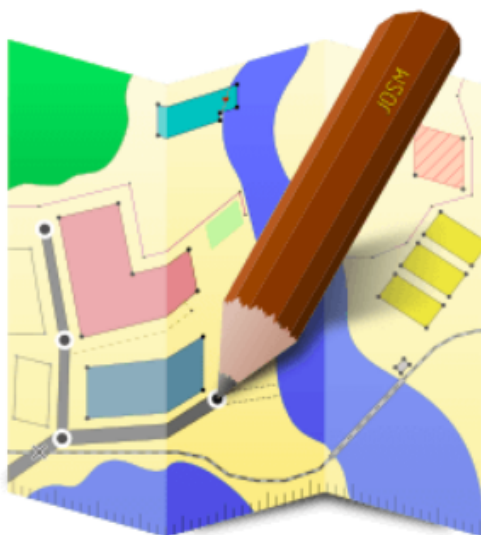


An Introduction to JOSM

Dr. Peter Mooney,
Department of Computer Science,
Maynooth University,
Ireland


What is JOSM?

- JOSM is the Java for OpenStreetMap (OSM) editor.
- The JOSM software is written in Java. It will work on your computer provided you have a recent version of Java installed (\geq Java 8)
- It is distributed as a JAR (Java Archive) file
- It is very frequently updated.
- JOSM sounds like “Jo-SOME” (as in the name Josh and then ‘some’ or ‘sum’)

[Wiki](#)[Timeline](#)[Changelog](#)[Browse Source](#)[View Tickets](#)[wiki: WikiStart](#)

JOSM is an extensible editor for [OpenStreetMap](#) (OSM) for [Java 8+](#).

It supports loading GPX tracks, background imagery and OSM data from local sources as well as from online relations) and their metadata tags.

JOSM is [open source](#) and licensed under [GPL](#) .



Start [josm.jnlp](#) (newest tested version (currently 15155))

preferred distribution channel, all platforms, monthly automatic update ([how to start](#))



Download [josm-tested.jar](#) (version 15155)

all platforms ([how to run](#))



Wiki

Timeline

Changelog

Browse Source












View Tickets

wiki: [Plugins](#)

If you want to learn steps to install or update plugins see ["Plugins" tab of preferences menu](#)

Plugins for JOSM

This is a list of all plugins available via the in JOSM integrated plugin manager.

Name	Author	Description
 AddrInterpolation	Mike Nice	Group common Address Interpolation inputs in a single dialog, as well as an option to generate individual house number nodes from a Way. More details
 alignways	Attila Szász	Makes a pair of selected way segments parallel by rotating one of them around a point. More details
apache-commons	nokutu; Don-vip	Provides Apache Commons library components. Not meant to be installed directly, but as a dependency for other plugins.
apache-http	Don-vip	Provides Apache HTTP library. Not meant to be installed directly by users, but as a dependency for other plugins.
 areaselector	Paul Woelfel, Thomas Konrad	Allows selection of areas in an layer and automatic creation of a way as polygon mapping of building from background layers. Optimized for basemap.at. More details
 austriaaddresshelper	Thomas Konrad	Automatically assigns the address to a selected object in Austria. Data © Österreichischer Adressregister 2017, N 23806/2017. More details
 auto_tools	Rub21,samely	Automatic tools to help on common issues More details
 BuildingGeneralization	Rotariu Anamaria	Allows the user to correct angle of buildings to 90 degrees, and aligns all loaded buildings to the road.
 buildings_tools	Upliner	Tools for drawing buildings. More details
 cadastre-fr	Pieren;Don-vip	A special handler for the French land registry WMS server. More details
 CADTools	Rotariu Anamaria-Ionela	Allows the user to make small changes to some selected buildings. More details
canvec_helper	Michael Bishop	Overlays the canvec tile grid on the map and prints URL's to the .zip files. Future versions will allow downloading and loading of canvec .osm files
 changeset-viewer	Rub21	Changeset Viewer plugin allows you to visualize the changesets in JOSM background. More details
		Color Plugin provide functionality for JOSM users who want to put 'color' attribute to the map.

You will need a valid OpenStreetMap account to use JOSM. This will be required when you start JOSM for the first time.

JOSM can be a little bit scary and complicated for beginners

DOGBERT'S PASSWORD RECOVERY SERVICE

ARE YOU TRYING TO RECOVER A PASSWORD, PIN CODE, USER NAME, PASS CODE OR CODE WORD?

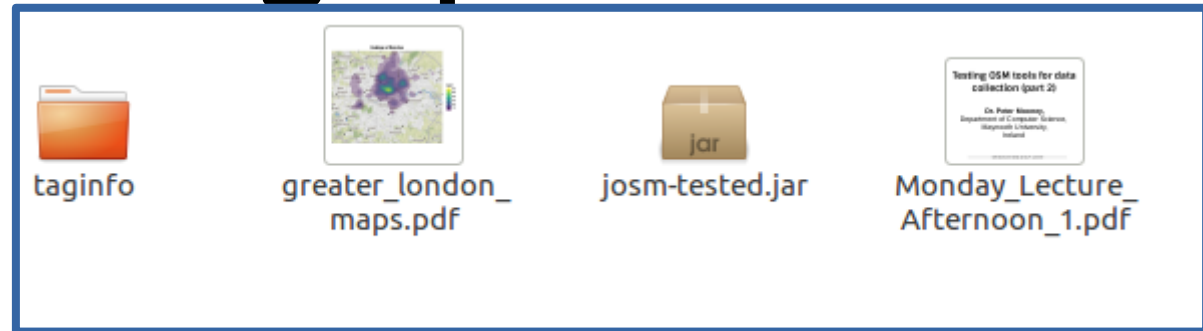
Dilbert.com DilbertCartoonist@gmail.com

I HATE THIS STUPID COMPLICATED PLANET! I AM SO OUT OF HERE!

4-29-11 © 2011 Scott Adams, Inc. Dist. by Universal Uclick

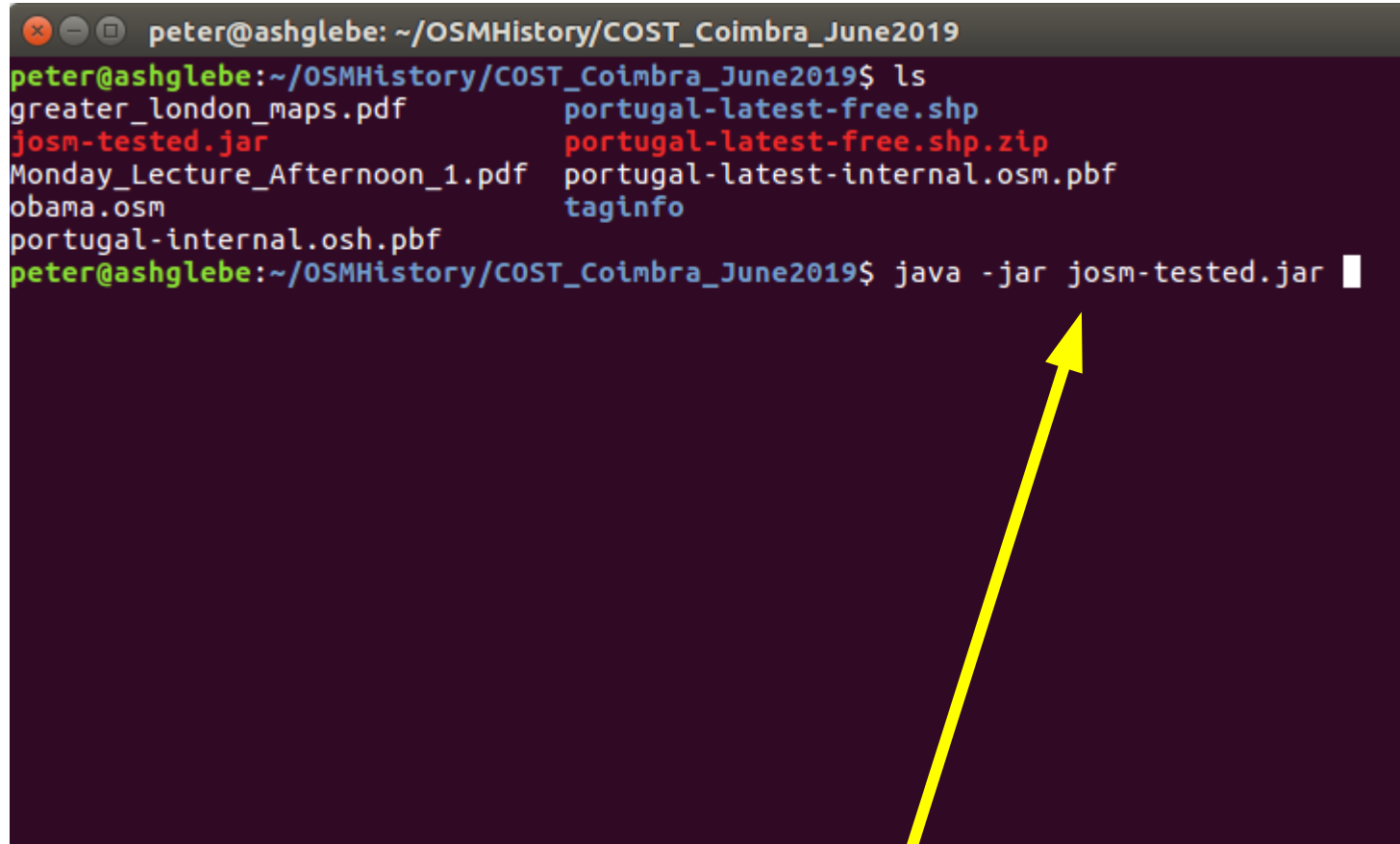
AND THAT IS HOW FLOYD BECAME THE FIRST PERSON TO HOLD HIS BREATH AND JUMP INTO OUTER SPACE.

