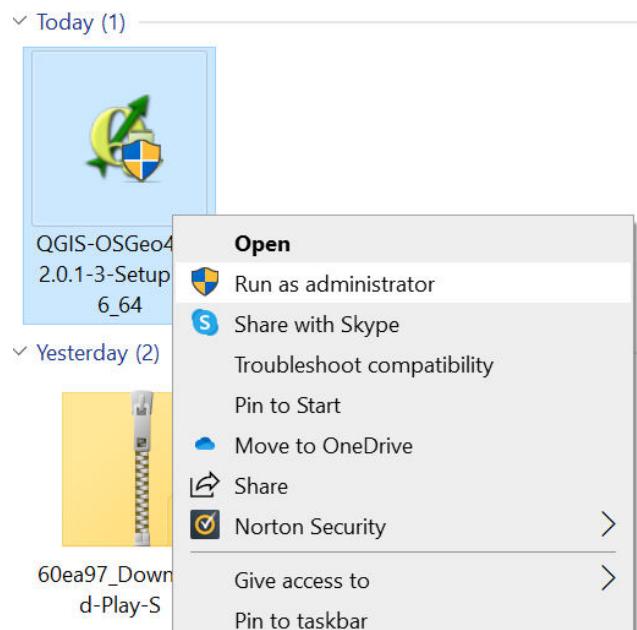


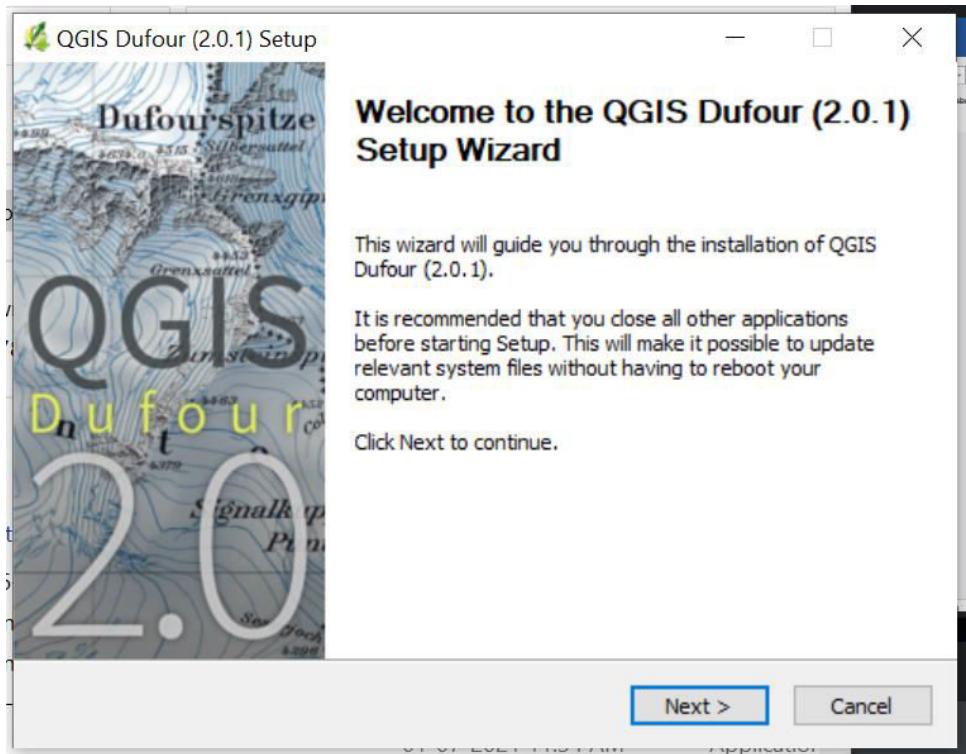
Practical - 0

Aim: Installation of QGIS software

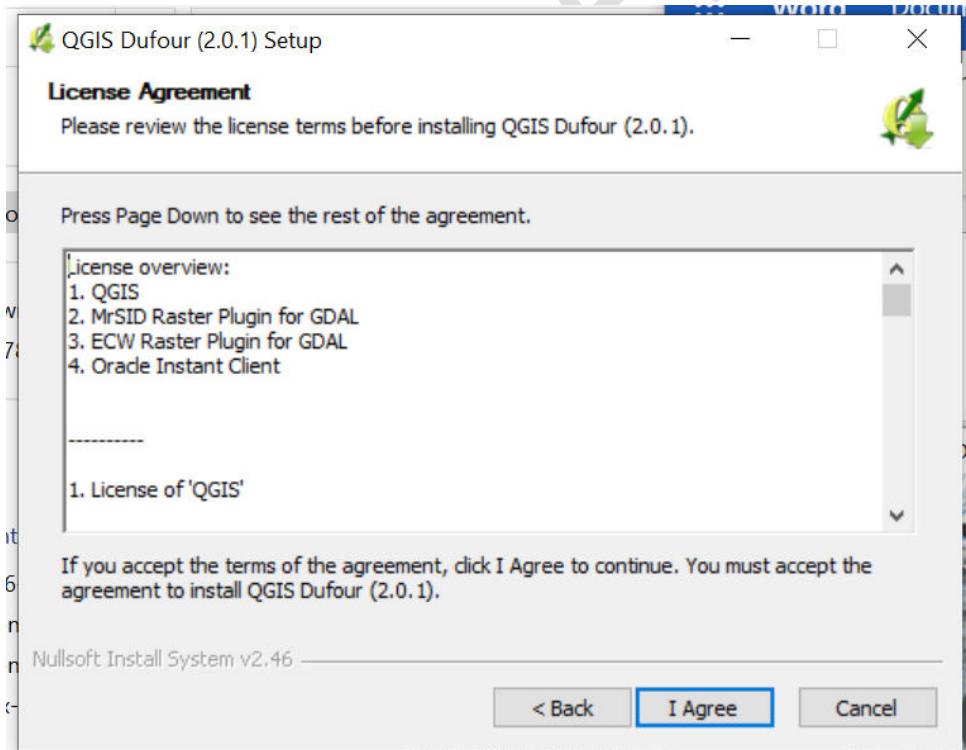
Step 1: Right click on the .exe file and select Run as Administer.



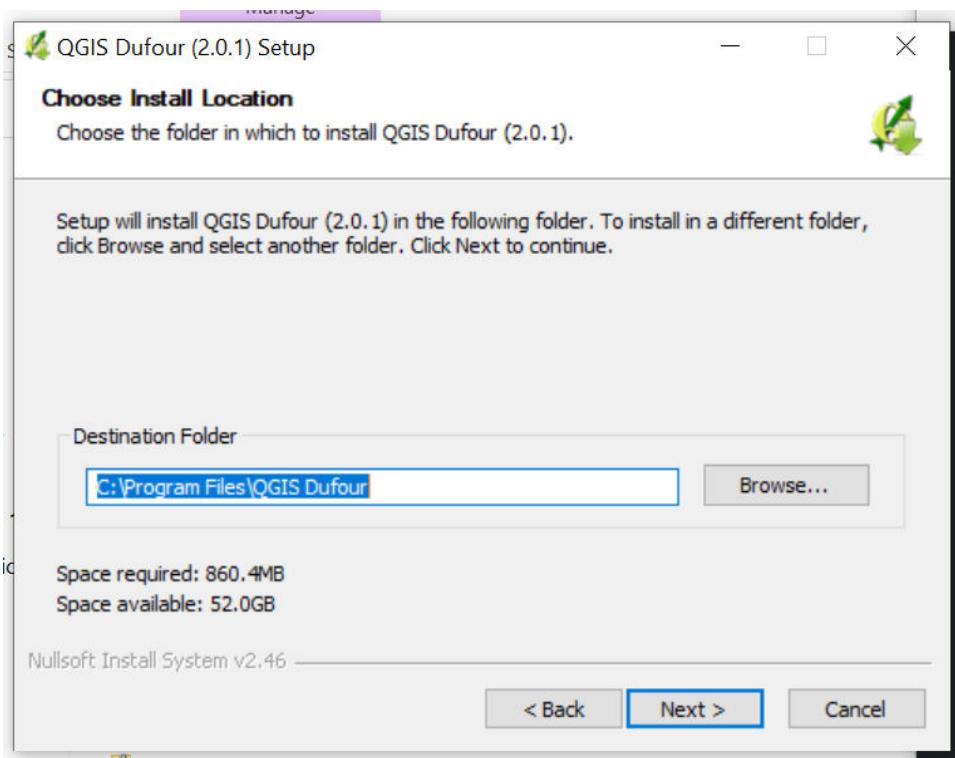
Step 2: Click Next



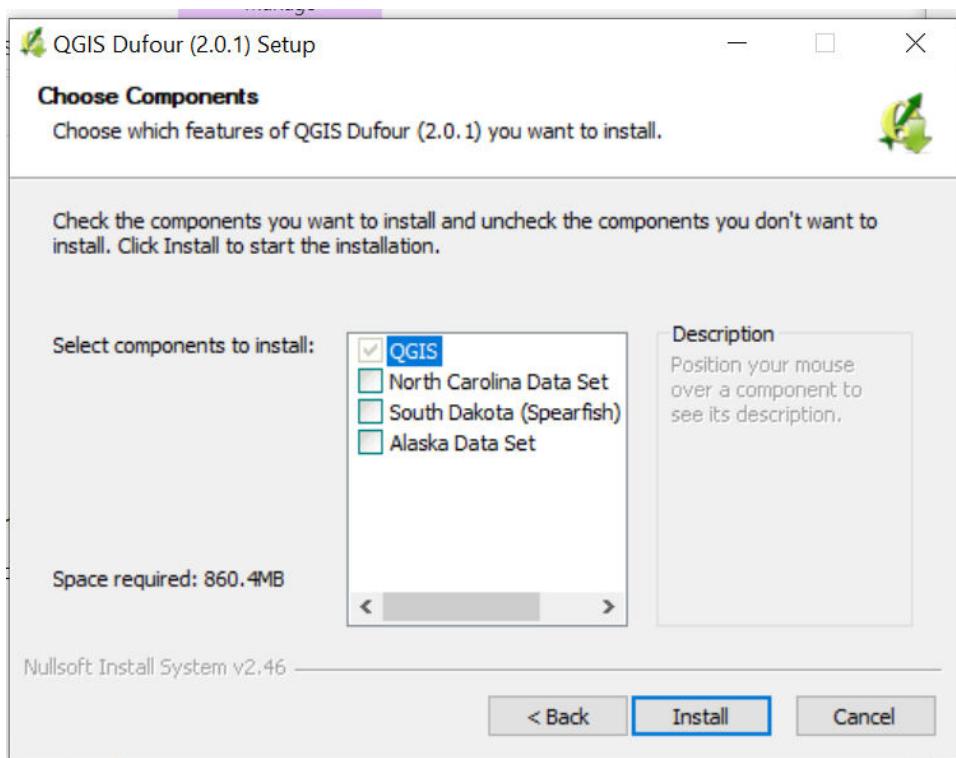
Step 3: Click on “I Agree”



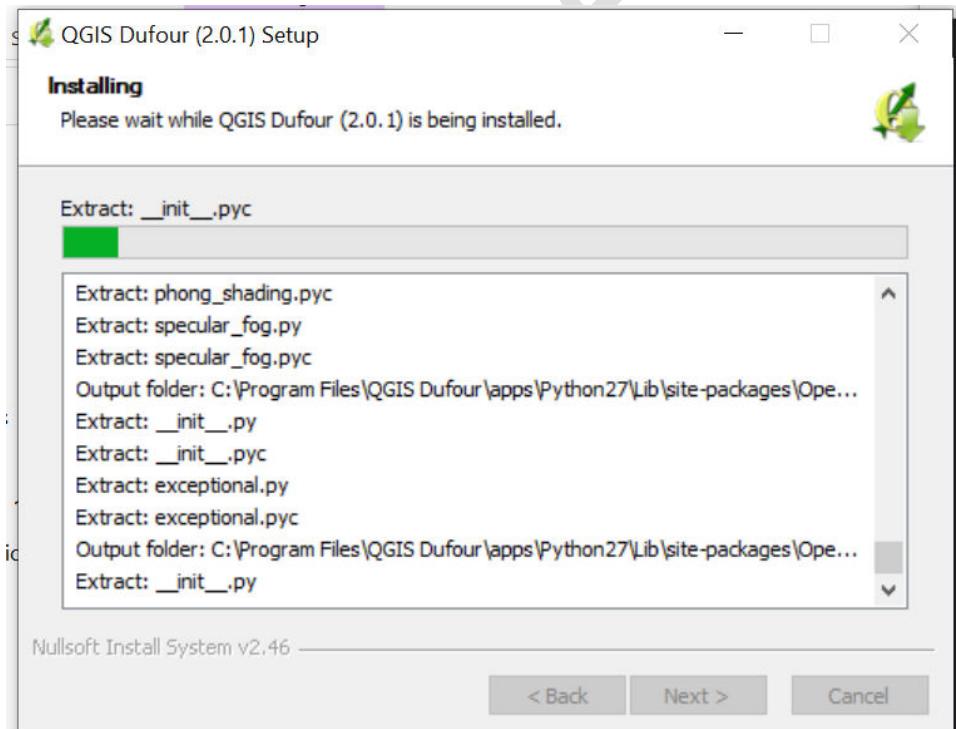
Step 4: Keep as it is or change the path according to your choice and select Next



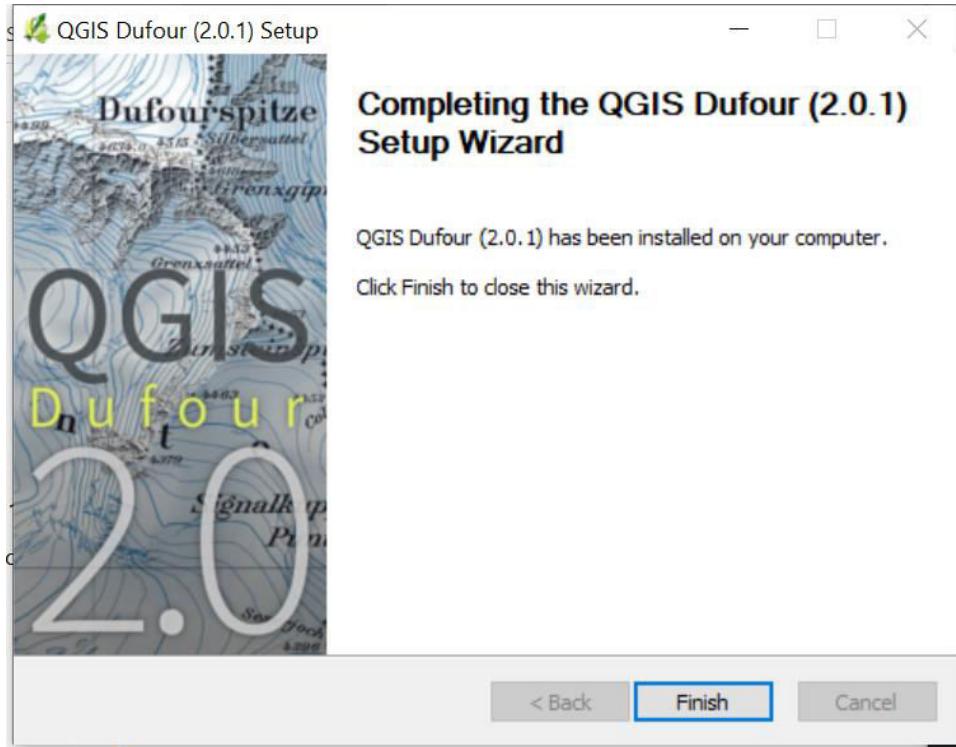
Step 5: Select as it is (default QGIS) and click Install



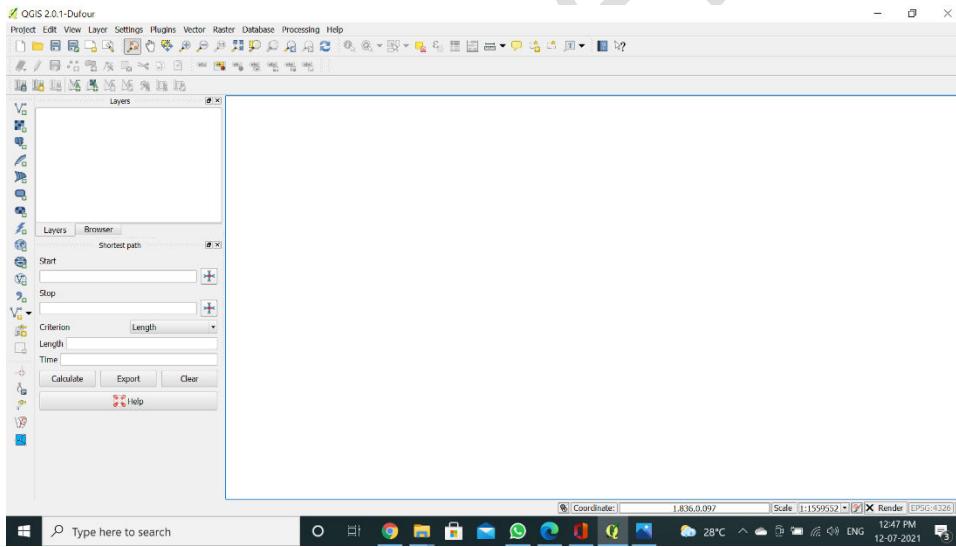
Step 6: Wait for the installation



Step 7: Click Finish



Step 8: On the desktop screen Click QGIS Desktop 2.0.1 icon

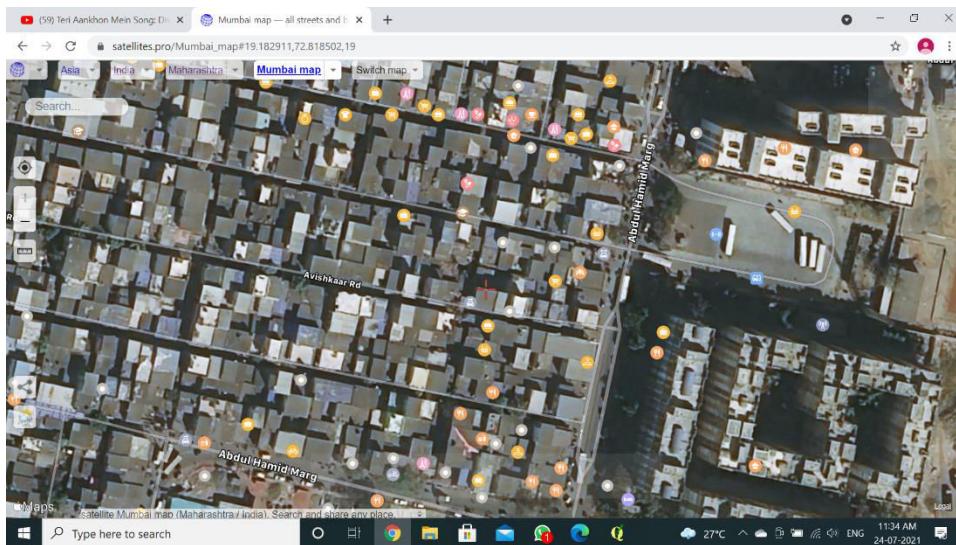


Practical 1

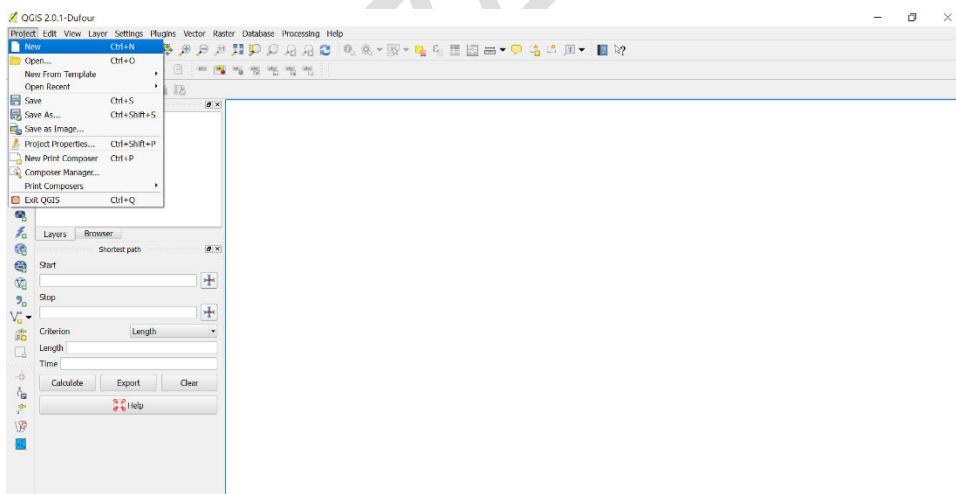
Aim: Creating and Managing Vector

Step 1: Go to www.satellites.pro

Step 2: Search for respective area in the map, take a screenshot and save it as an image in a folder named “practical1”



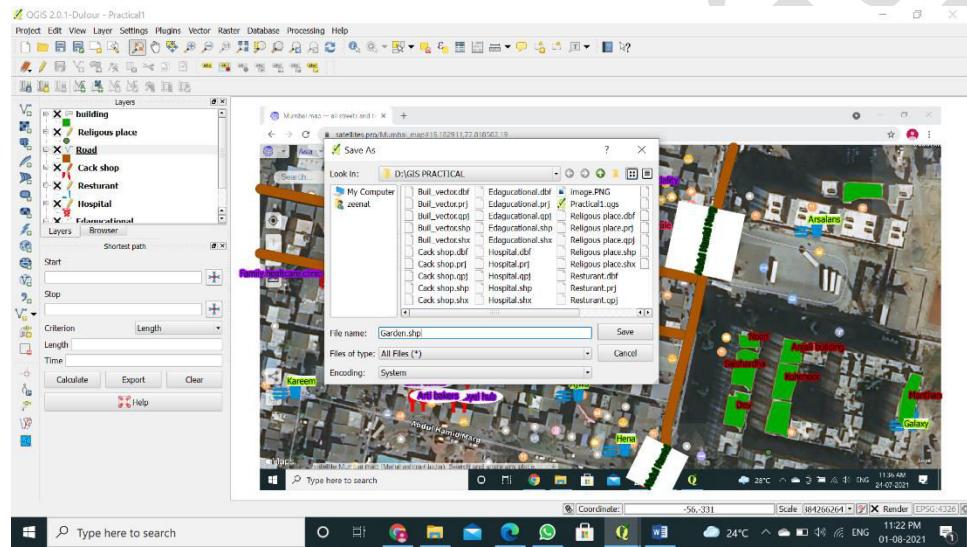
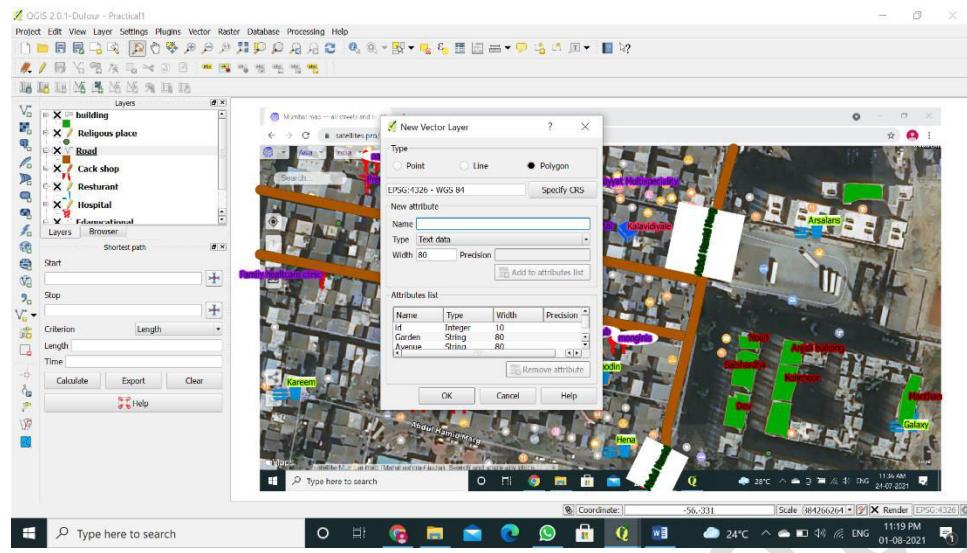
Step 3: Open QGIS Desktop, create a new project, save it with proper name



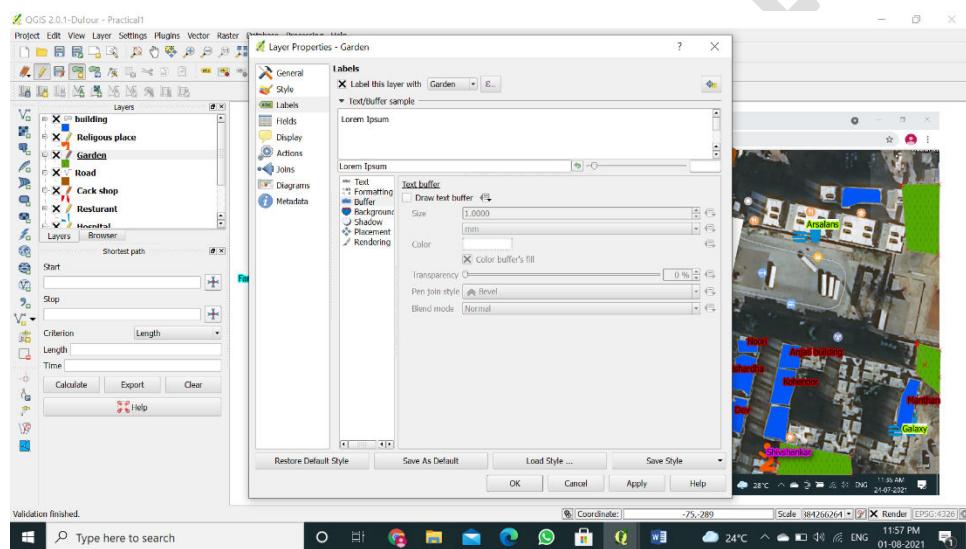
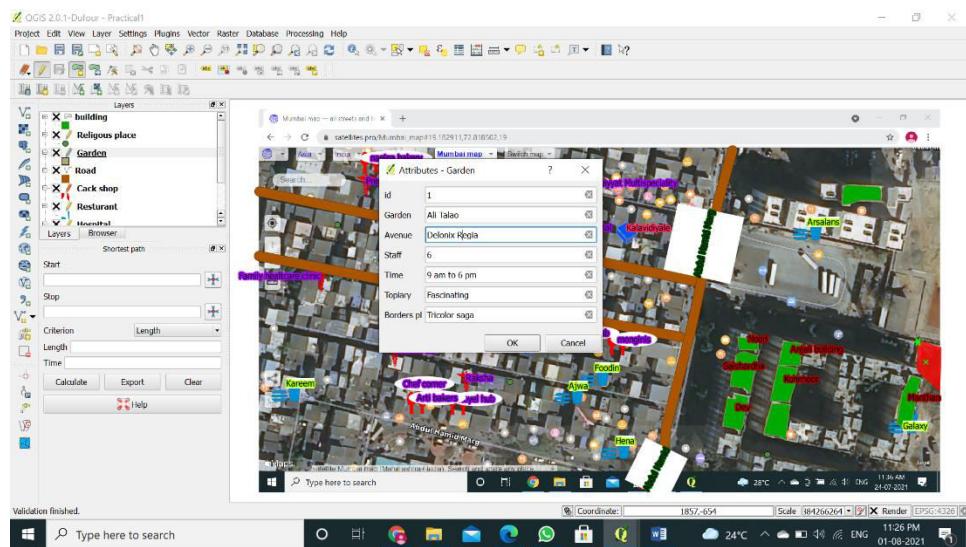
Step 4: Go to layers--> Add Raster Layer --> Browse to the image created in Step2 and select, and open that image.

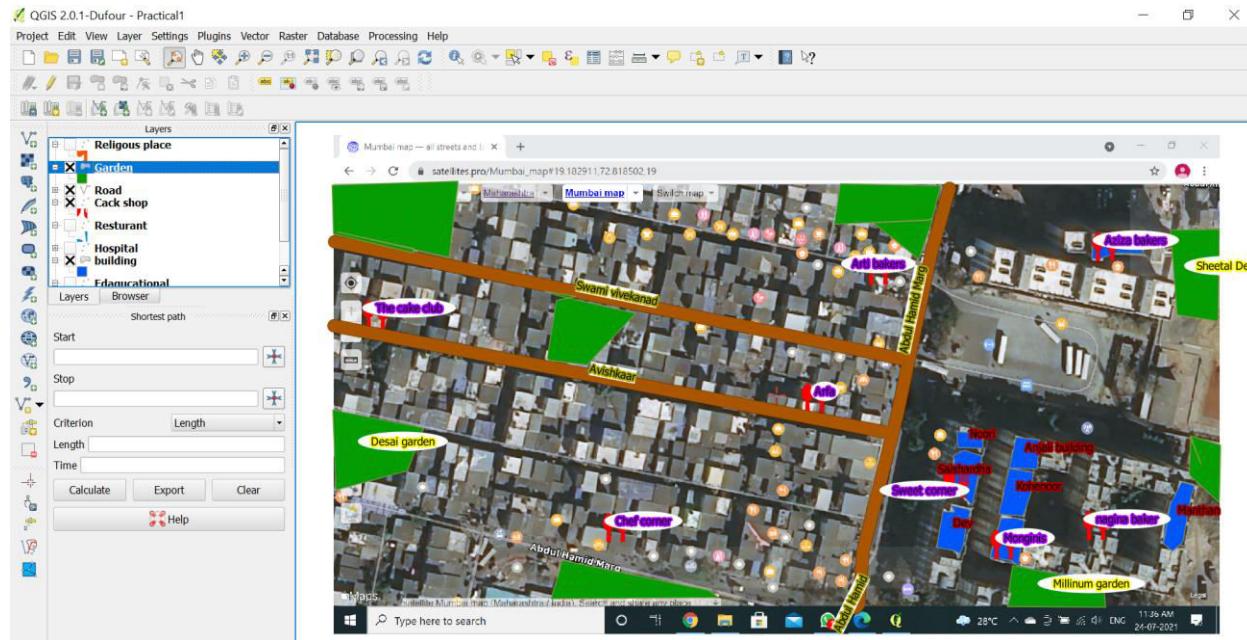
Step 5: Go to Layer--> New--> New shapefile layer

Step 6: Create a polygone layer with name “garden.shp” and give appropriate attributes and save in the respective folder.

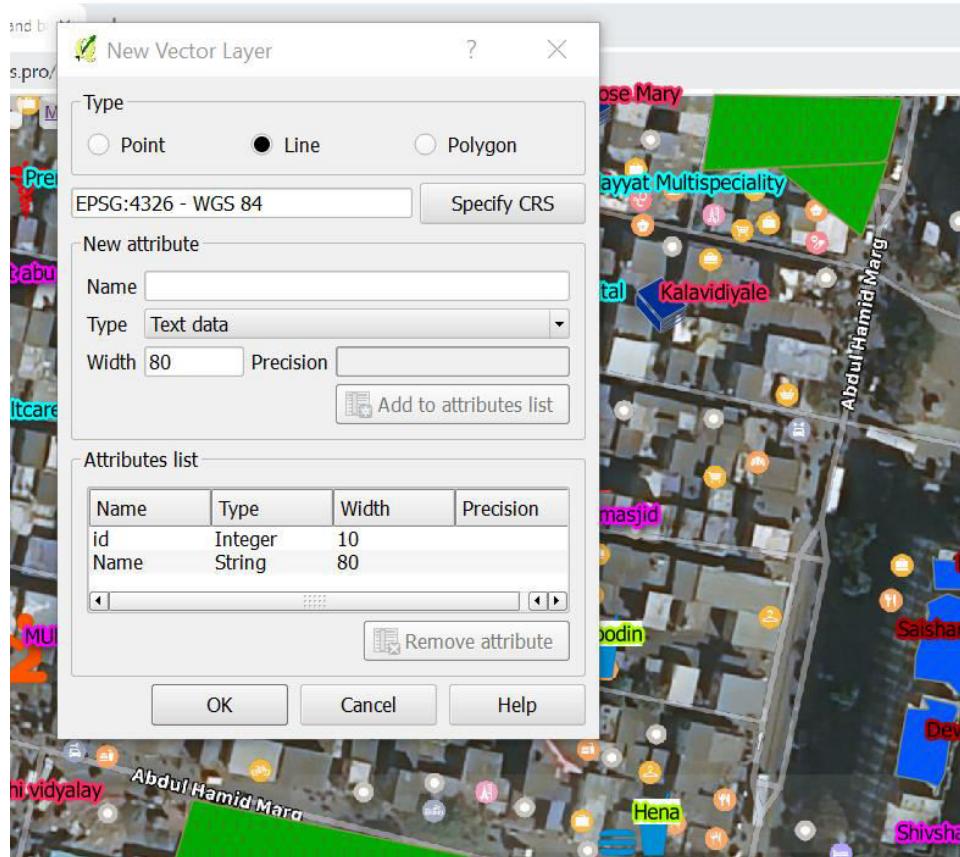


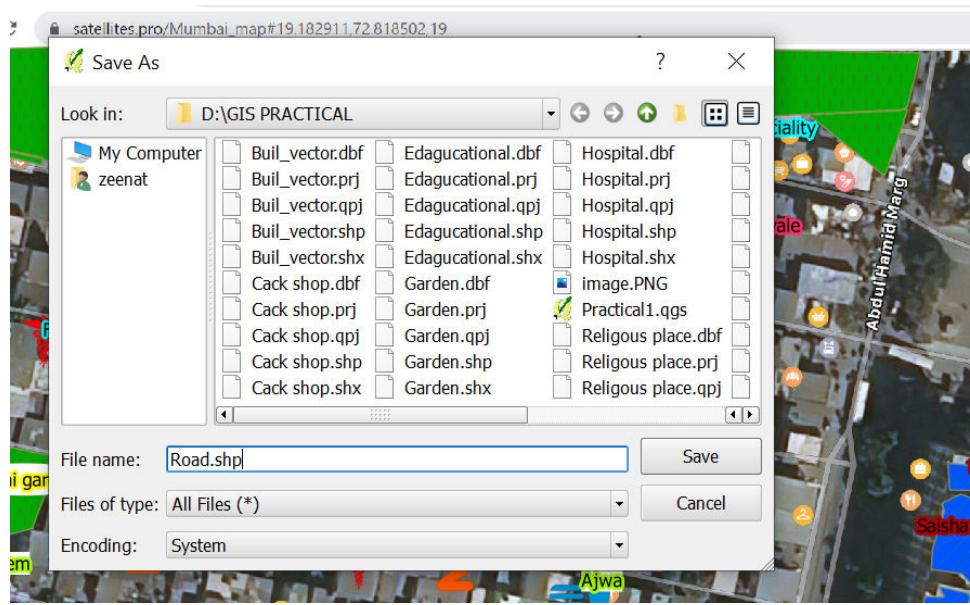
Step 7 Click on the garden layers created click on the TOGGLE EDITING BUTTON click on ADD FEATURES and start with DIGITIZATION process of each garden (Using the left button we start with the process we plot the sample points and using right button we stop the process)



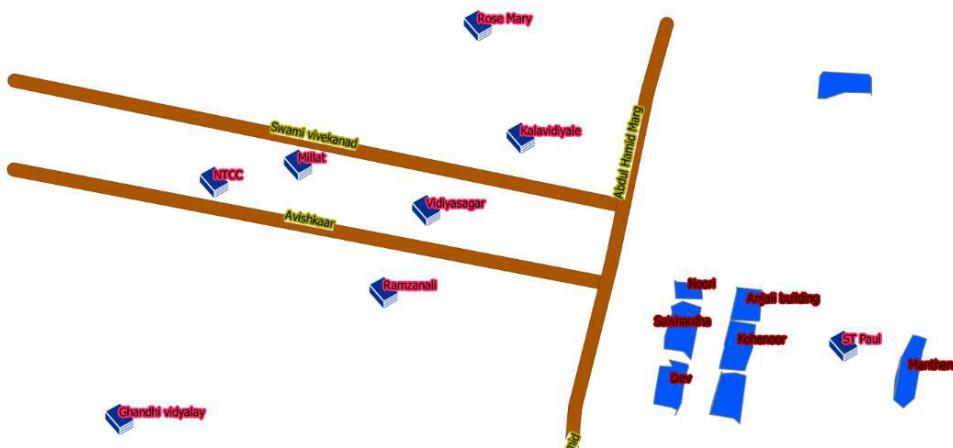


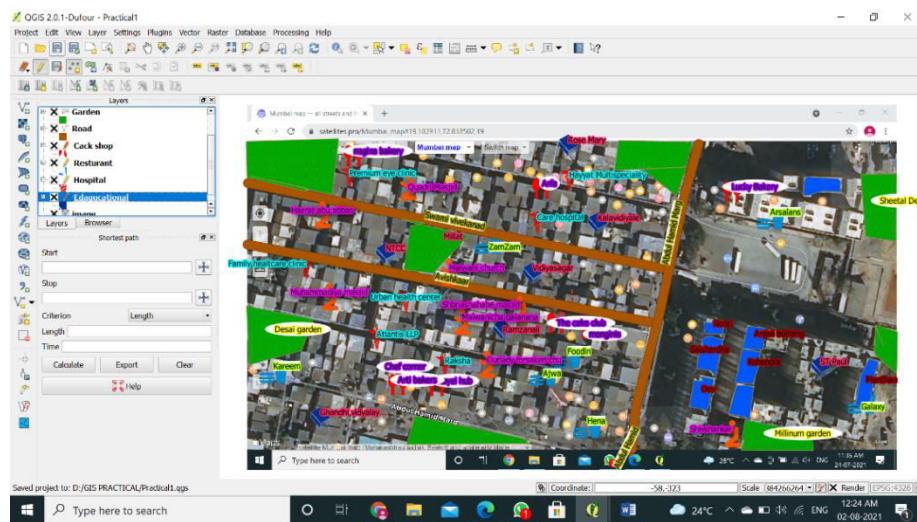
Step 8: Create a Line layer with name “road.shp”and give appropriate attributes and save in respective folder.



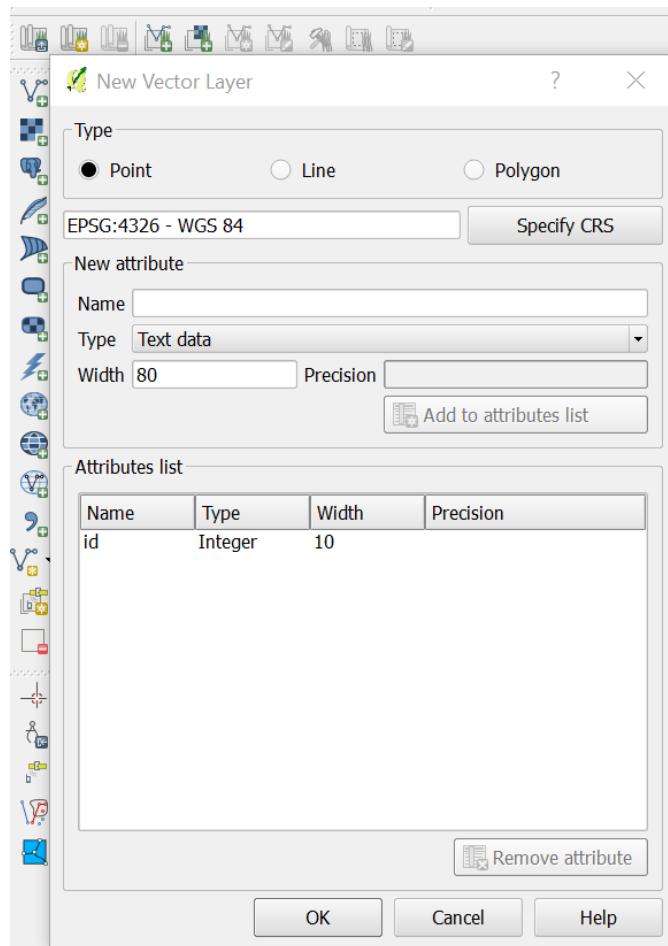


Step 9 Choose the layer and right click selecting properties go to the styles and select the simple line.

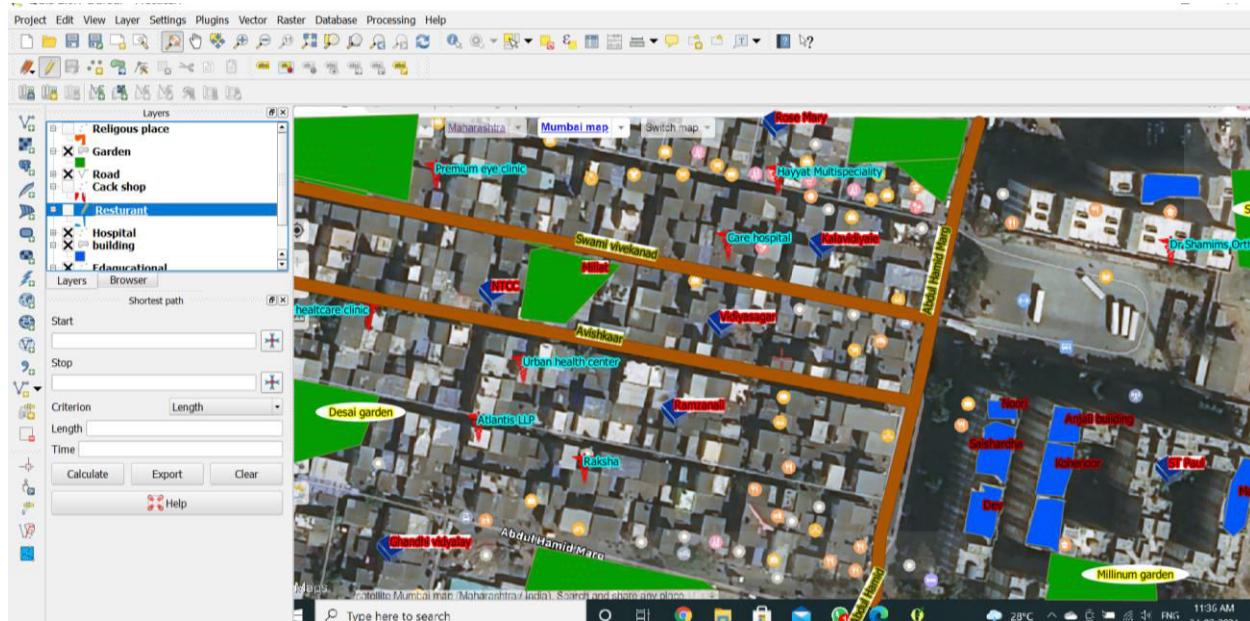




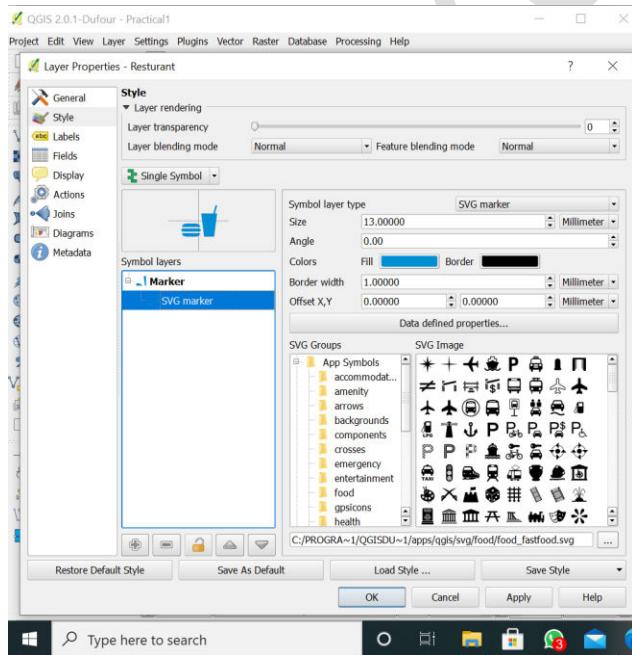
Step 10: Now we will create POINT FEATURE for restaurant, go to layers ◊ New ◊ New shapefile layer, create a Point layer with name “restaurants.shp” and give appropriate attributes and save in the respective folder.



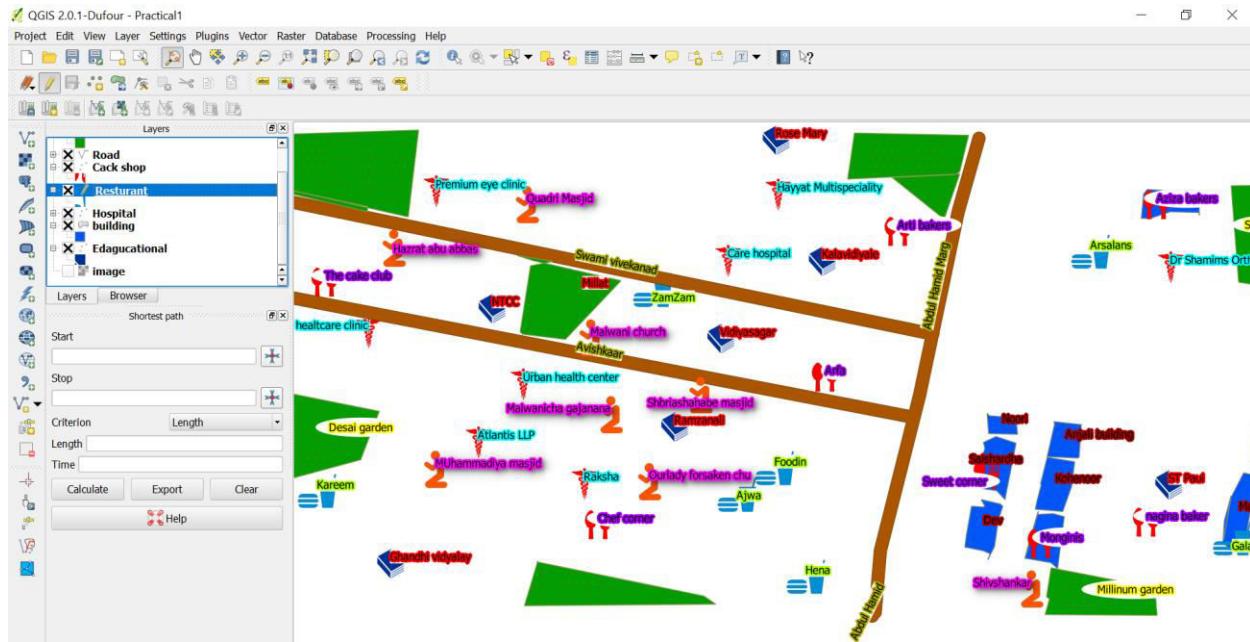
Step 11: Click on the restaurants layer created, click on TOGGLE EDITTING button, click on ADD FEATURES, and start with Digitization process of EACH restaurant.



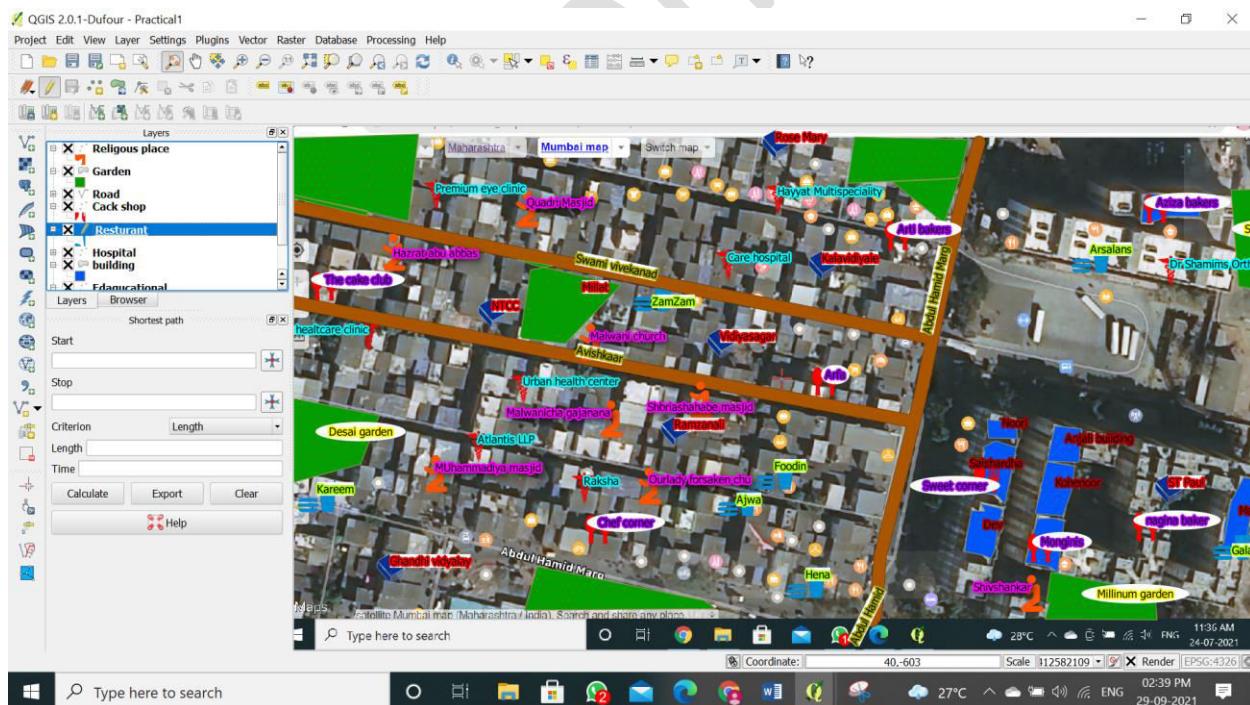
Step 12: Right click on restaurant layer, go to properties, style, click on simple marker \diamond in dropdown, select SVG marker, select appropriate symbol and its size, click on Apply and OK
 Similarly, we will digitize all the restaurants present in our map. (Note: Use another POINT LAYER for other point features, such as hospitals, etc., MINIMUM 6-point layer must be created, each POINT layer must consist of minimum 7 features)



Step 13: Display LABEL for EACH AREA



Step 14: Final Map



Step 15: Display attribute tables: Layer Name and its table

Attribute table - building :: Features total: 8, filtered: 8, selected: 0

The table displays the following data:

	floor	Lift	building	Parkingzon	Security	Amenities
0	9	3	Dev	yes	fier alarm system	power backup, mall
1	8	3	Saishardha	yes	passive infrared	gym
2	6	2	Noori	no	guard	gym, resturant
3	7	6	Krishana building	yes	microwave detector	on-site maintenance
4	8	4	Manthan	yes	PIR motion detector	school, market
5	9	3	Rahaman	yes	surveillance camera	car parking, shop
6	9	4	Kohenoor	yes	physical seurit guar	sports club
7	9	4	Anjali building	yes	CCTV	medical shop

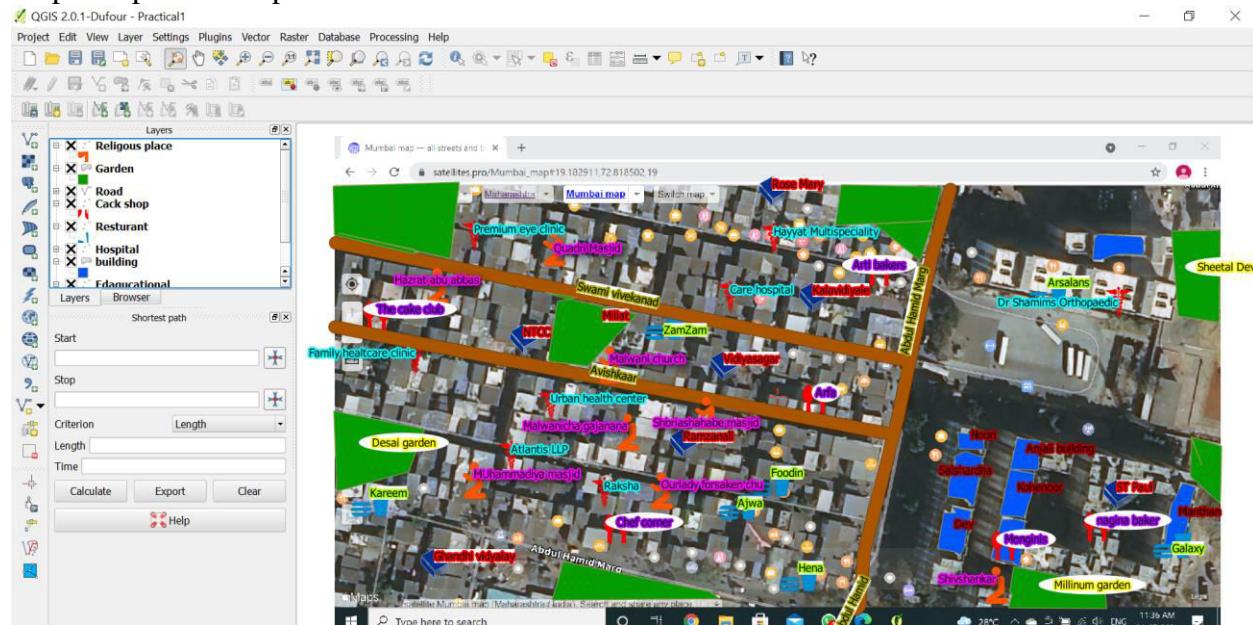
578 / Zeenat -

Practical 2A

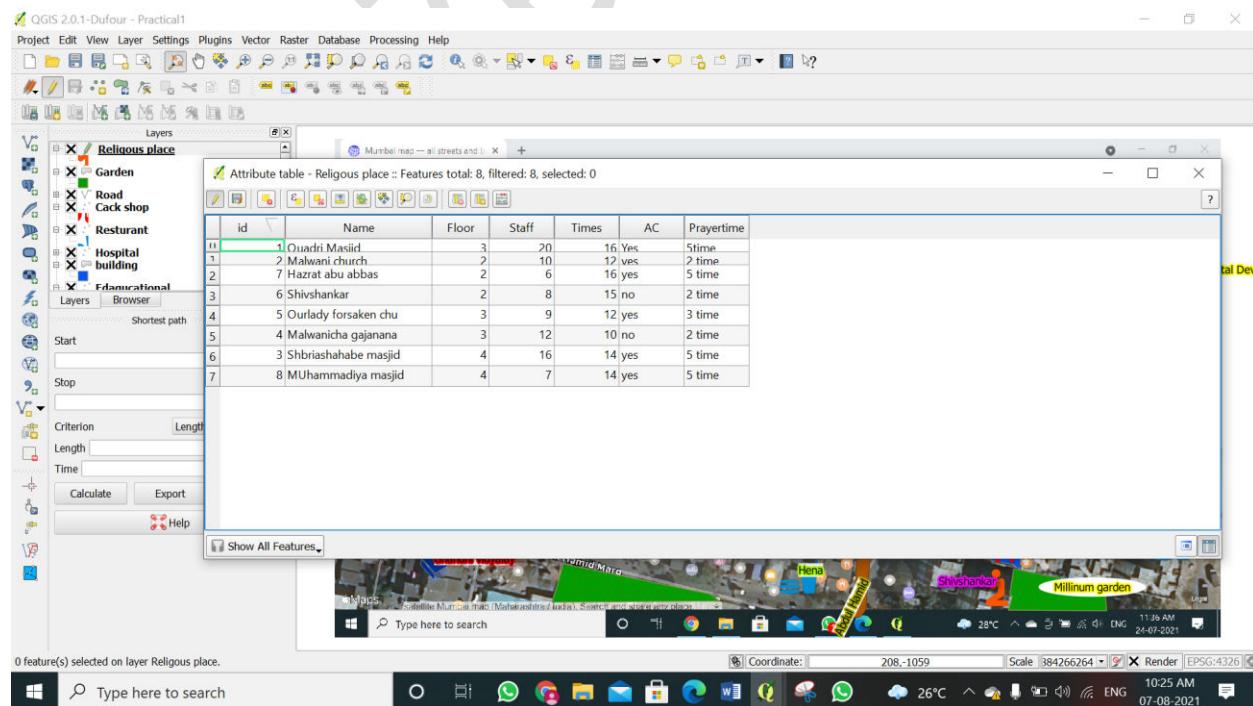
Aim: Working with Attributes, Attribute Data Query on the map created in Practical 1 and existing data.

