

# Step by step guide ORS Plugin

This document guides you through the installation process of the ORS plugin for QGIS.

## Plugin Installation in QGIS

### Sing up and setup

### Setup

### Routing queries using the ORS plugin

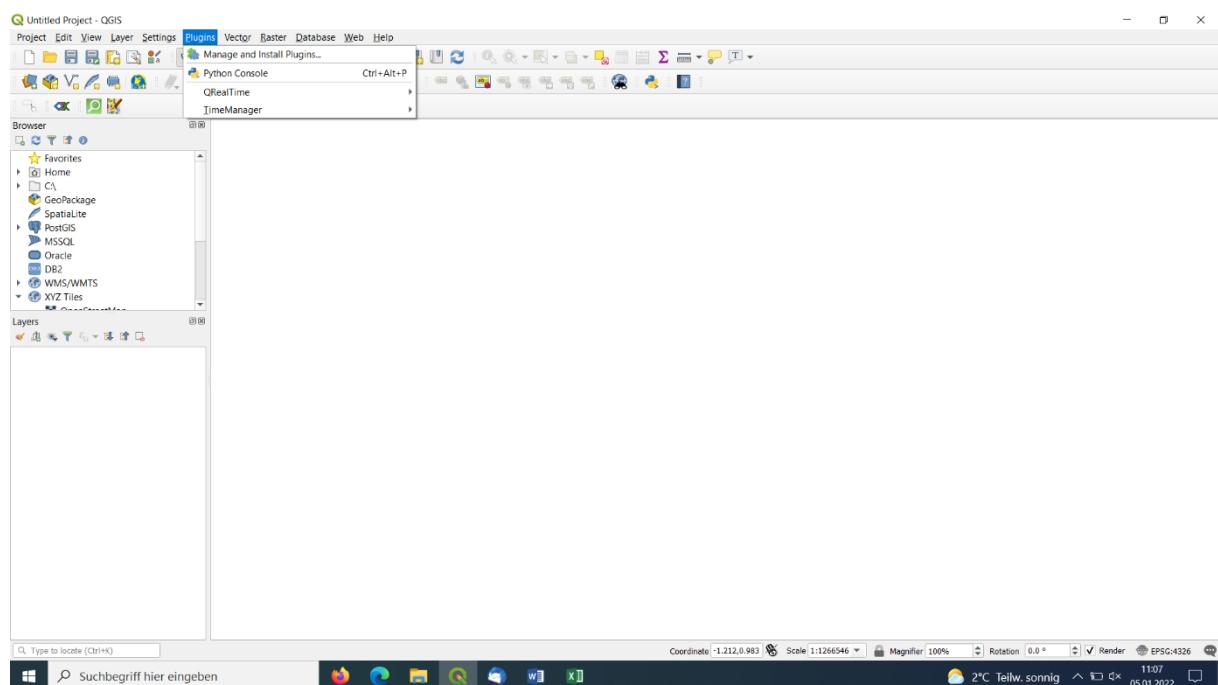
#### Fastest and shortest route

#### Isochrones- Accessibility/ Reachability Analyses: How far can I go in a specific time/ within a specific distance?

