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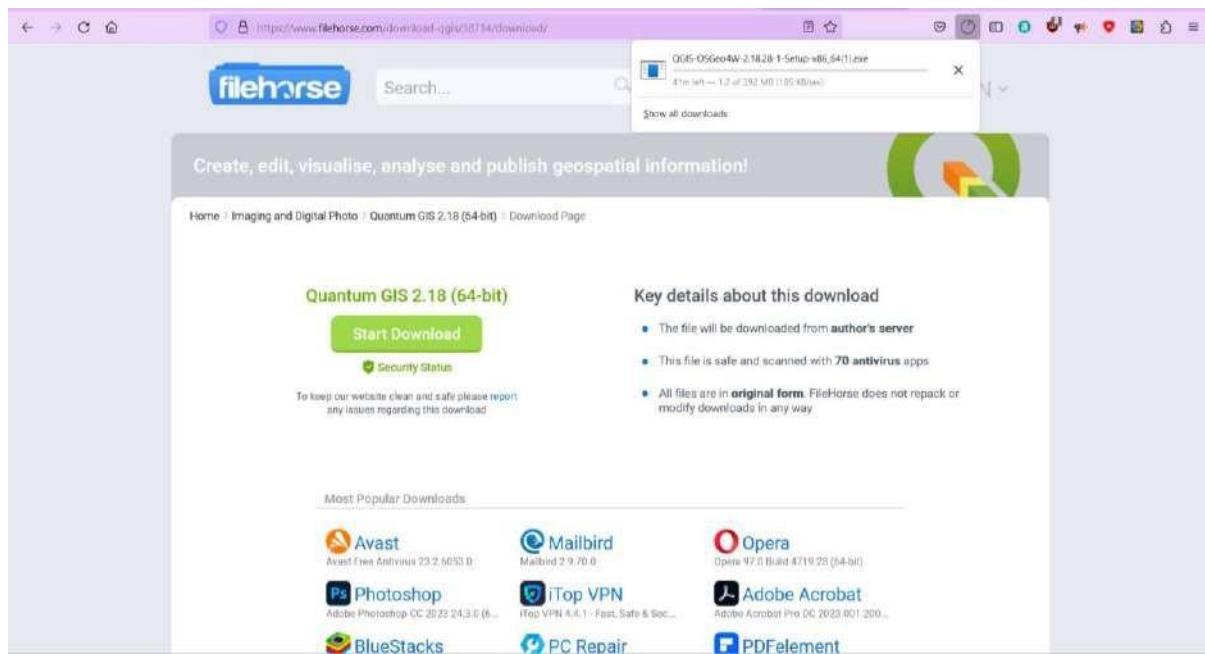
PRACTICAL – 0

Aim: Familiarizing Quantum GIS: Installation of QGIS, datasets for both Vector and Raster data, Maps.

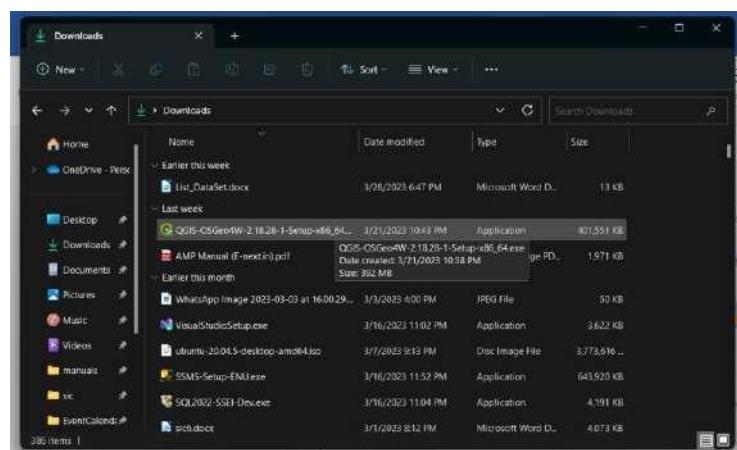
Installation of QGIS:

Step 1 – Enter the following URL in your browser and download QGIS v2.18

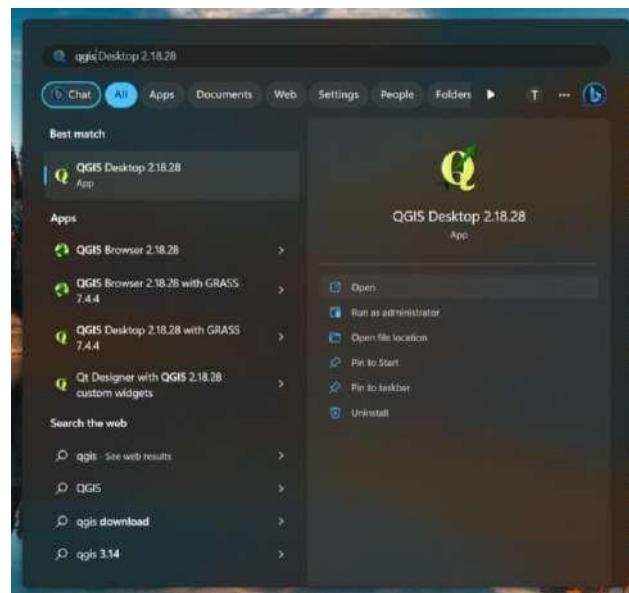
<https://www.filehorse.com/download-qgis/38714/download/>



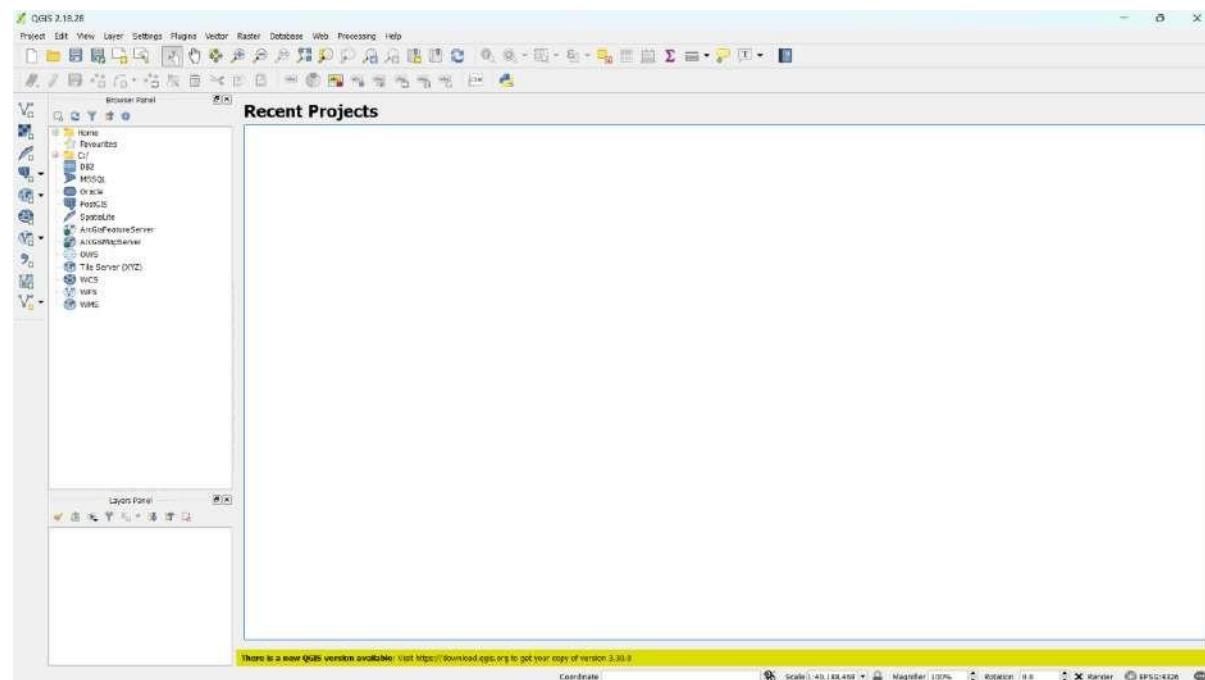
Step 2 – Open file explorer and run the setup file.



Step 3 – After the installation is complete. Open the start menu and type QGIS and then open QGIS Desktop 2.18.



You should be able to see the following interface.

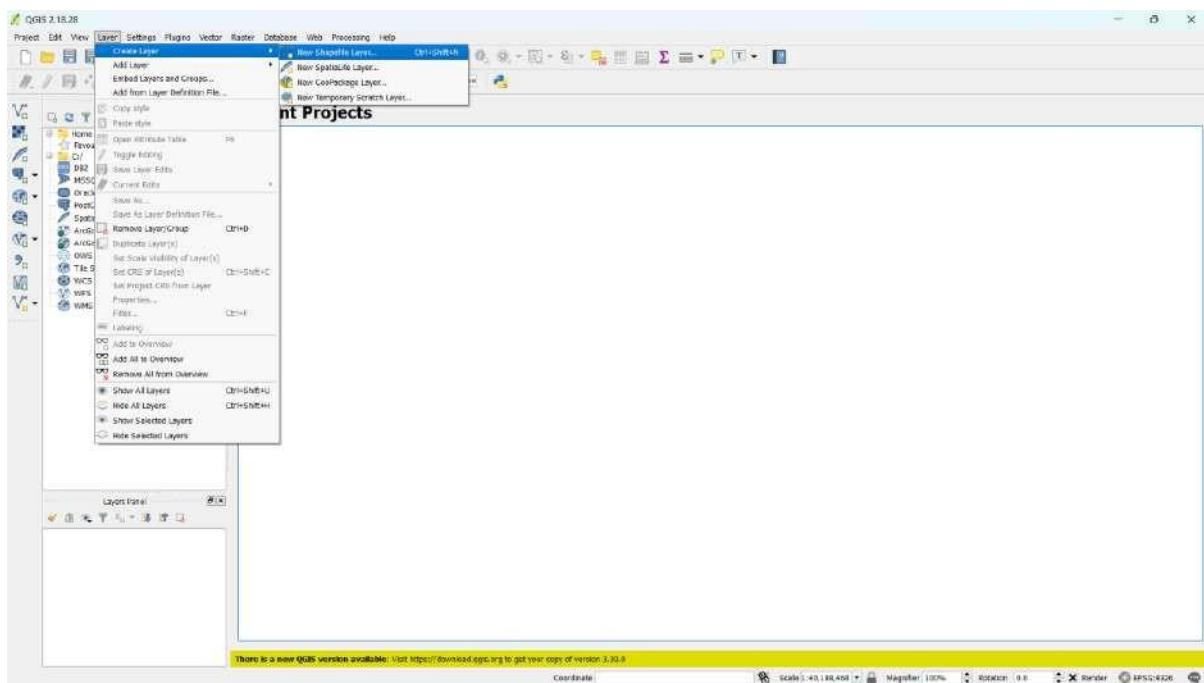


PRACTICAL – 1

Aim: Creating and Managing Vector Data: Adding vector layers, setting properties, formatting, calculating line lengths and statistics.

