



Taller de introducción a OpenStreetMap

IV Jornadas de Cultura Libre



Universidad
Rey Juan Carlos

Oficina de
Conocimiento y
Cultura Libres

26 marzo 2025, URJC, Fuenlabrada



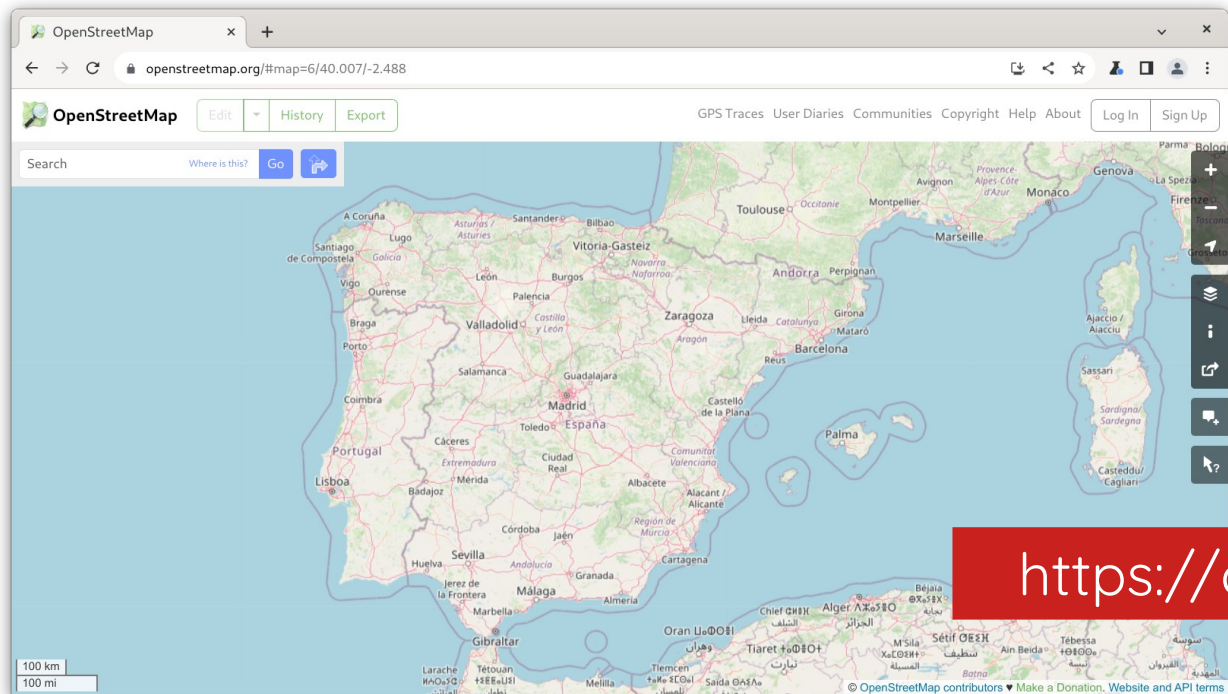
Miguel Sevilla-Callejo

Mapeado Colaborativo / Geoinquietos Zaragoza
Asociación OpenStreetMap España



OpenStreetMap

la wikipedia de los mapas



<https://openstreetmap.org>

OpenStreetMap

la wikipedia de los mapas



“crear y distribuir datos geográficos libres de restricciones técnicas o legales de uso, promoviendo su utilización de forma creativa, productiva o inesperada”

... a partir de la contribución voluntaria y colaborativa de la comunidad

¿Qué es OpenStreetMap?

- comunidad de **entusiastas** del software y los datos libres
- proyecto para crear **la mejor base de datos geográfica mundial**
- ¿un mapa en la red? ¡No! ¡**son muchos mapas!**
- **no solo mapas:** ecosistema de productos y servicios



OpenStreetMap

la wikipedia de los mapas



- ~ 10 millones de editores
- ~ 200 activos/día en España
- ~ 9.800 millones de nodos
- > 45.000 creados/día en España
- Base de datos espacial de libre uso y distribución (OdbL)

fuelle: osmstats.neis-one.org

Leyenda (mapnik)



Leyenda del mapa



	Autopista
	Main road
	Pista
	Vía ecuestre
	Bicisenda
	Vía peatonal
	Ferrocarril
	Metro
	Metro ligero y Tranvía
	Telecabinas y Telesilla
	Pista de aeropuerto y Calle de rodaje

	Rampa aeroportuaria y terminal
	Límites administrativos
	Bosque
	Madera
	Campo de golf
	Parque
	Zona residencial
	Común y pradera
	Zona de comercios
	Zona industrial
	Zona de oficinas

	Landa, brezal
	Lago y embalse
	Campiña
	Baldío
	Cementerio
	Huertos de ocio
	Campo de juego
	Centro deportivo
	Reserva natural
	Área militar
	Escuela y universidad
	Edificio significativo
	Estación de tren
	Cumbre y pico