#### Matrix: Calculation of distances/ travel duration between input points (in one or two input layers)

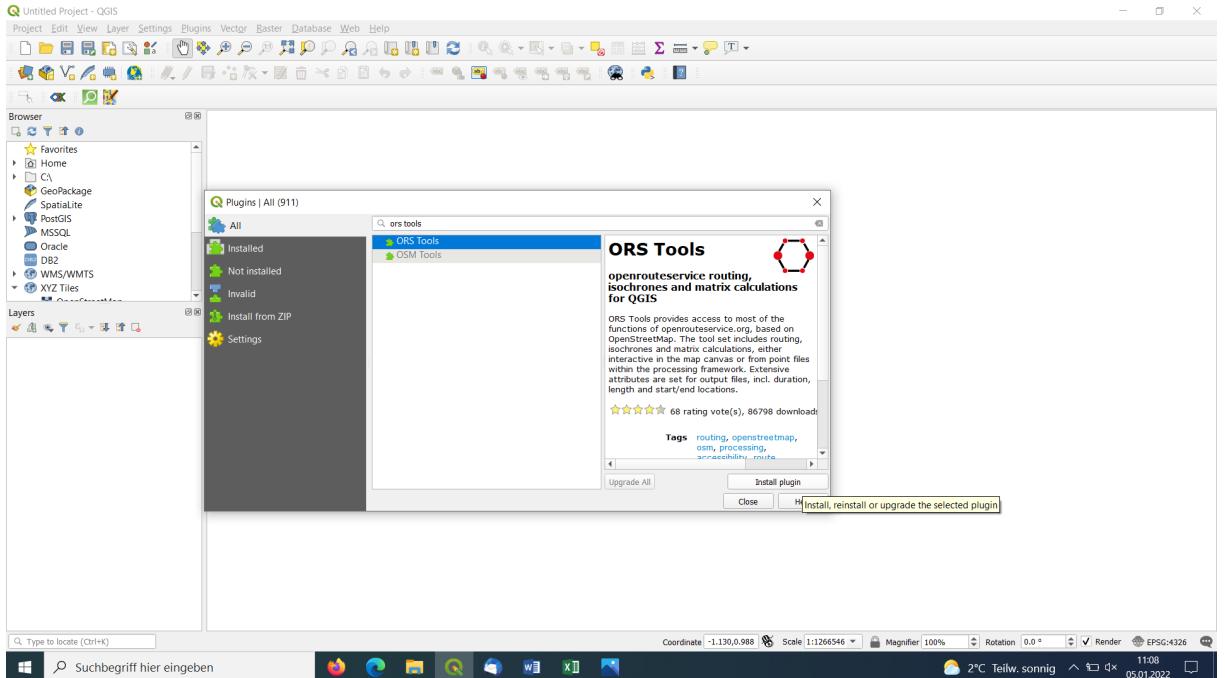
## Plugin Installation in QGIS

- Go under tab „Plugins“

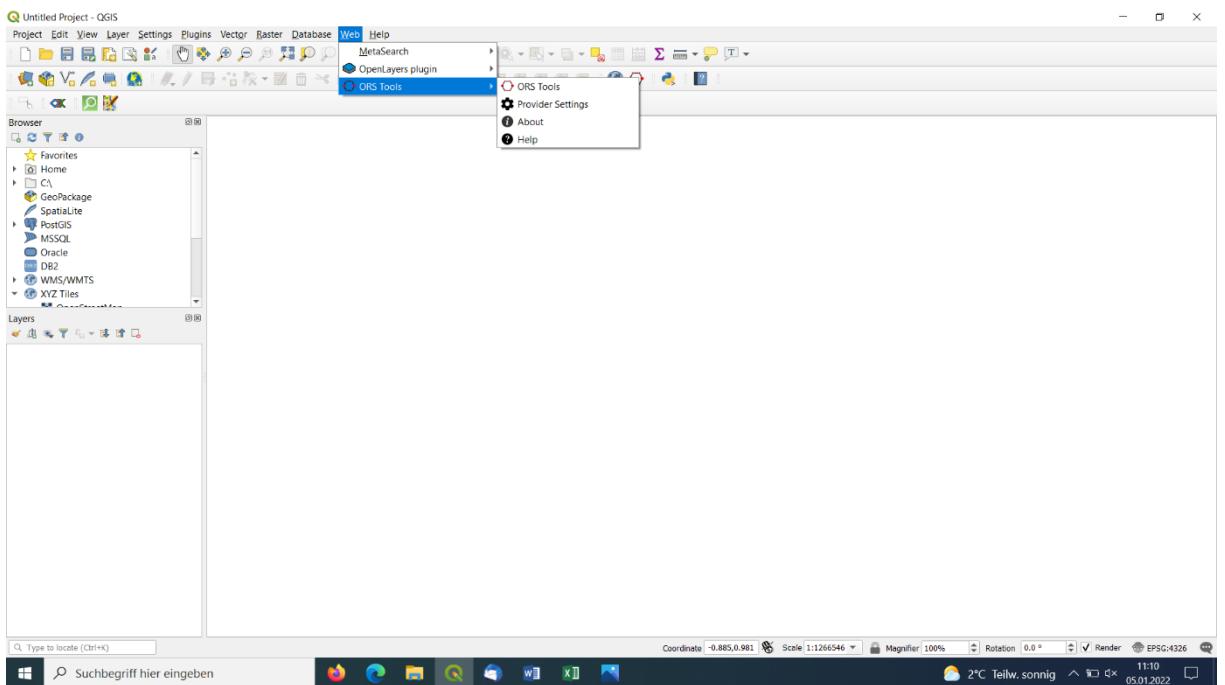




- Click on „Manage and install plugins“, a new window will open up
- Search for „ORS Tools“ in the search line and click „Install plugin“ (right bottom)