Steps:

Step 1 – Open QGIS Desktop 2.18. To create a polygon layer in the Layer tab, click on Create Layer and then select New Shapefile Layer.



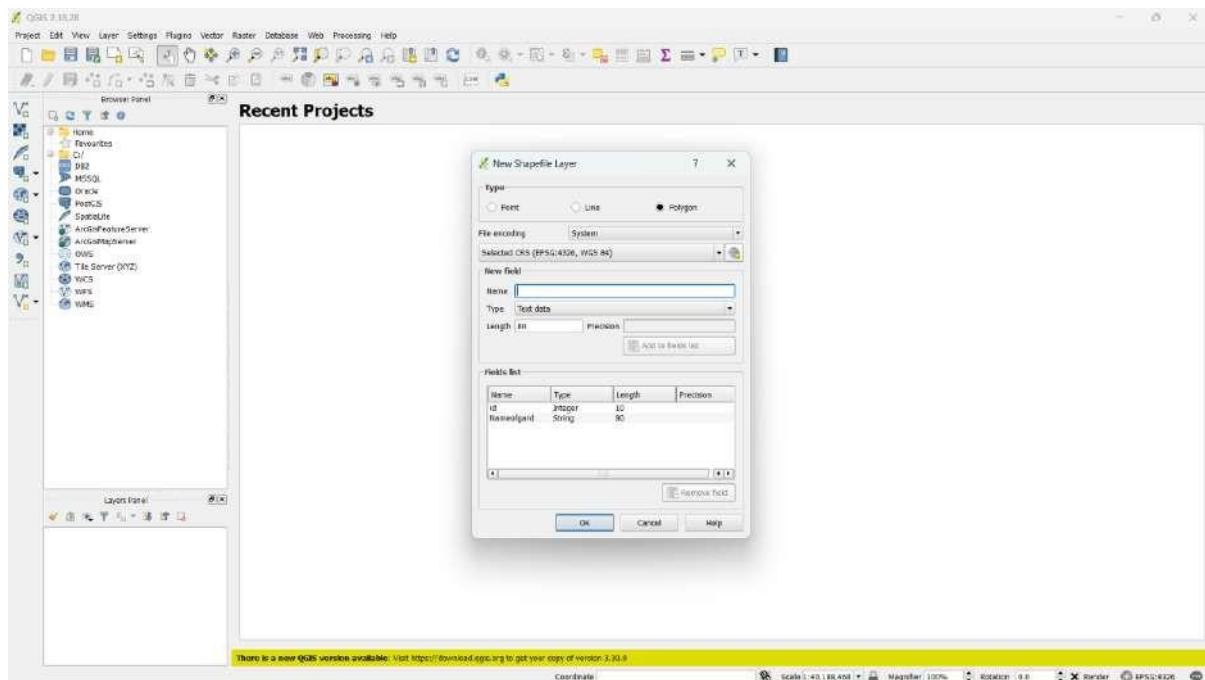
Name: Ankit Roshan

Subject: Principles of Geographical Information System Practical

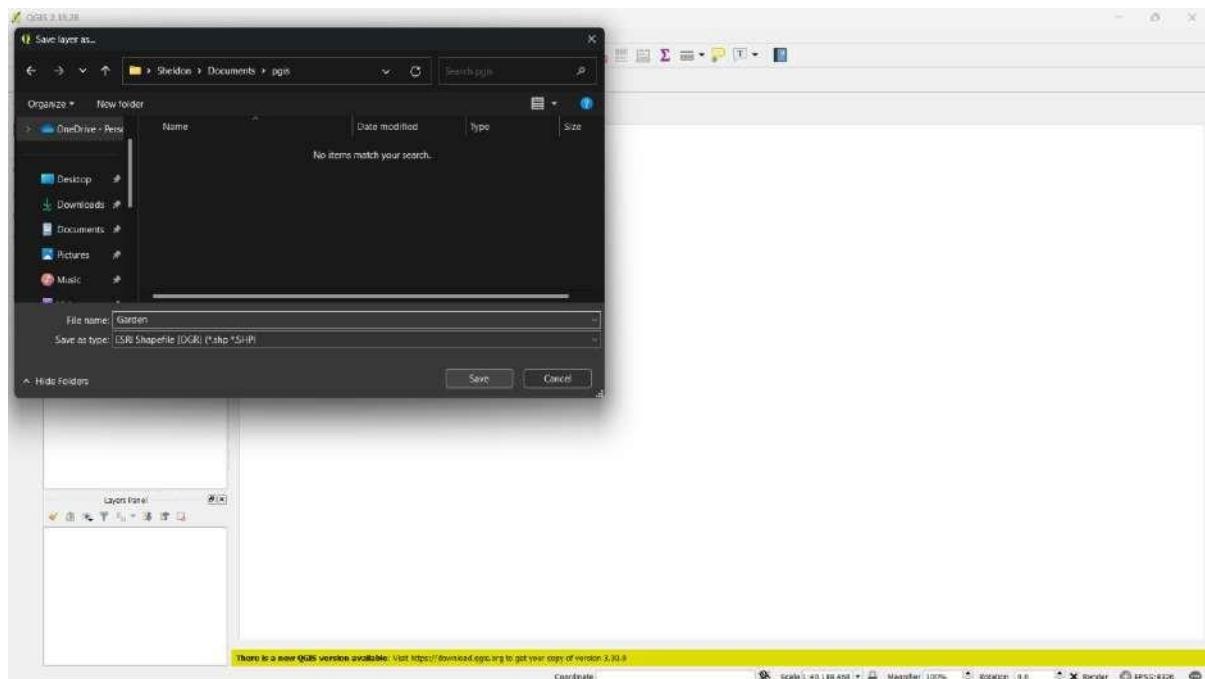
Roll No: IT21063

Subject Code: USIT6P4

Step 2 – Select the options and enter the data as shown below.



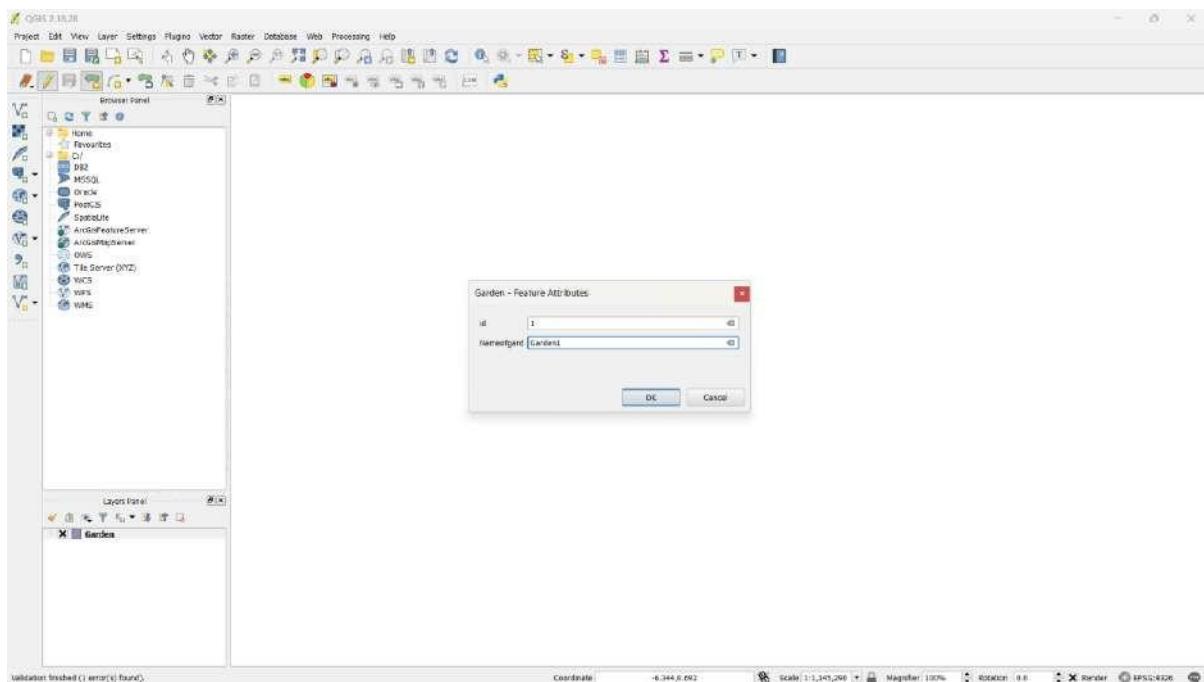
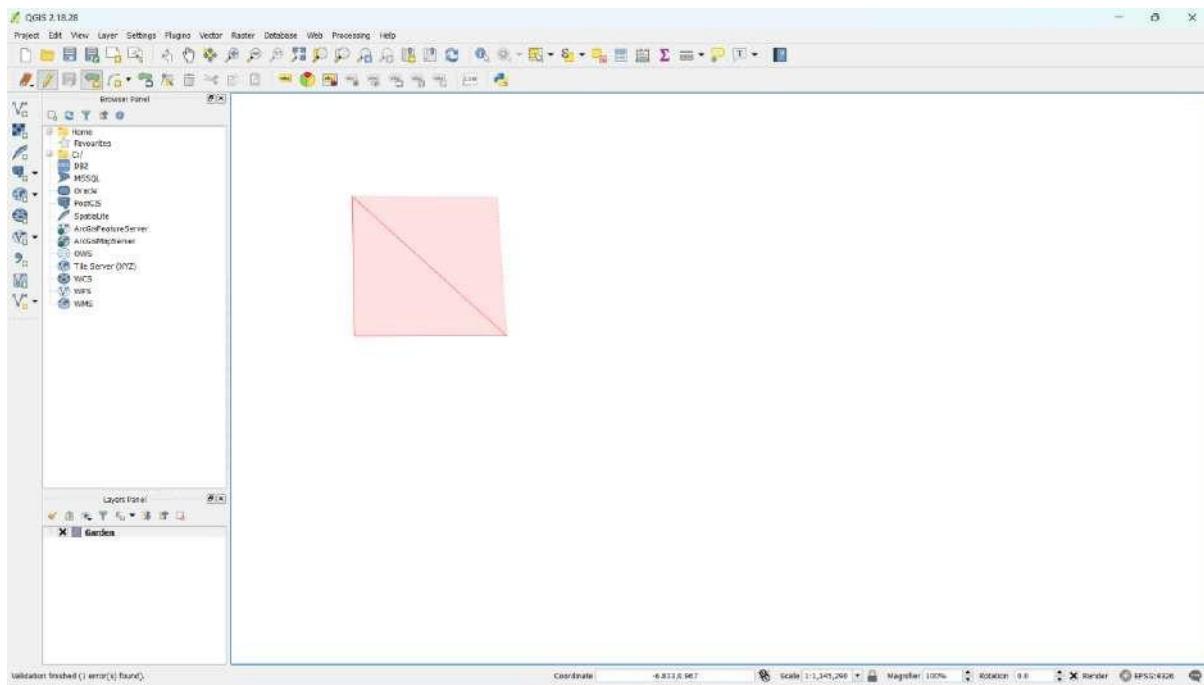
Step 3 – Enter a file name and click OK.