	Borde a rayas = túnel
	Borde negro = puente
	Acceso privado
	Acceso a destino
	Vías en construcción

Licencia ODBL



- *Open Data Commons Open Database License*
- eres libre de: **copiar, distribuir, usar** (producir trabajos), **modificar y transformar** la base de datos
- siempre y cuando: **cites** convenientemente la fuente y el trabajos obtenido **se distribuya con una licencia similar y de forma abierta** (sin restricciones)

<http://opendatacommons.org/licenses/odbl/summary/>

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**Mapping
technologies**

Serge Wroclawski

Tue 14 Jan 2014 11.52
GMT



Why the world needs OpenStreetMap

As more private companies offer us maps, we need an open-source, editable solution - a cartographical Wikipedia



Why the world needs OpenS x

theguardian.com/technology/2014/jan/14/why-the-world-needs-openstreetmap

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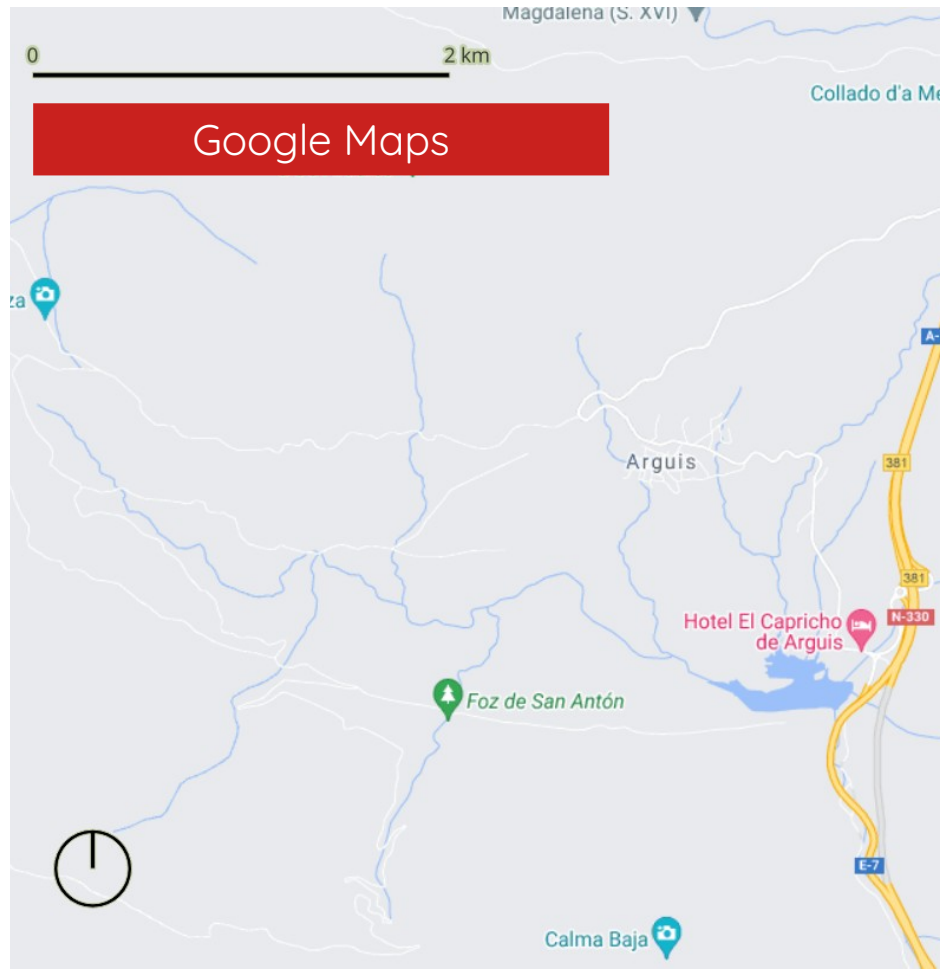
Contribute → Subscribe →

Search jobs Sign in Search The Guardian International edition v

relevancia de OpenStreetMap

- ◆ alternativa a servicios de mapas online
- ◆ uso fundamental en áreas de ayuda humanitaria
- ◆ cartografía de **información geográfica alternativa**
- ◆ incorporación “open data” espacial
- ◆ plataforma de referencia de información geográfica libre





Y más colaboraciones



Empresas como Amazon, Facebook, Microsoft o TomTom están editando para mejorar la calidad de los datos espaciales de OSM para su beneficio.

https://wiki.osm.org/wiki/Category:Organised_Editing_Teams

OpenStreetMap como fuente de datos espaciales



- Wikimedia
- Facebook
- Apple Maps
- Mapbox / Carto
- Medios de comunicación
- Agencias gubernamentales

