

3.1.2 Getting started with OpenStreetMap

Objective:

- To be able to operate and navigate the OpenStreetMap website
- To be able to see object information in OpenStreetMap
- To be able to create share link in OpenStreetMap
- To be able to save images from OpenStreetMap
- To be able to create user account in OpenStreetMap
- To be able to understand the basic concept of attribute in OpenStreetMap
- To be able to understand history in OpenStreetMap

After you understand the basic of OpenStreetMap in the previous module, you can immediately start using OpenStreetMap. In this module you will start to get to know the OpenStreetMap site, create an OSM account, and find out the menu buttons and how to use them.

I. Visit the OpenStreetMap website

To be able to visit OpenStreetMap (OSM) site, make sure your computer is connected to the internet network. The steps to visit OpenStreetMap site are as follows:

- Open the web browser in your computer such as **Mozilla Firefox, Google Chrome, Internet Explorer, Safari**, etc.
- Type **www.openstreetmap.org** in the address bar at the top of the window and press **Enter**.
- When the page has finished loading, you should see the page below:



OpenStreetMap website (openstreetmap.org)

II. Navigate the map

In the main view of the OpenStreetMap website, you will see a large map in it. You must be able to navigate the map so you can go to a location that you want. Here are the ways to navigate the map on OpenStreetMap:

- Use the left mouse to drag the map view. Left-click on your mouse, then hold and drag the map to the location that you want. If you don't have a mouse, you can press and hold the right touchpad and then move the cursor.



How to drag the map view

- Use (+) and (-) button in the upper right corner of the map to zoom in and zoom out the map view. You also can use your mouse scroll-wheel to zoom your map. Scroll your mouse up to zoom in, while scroll down to zoom out.



How to zoom in and out the map view

- To search the location based on the name, type the location name on the **Search** box in the upper left side on the screen. You can type it in the search column, then press **Enter** or click **Go**. After that a **Search Results** box will appear below the search column, then you can choose and click on the search. The map will automatically move to the location you chose.



Steps to find location using Search box

- To display your current location, you can go to the map panel to the right of the map and click **Show My Location** button. Then, the map will automatically display your current location point (blue dot). Make sure to enable the GPS on your laptop or computer to allow OSM to get your current location.



The display of Show My Location feature

III. Change different style options for the map

OpenStreetMap contains geographic data from all over the world. Although stored in one database, the data can be displayed in several styles. The steps to change style map in OSM are as follows:

- Click **Layers** button in the right panel on the map.



The Layers button to change background layer

OSM has four types of layers with different functions, namely:

- **Standard:** This layer shows all the objects on the OSM map.



Standard Layer

- **Cycle Map :** This layer emphasizes cycling routes and pedestrian roads.



Cycle Map layer

- **Transport Map:** This layer emphasizes transportation routes on the map such as highways and bus stop.



Transport Map Layer

- **Humanitarian:** This layer emphasizes important objects or amenities on the map such as school, hospital, etc.



Humanitarian Layer

IV. See the object information in OpenStreetMap

In the OpenStreetMap page, besides see the current location and navigate the map, you also can see the feature information using Query Features. The steps to use Query Features are below:

- Click on **Query Features** button on the panel in the right. After you clicked it, you should see the question mark on your cursor. This indicates that the query features function is activated.



Query Features button

- Now you can choose an object or location that you want to identify. For this example, we click on a governmental office building (Dinas Kesehatan) in Jakarta.
- You should see a box appears in left corner that displays **Nearby Features** and **Enclosing Features** options. Nearby Features shows the description of any object that is closest to the location of your chosen point, while Enclosing features shows all the object information that have a close range location with your chosen point. Try to click one feature in the Nearby Features, click **Governmental office Dinas Kesehatan** for this example.



Nearby features dan Enclosing features in Query Features

- After you clicked it, the information detail about Dinas Kesehatan building will appear in the left box. The information displayed is a tag or object attribute regarding general information objects such as object names, addresses, building levels, and others.



Query Features result

V. Share with link in OpenStreetMap

You can share links of your OpenStreetMap maps to others for various purposes, such as sharing the location of your current position with your colleagues and so on. To be able to share OpenStreetMap maps, the steps are as follows:

- Click the **Share** button on the right panel, then the Share column will appear.
- Check the **Include marker** to add the location marker point. You can move or drag the marker point to the desired location. Just click and hold the location marker then you drag to the desired location point. Another way is to shift the map so that the location marker is in the position you want.