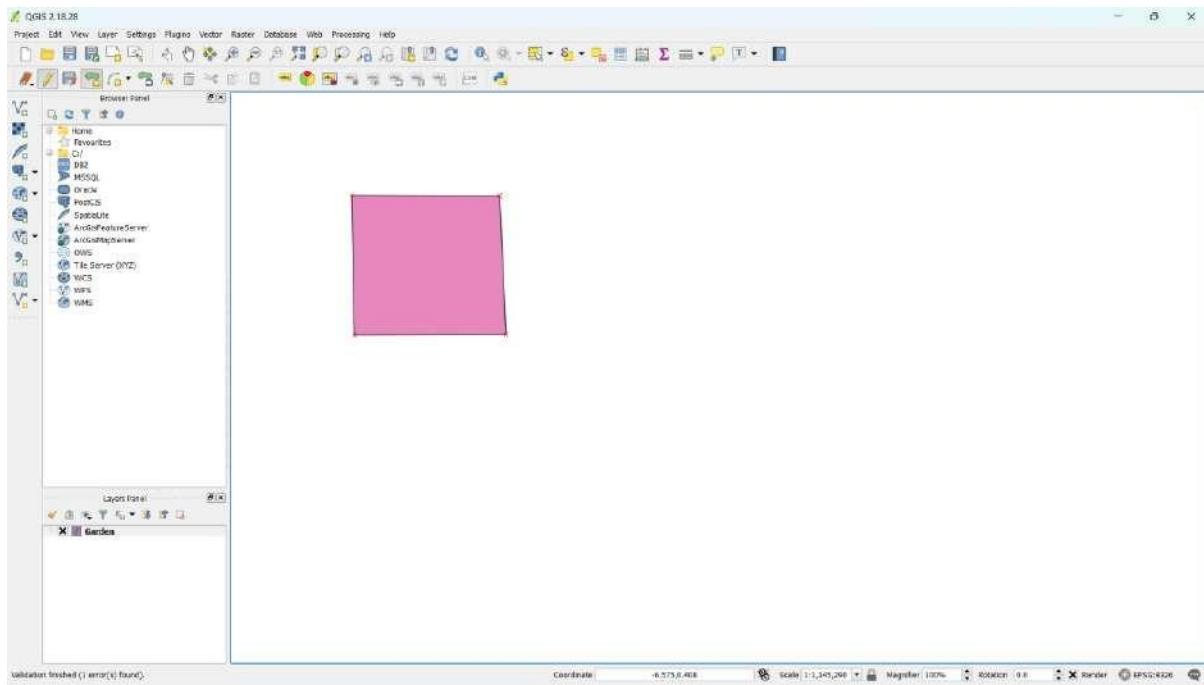


Step 4 – A new Shapefile Layer has been created now click the Toggle Editing button and then the add feature button situated in the top left hand corner.

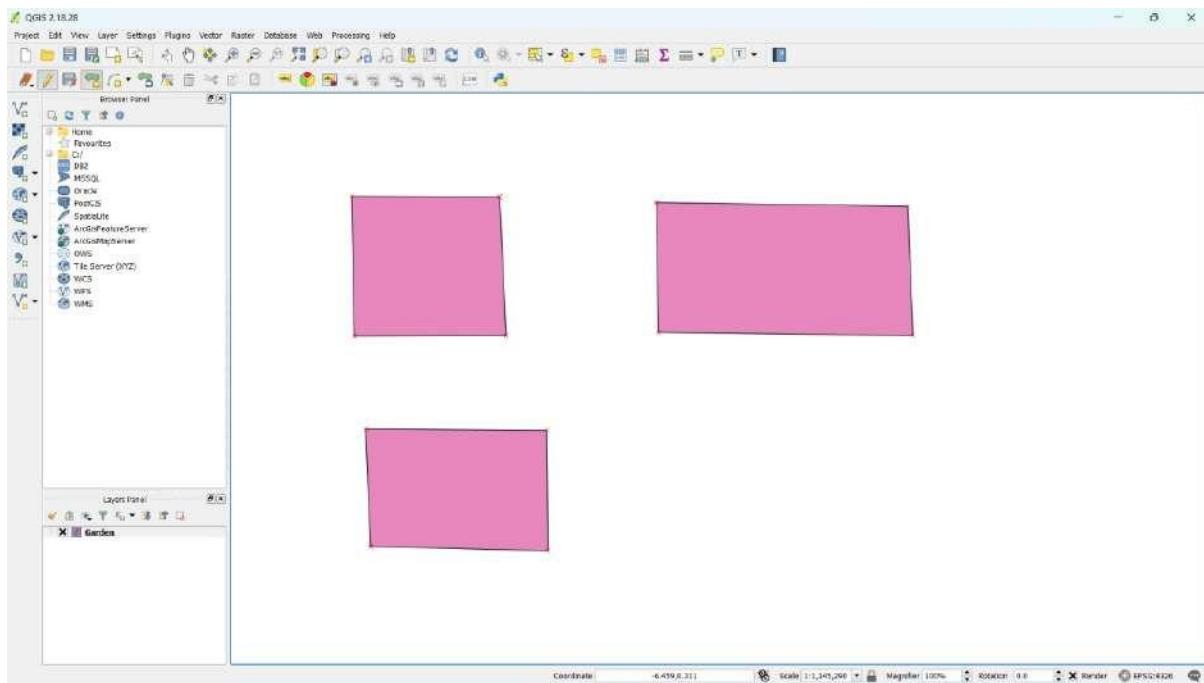


Step 5 – Now to create a polygon left click to add points on the canvas and then right click to save and add field data.