Ecosistema de aplicaciones muy extenso y diverso



The screenshot shows a web browser window with the address bar displaying 'wiki.openstreetmap.org/wiki/Use_OpenStreetMap'. The page features a sidebar on the left with navigation links: Main Page, The map, Map Features, Contributors, Help, Blogs, Shop, Donations, Wiki discussion, and Recent changes. The main content area has a title 'Use OpenStreetMap' and a sub-header 'Use OpenStreetMap - Other languages' with links for English, español, français, galego, italiano, Nederlands, português, فارسی, 한국어, 中文 (简体), and 日本語. Below this is a section 'Getting started' with a link to 'Read our introduction: Using OpenStreetMap'. To the right, there is a section 'Applications of OpenStreetMap' with links to 'Browsing our world map' and 'Ready-to-use applications'. A 'Get Data' link with a globe icon is also visible at the bottom left.

Use OpenStreetMap - OpenS x +

← → ↻ wiki.openstreetmap.org/wiki/Use_OpenStreetMap ☆

English Create account...

Page Discussion Read View source View history Search OpenStreetMap \ Q

Use OpenStreetMap

Use OpenStreetMap - Other languages [Purge](#) [Help](#)

English · español · français · galego · italiano · Nederlands · português · فارسی · 한국어 · 中文 (简体) · 日本語 · [Other languages](#) · [Translate](#)

*Find out about how **you** can benefit from the OpenStreetMap project!*

Getting started

- Read our introduction: [Using OpenStreetMap](#)

Applications of OpenStreetMap

- [Browsing our world map](#)
- [Ready-to-use applications](#)

[Get Data](#)

Lo mejor de OpenStreetMap
es su Comunidad llena de
entusiastas

Y tú también puedes ser
parte de ella



Procedimiento a seguir



- **Unirse** a la comunidad
 - tener usuario en OpenStreetMap
- **Recoger** los datos
- **Subir** los datos a OSM
- **Generar** mapas
 - OSM.org, otras plataformas, hacerlo tú mismo

Crea una cuenta
osm.org/login

[Log In](#)

[Sign Up](#)



Free and editable. Unlike other maps, OpenStreetMap is completely created by people like you, and it's free for anyone to fix, update, download and use.

Sign up to get started contributing.

Email

Your address is not displayed publicly, see our [privacy policy](#) for more information.

Mapping parties



UNIDAD MÓVIL
21:35



Barrio Las Fuentes, Zaragoza

Image: Aragón TV

Trabajo sobre el terreno



Recursos online

- Recursos IGN/CNIG
 - Ortofotografía
 - Mapas topográficos
- Catastro
- Imágenes de satélite
 - Maxtar, BING y otras



Mapatones



editor iD

editor web

OpenStreetMap

https://www.openstreetmap.org/edit#map=18/41.64751/-0.88530

OpenStreetMap Edit History Export

Edit feature

Feature Type

University Grounds

Fields

Name

Edificio Paraninfo

Operator

Unknown

Address

Street 123 Unit

Postcode City

Website

Inspect Add Feature Point Line Area

Undo / Redo Save

Callo Almagro

Plaza Aragón

Edificio Paraninfo

Campus Paraiso - Universidad de Zaragoza

PNDA

1 50 m

Edits by tolica, jaimemf, alexandrocf, and 58 others

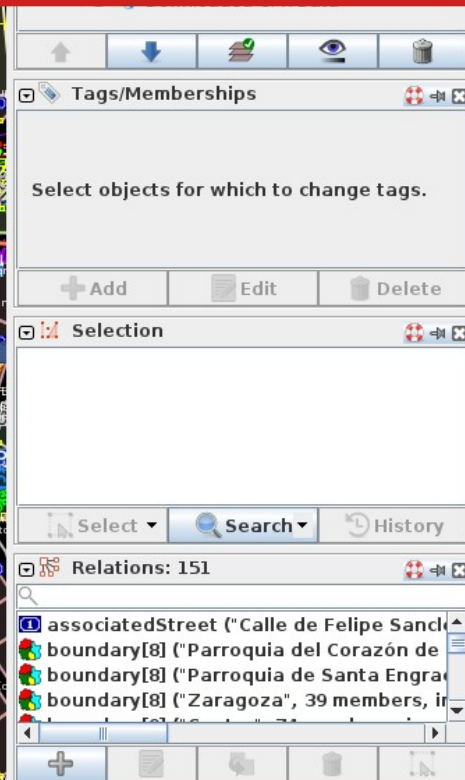
263 hidden features

220.2



editor JOSM

editor externo Java



Modelo datos geográficos



a. componente espacial

tipologías básicas

- nodos / nodes
- líneas / ways



b. componente temático

etiquetas y valores

- shop=bakery
- name=Panadería Alonso



c. relaciones y conjuntos



¿dónde?
¿qué forma?
¿qué es?
¿cómo se relaciona?