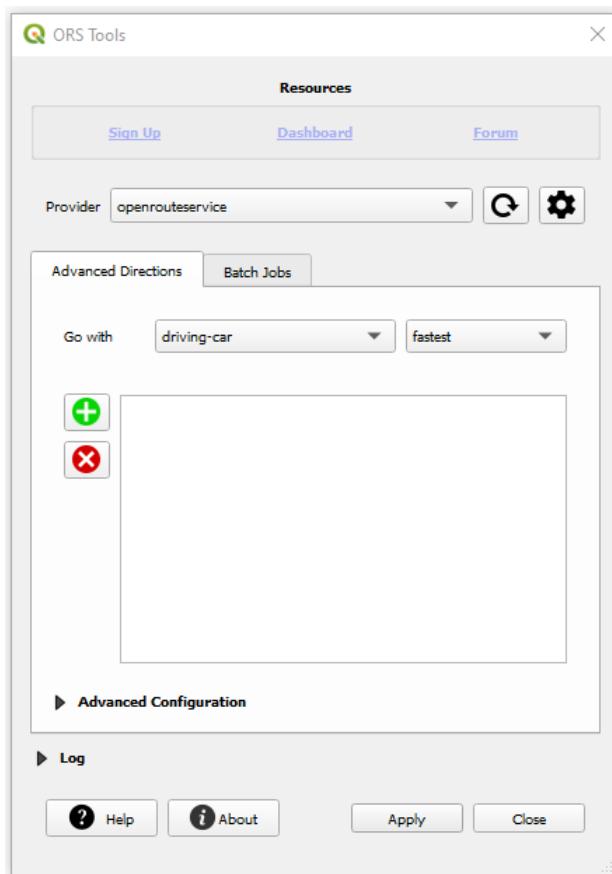


- Close the window.
- After a few seconds, the plugin should appear under the „Web“ tab in QGIS as „ORS Tools“