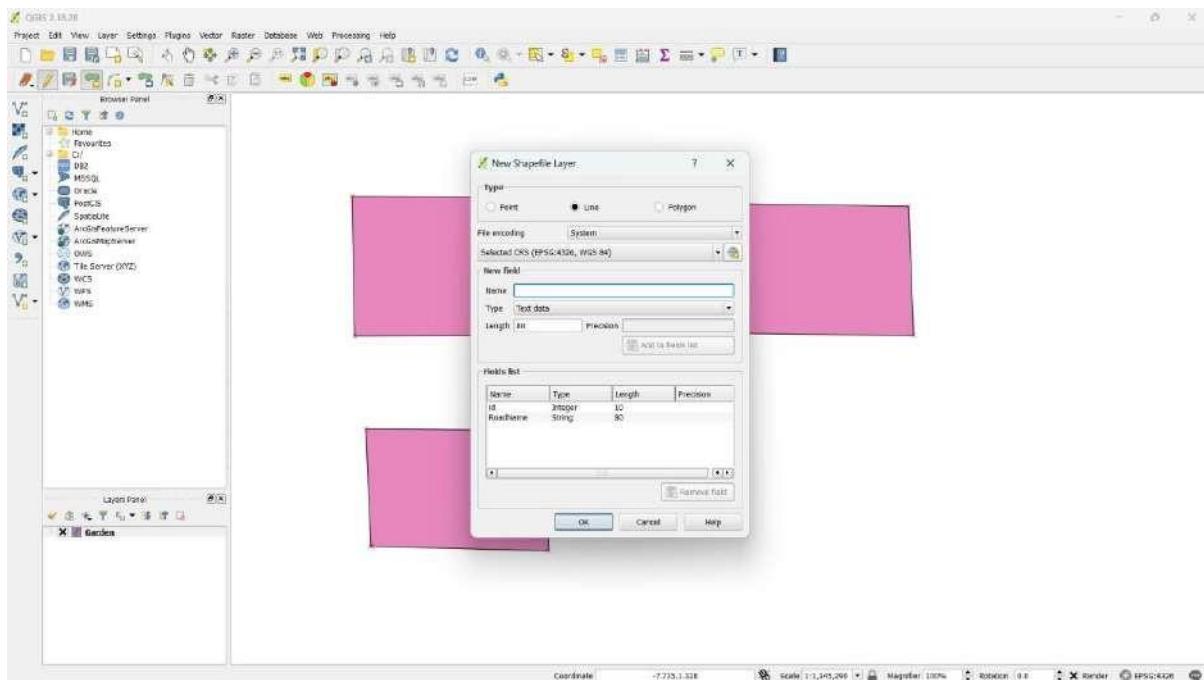




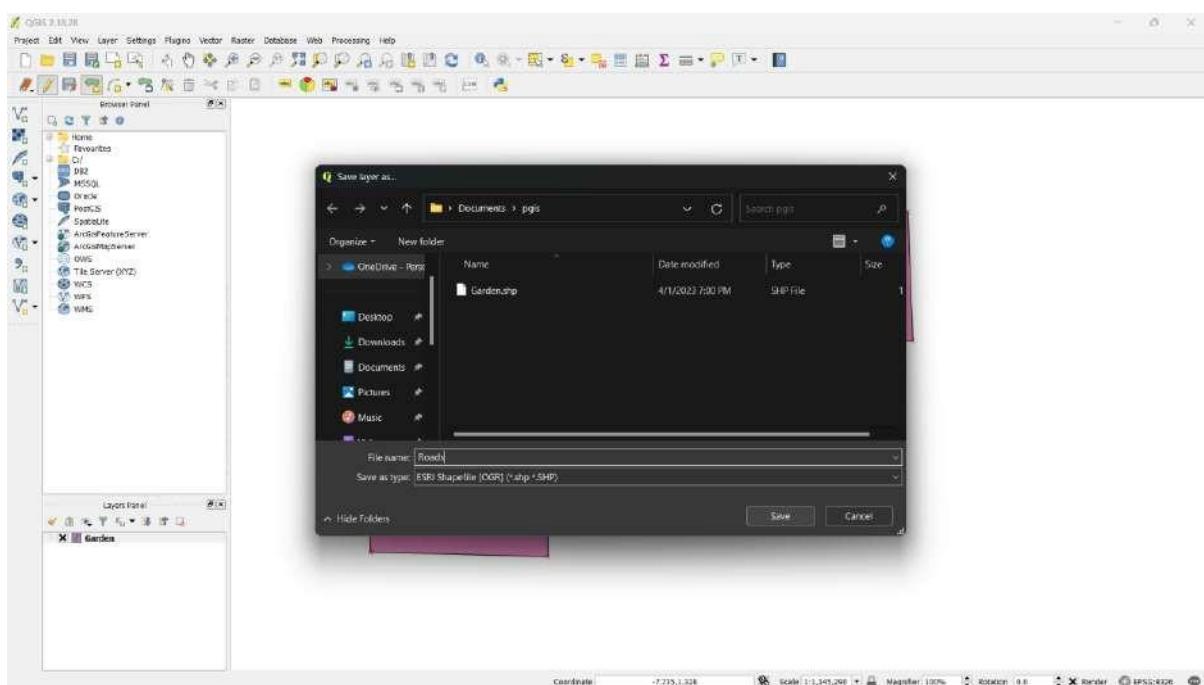
Step 6 – Add as many polygons as you like.



Step 7 – Now to create a line layer again click New Shapefile Layer and this time select the following options.



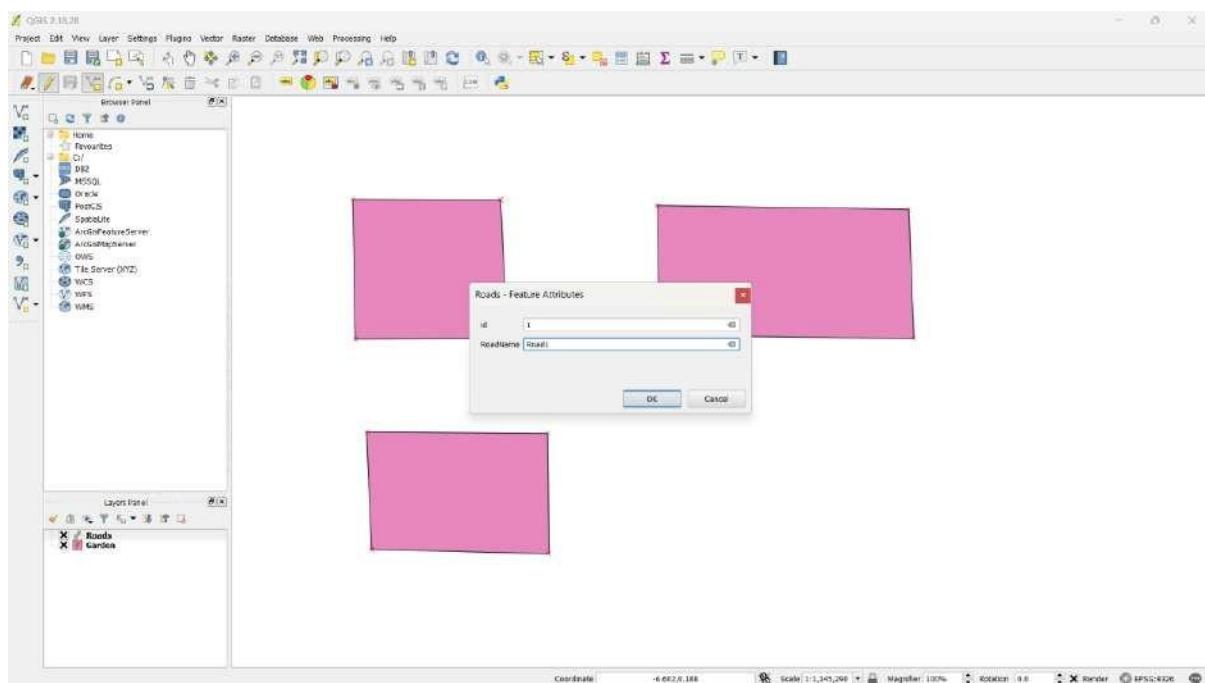
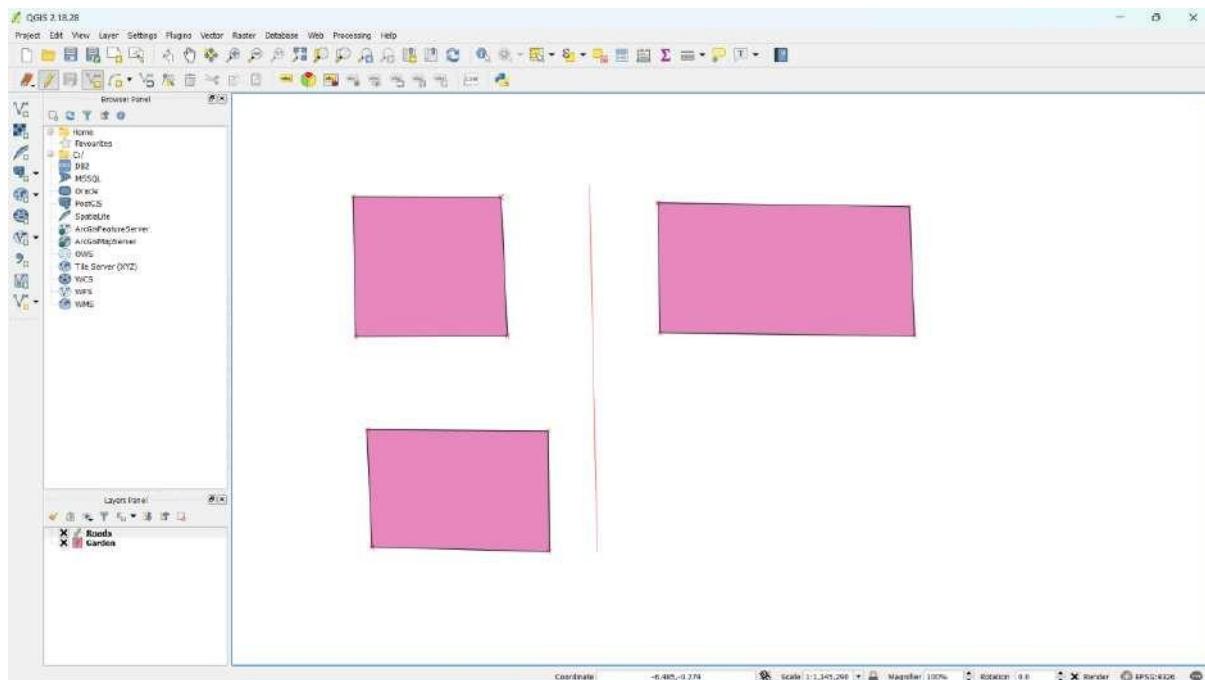
Step 8 – Enter the name and save the file.



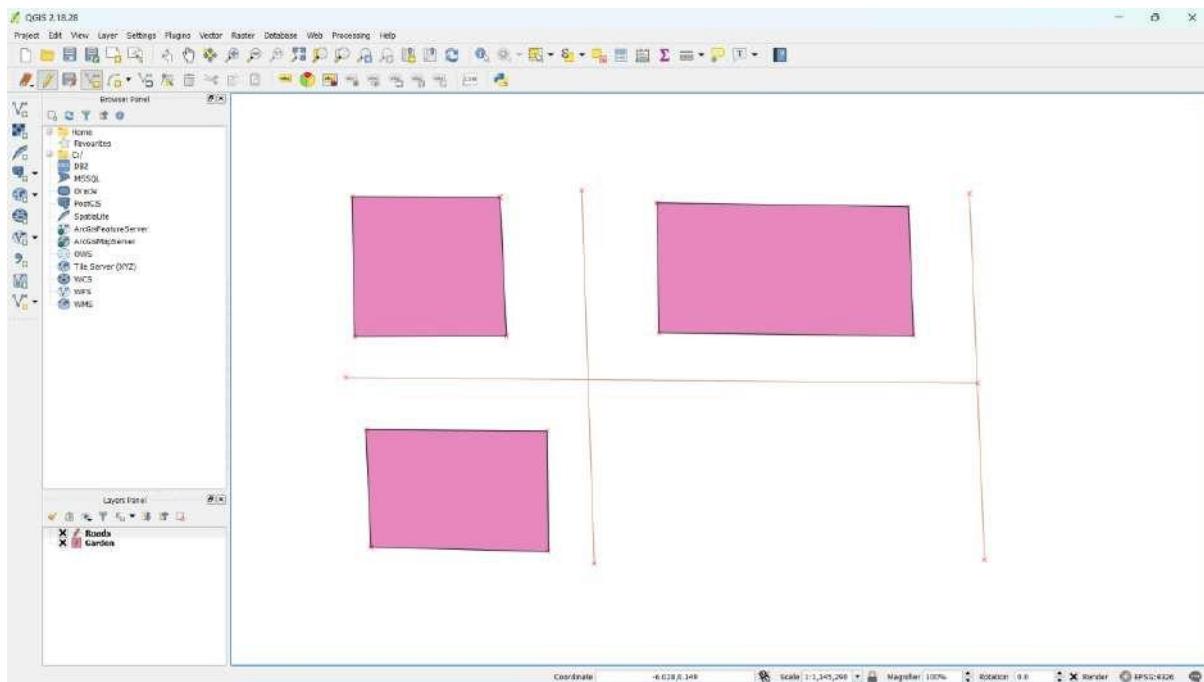
Step 9 – A new Lines Layer is created. Again click the Toggle Editing button and Add Line Feature button.