Wiki de OpenStreetMap

wiki.osm.org

[Main Page](#) [Discussion](#)[Read](#)[View source](#)[View history](#)

Main Page - Other languages

[Purge](#) [Help](#)

Afrikaans asturianu azərbaycanca Bahasa Indonesia Bahasa Melayu bosanski brezhoneg català čeština dansk Deutsch eesti **English** español Esperanto euskara français Frysk galego hrvatski interlingua íslenska italiano kréyòl gwadeloupéyen kurdî latviešu Lëtzebuergesch lietuvių magyar Nederlands norsk occitan polski português română shqip slovenčina slovenščina srpski (latinica) suomi svenska Tiếng Việt Türkçe Zazaki Ελληνικά български македонски русский српски / srpski українська хայтатл עברית العربية الفارسی لُجِنْدِي پښتو سرائیکی नेपाली मराठी বাংলা ଇଞ୍ଚ ଲୁହ မြန်မာဘာသာ 한국어 中文 (简体) 中文 (繁體) 日本語

Other languages...

Welcome to OpenStreetMap, the project that creates and distributes [free](#) geographic data for the world. We started it because most maps you think of as free actually have legal or technical restrictions on their use, holding back people from using them in creative, productive, or unexpected ways.



[More about OpenStreetMap](#) | [How to contribute](#) | [Where to get help](#)

Use OpenStreetMap



Using OpenStreetMap

- [Browse our world map](#)
- Check the ready-to-use products for your mobile device, your desktop computer or the web services

Contribute free map data



Beginners' Guide

- Browse the [map feature documentation](#)
- Browse the [Mapping projects](#)
- [...more on contributing map data](#)

Software Development



Develop and use the Platform

- Use OpenStreetMap for your software
- Contribute to the OpenStreetMap software

[Main Page](#)
[The map](#)
[Map Features](#)
[Contributors](#)
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Recent changes

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What links here
Related changes
Special pages
Printable version
Permanent link
Page information
Cite this page

Page Discussion

Read

View source

View history

Search OpenStreetMap Wiki



Map features

tagging tagging

Map Features - Other languages

Purge · Help

asturianu azərbaycanca Bahasa Indonesia bosanski català čeština dansk Deutsch eesti English español Esperanto français hrvatski íslenska italiano latviešu lietuvių magyar Nederlands norsk occitan polski português română shqip slovenčina slovenščina suomi svenska Tiếng Việt Türkçe Ελληνικά български македонски русский срpski / srpski українська עברית العربية فارسی پنجابی नेपाली தமிழ் తెలుగు བོད་སྐད་ 한국어 ქართული 中文 (简体) 中文 (繁體) 日本語

Other languages...

OpenStreetMap represents [physical features on the ground](#) (e.g., roads or buildings) using [tags](#) attached to its basic data structures (its [nodes](#), [ways](#), and [relations](#)).

Each tag describes a geographic attribute of the feature being shown by that specific node, way or relation.

OpenStreetMap's [free tagging system](#) allows the map to include an unlimited number of attributes describing each feature. The community agrees on certain key and value combinations for the most commonly used tags, which act as informal standards. However, users can create new tags to improve the style of the map or to support analyses that rely on previously unmapped attributes of the features. Short descriptions of tags that relate to particular topics or interests can be found using the [feature pages](#).

Most features can be described using only a small number of tags, such as a path with a classification tag such as [highway=footway](#), and perhaps also a name using [name=*](#). But, since this is a worldwide, inclusive map, there can be many different feature types in OpenStreetMap, almost all of them described by tags.

There are [proposed changes to existing tags](#), [inactive features](#) and [deprecated features](#). If you do not find a suitable tag in this list then feel free to make something suitable up as long as the [tag values will be verifiable](#). Over time, you may find that the tag name is changed to fit with some wider consensus. However, many good tags were used first and documented later. For the latest updates of tagging schemes see [Changelog](#).

Contents

1 Primary features

1.1 Aerialway

1.2 Aegway

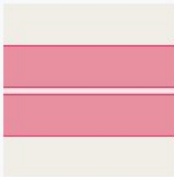
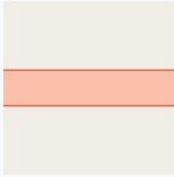
Map Features

Elementos del mapa

Highway

This is used to describe roads and footpaths. For an introduction on its access limitations by vehicles type, time, day, load and purpose, etc.

Etiqueta *highway*
elementos de la red Viaria

Key	Value	Element	Comment	Rendering carto	Examples
Roads					
These are the principal tags for the road network. They range from the most to least important.					
highway	motorway		A restricted access major divided highway, normally with 2 or more running lanes plus emergency hard shoulder. Equivalent to the Freeway, Autobahn, etc..		
highway	trunk		The most important roads in a country's system that aren't motorways. (Need not necessarily be a divided highway.)		 
highway	primary		The next most important roads in a country's system. (Often link larger towns.)		 