FIRING QUERIES ON MAP CREATED IN PRACTICAL 1

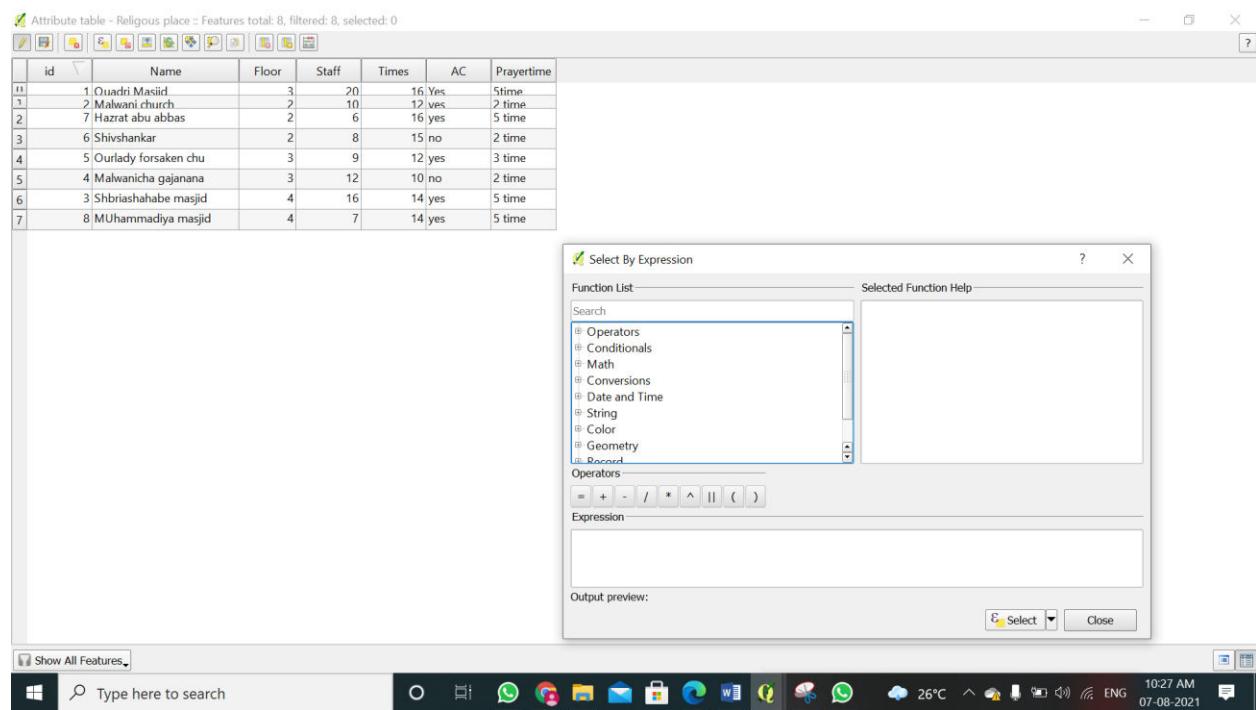
Step 1: Open the map created



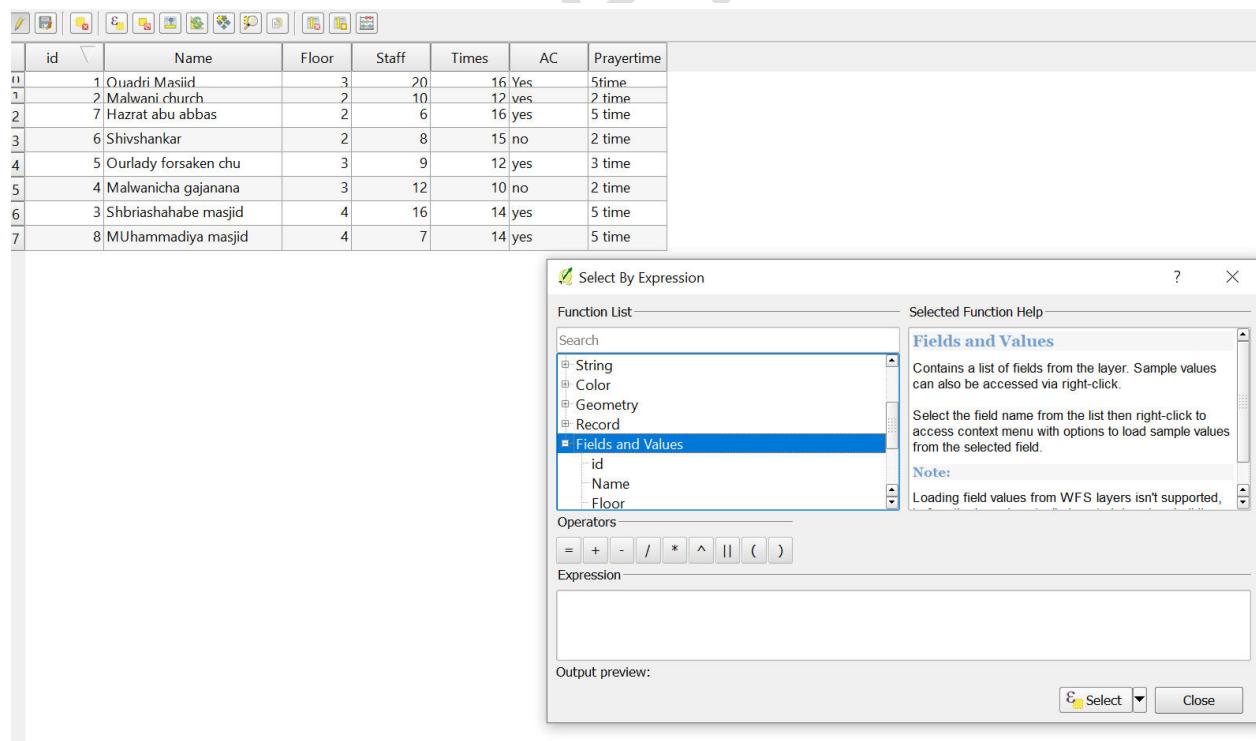
Step 2: Go to Attribute Table of any layer.



Step 3: Turn on Toggle Editing and Click on Select feature using expressive button.



Step 4: Expand the Fields and Value option in dialogue box that appears and double click on the Field name on which query needs to be fired.



Step 5: After adding Field Name operator like=>,< and so on can be added depending on the query that needs to be fired.

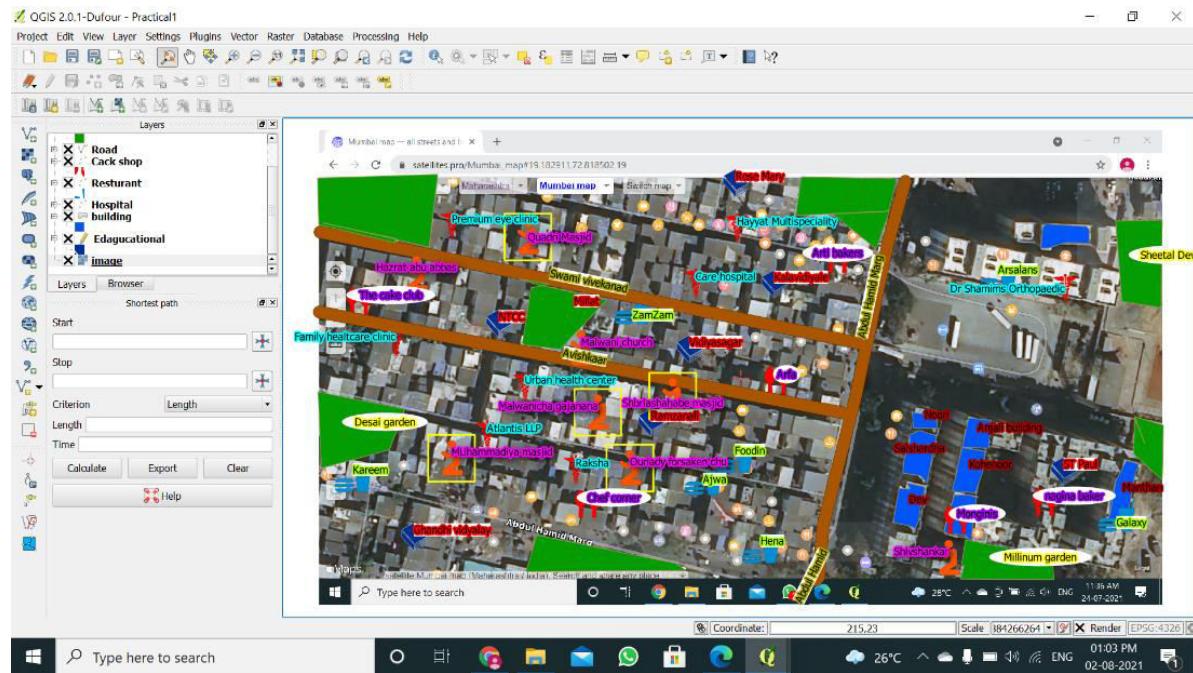
Step 6: After that click on LOAD ALL UNIQUE VALUES Button and select the conditional values.

The screenshot shows a GIS application window with an attribute table titled "Attribute table - Religious place :: Features total: 8, filtered: 0, selected: 5". The table has columns: id, Name, Floor, Staff, Times, AC, and Prayertime. The data includes various religious places like Quadri Masjid, Malwani church, Hazrat abu abbas, etc., with their respective details. To the right of the table is a "Select By Expression" dialog box. In the "Expression" field, the condition `"Floor" >= 3` is entered. The "Field Values" list contains the integers 2, 3, and 4. The "Selected Function Help" pane shows the function `Field` with the note: "Double click on field name to open context menu sample value insertion options". The system tray at the bottom shows the date as 07-08-2021 and time as 10:22 AM.

Step 7: Click on SELECT Button.

The screenshot shows the same GIS application window after the "SELECT" button was clicked. The attribute table now displays only the features where the "Floor" value is 3 or greater. The selected rows are highlighted in blue. The system tray at the bottom shows the date as 02-08-2021 and time as 01:03 PM.

Areas selected (output of query must be highlighted square box by yellow colour in map)



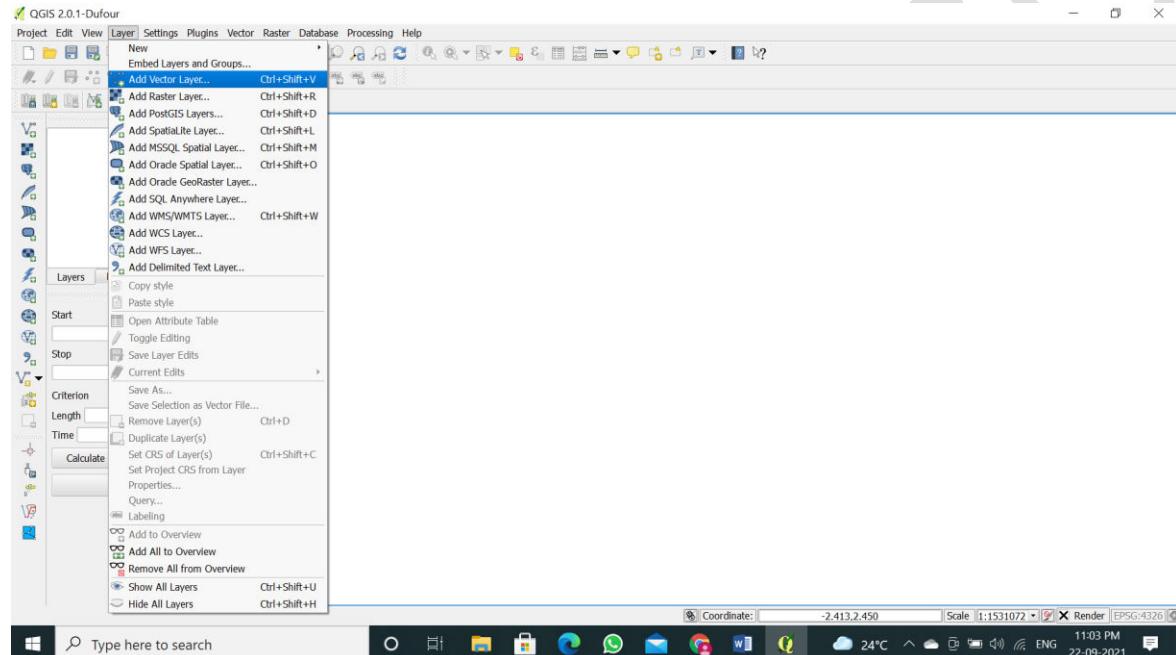
Practical 2B

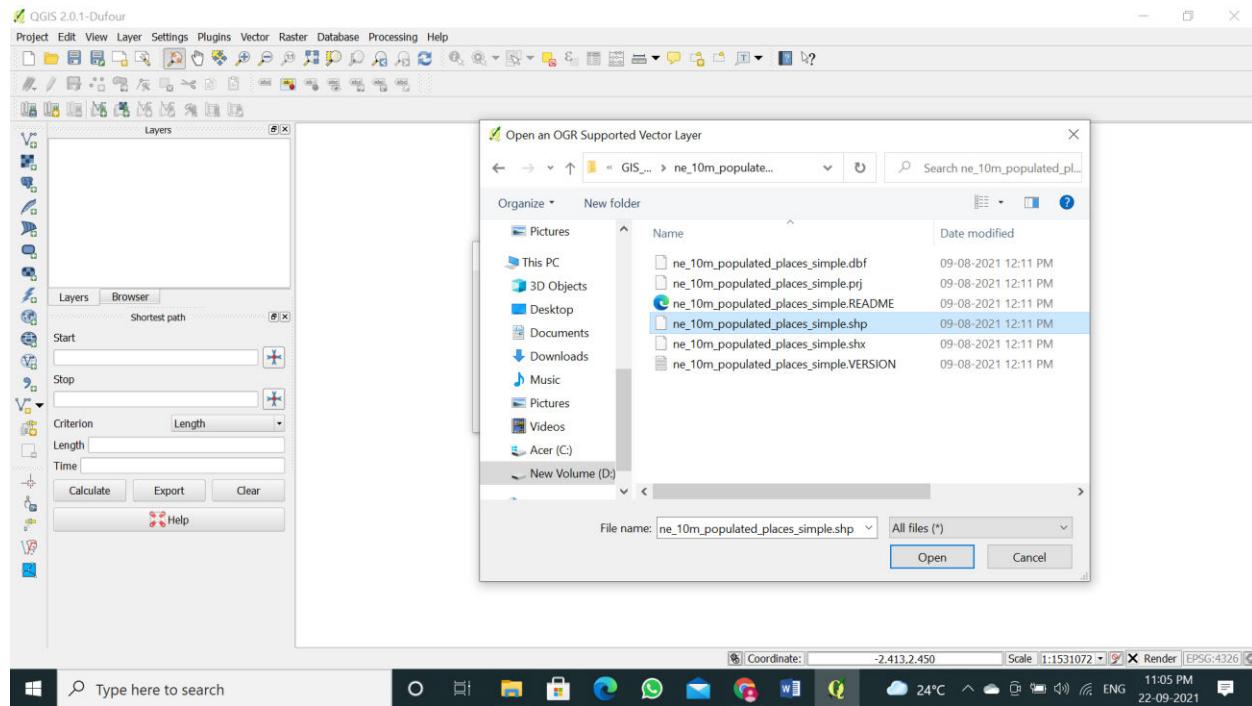
FIRING QUERIES ON PRE-EXISTING DATA

Step: 1: Start a new project

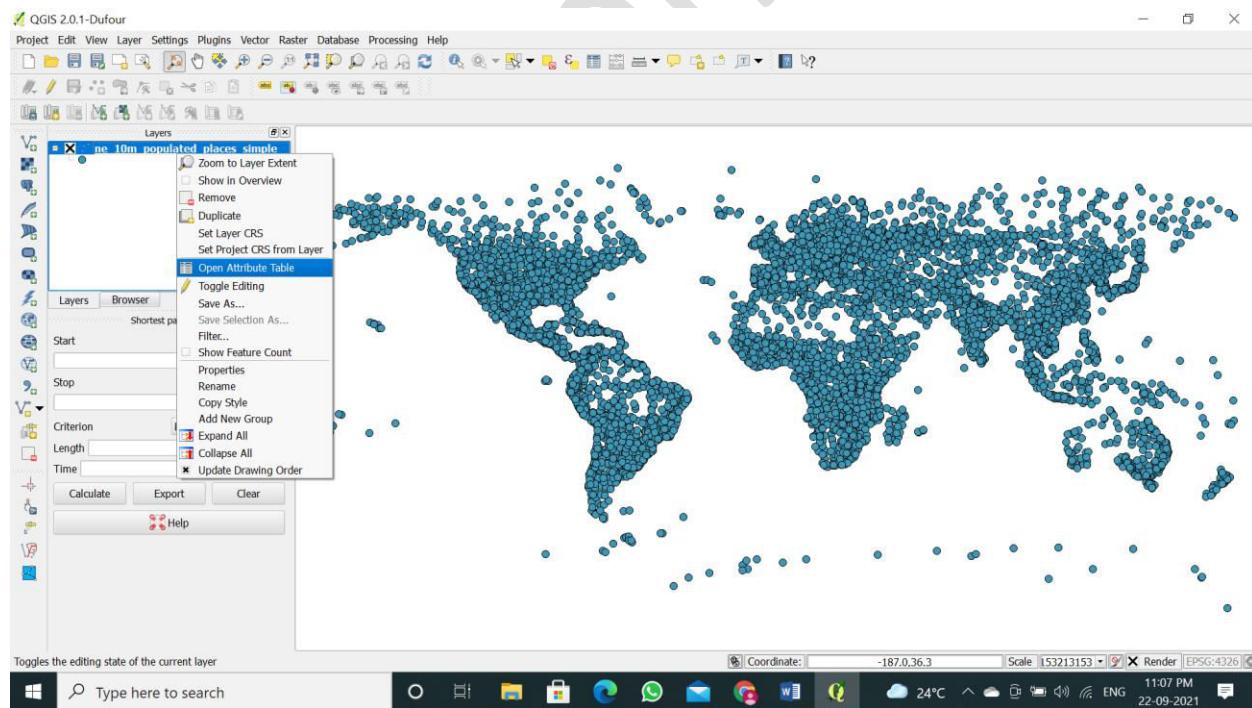
Go to Layer -> Add Layer -> Add Vector Layer -> Select

ne_10m_populated_places_simple.zip





Step 2: Right click on Layer in Layer Panel -> Open Attribute Table.



Attribute table - ne_10m_populated_places_simple :: Features total: 7322, filtered: 7322, selected: 0

Show All Features

Type here to search

24°C ENG 11:07 PM 22-09-2021

Step 3 : Click on Select feature expression button.

Attribute table - ne_10m_populated_places_simple :: Features total: 7322, filtered: 7322, selected: 0

Select feature using an expression

Show All Features

Type here to search

24°C ENG 11:08 PM 22-09-2021

Step 4: To find the Place with maximum population click on “pop_max” file

Step: 5

Query 1: Enter pop_max>100 and pop_max<10000 and click Select Features button to get all places with population between 100 and 10000 (To deselect the result of previous query, use DESELECT FEATURE)

Attribute table - ne_10m_populated_places_simple :: Features total: 7322, filtered: 7322, selected: 0

Select By Expression

Function List

Selected Function Help

Fields and Values

Search

Conversions

Date and Time

String

Color

Geometry

Record

Fields and Values

scalerank
natscale

Operators

Expression

Output preview:

Show All Features

Type here to search

24°C 11:16 PM 22-09-2021 ENG

Attribute table - ne_10m_populated_places_simple :: Features total: 7322, filtered: 7322, selected: 0

Select By Expression

Function List

Selected Function Help

Field

namediff
diffnote
pop_max
pop_min
pop_other
rank_max
rank_min
geonameid
geonamepage

Load all unique values Load 10 sample values

Operators

Expression

"pop_max" > 100 and "pop_max" < 10000

Output preview: 0

Show All Features

Type here to search

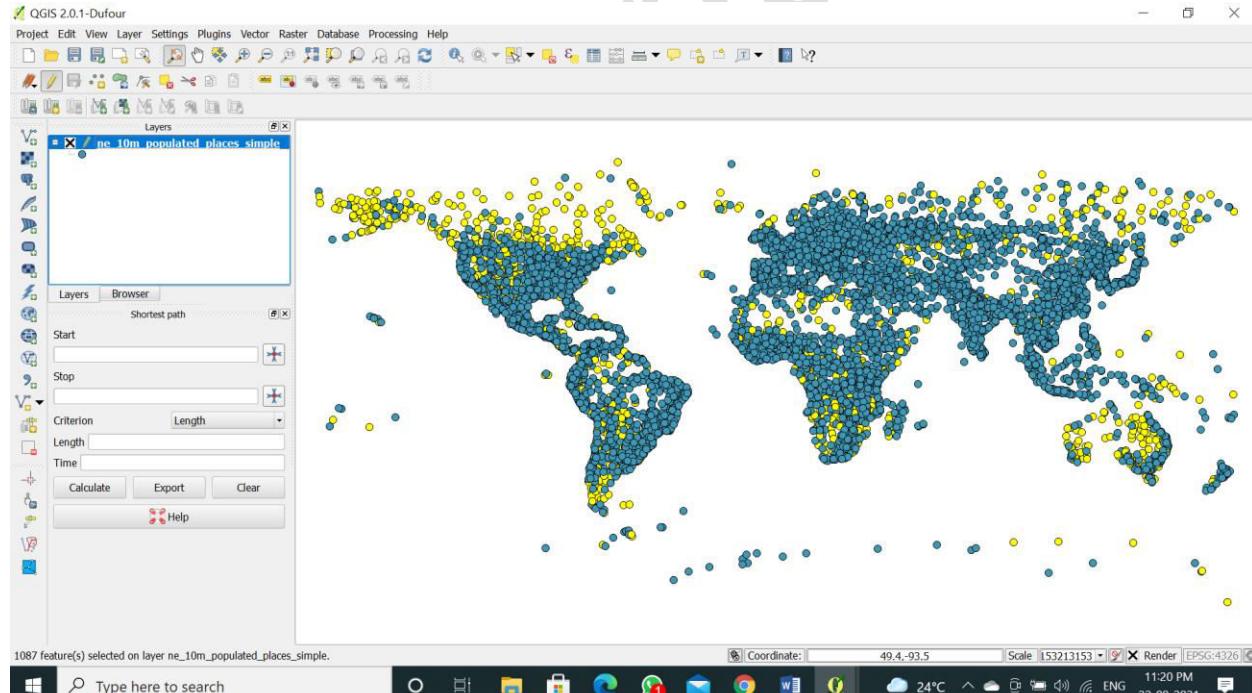
24°C 11:17 PM 22-09-2021 ENG

Output:

Attribute table - ne_10m_populated_places_simple :: Features total: 7322, filtered: 7322, selected: 1087

	caleran	natscale	labelrank	featurecla	name	namepar	namealt	diffascii	nameascii	adm0cap	capalt	capin	worldcity	megacity	sov0name	sov_a3	adm0name	adm0_a3	adm1
11	10	1	7	Admin-1	Jendouba	NULI	NULI	0	Jendouba	0.000000...	0.000000...	NULI	0.000000...	0	Tunisia	TUN	Tunisia	TUN	Jend
12	10	1	7	Admin-1	Kasserine	NULI	NULI	0	Kasserine	0.000000...	0.000000...	NULI	0.000000...	0	Tunisia	TUN	Tunisia	TUN	Kassé
13	10	1	7	Admin-1	Sidi Bou...	NULI	NULI	0	Sidi Bou...	0.000000...	0.000000...	NULI	0.000000...	0	Tunisia	TUN	Tunisia	TUN	Sidi B
14	10	1	7	Admin-1	Siliana	NULI	NULI	0	Siliana	0.000000...	0.000000...	NULI	0.000000...	0	Tunisia	TUN	Tunisia	TUN	Silan
15	10	1	7	Admin-1	Mahdia	NULI	NULI	0	Mahdia	0.000000...	0.000000...	NULI	0.000000...	0	Tunisia	TUN	Tunisia	TUN	Mahd
16	10	1	7	Admin-1	Medenine	NULI	NULI	0	Medenine	0.000000...	0.000000...	NULI	0.000000...	0	Tunisia	TUN	Tunisia	TUN	Meden
17	10	1	7	Admin-1	Zarzis	NULI	NULI	0	Zarzis	0.000000...	0.000000...	NULI	0.000000...	0	Tunisia	TUN	Tunisia	TUN	Zarz
18	10	1	5	Admin-1	Tay Ninh	NULI	NULI	0	Tay Ninh	0.000000...	0.000000...	NULI	0.000000...	0	Vietnam	VNM	Vietnam	VNM	Tây N
19	10	1	5	Admin-1	Luan Chau	NULI	NULI	0	Luan Chau	0.000000...	0.000000...	NULI	0.000000...	0	Vietnam	VNM	Vietnam	VNM	Đồn
20	10	1	5	Admin-1	Bac Kan	NULI	NULI	0	Bac Kan	0.000000...	0.000000...	NULI	0.000000...	0	Vietnam	VNM	Vietnam	VNM	Đông
21	10	1	5	Admin-1	Lang Son	NULI	NULI	0	Lang Son	0.000000...	0.000000...	NULI	0.000000...	0	Vietnam	VNM	Vietnam	VNM	Lang
22	10	1	5	Admin-1	Son La	NULI	NULI	0	Son La	0.000000...	0.000000...	NULI	0.000000...	0	Vietnam	VNM	Vietnam	VNM	Son L
23	10	1	5	Admin-1	Tuyen Qu...	NULI	NULI	0	Tuyen Qu...	0.000000...	0.000000...	NULI	0.000000...	0	Vietnam	VNM	Vietnam	VNM	Tuyê
24	10	1	5	Admin-1	Yen Bai	NULI	NULI	0	Yen Bai	0.000000...	0.000000...	NULI	0.000000...	0	Vietnam	VNM	Vietnam	VNM	Yên B
25	10	1	5	Admin-1	Hai Duong	NULI	NULI	0	Hai Duong	0.000000...	0.000000...	NULI	0.000000...	0	Vietnam	VNM	Vietnam	VNM	Hà D
26	10	1	5	Admin-1	Thai Binh	NULI	NULI	0	Thai Binh	0.000000...	0.000000...	NULI	0.000000...	0	Vietnam	VNM	Vietnam	VNM	Thái B
27	10	1	5	Admin-1	Tuy Hoa	NULI	NULI	0	Tuy Hoa	0.000000...	0.000000...	NULI	0.000000...	0	Vietnam	VNM	Vietnam	VNM	Phú Y
28	10	1	5	Admin-1	Thua Thien	NULI	NULI	0	Thua Thien	0.000000...	0.000000...	NULI	0.000000...	0	Vietnam	VNM	Vietnam	VNM	Bình
29	10	1	5	Admin-1	Dong Ha	NULI	NULI	0	Dong Ha	0.000000...	0.000000...	NULI	0.000000...	0	Vietnam	VNM	Vietnam	VNM	Quảng
30	10	1	5	Admin-1	Can Lanh	NULI	NULI	0	Can Lanh	0.000000...	0.000000...	NULI	0.000000...	0	Vietnam	VNM	Vietnam	VNM	Đà N
31	10	1	5	Admin-1	Truc Gia...	NULI	NULI	0	Truc Gia...	0.000000...	0.000000...	NULI	0.000000...	0	Vietnam	VNM	Vietnam	VNM	Bến T
32	10	1	5	Admin-1	Tra Vinh	NULI	NULI	0	Tra Vinh	0.000000...	0.000000...	NULI	0.000000...	0	Vietnam	VNM	Vietnam	VNM	Trà V
33	10	1	5	Admin-1	Vinh Long	NULI	NULI	0	Vinh Long	0.000000...	0.000000...	NULI	0.000000...	0	Vietnam	VNM	Vietnam	VNM	Vĩnh L
34	10	1	5	Admin-1	Cao Bang	NULI	NULI	0	Cao Bang	0.000000...	0.000000...	NULI	0.000000...	0	Vietnam	VNM	Vietnam	VNM	Cao B
35	10	1	8	Admin-1	Yoro	NULI	NULI	0	Yoro	0.000000...	0.000000...	NULI	0.000000...	0	Honduras	HND	Honduras	HND	Yoro
36	10	1	8	Admin-1	La Espera	NULI	NULI	0	La Espera	0.000000...	0.000000...	NULI	0.000000...	0	Honduras	HND	Honduras	HND	Intib
37	10	1	8	Admin-1	La Paz	NULI	NULI	0	La Paz	0.000000...	0.000000...	NULI	0.000000...	0	Honduras	HND	Honduras	HND	La Pa
38	10	1	8	Admin-1	Santa Bar...	NULI	NULI	0	Santa Bar...	0.000000...	0.000000...	NULI	0.000000...	0	Honduras	HND	Honduras	HND	Santa
39	10	1	8	Admin-1	Gracias	NULI	NULI	0	Gracias	0.000000...	0.000000...	NULI	0.000000...	0	Honduras	HND	Honduras	HND	Irama
40	10	1	8	Admin-1	Nueva Orc...	NULI	NULI	0	Nueva Orc...	0.000000...	0.000000...	NULI	0.000000...	0	Honduras	HND	Honduras	HND	Ocote
41	10	1	8	Admin-1	Yuscaran	NULI	NULI	0	Yuscaran	0.000000...	0.000000...	NULI	0.000000...	0	Honduras	HND	Honduras	HND	El Pat
42	10	1	8	Admin-1	Port-de...	NULI	NULI	0	Port-de...	0.000000...	0.000000...	NULI	0.000000...	0	Haiti	HTI	Haiti	HTI	Gros
43	10	1	8	Admin-1	Hinche	NULI	NULI	0	Hinche	0.000000...	0.000000...	NULI	0.000000...	0	Haiti	HTI	Haiti	HTI	Nord
44	10	1	8	Admin-1	Fort-l'Her...	NULI	NULI	0	Fort-l'Her...	0.000000...	0.000000...	NULI	0.000000...	0	Haiti	HTI	Haiti	HTI	Centr
45	10	1	8	Admin-1	Jacmel	NULI	NULI	0	Jacmel	0.000000...	0.000000...	NULI	0.000000...	0	Haiti	HTI	Haiti	HTI	Sud
46	10	1	5	Admin-1	Kirkdale	NULI	NULI	0	Kirkdale	0.000000...	0.000000...	NULI	0.000000...	0	Turkey	TUR	Turkey	TUR	Kirkla
47	10	1	5	Admin-1	Bilecik	NULI	NULI	0	Bilecik	0.000000...	0.000000...	NULI	0.000000...	0	Turkey	TUR	Turkey	TUR	Bilec
48	10	1	5	Admin-1	Sakarya	NULI	NULI	0	Sakarya	0.000000...	0.000000...	NULI	0.000000...	0	Turkey	TUR	Turkey	TUR	Sakar
49	10	1	5	Admin-1	Kastamonu	NULI	NULI	0	Kastamonu	0.000000...	0.000000...	NULI	0.000000...	0	Turkey	TUR	Turkey	TUR	Kasta
50	10	1	5	Admin-1	Burdur	NULI	NULI	0	Burdur	0.000000...	0.000000...	NULI	0.000000...	0	Turkey	TUR	Turkey	TUR	Burd
51	10	1	5	Admin-1	Kirsehir	NULI	NULI	0	Kirsehir	0.000000...	0.000000...	NULI	0.000000...	0	Turkey	TUR	Turkey	TUR	Kires

Show All Features



Query 2: pop_max>100 and pop_max<10000 and “sov0name”=”India”

Attribute table - ne_10m_populated_places_simple :: Features total: 7322, filtered: 7322, selected: 0

Select By Expression

Function List

Selected Function Help

Field

Double click to add field name to expression string.

Field Values

Search

Operators

Expression

Output preview: 0

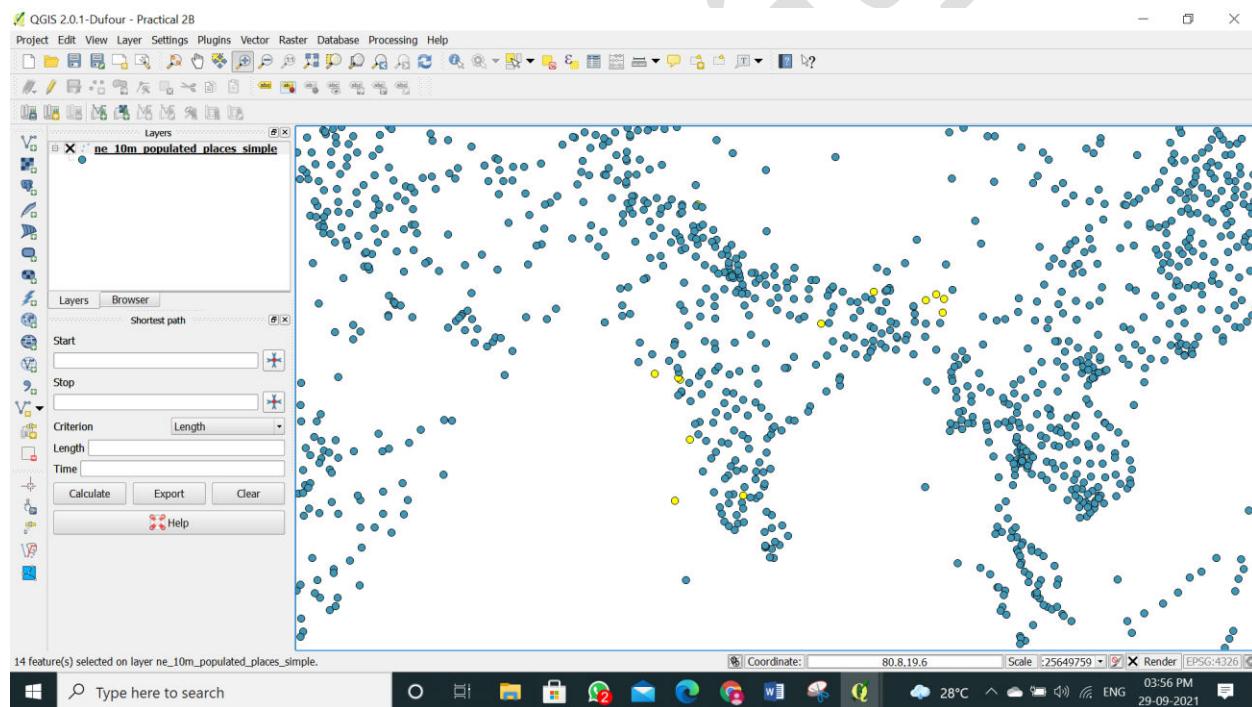
Show All Features

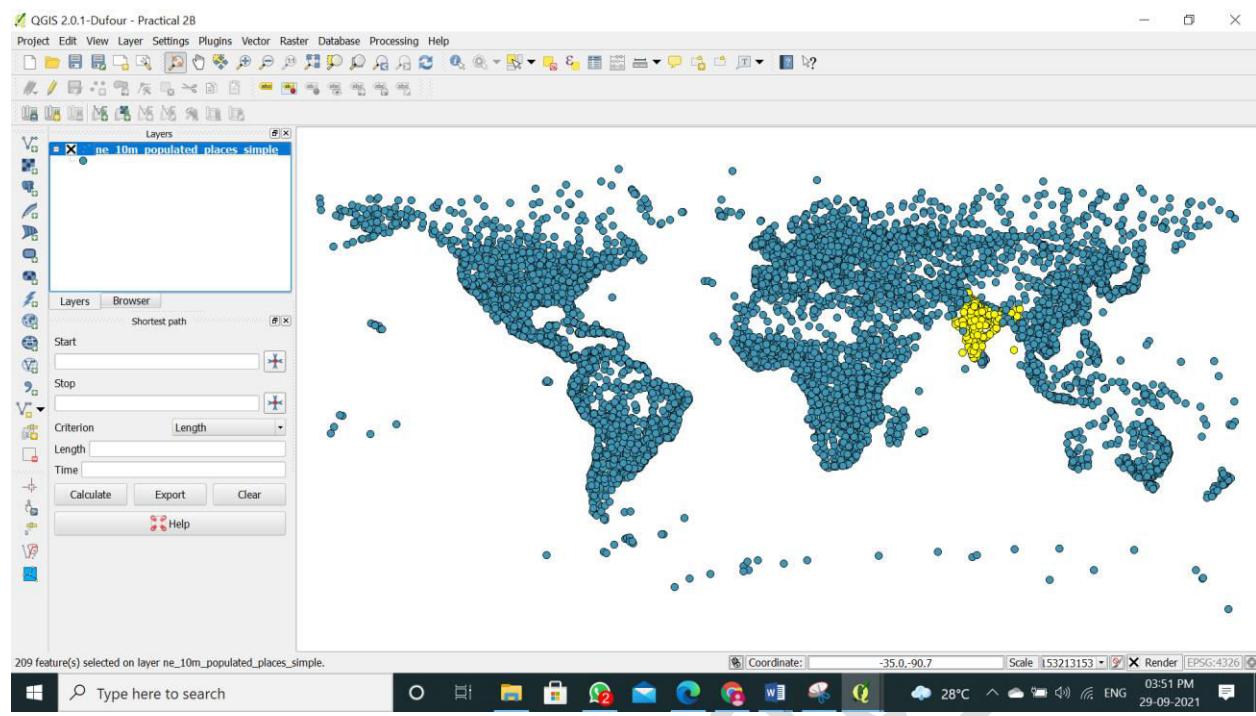
QGIS 2.0.1-Dufour - Practical 2B

Type here to search

Coordinate: 80.819.6 Scale: 1:25649759 Render: EPSG:4326

27°C 03:25 PM 29-09-2021



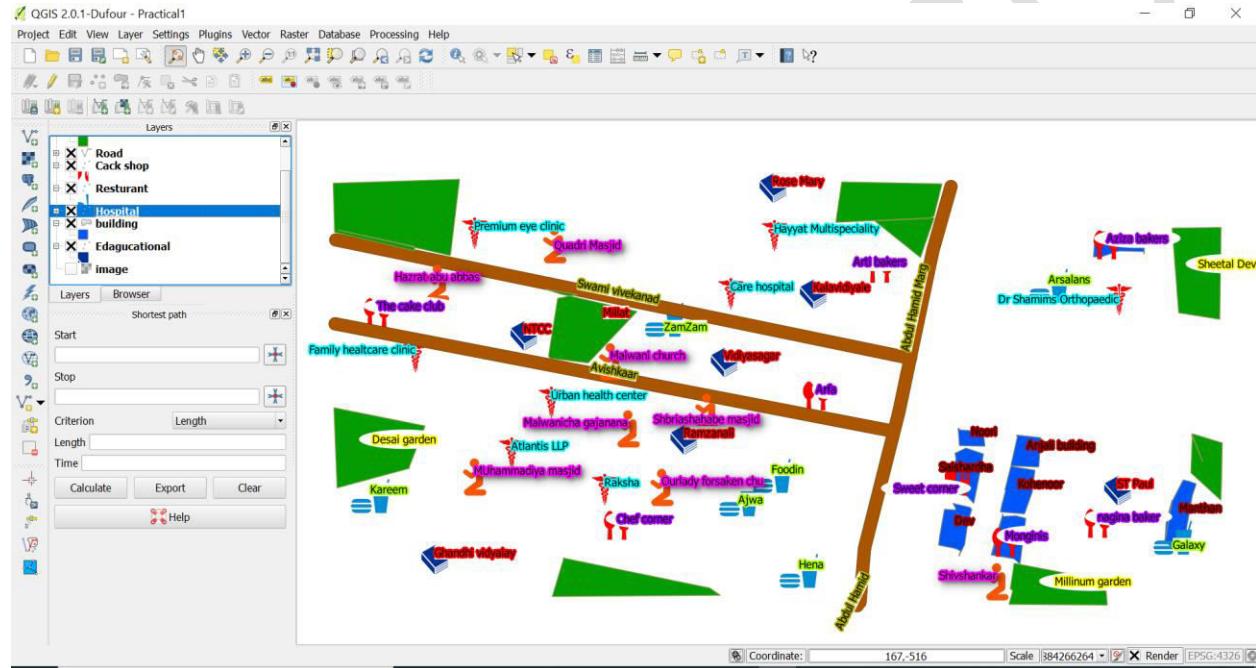


Practical 3

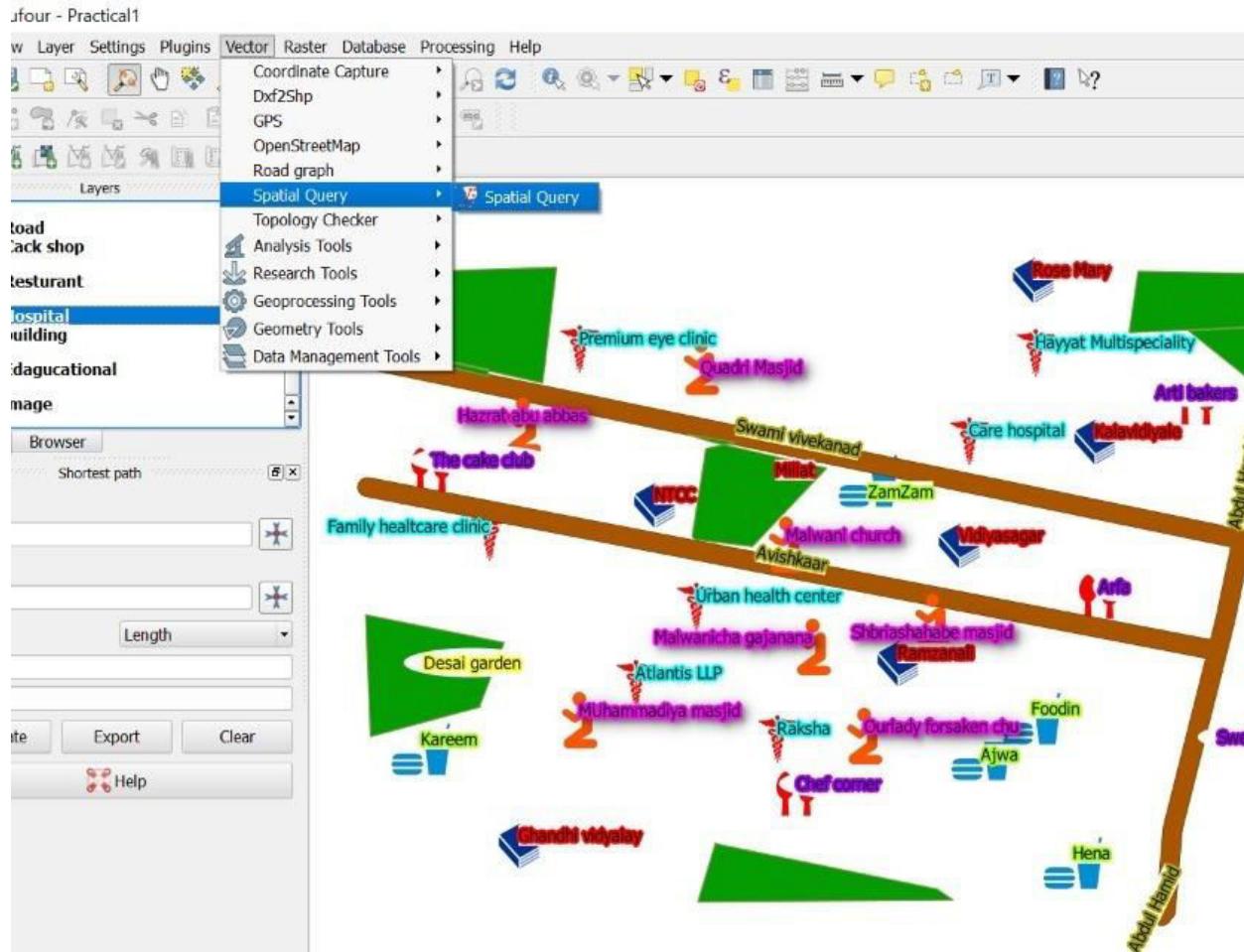
Aim: Performing Spatial Queries on the map created in Practical 1 and existing data.

FIRING QUERIES ON MAP CREATED IN PRACTICAL 1

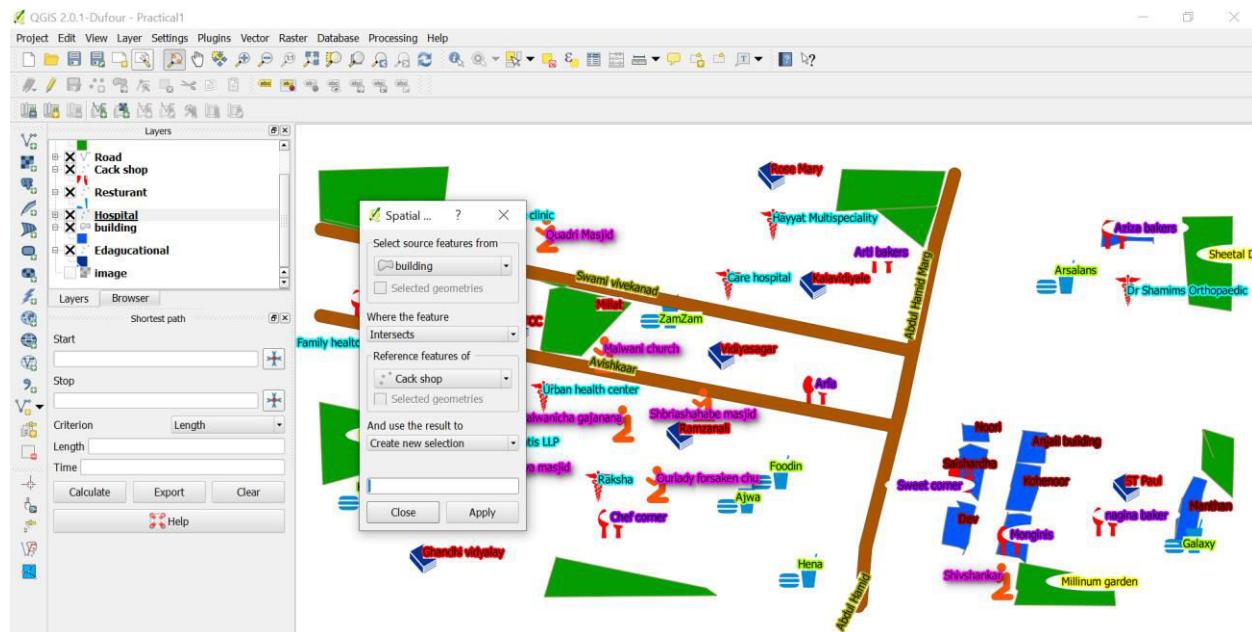
Step 1: Open the map Created in Practical 1.



Step 2: Click on Vector then Spatial Query - Spatial Query.

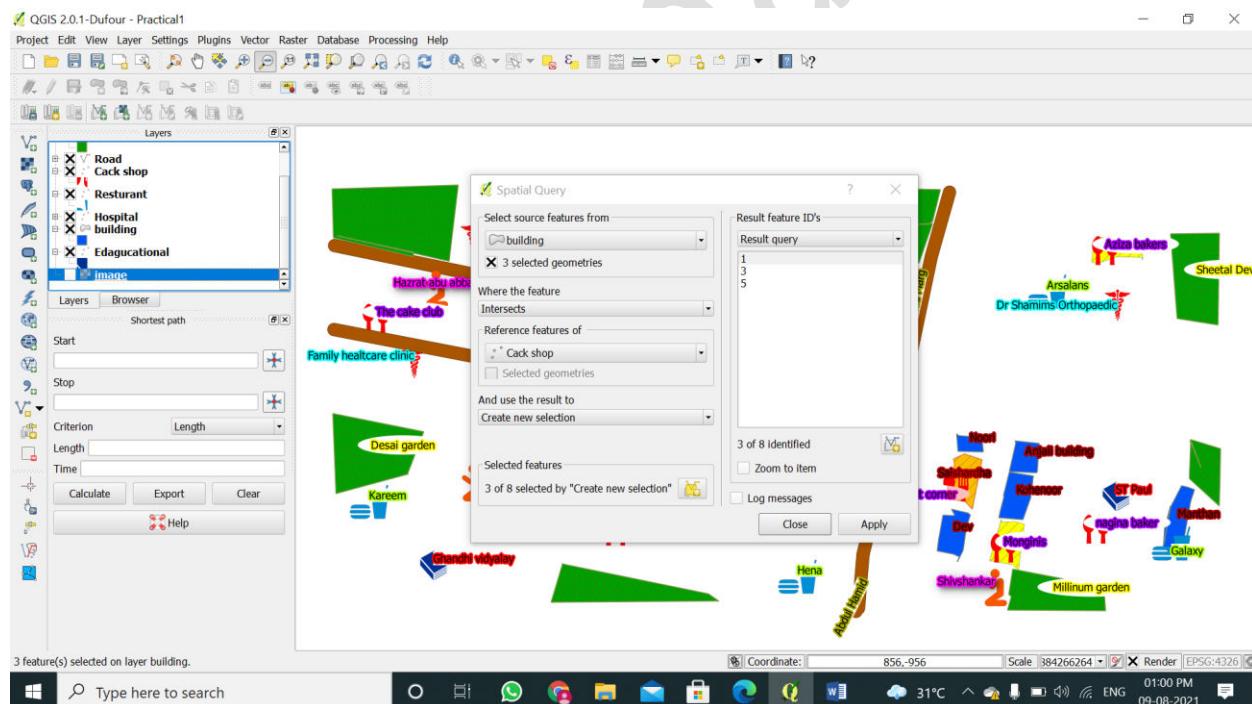


Step 3: On the Spatial Query Window, Select the input layer 1, the relationship and the input layer 2 and Click on “Apply”.