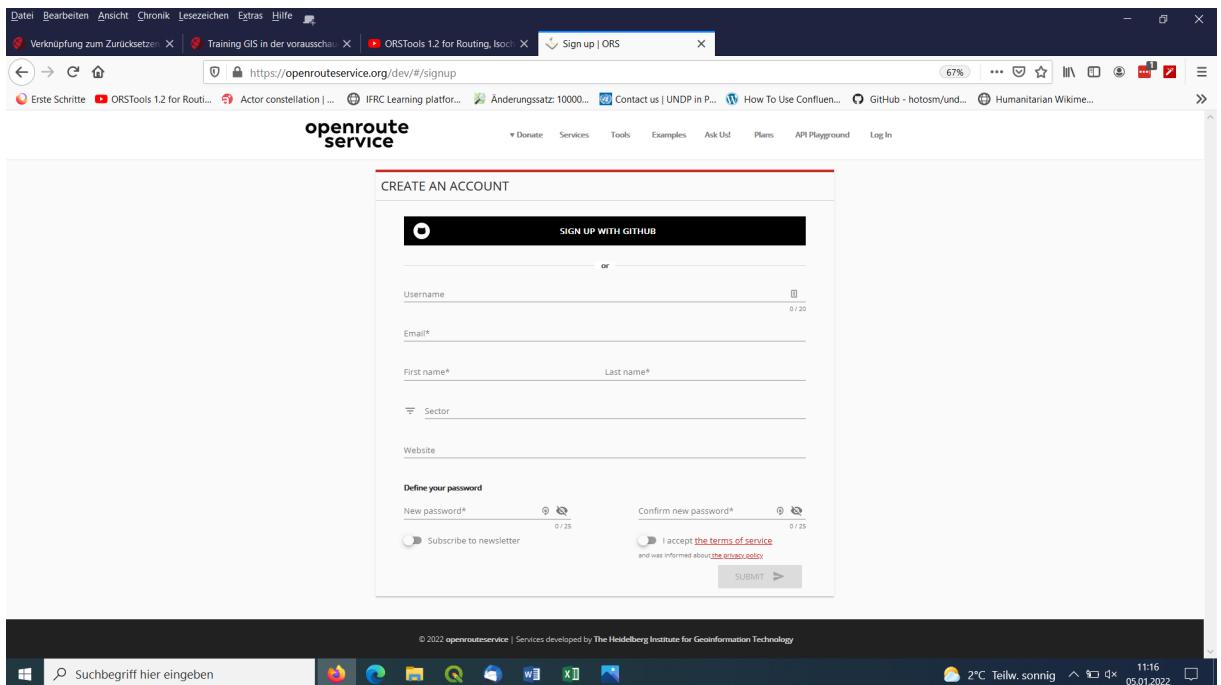


# Sing up and setup

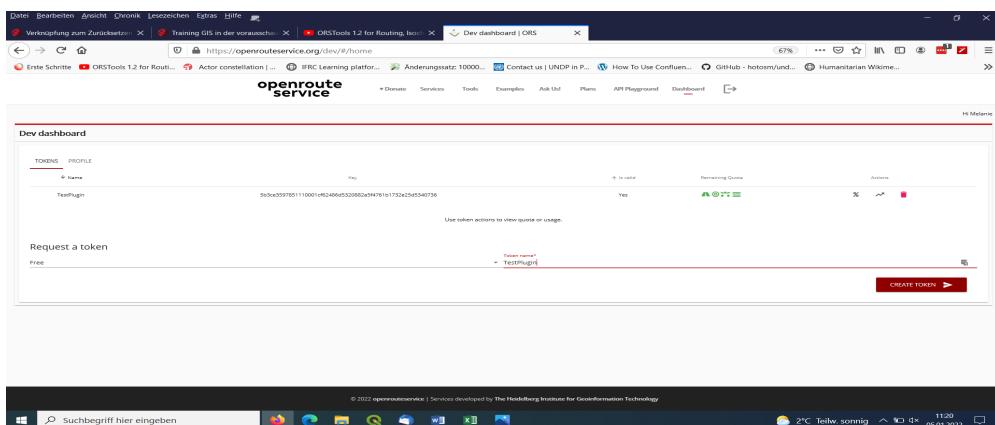
- Open the „ORS tools“ plugin
- To make use of the ORS tools, you first need to sign up. If you haven't done it already and generated yourself an API key, go ahead and click „Sign Up“. Otherwise skip to the setup plugin section.



- You will be redirected to the openrouteservice site where you need to create a user account.



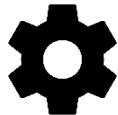
- After submitting your profile, a confirmation email will be sent to your mail address.
- Please confirm your account.
- You are now able to create tokens (API keys) which allow you to run queries through the ORS Tools Plugin in QGIS
- Click into the field under „Request a token“ and choose „Free“
- Choose a „Token Name“ in the field to the right and „Create token“
- The token will directly appear above in the “key” field



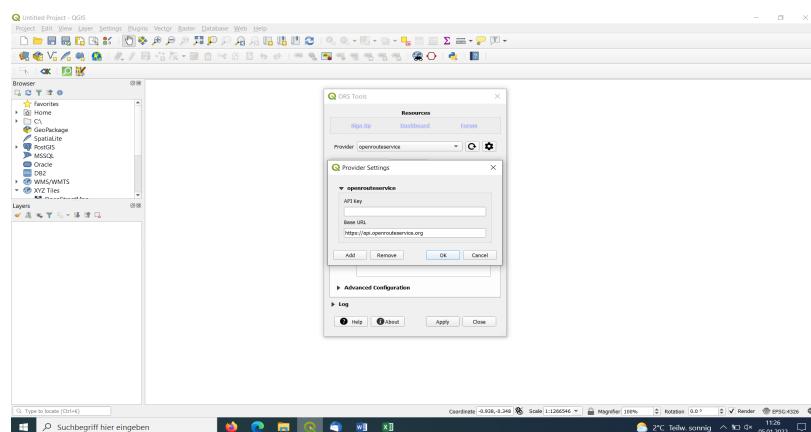
- Click on the token, it will directly be copied. You can now go back into QGIS for further setup.