Main Page
The map
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Tools
What links here
Related changes
Special pages
Printable version
Permanent link
Page information
Cite this page
Data item

Page [Discussion](#)

Tag:amenity=university

Tag:amenity=university - Other languages

[Purge](#) · [Help](#)

[català](#) [čeština](#) [Deutsch](#) **English** [español](#) [français](#) [italiano](#) [Nederlands](#) [polski](#) [português](#) [Ελληνικά](#) [русский](#) [українська](#) [한국어](#) [日本語](#)

[Other languages...](#)

For OSM activities by the scientific community, see [Research](#).

- **education=university** – **education=*** has been adopted as the recommended key for tagging all education features. If you know [places with this tag](#), verify if it could be tagged with another tag. Automated edits are **strongly discouraged** unless **you really know what you are doing!**

education=university		
	149	2.47%
	33	1.66%
	80	2.47%
	36	4.43%

The tag **amenity=university** is used to map a university: an institution of higher education, designed for instruction, examination, or both, of students in many branches of advanced learning.

Contents [\[hide\]](#)

- 1 [How to map](#)
 - 1.1 [Complex areas](#)
 - 1.1.1 [Separate campuses](#)
 - 1.2 [Faculties and departments](#)
 - 1.3 [Common mistakes when mapping a university =](#)
- 2 [Similar tags and proposals](#)

Etiqueta específica
sobre universidades

amenity = university v · d · e



Description

An educational institution designed for instruction, examination, or both, of students in many branches of advanced learning.

Rendering in [OSM Carto](#)

Version #9

Añadido de caminos en Avenida de la Universidad

Edited over 1 year ago by akari17
Changeset #142040146

Tags

addr:city	Fuenlabrada
addr:postcode	28943
addr:street	Camino del Molino
amenity	university
barrier	fence
internet_access	yes
internet_access:ssid	eduroam
name	Universidad Rey Juan Carlos - Campus de Fuenlabrada
nohousenumber	yes

Nodes

▶ 32 nodes

Elemento de OSM del campus de Fuenlabrada de la URJC



RECUERDA

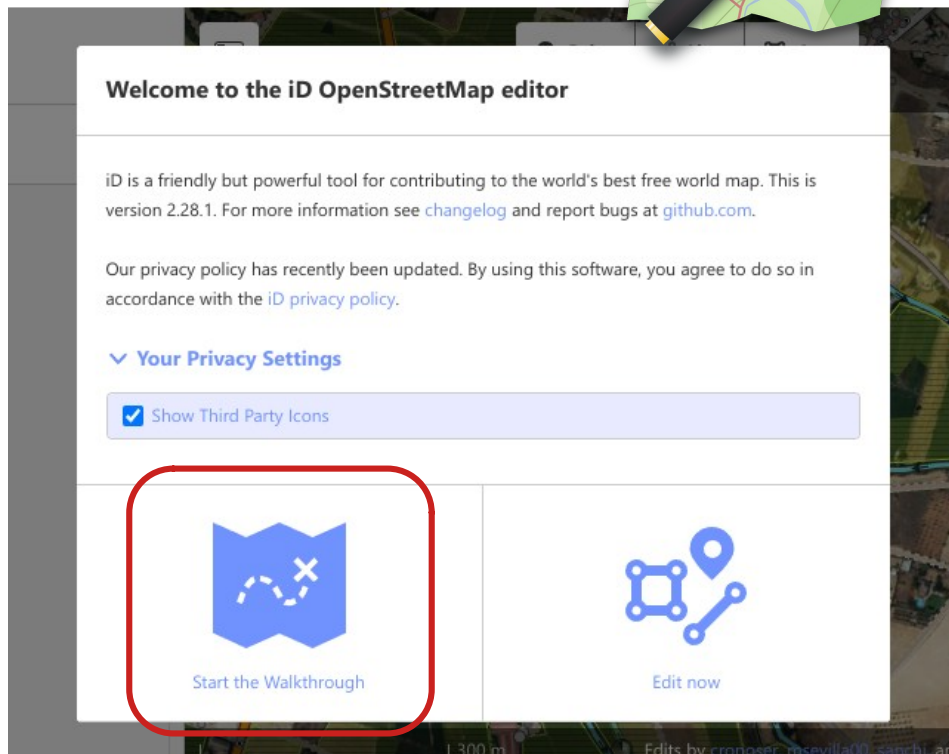
No copies de otros
mapas



Editando en iD



- Seguir el tutorial



Search features

[🔍 Search](#)

Welcome! This walkthrough will teach you the basics of editing on OpenStreetMap.