Add marker point

- Once the marker position has fixed, you can copy the link in the **Link** box and share the link according to your needs. You can also copy a shorter version of the link in the **Short Link** box or copy the HTML code in the **HTML** box.



Share the link of the map in OpenStreetMap

VI. Export map as an image

Besides changing the layer map, you also can export the map as an image and choose the various format file such as .png, .jpg, .svg, and .pdf. The steps to export the map are as follows:

- Click on the **Share** icon in the right of your map. Then the Share column will appear on the right side of your screen.



Share button to export the map

- After that, specify the area on the map that you want to export as an image. Give a check mark on the **Set custom dimensions** box in the **Image** section, then adjust the size of the box or adjust the scale in the **Scale** section.

Note : You can only export map as image if you set the Standard Layer view. If your map does not use the Standard Layer, you need to change it first on the Layers menu.

- You can choose the format of the export image in the **Format** dropdown menu. After that, click **Download** button to download the image and save the image to your folder location.



Image section to export the map

VII. See the editing history in OpenStreetMap

When you edit objects or make changes to OpenStreetMap, you can see the editing history of objects in that area. The steps to see editing history are as follows:

- You can see the information by clicking on the **History** menu button on the top left of the map.
- After that, the **Changesets** column will appear at the bottom of the Search box and orange boxes will appear on the map that indicates which areas have just been edited. Changeset is a version of every change uploaded by OSM users. The information that we can see in the Changesets column is as follows:
 1. Changeset comment. It is recommended that you write the short comment when uploading changes or changeset. Comments can contain information about any changes that you made or specific hashtags.
 2. Upload time information.
 3. OSM username.
 4. Changeset number. This number is a unique number as the changeset identity.



Changeset history in OpenStreetMap

- You can click one of the changeset on the changeset list or you can immediately select the orange box on the map. After you select one of the changeset, you will get details about the changeset.



The changeset details

VIII. Create an OpenStreetMap Account

You have seen the display and main menus from the OpenStreetMap website, now you will learn how to create an account at OpenStreetMap and make the first contribution on OpenStreetMap. The steps are:

- Click **Sign Up** on the OpenStreetMap page. You should see a new page that look like this:

Sign Up

Email Address:

Confirm Email Address:

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

Display Name:

Your publicly displayed username. You can change this later in the preferences.

Password:

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. We'll send an email to confirm your account.

Sign up page

- There are five boxes on this page that you need to fill in to register an account with OSM. Firstly, enter your **email address** in the first two boxes. You should enter the same email address in both boxes. Later, you will need to open your email to confirm your account with OpenStreetMap.
- In the third box, enter the username that you would like to have. If you try to use a simple name, it is likely that someone has already claimed the name. You will not be able to choose a username that someone else has chosen before, so pick the available name for your username.
- Enter a new password in the fourth and fifth boxes. You should enter the same password in both boxes and the password. You should not use an important one such as the password for your email. After you have completed all the boxes, click **Sign Up** at the bottom of the page.

At this stage, you have successfully registered yourself on the OpenStreetMap site, but your account is still not active yet. To activate it, the steps that must be taken are as follows:

- Open the new tab on your browser and open your email.
- If everything was successful with your registration, you should see an email from OpenStreetMap in your inbox.
- Open the email. Click on the link that is identified below:



Notification of OSM registered account

- After that, a new tab of OSM page will appear in your browser. If everything went well, congratulations you already have an OSM account!

Note : If a problem occurs, a problem message will appear. Make sure that the email you entered is the same as in the first two boxes and your password. If the box for the user name is red then someone else has already used the name and you have to look for another name.

- On the OpenStreetMap page, click **Log In** in the upper right corner. Enter your OpenStreetMap username and password then press **Enter**. You should now be logged in and you will see your username on the top right of the OpenStreetMap site.

Congratulations! If you have done all the steps in this section, you already have an OpenStreetMap account and already know how to navigate the OpenStreetMap website.

IX. The basic concept of OpenStreetMap attribute

1. The attribute concept on object

When you draw an object as a point, line, or polygon in OSM, you still need to add information about the object such as object name, address, or other supporting information. This information will help other users when using OSM data for various purposes. Information provided by users on OSM objects is called an **attribute** or **tag**.