Starting up JOSM



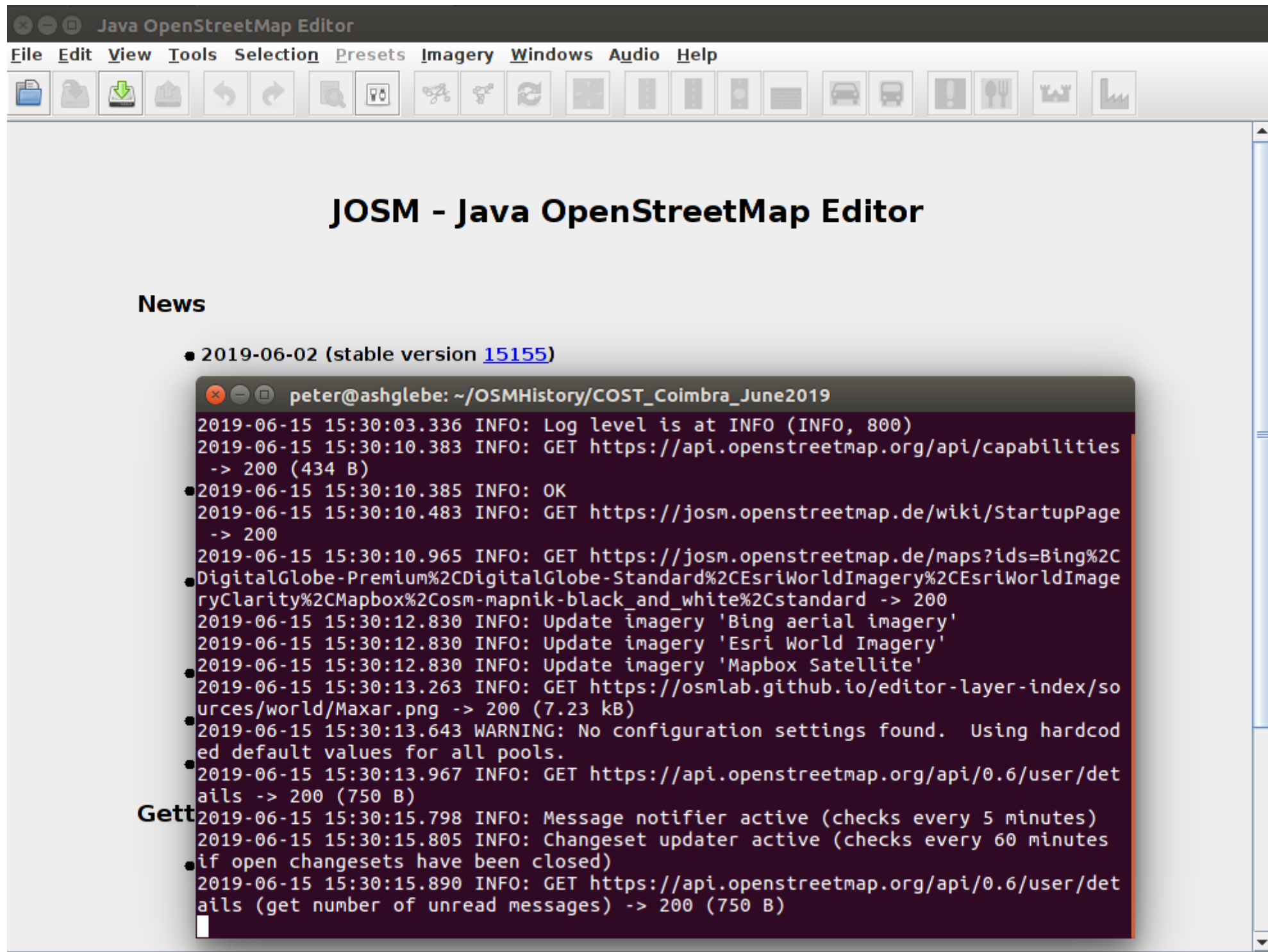
- JOSM is just a single file on your computer (see above)
- So we need to run this Java JAR file.
- This is performed in different ways on different operating systems.
- But we can use the command prompt in any O/S

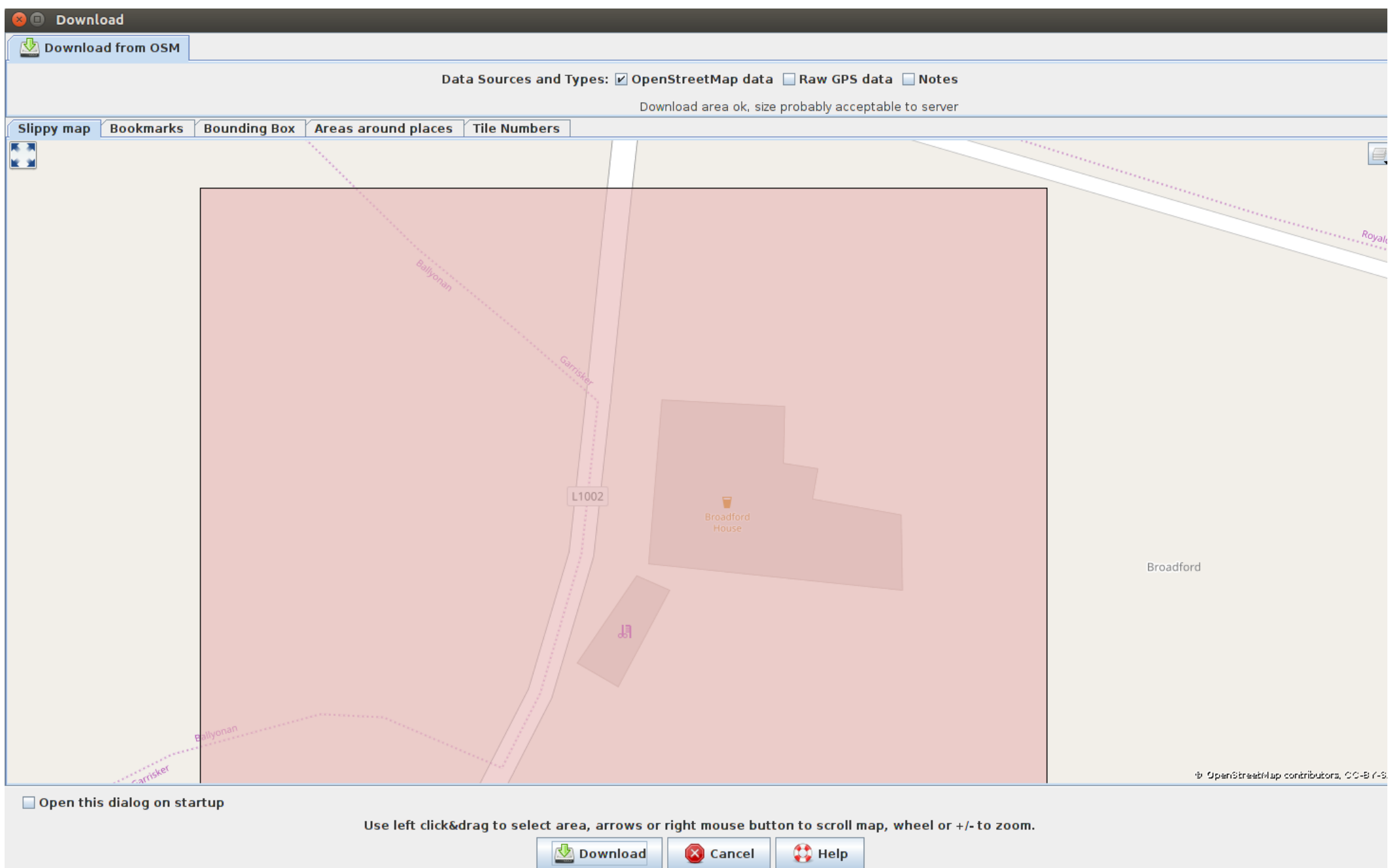
Open the command prompt in the folder where you downloaded the JAR file for JOSM

A terminal window with a dark purple background. The title bar shows 'peter@ashglebe: ~/OSMHistory/COST_Coimbra_June2019'. The prompt is 'peter@ashglebe:~/OSMHistory/COST_Coimbra_June2019\$'. The command 'ls' has been executed, showing a list of files: 'greater_london_maps.pdf', 'josem-tested.jar' (in red), 'Monday_Lecture_Afternoon_1.pdf', 'obama.osm', 'portugal-internal.osh.pbf', 'portugal-latest-free.shp', 'portugal-latest-free.shp.zip' (in red), 'portugal-latest-internal.osm.pbf', and 'taginfo'. The next command 'java -jar josem-tested.jar' is being entered, with a cursor at the end. A yellow arrow points from the text below to the 'josem-tested.jar' part of the command.

```
peter@ashglebe: ~/OSMHistory/COST_Coimbra_June2019
peter@ashglebe:~/OSMHistory/COST_Coimbra_June2019$ ls
greater_london_maps.pdf      portugal-latest-free.shp
josem-tested.jar             portugal-latest-free.shp.zip
Monday_Lecture_Afternoon_1.pdf portugal-latest-internal.osm.pbf
obama.osm                   taginfo
portugal-internal.osh.pbf
peter@ashglebe:~/OSMHistory/COST_Coimbra_June2019$ java -jar josem-tested.jar
```

Then run the command `java -jar josem-tested.jar`
(please replace with correct filename as per your download)





You can also use “Areas around places” to search for a location!