OK



Welcome

Navigation

Points

Areas

Lines

Buildings

Start Editing



Inspect



Point



Line



Area

Add Feature



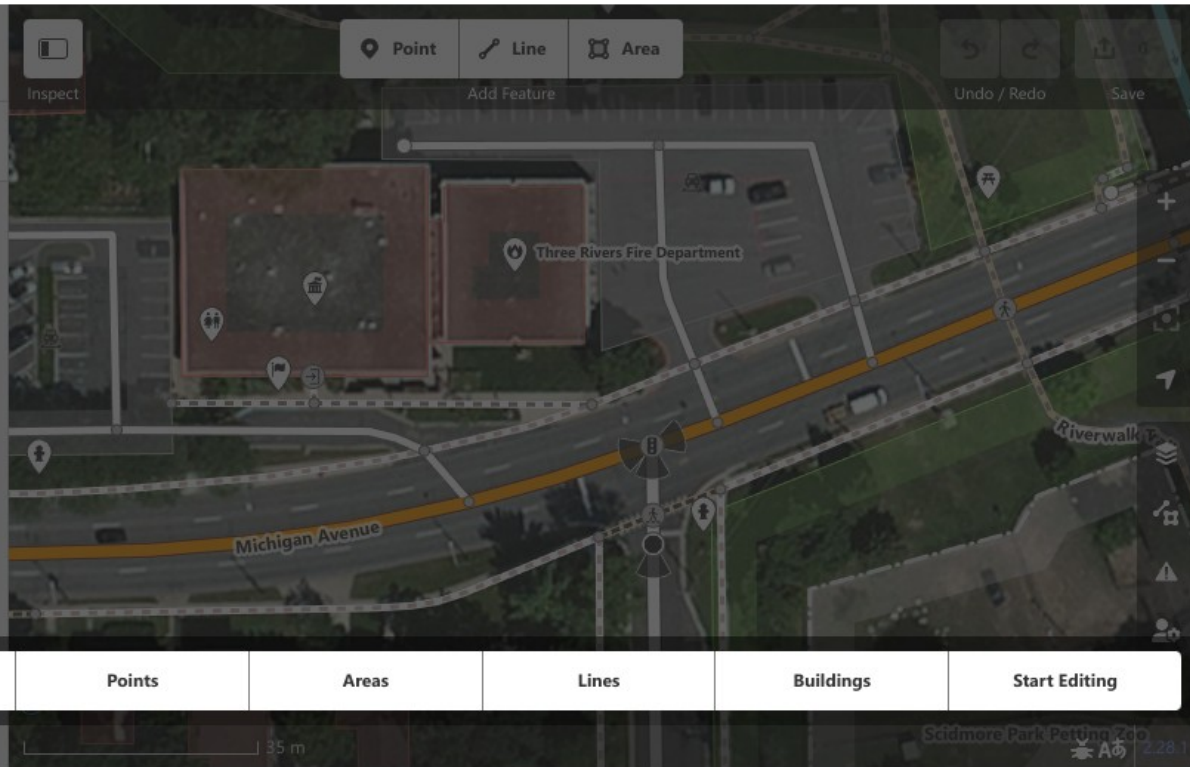
Undo



Redo



Save



Search features

 Search**Start mapping!**

Undo / Redo

Save

Camino Farlete

Acquía de Canarero

300 m

Edits by msevilla00, sidvicio, jorgarcia, and 25 others

[434 hidden features](#) Aa

2.28

Search features

[🔍 Search](#)

Inspect

Point

Line

Area

Add Feature

Undo / Redo

Save

Help

Street-level photos, copying from commercial sources, like Google Maps, is strictly forbidden.

Before you start

You should be familiar with OpenStreetMap and this editor before you start editing. iD contains a walkthrough to teach you the basics of editing OpenStreetMap. Press the "Start the Walkthrough" button on this screen to start the tutorial—it takes only about 15 minutes.

Open Source

The iD editor is a collaborative open source

[Notes](#)[Background Imagery](#)[Street Level Photos](#)[GPS Traces](#)[Quality Assurance](#)[Keyboard Shortcuts](#)

Start the Walkthrough



Consejos

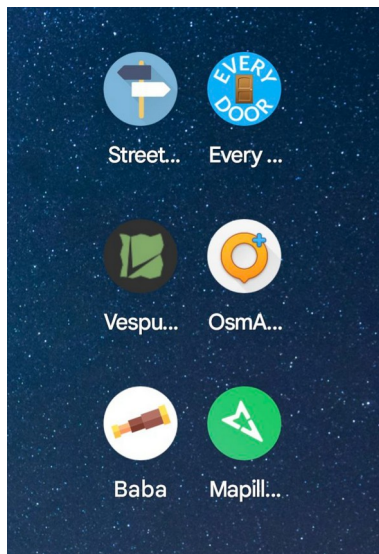


- Ante la duda no lo toques
- No edites para el render
- Comenta tus ediciones
- Algunas líneas comparten nodos otras NO
- Consulta la documentación
- Pregunta a la comunidad