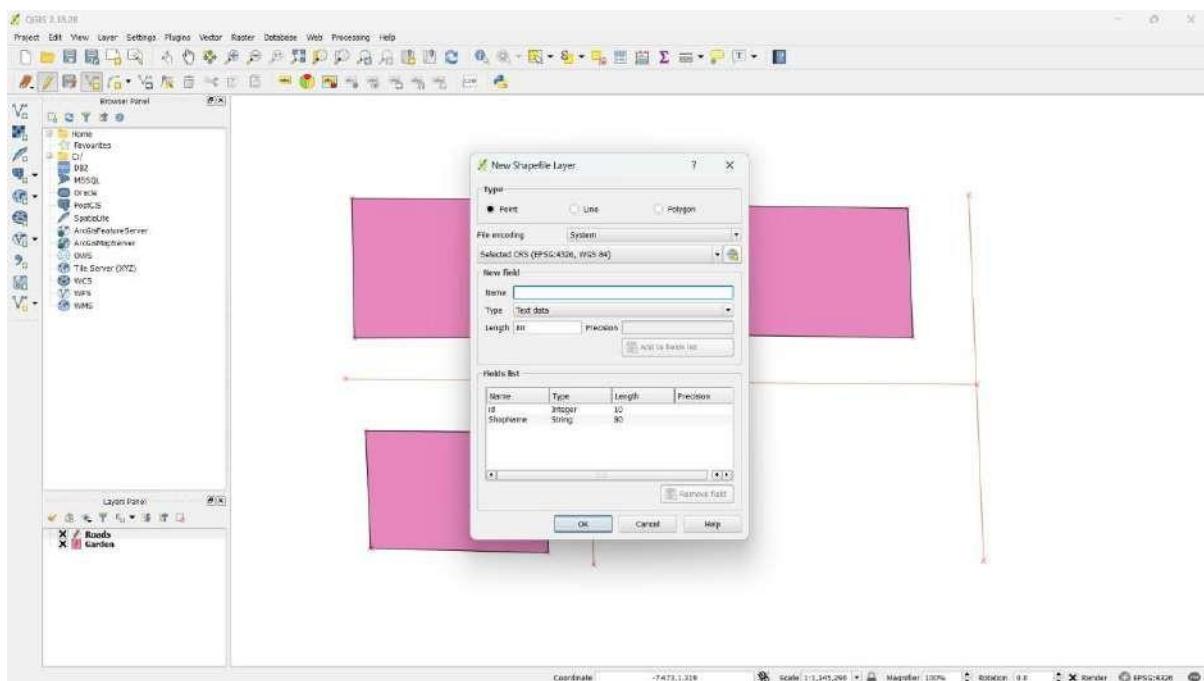
Step 10 – Now create and save lines as shown below.

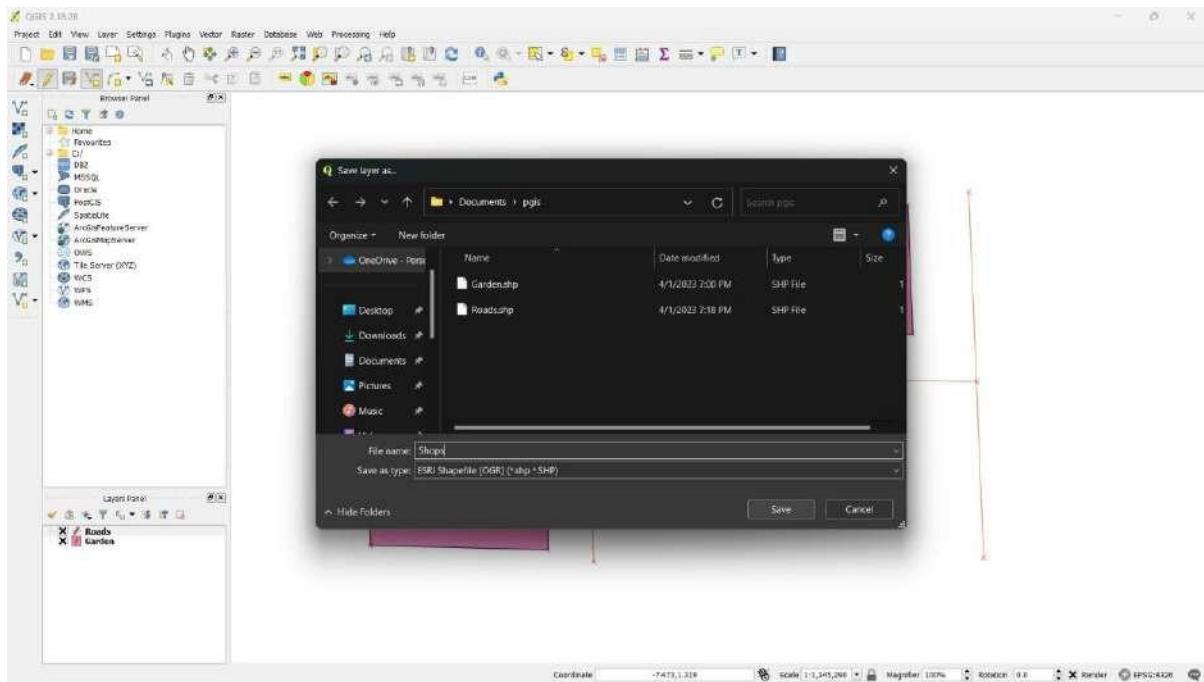


Step 11 – You can create as many lines as you like.



Step 12 – Now create a new Point type Shapefile Layer and select the options as shown below and finally enter the layer name and save.

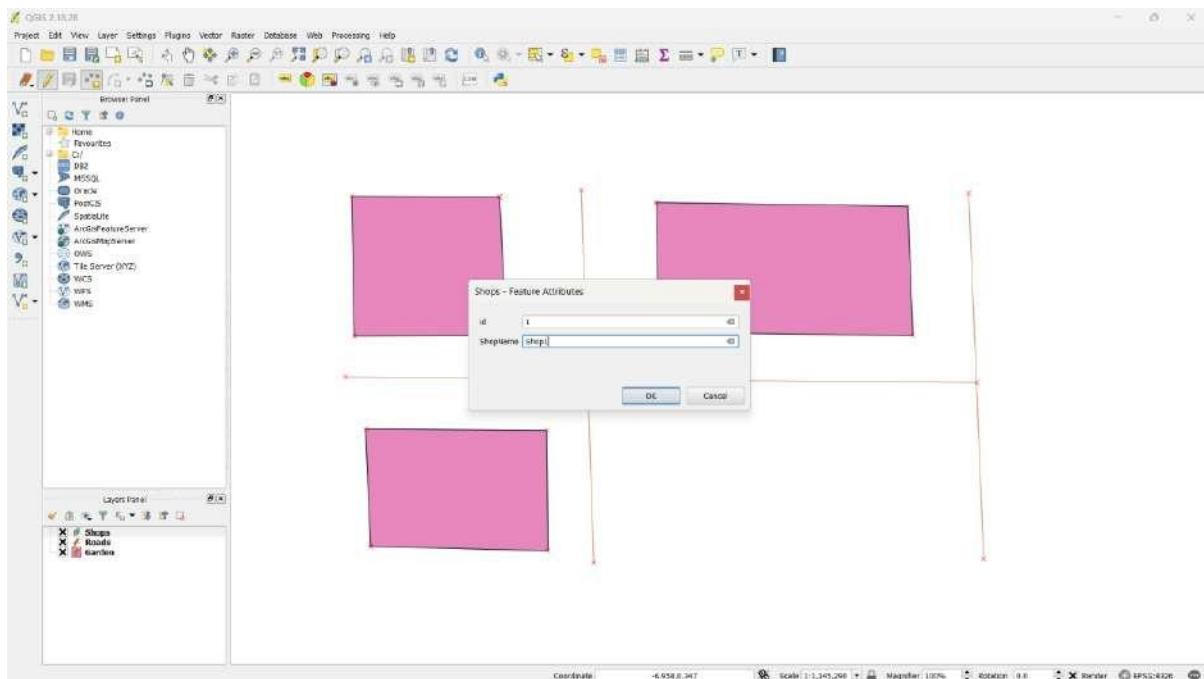


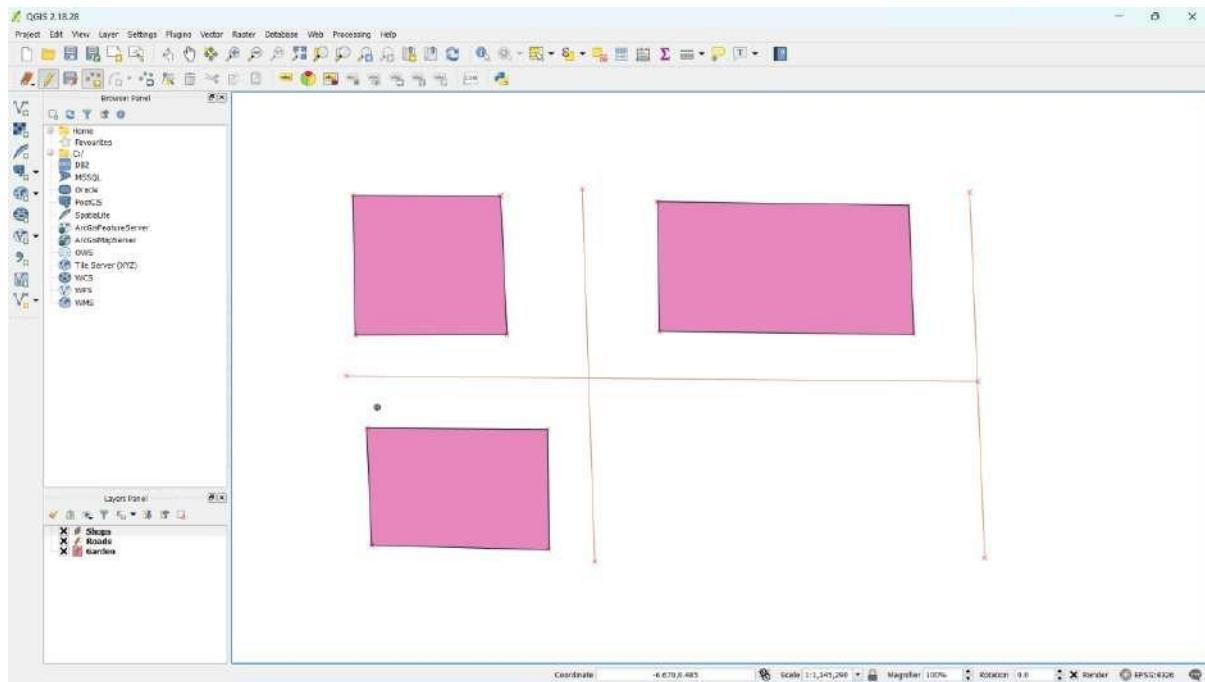


Step 13 – A new layer is created now again click the Toggle Editing button and Add Feature button.