Download

Download from OSM

Data Sources and Types: ☒ OpenStreetMap data ☐ Raw GPS data ☐ Notes

Download area ok, size probably acceptable to server

Slippy map Bookmarks Bounding Box **Areas around places** Tile Numbers

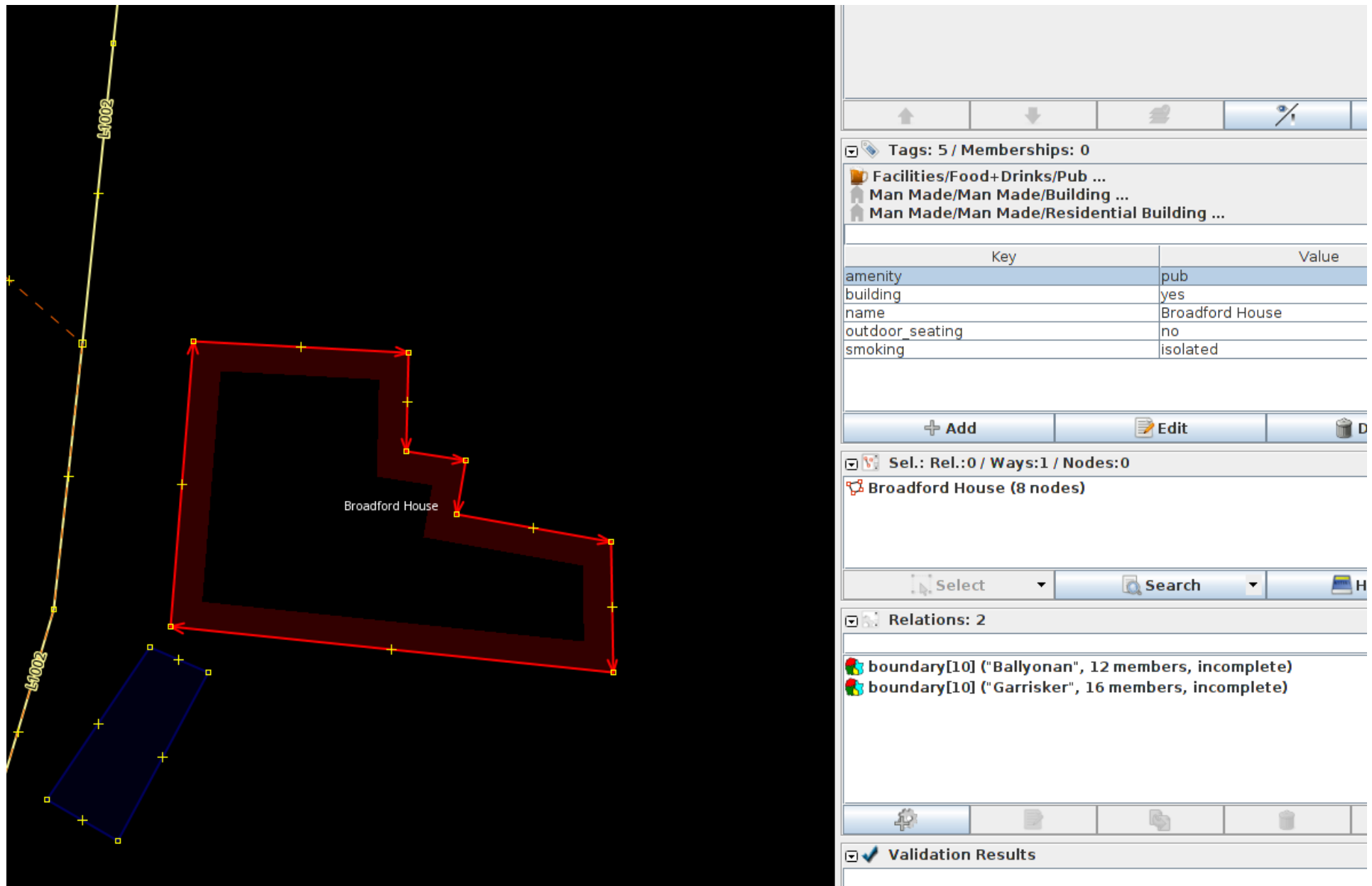
Choose the server for searching: Nominatim

Enter a place name to search for: Coimbra

Search...

Name	Type	Class Type	Bounds
Coimbra, CBR, Coimbra, Baixo Mondego, Centro, 3004-007, Po...	place	city	40.051 -8.589 / 40.371 -8.269
CBR, Coimbra, Baixo Mondego, Centro, Portugal	boundary	administrative	40.099 -8.592 / 40.352 -8.313
Coimbra, Baixo Mondego, Centro, Portugal	boundary	administrative	39.924 -8.909 / 40.520 -7.732
Coimbra, Sé Nova, Santa Cruz, Almedina e São Bartolomeu, ...	natural	peak	40.208 -8.427 / 40.208 -8.426
Coimbra, Corumbá, Microrregião do Baixo Pantanal, Mesorre...	boundary	administrative	-20.950 -58.170 / -19.552 -57.544
Coimbra, São Miguel das Missões, Microrregião de Santo Ân...	boundary	administrative	-29.004 -54.578 / -28.654 -54.331
Coimbra, Microrregião de Rosário Oeste, Mesorregião Centr...	place	hamlet	-14.857 -55.863 / -14.817 -55.823
Coimbra, Microrregião do Baixo Pantanal, Mesorregião Pant...	place	village	-19.931 -57.814 / -19.891 -57.774
Coimbra, Cauê, Província de São Tomé, São Tomé e Príncipe	place	hamlet	0.132 6.640 / 0.172 6.680
Coimbra, Microrregião Viçosa, Mesorregião Zona da Mata, M...	boundary	administrative	-20.882 -42.888 / -20.803 -42.703

Adding a node – go to your location



The screenshot displays a mapping application interface. On the left, a map shows a red polygon representing a building labeled "Broadford House" and a blue rectangle below it. A yellow line with markers is visible on the left side of the map. The right panel shows the object's details:

Tags: 5 / Memberships: 0

- Facilities/Food+Drinks/Pub ...
- Man Made/Man Made/Building ...
- Man Made/Man Made/Residential Building ...

Key	Value
amenity	pub
building	yes
name	Broadford House
outdoor_seating	no
smoking	isolated

+ Add **Edit** **D**

Sel.: Rel.:0 / Ways:1 / Nodes:0

Broadford House (8 nodes)

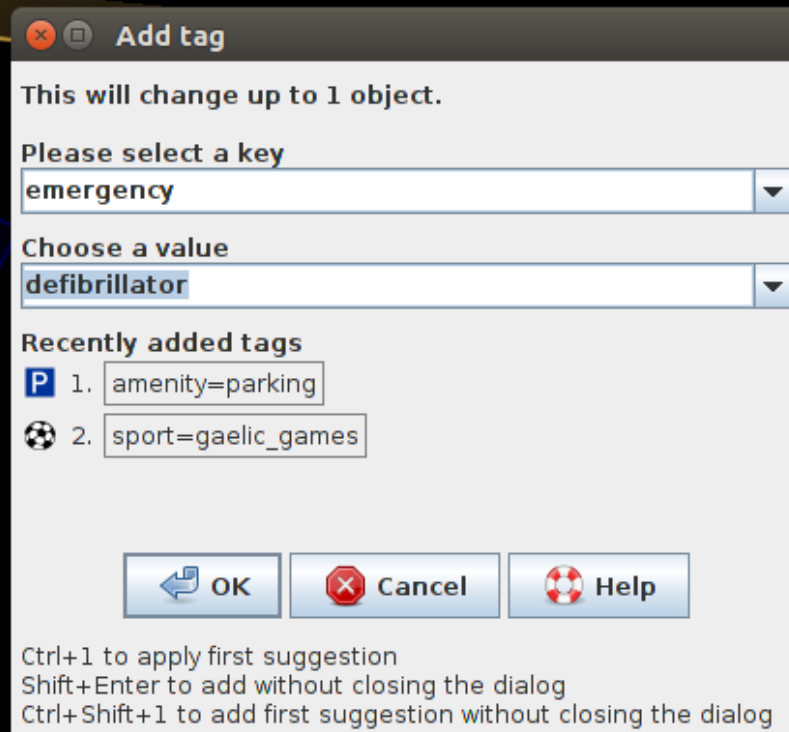
Select **Search** **H**

Relations: 2

- boundary[10] ("Ballyonan", 12 members, incomplete)
- boundary[10] ("Garrisker", 16 members, incomplete)

Validation Results

Add a node – make sure to choose a correct tag!