Editando con nuestro móvil



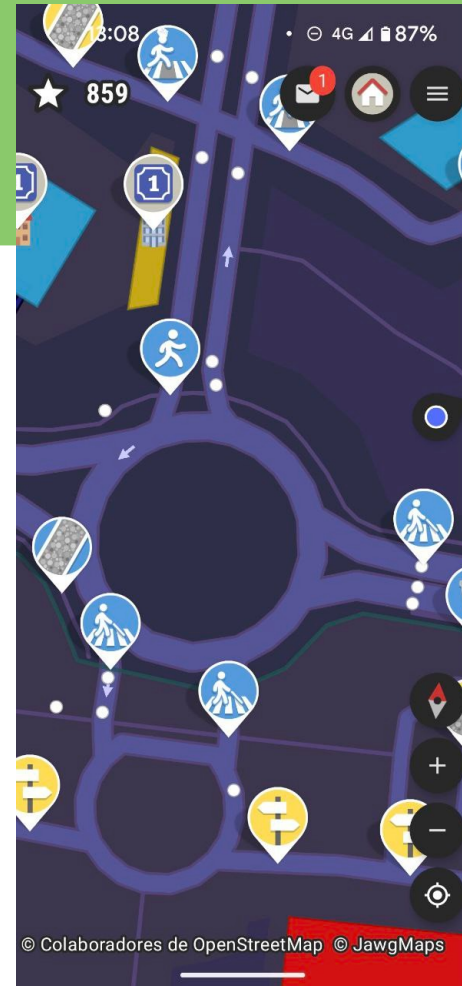
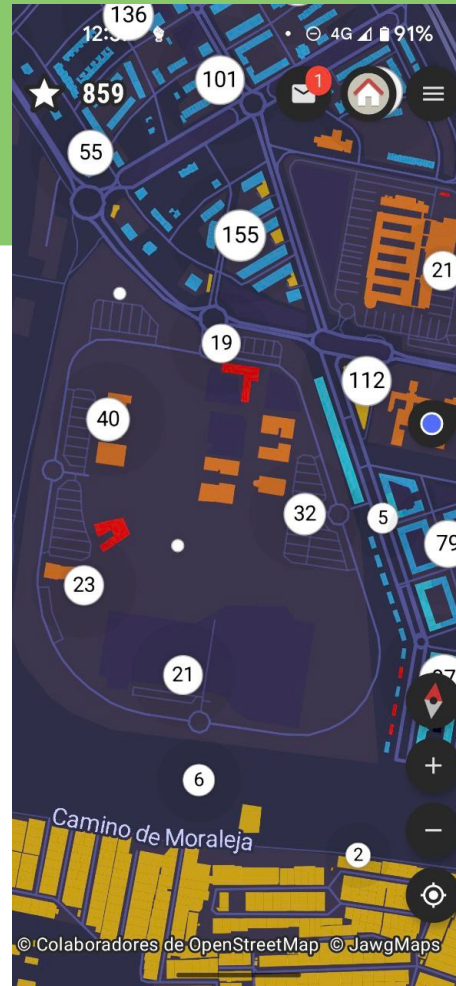
Apps de OMS en el móvil



- StreetComplete
- EveryDoor
- Vespucci
- OSMAnd
- Panoramax (Baba)
- Mapillary

StreetComplete

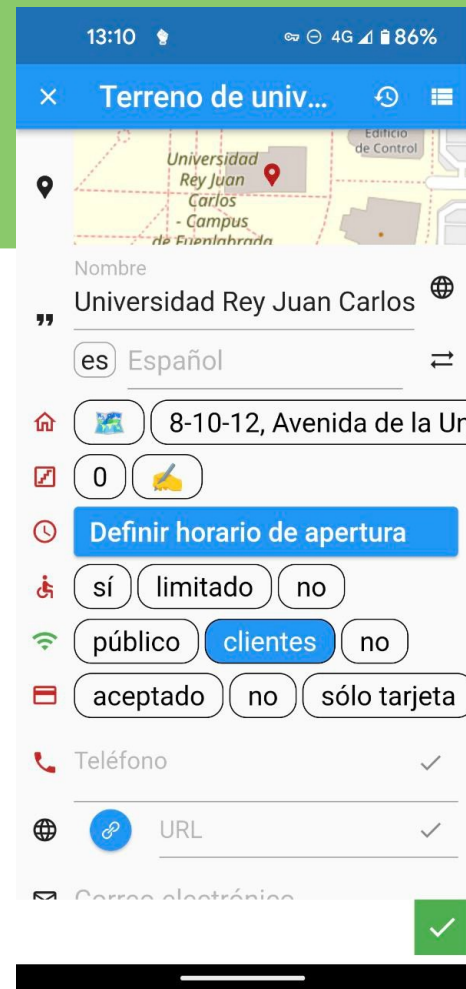
- Completar elementos del mapa
- Añadir información a calles y otros elementos
- Diversas temáticas