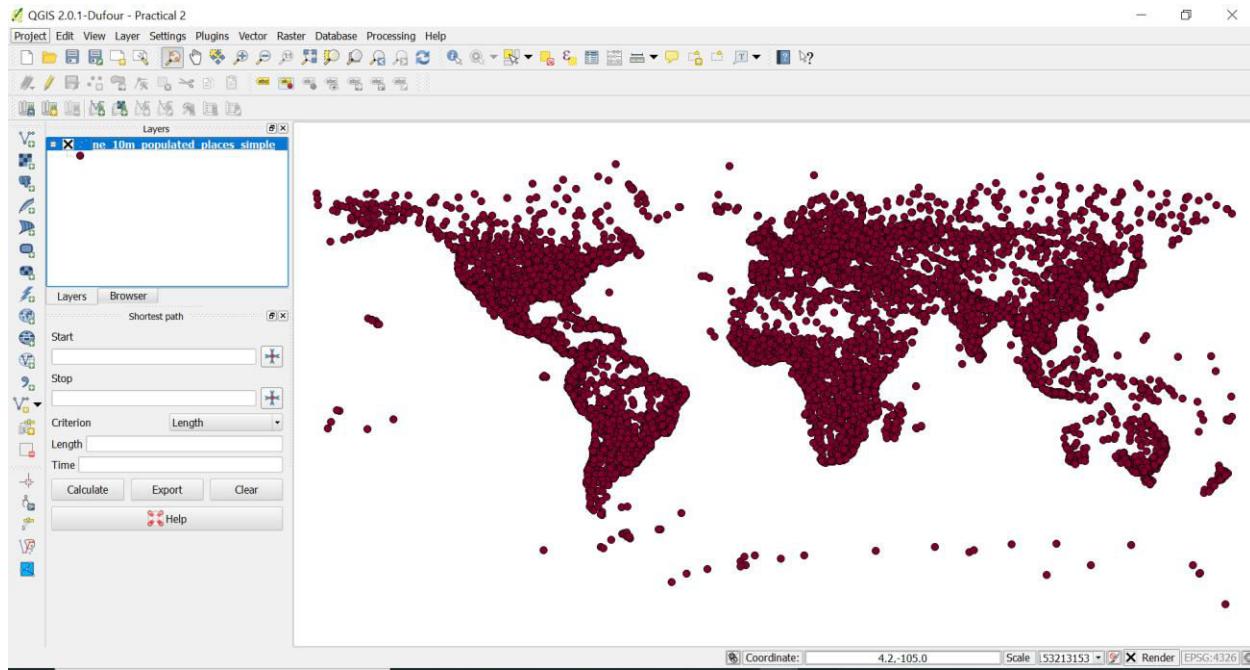
Step 4: Result will be highlighted Yellow coloured box in the map

(Fire minimum 5 queries)

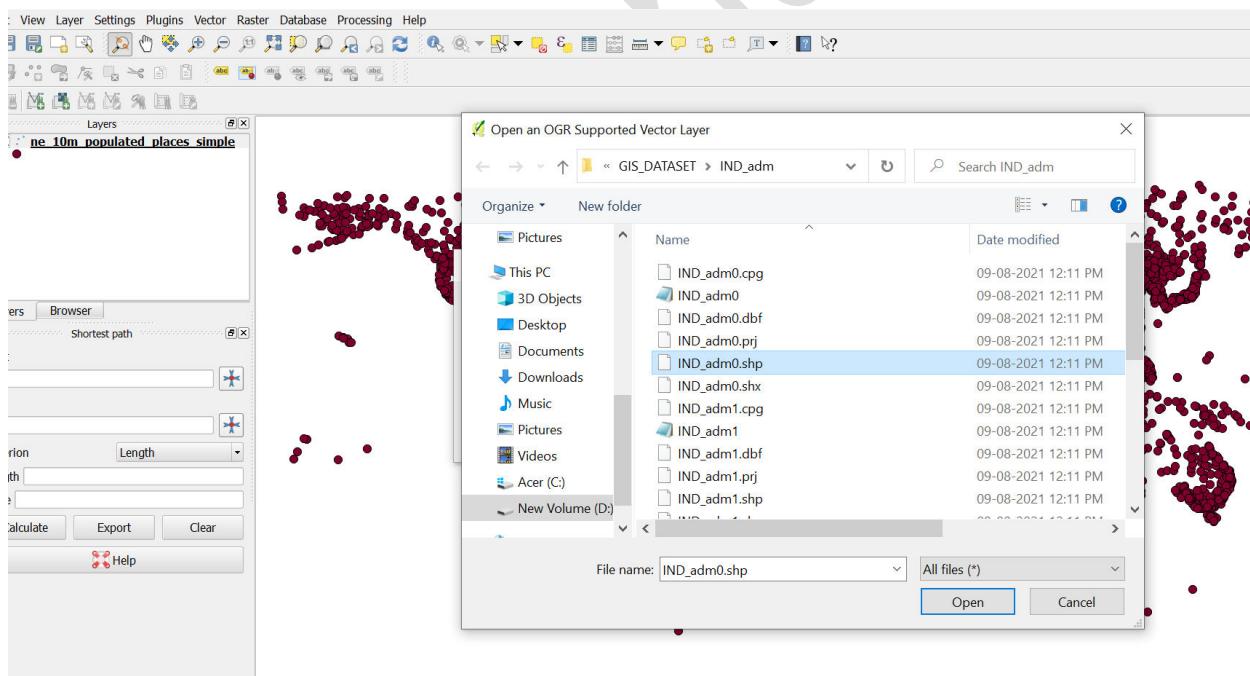


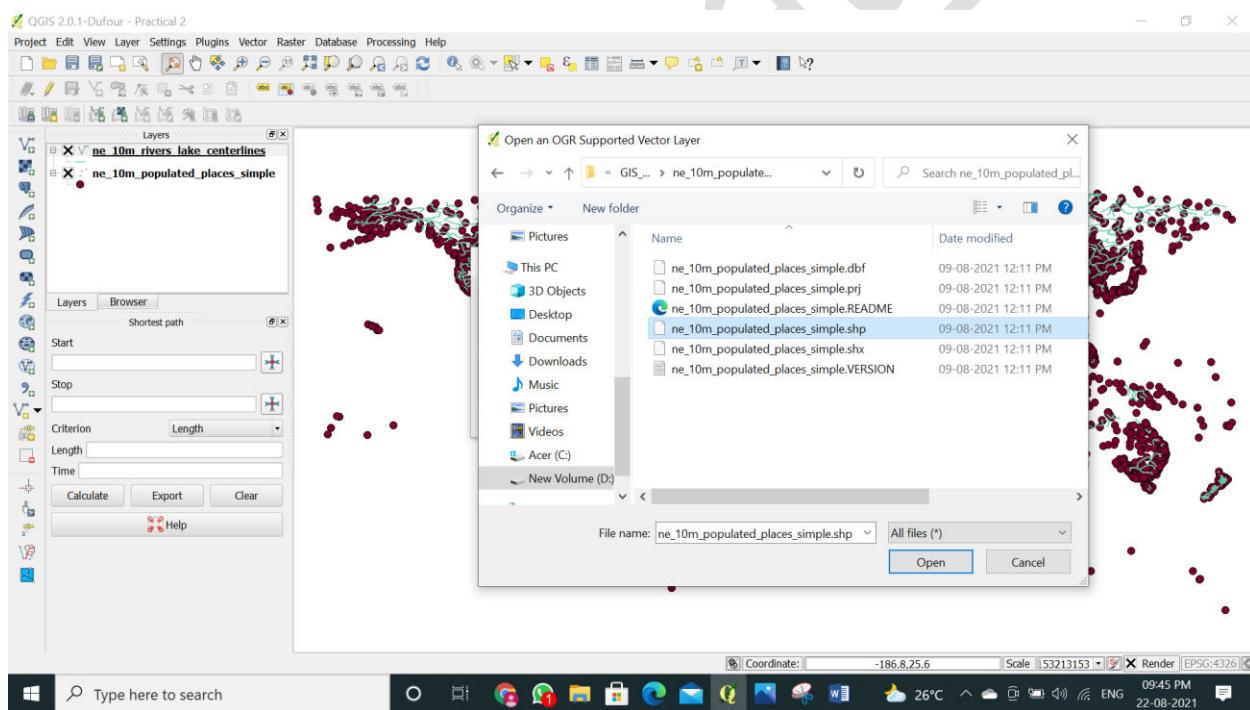
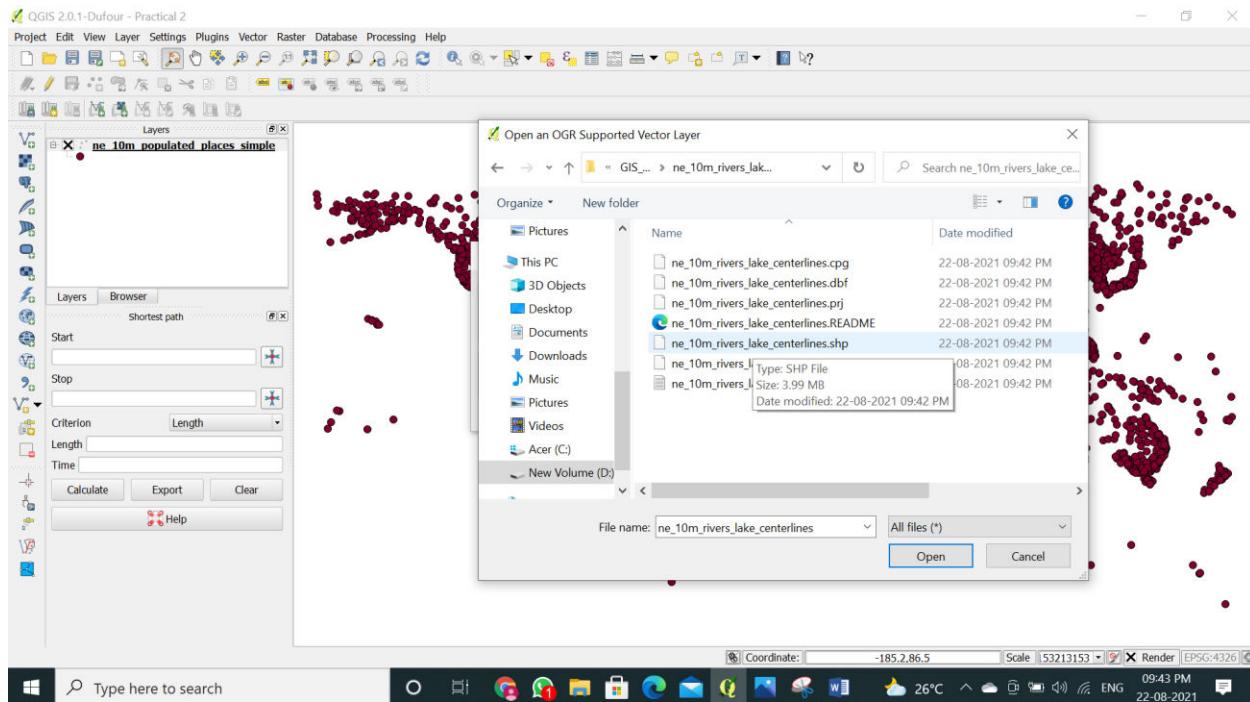
FIRING QUERIES ON EXISTING DATA SET

Step 1: Open the map.

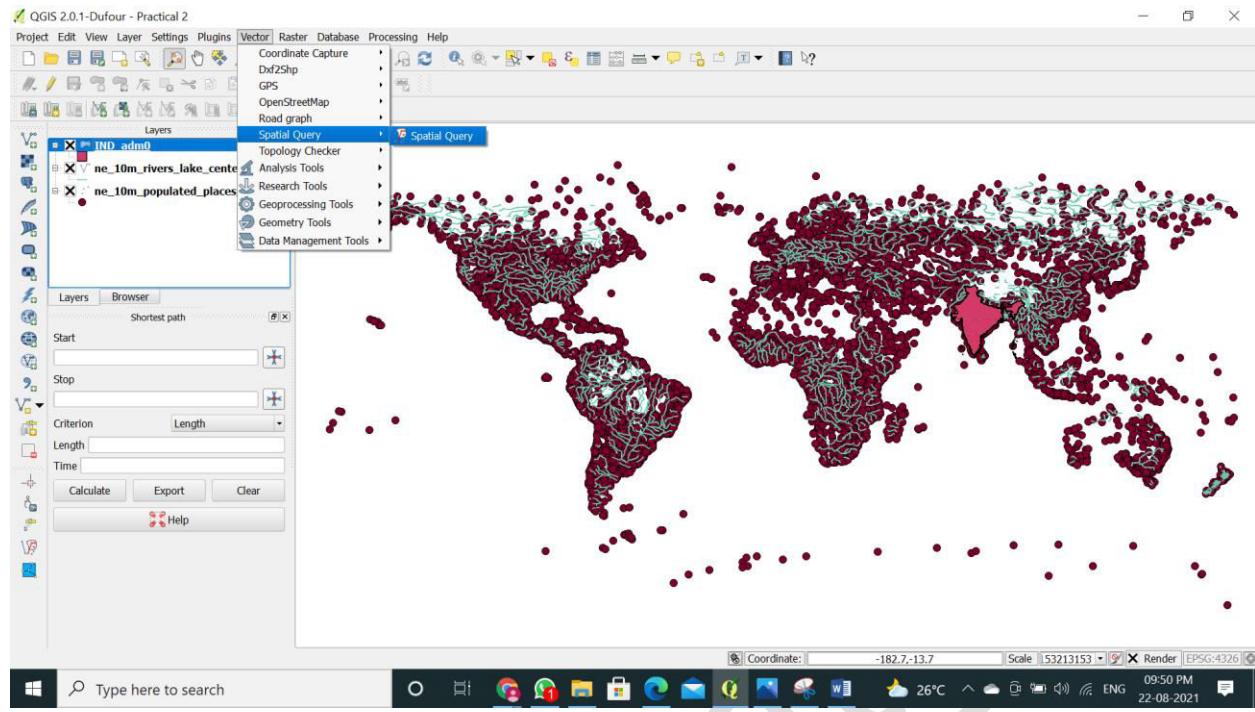


Step 2: Click on layer select “add vector layer” browse and select “IND_adm0.shp”, “ne_10m_rivers_lake_centerlines” and “ne_10m_populated_places_simple”.

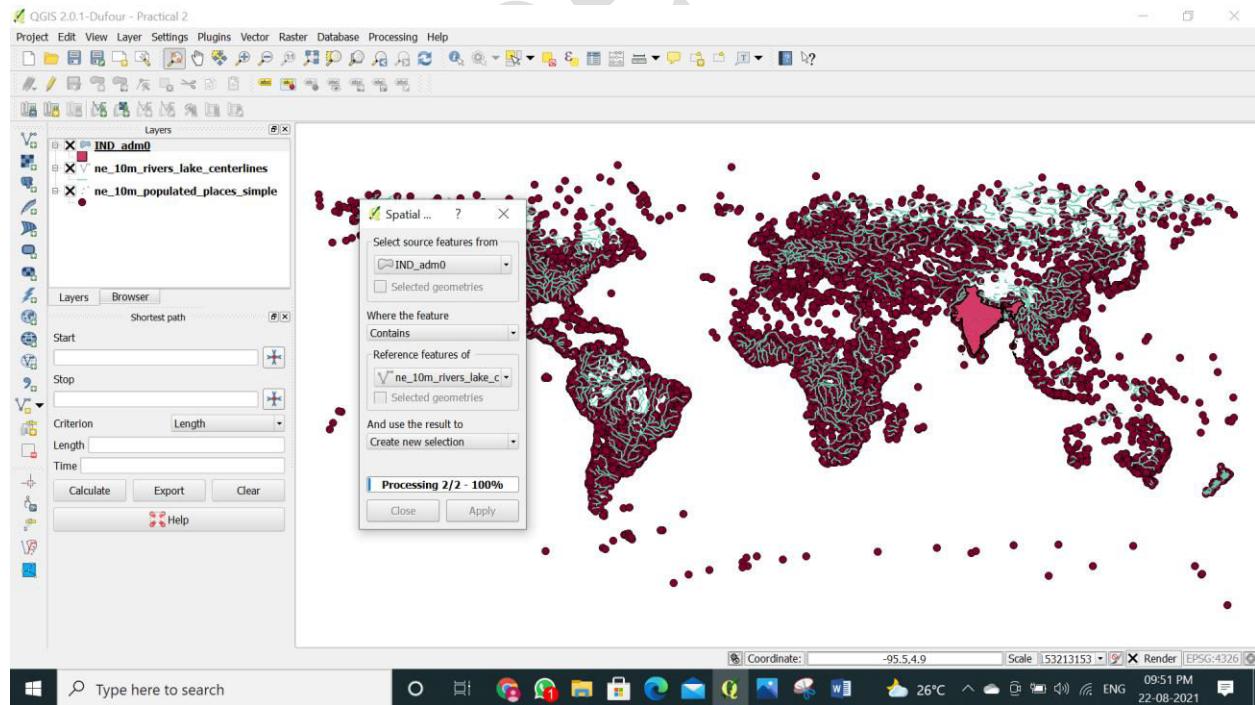




Step 3: Step 2: Click on Vector then Spatial Query - Spatial Query.

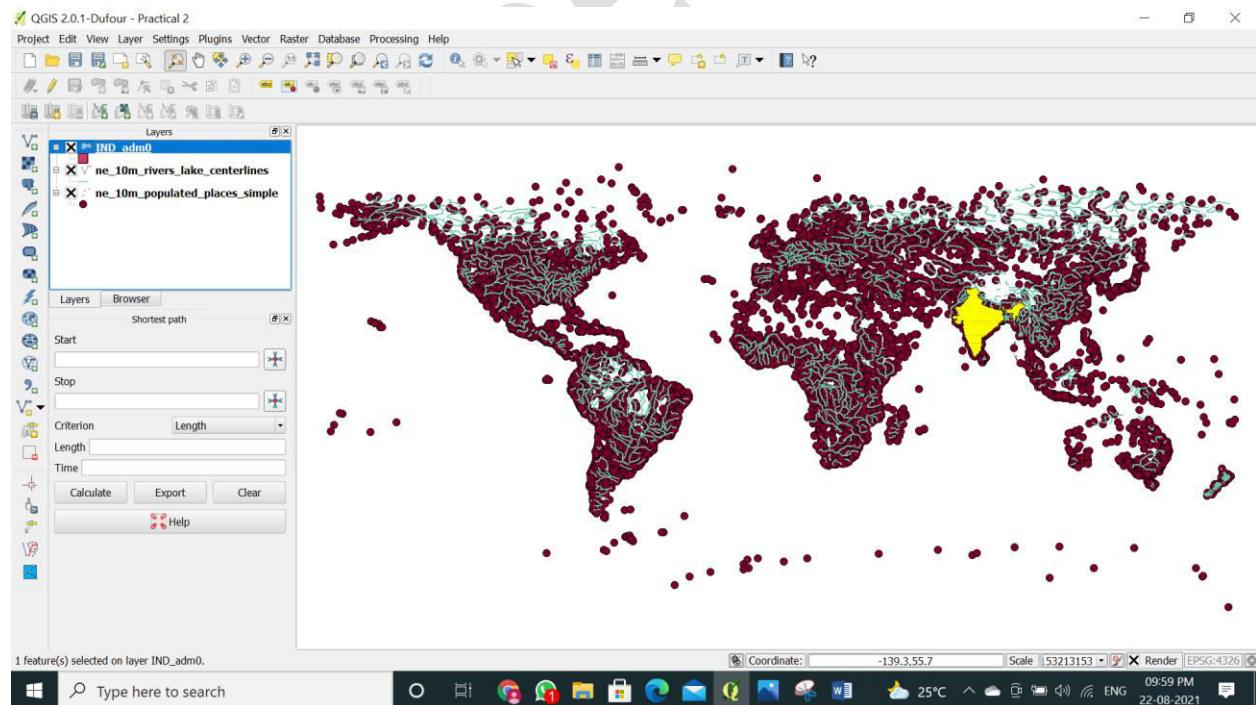
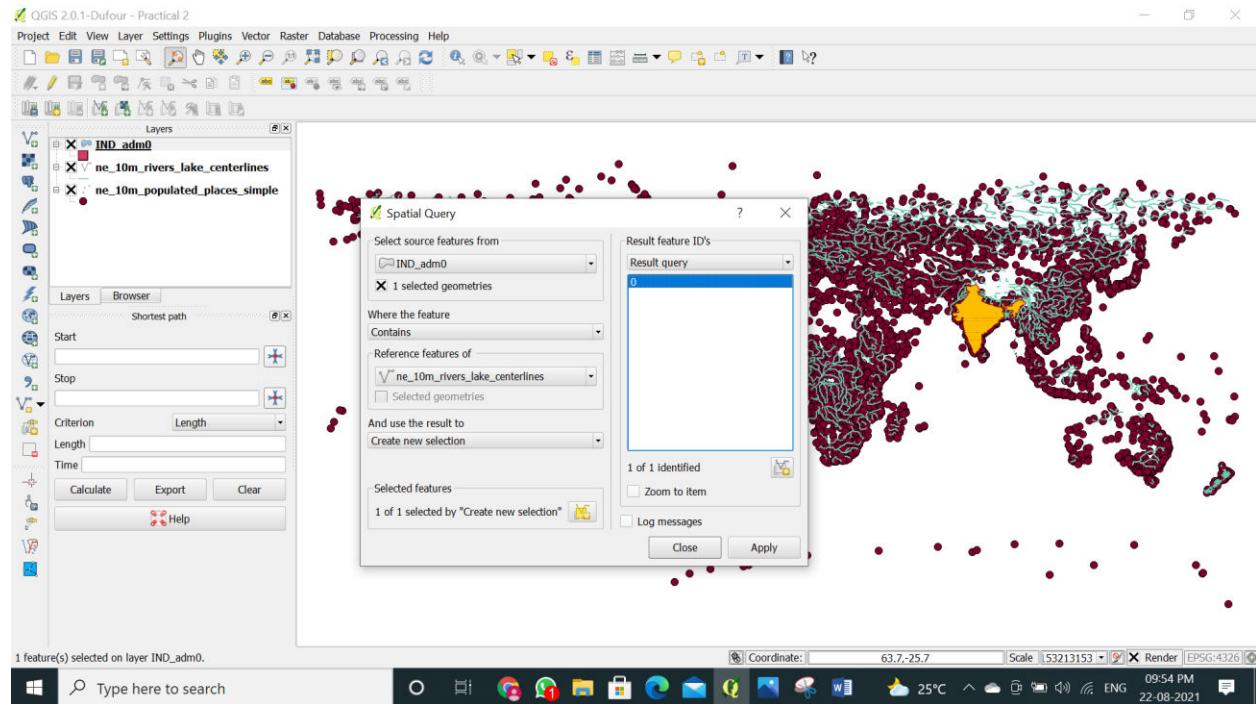


Step 4: On the Spatial Query Window, Select the input layer 1, the relationship and the input layer 2 and Click on “Apply”.



Step 5: Result will be highlighted Yellow coloured box in the map.

(Wait for the result to display as the data set is huge it might take some time)



Practical 4

AIM: Raster Mosaicking and Clipping

A mosaic is a combination or merge of two or more images. In GIS, a single raster dataset can be created from multiple raster datasets by mosaicking them together.

Steps:

MOSAICKING

Step1: Go to Layer → Add Layer → Add Raster Layer.

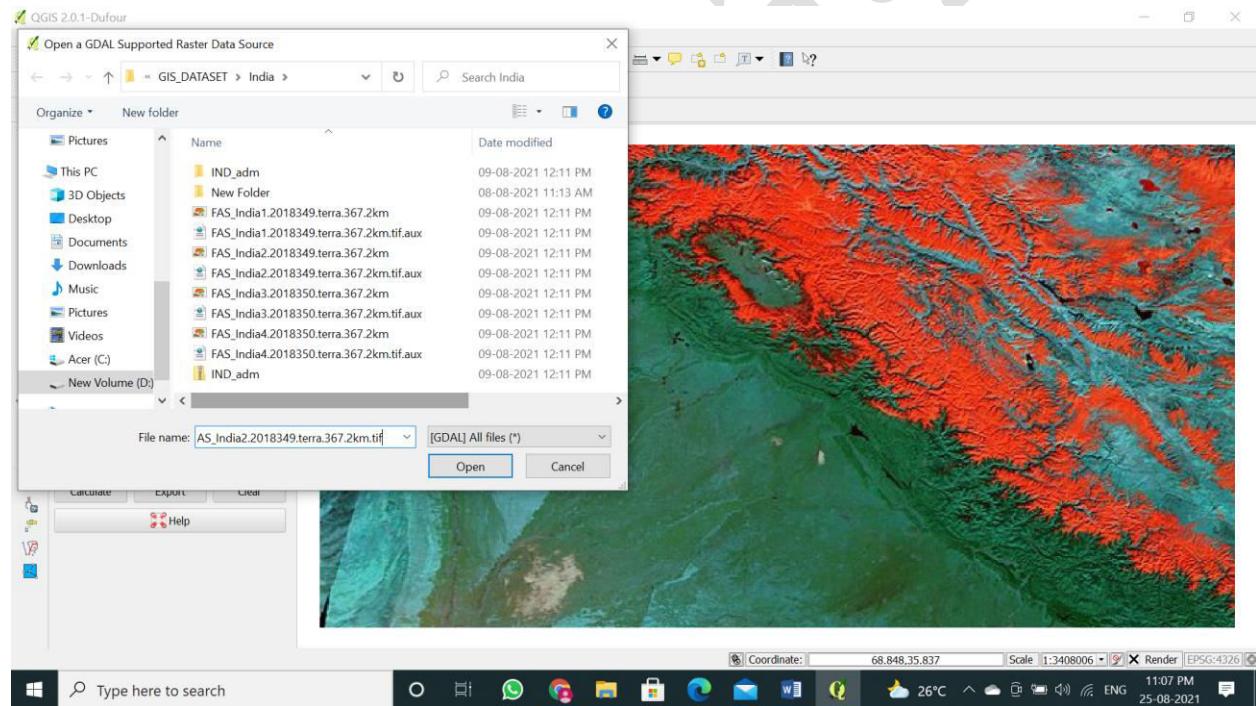
Select the following “.tif” raster images for India from data folder.

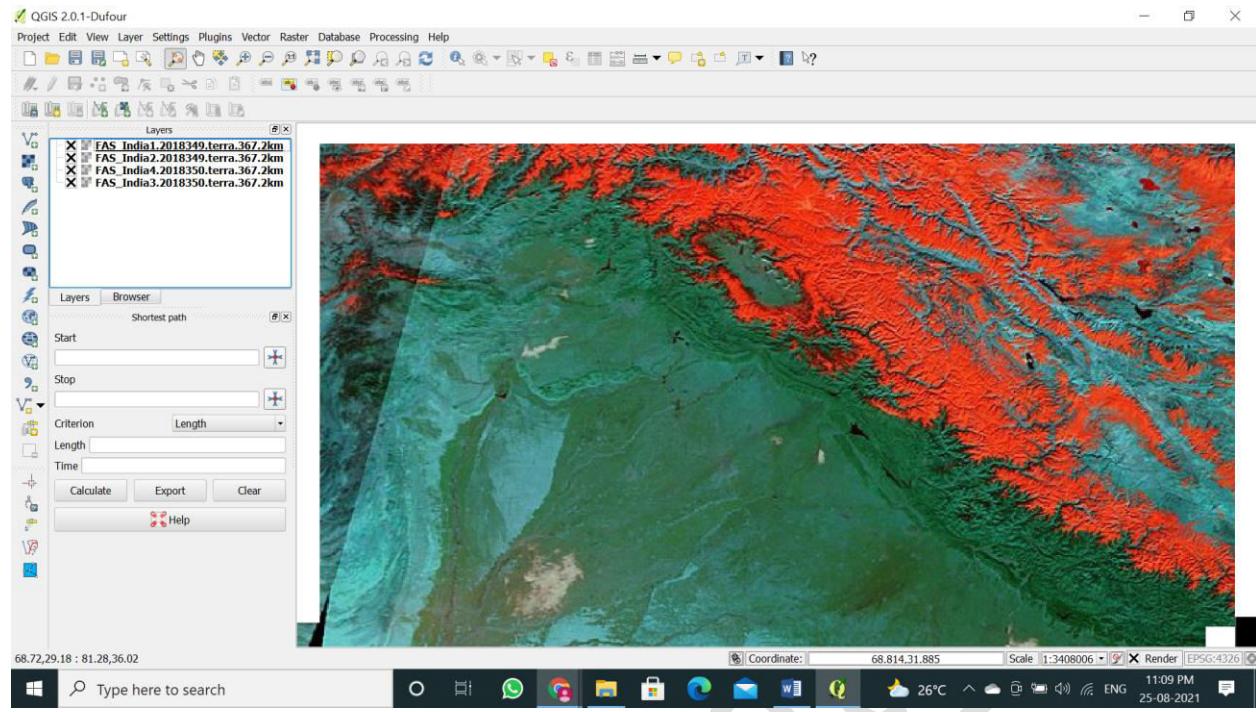
FAS_India1.2018349.terra.367.2km.tif

FAS_India2.2018349.terra.367.2km.tif

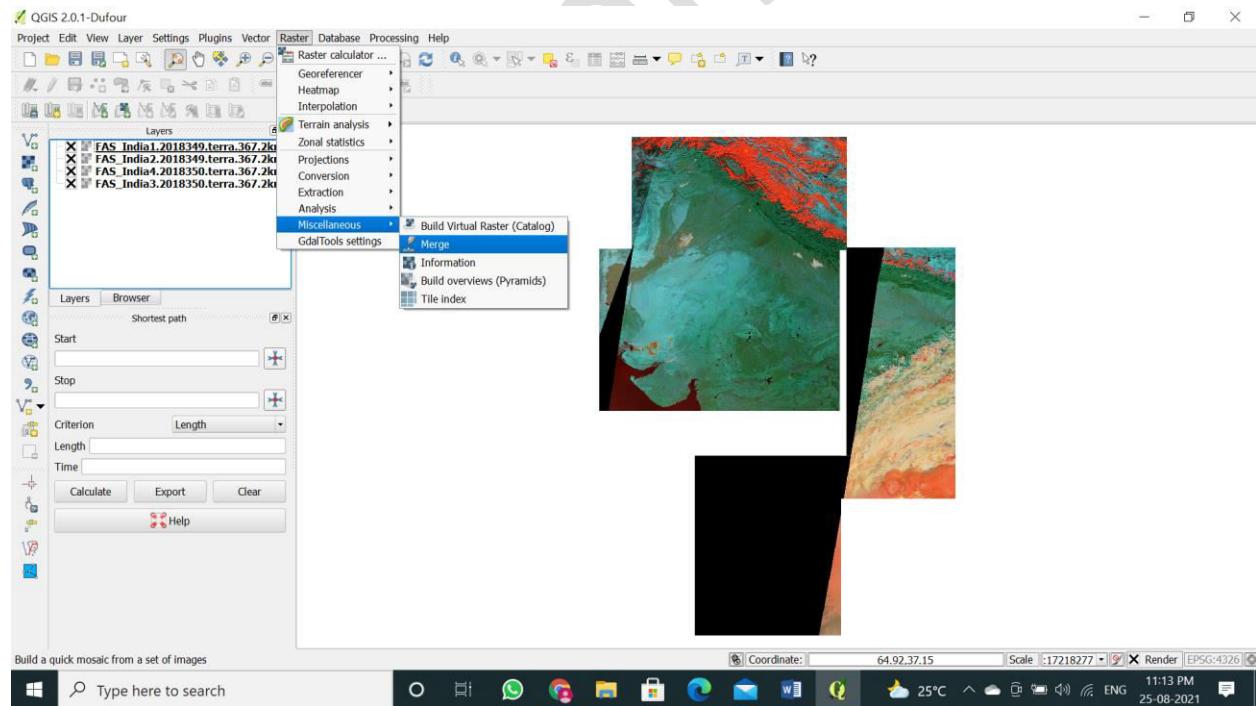
FAS_India3.2018349.terra.367.2km.tif

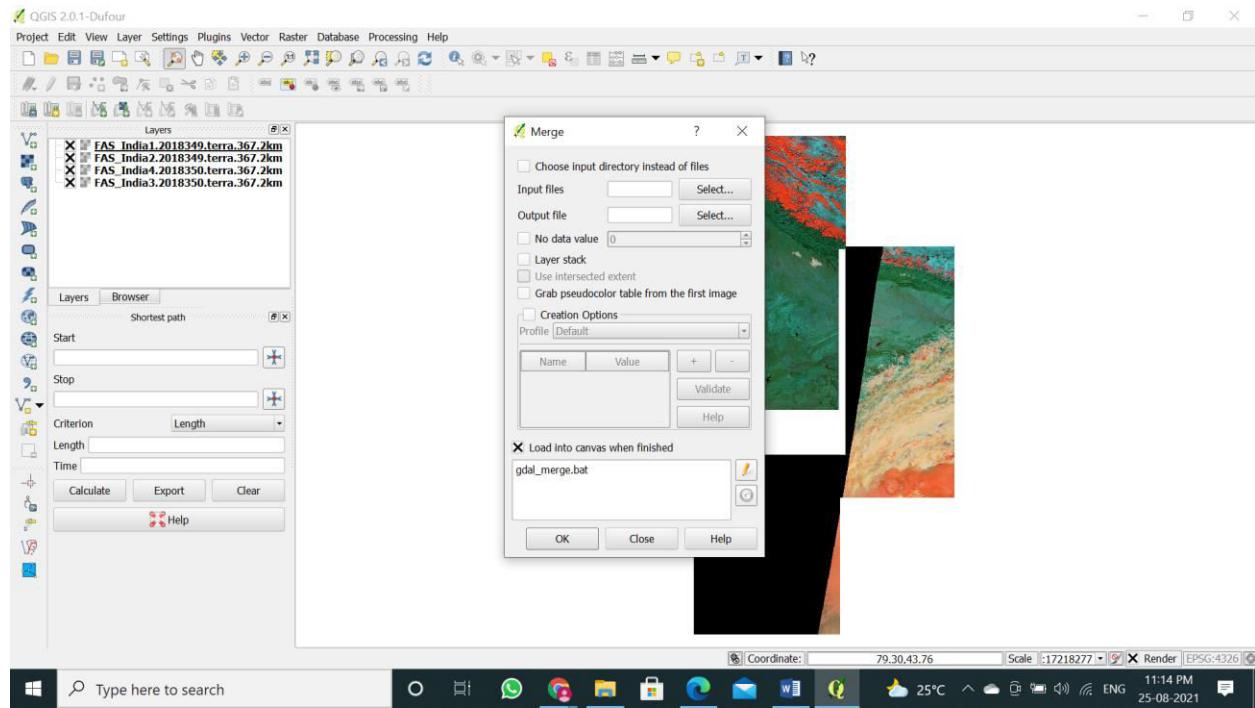
FAS_India4.2018349.terra.367.2km.tif



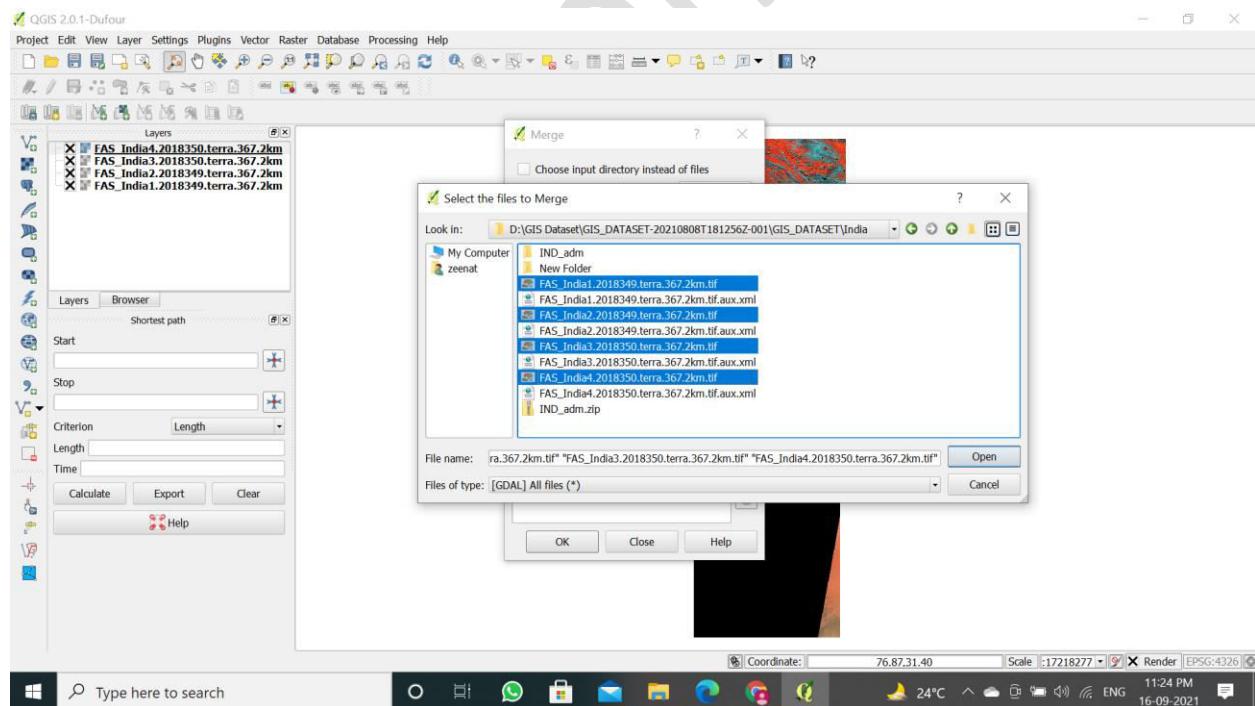


Step 2: Go to Raster → Miscellaneous → Merge

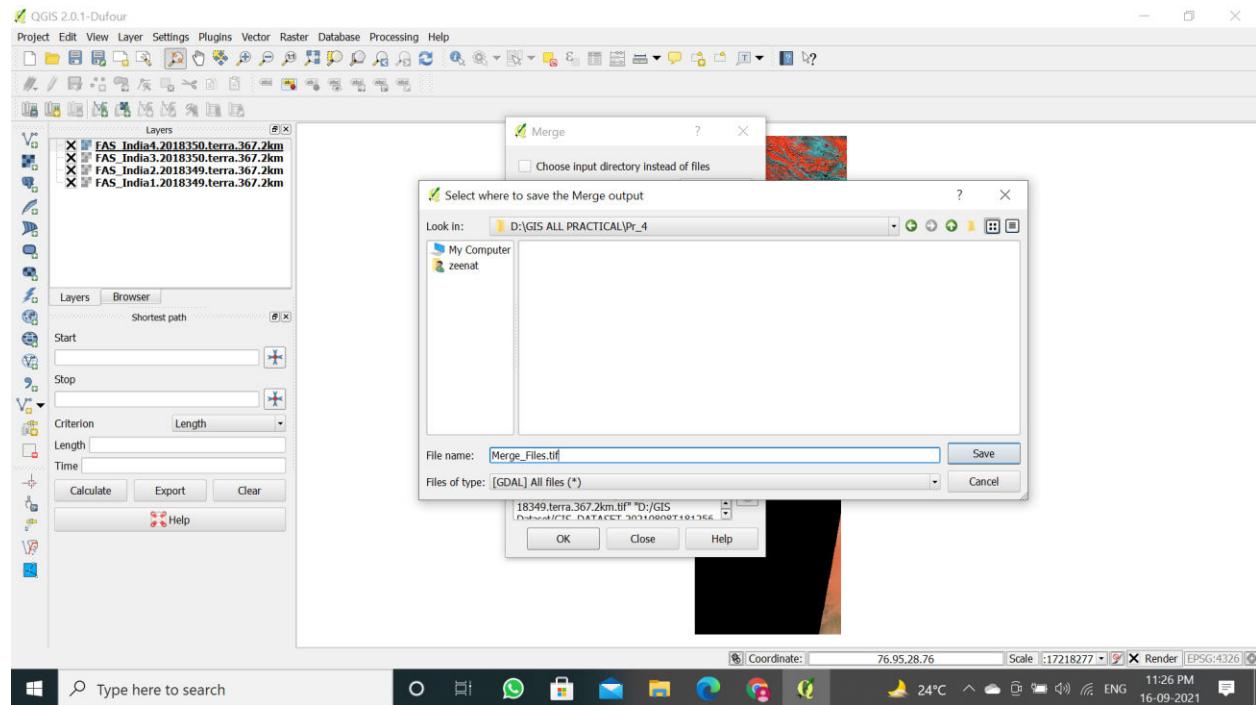




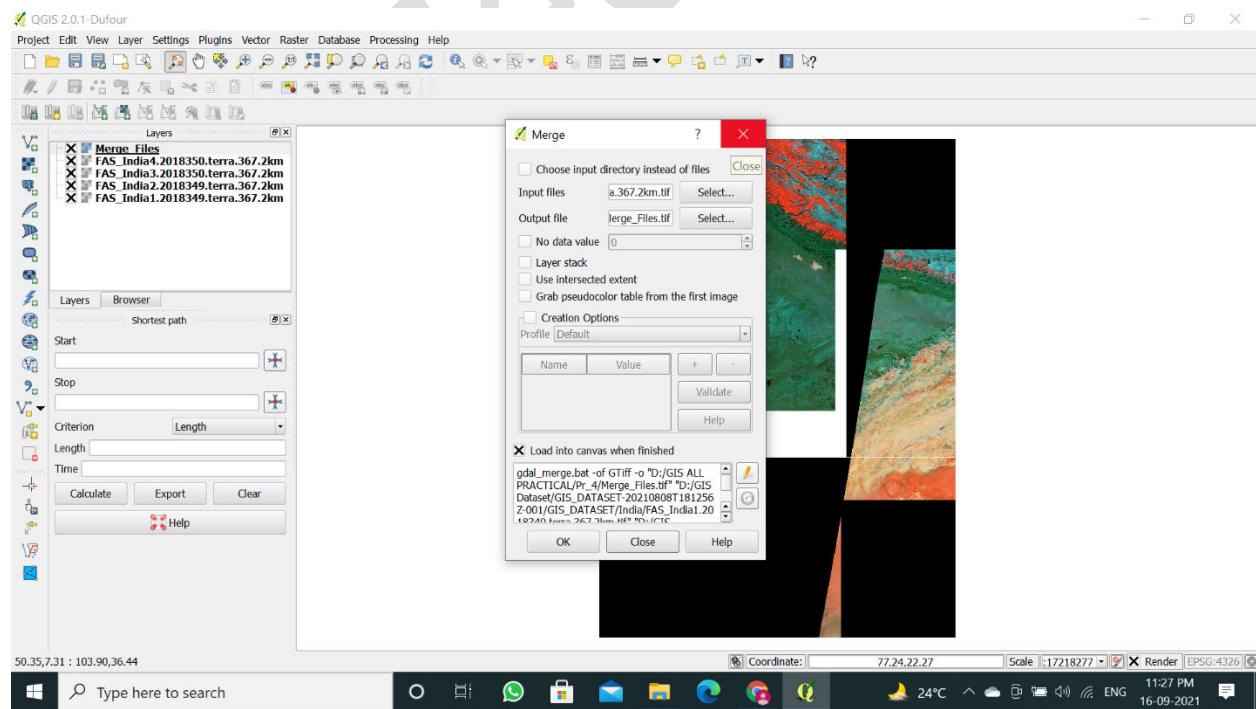
3. In the Merge dialog window, Click on Select of Input Files Select all layers and Press OK.

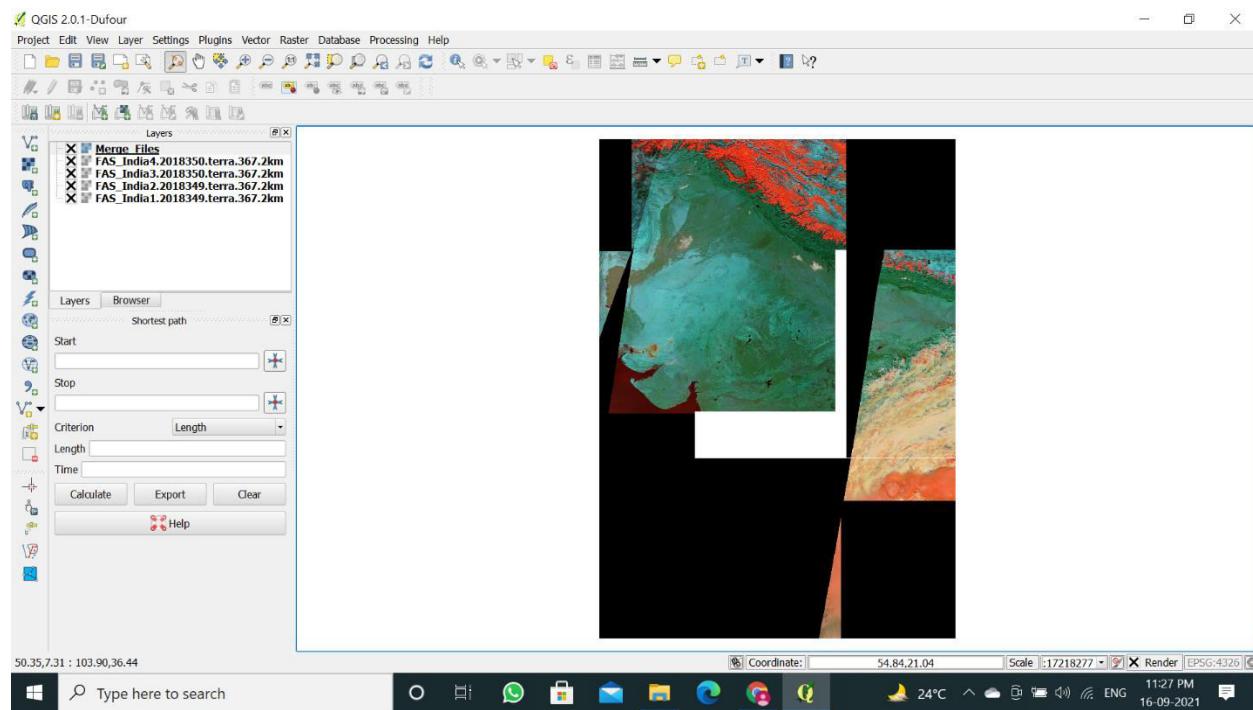


4. In Merge dialog window select a file name and location to save merged images.
(Merge_Files.tif)



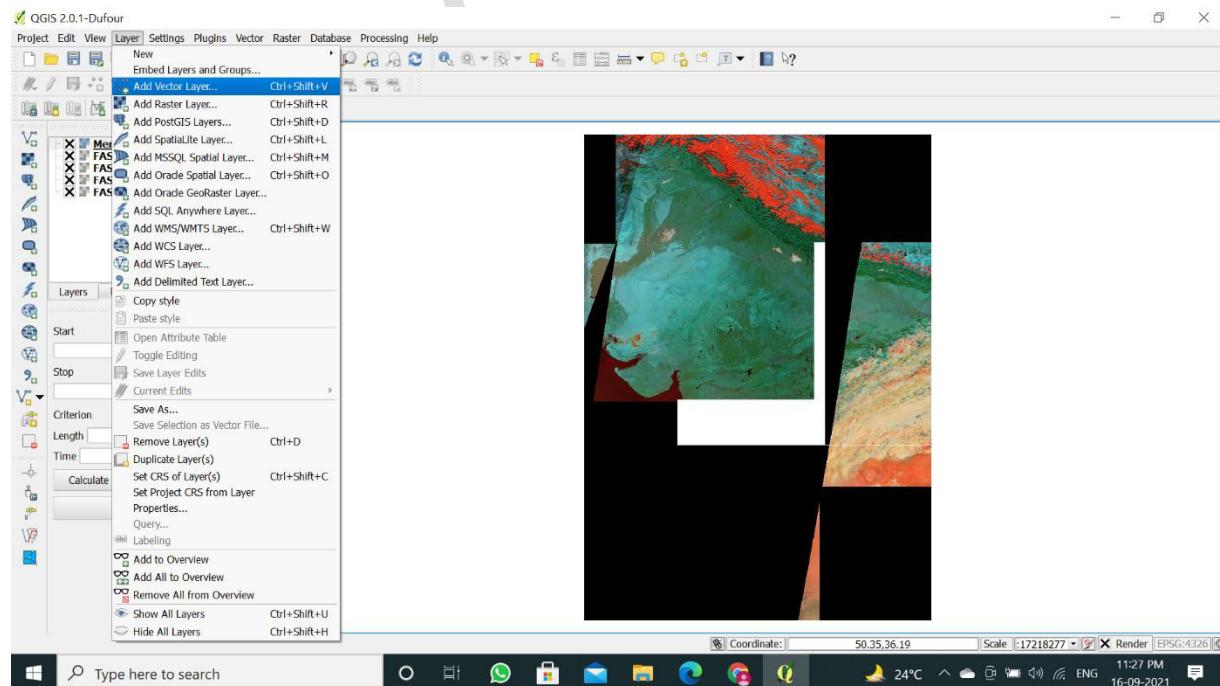
5. Press Run and after completion of operation close the Merge window dialog box

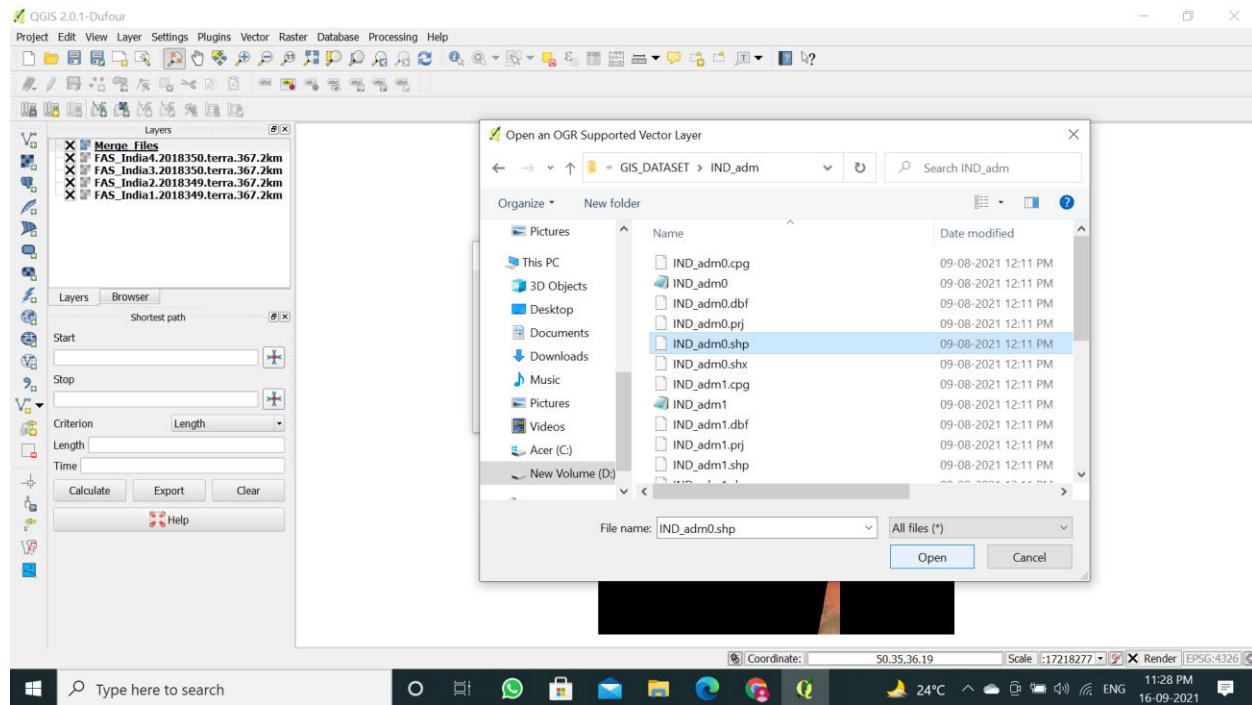




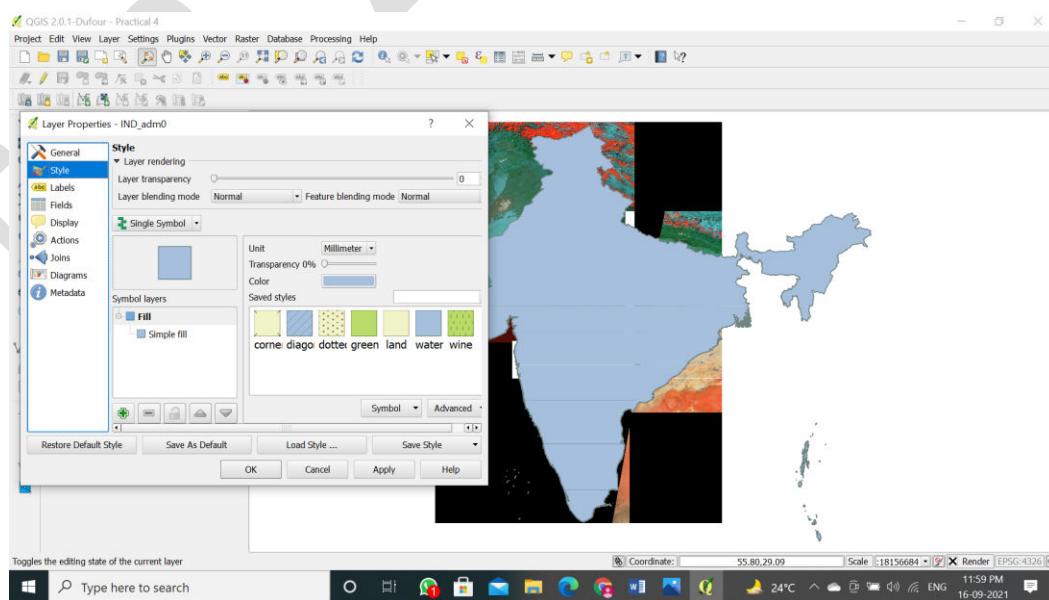
CLIPPING BOUNDARY

1. Go to layer □ Add layer □ Add Vector Layer and add the following file to your project:
IND_adm0.shp



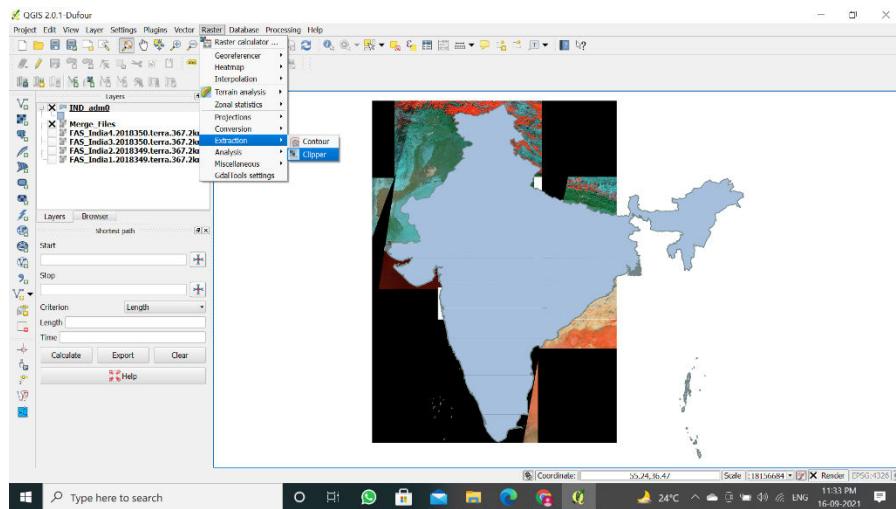


2. Right click on IND_adm0 and go to symbology. Click on any outline color, apply and then OK.

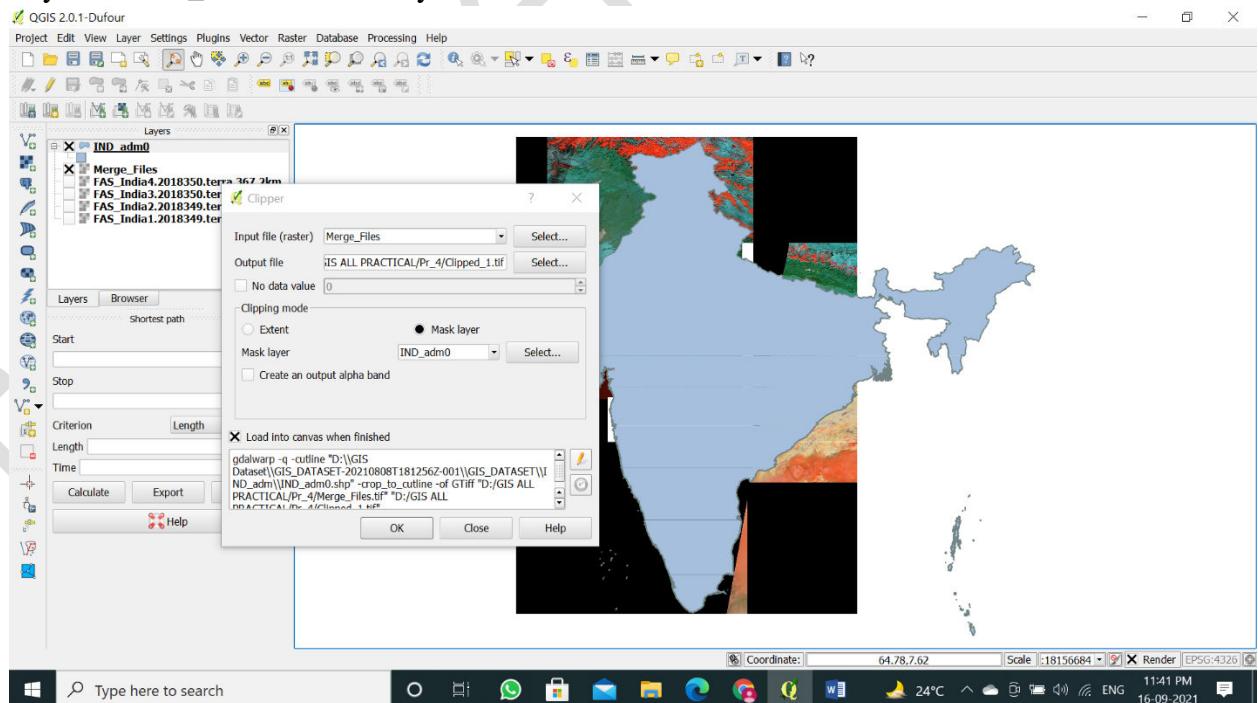


CLIPPING

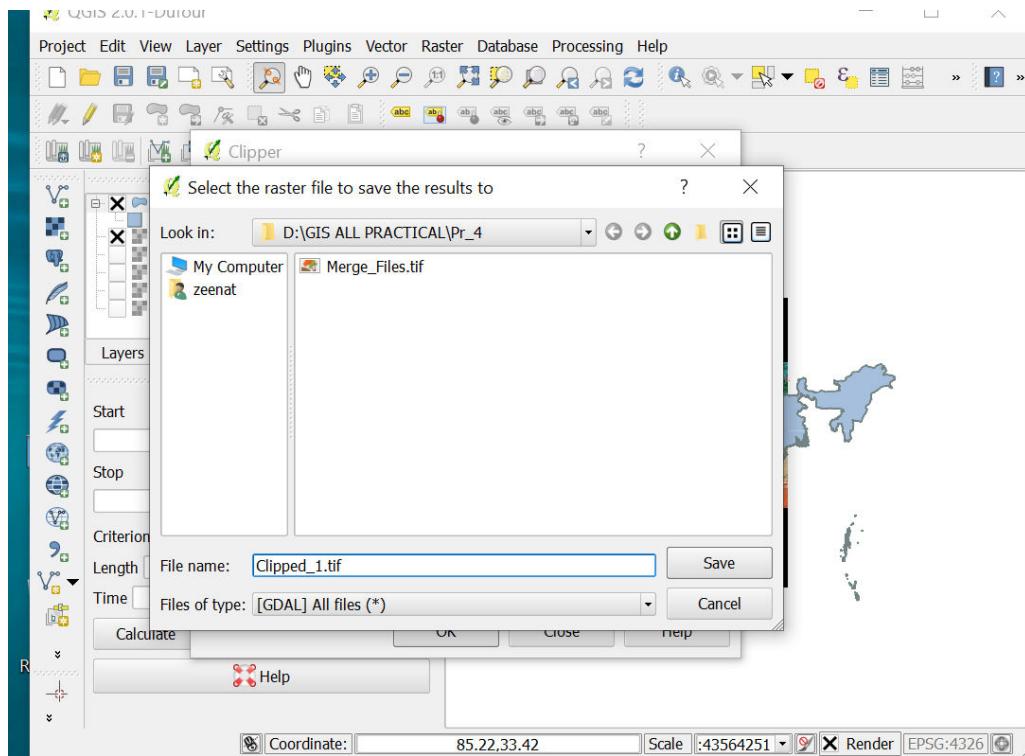
1. Go to Raster → Extraction → Clipper.