Add tag

This will change up to 1 object.

Please select a key
emergency

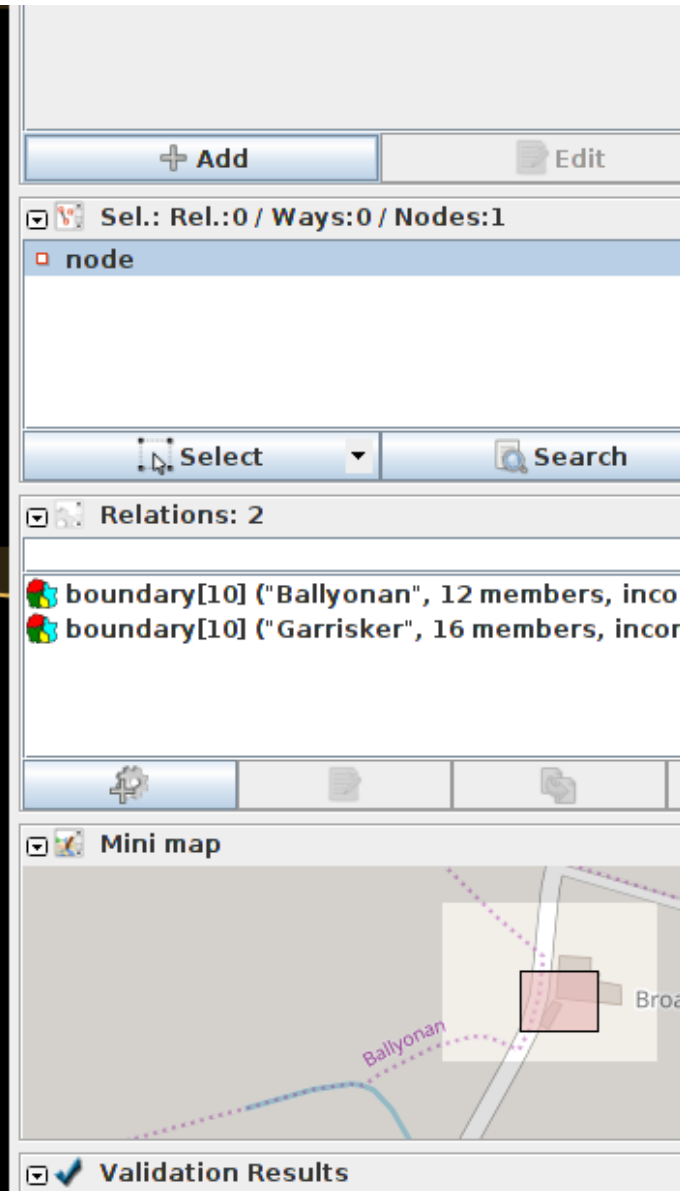
Choose a value
defibrillator

Recently added tags



- 1. amenity=parking
- 2. sport=gaelic_games

OK Cancel Help

Ctrl+1 to apply first suggestion
Shift+Enter to add without closing the dialog
Ctrl+Shift+1 to add first suggestion without closing the dialog



JOSM Tag Presets

  **Add tag**

This will change up to 1 object.




Please select a key

opening_hours ▼

Choose a value

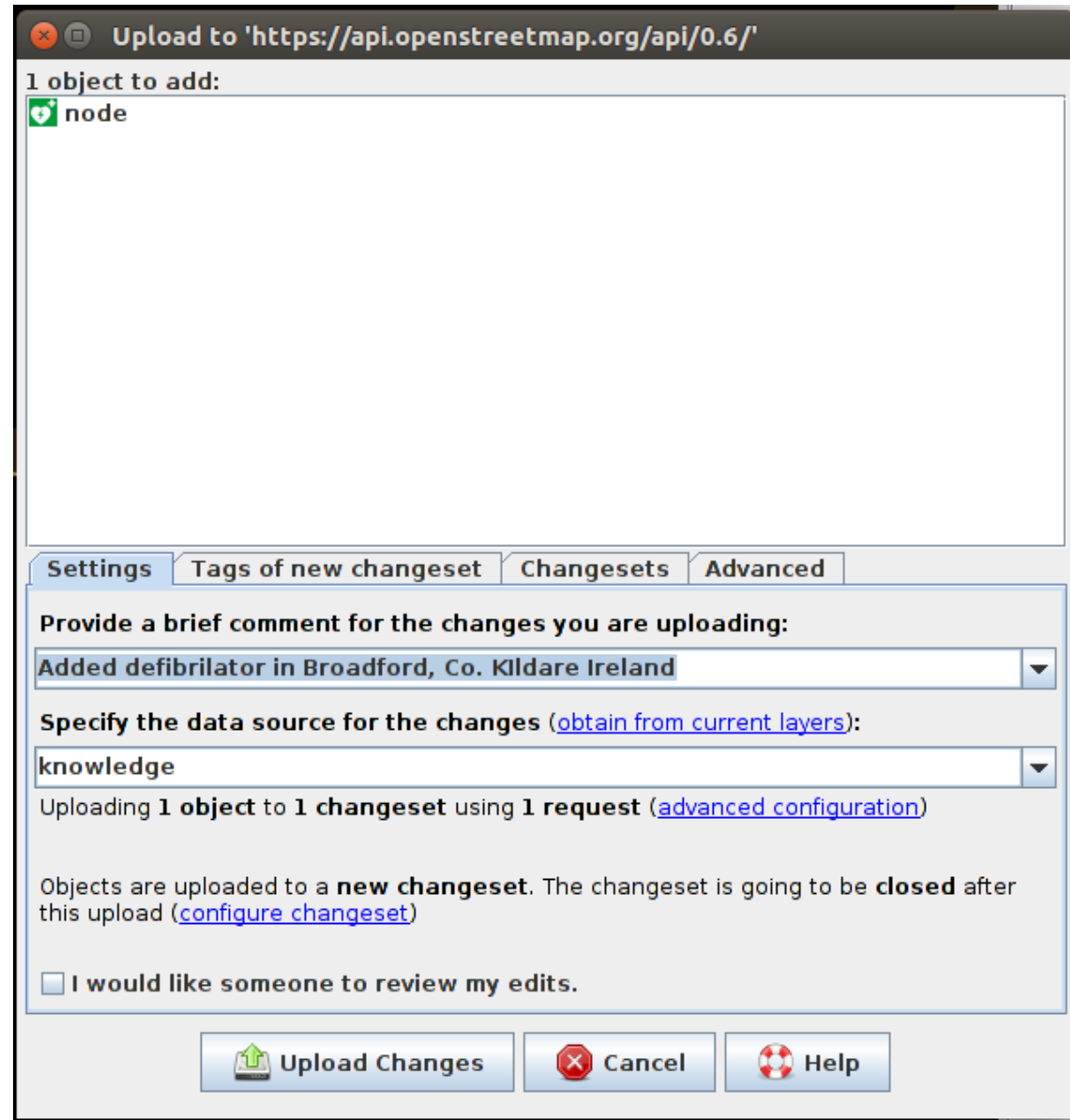
parking ▼

08:30-12:30,15:30-20:00
24/7
Mar-Jun closed; Jul-Feb Mo-Su,PH sunrise-sunset
Mo-Fr 08:30-20:00; Tu-Su 08:00-15:00; Sa 08:00-12:00
Mo-Fr 08:30-20:00; Sa,Su 08:00-15:00; PH off
Mo-Fr 15:00-22:00; Sa-Su 11:00-22:00
Mo-Fr 22:00-05:00
Mo-Su 08:00-18:00; Apr 10-15 off; Jun 08:00-14:00; Aug off; Dec 25...
Sa-Su 00:00-24:00
Su 10:00+
sunrise-sunset
sunset-sunrise open; sunrise-sunset closed
week 01-53/2 Fr 09:00-12:00; week 02-52/2 We 09:00-12:00

Ctrl+1 to apply first suggestion
Shift+Enter to add without closing the dialog
Ctrl+Shift+1 to add first suggestion without closing the dialog

If we are finished – we can upload to OSM – you should provide some comments on your changes/new data



The screenshot shows a web browser window titled "Upload to 'https://api.openstreetmap.org/api/0.6/'". The main content area displays "1 object to add:" followed by a green heart icon and the word "node". Below this is a tabbed interface with four tabs: "Settings" (selected), "Tags of new changeset", "Changesets", and "Advanced". The "Settings" tab contains the following elements:

- A text input field with the placeholder "Provide a brief comment for the changes you are uploading:" containing the text "Added defibrillator in Broadford, Co. Kildare Ireland".
- A dropdown menu labeled "Specify the data source for the changes ([obtain from current layers](#)):" with "knowledge" selected.
- A status line: "Uploading 1 object to 1 changeset using 1 request ([advanced configuration](#))".
- Informational text: "Objects are uploaded to a **new changeset**. The changeset is going to be **closed** after this upload ([configure changeset](#))".
- A checkbox labeled "I would like someone to review my edits." which is currently unchecked.

At the bottom of the dialog are three buttons: "Upload Changes" (with a green upload icon), "Cancel" (with a red X icon), and "Help" (with a red lifebuoy icon).

