# Dynamic Web Map services

Summer School on Digital Humanities

Course material available at

https://bitbucket.org/augusto_ciuffoletti/digitalmaps4ssdh

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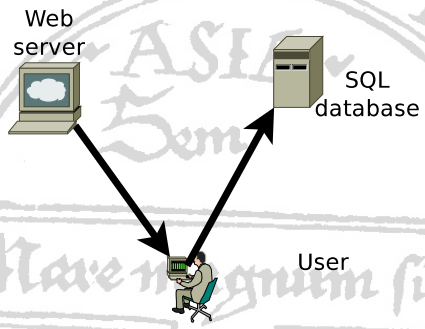
21 maggio 2021

# Dynamic Web Map services

- A local application does not help to share a map
- We want an interactive map service




- Web Mapping: enabling the cartographer to update a shared map
  - The cartographer reaches the mapping service using a browser
  - The server renders a web page that incorporates the map
  - The code embedded in the web page connects to the remote database and uses/registers data
  - The cartographer modifies the view or enters new data

## Web GIS vs resident GIS application

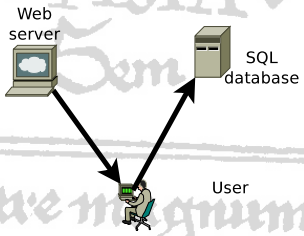
- Compared with a resident GIS application (like qGis):
  - no installation required
  - no problems of computing capacity
  - does not depend on the operating system
  - adaptable to different devices (PC or smartphone)
  - sharing by design, need to restrict access
- To create such a dynamic application we need a specialized JavaScript library

## Tools for Web Maps: JavaScript libraries

- JavaScript is the language used to embed complex functions in web pages
- The JavaScript library Leaflet allows the web page to interact with remote GIS servers and integrate user data into the database
- The user can modify the map
- A complex structure is created: the user who downloads a certain web page (created by the cartographer) also interacts with a postGis server and a raster repository
- We explore the OpenStreetMap case, which is based on the *Leaflet* library

# Example of an open Web Map service: OpenStreetMaps

- The server (www.openstreetmap.org) renders on my browser a (dynamic) map recorded in a public database




- I have write access to the public database: everyone sees my updates!
- I cannot work in a private space
- If I use the online editor **Id**
  - I create easily: a bar, a swimming pool, a street
  - ... I could **Save**, but with great care
  - ... since everyone would see!

# Detailed track of an exercise (sect. 2 in the booklet)

- Create a feature on OpenStreetMaps
  - Open the browser on https://www.openstreetmap.org
  - Enter the service
    - **Access** if you have an account with one of the "third parties" or
    - **Register** a new account (recommended to use uMap later on)
  - To create a feature (but do not Press **Save**)
    - Zoom-in using the trackpad (until **Edit** is unshaded)
    - Select the **Edit** option (Thus using the *ID* editor)
    - Hit the **Point** button (which turns blue)
    - Select a point on the map with a mouse click
    - Select the type of stitch (e.g. **Coffee**) in the left sidebar
    - Fill out the relevant attributes
    - Press **Cancel** (back arrow, next to Area)
  - To draw a **Line** or an **Area**, one click for each point, *Esc* key to finish
  - By pressing **Save** (please don't!) our fake "feature" is recorded in the OpenStreet database