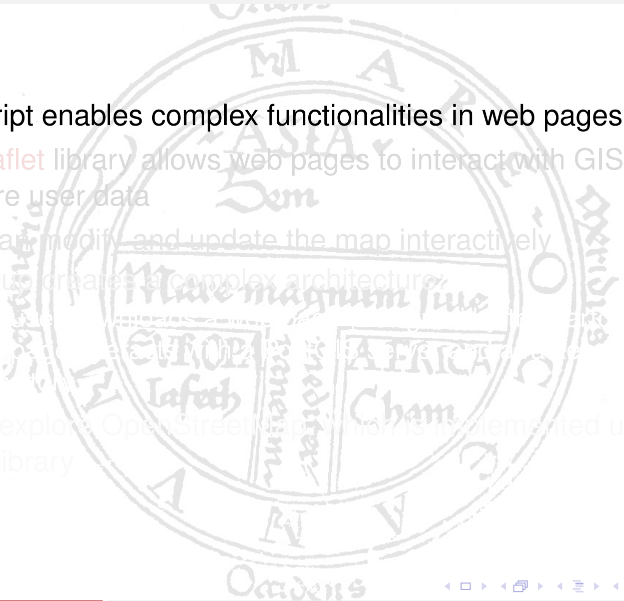

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- The Leaflet library allows web pages to interact with GIS servers and store user data
- Users can modify and update the map interactively
- This setup creates a complex architecture:
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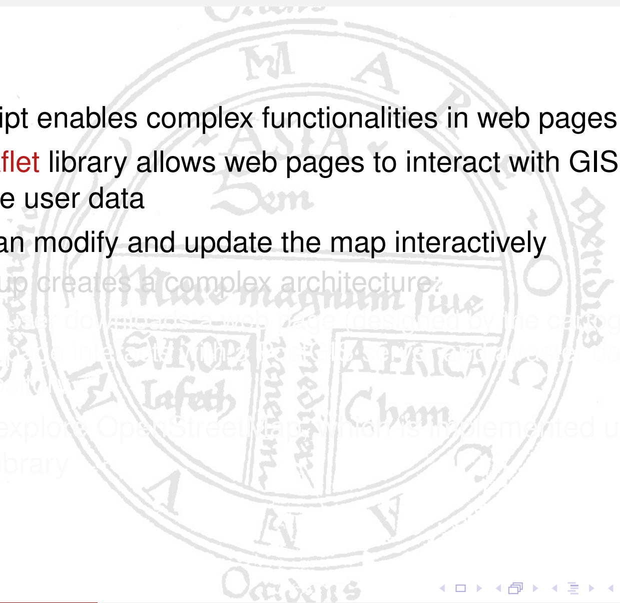

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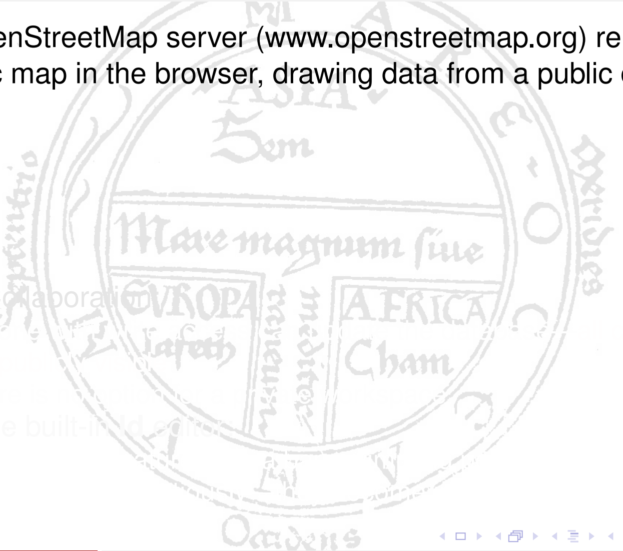
## Example of an Open Web Map Service: OpenStreetMap



- The OpenStreetMap server (www.openstreetmap.org) renders a dynamic map in the browser, drawing data from a public database
- Public Collaboration
  - Anyone [illegible] all changes are publicly [illegible]
  - There is no [illegible] workspace
- Using the built-in Id editor

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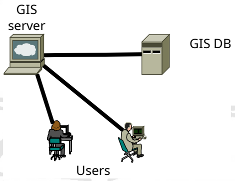

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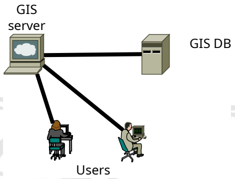

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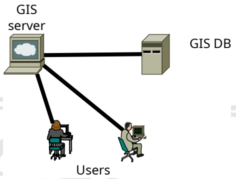

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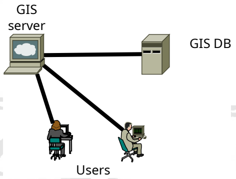

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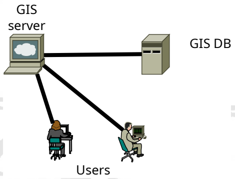

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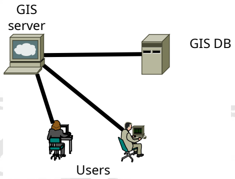

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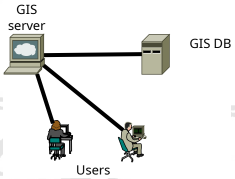

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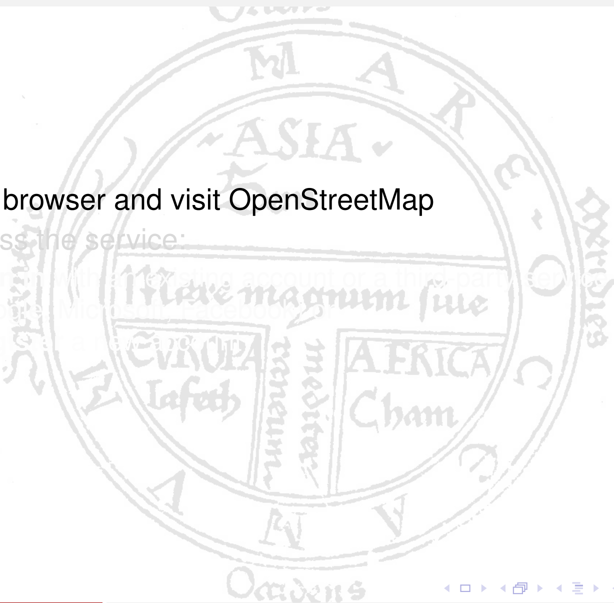

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- To add a point feature (but do not press **Save**):
  - Zoom in using the trackpad until **Edit** is enabled
  - Select the **Edit** option (opens the *iD* editor)
  - Zoom until the "Zoom in to edit" banner disappears
  - Click the **Point** tool in the top toolbar (it turns blue)
  - Click on the map to place the point
  - Choose a feature type (e.g., **Cafe**) from the left sidebar
  - Fill in relevant attributes
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## Additional Editing in OpenStreetMap

- To draw a Line or Area:
  - Click to place each vertex
  - Press *Esc* or double-click to finish
- To edit an existing feature:
  - Right-click to access transformation options:
    - Convert to a circle
    - Convert to a point
    - Align angles to 90°
    - Flip or rotate
- Keyboard shortcuts:
  - Ctrl+C / Ctrl+V to copy and paste
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## Lab Activity

- Scenario: South of Pescara lies "Francavilla al Mare," a seaside resort town
    - Locate "Lido Merope"
    - Add an Area for the beach
    - Set Beach Resort as the feature type
    - Set the Name field to "Spiaggia del Lido Merope"
    - Undo...