Every Door



- Editar y añadir puntos de interés
- Modos
 - genérico, negocios, números de calle y notas de edición

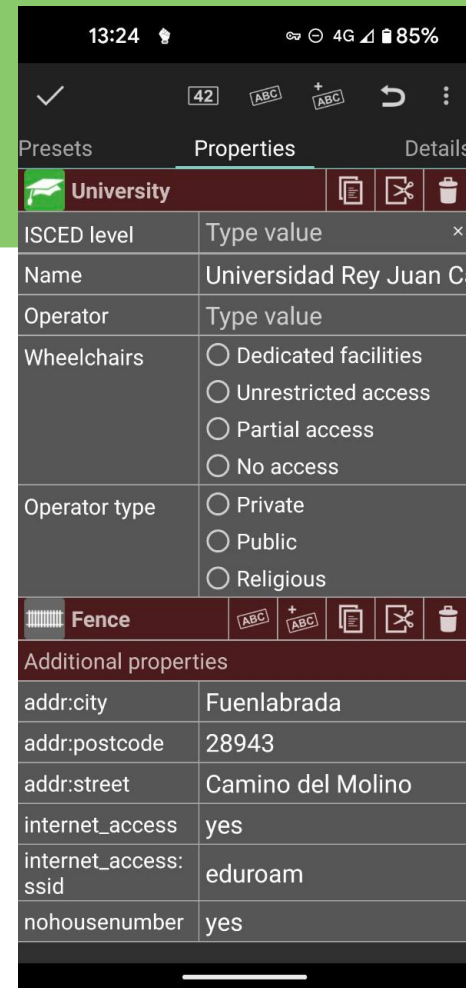
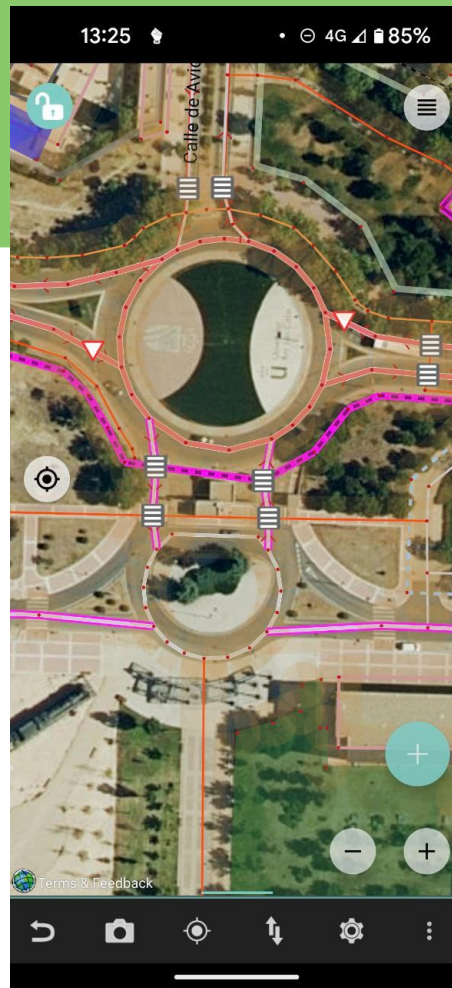


Vespucci



- Editor avanzado para Android
- Puntos, vías y relaciones

Alternativa iOS: Go Map

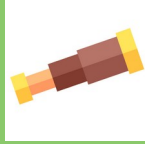


Fotos a nivel de calle



- Compartir fotos a nivel de calle
- Accesible desde los editores de OSM
- Mejorar los datos de los elementos de OSM
- Mapillary
- Panoramax
 - Baba
- Wiki Commons

Baba



- Panoramax
 - fotos libres a nivel de calle
- IGN Francia
- OSM Francia



Recuerda
preguntar a la
comunidad



Enlaces y recursos

- [Guía de inicio en OpenStreetMap](#)
- [Resumen de objetos del mapa en OSM](#)
- [Etiquetas OSM universidades](#)
- [Comunidad OpenStreetMap España](#)
 - [Contacto con la comunidad](#)
 - [Asociación OpenStreetMap España](#)
 - [Mapeado Colaborativo / Geoinquietos Zaragoza](#)





Taller de introducción a OpenStreetMap



Presentación con materiales CC BY-SA del grupo Mapeado Colaborativo / Geoinquietos Zaragoza y la Comunidad de OpenStreetMap elaborados por Miguel Sevilla-Callejo, Héctor Ochoa Ortiz, Jorge Sanz Sanfructuoso, Xurxo Sanz, Alejandro Suárez, Jaime Crespo y Carlos Cámara

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