An attribute/tag is like a label that you can place on an object. For example, if you draw a square, this is only a square without any object information. But you can add attributes to describe that object, for example you draw a square that is a building; the name of the building is "Tebet Hospital"; 10 level building.

2. Components in OpenStreetMap attribute data

You can add as many attributes / tags as you want to an object. Attributes are stored as a pair of text, named **Key** and **Value**. Key is general information that explains the function of an object. In one key, it can consist of many values. For example schools, mosques, and hospitals have key=amenities (important facilities). Although the three objects have different types of functions, but all three objects have the same key. Whereas *Value* is information that more specifically explains the type of an object. Because this value describes specific information about an object, so that one type of value can only describes the type of the object itself. Not the same as a key that can explain general information about the object. In OpenStreetMap, an attribute is added by formatting a key-value pair that represents physical features on the ground, for example:



The screenshot shows the 'Tags' panel in OpenStreetMap. At the top, it says 'Tags: 4 / Memberships: 0'. Below this is a table with two columns: 'Key' and 'Value'. The table contains the following entries:

Key	Value
amenity	hospital
building	yes
building:levels	10
name	Rumah Sakit Tebet

At the bottom of the panel, there are three buttons: '+ Add', 'Edit', and 'Delete'.

The example of object attributes

In the example above, there are four kinds of key & value attributes, including object amenities for hospital (amenity = hospital), building objects (building = yes), building level 10 (building:levels = 10) and object name 'Tebet Hospital' (name = Tebet Hospital).

3. World and Indonesian OpenStreetMap tagging guidelines

For providing information on the object that you mapped, you need to ensure that the information is correct and suitable with OpenStreetMap rules. You need to make sure the reference is cor-

rect if you want to describe features by tag. OpenStreetMap has provided a special Wikipedia page that you can refer to. You can see the page on the Map Features Wiki page at https://wiki.openstreetmap.org/wiki/Map_Features.

The screenshot shows the 'Map Features' page on the OpenStreetMap Wiki. The page title is 'Map Features'. Below the title, there is a list of available languages for the page, including Indonesian. The main content area explains that OpenStreetMap represents physical features on the ground using tags attached to its basic data structures (its nodes, ways, and relations). It describes a geographic attribute of the feature being shown by that specific node, way or relation. The page also mentions that 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. For details of more tags and proposed changes to existing tags see [Proposed Features](#), [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.

Below the main text, there is a section titled 'Tables of features' which contains a table with three columns: Name, Template, and Description. The table lists features like '3D' and 'Aerialway' with their respective templates and descriptions.

Main page of Wiki Map Features and list of feature table

Pages from Map Features that contain information about objects in OpenStreetMap are considered not enough to help especially for specific objects that usually only exist in a certain country, including Indonesia. Sometimes users do not get enough information about the object tag and they end up skipping the object because of different names.

Usually objects in Indonesia have their own local names such as Posyandu (health service for children and infants), Pesantren (islamic boarding school), and others. You do not need to be confused in searching for and memorizing attribute lists because you can see a list of object attributes that you can see on the Wikipedia page https://wiki.openstreetmap.org/wiki/Id:Indonesian_Tagging_Guidelines