What is a Changeset?

- A CHANGESET in OSM is a logical grouping of edits by a user.
- Suppose you create 6 nodes and 4 ways. You provide tags for these objects. Suppose you edit the tags on 2 nodes. Then you upload to OSM.
- The editor software you are using will upload these changes as a group. When they are entered into the OSM database they will be attached to a CHANGESET which will describe the changes you have made.
- You don't need to worry about Changesets – but you should be aware that they are a method for tracking the edits and uploads of ALL users.

My very simple edit (one new node) in a Changeset

The screenshot shows the OpenStreetMap web interface. At the top, there's a navigation bar with the OpenStreetMap logo, a search bar, and buttons for 'Edit', 'History', and 'Export'. Below the navigation bar, there's a search bar with the text 'Where is this?' and a 'Go' button. The main content area is divided into two panels. The left panel displays details for a changeset with ID 71281468. The right panel shows a map of the area, with a new node (orange dot) added near the 'Broadford House'.

OpenStreetMap Edit History Export

Search [Where is this?](#) [Go](#) [↗](#)

Changeset: 71281468 [×](#)

Added defibrillator in Broadford, Co. Kildare Ireland

Closed [less than a minute ago](#) by [peterm7](#)

Tags

created_by	JOSM/1.5 (15155 en)
source	knowledge

Discussion

[Log in to join the discussion](#)

Nodes (1)

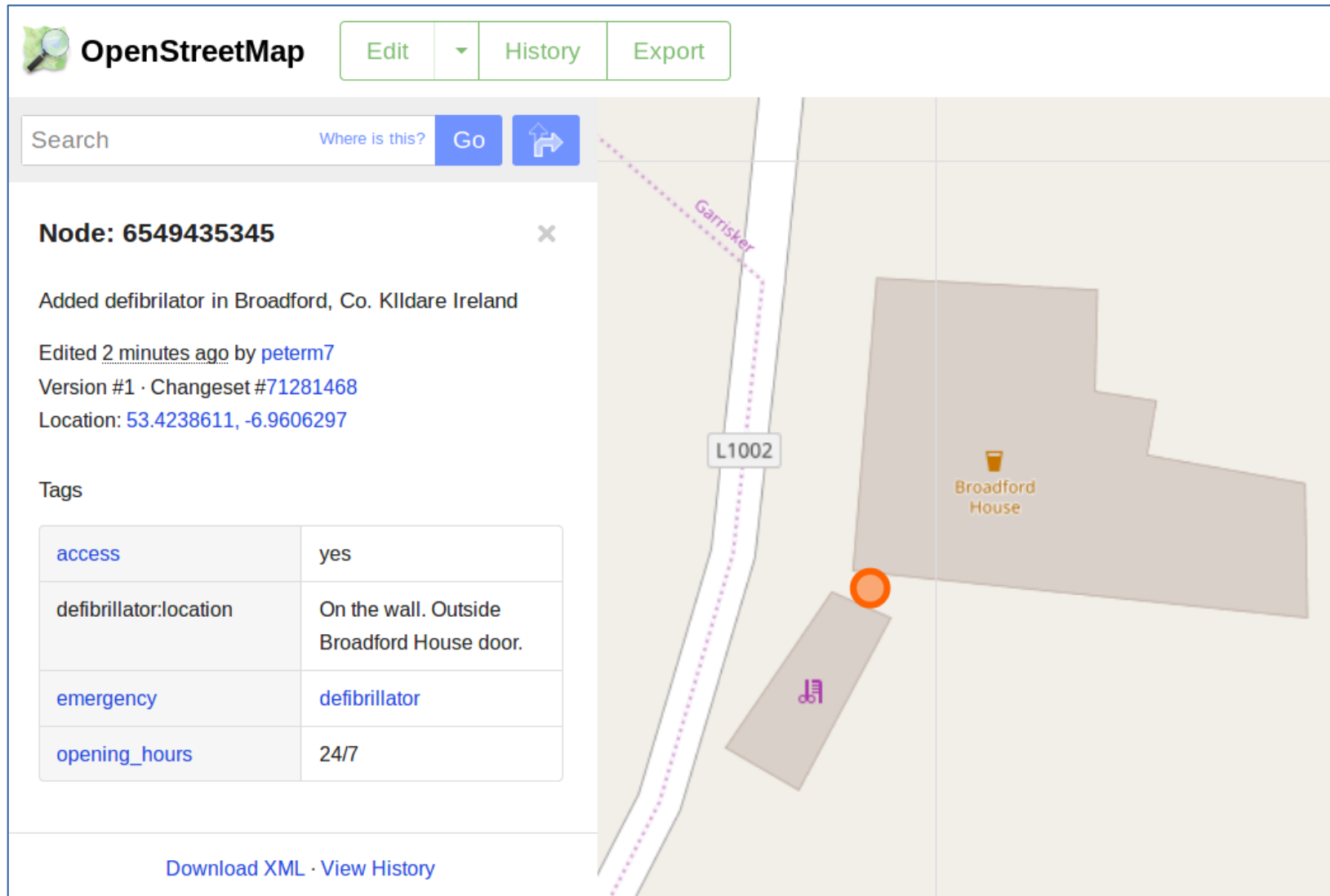
[6549435345, v1](#)

[<< 70395976 · peterm7](#)

[Changeset XML](#) · [osmChange XML](#)

Map labels: Garrisker, L1002, Broadford House

We can see information about the node on the OSM website



The screenshot shows the OpenStreetMap website interface. At the top, there is a search bar with the text "Search" and a "Where is this?" link. To the right of the search bar are buttons for "Go" and a share icon. Above the search bar are buttons for "Edit", "History", and "Export".

The main content area on the left displays information about a specific node:

- Node: 6549435345**
- Added defibrilator in Broadford, Co. Kildare Ireland
- Edited 2 minutes ago by [peterm7](#)
- Version #1 · Changeset #[71281468](#)
- Location: [53.4238611](#), [-6.9606297](#)

Below this information is a "Tags" section with a table:

access	yes
defibrillator:location	On the wall. Outside Broadford House door.
emergency	defibrillator
opening_hours	24/7

At the bottom of the node information section, there are links for "Download XML" and "View History".

The map on the right shows a street labeled "L1002" and a building labeled "Broadford House". A red dot on the map indicates the location of the defibrillator, which is marked with a purple icon. A dashed line labeled "Garrisker" is also visible on the map.

Editing a Node

Click on the node you wish to edit (tags for example)

The screenshot displays the OpenStreetMap editor interface. On the left is a satellite map view. On the right is a list of tags for a selected object. A dialog box titled "Change value?" is open, showing the current key and value for a tag.

Tags: 27 Memberships...

Facilities/Food+Drinks/Cafe ...

Key	Value
amenity	cafe
name	Esquina Magalhães

Change value?

This will change 1 object.
(An empty value deletes the tag.)

Key: amenity
Value: cafe

OK Cancel Help

boundary[7] ("Coimbra", 78 members, incomplete)
boundary[8] ("Santa Clara e Castelo Viegas", 14 members, incomplete)
boundary[8] ("Sé Nova, Santa Cruz, Almedina e São Bartolomeu", 16 members, incomplete)
boundary[9] ("Santa Cruz", 9 members, incomplete)
boundary[9] ("Santa Cruz", 10 members, incomplete)

Mini map

Map showing the location of Coimbra, Portugal, with various districts and landmarks labeled.

Validation Results

Using PRESETS to edit tags

The screenshot displays the JOSM (Java OpenStreetMap) editor interface. On the left, a map view shows a road network with a highlighted area. A dialog box titled 'Change 1 object' is open, showing the 'Facilities/Accommodation/Hotel' preset. The dialog includes fields for Name, Operator, Stars, Rooms, Beds, Wheelchairs, Internet access, Internet access fee, and Smoking. The 'Name' field is set to 'Hotel Dona Inês'. A tooltip points to the 'operator' field, stating 'This corresponds to the key 'name''. Below the fields, there are links for 'Edit also ...' and 'More information about this feature'. At the bottom of the dialog are 'Apply Preset' and 'Cancel' buttons.