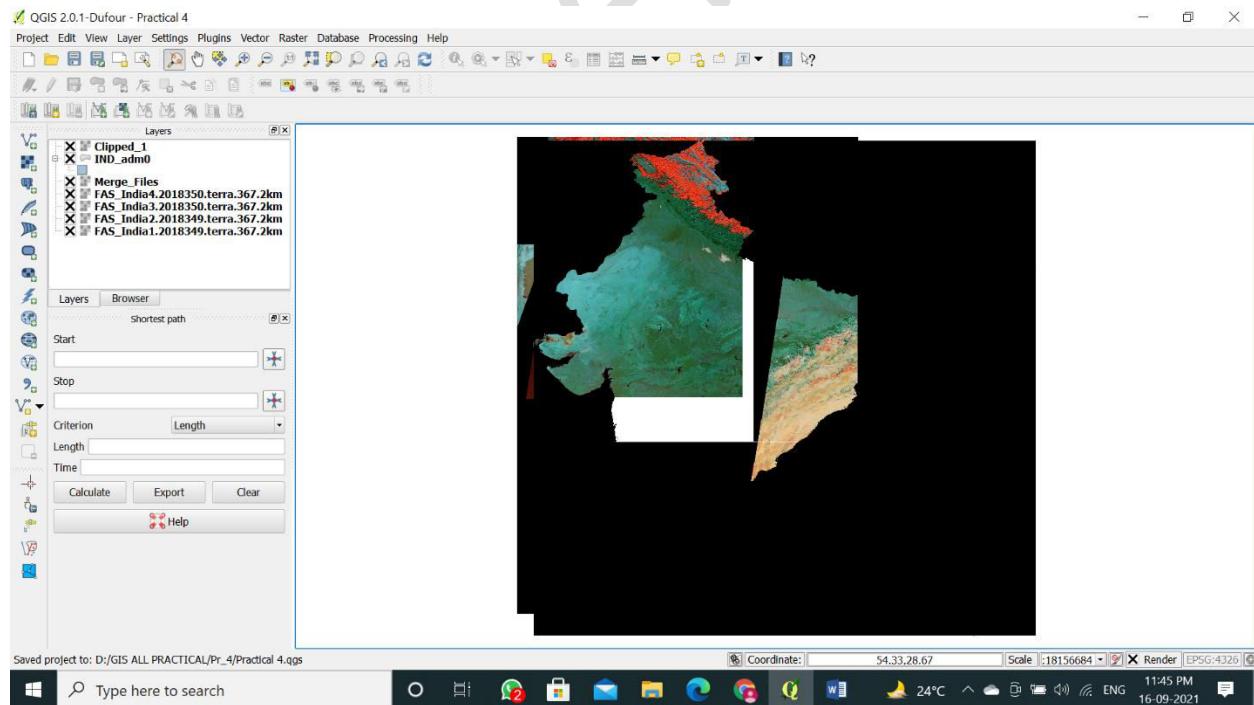
2. Select the merge raster image as input (merge.tif), Saving output file, click on Mask Layer and Ind_adm0 as mask layer.



3. Select a file name and location for clipped raster as Clipped_File.tif.



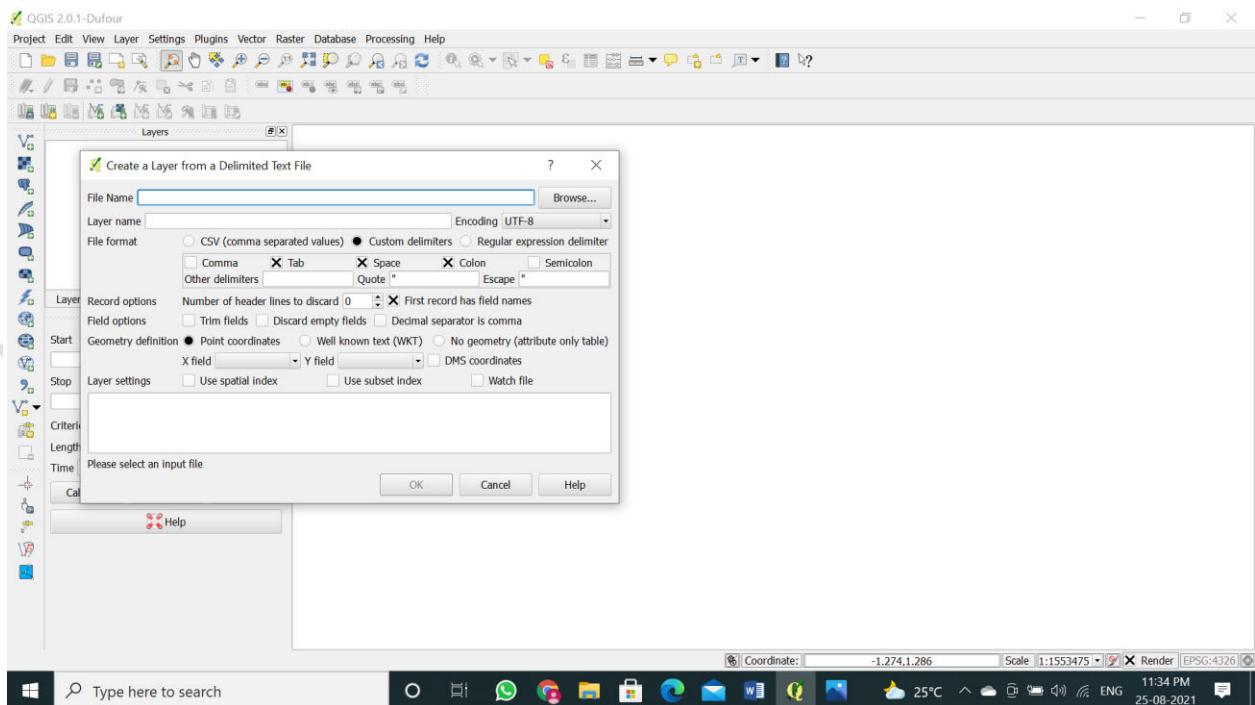
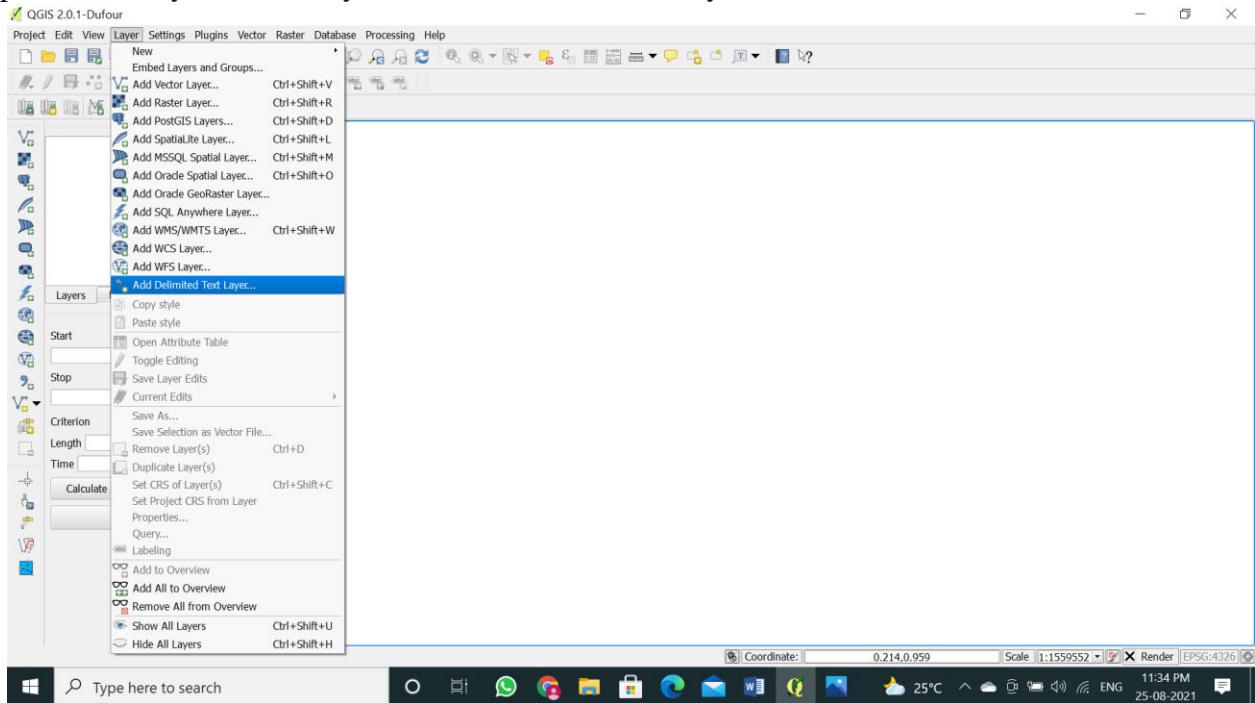
4. Press RUN



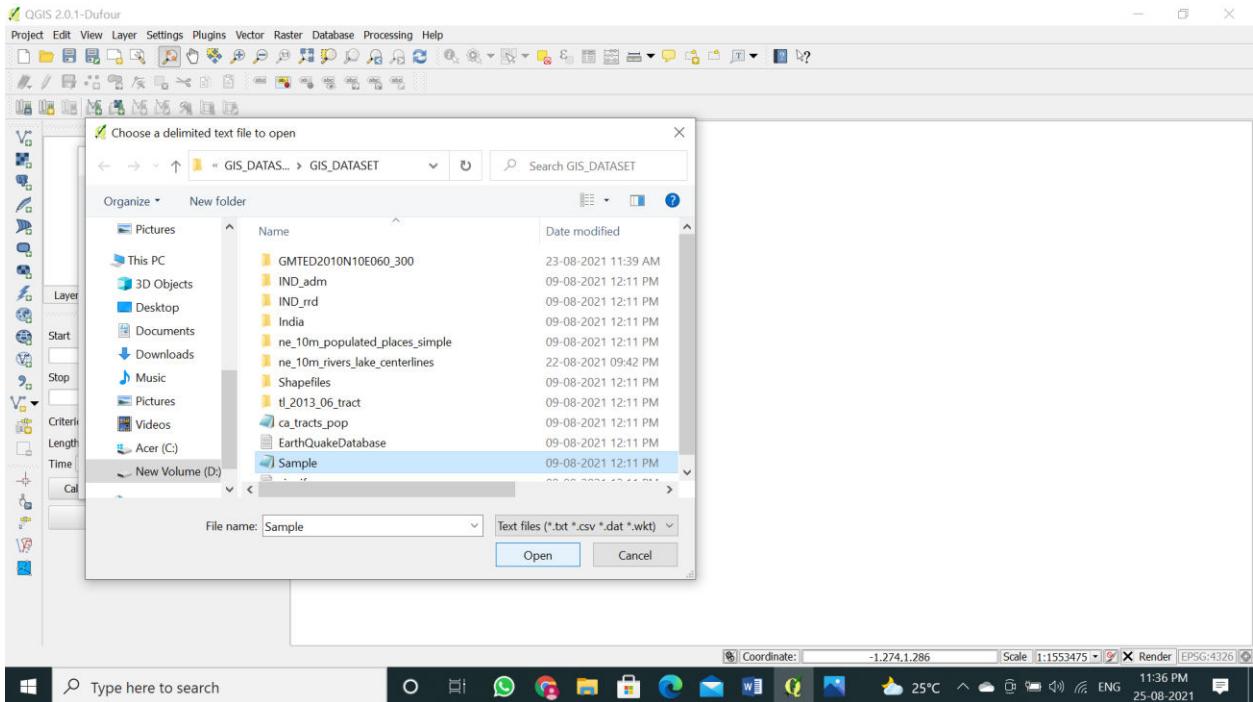
Practical 5

Aim: Importing Spreadsheets or import CSV Files.

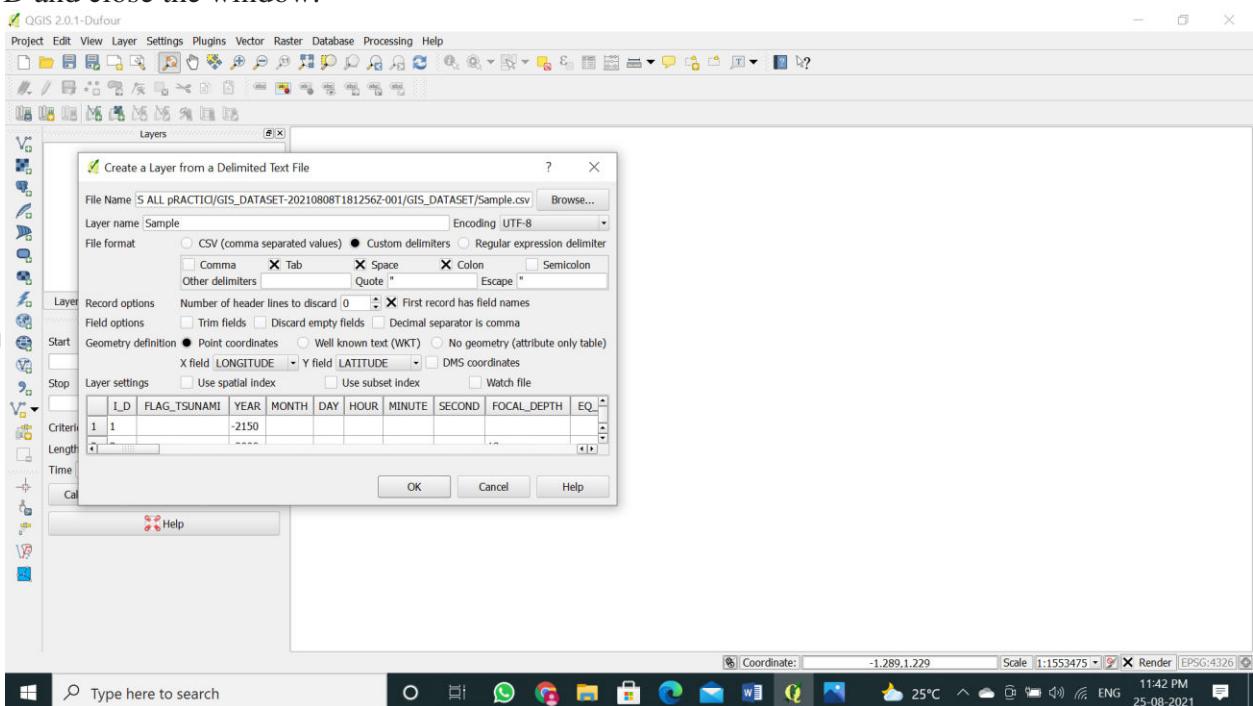
Step 1: Go to Layer > Add Layer > Add Delimited text Layer

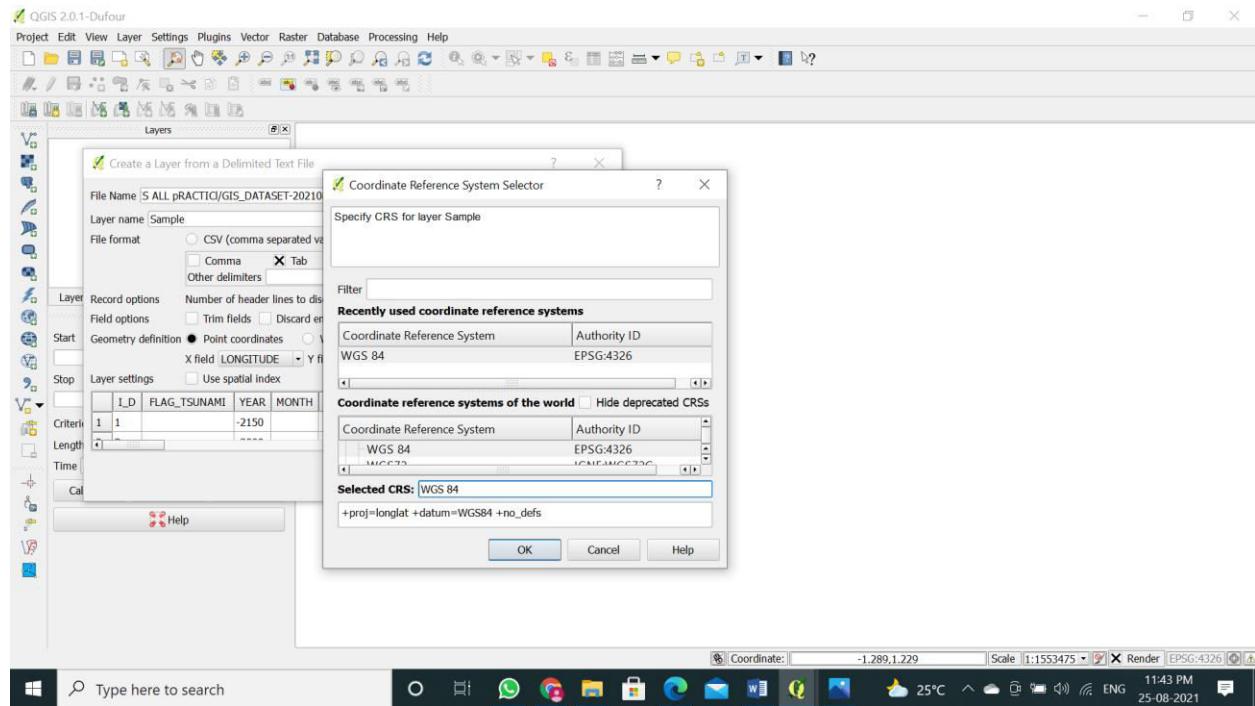


Step 2: Data Source Manager | Delimited Text window will appear and select the Sample.csv file from data folder.

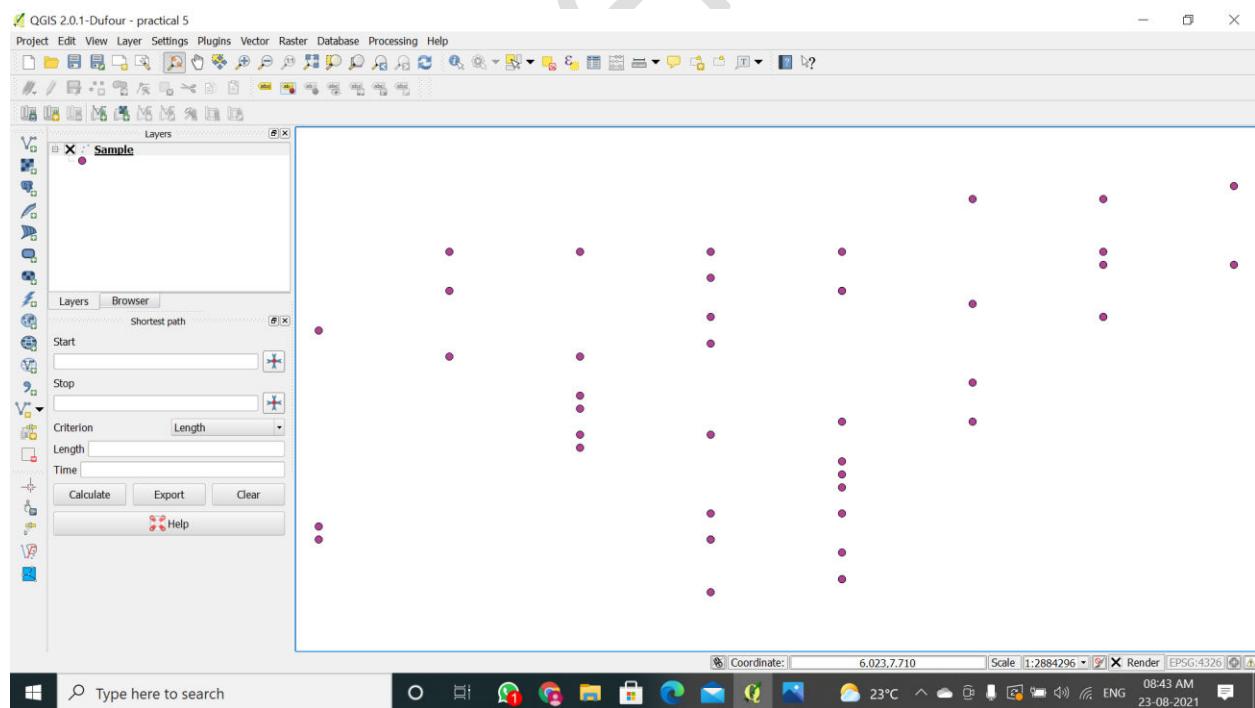


Step 3: Make following changes: under delimited Text CHECK TAB, COLON, SPACE
Geometry definition X – Longitude, Y – Latitude geometry CRS EPSG:4326-WGS 84 • Press ADD and close the window.





Step 4: Press Add and Close the Window



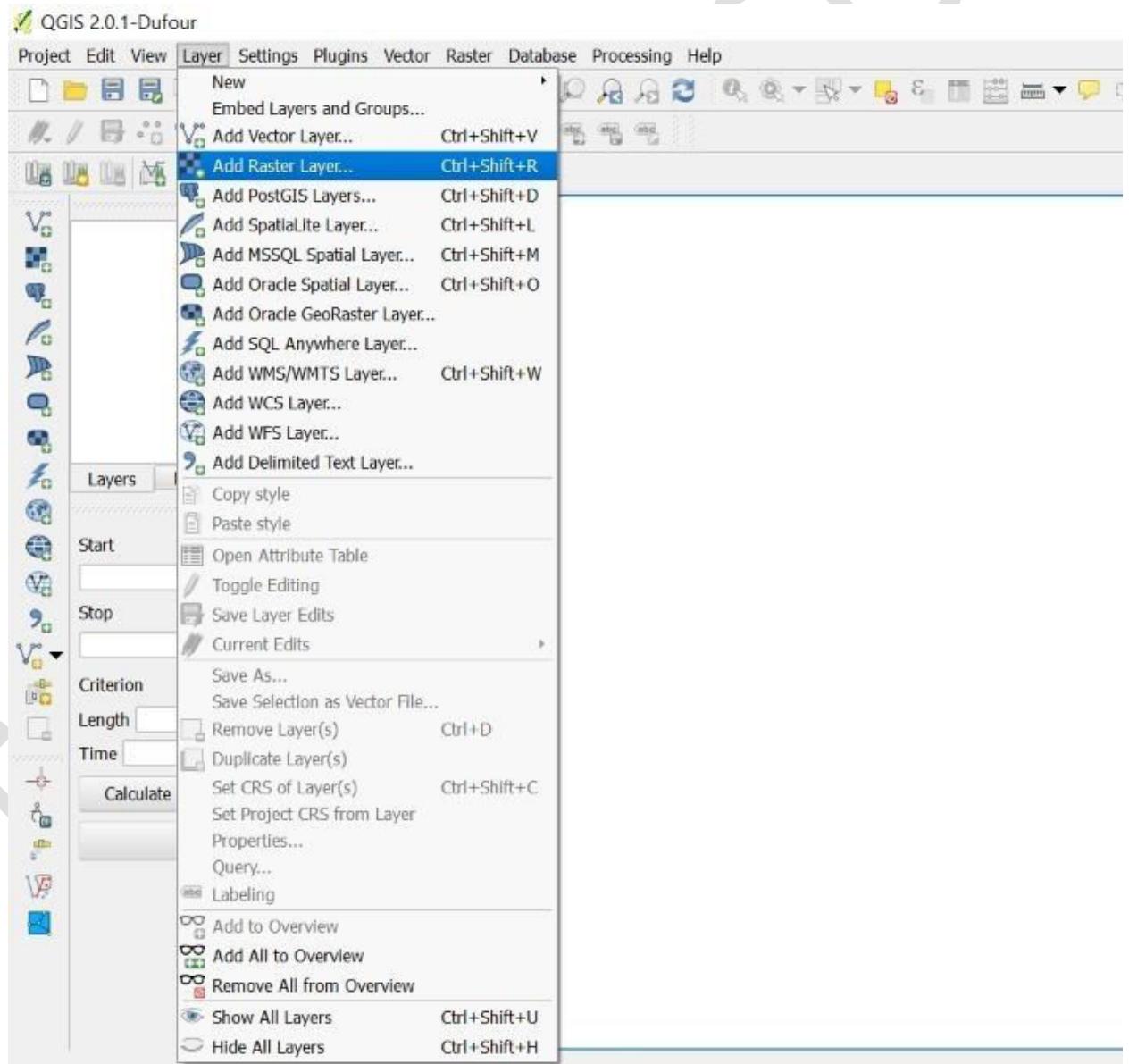
Practical 6

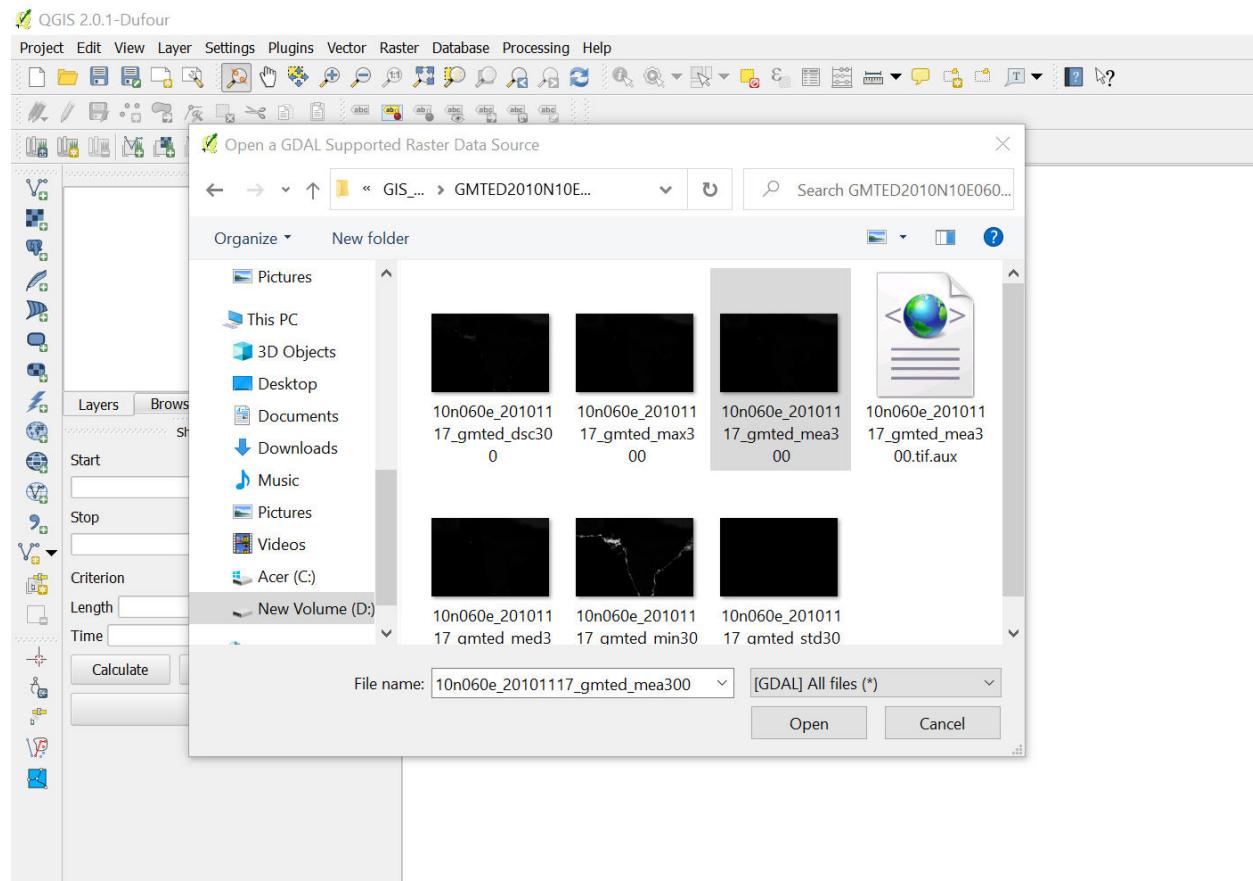
Aim: Working with Attributes, Terrain Data Analysis

A terrain dataset is a multiresolution, TIN based surface built from measurements stored as features in a good database. Terrain or elevation data is useful for many GIS analysis like, to generate various products from elevation data such as contours, hillshades etc.

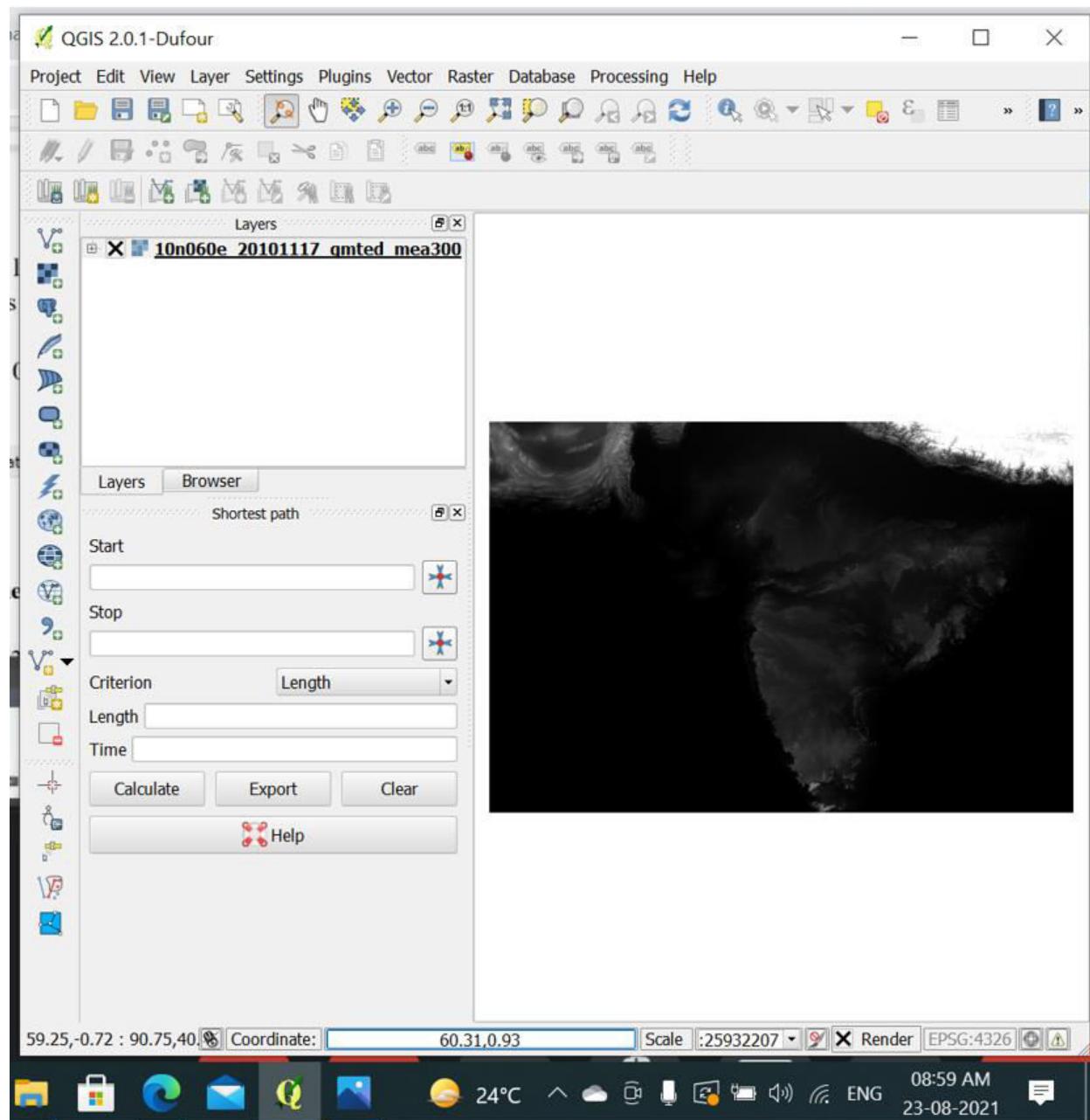
1. Go to Layer > Add Raster Layer > Select

“10_n006e_20101117_gmted_mea300.tif”, from Data Folder

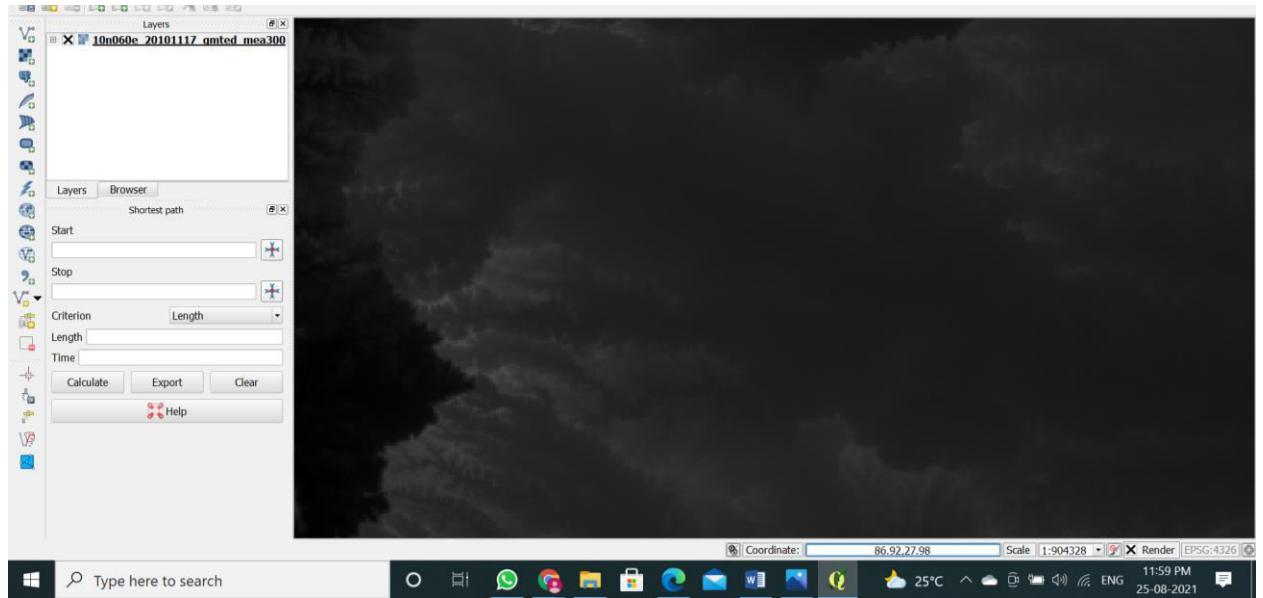




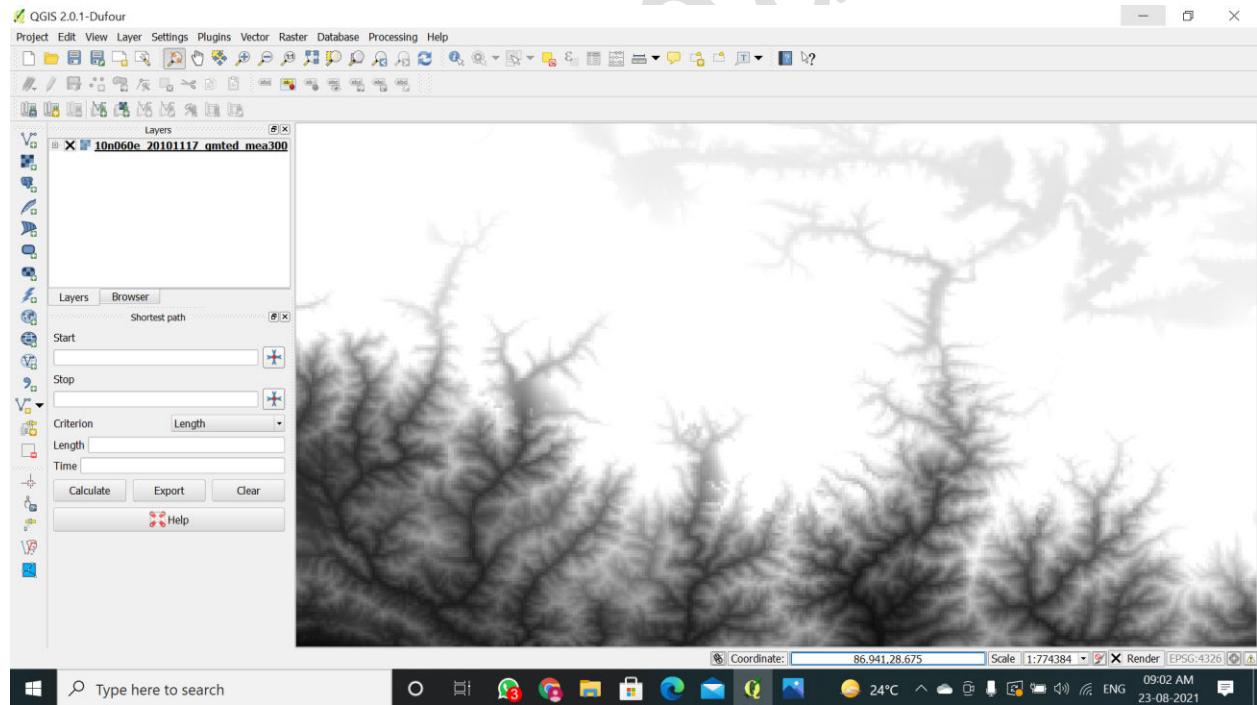
2. The Lower Latitude region are shown using dark color and highest using light shade as seen on top region containing Himalaya and Mt Everest – is located at the coordinates 27.9881 Degree N 89.9253 Degree E.



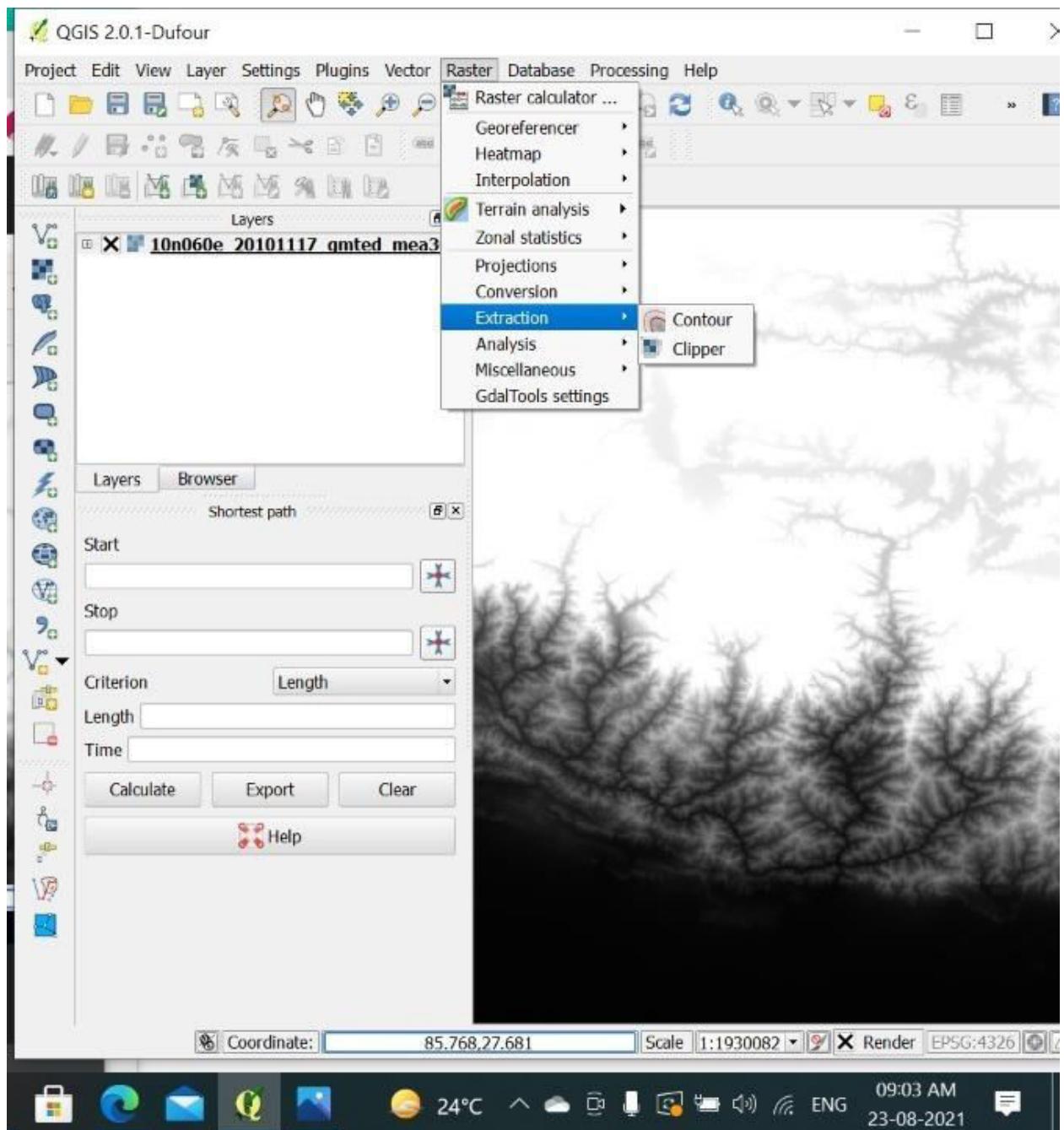
3. Enter 86.92,27.98 in the coordinate field , Scale 900000 and Magnifier 100% at the bottom of QGIS

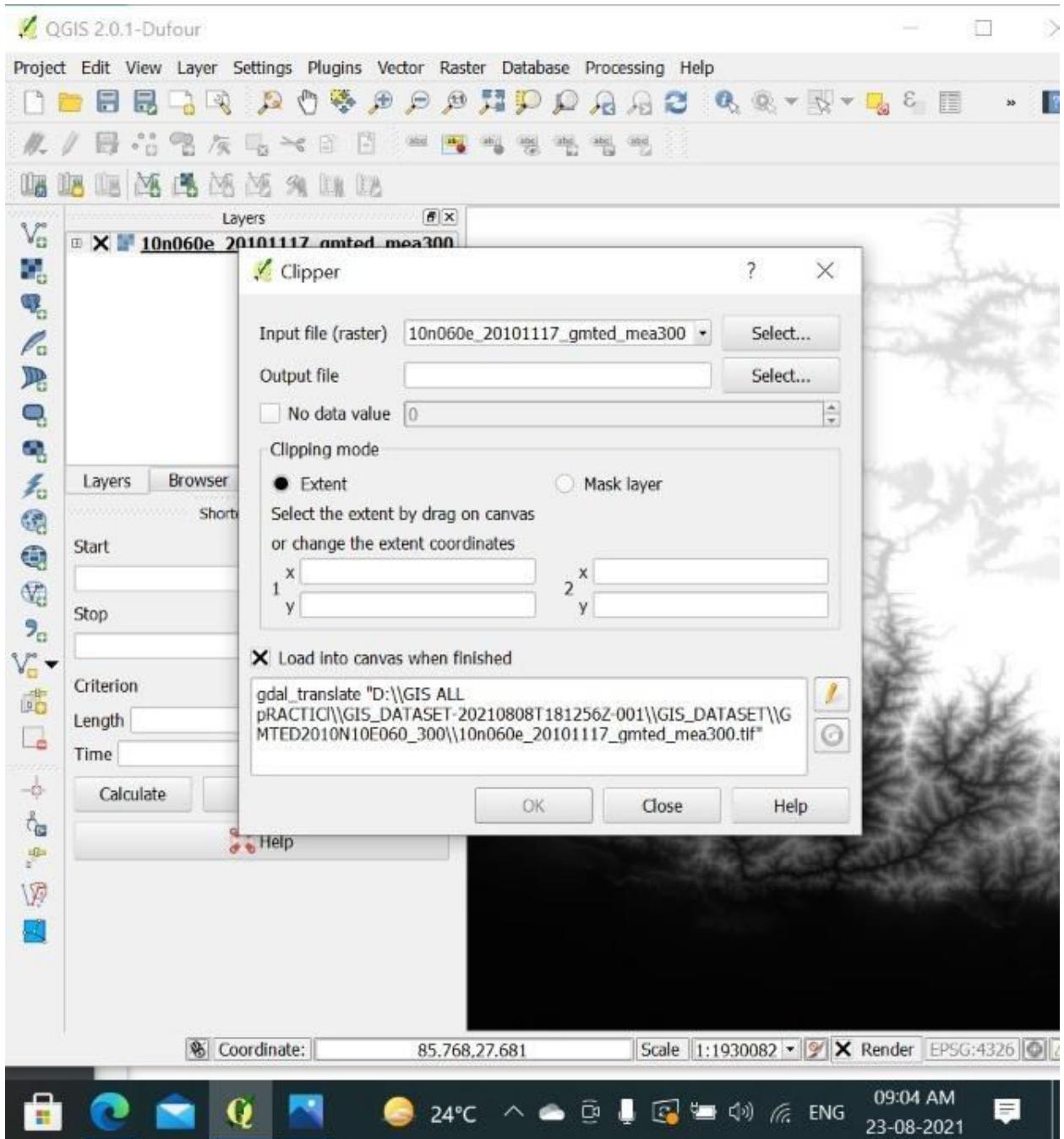


4. Press enter the view port will be centered on Himalaya Region.



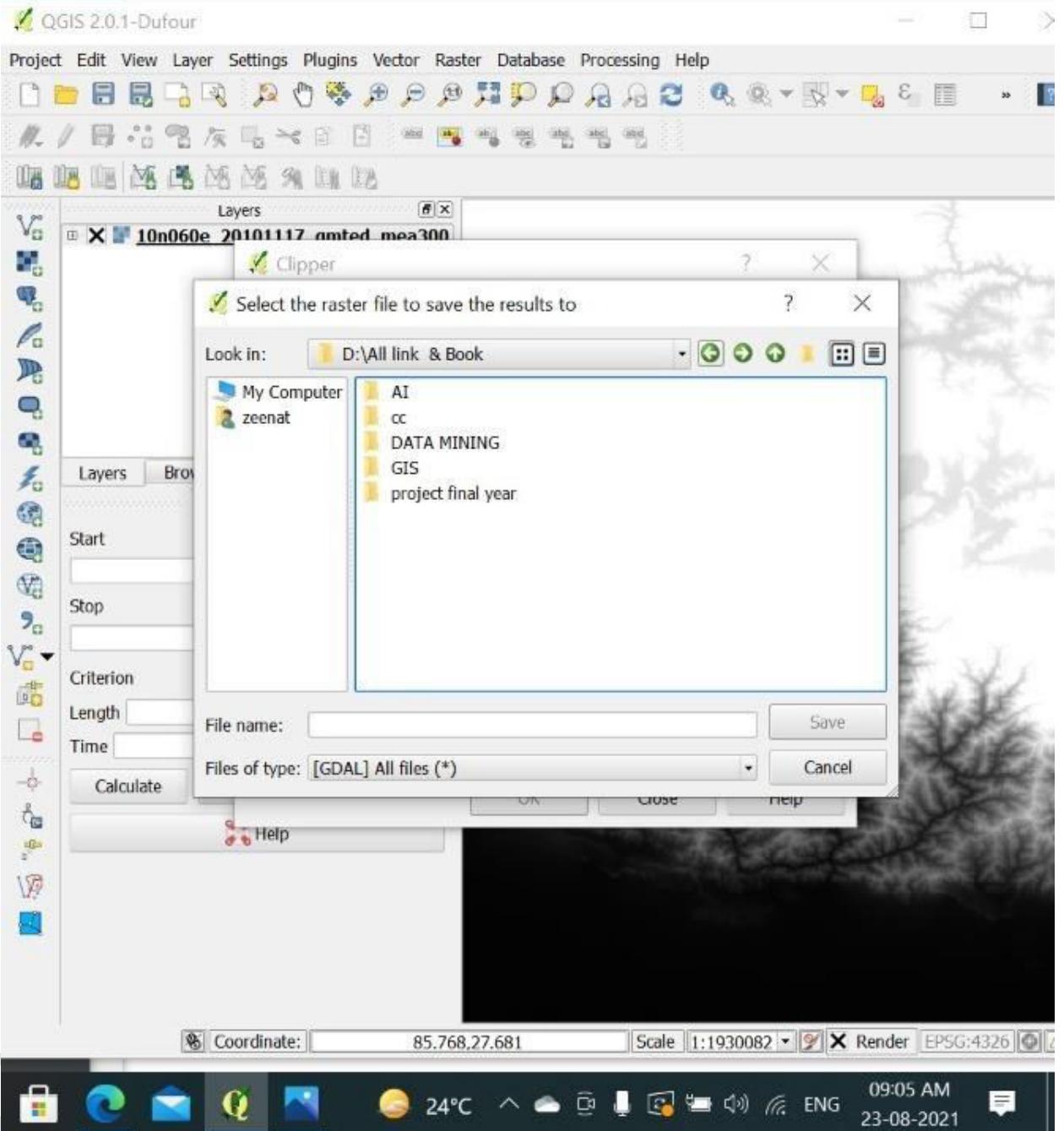
5. Go to Raster > Extraction > Clipper

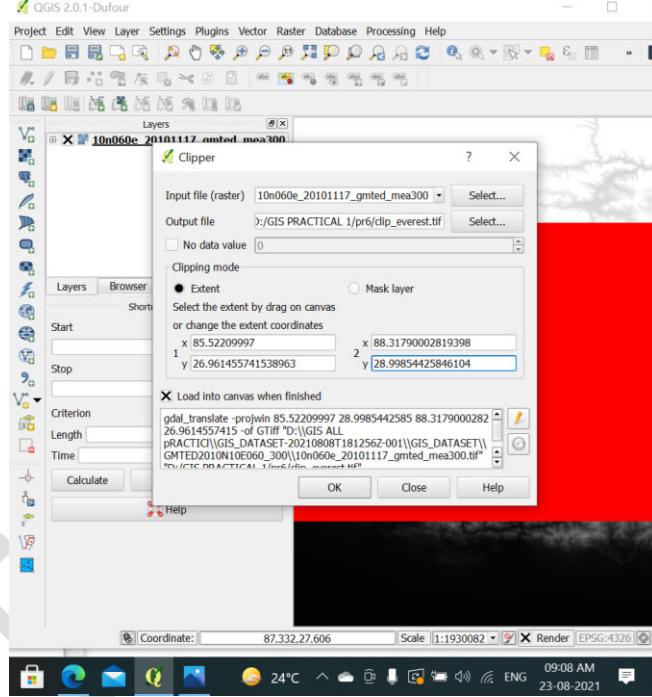
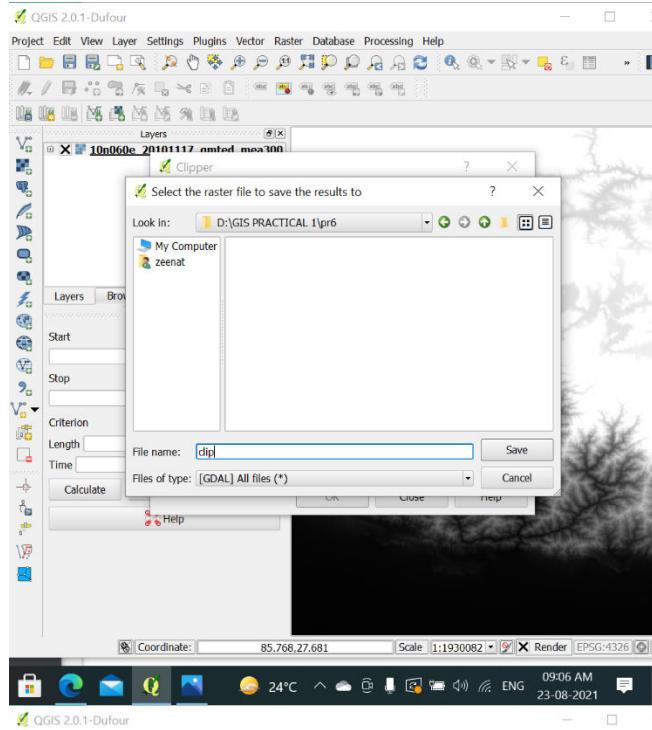


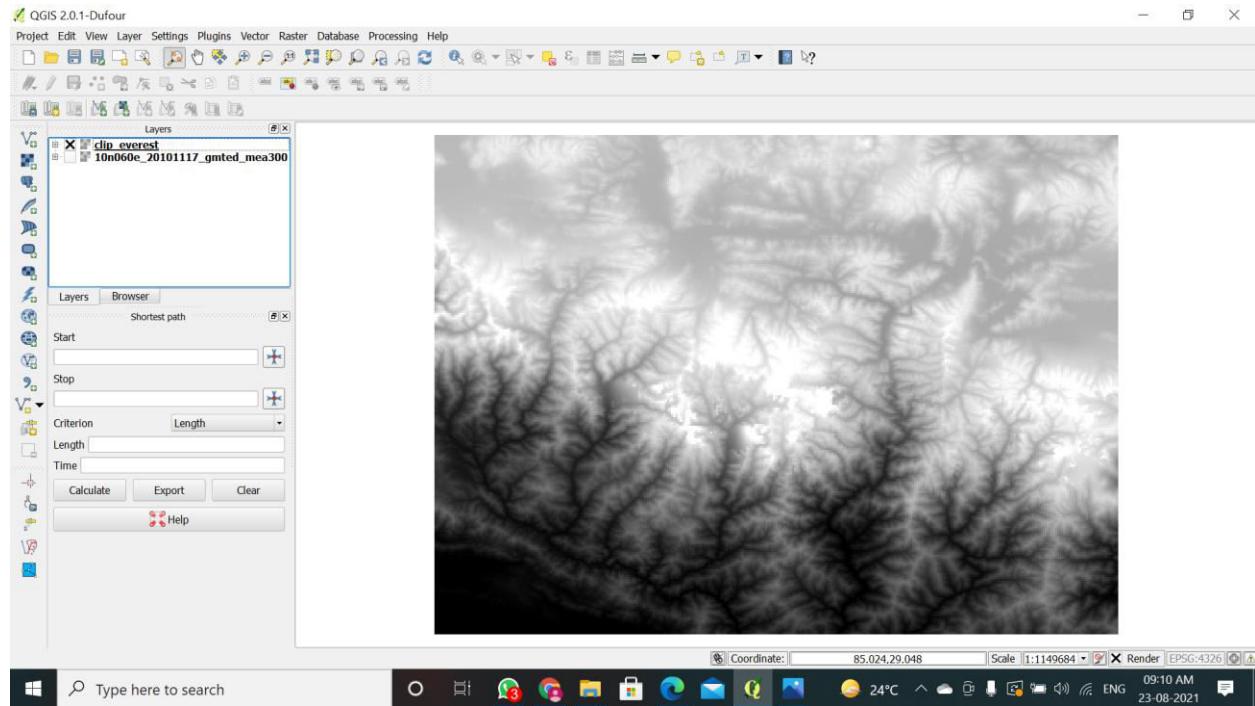


6. Select clip by Extent, select input file as **10n060e_20101117_gmted_me300.tif** and output file as “clipped_everest.tif” Xmin=85.52209997, xmax=88.31790002819398, ymin=26.961455741538963, ymax= 28.99854425846104, and click OK Deselect the original file.