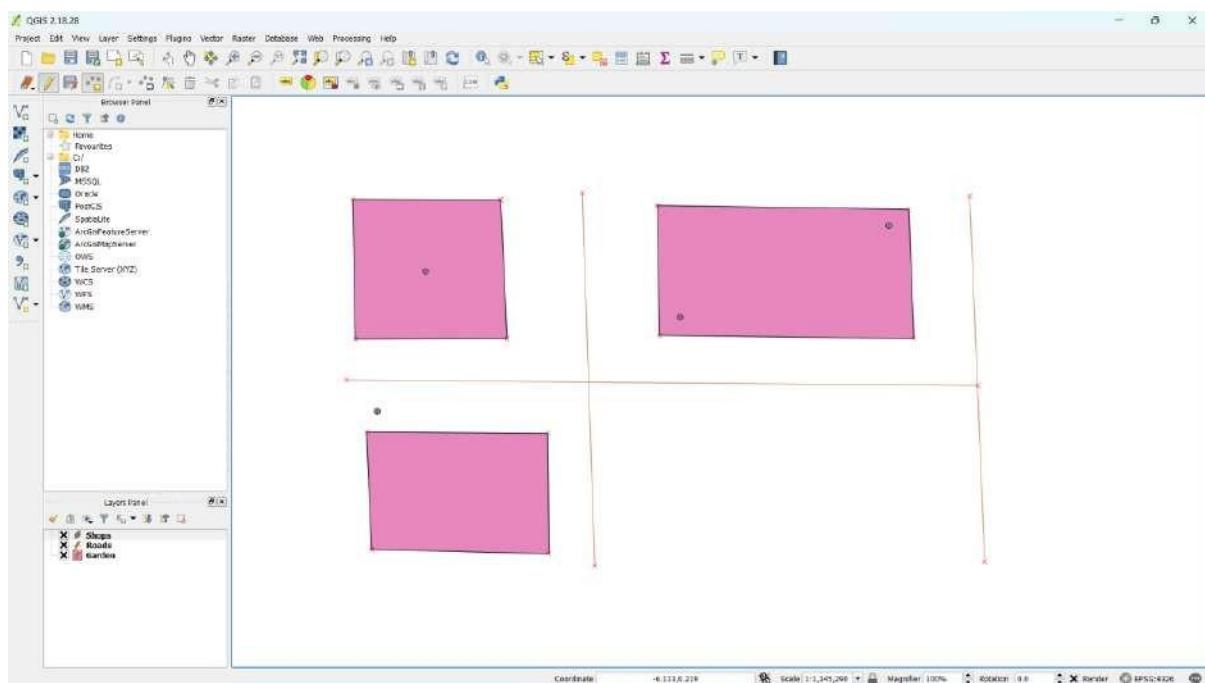


Step 14 – Click wherever you want to add and point and enter the following data.

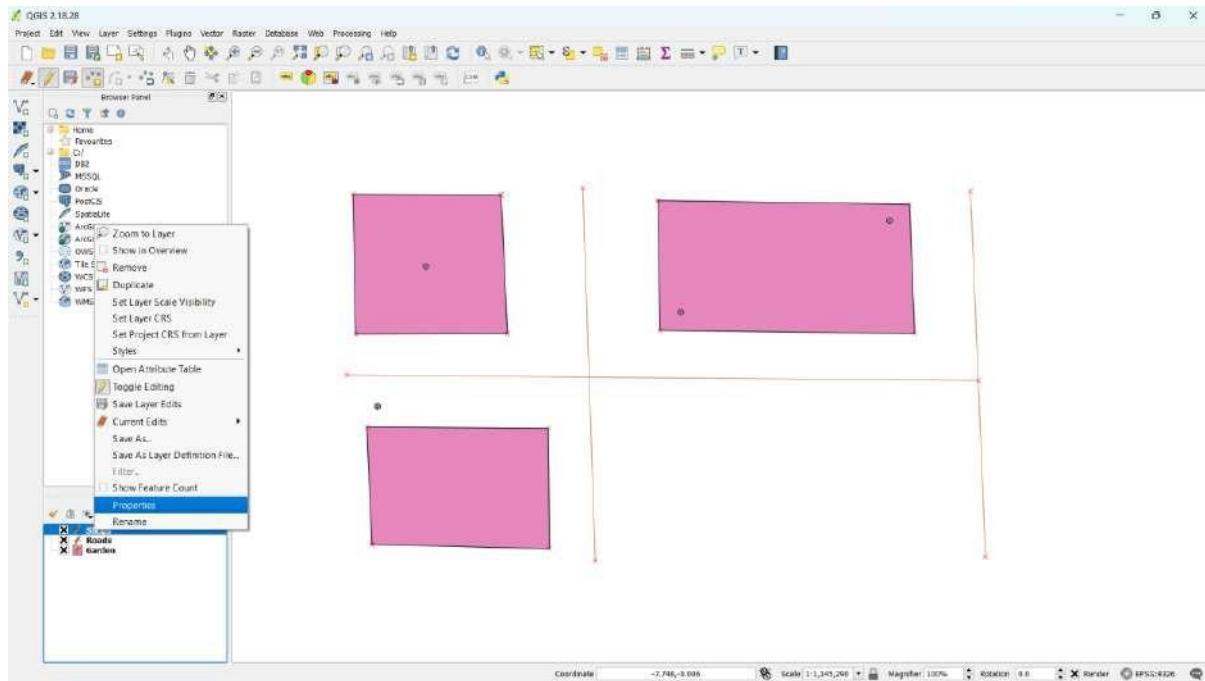




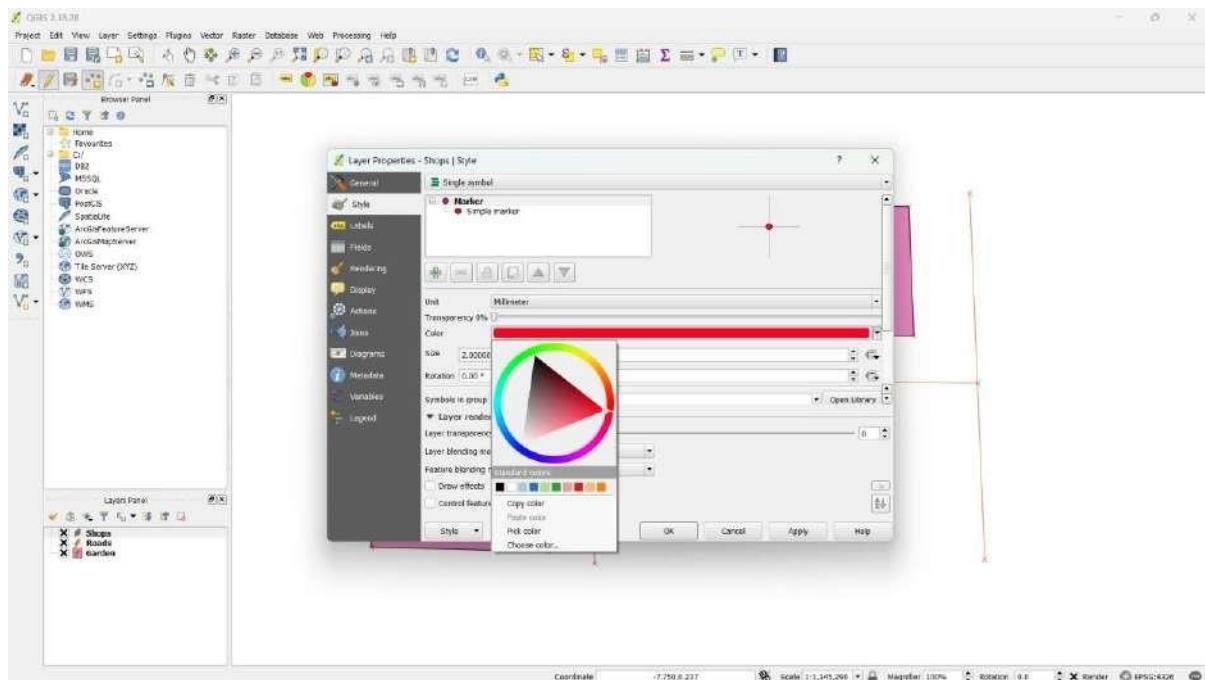
Step 15 – Similarly you can add as many points as you like.



Step 16 – You can change the properties of any of the layers by just right click on any of the layer and then clicking properties.



Step 17 – You can change anything like its color, size, symbol, etc.