On the right, the 'Data Layer 1' panel shows the 'Tags: 2 / Memberships: 0' for the selected object. The tags are listed in a table:

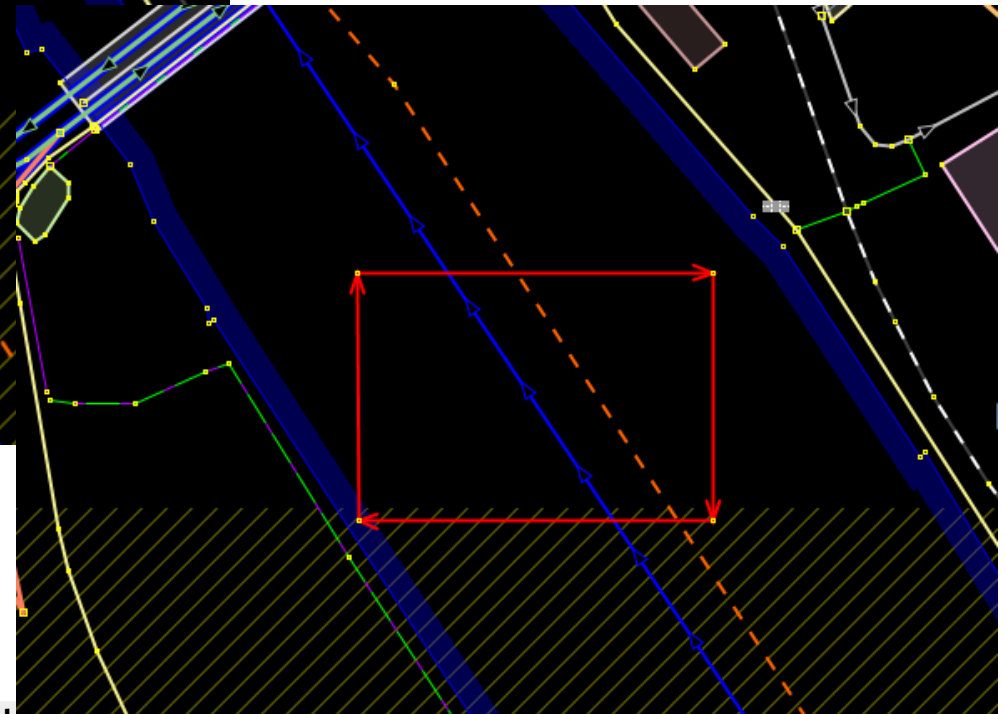
Key	Value
name	Hotel Dona Inês
tourism	hotel

Below the table are buttons for '+ Add', 'Edit', and 'Delete'. The 'Relations: 11' panel shows a list of relations, including 'boundary[7] ("Coimbra", 78 members, incomplete)', 'boundary[8] ("Santa Clara e Castelo Viegas", 14 members, incomplete)', 'boundary[8] ("Sé Nova, Santa Cruz, Almedina e São Bartolomeu", 16 members, incomplete)', 'boundary[9] ("Santa Cruz", 9 members, incomplete)', and 'boundary[9] ("Santa Cruz", 10 members, incomplete)'. The 'Mini map' panel shows a map of the area around Coimbra, Portugal. The 'Validation Results' panel is empty.

Making Buildings SQUARE

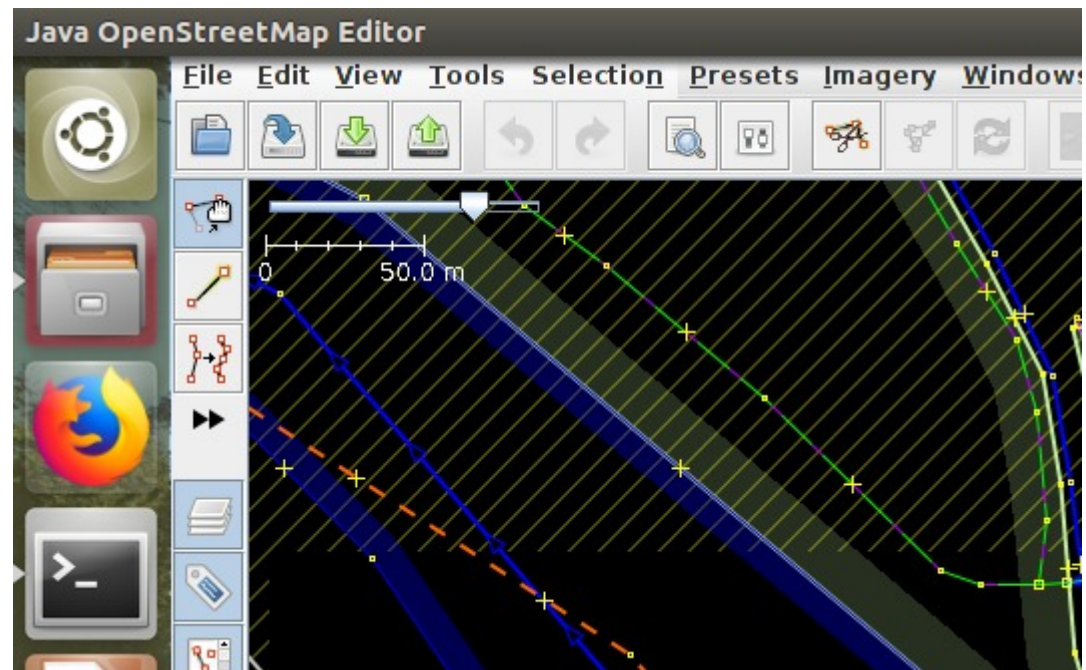


PRESS the Q key



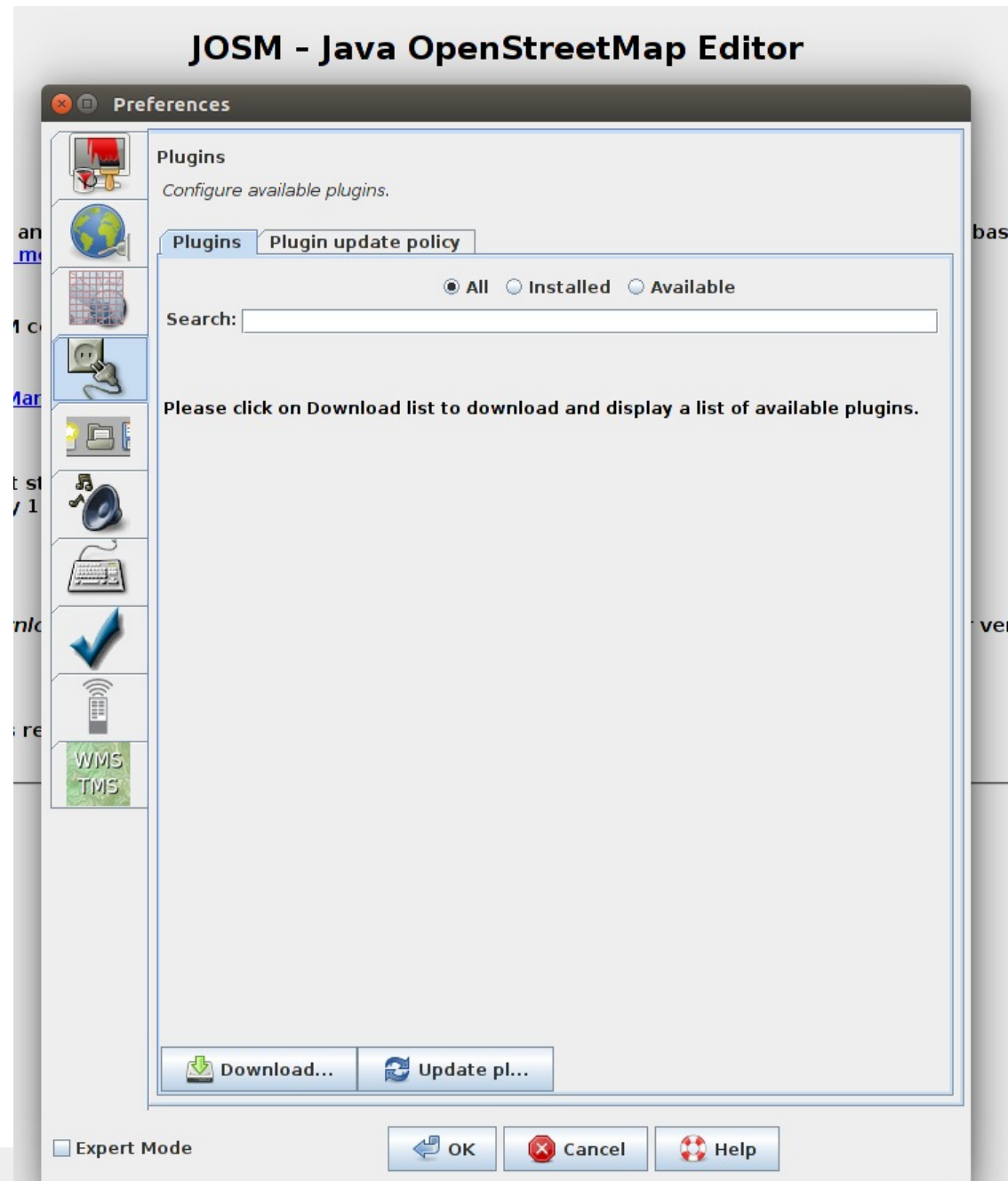
Remember – JOSM is an offline editor.