## Setup

- In QGIS and go to „Provider Settings“ in the ORS Tools window by clicking the settings icon (right next to „Provider field“)



- Add the API key you just created into the „API Key“ field
- Add URL: <https://api.openrouteservice.org> into the Base URL field
- (Potentially: Click „Add“ and enter „openrouteservice“ into the pop up window „Enter a name for the provider“)

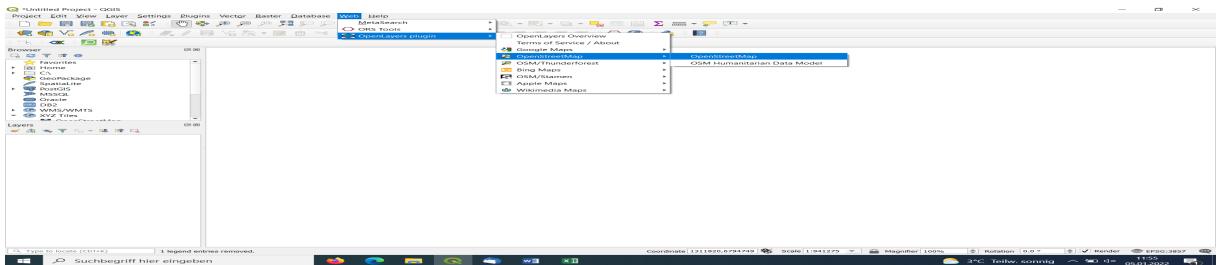


- Now you are ready to go ☺

## Routing queries using the ORS plugin

- Start by adding a background layer into your QGIS project:

- Choose the standard OSM background layer via “Browser”, “XYZ Tiles”, or via the “OpenLayers” or “QuickMapServices” Plugin



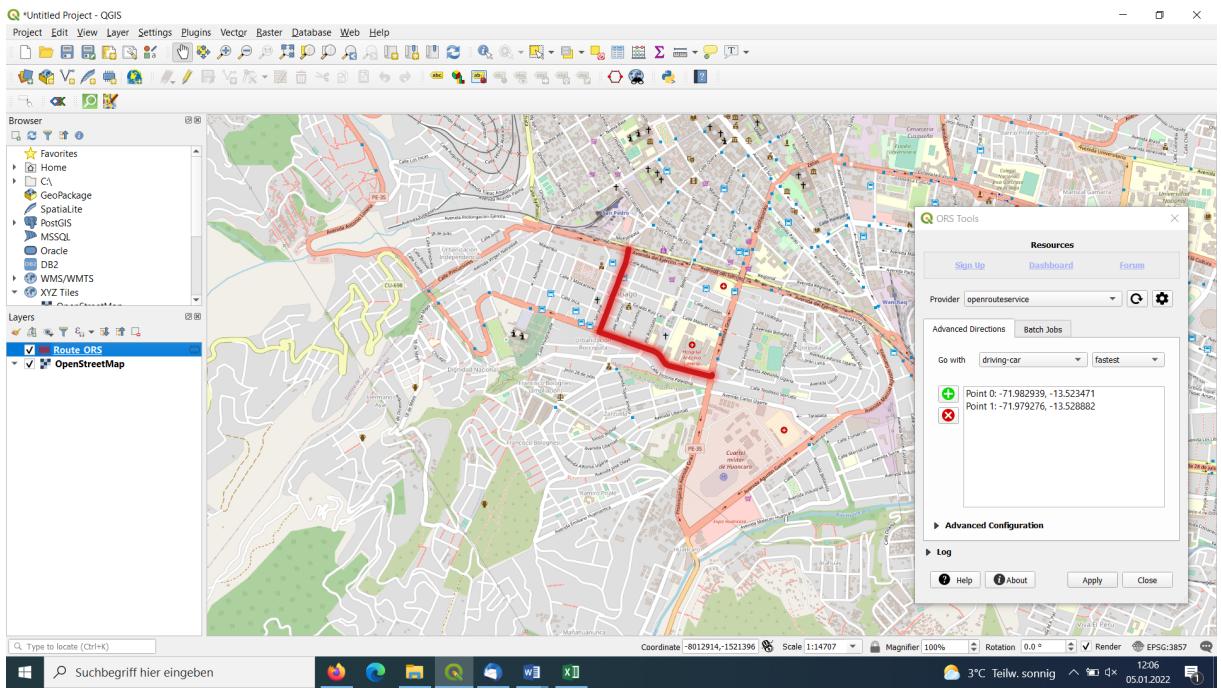
- The queries can now be run with using the layer as a spatial reference.