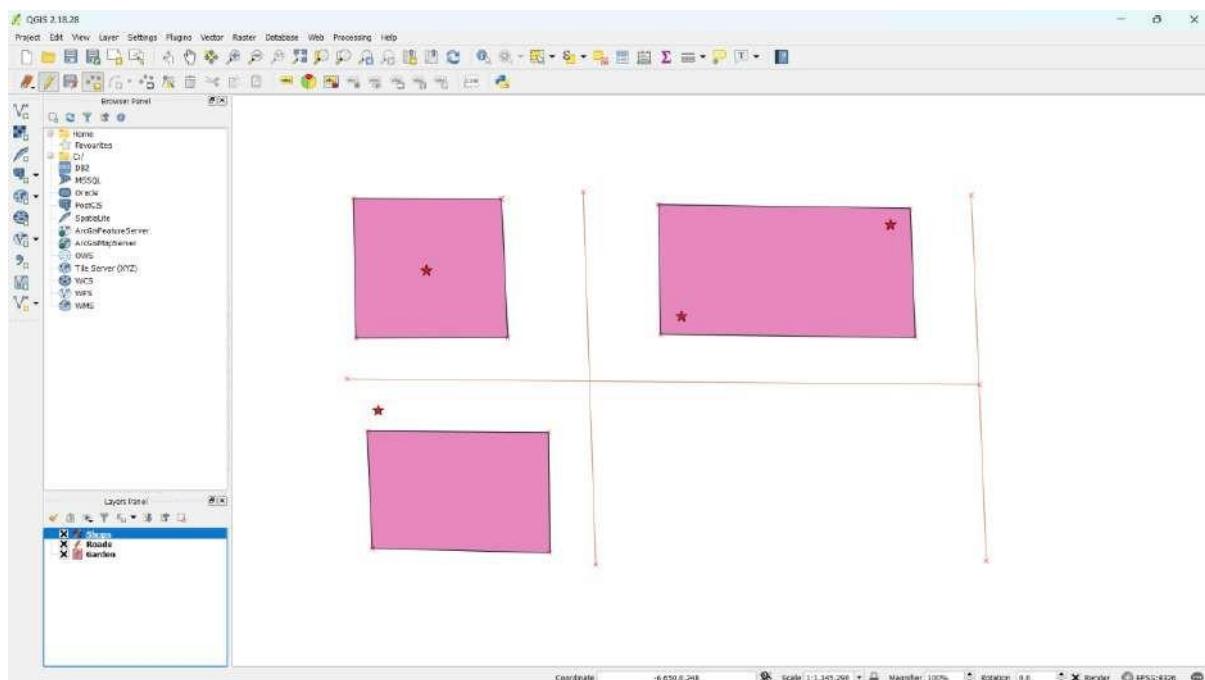
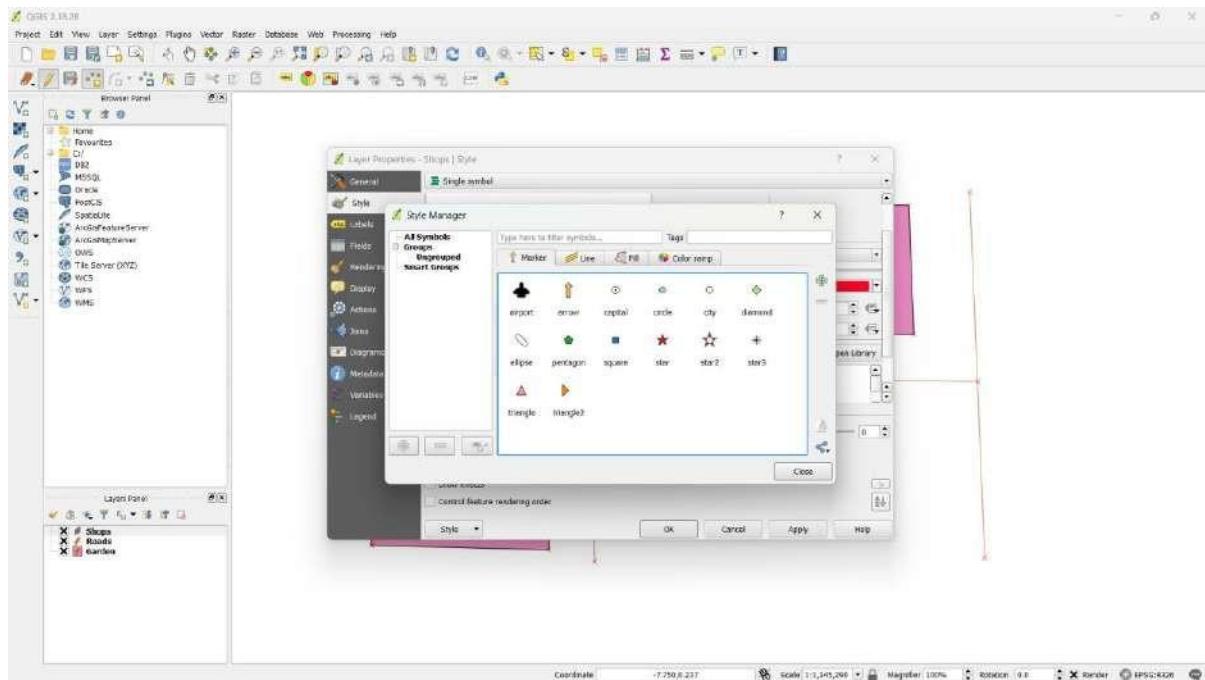


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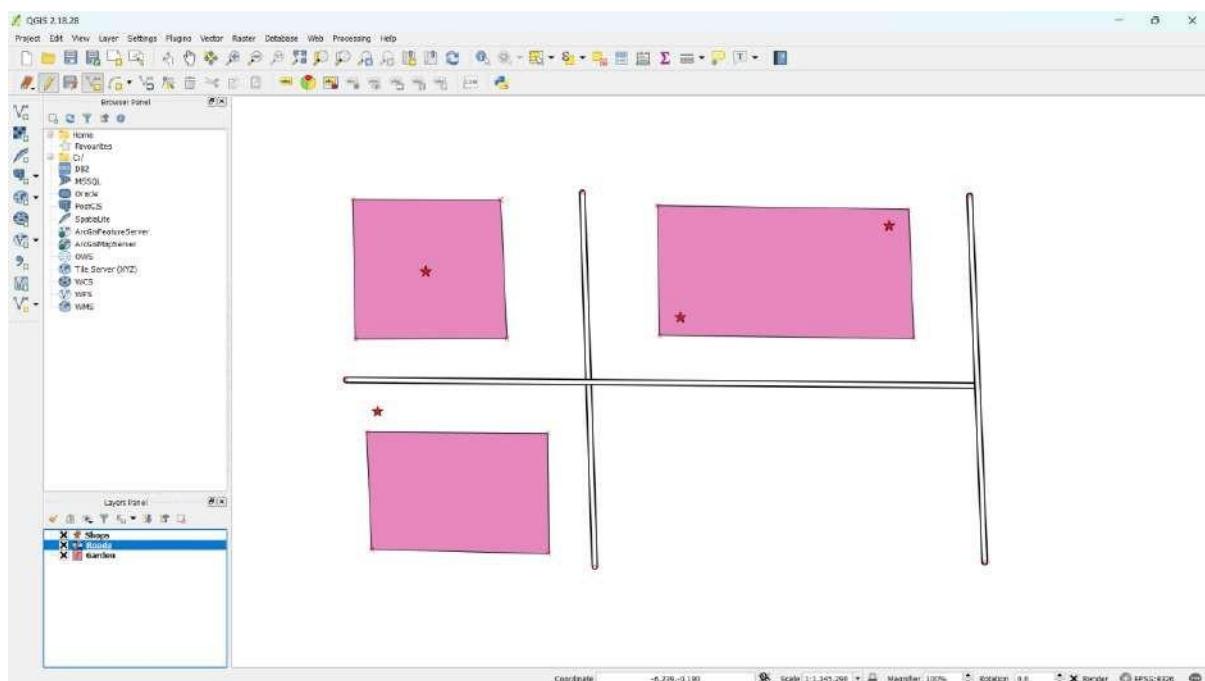
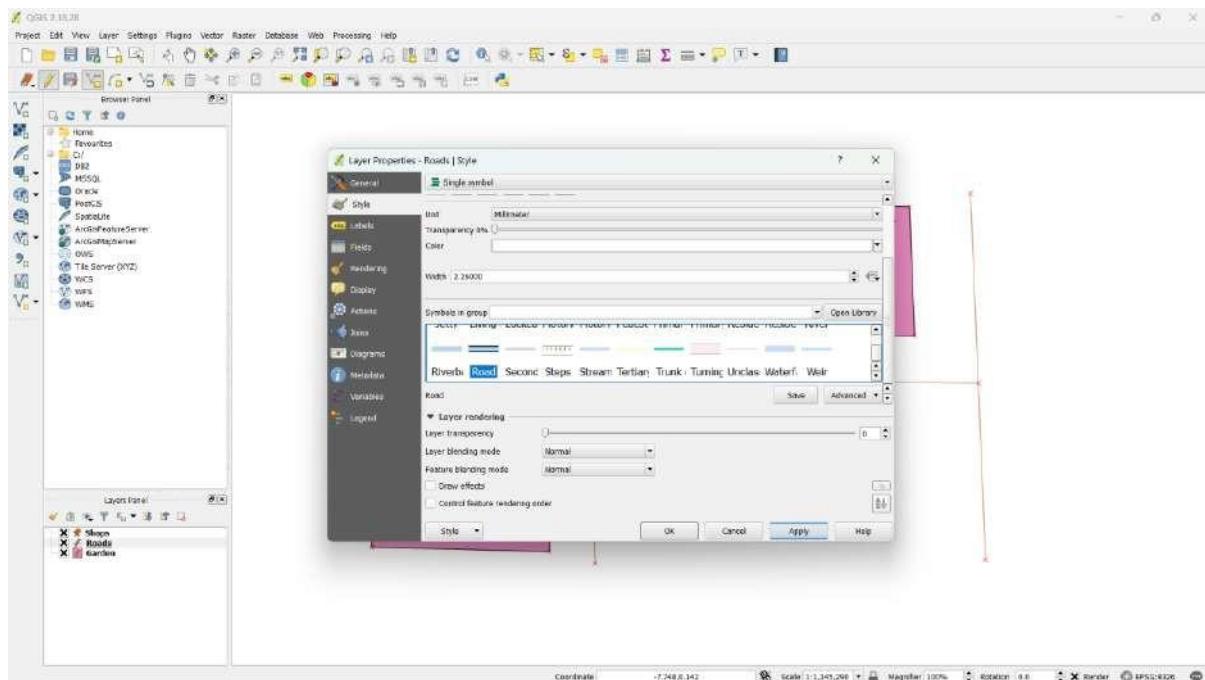
Subject: Principles of Geographical Information System Practical