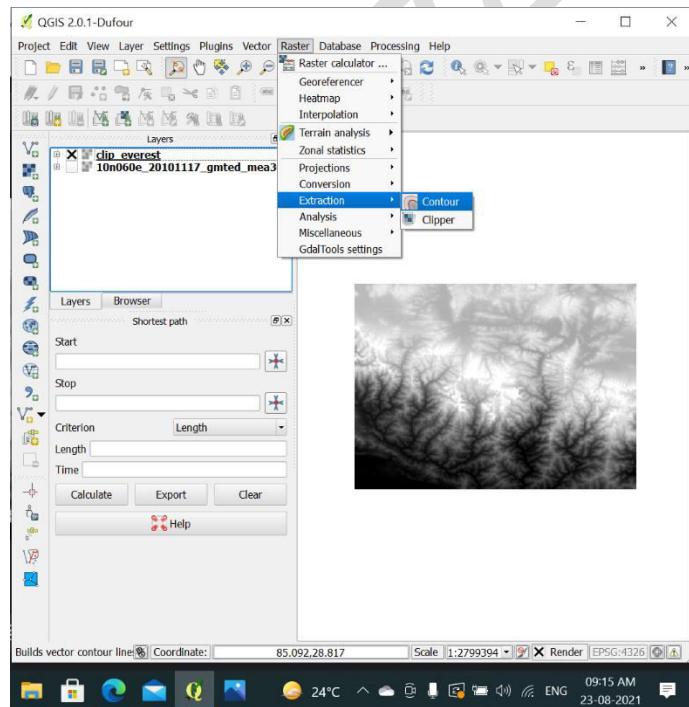
Counter lines are the lines on a map joining points of equal height above or below sea level. A contour interval in surveying is the vertical distance or the difference in the elevation between the two contour lines in a topographical map. **To derive counter lines from raster.**

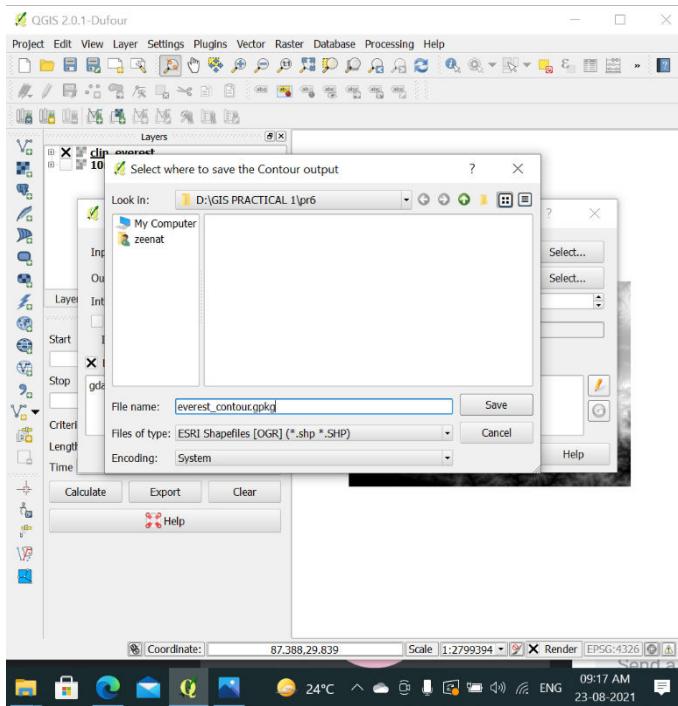




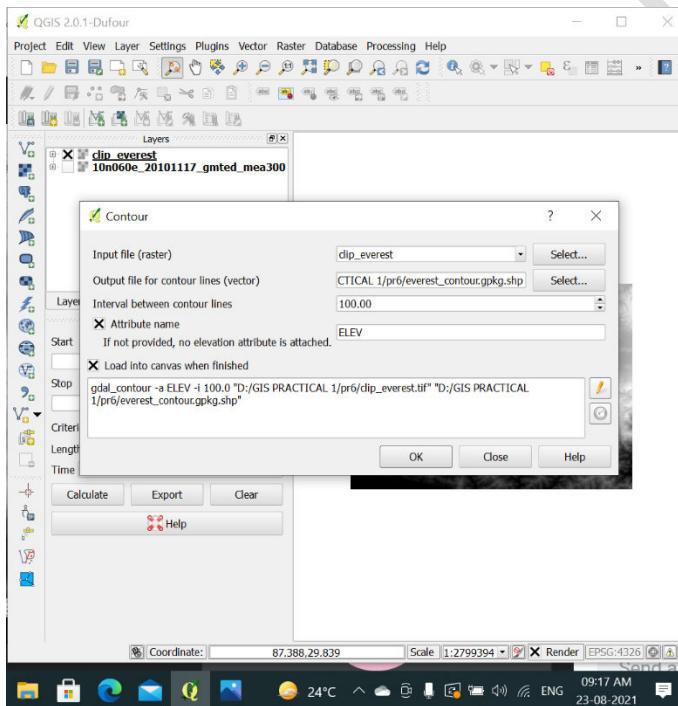


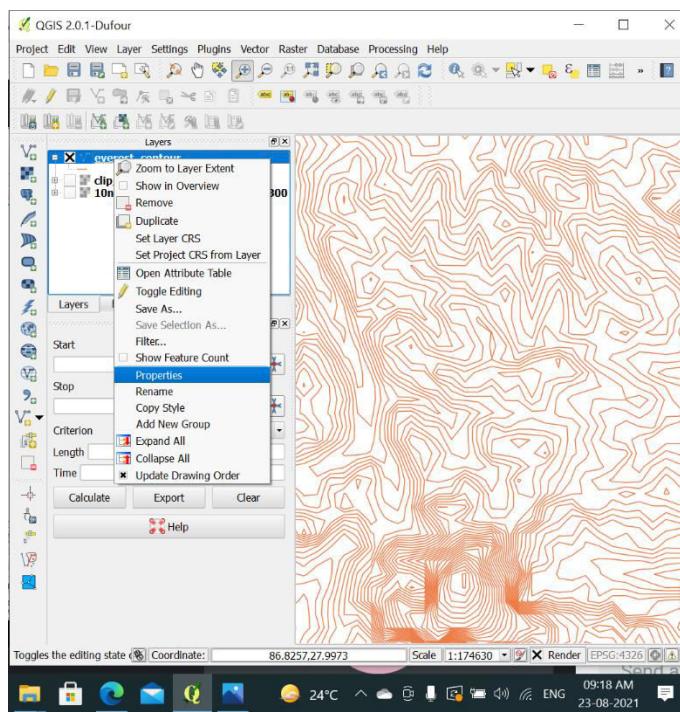
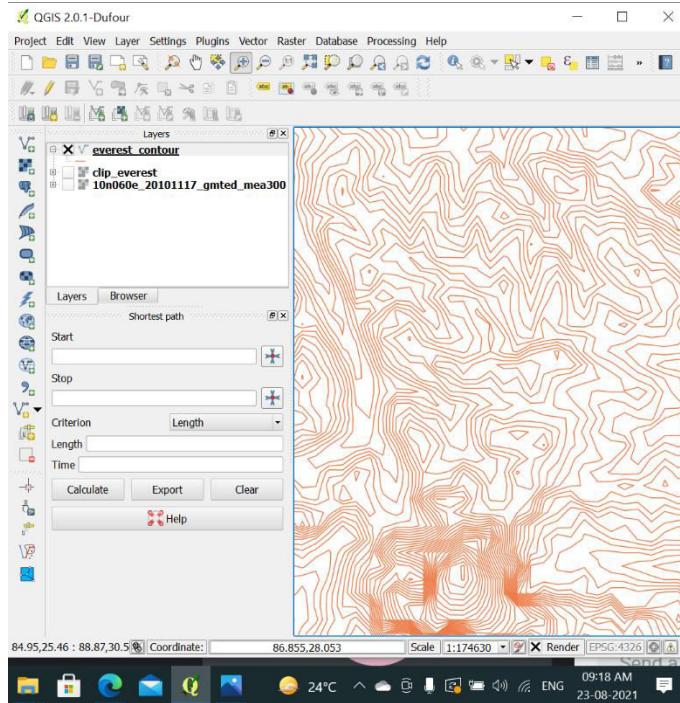
7. Go to Raster → Extraction → Contour
8. Select Input file as “**clipped_everest.tif**” and output file= (browse to your folder) **everest.gpkg**, Interval=100, SELECT attribute name check box and click ok
9. contour layer will appear

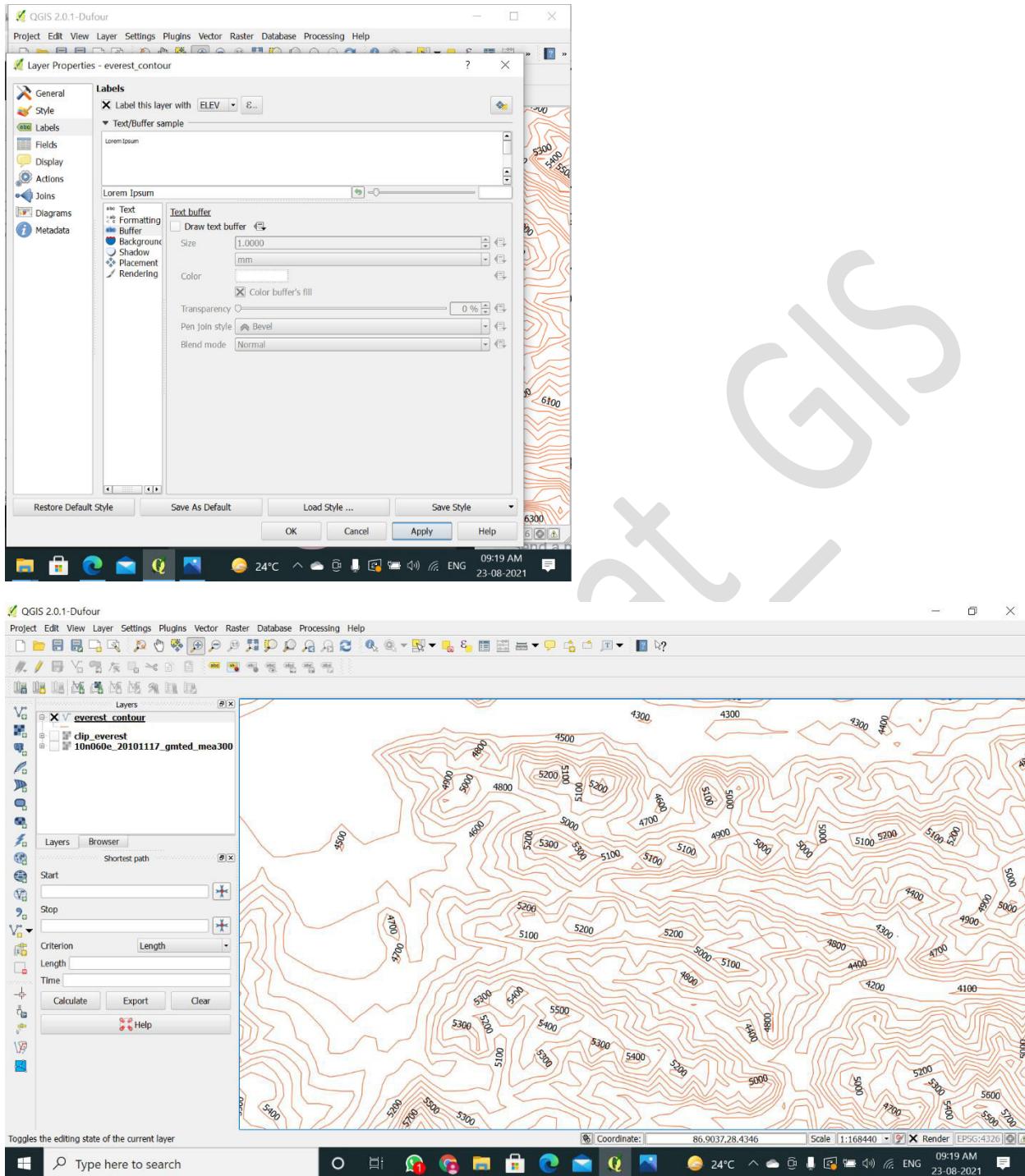




10. Label the layer using “ELEV” field and set appropriate symbols for line. Right click on layer □ properties □ Labels □ (Select attribute as ELEV)







11. In the Layer panel right click on Contour Raster Layer and select “Open Attribute table”, the table in descending order based in the value of “ELEV” column.

Attribute table - everest_contour :: Features total: 4714, filtered: 4714, selected: 0

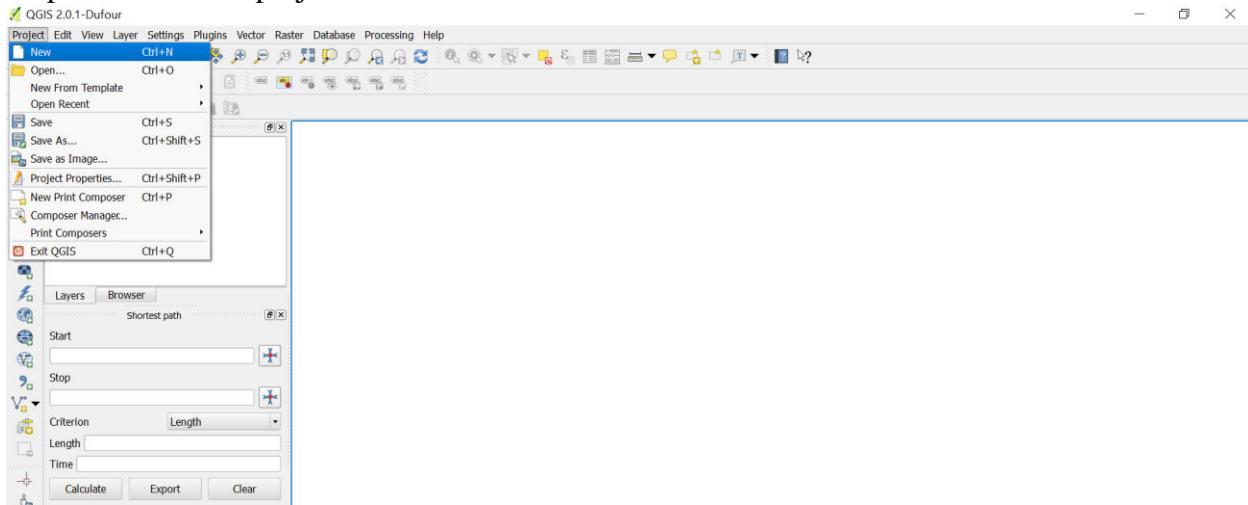


	ID	ELEV
0	0	4200.000
1	1	4300.000
2	2	4400.000
3	3	4700.000
4	4	4800.000
5	5	4800.000
6	6	4800.000
7	7	4900.000
8	8	4900.000
9	9	4900.000
10	10	5000.000
11	11	5000.000
12	12	5000.000
13	13	5000.000
14	14	5000.000
15	15	5000.000
16	16	5000.000
17	17	5100.000
18	18	5100.000
19	19	5100.000
20	20	5100.000
21	21	5100.000
22	22	5200.000
23	23	5300.000
24	24	5400.000
25	25	5400.000
26	26	5400.000
27	27	5400.000
28	28	5400.000
29	29	5400.000
30	30	5400.000
31	31	5400.000
32	32	5500.000
33	33	5500.000

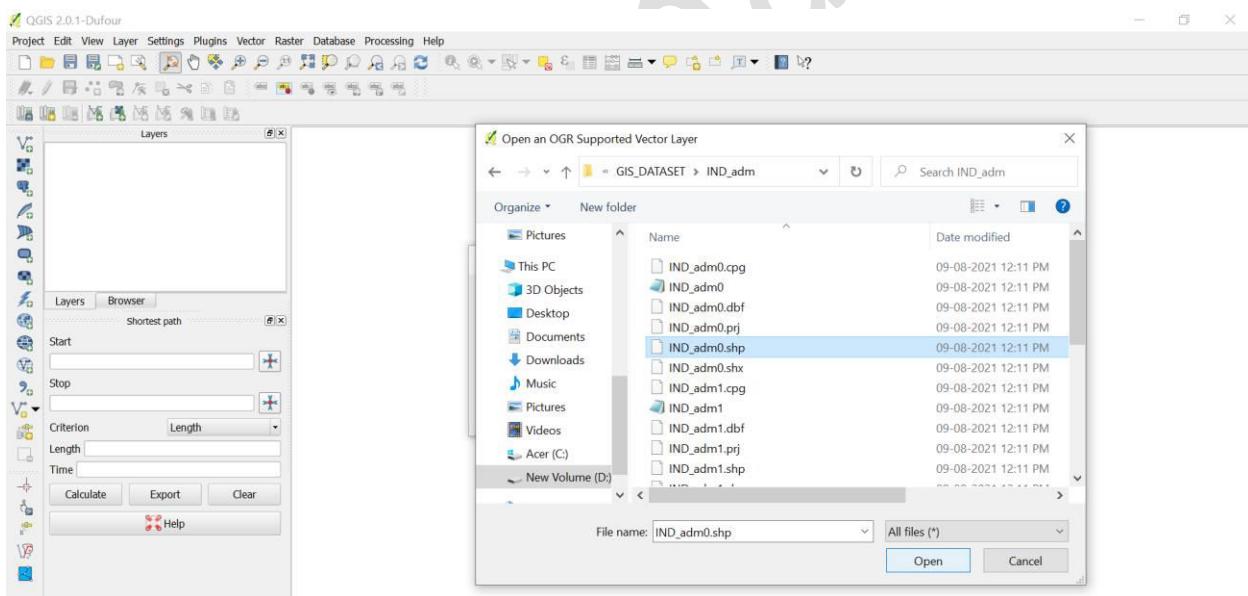
Practical 7

Aim: Georeferencing Topo Sheets and Scanned Maps

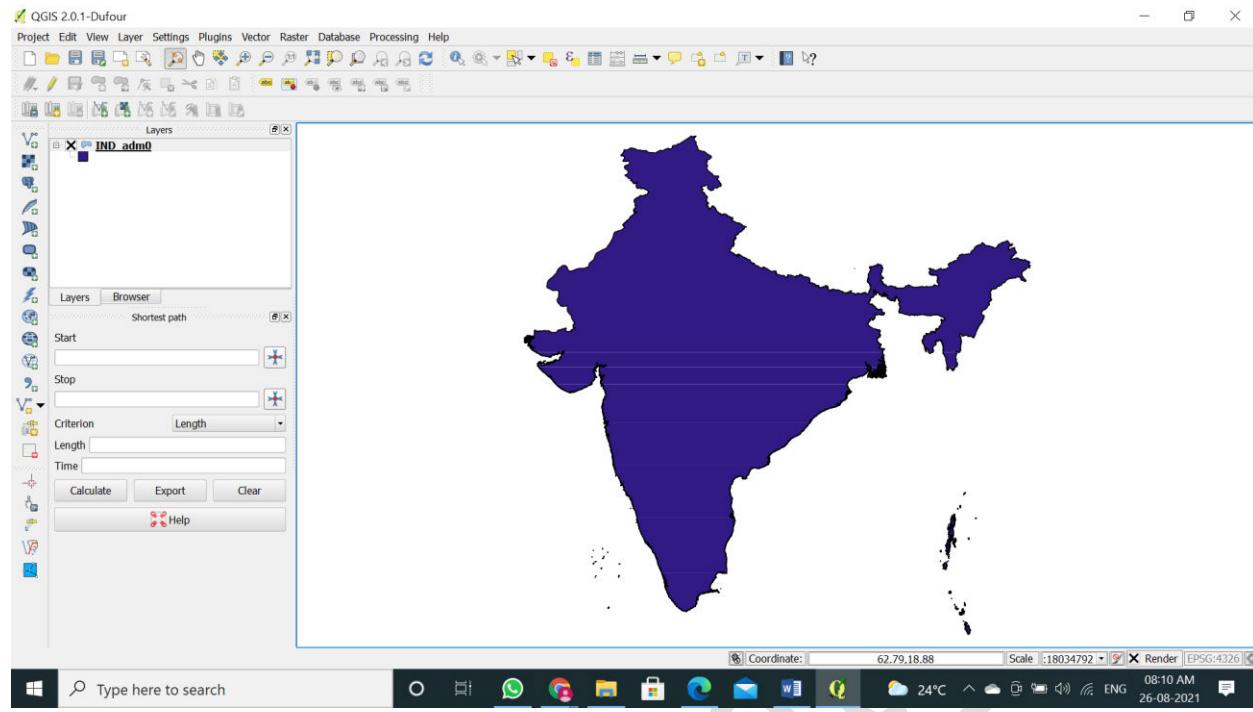
Step 1: Start a new project



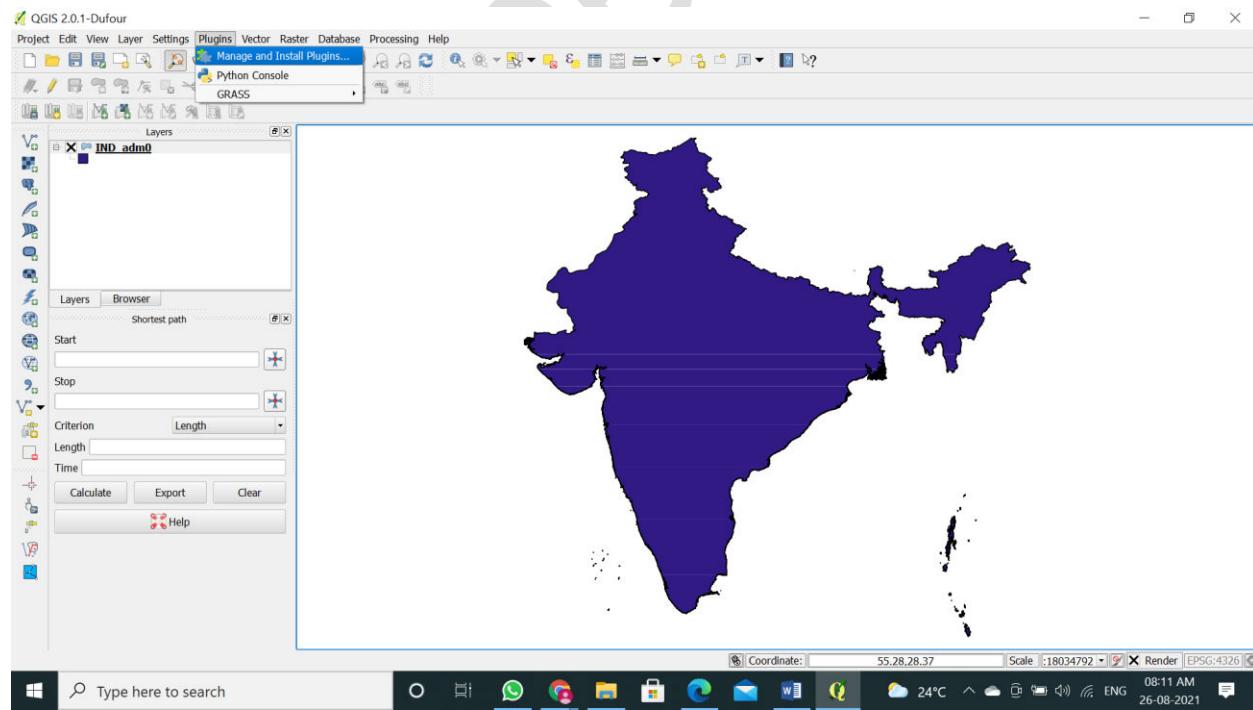
Step 2: Go to Layers → Add Layer → Add vector Layer Select IND_adm0.shp

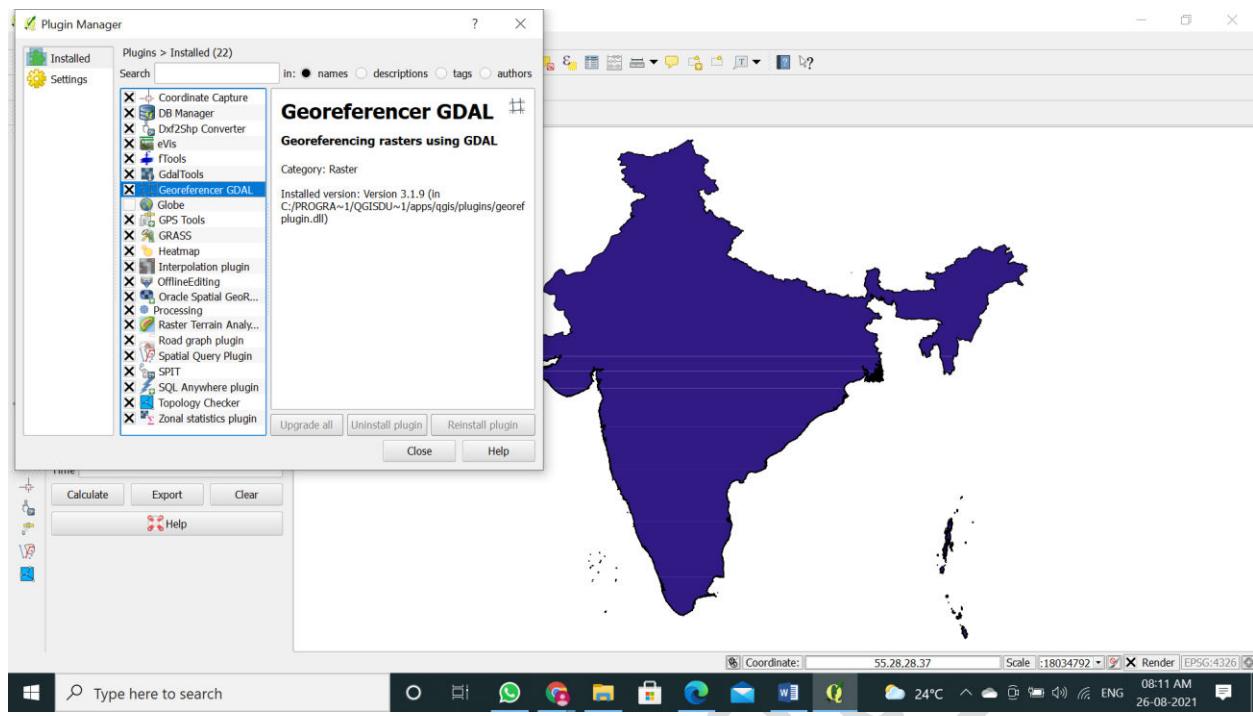


Step 3: Zoom in to Mumbai region in the layer.

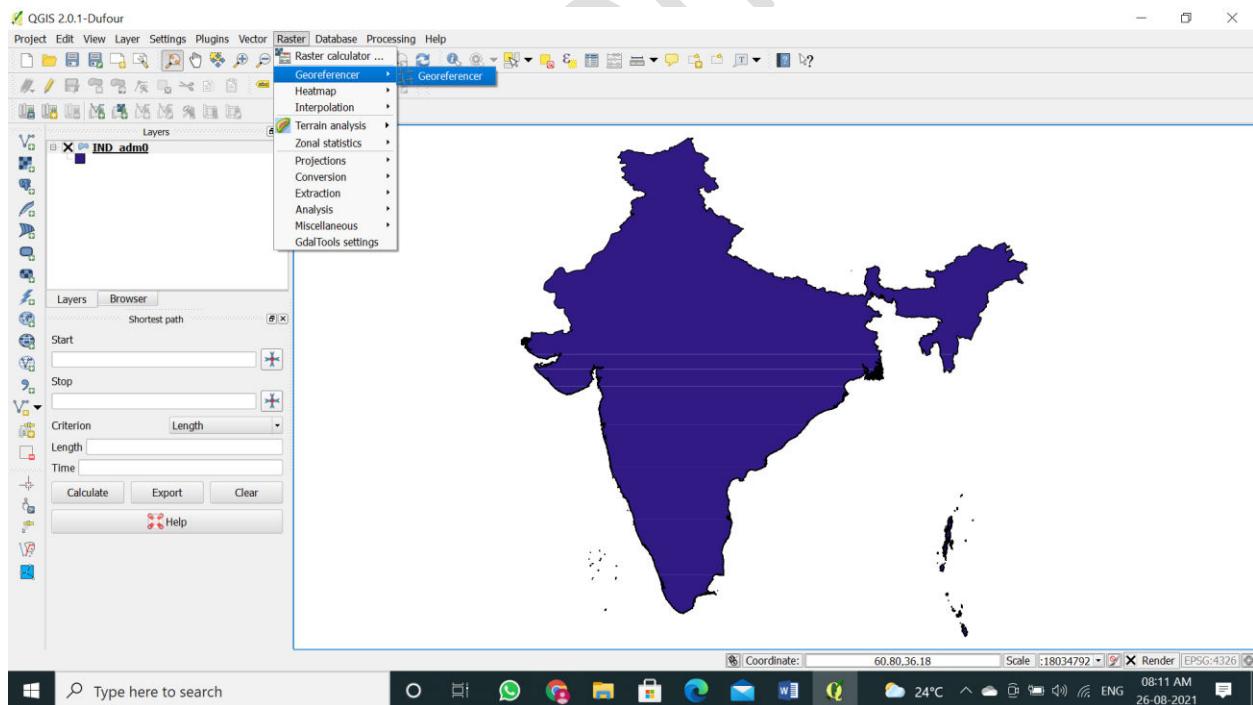


NOTE: For Georeferencing analysis > Go to Plugin → Install Georeferencer GADL. After successful installation of plugin,

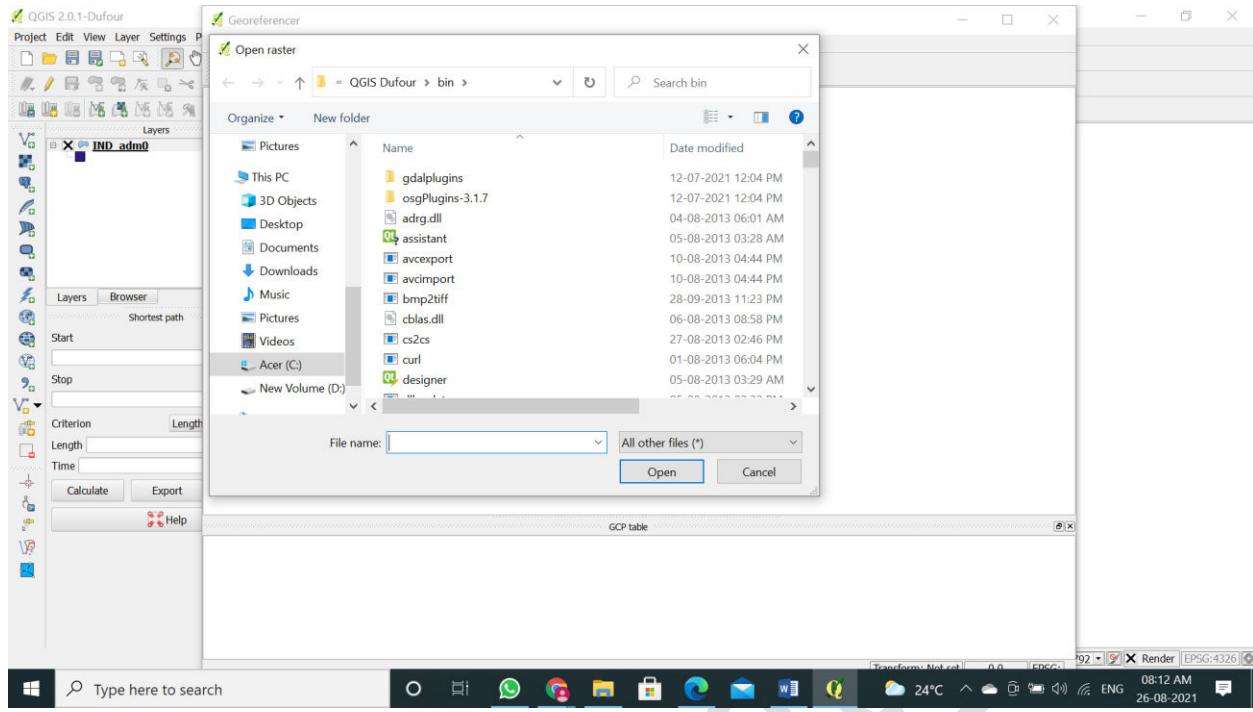




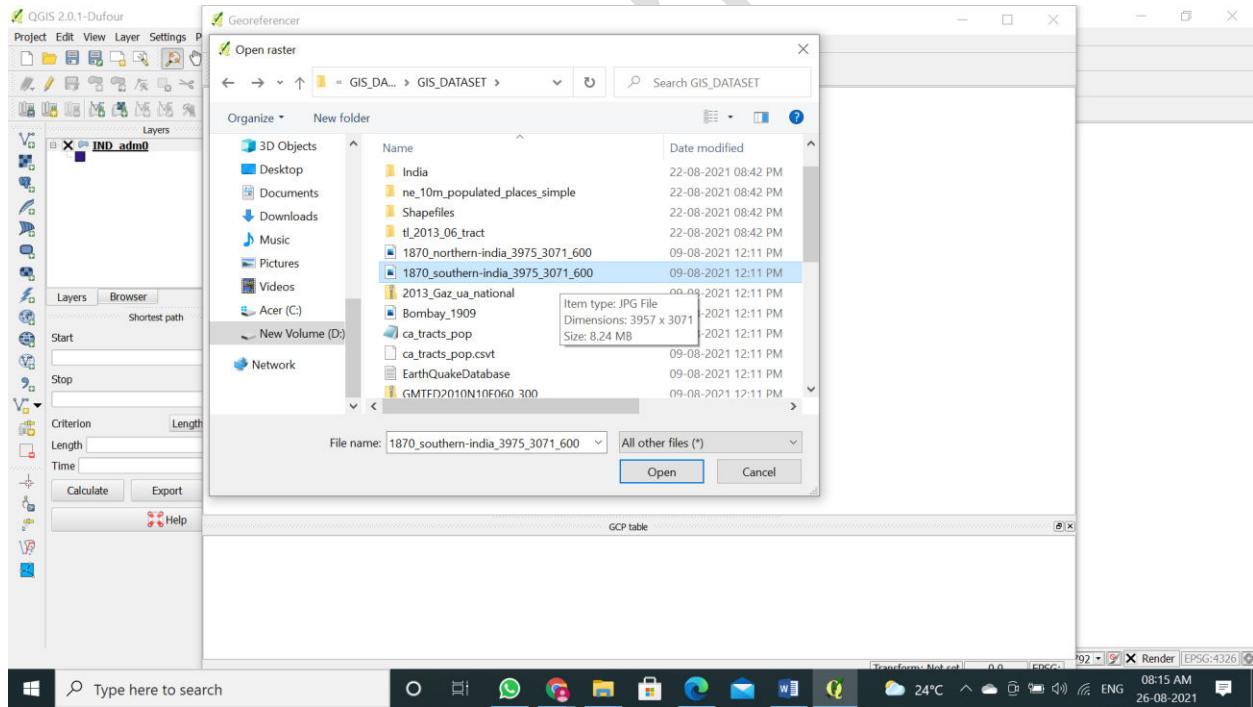
Step 4: Go to Raster → Georeferencer Georeference



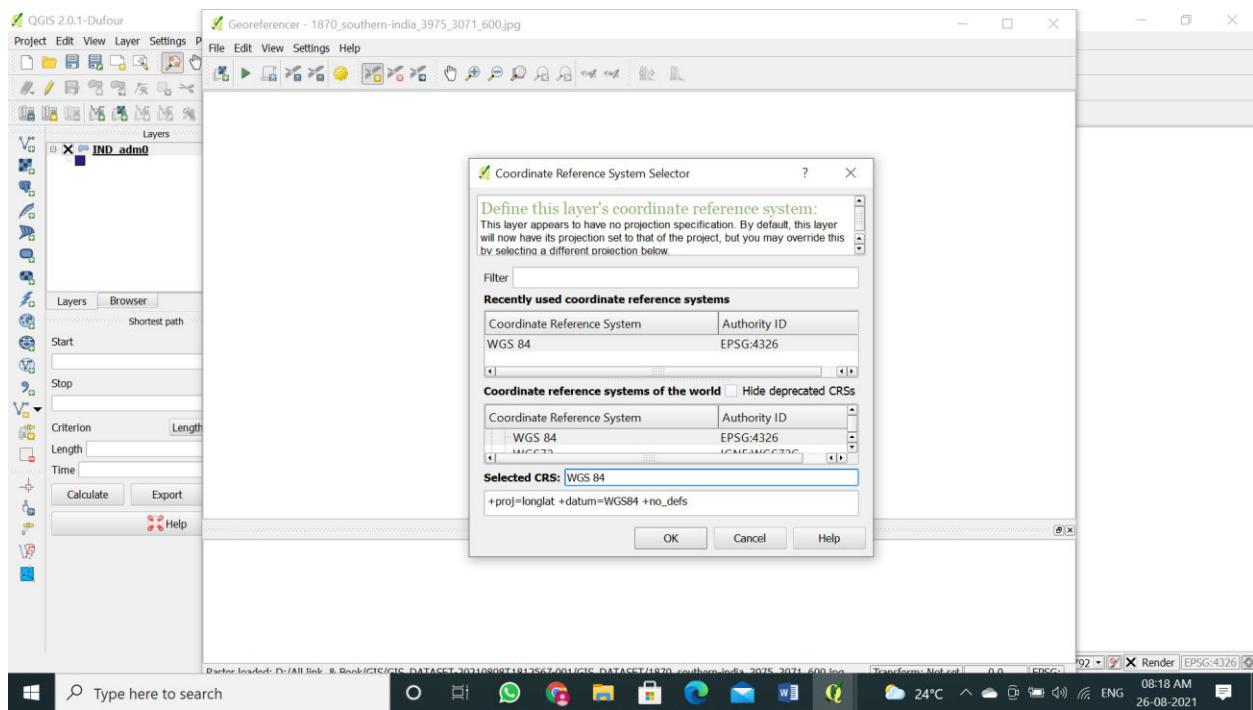
Step 5: File → Open Raster

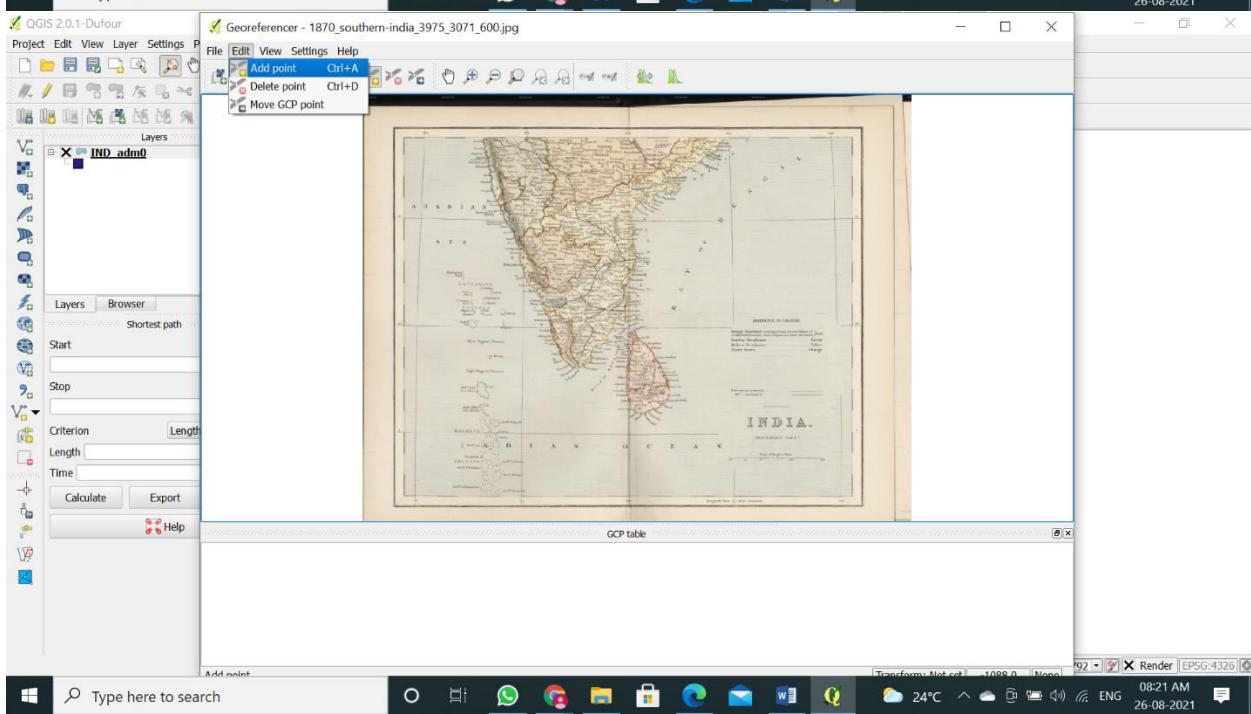
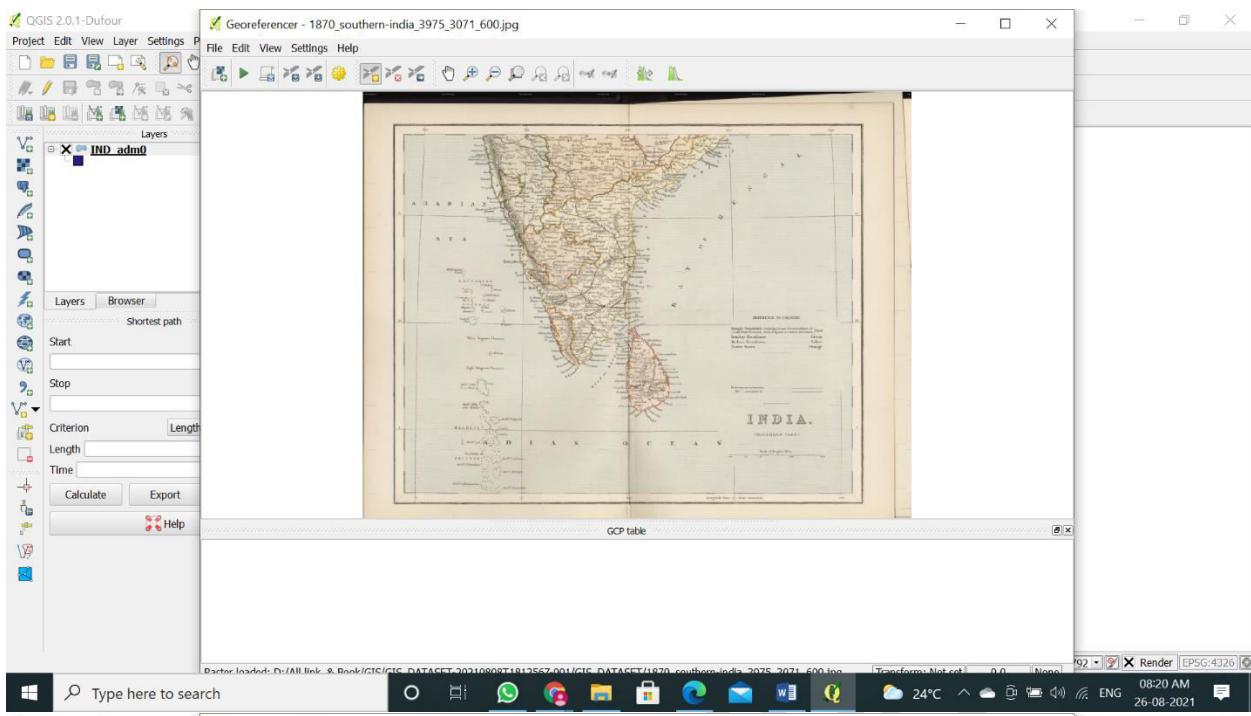


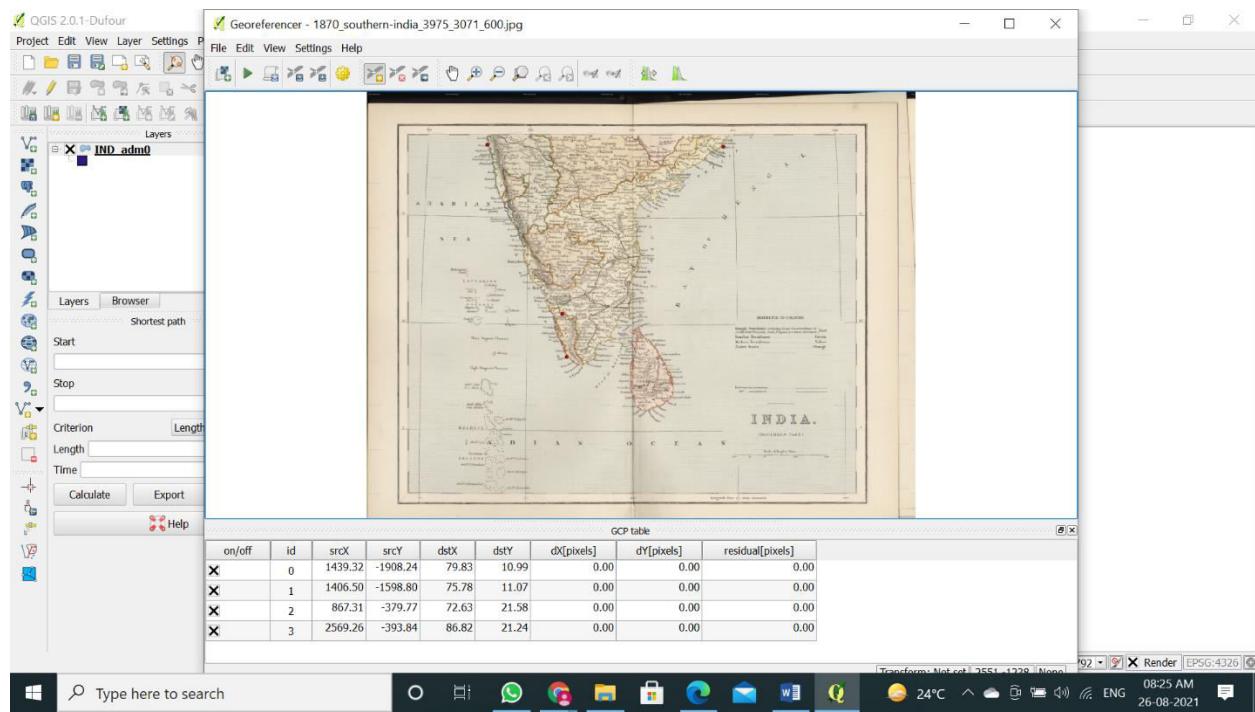
Step 6: Select file “1870_southern-india_3975_3071_600.jpg” from project data folder



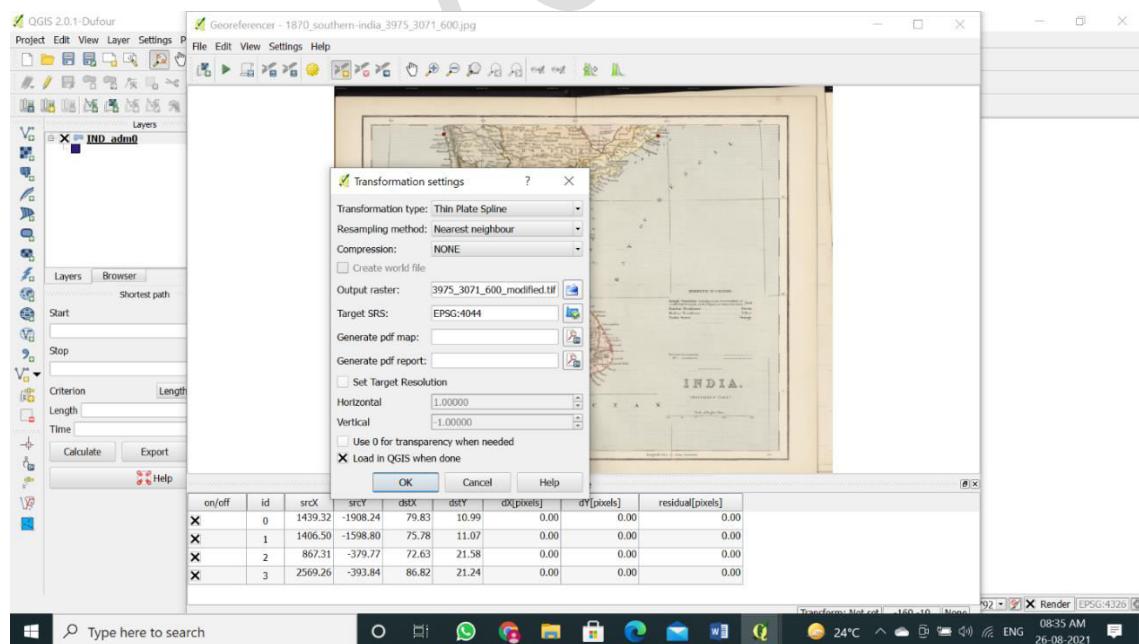
Step 7: In Georeferencer window Go to Edit → Add Points (**NO DIALOG BOX WILL BE OPENED, CLICK ANYWHERE ON IMAGE LOADED, SELECT BUTTON “FROM MAP CANVAS” AND CLICK ON ANY POINT IN THE ORIGINAL MAP IN MUMBAI REGION**) (ADD 4 POINTS)



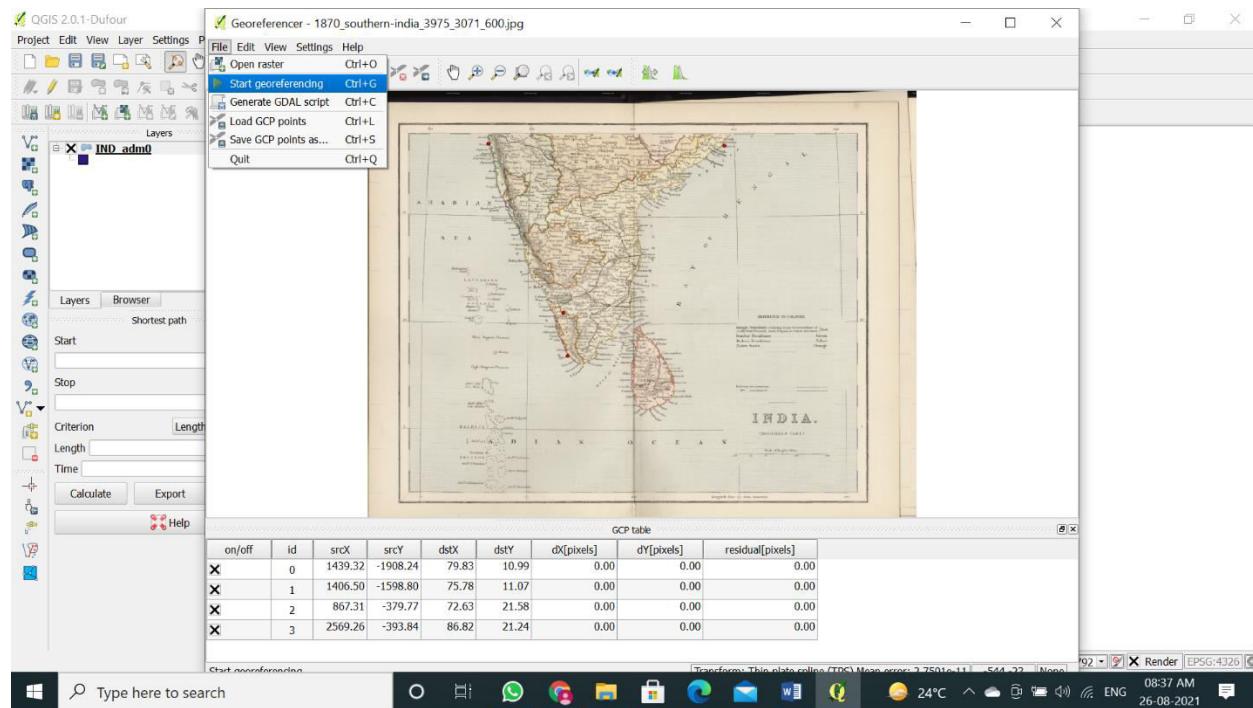




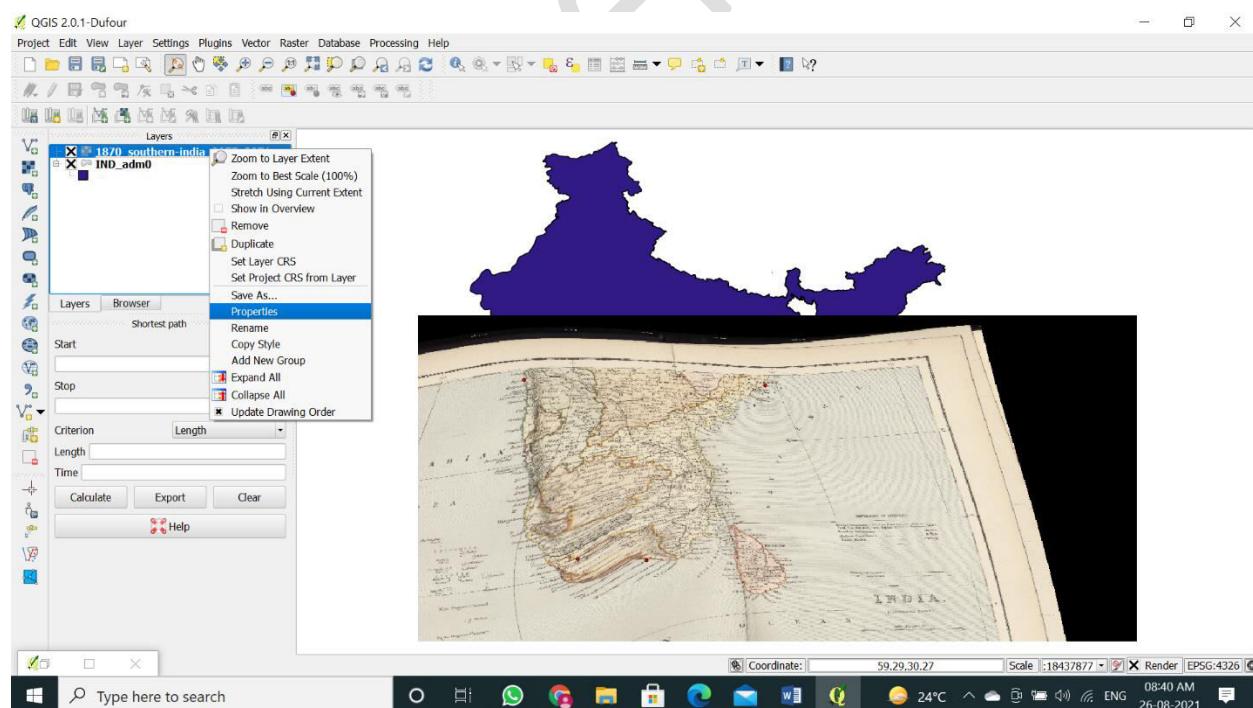
Step 8: Go to Settings → Transformation Settings
Select Transformation type → Thin Plate Spline
Re-sampling Method → Nearest Neighbour
Target TRS → Everest 1830 datum: EPSG 4044
Select Output Raster: MODIFIED.TIF
Check the Load in QGIS When Done Option
Press “OK”.