## Fastest and shortest route

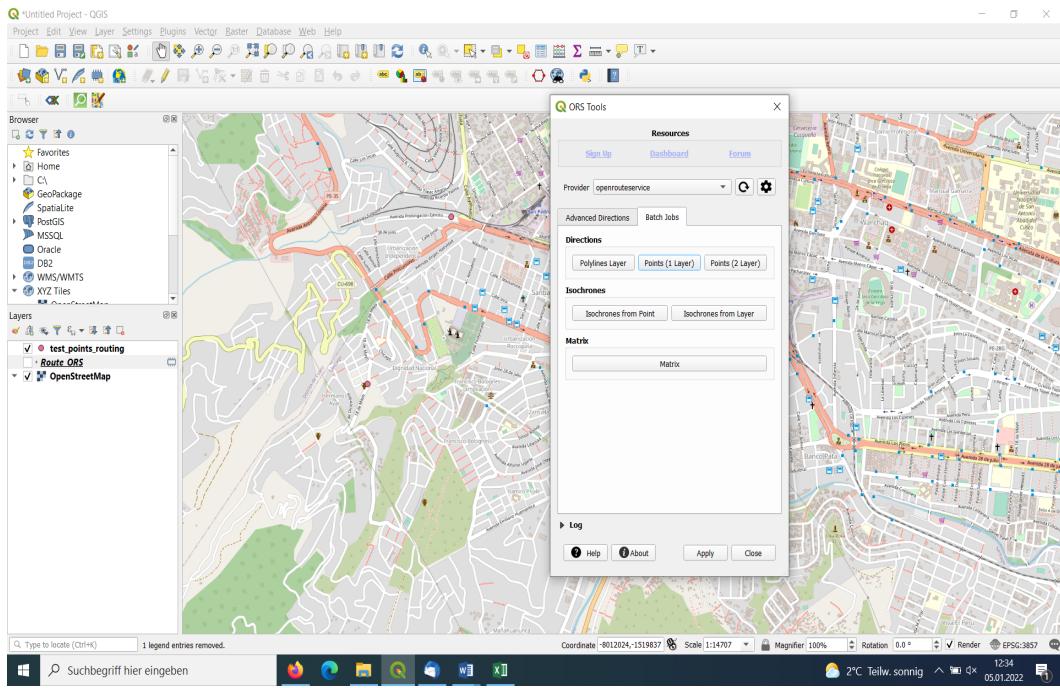
- If you want to create a route based on points that you create in your QGIS project:

Advanced directions:

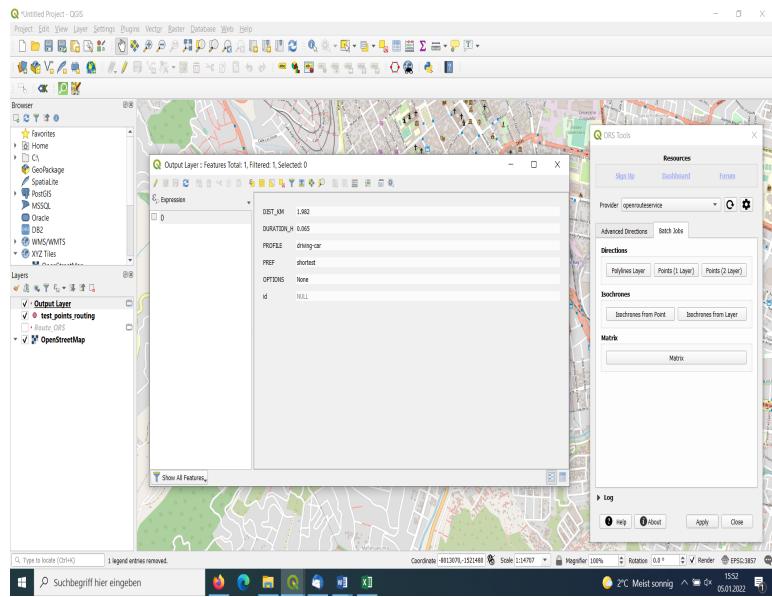
- Choose your preferred mode of travel
- And choose between „fastest“ and „shortest“ route
- Click on „+“ sign to select points on the background layer
  - Left click to add a point, double-click to finish
- When you added all points, click on „Apply“ on the bottom of the window to run the routing query