- This is very important.
- All of your edits happen OFFLINE.
- Press the UPLOAD button to submit your edits to OSM database

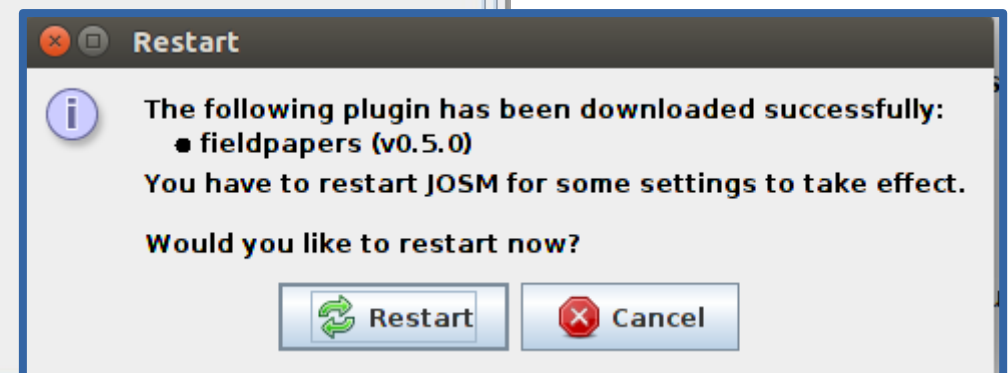
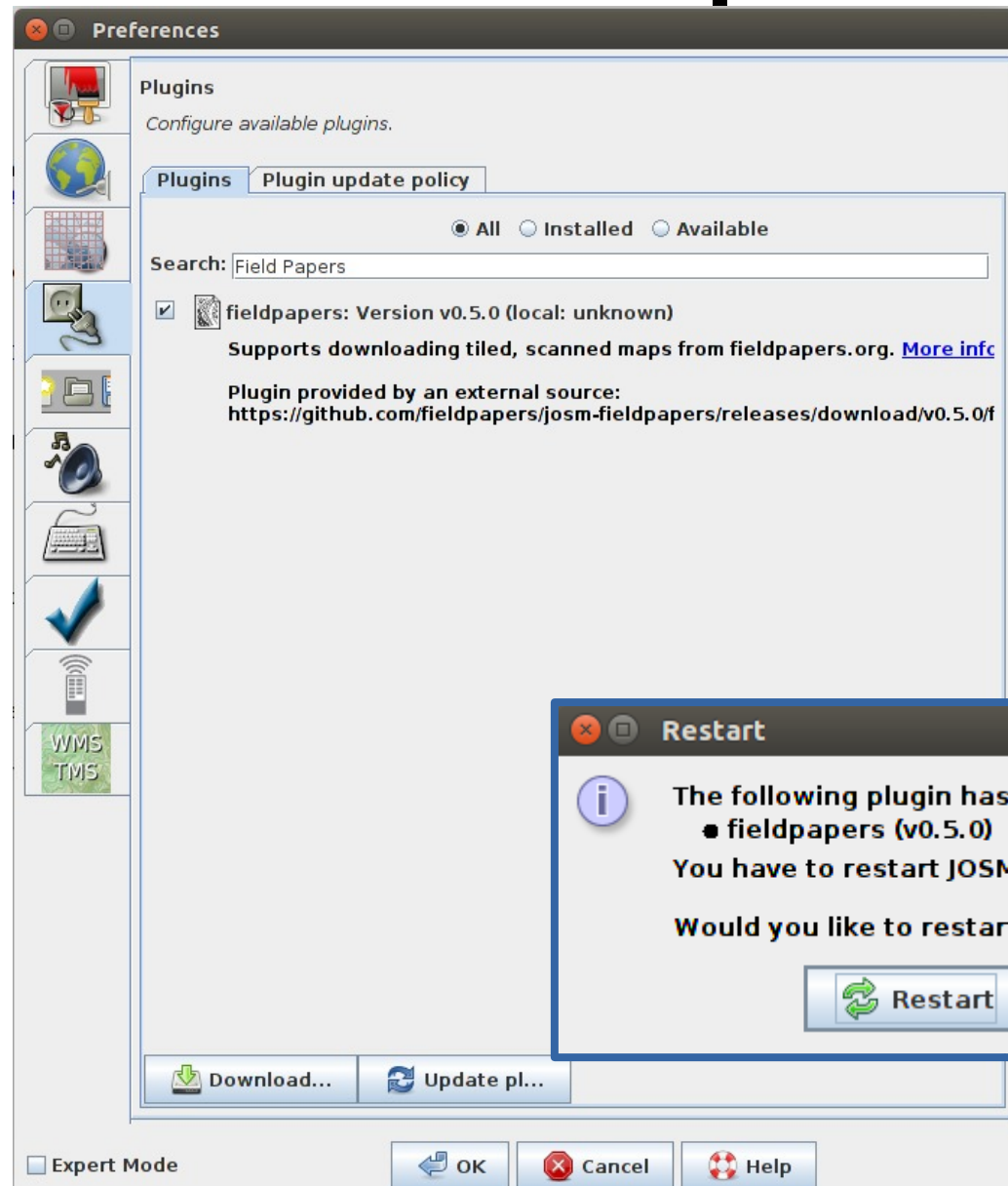


Using Field Papers

Edit->Preferences-Plugins



Plugins: Click 'Download' then search for 'Field Papers'



The LearnOSM website has a very good guide to using FieldPapers in JOSM

learnOSM

Learn OpenStreetMap Step by Step



► OTHER GUIDES

- Beginner's guide
- **JOSM - Detailed Editing**
- Coordination
- Mapping with a SmartPhone, GPS or Paper
 - Surveying with a Garmin GPS
- **Field Papers**
- OsmAnd 2.0+
- OSMAnd
- OruxMaps
- OSMTTracker

Surveying with Field Papers

NOTE:

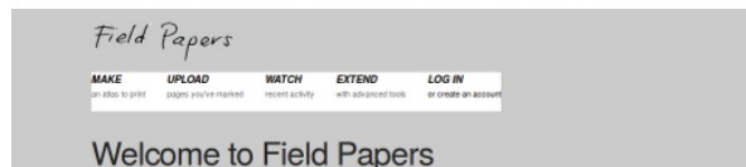
Reviewed 2016-08-10

In this chapter we will see how we can record the coordinates of places without a GPS. We will use a tool called **Field Papers**, which allows you to print a map of an area, draw on it and add notes, and load the paper back into JOSM, where you can add your locations to OpenStreetMap. You can also watch this 8-minute **Tutorial Field Papers video** on how to create an atlas and upload a snapshot.

OVERVIEW OF FIELD PAPERS

Before we go into detail about Field Papers, let's look at an overview of how the process works:

1. Locate the area you want to map on the Field Papers website. Print out a map of this area. You can choose to print the current map of the area on OpenStreetMap, or you can choose to print aerial imagery, if it is available in your area.



Field Papers

MAKE

an atlas to print

UPLOAD

pages you've marked

WATCH

recent activity

EXTEND

with advanced tools

LOG IN

or create an account



Make note of URL

Activity

- anonymous made this atlas [about 5 hours ago](#)
1 page + sputnik.ru + landscape + full-page

Export Data

- [GeoJSON](#)
- [Plain Text \(CSV\)](#)
- [Snapshot URL Grid \(CSV\)](#)