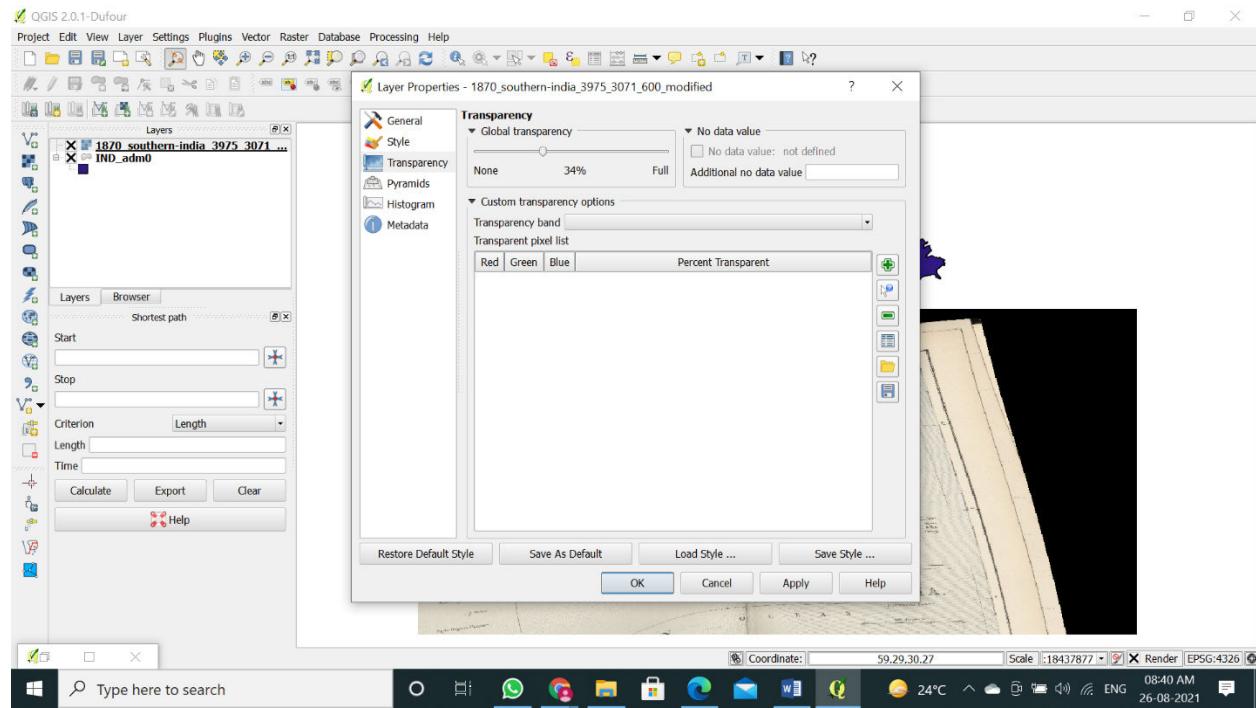
Step 9: In Georeferencing window go to → File → Start Georeferencing



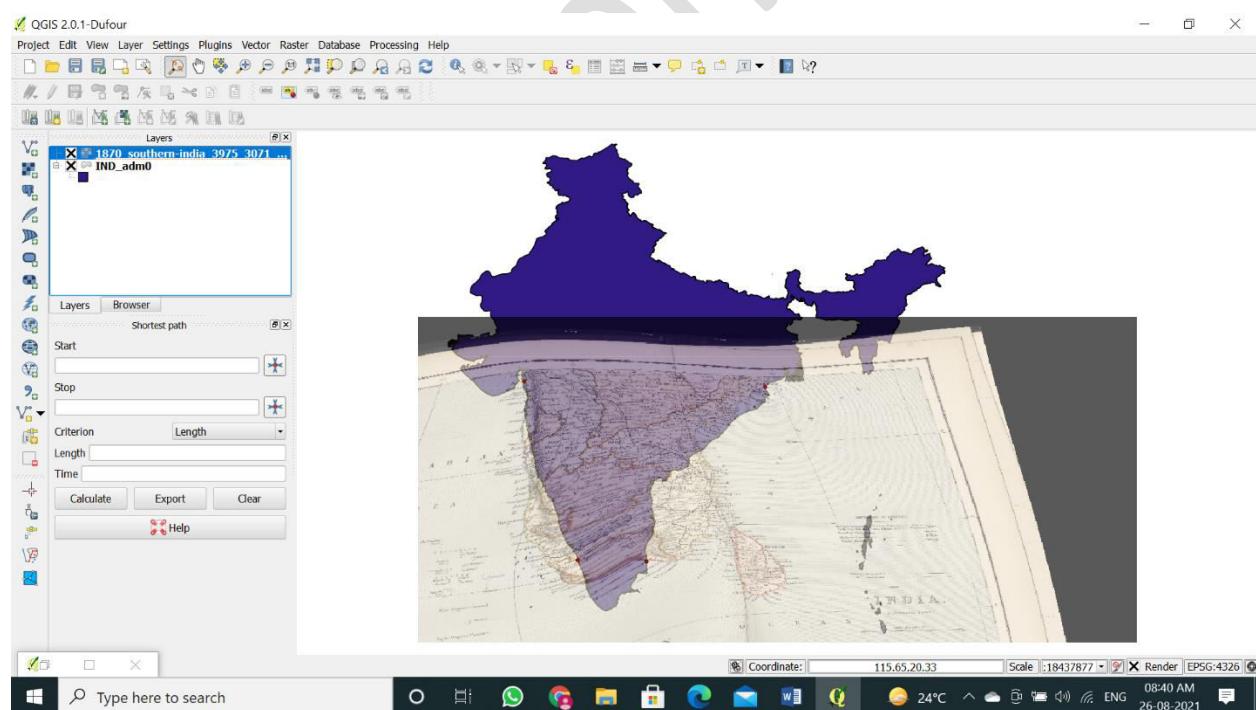
Step 10: Select the newly added layer in Layer Panel Right click and go to property.



Step 11: In TRANSPARENCY TAB Global Opacity to 38%



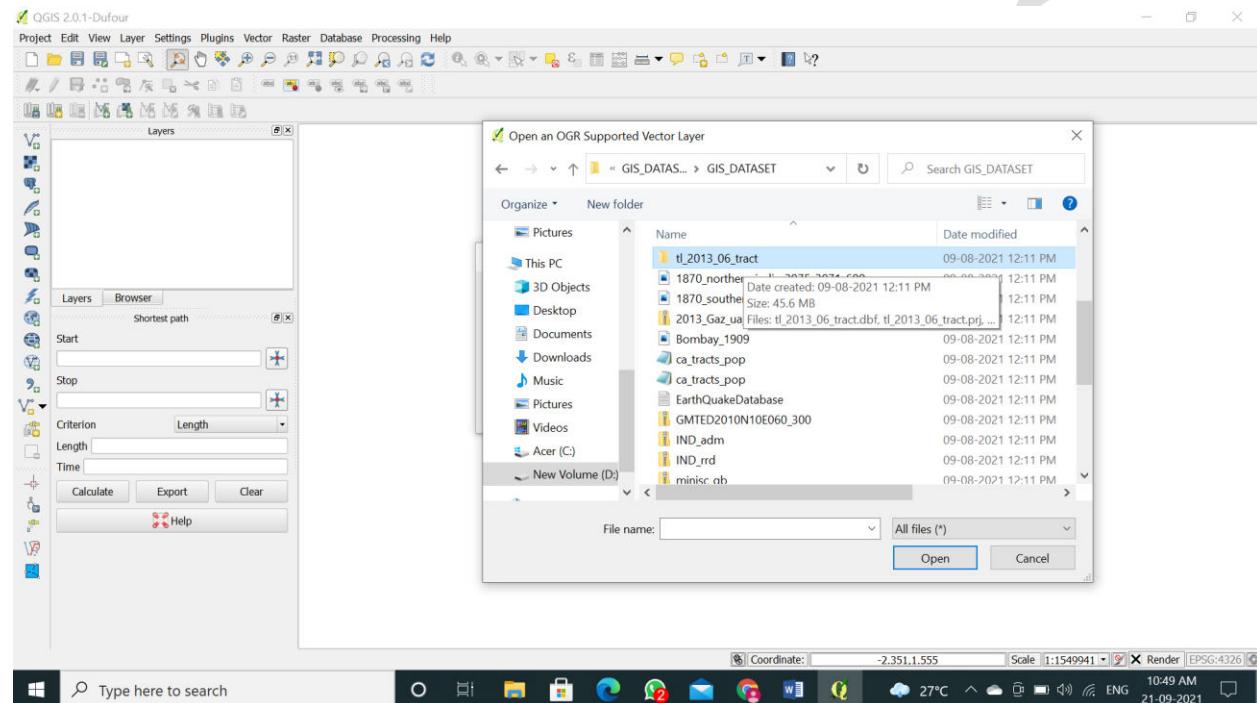
Step 12: The Scanned Image map coincides with the existing map.



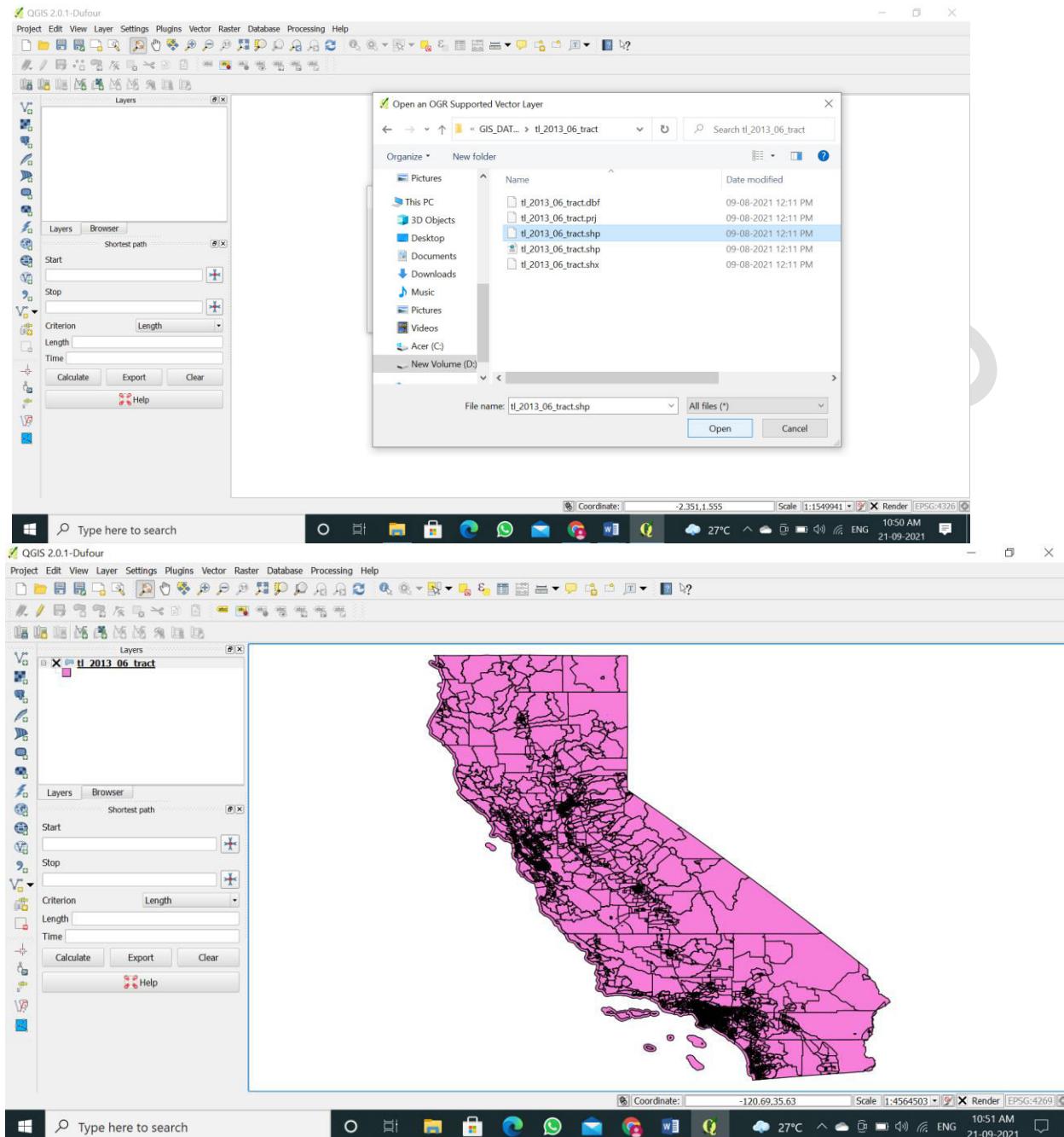
Practical 8A

Aim: Performing Table Joins

Step 1: Go to Layer ▶ Add Vector Layer. Browse to the downloaded zip file tl_2013_06_tract.zip and select it.



Step 2: Select the tl_2013_06_tract.shp layer and click OK.



Step 3: Right-click on the layer and select Open Attribute Table NOTE: To join a table with this shapefile, we need a unique and common attribute for each feature. In this case, the GEOID field is a unique identifier for each tract and can be used to link this shapefile with any other table containing the same ID.

Attribute table - tl_2013_06_tract :: Features total: 8057, filtered: 8057, selected: 0

	TATEFFI	COUNTYFP	TRACTCE	GEOID	NAME	JAMESAEC	MTFCC	FUNCSTAT	ALAND	AWATER	INTPTLAT	INTPTLON
11	06	001	442700	0600144...	4427	Census Tr...	G5020	S	1234034...	0	+37.5371...	-122.008...
1	06	001	442800	0600144...	4428	Census Tr...	G5020	S	1278647...	0	+37.5293...	-121.993...
2	06	037	204920	0603720...	2049.20	Census Tr...	G5020	S	909972...	0	+34.0175...	-118.197...
3	06	037	205120	0603720...	2051.20	Census Tr...	G5020	S	2869660...	0	+34.0245...	-118.214...
4	06	037	205120	0603720...	2051.20	Census Tr...	G5020	S	1466179...	0	+34.0187...	-118.214...
5	06	037	205200	0603720...	2052.00	Census Tr...	G5020	S	1466179...	0	+34.0187...	-118.214...
6	06	037	206020	0603720...	2060.20	Census Tr...	G5020	S	843243...	30290...	+34.0571...	-118.232...
7	06	037	206050	0603720...	2060.50	Census Tr...	G5020	S	1643242...	94606...	+34.0299...	-118.224...
8	06	037	207400	0603720...	2074	Census Tr...	G5020	S	863958...	6458...	+34.0561...	-118.246...
9	06	001	442900	0600144...	4429	Census Tr...	G5020	S	2066533...	0	+37.5184...	-121.974...
10	06	037	192410	0603719...	1924.10	Census Tr...	G5020	S	683899...	0	+34.0798...	-118.318...
11	06	037	192510	0603719...	1925.10	Census Tr...	G5020	S	3407050...	0	+34.0798...	-118.306...
12	06	037	192520	0603719...	1925.20	Census Tr...	G5020	S	307802...	0	+34.0799...	-118.302...
13	06	037	192610	0603719...	1926.10	Census Tr...	G5020	S	415408...	0	+34.0813...	-118.296...
14	06	037	192700	0603719...	1927	Census Tr...	G5020	S	531205...	0	+34.0800...	-118.288...
15	06	037	194500	0603719...	1945	Census Tr...	G5020	S	685332...	0	+34.0781...	-118.369...
16	06	037	195100	0603719...	1951	Census Tr...	G5020	S	1566362...	329063...	+34.1022...	-118.266...
17	06	037	195200	0603719...	1952	Census Tr...	G5020	S	580340...	0	+34.0922...	-118.333...
18	06	001	443001	0600144...	4430.01	Census Tr...	G5020	S	769110...	0	+37.5184...	-121.951...
19	06	001	443002	0600144...	4430.02	Census Tr...	G5020	S	1580314...	0	+37.5168...	-121.960...
20	06	001	443102	0600144...	4431.02	Census Tr...	G5020	S	2375918...	0	+37.5071...	-121.927...
21	06	001	443301	0600144...	4433.01	Census Tr...	G5020	S	1577692...	0	+37.4707...	-121.912...
22	06	037	137501	0603713...	1375.01	Census Tr...	G5020	S	2514417...	0	+34.1649...	-118.576...
23	06	037	137502	0603713...	1375.02	Census Tr...	G5020	S	2090215...	0	+34.1634...	-118.597...
24	06	001	444100	0600144...	4441	Census Tr...	G5020	S	2955528...	60526...	+37.5509...	-122.036...
25	06	001	444200	0600144...	4442	Census Tr...	G5020	S	2069728...	0	+37.5425...	-122.045...
26	06	037	195500	0603719...	1955	Census Tr...	G5020	S	1215206...	0	+34.0881...	-118.264...
27	06	037	195600	0603719...	1956	Census Tr...	G5020	S	527584...	0	+34.0808...	-118.265...
28	06	037	195710	0603719...	1957.10	Census Tr...	G5020	S	483407...	0	+34.0747...	-118.268...
29	06	037	195720	0603719...	1957.20	Census Tr...	G5020	S	288986...	0	+34.0737...	-118.263...
30	06	001	444400	0600144...	4444	Census Tr...	G5020	S	1027798...	0	+37.5362...	-121.035...
31	06	037	195800	0603719...	1958.00	Census Tr...	G5020	S	402473...	0	+37.5362...	-118.577...
32	06	001	444500	0600144...	4445	Census Tr...	G5020	S	1959201...	0	+37.5342...	-122.027...
33	06	001	450200	0600145...	4502	Census Tr...	G5020	S	1620535...	0	+37.7274...	-121.915...
34	06	001	450300	0600145...	4503	Census Tr...	G5020	S	3073984...	0	+37.7108...	-121.917...
35	06	037	137504	0603713...	1375.04	Census Tr...	G5020	S	3837564...	0	+34.1480...	-118.572...
36	06	037	138000	0603713...	1380	Census Tr...	G5020	S	4472390...	0	+34.1488...	-118.591...
37	06	037	139200	0603713...	1392	Census Tr...	G5020	S	1152032...	0	+34.1756...	-118.524...
38	06	067	002300	0606700...	23	Census Tr...	G5020	S	1213095...	0	+38.5571...	-121.493...
39	06	067	002400	0606700...	24	Census Tr...	G5020	S	3224721...	0	+38.5448...	-121.497...
40	06	037	143200	0603714...	1432	Census Tr...	G5020	S	957093...	0	+34.1494...	-118.372...
41	06	037	143300	0603714...	1433	Census Tr...	G5020	S	1649228...	5619+34.1521...	+118.386...	
42	06	037	201301	0603720...	2013.01	Census Tr...	G5020	S	872773...	0	+34.0882...	-118.187...

Show All Features

Type here to search

File Home Share View

27°C ENG 10:52 AM 21-09-2021

Step 4: To tell QGIS to import the field as a number, we need to create a sidecar file with a .csv extension. This file will have only 1 row specifying data types for each column. Save this file as ca_tracts_pop.csv in the same directory as the original .csv file

GIS_DATASET

File Home Share View

All 3 year notic ^

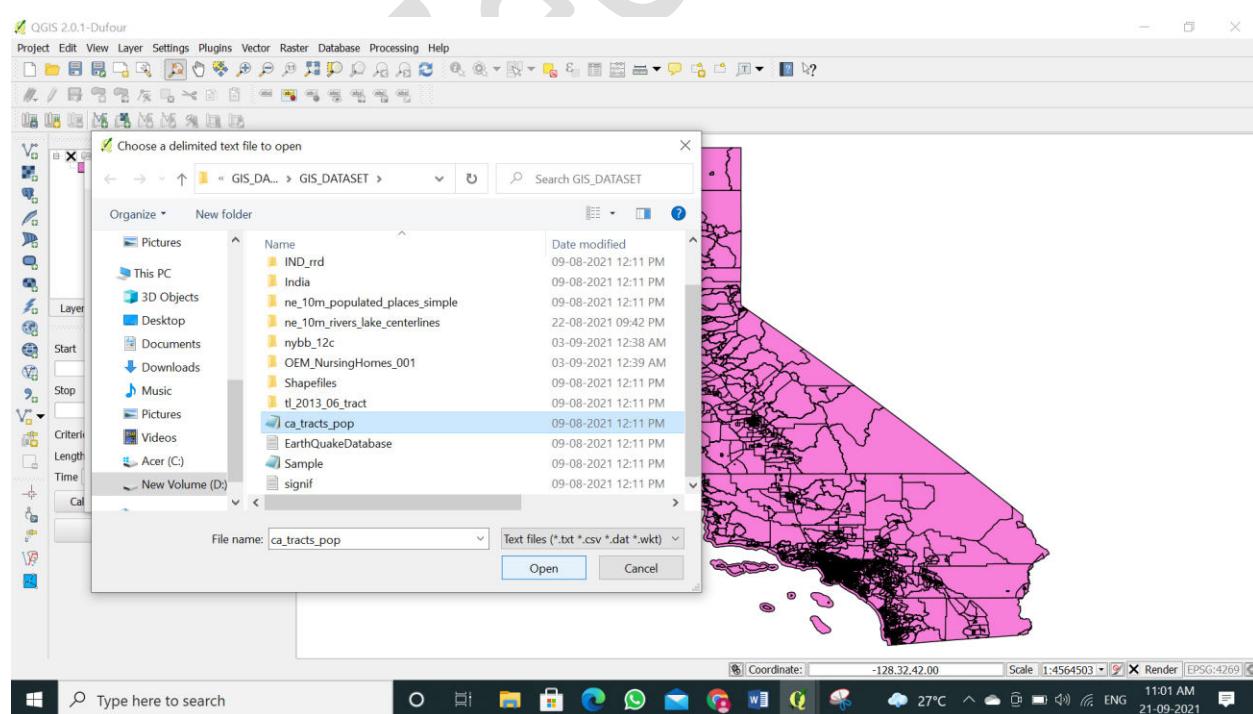
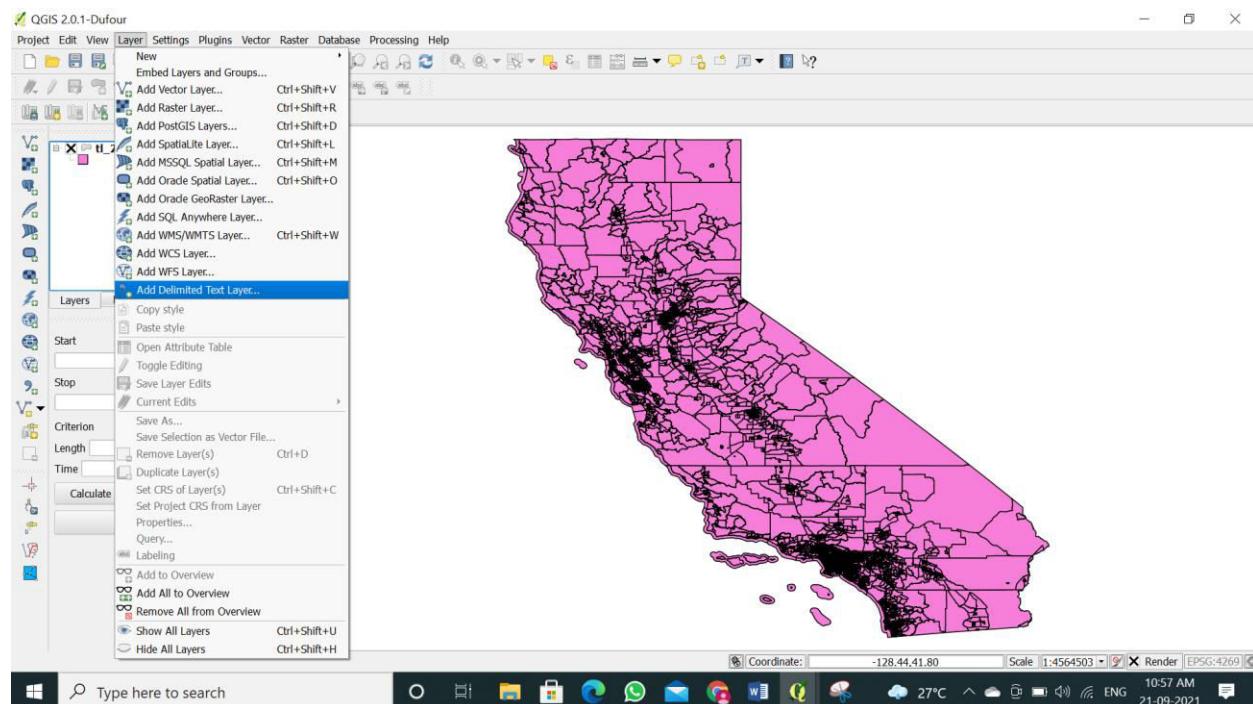
Search GIS_DATASET

Name	Date modified	Type
nybb_12c	03-09-2021 12:38 AM	File folder
OEM_NursingHomes_001	03-09-2021 12:39 AM	File folder
Shapefiles	09-08-2021 12:11 PM	File folder
tl_2013_06_tract	09-08-2021 12:11 PM	File folder
1870_northern-india_3975_3071_500	09-08-2021 12:11 PM	JPG File
1870_southern-india_3975_3071_500	09-08-2021 12:11 PM	JPG File
2013_Gaz_ua_national	09-08-2021 12:11 PM	Compress
Bombay_1909	09-08-2021 12:11 PM	JPG File
ca_tracts_pop	09-08-2021 12:11 PM	CSV File
EarthQuakeDatabase	09-08-2021 12:11 PM	Text Docum
GMTED2010N10E060_300	09-08-2021 12:11 PM	Compress
IND_admin	09-08-2021 12:11 PM	Compress
IND_rnd	09-08-2021 12:11 PM	Compress
minisc_gb	09-08-2021 12:11 PM	Compress
ne_10m_admin_0_countries	09-08-2021 12:11 PM	Compress
ne_10m_populated_places_simple	09-08-2021 12:11 PM	Compress
ne_10m_rivers_lake_centerlines	09-08-2021 12:11 PM	Compress
nybb_12c	09-08-2021 12:11 PM	Compress
OEM_NursingHomes_001	09-08-2021 12:11 PM	Compress
Sample	09-08-2021 12:11 PM	CSV File
Shapefiles	09-08-2021 12:11 PM	Compress
signif	09-08-2021 12:11 PM	Text Docum
H_2013_06_tract	09-08-2021 12:11 PM	Compress

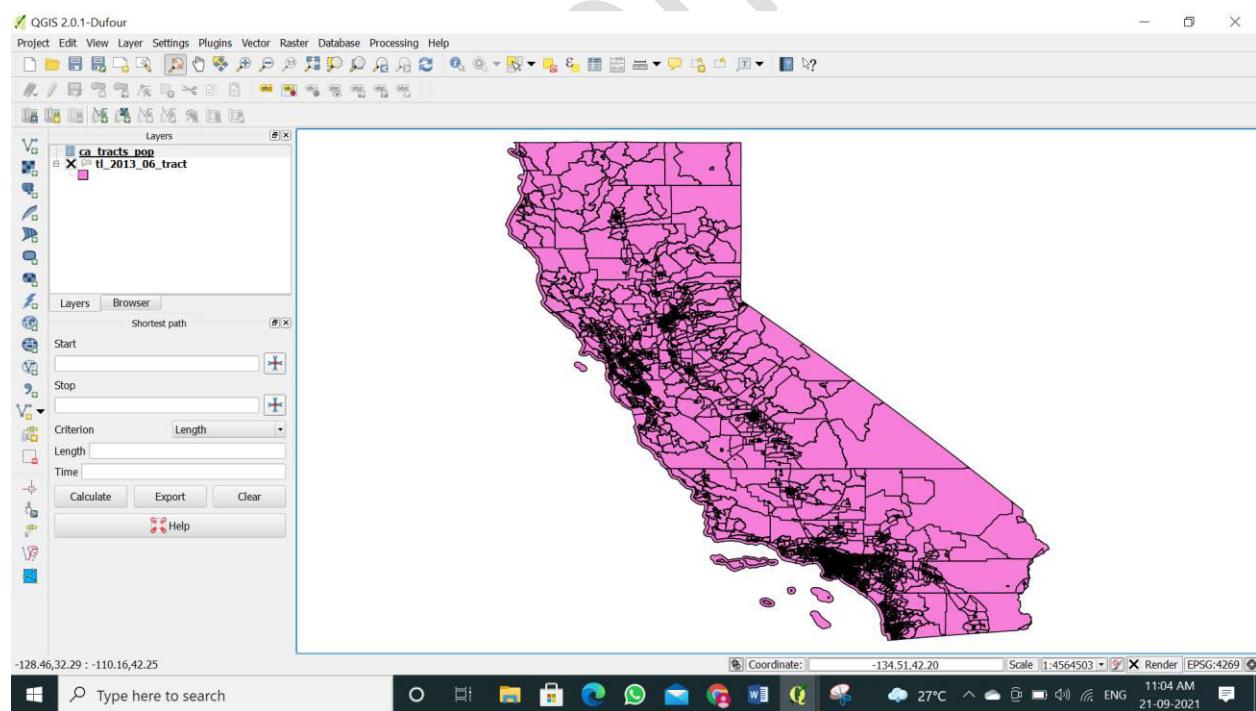
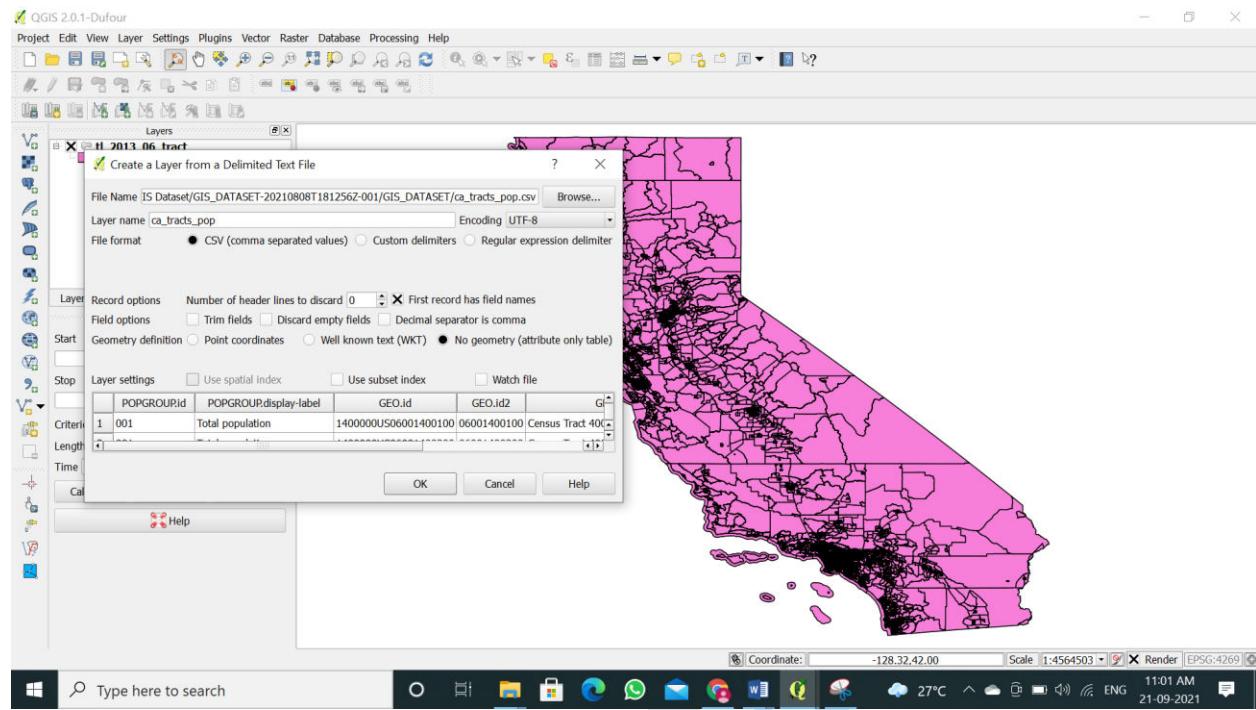
32 items 1 item selected 70 bytes

Type here to search

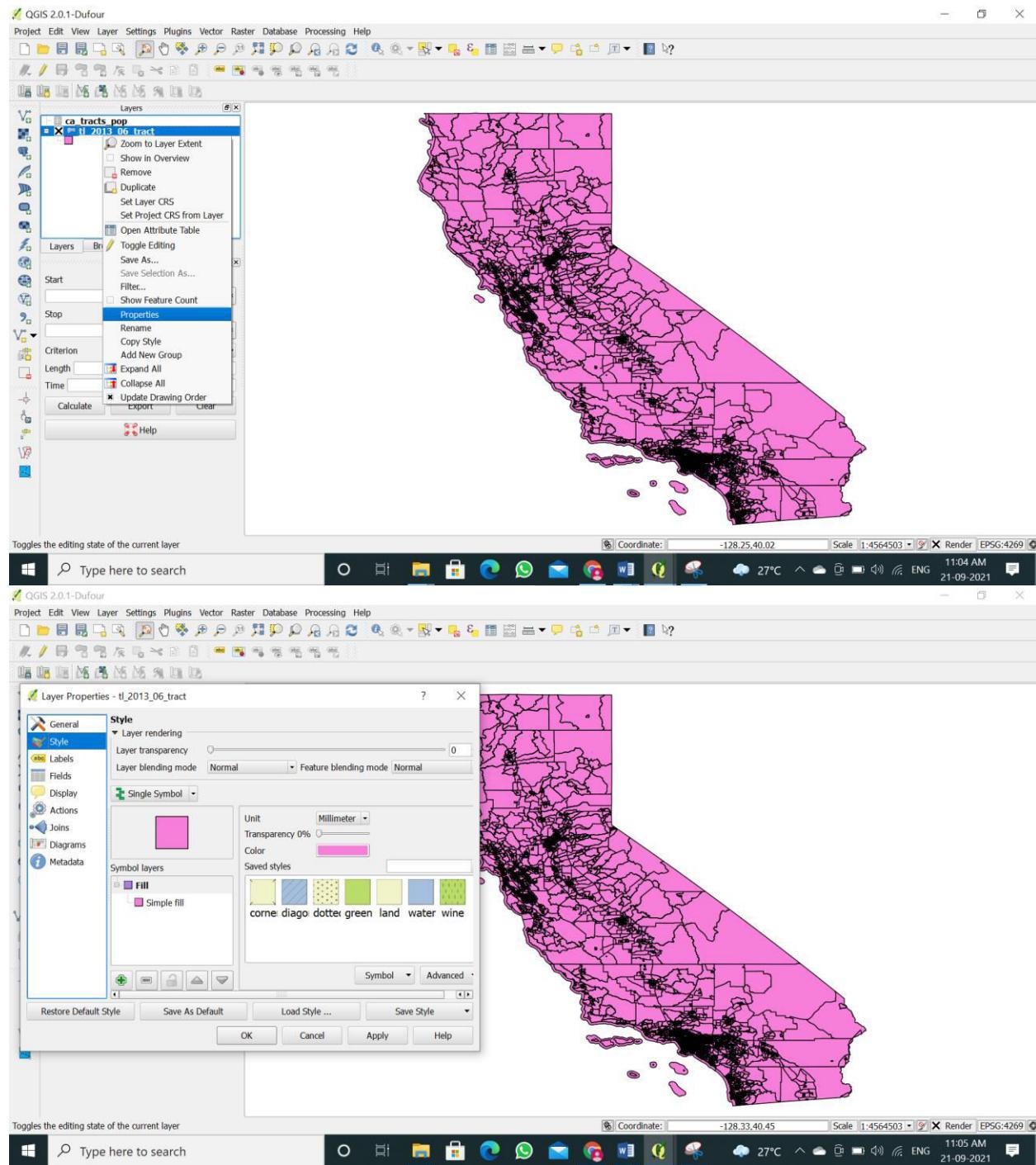
Step 5: Now we are ready to import the CSV file to QGIS. Go to Layer ▶ Add Delimited Text Layer. Browse to the folder containing the CSV file and select it. Make sure you have selected File format as CSV (comma separated values). Since we are importing this as a table, we must specify that our file contains no geometry.



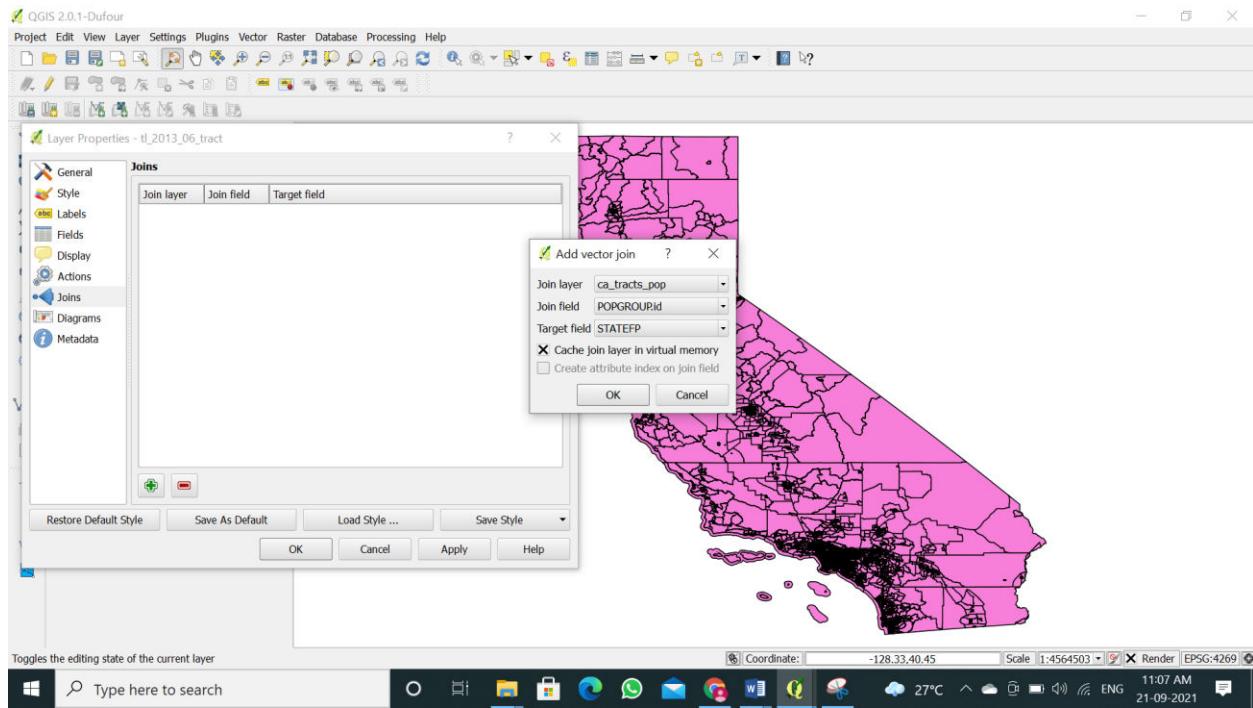
Step 6: Select the No geometry (attribute only table) option. Click OK.



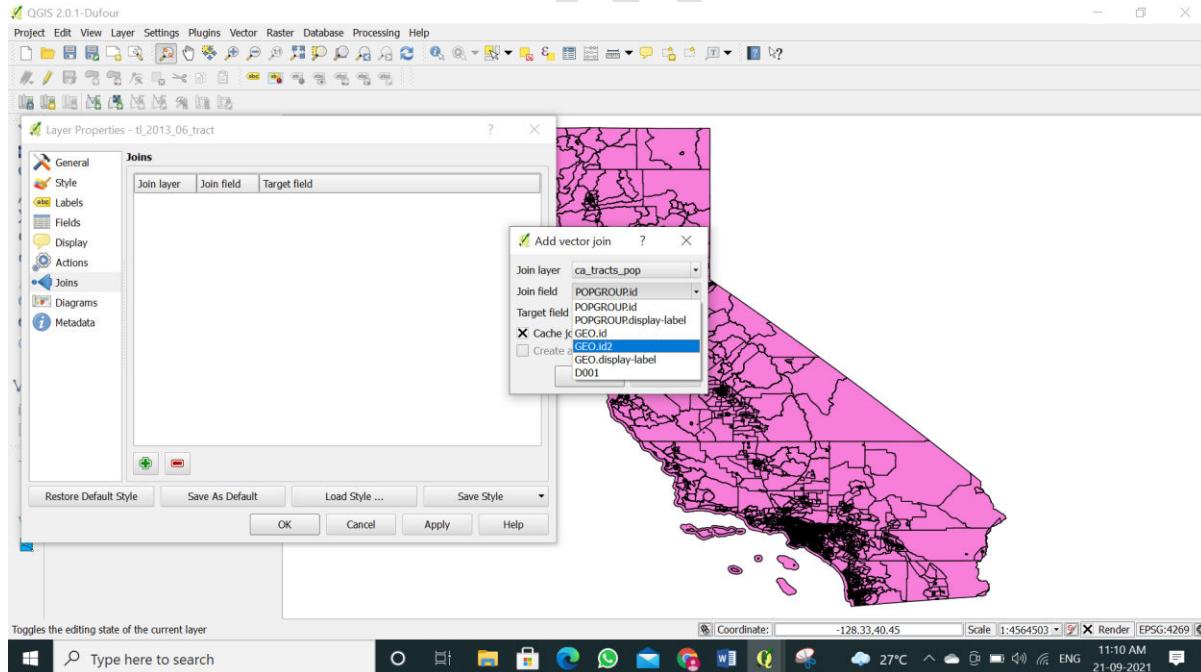
Step 7: Select the tl_2013_06_tract layer. Right-click on it and select Properties .

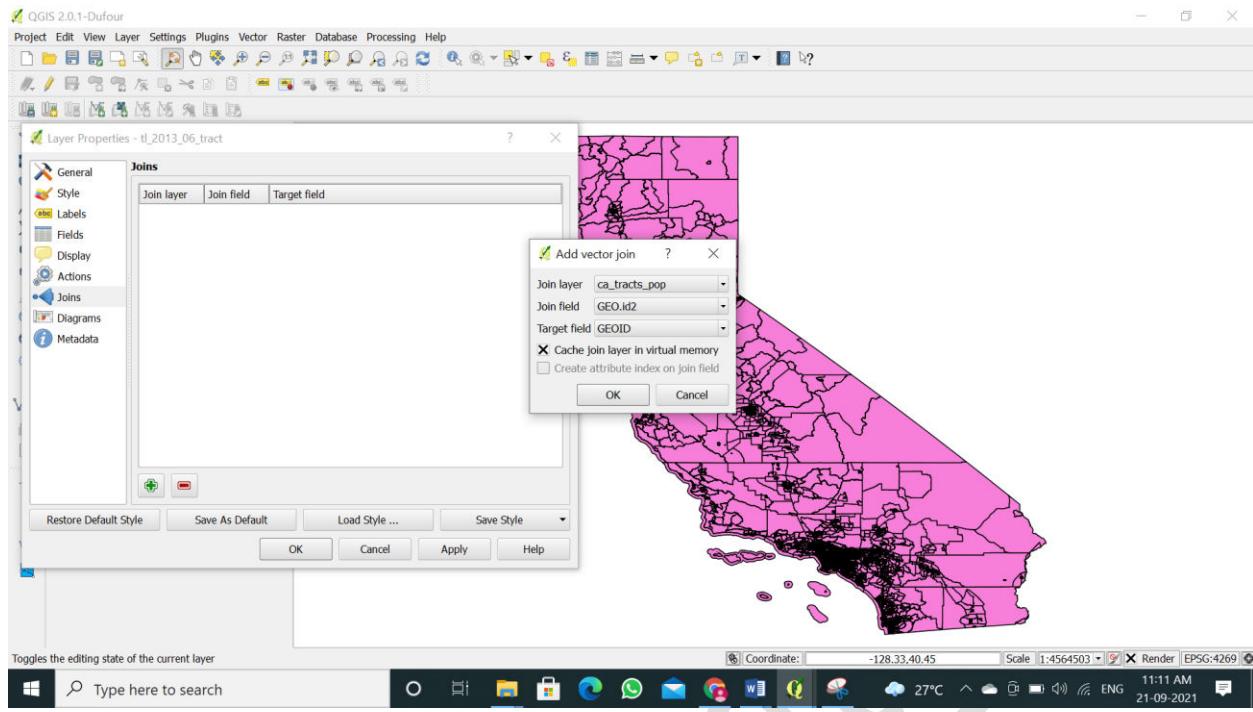


Step 8: In the Layer Properties dialog, select the Joins tab. Click on the + button at the bottom to create a new table join.

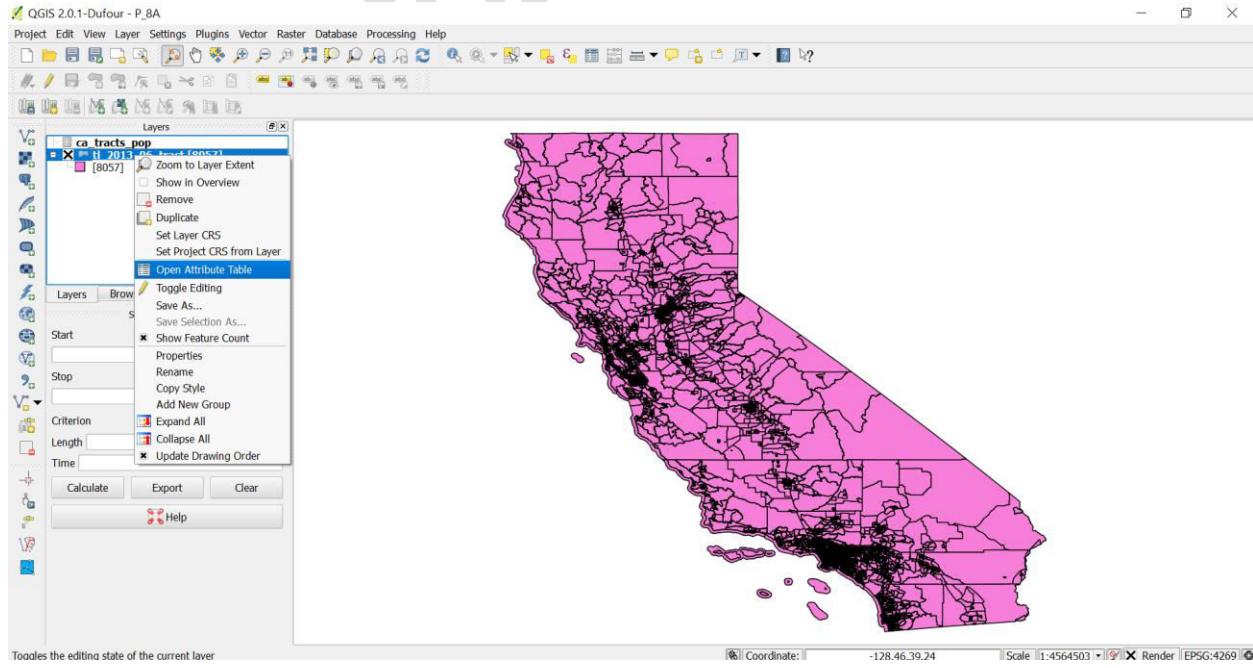


Step 9: In the Add vector join dialog, select ca_tracts_pop as the Join layer. Next we have to select the field with unique ids in both the shapefile and the CSV. Select GEO.id2 and GEOFID as the Join field and Target field respectively. Click OK.





Step 10: Close the Layer Properties dialog and return to the main QGIS window. At this point, the fields from the CSV file are joined with the shapefile. Right-click on the tl_2013_06_tract layer and select Open Attribute Table.



Step 11: You can now see a new set of fields, including ca_tracts_pop_D001 field added to each feature. Now you have access to the population value of each tract from the CSV file. Close the attribute table and return to the main QGIS window.

Attribute table - tl_2013_06_tract :: Features total: 8057, filtered: 8057, selected: 0

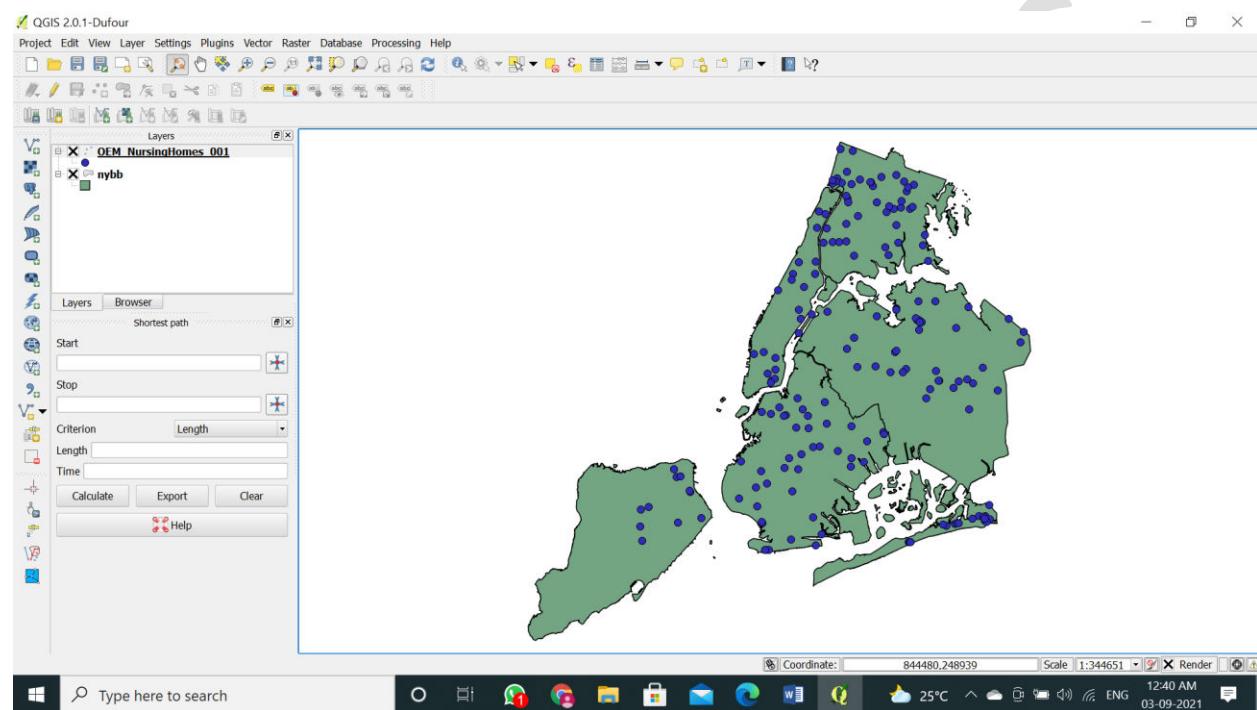
The screenshot shows the QGIS attribute table for the 'tl_2013_06_tract' layer. The table has 8057 features. The columns include STATEFF, COUNTYFF, TRACTCE, GEOID, NAME, NAMELSAE, MTFCC, FUNCSTAT, ALAND, AWATER, INTPTLAT, INTPTLON, pop_POPG, POPGROU, ca_tracts_pop_GEO_id, and tracts_pop_GEO.display_label. The 'ca_tracts_pop_GEO_id' column contains unique identifiers for each census tract, and the 'tracts_pop_GEO.display_label' column provides the tract name. The table is sorted by NAME. The bottom of the screen shows the Windows taskbar with various icons and the system tray showing the date and time (21-09-2021, 11:15 AM, 27°C, ENG).

