Sharing Maps: The GIS Cloud

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- OpenStreetMap (OSM) does not support adding custom layers
    - It lacks infrastructure for proprietary data storage
- Desktop GIS applications (e.g., QGIS) allow users to overlay OSM data with their own layers
- Alternative services provide infrastructure for collaborative map sharing
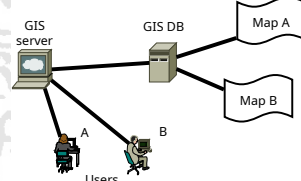
- In these services, the server acts as an intermediary between users and data storage
- Unlike OSM, access and sharing restrictions can be enforced

The uMap Service

- A stable project (launched in 2014)
- Open-source (can be installed on a private server)
- Uses OpenStreetMap as a base raster layer
- Users can:
  - Import and display vector layers in standard formats
  - Connect to external databases
  - Create new layers stored within the uMap infrastructure
- Supports *popup* annotations with:
  - Text, images, and web links
- Maps can be shared and collaboratively edited by a restricted user group

A uMap Tour (Sect. 5 in the Booklet)

- Open a browser and visit `https://umap.openstreetmap.fr`
- Log in using OpenStreetMap credentials (or via Bitbucket, or GitHub)
  - It is also possible to explore uMap without an account (with limited functionality)
- Click "Create a map"
  - An OpenStreetMap raster background will appear

Editing Your Shared Map

- Upon map creation, you are in Edit Mode
    - To exit, click the blue Save draft button, then View
    - To re-enter edit mode, click the pencil icon Edit in the top-right corner
- Two toolboxes appear on the right:
    - Upper box: feature creation tool
    - Lower box: map management tools
    - On the left panel, click 🔍 to search for a town (e.g., "Pisa")
- If town names are displayed in French, switch the raster layer:
    - Click 🔲 and select "OpenStreetMap"

Adding a Feature

- Choose a feature type from the right-hand menu:
    - 📍 Point
    - 📈 Line
    - ⬛ Area
- Click on the desired feature type, then interact with the map:
    - A single click places a point
    - Multiple clicks define a line or area
    - A double-click ends the line or closes the area
- Once the feature is created, a form appears:
    - Enter the *name* and *description* of the feature
    - Explore additional customization options
- To edit an existing feature, click it and select the pencil icon

    - Click the question mark near *Description* for formatting tips

Special Content in the **Description** Field

The *Description* field can contain interactive elements:

(Note: these appear only after Save and Disable Editing)

- Add an image by inserting its link within double braces:

  `{{http://gardenersnet.com/flower/pics/daffodil04.jpg}}`

- Add a hyperlink using double brackets:

  `[[http://www.google.com]]`

- Embed a video (e.g., YouTube) using triple braces:

  `{{{https://player.vimeo.com/video/56810854}}}`

Creating a Slideshow

- A slideshow cycles through the map features sequentially
  - Features are displayed in the order they were added
- To enable the slideshow:
  - Click the ⚙ gear icon and select *Slideshow*
  - Enable *Slideshow mode*
  - Set the time interval between slides
  - Optionally, enable auto-play on map load
  - Click Save
- Familiar playback controls ("Play," "Pause," "Next," "Previous") appear in the bottom right corner
- If auto-play is enabled, the slideshow starts automatically upon loading the map
- Reordering features is not possible, but you can export them to QGIS, reorder, and reimport them into uMap

How to Share, Embed, and Export

To share your map with specific users or the public

- Click 🔑 (right panel)
- Adjust editor permissions and visibility settings

To embed your map in a webpage

- Click ⊘ (left panel)
- Generate a short URL (useful for mobile access)
- Export features in various formats
    - GeoJSON – JavaScript-compatible format
    - KMZ – Google Maps format
    - GPX – GPS-compatible format
- Copy the embed code ("iframe" tag) for use in web pages
- Configure a custom URL with query

Time for a uMap *Challenge*! (Step 1)

Geolocate Yourself

- Open `https://umap.openstreetmap.fr/it/map/dhss_2025_616270`
- Add a *point* feature at a location you like (e.g., your town, favorite hike, birthplace)
- Enter your nickname in the *Description* field
- Save the point as a visible feature
- Warning: the map is public: avoid personal data

Time for a uMap *Challenge* (Step 2)

The Map to the Tower
- Help a friend visiting Pisa for the first time:
  - Add points of interest (leaning tower, train station, whatever...)
    - Fill "Description" fields as you like (try with an image of the tower, `{{https://images.app.goo.gl/SWAQCqGn6peVnwH29}}`)
  - Create a map showing a route from the train station to the Leaning Tower
    - Draw a path from the station to an imaginary bus stop, then the bus route, and finally the walk to the tower
    - At the bus stop, enter details: bus number, direction, stop name, and estimated travel time