The screenshot shows the 'Id:Indonesian Tagging Guidelines' page on the OpenStreetMap Wiki. The page title is 'Id:Indonesian Tagging Guidelines'. Below the title, there is a list of available languages for the page, including Indonesian. The main content area explains that OpenStreetMap merupakan peta digital yang menampilkan berbagai macam objek yang terdapat di atas permukaan bumi. Dengan sifatnya yang **Gratis dan Terbuka**, OpenStreetMap memungkinkan kepada para pengguna untuk memberikan tag/informasi apapun terhadap objek yang kita petakan. Oleh karena itu, untuk menghindari kesalahan serta ketidaksamaan informasi terhadap objek yang ada maka OpenStreetMap telah menyediakan referensi umum yang dapat digunakan oleh para pengguna di halaman [Map Features](#) dalam memberikan informasi terhadap objek yang dipetakan. Akan tetapi, seiring bertambah banyaknya para pengguna OpenStreetMap di seluruh dunia maka jumlah dan jenis informasi yang dimasukkan juga semakin beragam. Halaman dari Map Feature yang berisi informasi terhadap objek-objek di OpenStreetMap dianggap tidak cukup untuk membantu terutama untuk objek spesifik yang biasanya hanya terdapat di suatu negara termasuk di Indonesia. Sehingga para pengguna tidak mendapatkan informasi tag terhadap objek yang mereka can di Map Feature ataupun melewati objek tersebut karena berbeda nama. Biasanya objek tersebut memiliki nama lokal sendiri seperti posyandu, pesantren dan lain-lain. Berangkat dari hal di atas maka halaman ini khusus dibuat untuk memberikan referensi atribut objek-objek OSM yang ada di Indonesia. Dalam halaman ini objek-objek yang ada akan dibagi ke dalam beberapa kategori dimana akan disesuaikan pula dengan presets Objek Indonesia. Diharapkan halaman ini dapat membantu para pengguna dan komunitas OpenStreetMap di Indonesia dalam memetakan objek di wilayah mereka. Perlu diingat, bahwa daftar objek yang ada di halaman ini belum sepenuhnya lengkap serta informasi yang ditampilkan dapat diubah sewaktu-waktu sesuai dengan aturan dan ketentuan dari OpenStreetMap.

Below the main text, there is a section titled 'Daftar isi [sembunyikan]' which contains a list of categories for tagging guidelines, including '1. OBJEK TITIK DAN POLIGON (BANGUNAN)' and '1.1 Pendidikan'.

Indonesia Wiki OSM Tagging Guideline

The Wikipedia page was specifically created to provide references to OSM objects attributes in Indonesia. On that page, the objects will be divided into several categories which will be adapted

from the objects in Indonesia.

Id:Indonesia: Tagging Guidelines: X

https://wiki.openstreetmap.org/wiki/Id:Indonesia:_Tagging_Guidelines

OBJEK TITIK DAN POLIGON (BANGUNAN)

Daftar objek di bawah ini merupakan jenis objek yang dapat digambarkan sebagai titik ataupun bangunan. Untuk objek yang **hanya digambarkan** sebagai **bangunan** adalah yang hanya memiliki simbol  dan objek yang **hanya digambarkan** sebagai **titik/point** adalah objek yang memiliki simbol . Adapun penggambaran objek yang **dapat digambarkan** sebagai **objek atau titik** adalah objek yang memiliki simbol  dan . Sebaiknya objek ini digambarkan sebagai bangunan jika terlihat jelas *building footprint* objek tersebut di citra satelit akan tetapi jika memang objek tersebut tidak terlihat jelas di citra satelit maka kita dapat menandai objek tersebut sebagai titik saja.

Pendidikan

Ini merupakan objek-objek yang memberikan fasilitas pelayanan pendidikan khususnya pendidikan formal seperti sekolah. Berikut adalah objek-objek di Indonesia yang terkait dengan pendidikan:

No.	Nama Objek	Jenis Objek	Deskripsi	Key	Value	Simbol di OSM	Foto Contoh
1.	PAUD		Tempat bermain dan belajar untuk anak di bawah usia lima tahun (balita)	amenity	kindergarten		
2.	Taman Kanak-Kanak		Tempat pendidikan untuk anak usia dini (5-6 tahun)	amenity	kindergarten		
3.	Sekolah Dasar (SD) / Madrasah Ibtidaiyah (MI)		Tempat pendidikan dasar. Biasanya ditempuh selama 6 tahun.	amenity school_type_idn	school sd		
4.	Sekolah Menengah Pertama (SMP) / Madrasah Tsanawiyah (MTs)		Tempat pendidikan lanjutan setelah SD. Lama pendidikan selama 3 tahun	amenity school_type_idn	school smp		
5.	Sekolah Menengah Atas (SMA) / Madrasah Aliyah (MA)		Tempat pendidikan lanjutan setelah SMP. Lama pendidikan selama 3 tahun	amenity school_type_idn	school ama		

List of Indonesia object attributes

SUMMARY

If you can follow and practice all the sections in this chapter, then you have succeeded in creating an OSM account, operating and navigating the OpenStreetMap website. In addition, you have also successfully shared OSM map images and shared links to other people. In the next chapter you will learn how to use Java OpenStreetMap (JOSM).