Field Papers

MAKE

an atlas to print

UPLOAD

pages you've marked

WATCH

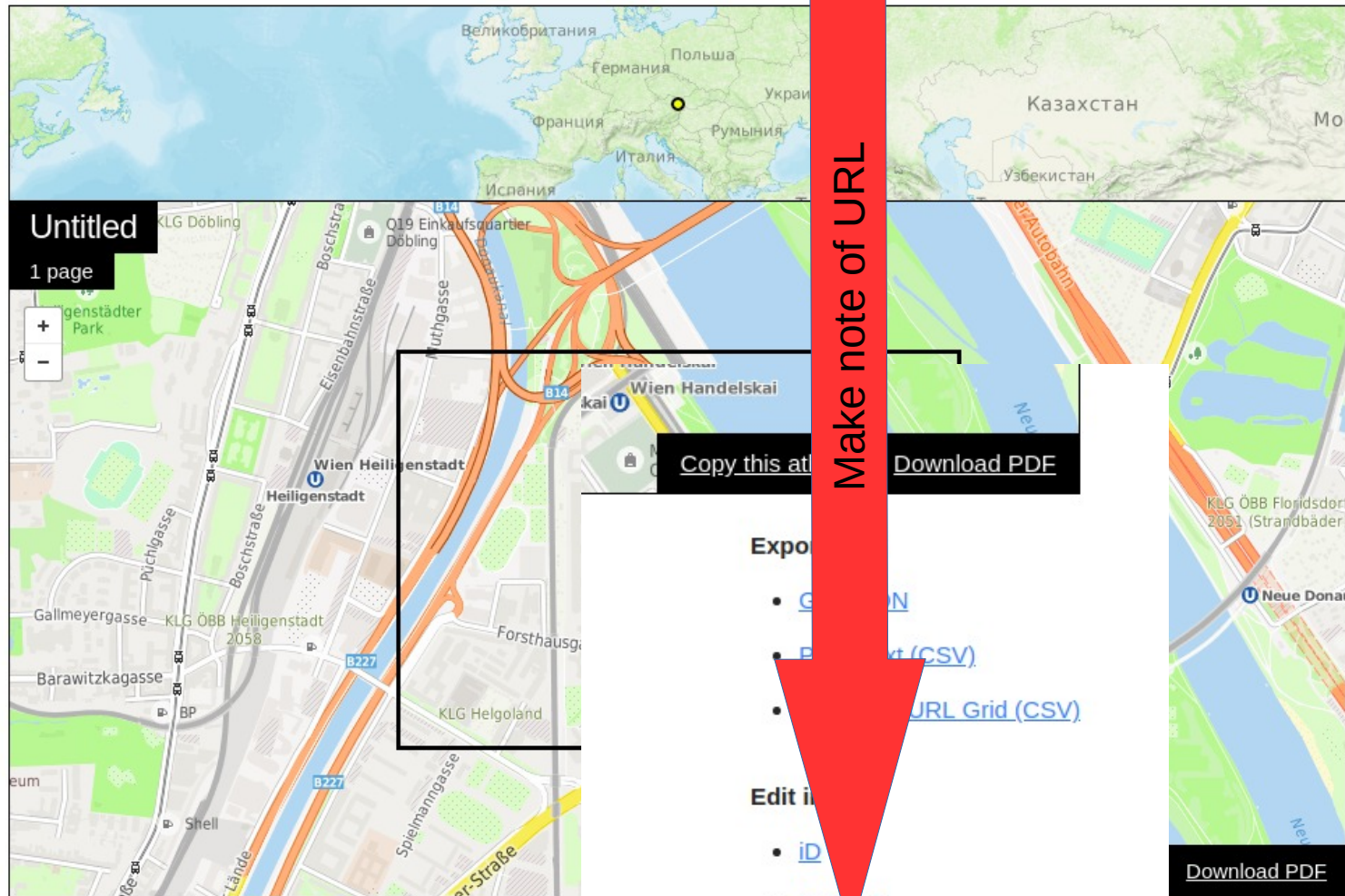
recent activity

EXTEND

with advanced tools

LOG IN

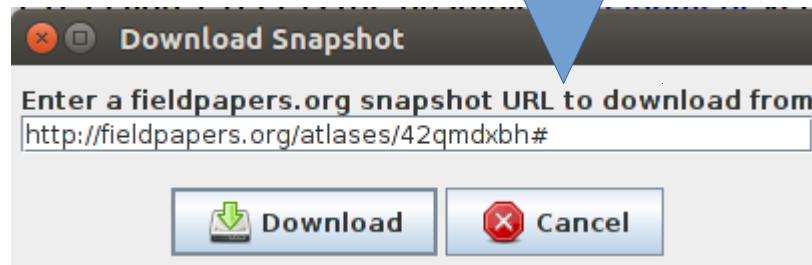
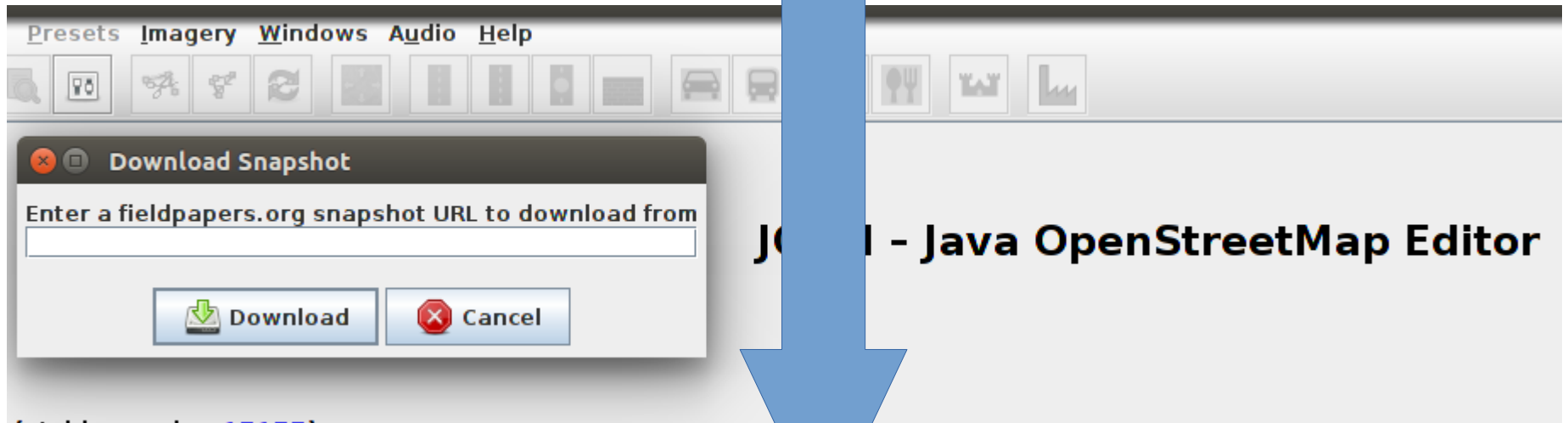
or create an account



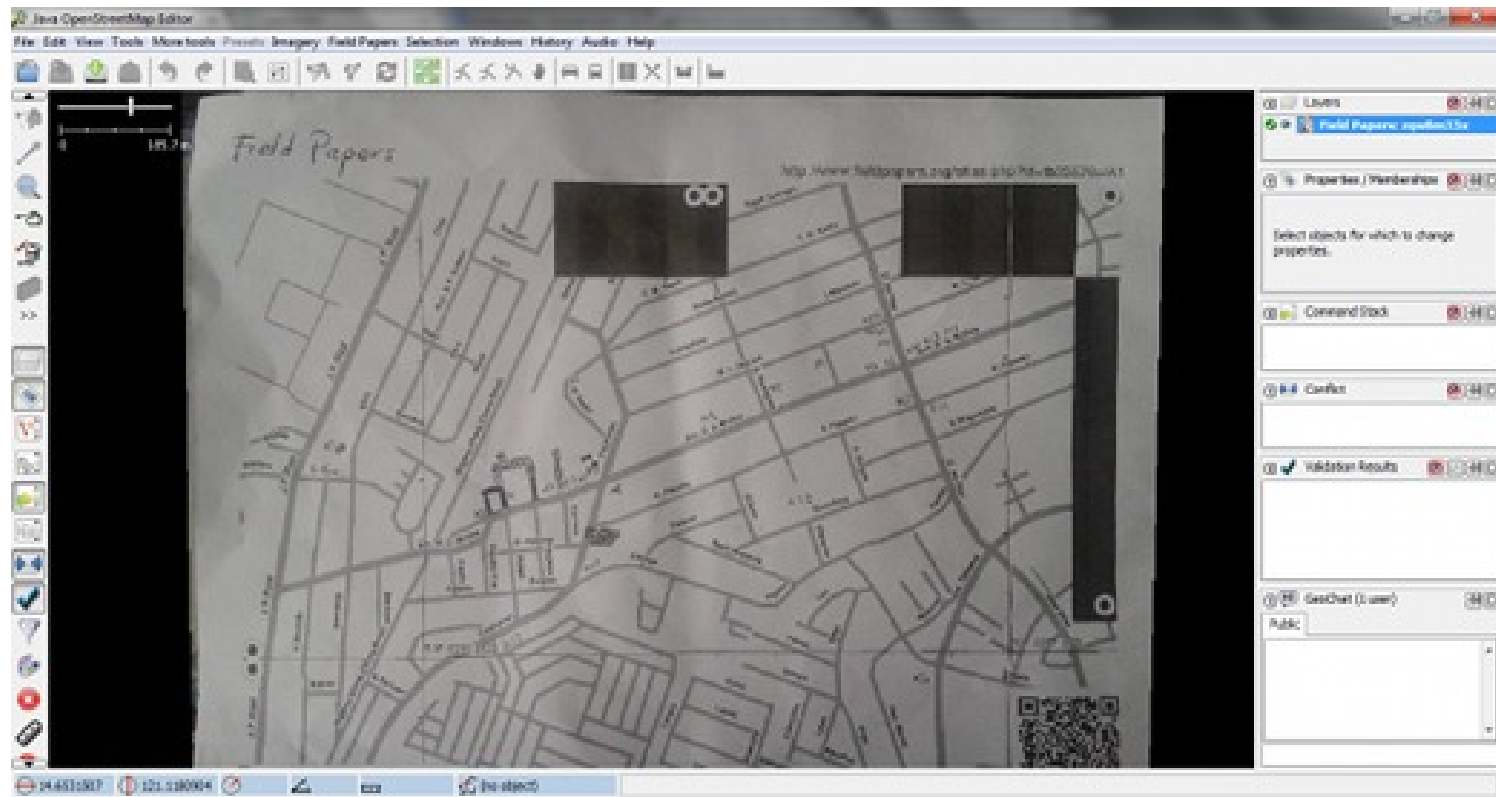
Activity

- anonymous made this atlas [about 5 hours ago](#)
1 page + sputnik.ru + landscape + full-page

Copy the specific URL from the Field Papers website for this 'atlas'



JOSM will load the Field Paper, in the correct position. You can start editing





Layers

Field Papers: cdq5bfq4



Tags / Memberships

Select objects for which to change tags.

+ Add Edit Delete

Authors

Author	# Objects	%

Select Show info

Validation Results

Select Lookup Valid... Fix Ignore

The screenshot displays the Java OpenStreetMap Editor application. The main window shows a satellite map of a residential area with several handwritten labels in blue ink. These labels include "Hotel Petala Bamboo", "Pasar hah lembang", "Jl. Paur lapis", "mandarin restaurant", "PDAM Lembang", "Jl. Minatu", "Hotel Bumi Malenur Indah", "JLKP Lembang", "Pulsi sektor Lembang", "022 Rm. Sunda", and "026". A scale bar at the top left indicates a distance of 100.0 m. The sidebar on the right contains several panels: "Layers" (showing "Field Papers: cdq5bfq4"), "Tags / Memberships" (with a prompt to select objects for tag changes), "Authors" (with a table for tracking author contributions), and "Validation Results". The bottom status bar shows the current coordinates as -6.8097933, 107.6148936 and indicates that no object is currently selected.