- Optional:
  - o Advanced settings:
    - Travelling salesman: Optimal route changing the order of the given routepoints
    - Avoid tags: Avoid certain road types
    - Avoid countries: Potentially of relevance when creating international routes
    - Avoid polygons: You can avoid specific areas. These can be provided in another layer in your QGIS project (load external data or draw the area to be avoided yourself)
  
- If you already have locations that you would like to run a route query for:
  - Choose „Batch Jobs“



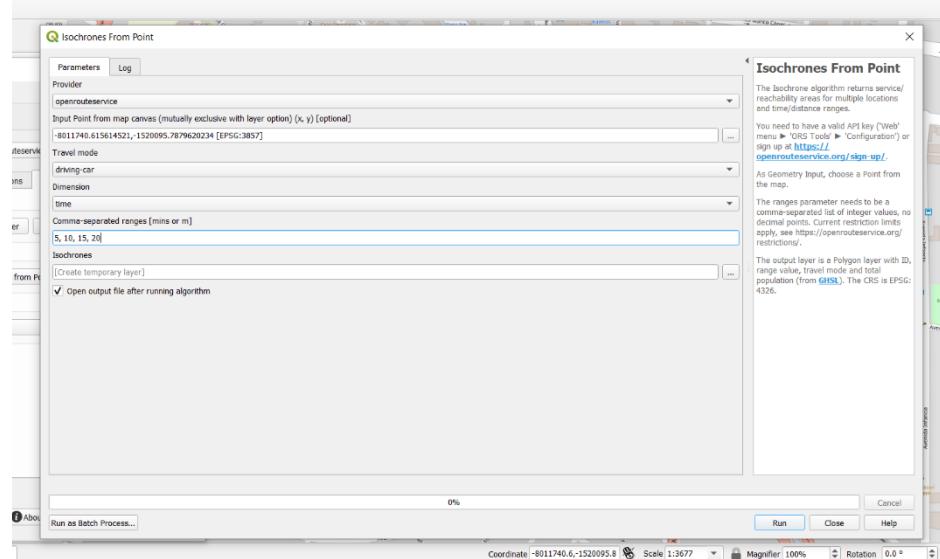
- Choose the input according to your input layer (point or line)
- Choose your input file
- Like in „Advanced routing“, choose your preferred travel mode, shortest or fastest route and if the route should be optimized (travelling salesman)
- As output, choose location where the output file should be stored on your computer
- „Run“ the query
- The output file will appear as an extra layer, the attributes and, thus, chosen parameters can be checked in the attribute table



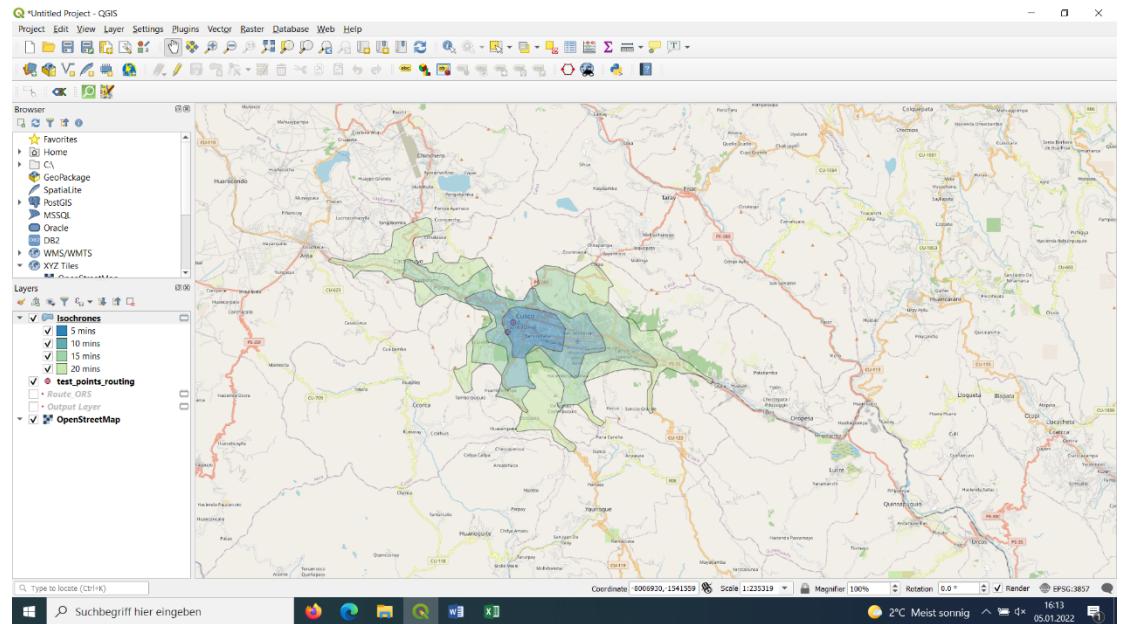
## Isochrones- Accessibility/ Reachability Analyses: How far can I go in a specific time/ within a specific distance?