STATEFF	COUNTYFF	TRACTCE	GEOID	NAME	NAMELSAE	MTFCC	FUNCSTAT	ALAND	AWATER	INTPTLAT	INTPTLON	pop_POPG	POPGROU	ca_tracts_pop_GEO_id	tracts_pop_GEO.display_label
11	06	001	442700	0600144...4427	Census Tr...	G5020	S	1234034	0	+37.5371...	-122.008...	001	Total non...	1400000US060014427...	Census Tract 4427. Alame...
1	06	001	442800	0600144...4428	Census Tr...	G5020	S	1278647	0	+37.5293...	-121.993...	001	Total non...	1400000US060014428...	Census Tract 4428. Alame...
2	06	037	204500	0603720...2045	Census Tr...	G5020	S	909972	0	+34.0175...	-118.197...	001	Total non...	1400000US060372045...	Census Tract 2045.10. o...
3	06	037	204610	0603720...204610	Census Tr...	G5020	S	280000	0	+34.0174...	-118.194...	001	Total non...	1400000US060372046...	Census Tract 204610. o...
4	06	037	205120	0603720...205120	Census Tr...	G5020	S	1461129	0	+34.0187...	-118.211...	001	Total non...	1400000US060372051...	Census Tract 205120. o...
5	06	037	206010	0603720...206010	Census Tr...	G5020	S	1418124	20551	+34.0682...	-118.232...	001	Total non...	1400000US060372060...	Census Tract 206010. o...
6	06	037	206020	0603720...206020	Census Tr...	G5020	S	843243	30290	+34.0571...	-118.231...	001	Total non...	1400000US060372060...	Census Tract 206020. o...
7	06	037	206050	0603720...206050	Census Tr...	G5020	S	1643242	94606	+34.0299...	-118.224...	001	Total non...	1400000US060372060...	Census Tract 206050. o...
8	06	037	207400	0603720...2074	Census Tr...	G5020	S	862998	6458	+34.0561...	-118.244...	001	Total non...	1400000US060372074...	Census Tract 2074.1. los A...
9	06	001	442900	0600144...4429	Census Tr...	G5020	S	2066533	0	+37.5184...	-121.974...	001	Total non...	1400000US060014429...	Census Tract 4429. Alame...
10	06	037	192410	0603719...192410	Census Tr...	G5020	S	683899	0	+34.0798...	-118.318...	001	Total non...	1400000US060371924...	Census Tract 1924.10. o...
11	06	037	192510	0603719...192510	Census Tr...	G5020	S	340750	0	+34.0798...	-118.306...	001	Total non...	1400000US060371925...	Census Tract 1925.10. o...
12	06	037	192520	0603719...192520	Census Tr...	G5020	S	307802	0	+34.0799...	-118.307...	001	Total non...	1400000US060371925...	Census Tract 1925.20. o...
13	06	037	192610	0603719...192610	Census Tr...	G5020	S	415408	0	+34.0813...	-118.296...	001	Total non...	1400000US060371926...	Census Tract 1926.10. o...
14	06	037	192700	0603719...1927	Census Tr...	G5020	S	531205	0	+34.0800...	-118.284...	001	Total non...	1400000US060371927...	Census Tract 1927.1. los A...
15	06	037	194500	0603719...1945	Census Tr...	G5020	S	685342	0	+34.0781...	-118.369...	001	Total non...	1400000US060371945...	Census Tract 1945. Los A...
16	06	037	195100	0603719...1951	Census Tr...	G5020	S	154602	329063	+34.0798...	-118.372...	001	Total non...	1400000US060371951...	Census Tract 1951. Los A...
17	06	037	195300	0603719...1953	Census Tr...	G5020	S	580349	0	+34.0992...	-118.283...	001	Total non...	1400000US060371953...	Census Tract 1953.1. los A...
18	06	001	443001	0600144...443001	Census Tr...	G5020	S	7663730	0	+37.5184...	-121.951...	001	Total non...	1400000US060014430...	Census Tract 4430.1. Ala...
19	06	001	443002	0600144...443002	Census Tr...	G5020	S	1580314	0	+37.5168...	-121.960...	001	Total non...	1400000US060014430...	Census Tract 4430.02. Ala...
20	06	001	443102	0600144...443102	Census Tr...	G5020	S	2375918	0	+37.5071...	-121.927...	001	Total non...	1400000US060014431...	Census Tract 4431.02. Ala...
21	06	001	443301	0600144...443301	Census Tr...	G5020	S	1577682	0	+37.4707...	-121.912...	001	Total non...	1400000US060014433...	Census Tract 4433.01. Ala...
22	06	037	137501	0603713...137501	Census Tr...	G5020	S	2514417	0	+34.1649...	-118.576...	001	Total non...	1400000US060371375...	Census Tract 1375.01. o...
23	06	037	137502	0603713...137502	Census Tr...	G5020	S	2090215	0	+34.1634...	-118.597...	001	Total non...	1400000US060371375...	Census Tract 1375.02. o...
24	06	001	444106	0600144...4441	Census Tr...	G5020	S	2955528	60526	+37.5509...	-122.036...	001	Total non...	1400000US060014441...	Census Tract 4441. Alame...
25	06	001	444200	0600144...4442	Census Tr...	G5020	S	2069728	0	+37.5452...	-122.045...	001	Total non...	1400000US060014442...	Census Tract 4442. Alame...
26	06	037	195500	0603719...1955	Census Tr...	G5020	S	1215206	0	+34.0881...	-118.264...	001	Total non...	1400000US060371955...	Census Tract 1955.1. los A...
27	06	037	195600	0603719...1956	Census Tr...	G5020	S	527584	0	+34.0808...	-118.265...	001	Total non...	1400000US060371956...	Census Tract 1956.1. los A...
28	06	037	195710	0603719...195710	Census Tr...	G5020	S	483407	0	+34.0747...	-118.266...	001	Total non...	1400000US060371957...	Census Tract 1957.10. o...
29	06	037	195720	0603719...195720	Census Tr...	G5020	S	78846	0	+34.0747...	-118.267...	001	Total non...	1400000US060371957...	Census Tract 1957.20. o...
30	06	001	444400	0600144...4444	Census Tr...	G5020	S	1027708	0	+37.5362...	-122.035...	001	Total non...	1400000US060014444...	Census Tract 4444. Alame...
31	06	037	195802	0603719...195802	Census Tr...	G5020	S	402523	0	+34.0756...	-118.277...	001	Total non...	1400000US060371958...	Census Tract 1958.02. o...
32	06	001	444500	0600144...4445	Census Tr...	G5020	S	1959291	0	+37.5342...	-122.027...	001	Total non...	1400000US060014445...	Census Tract 4445. Alame...
33	06	001	450200	0600145...4502	Census Tr...	G5020	S	1620535	0	+37.7224...	-121.915...	001	Total non...	1400000US060014502...	Census Tract 4502. Alame...
34	06	001	450300	0600145...4503	Census Tr...	G5020	S	3071984	0	+37.7108...	-121.917...	001	Total non...	1400000US060014503...	Census Tract 4503. Alame...
35	06	037	137504	0603713...137504	Census Tr...	G5020	S	3837564	0	+34.1480...	-118.572...	001	Total non...	1400000US060371375...	Census Tract 1375.04. o...
36	06	037	138000	0603713...1380	Census Tr...	G5020	S	4472390	0	+34.1488...	-118.591...	001	Total non...	1400000US060371380...	Census Tract 1380.1. los A...
37	06	037	139200	0603713...1392	Census Tr...	G5020	S	1152032	0	+34.1756...	-118.524...	001	Total non...	1400000US060371392...	Census Tract 1392.1. los A...
38	06	067	002300	0606700...23	Census Tr...	G5020	S	1213095	0	+38.5571...	-121.493...	001	Total non...	1400000US060670023...	Census Tract 23. Sacrame...
39	06	067	002400	0606700...24	Census Tr...	G5020	S	3224721	0	+38.5448...	-121.497...	001	Total non...	1400000US060670024...	Census Tract 24. Sacrame...
40	06	037	143200	0603714...1432	Census Tr...	G5020	S	957093	0	+34.1494...	-118.372...	001	Total non...	1400000US060371432...	Census Tract 1432.1. los A...
41	06	037	143300	0603714...1433	Census Tr...	G5020	S	1649228	5619	+34.1521...	-118.386...	001	Total non...	1400000US060371433...	Census Tract 1433.1. los A...

Practical 8B

Aim: Performing Spatial Joins

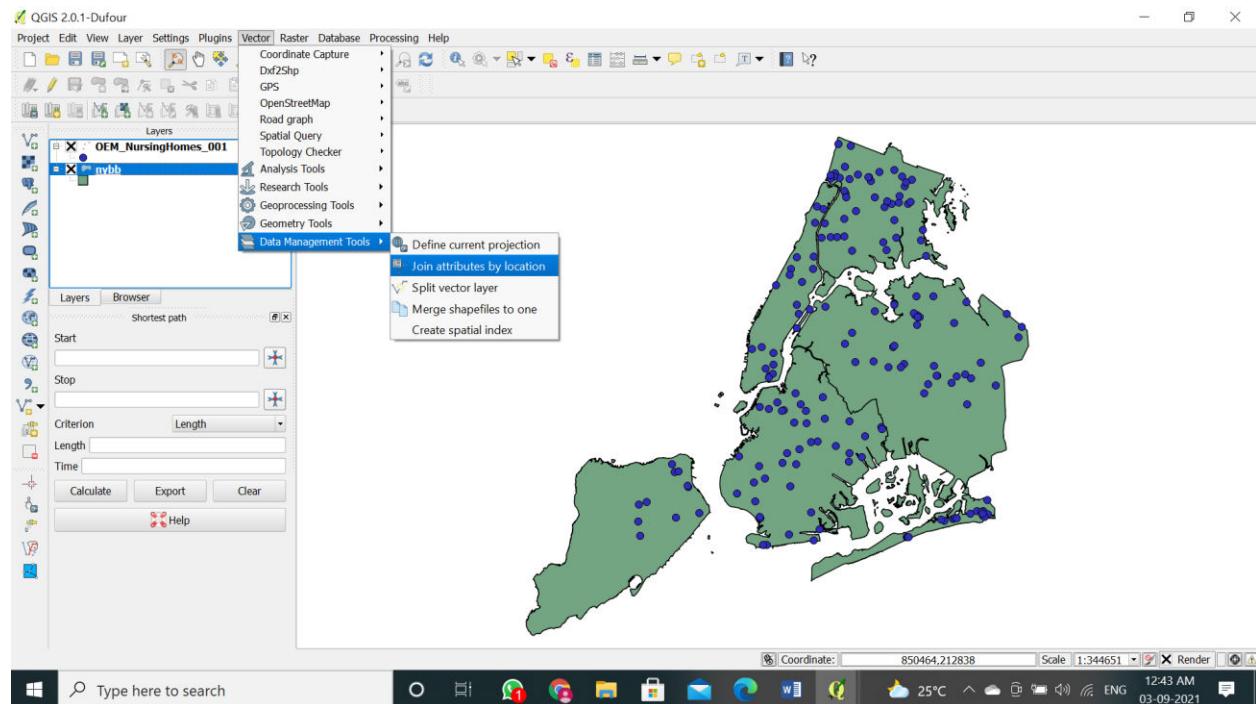
Step 1: Go to Layer → Add Layer → Add Vector Layer → Select nybb.shp” and OEM_NursingHomes_001.shp” from data folder.



Step 2: Go to attribute table and observe the data. (Table before performing Join)

oroCoc	BoroName	Shape_Len	Shape_Area
1	5. Staten Isl.	330454.8	1623846.
2	1. Manhattan	357176.1	6363978.
3	4. Bronx	110297.8	110297.8
4	3. Brooklyn	742297.8	1937844.
5	4. Queens	874225.1	3048478..

Step 3: Go to Vector → Data Management Tools → Join Attributes by Location



Step 4: Give following Parameters:

Input: nybb

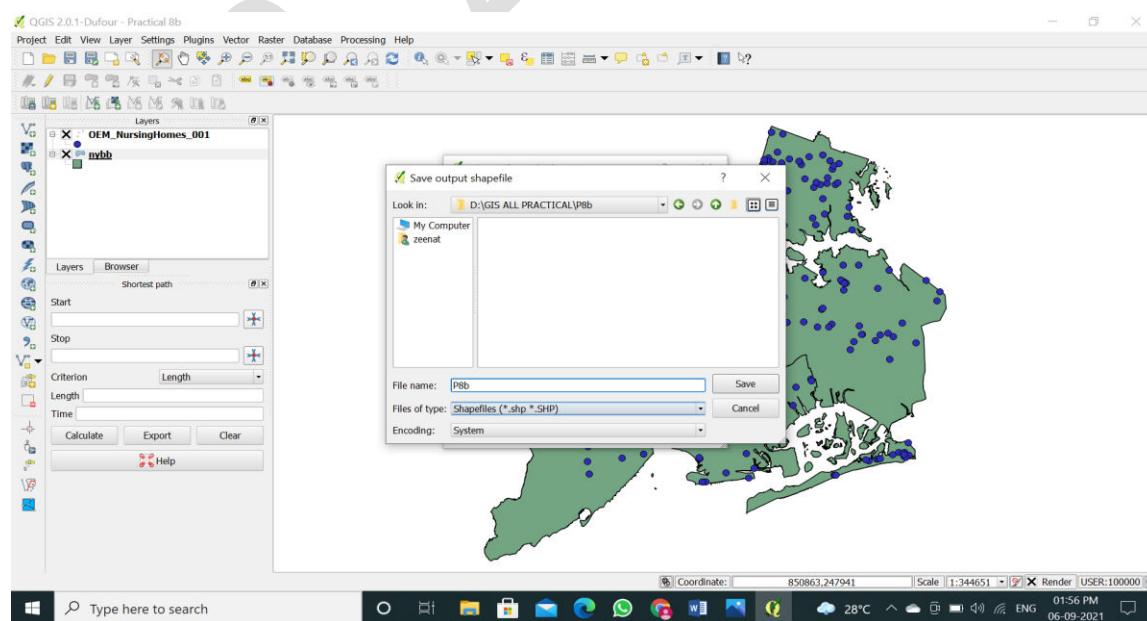
Join layer: OEM_NursingHomes_001

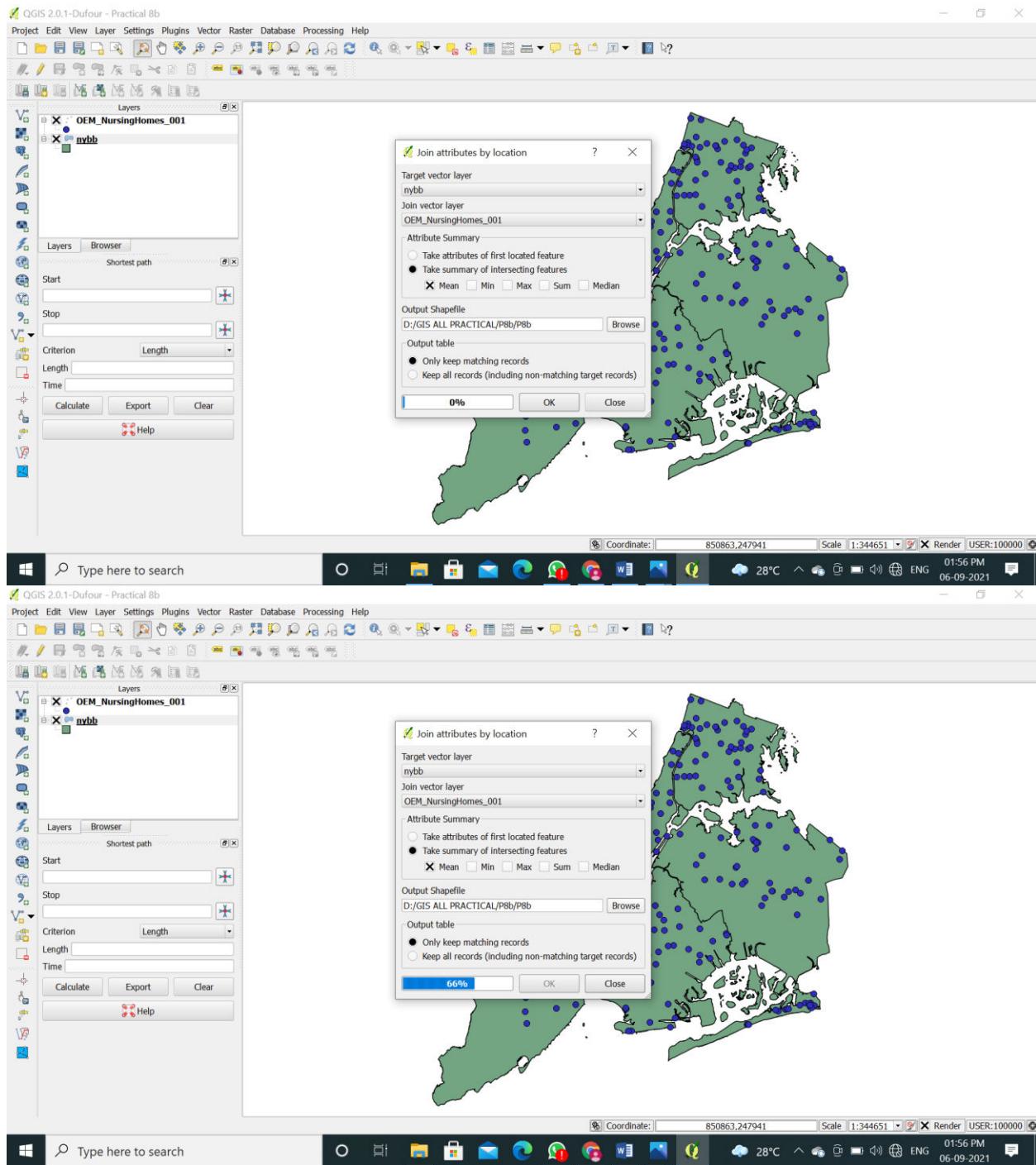
Geometric Predicate: intersects

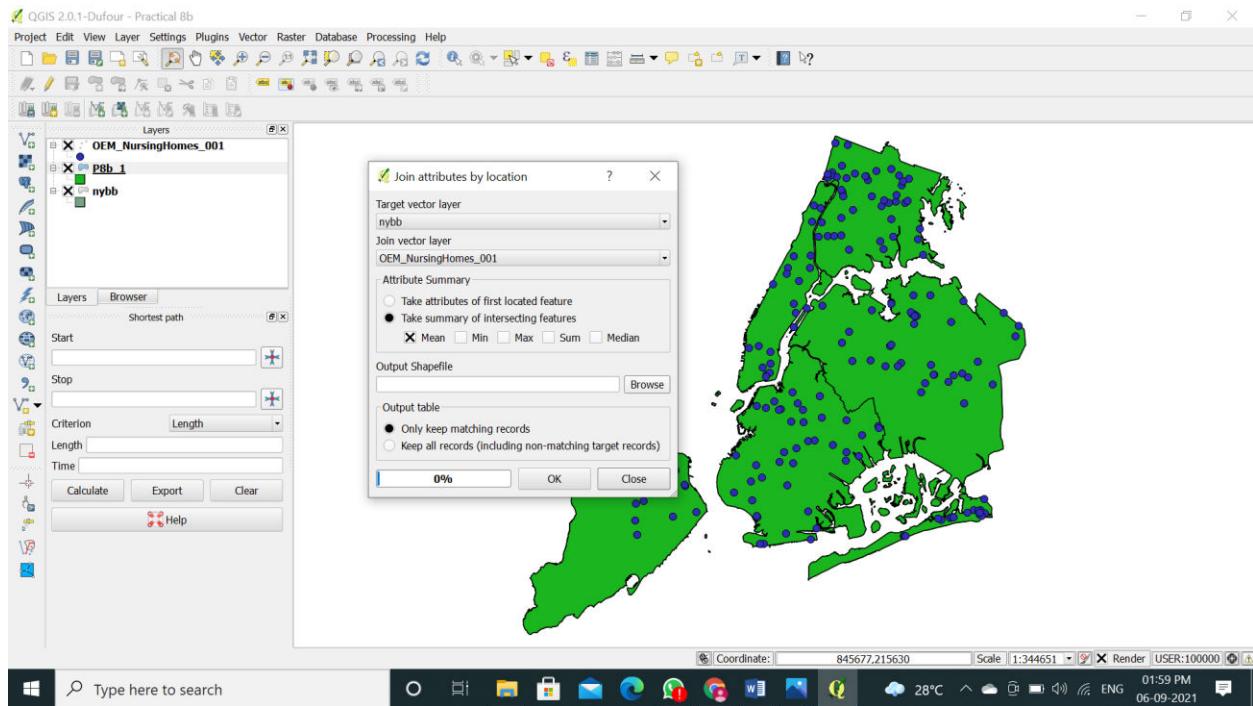
Fields to add: Click on Browse button Select all OK

Join type: one to one

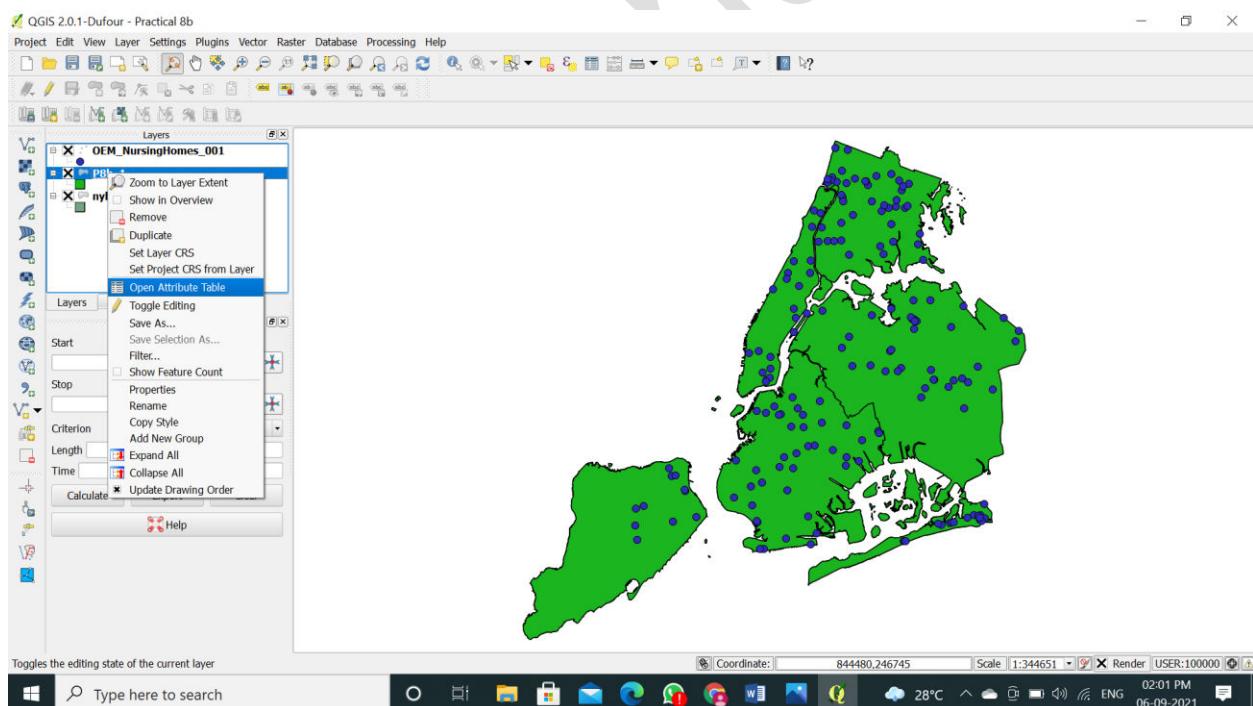
Joined layer: Click on browse button Save to file Filename(table_joins)







Step 5: Open attribute table AFTER JOIN



Step 6: Use the Identify Feature  Button to select a region to view join data on map Layer.

Step 7: Output

Attribute table - P8b_1 :: Features total: 5, filtered: 5, selected: 0

	BoroCoc	BoroName	Shape_Leng	Shape_Area	MEANPFI	IEANOpCe	IEANCapa	IEANBase	MEANAIDS	IEANAdult	IEANAdult	IEANLabor	IEANHealth	IEANRadic	MEANLTS	IEANRespi	MEANVentil	IEANOPD	IEANOPP
1	5. Staten Isl.	330454.8	1623846...	2031.636...	7004314...	286.0000...	1.000000...	0.000000...	0.000000...	0.000000...	0.000000...	0.000000...	0.000000...	0.000000...	0.000000...	0.000000...	0.000000...	0.000000...	
2	1. Manhattan	357176.1	6363978...	2621.818...	7002344...	320.0000...	1.000000...	0.000000...	0.000000...	0.000000...	0.000000...	0.000000...	0.000000...	0.000000...	0.000000...	0.000000...	0.000000...	0.000000...	
3	2. Bronx	464475.0	1186823...	1817.913...	7000353...	257.0000...	1.000000...	0.000000...	0.000000...	0.000000...	0.000000...	0.000000...	0.000000...	0.000000...	0.000000...	0.000000...	0.000000...	0.000000...	
4	3. Brooklyn	742297.8	1937844...	2280.238...	7001346...	250.0000...	1.000000...	0.000000...	0.000000...	0.000000...	0.000000...	0.000000...	0.000000...	0.000000...	0.000000...	0.000000...	0.000000...	0.000000...	
5	4. Queens	874225.1	3048478...	2504.982...	7003365...	219.0000...	1.000000...	0.000000...	0.000000...	0.000000...	0.000000...	0.000000...	0.000000...	0.000000...	0.000000...	0.000000...	0.000000...	0.000000...	

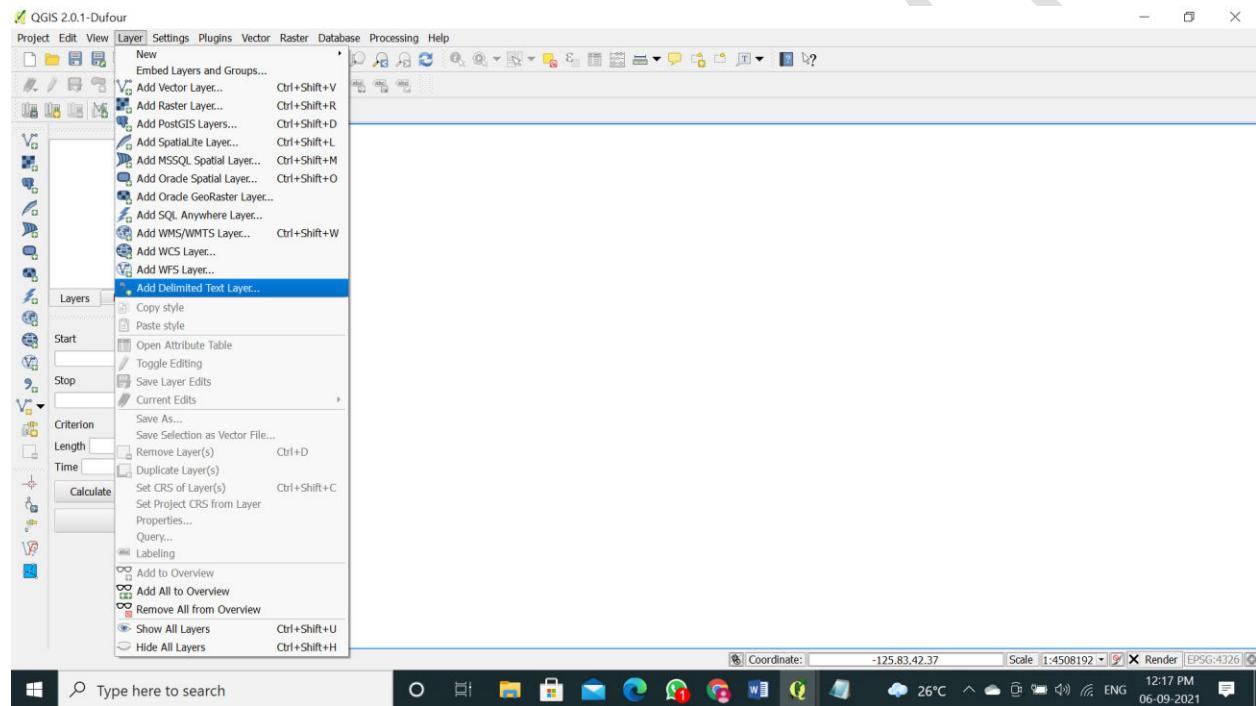
578 / Zeenab

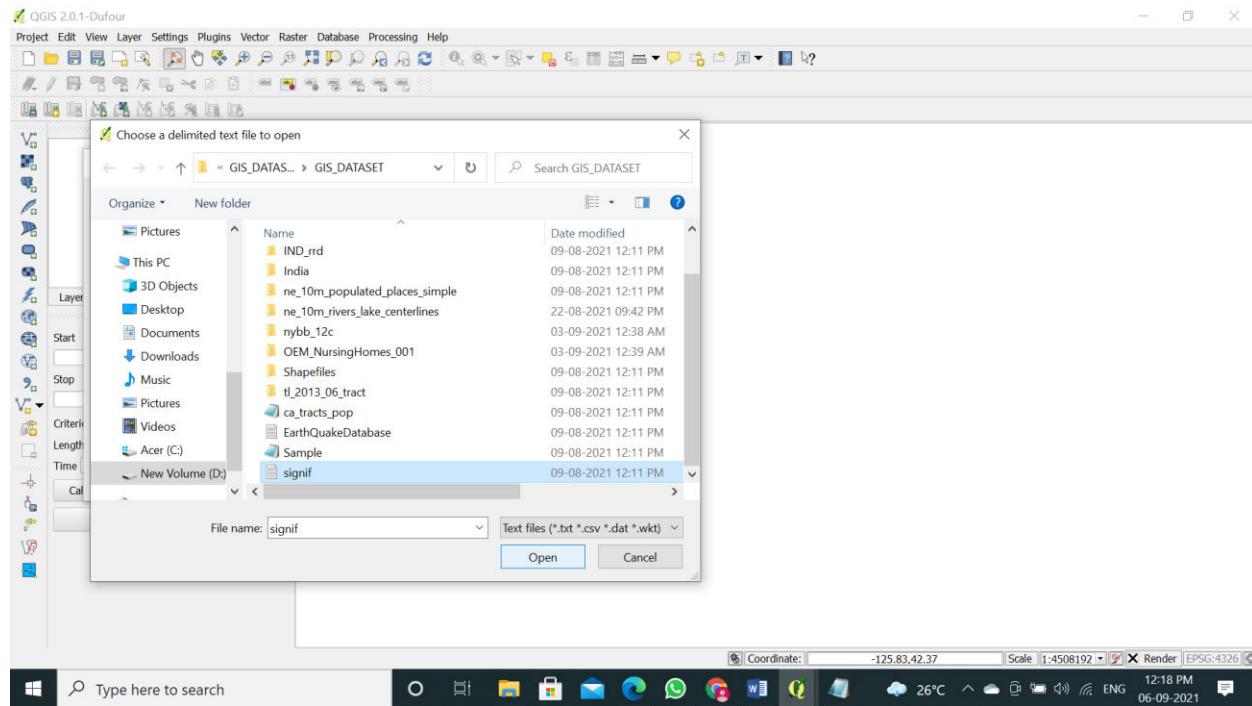
Practical 8C

Aim: Performing Nearest Neighbour Analysis

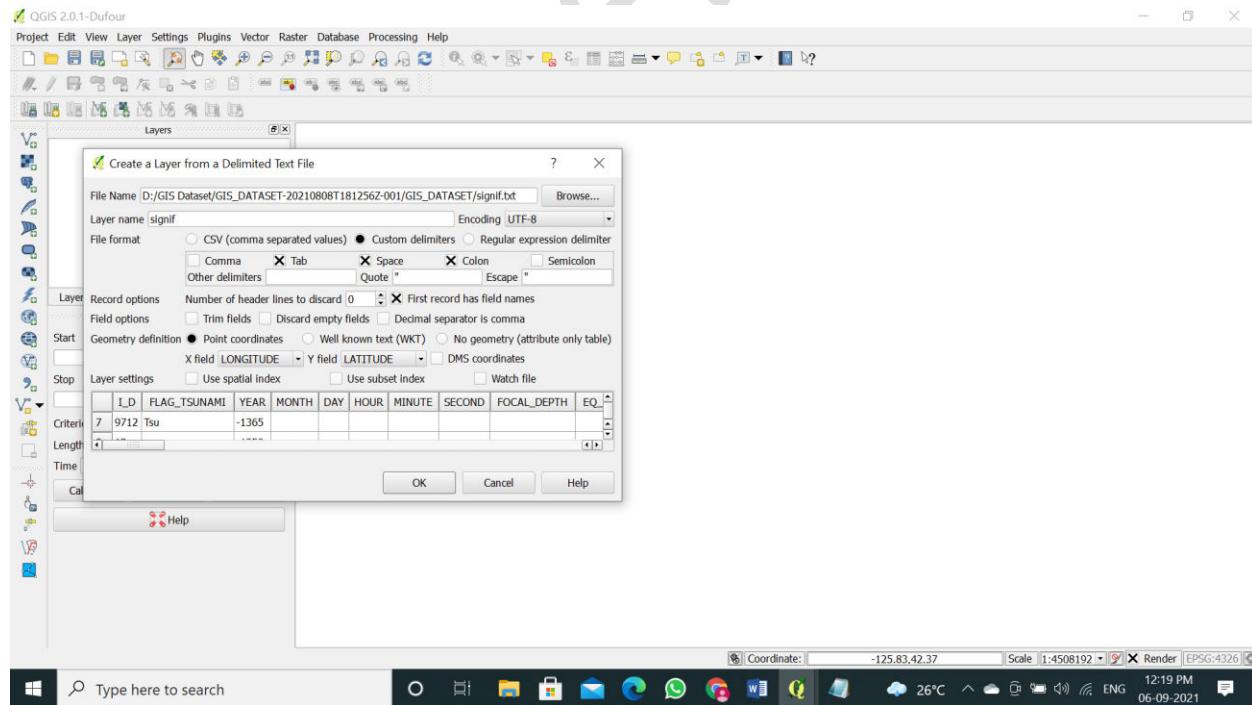
GIS is very useful in analyzing spatial relationship between features. One such analysis is finding out which features are closest to a given feature. QGIS has a tool called Distance Matrix which helps with such analysis. In this tutorial, we will use 2 datasets and find out which points from one layer are closest to which point from the second layer.

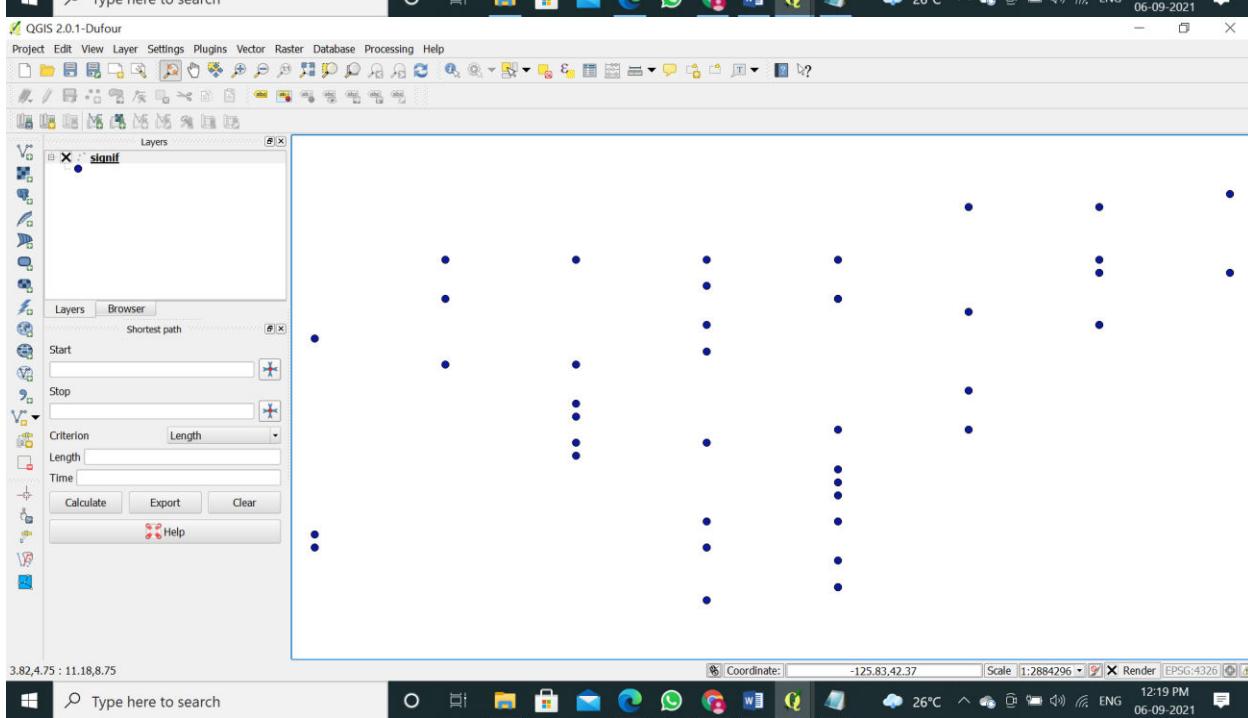
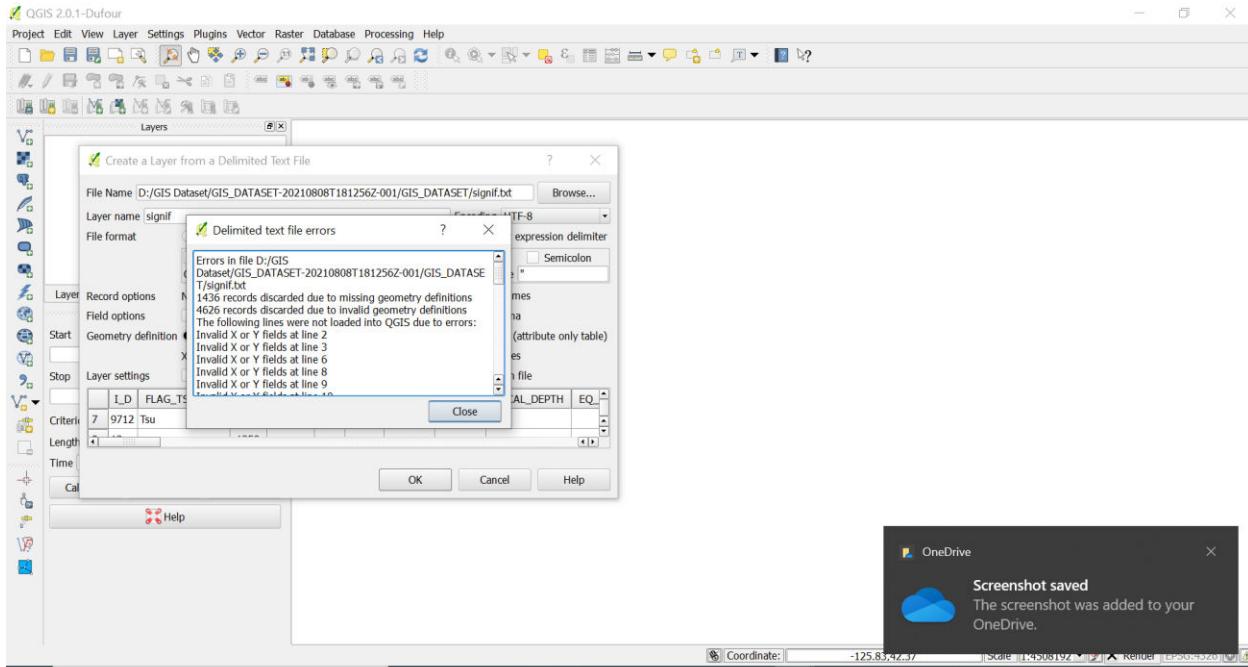
Step 1: Open Layer Add Layer Add Delimited Text Layer and browse to the downloaded signif.txt file.

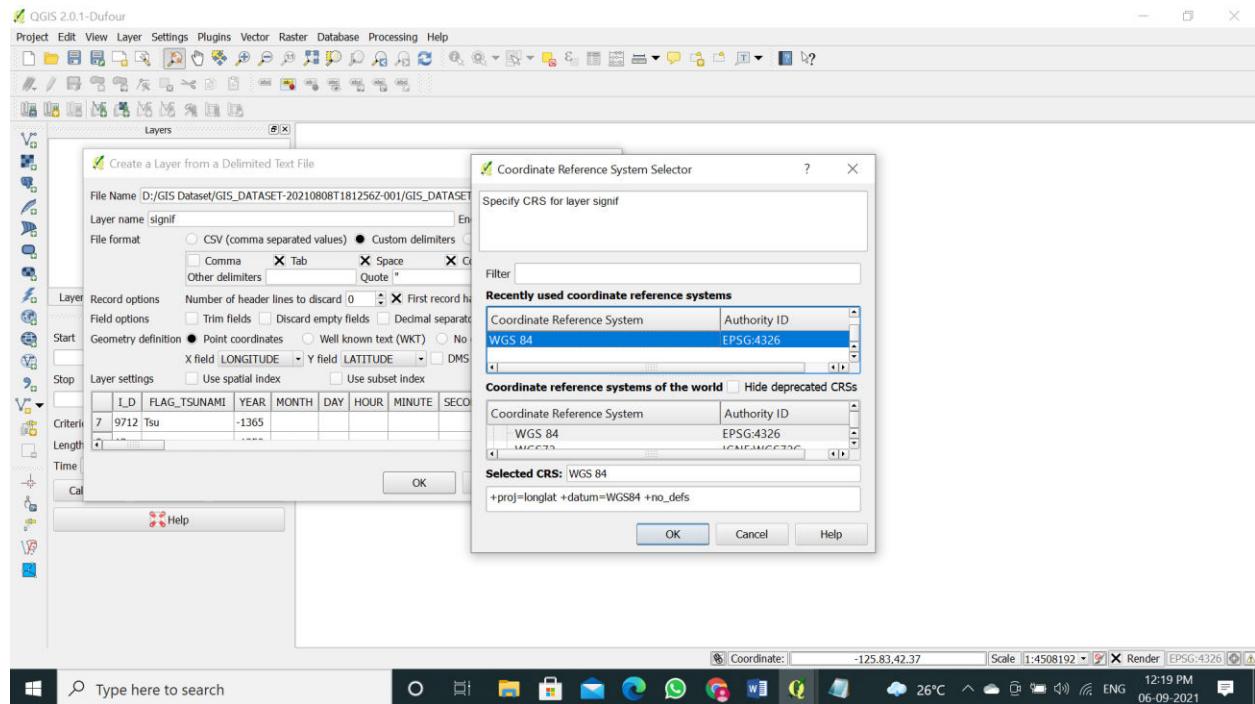




Step 2: Since this is a tab-delimited file, choose Tab as the File format. The X field and Y field would be auto-populated. Click OK.

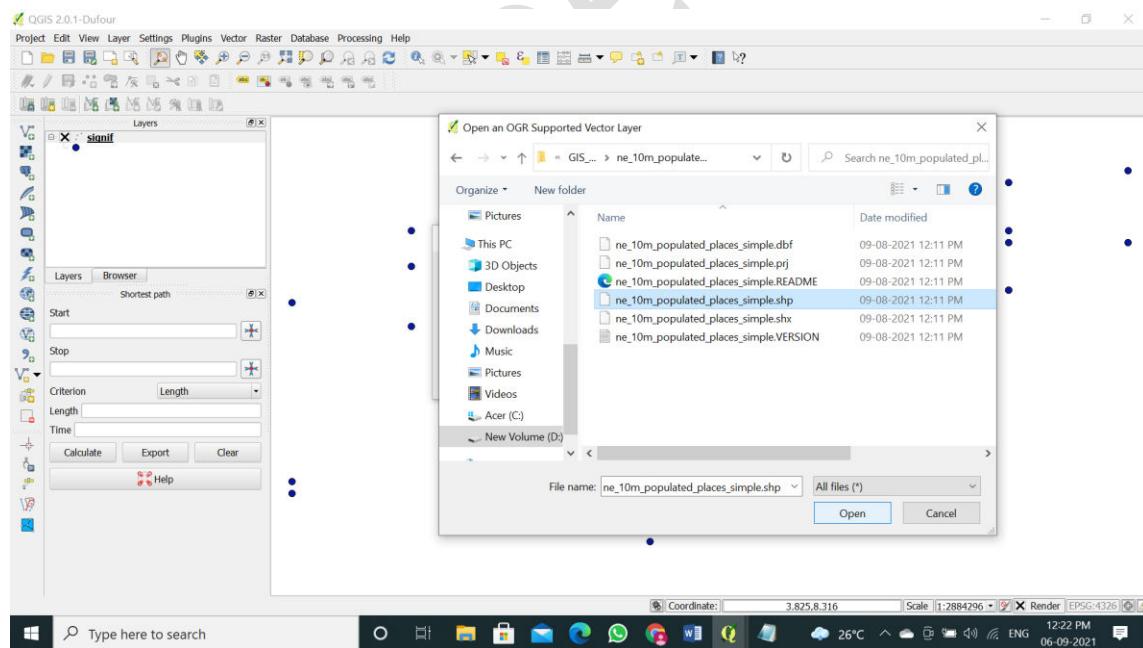


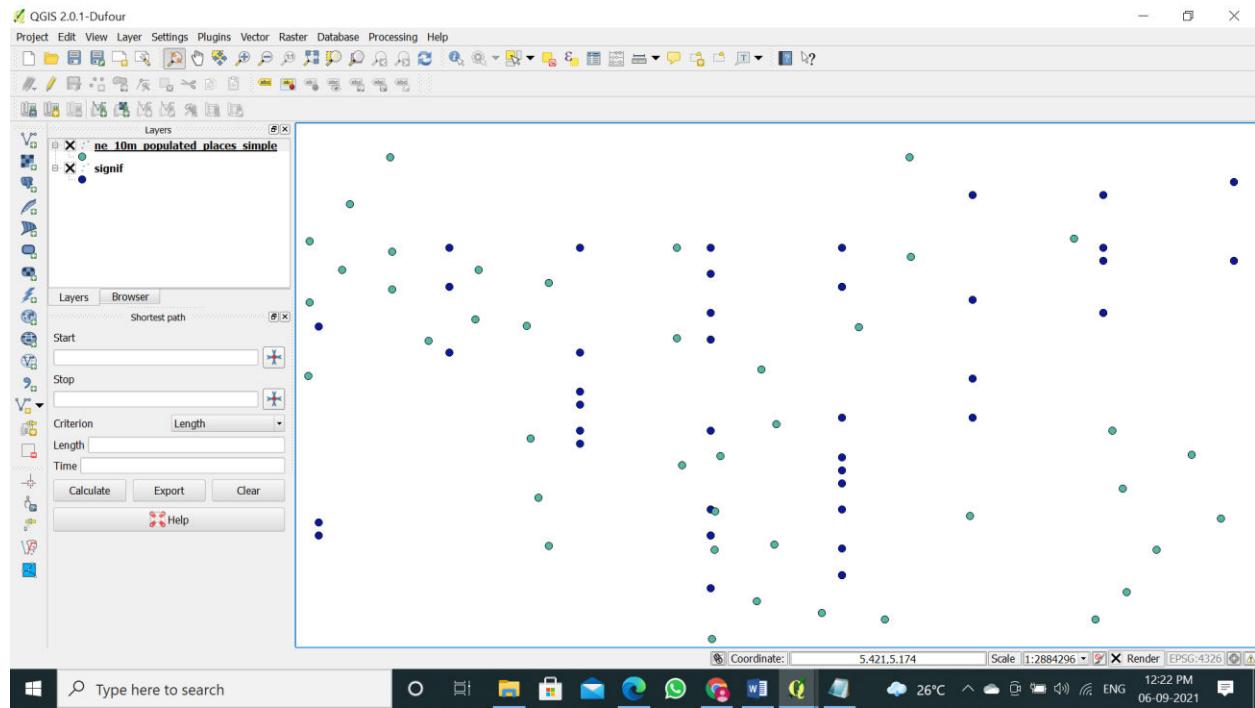




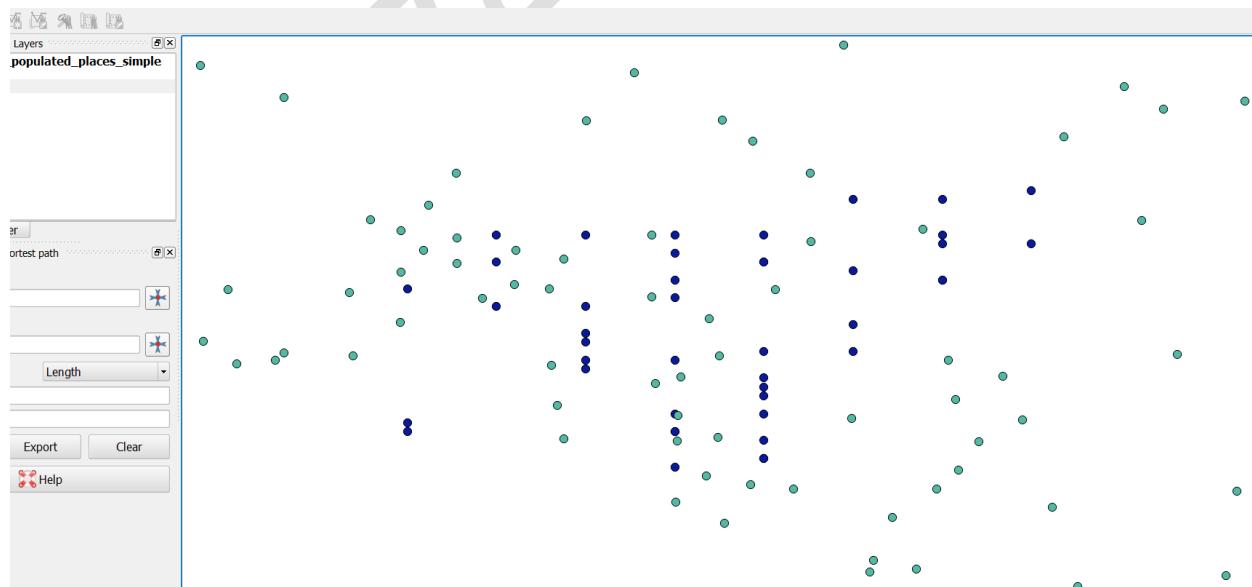
Step 3: Go to Layer Add Layer Add Vector Layer.

Step 4: Browse to the downloaded ne_10m_populated_places_simple.zip file and click Open.