- Again open the „Batch Jobs“ menu
- Choose „Isochrones from Point“ if you would like to create an isochrone around a certain location on the map canvas in your QGIS project
  - o Mark your input point/location using the background layer
  - o Dimension: Choose „time“ or „duration“ as dimensions
  - o Comma separated ranges: Choose the preferred intervals (if multiple separate using a comma sign)

- As output, choose location where the output file should be stored on your computer



- „Run“ the query
- The output file will appear as an extra layer, the attributes and, thus, chosen parameters can be checked in the attribute table

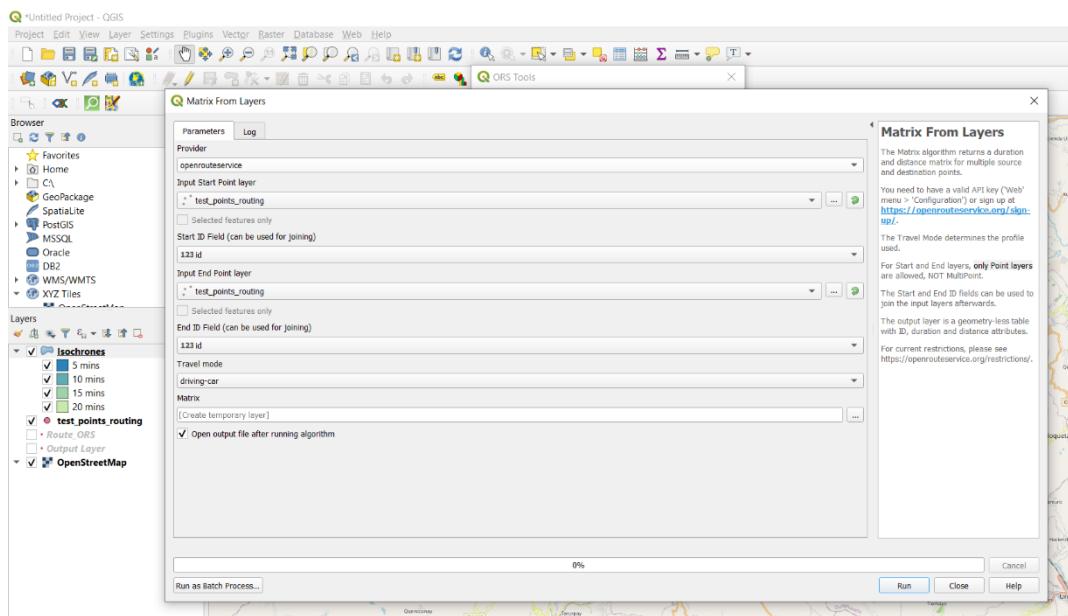


- Choose „Isochrones from a layer“ if you would like to create isochrones around points in a already existing layer
  - Choose your input layer (or points within the layer using „selected features only“)

- Dimension: Choose „time“ or „duration“ as dimensions
- Comma separated ranges: Choose the preferred intervals (if multiple separate using a comma sign)
- As output, choose location where the output file should be stored on your computer
- „Run“ the query
- The output file will appear as an extra layer, the attributes and, thus, chosen parameters can be checked in the attribute table

## Matrix: Calculation of distances/ travel duration between input points (in one or two input layers)

- Choose „Matrix“ in „Batch Jobs“
  - Choose an „Input Start Point Layer“ and an „Input End Point Layer“ (can also be the same if you would like to calculate the distance/travel time between points within a single layer)



- Choose the „Travel mode“ in the dropdown menu

- „Run“ the query
- The result is a table providing information about the time/ travel distance between the points within a layer/ in two layers