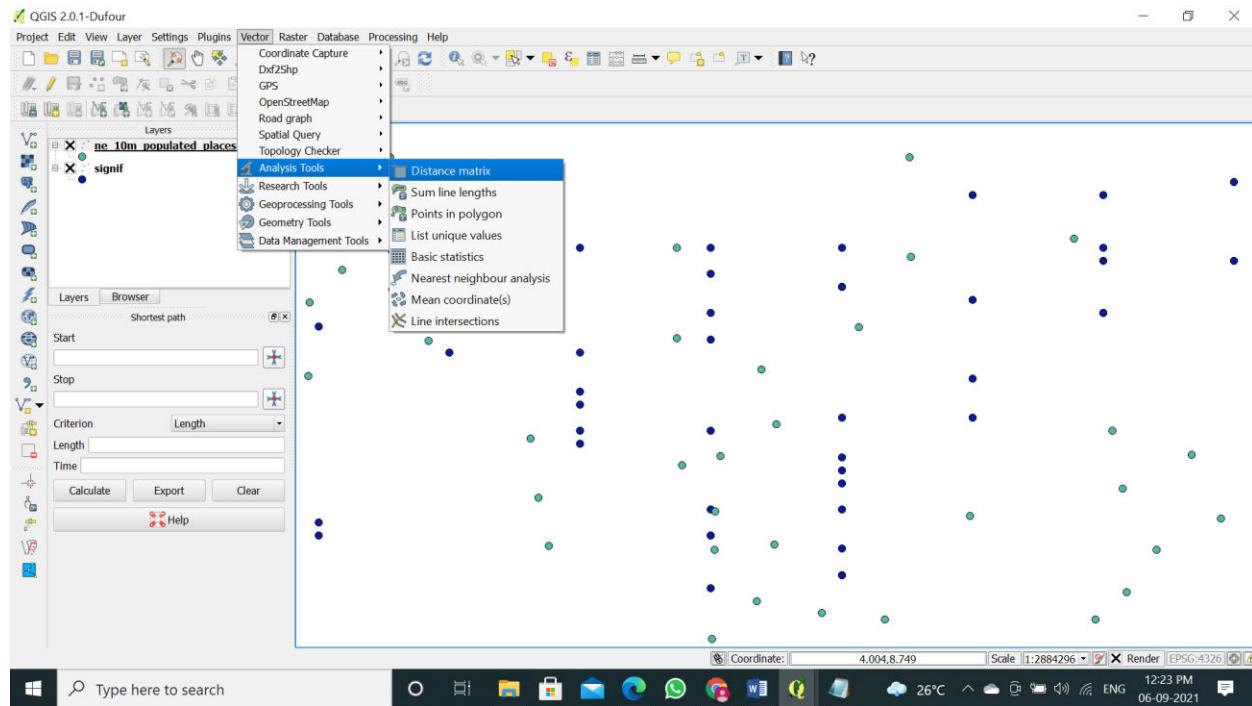




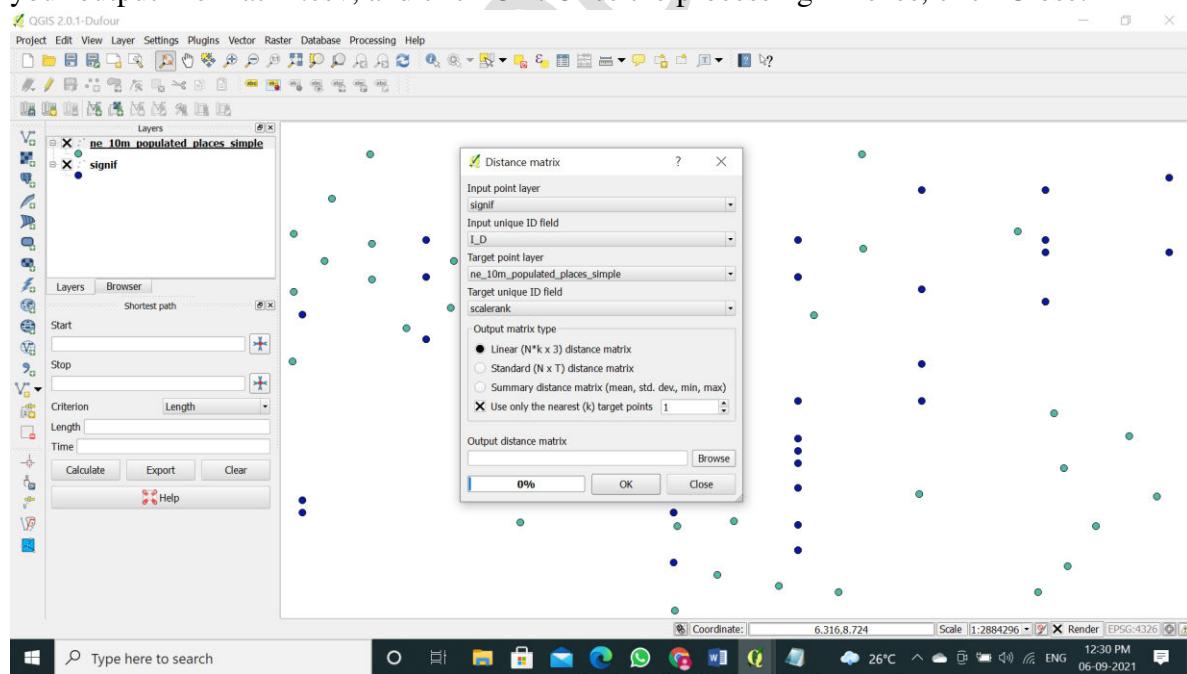
Step 5: Zoom around and explore both the datasets. Each purple point represents the location of a significant earthquake and each blue point represents the location of a populated place. We need a way to find out the nearest point from the populated places layer for each of the points in the earthquake layer

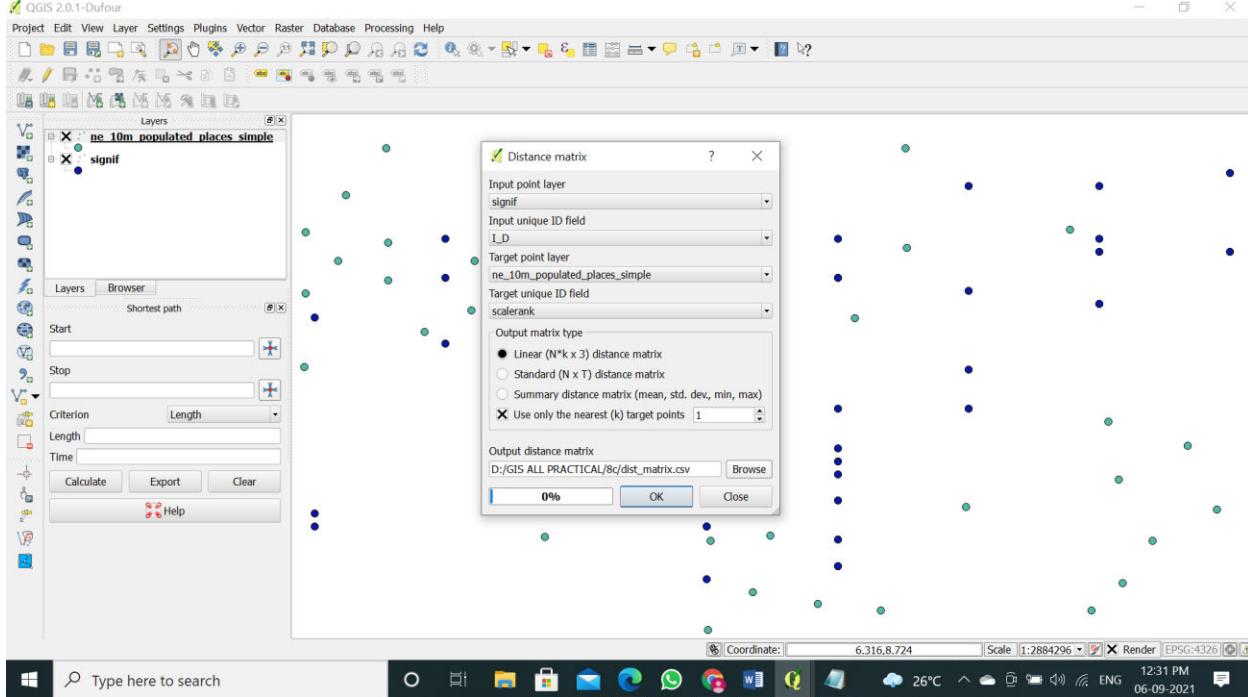
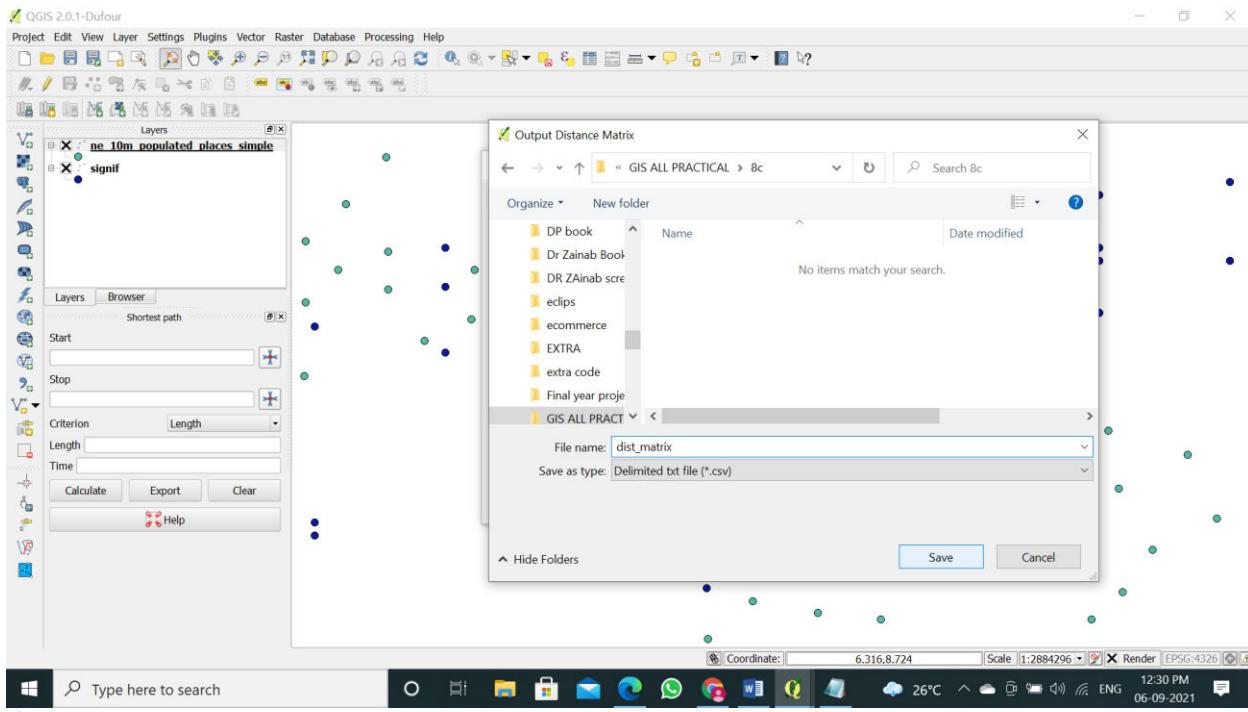


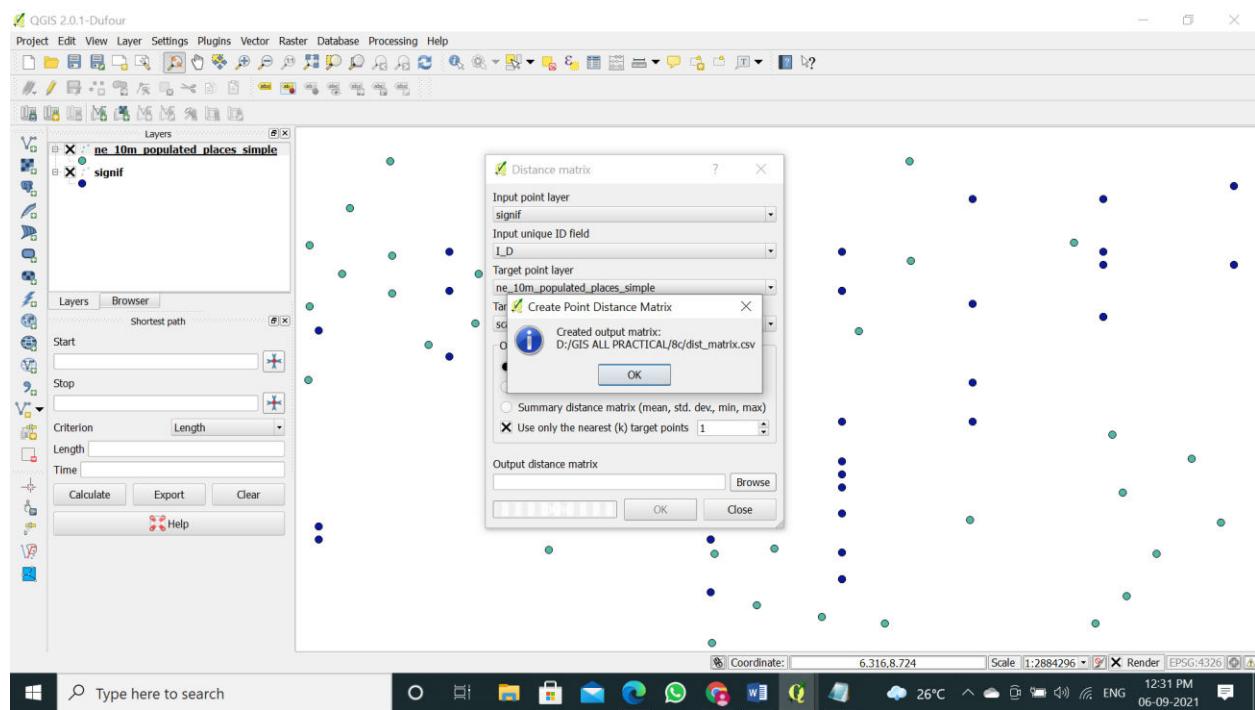
Step 6: Go to Vector Analysis Tools Distance Matrix



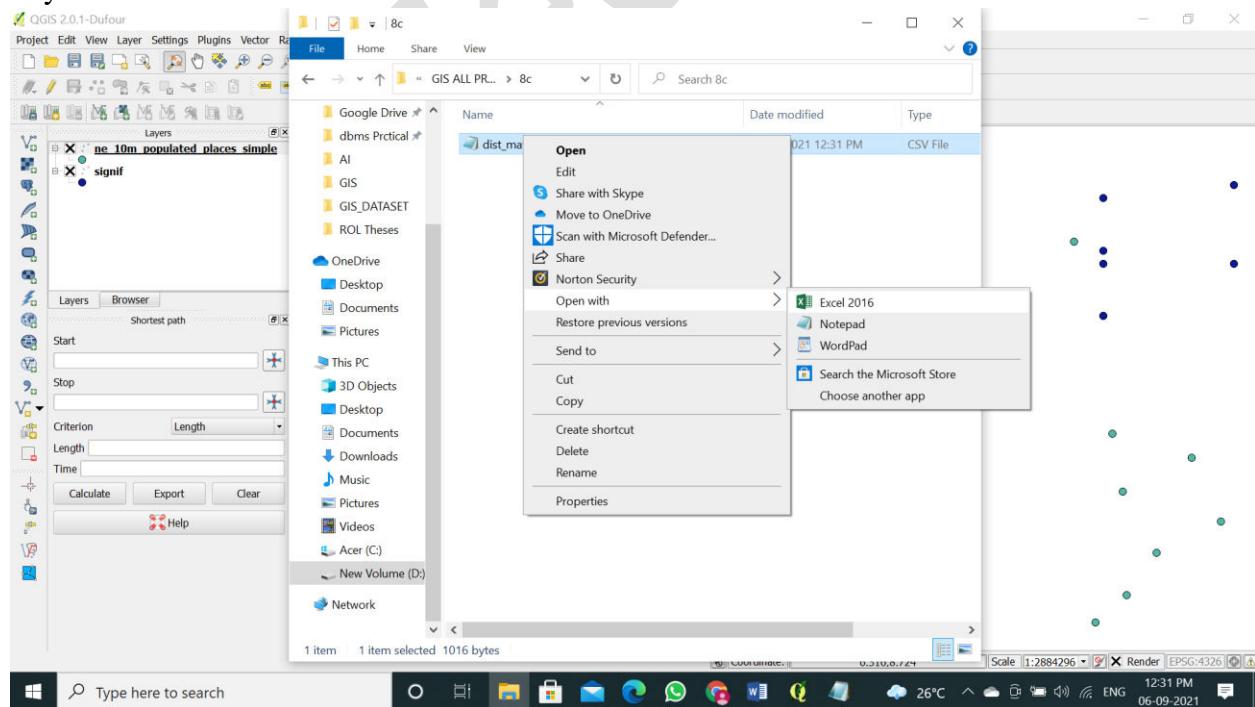
Step 7: Here select the earthquake layer signif as the Input point layer and the populated places ne_10m_populated_places_simple as the target layer. You also need to select a unique field from each of these layers which is how your results will be displayed. In this analysis, we are looking to get only 1 nearest point, so check the Use only the nearest(k) target points, and enter 1. Name your output file matrix.csv, and click OK. Once the processing finishes, click Close.





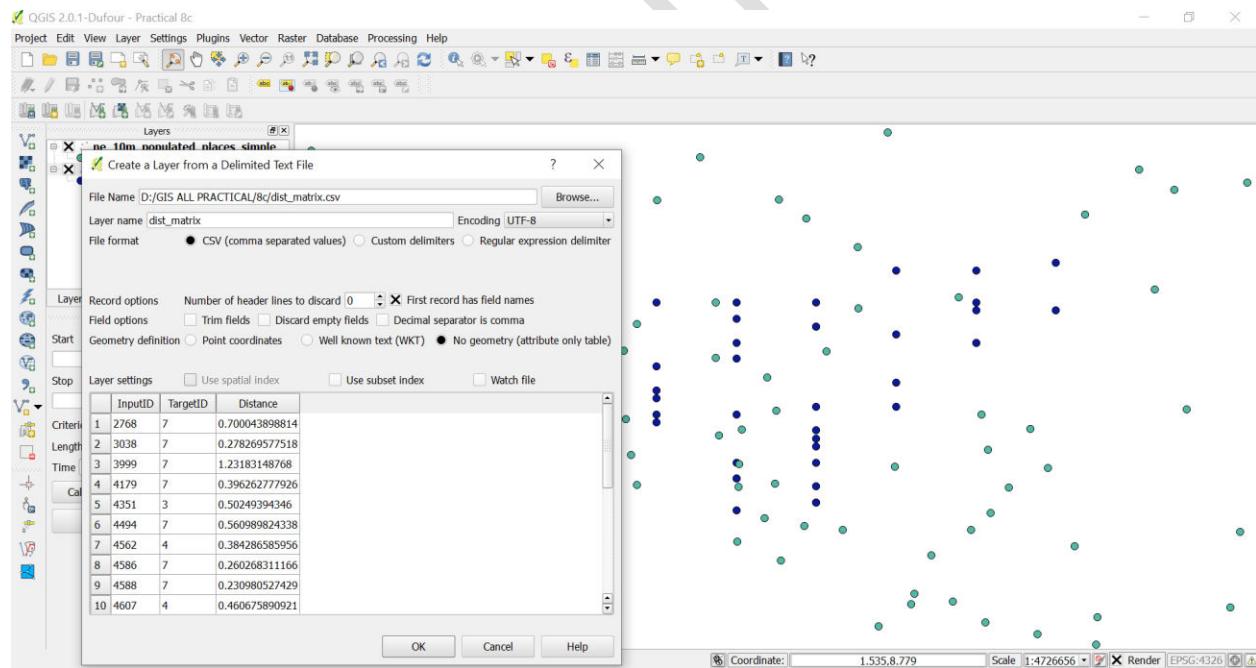


Step 8: Once the processing finishes, click the Close button in the Distance Matrix dialog. You can now view the matrix.csv file in Notepad or any text editor. QGIS can import CSV files as well, so we will add it to QGIS and view it there. Go to Layer Add Layer Add Delimited Text Layer....

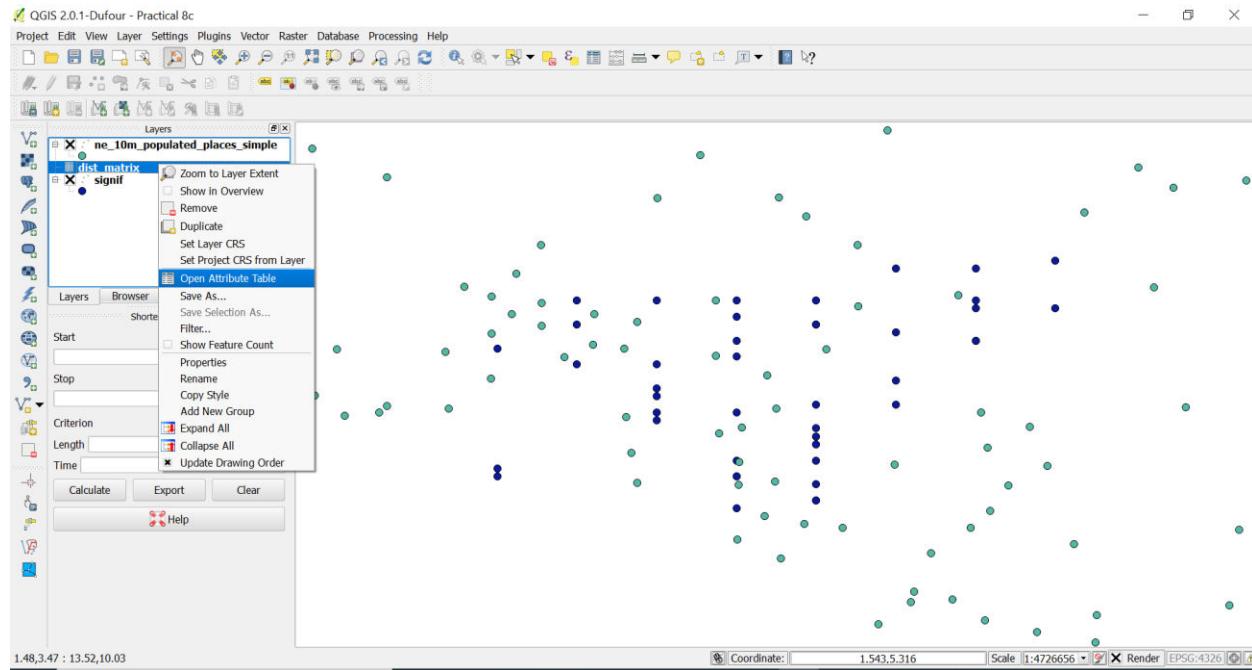


A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
1	InputID	TargetID	Distance															
2	2768	7	0.700044															
3	3038	7	0.27827															
4	3999	7	1.231831															
5	4179	7	0.396263															
6	4351	3	0.502494															
7	4494	7	0.56099															
8	4562	4	0.384287															
9	4586	7	0.260268															
10	4588	7	0.230981															
11	4607	4	0.460676															
12	4609	7	0.328309															
13	4614	7	0.202077															
14	4615	7	0.255712															
15	4616	7	0.360926															
16	4647	10	0.579669															
17	4649	10	0.328278															
18	4650	3	0.610348															
19	4651	7	0.260061															
20	4669	7	0.33578															
21	4686	4	0.523199															
22	4689	4	0.386253															

Step 9: Browse to the newly created matrix.csv file. Since this file is just text columns, select No geometry (attribute only table) as the Geometry definition. Click OK.



Step 10: You will see the CSV file loaded as a table. Right-click on the table layer and select Open Attribute Table.



Step 11: Now you will be able to see the content of our results. The InputID field contains the field name from the Earthquake layer. The TargetID field contains the name of the feature from the Populated Places layer that was the closest to the earthquake point. The Distance field is the distance between the 2 points.

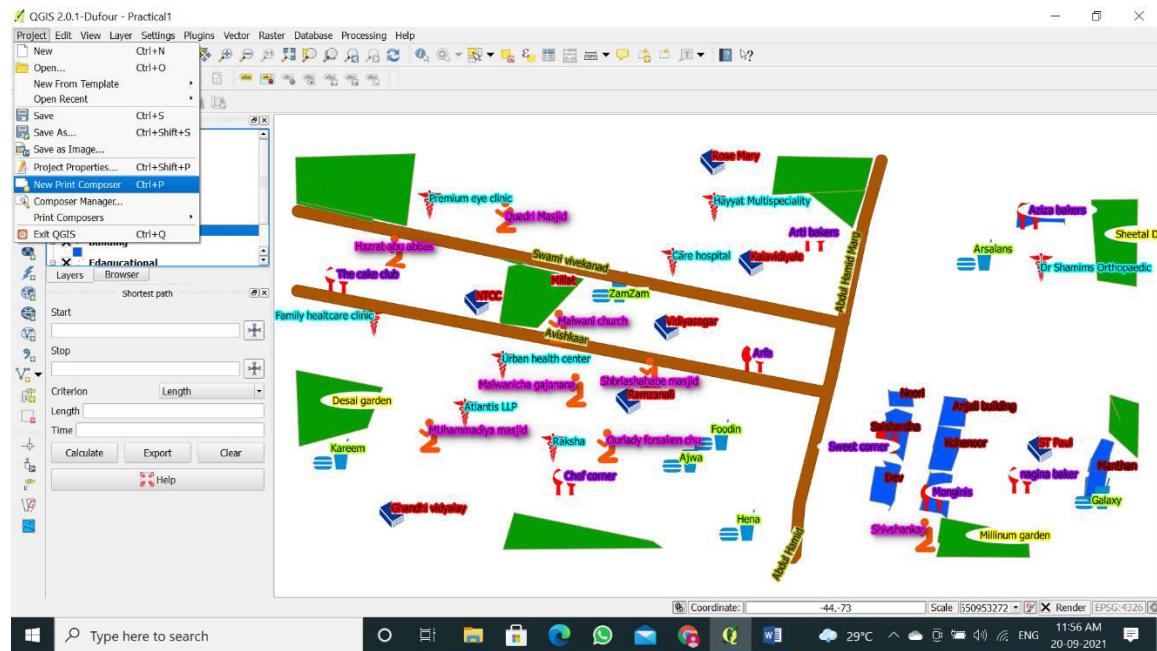
Attribute table - dist_matrix :: Features total: 43, filtered: 43, selected: 0

	InputID	TargetID	Distance
1	2768	7	0.700043...
2	3038	7	0.278269...
3	3999	7	1.231831...
4	4179	7	0.39662...
5	4351	3	0.502493...
6	4494	7	0.560989...
7	4562	4	0.336286...
8	4586	7	0.56003...
9	4588	7	0.230980...
10	4607	4	0.460675...
11	4609	7	0.298308...
12	4614	7	0.202076...
13	4615	7	0.255711...
14	4616	7	0.360926...
15	4647	10	0.579668...
16	4649	10	0.328278...
17	4650	3	0.610348...
18	4651	7	0.260060...
19	4669	7	0.335780...
20	4686	4	0.523199...
21	4689	4	0.336286...
22	4705	7	0.277785...
23	4708	4	0.534616...
24	4715	10	0.514362...
25	4717	7	0.321835...
26	4724	7	0.611360...
27	4732	7	0.037074...
28	4741	0	1.042584...
29	4744	7	0.749827...
30	4748	3	0.559033...
31	4752	7	0.611360...
32	4763	3	0.672704...
33	4777	4	0.195685...
34	4781	10	0.579668...
35	4784	4	0.574260...
36	4788	7	0.183771...
37	4802	10	0.110117...
38	4803	0	0.963296...
39	4813	10	0.110117...
40	4814	10	0.328278...
41	4818	7	0.953592...
42	4820	7	0.335780...
43	5062	7	0.456369...

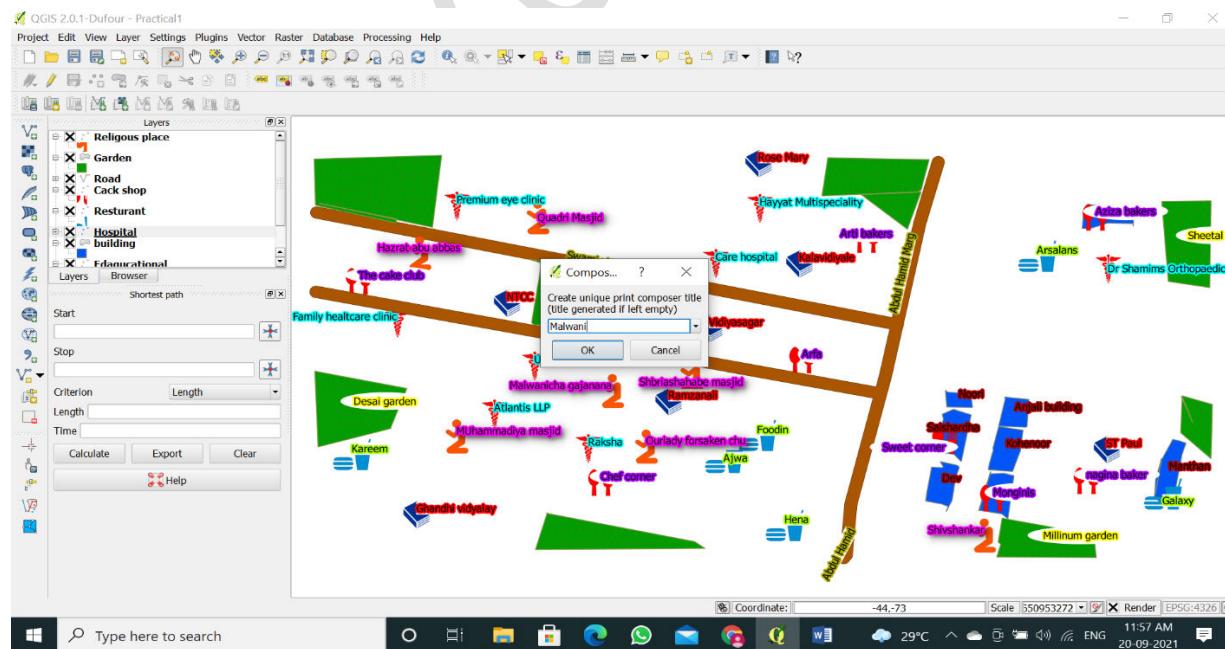
Practical No 9

Aim: Automating Map Creation with Print Composer Atlas

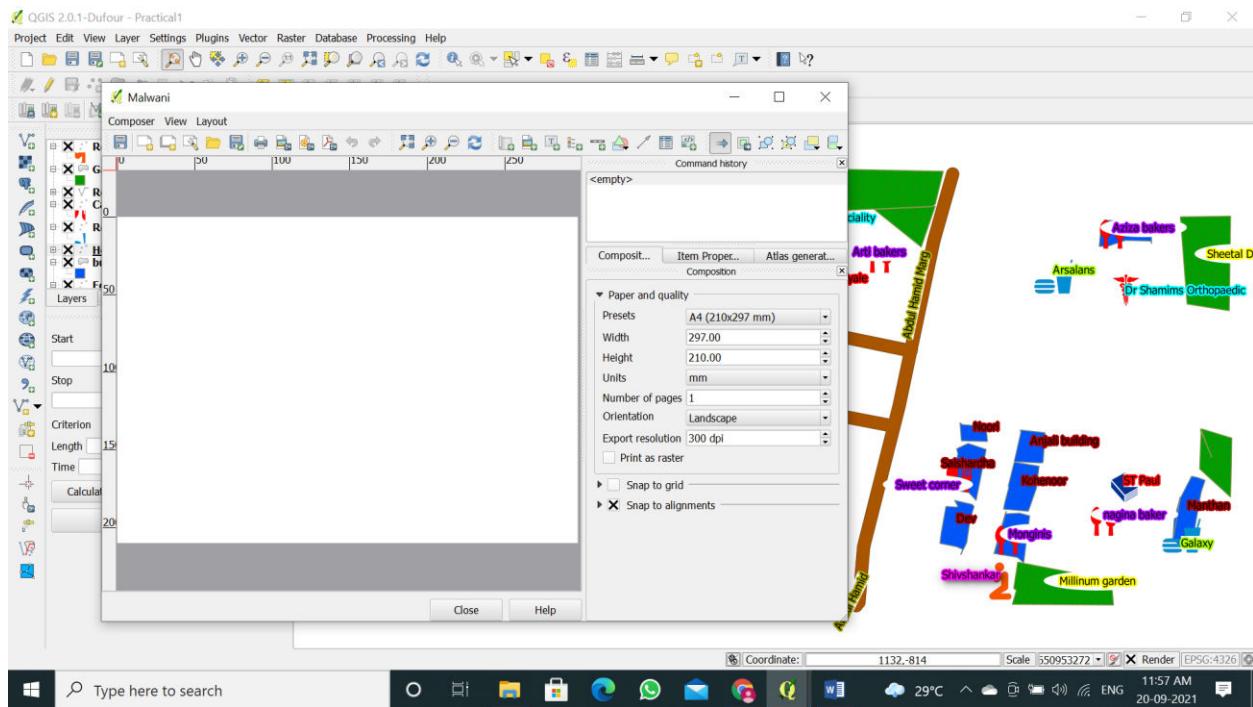
Step 1: Click on Project → New Print Composer in the Toolbar.



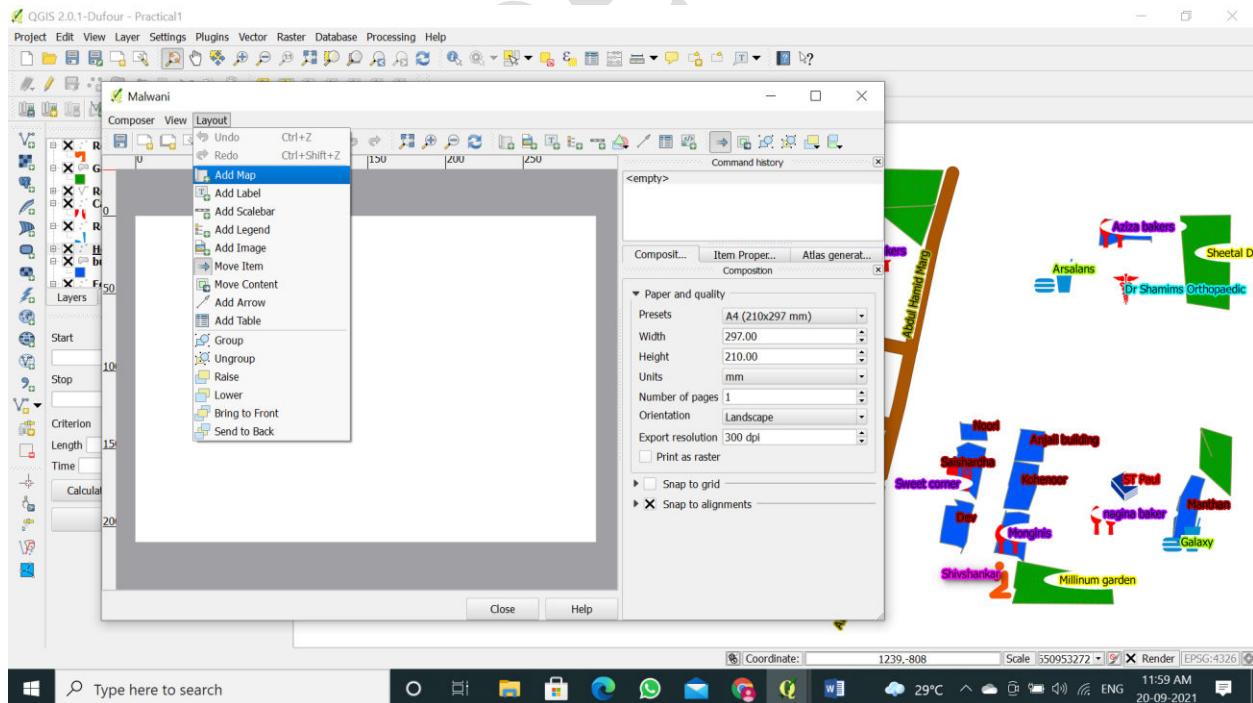
Step 2: Composer Title Dialog box will appear and select the layer the project that you want to create as map.



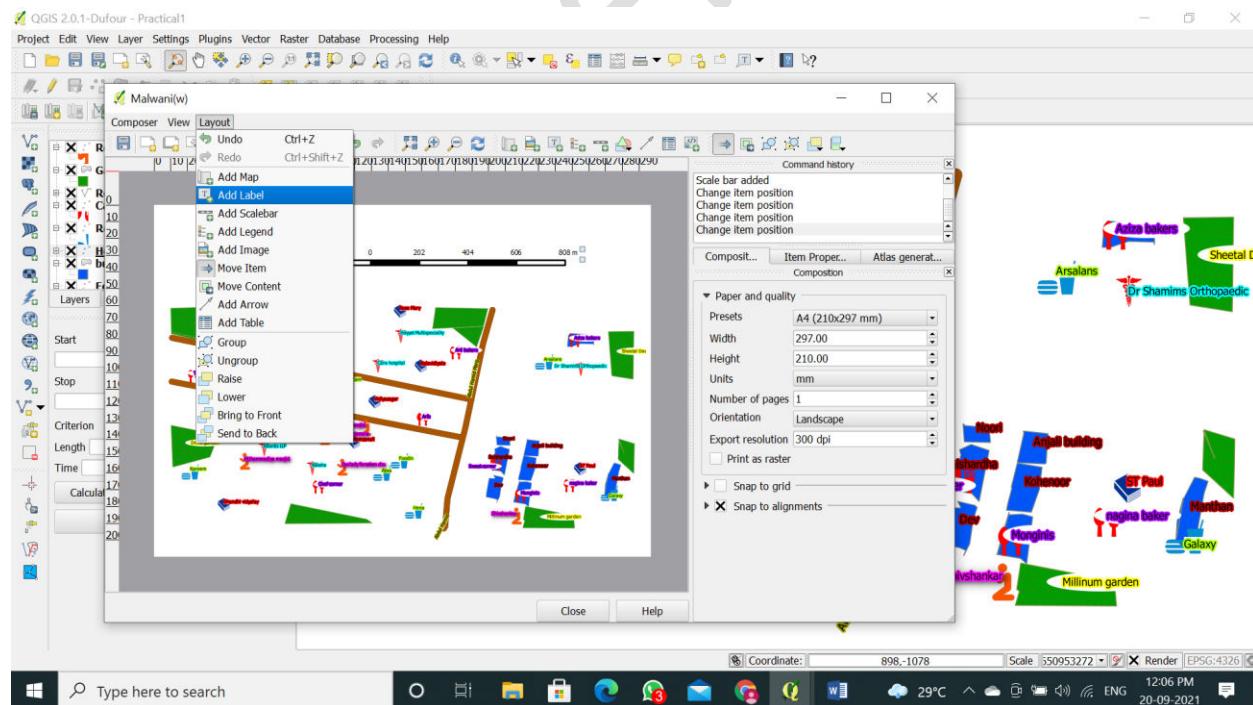
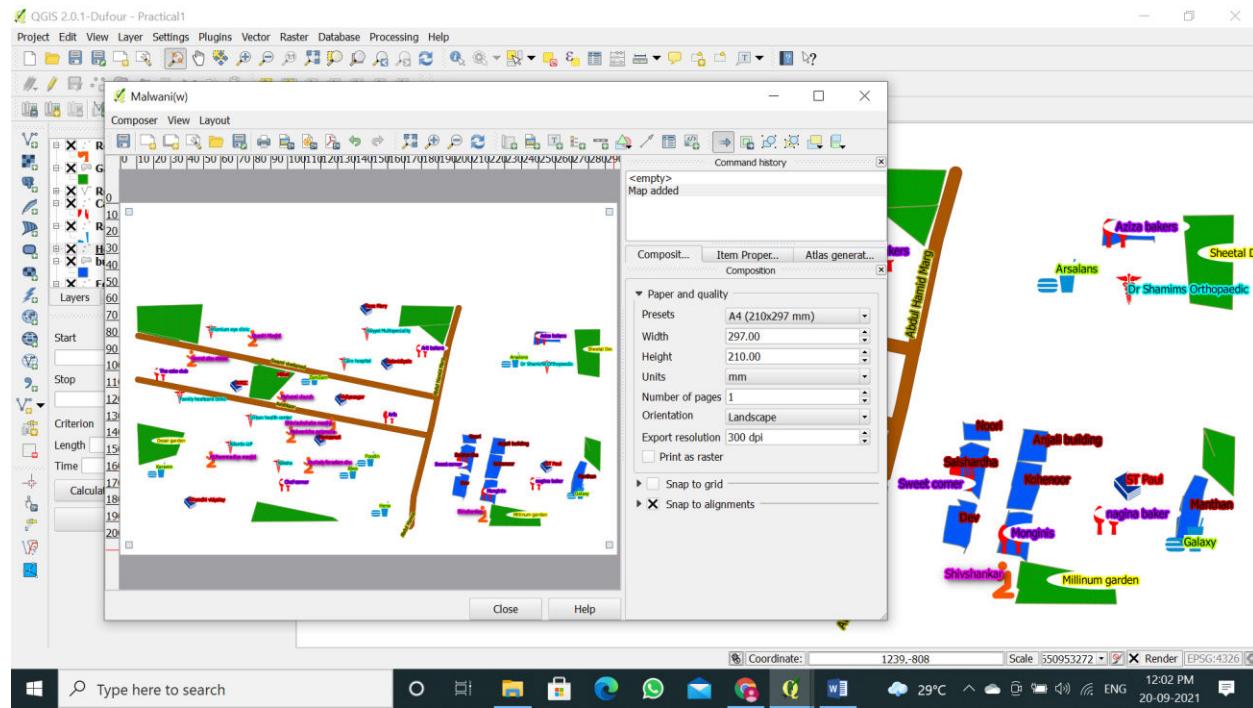
Step 3: The New Composer window will appear as shown below



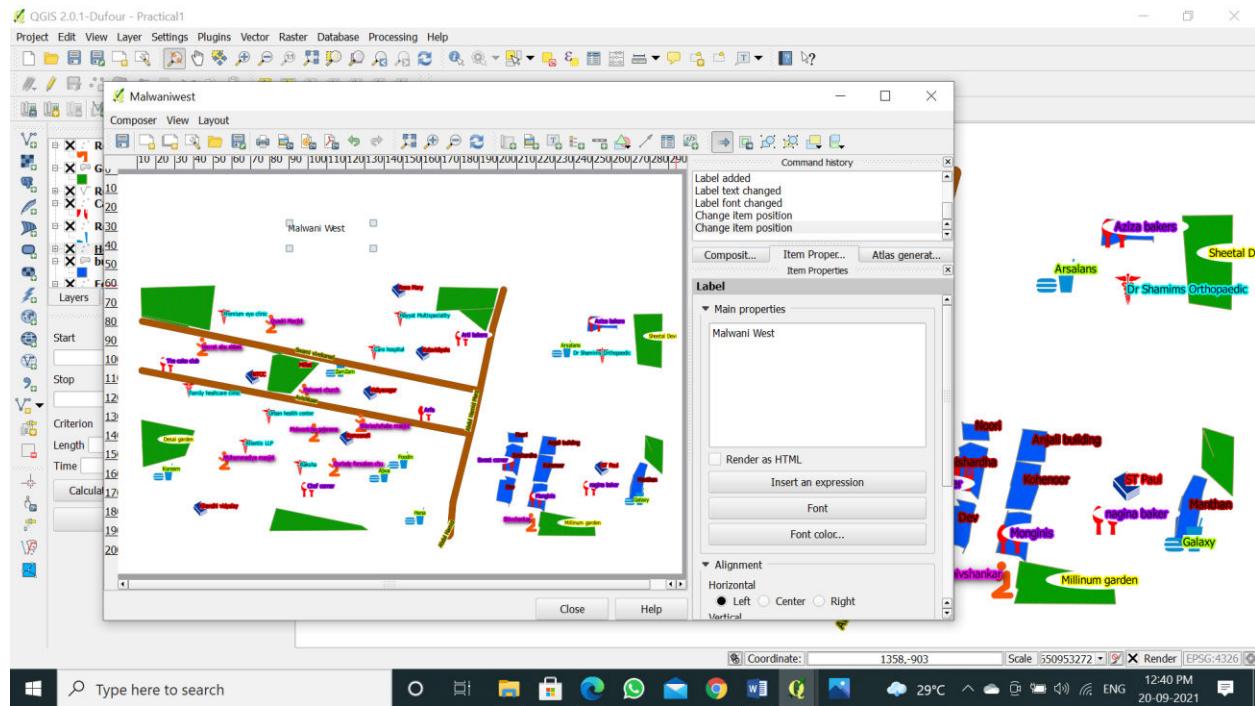
Step 4: Click on Layout → Add Map to import the vector layer from your selected project.



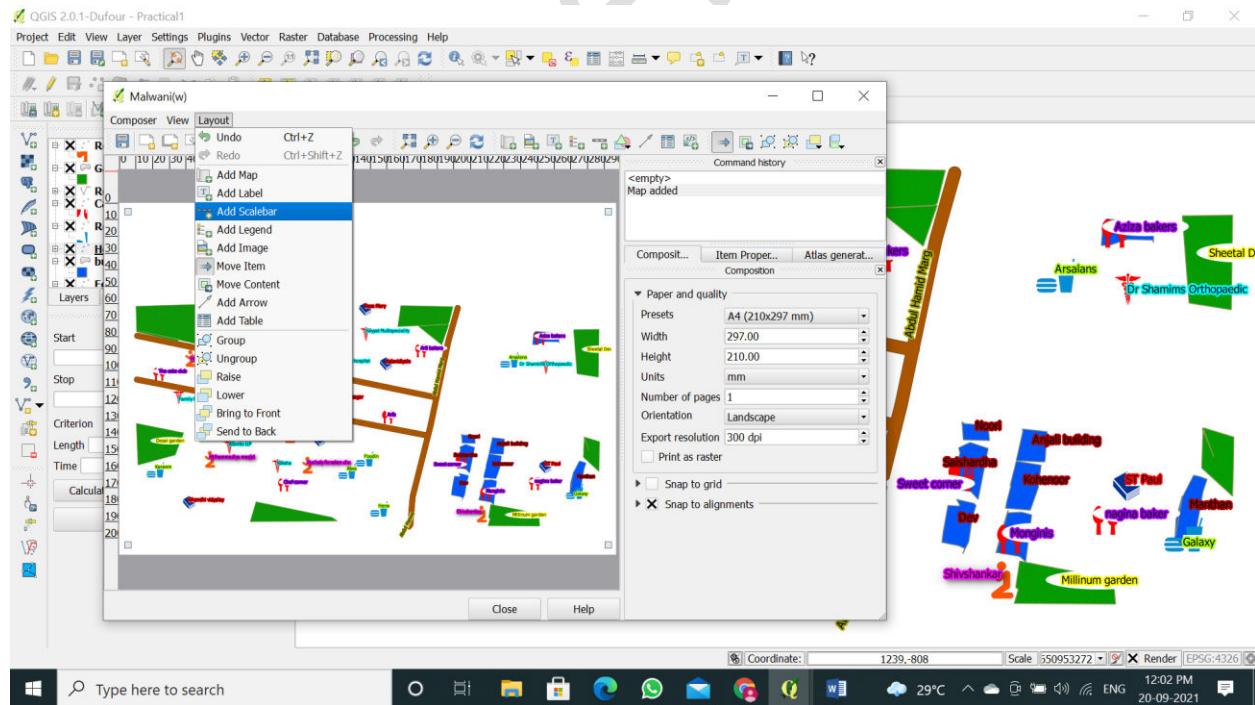
Step 5: The Vector Layer will be imported to your canvas. Click on Layout → Add Label to add text on to the map.

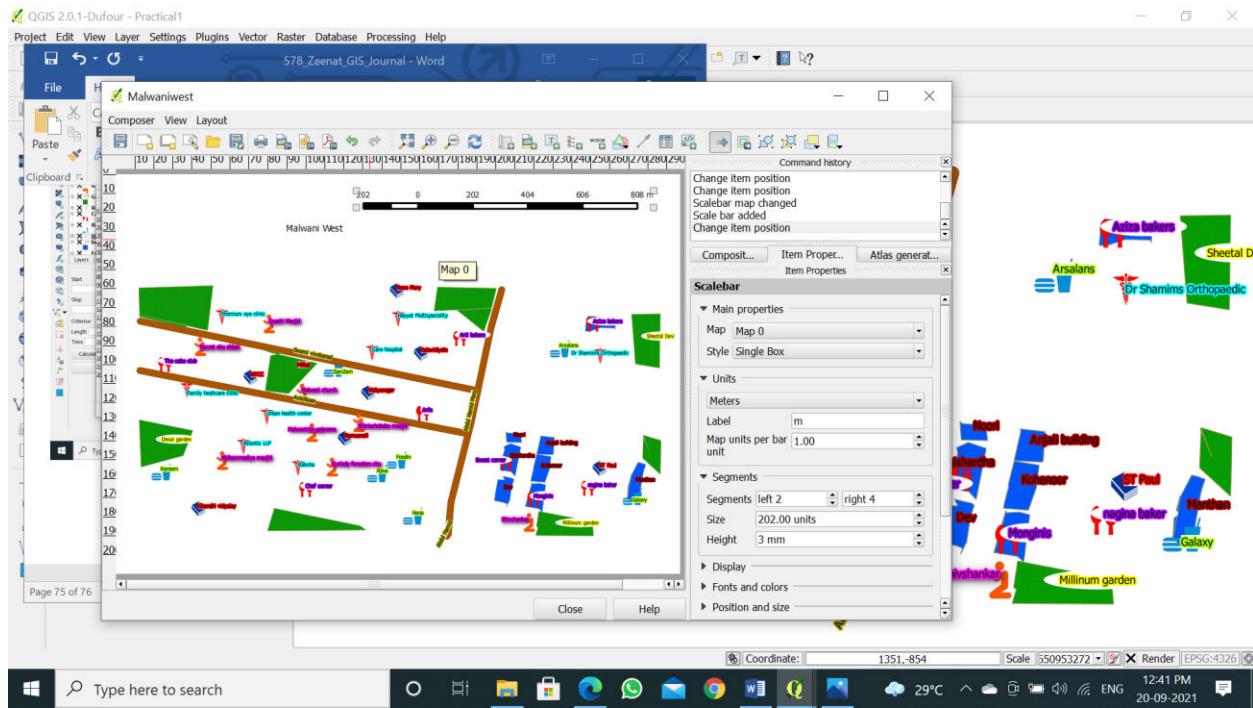


Step 6: A Textbox will appear on the canvas. Type appropriate text in it.

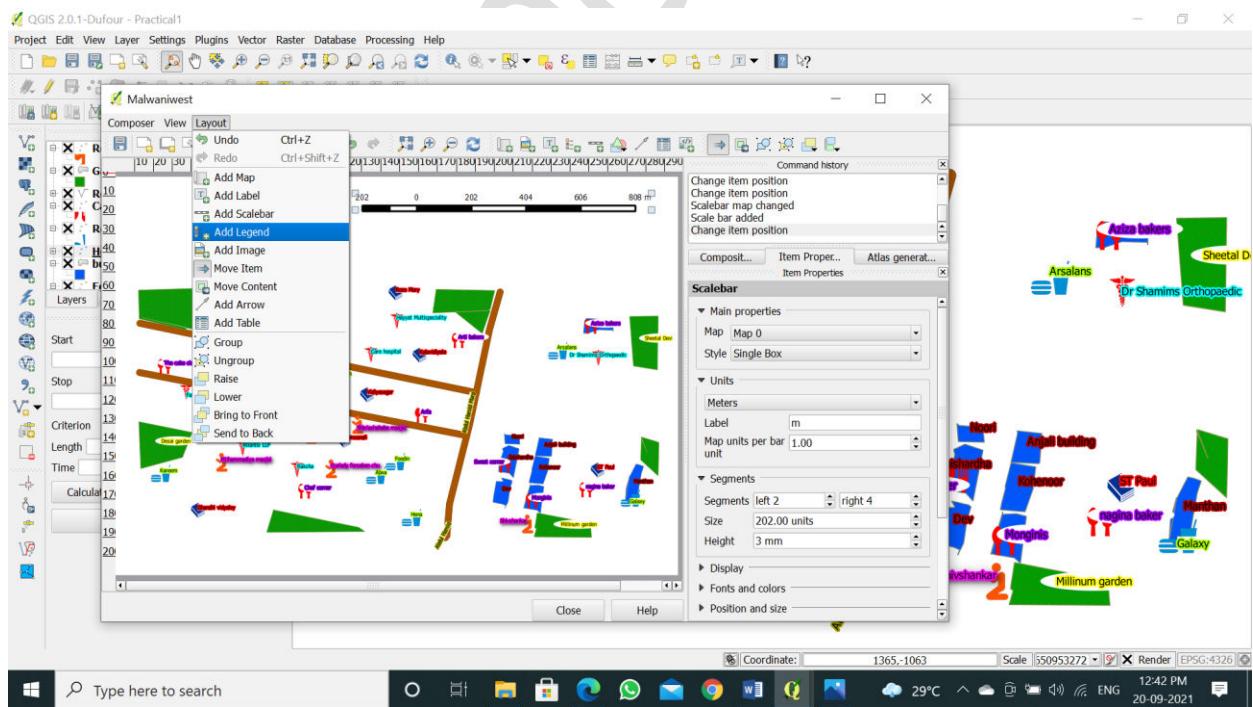


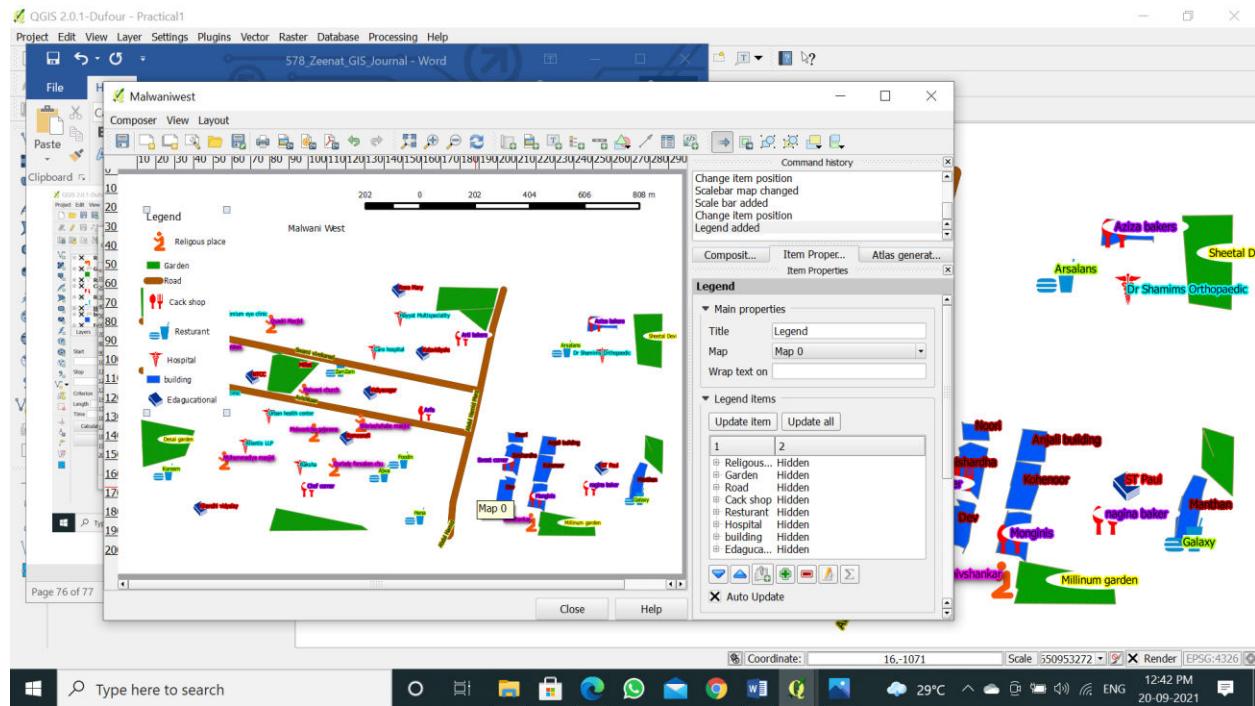
Step 7: Click on Layout → Add Scalebar. This will add a Map Scale on to you Map Canvas as shown below.



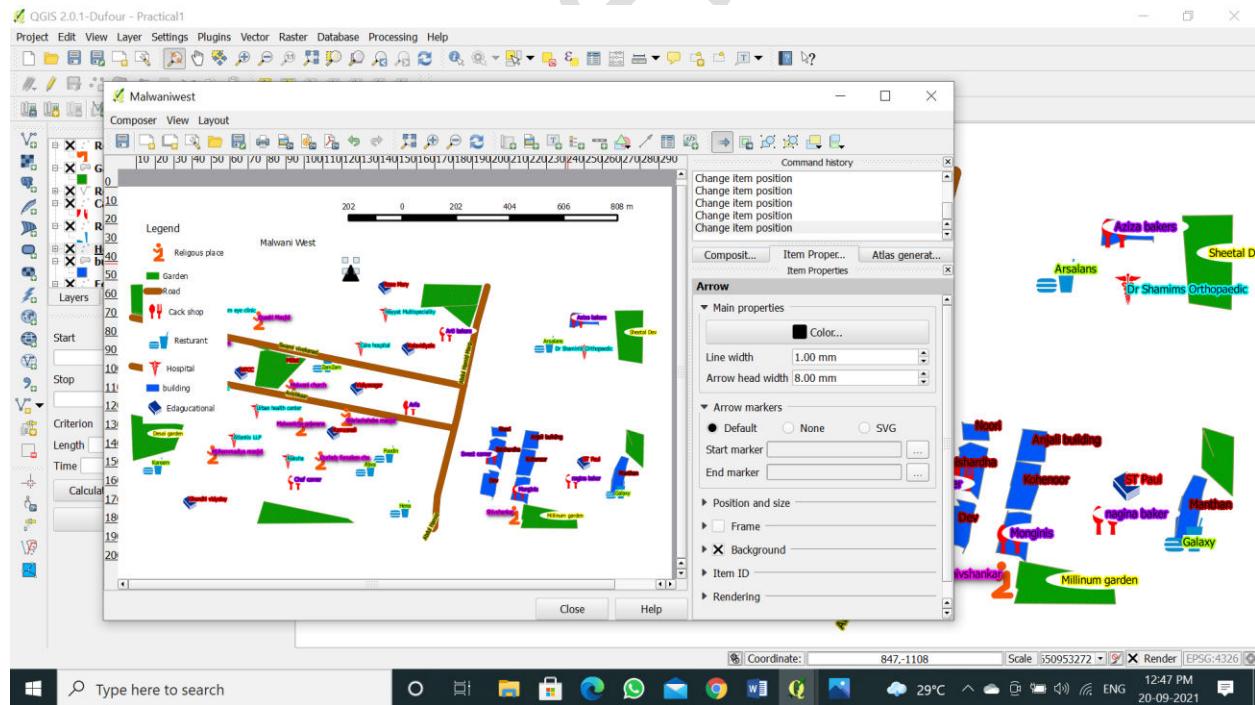


Step 8: Now click on Layout → Add Legend to add Map Content into Map Canvas. This will automatically import the contents from the QGIS project you selected which it shows in the Layout Panel.





Step 9: Now Click on Layout → Add Arrow. This will add the North pointing arrow that we see in every map



Step 10: Now save the map by Clicking on Save icon or by Ctrl + S in .png format which will look like as the below image