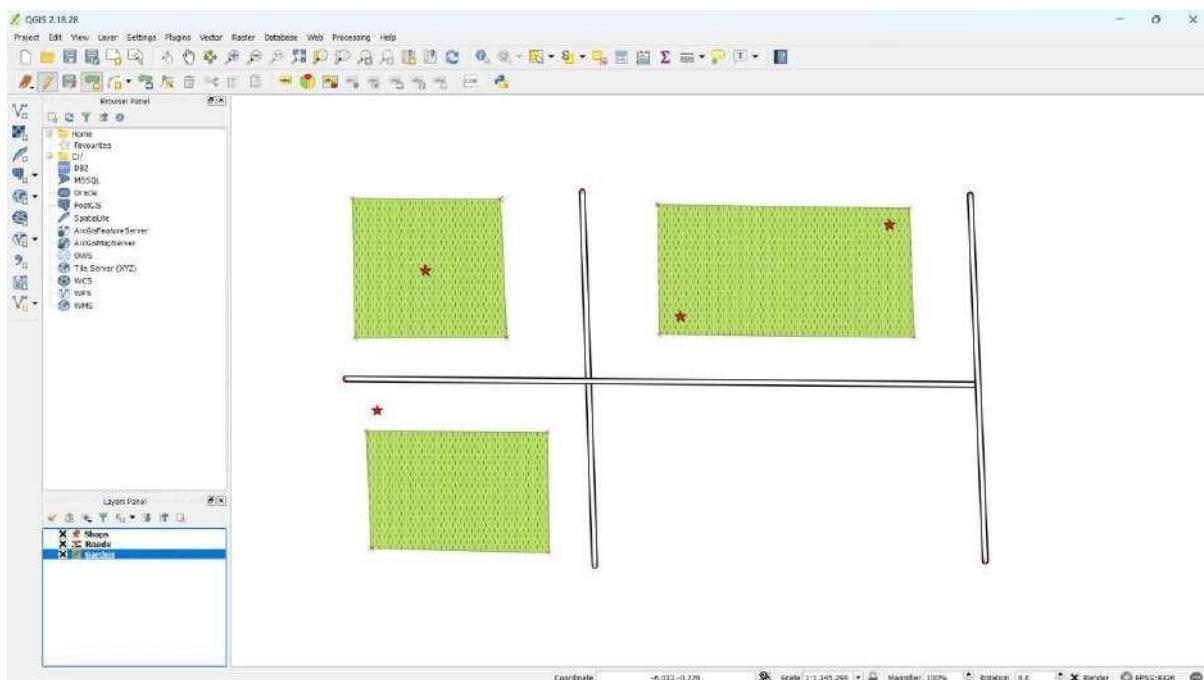
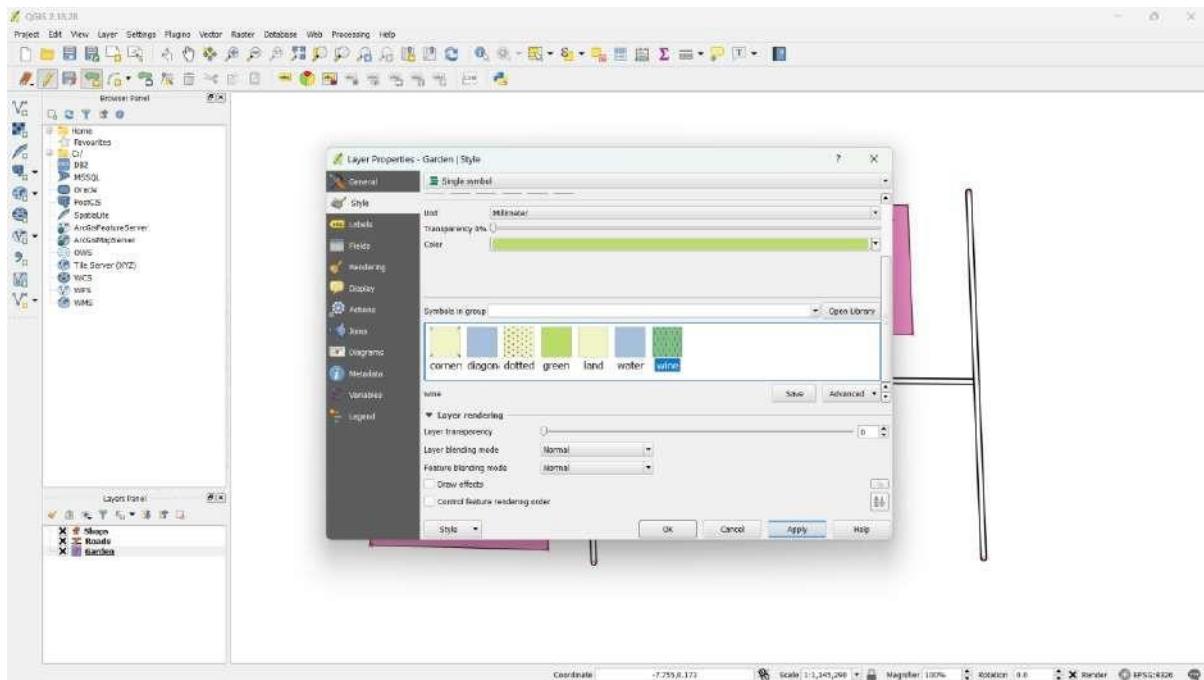
Roll No: IT21063

Subject Code: USIT6P4

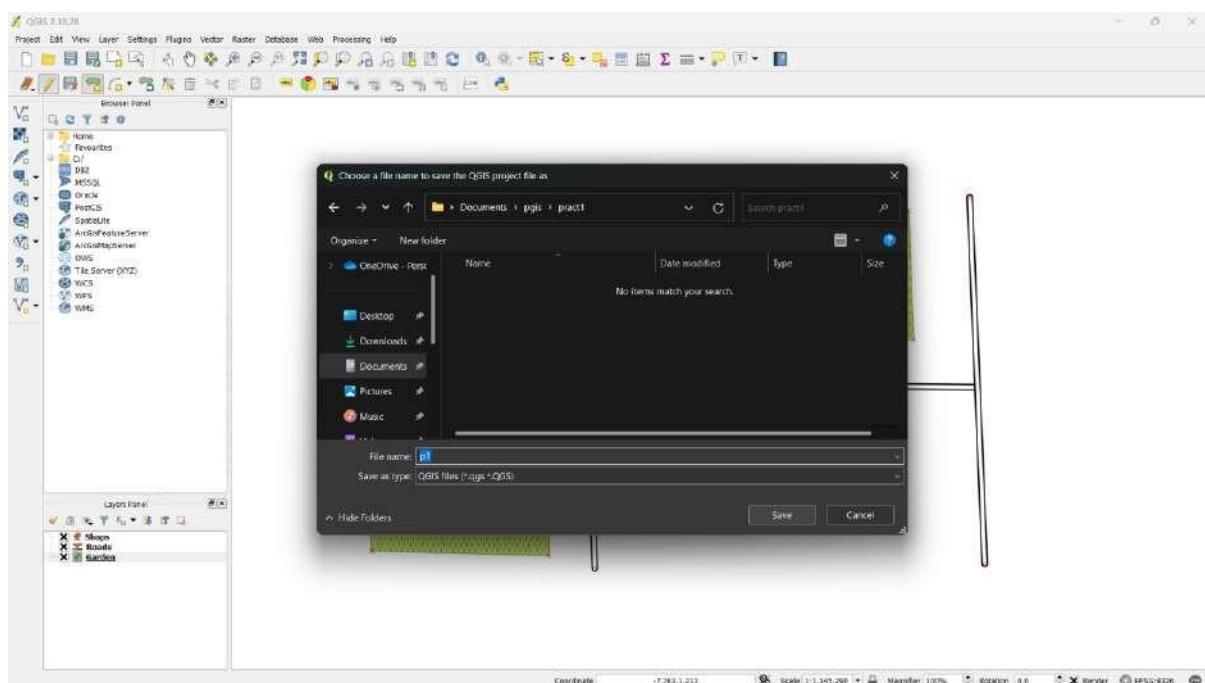
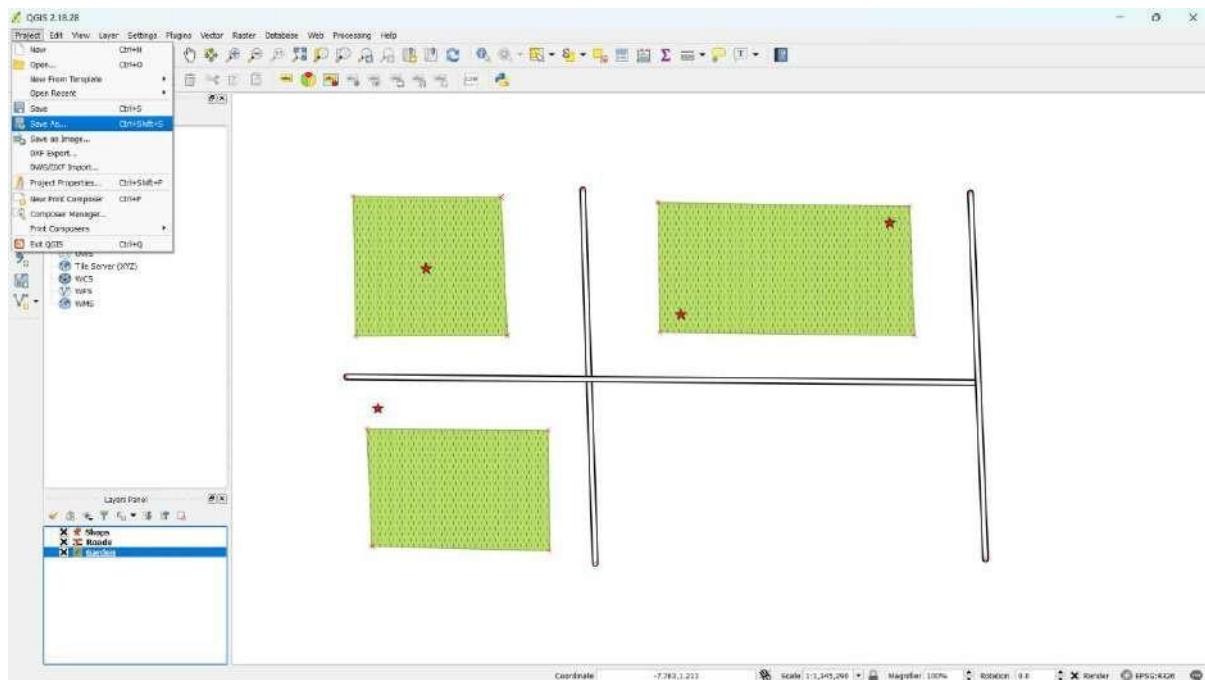


Step 18 – The same can be done to other layers.

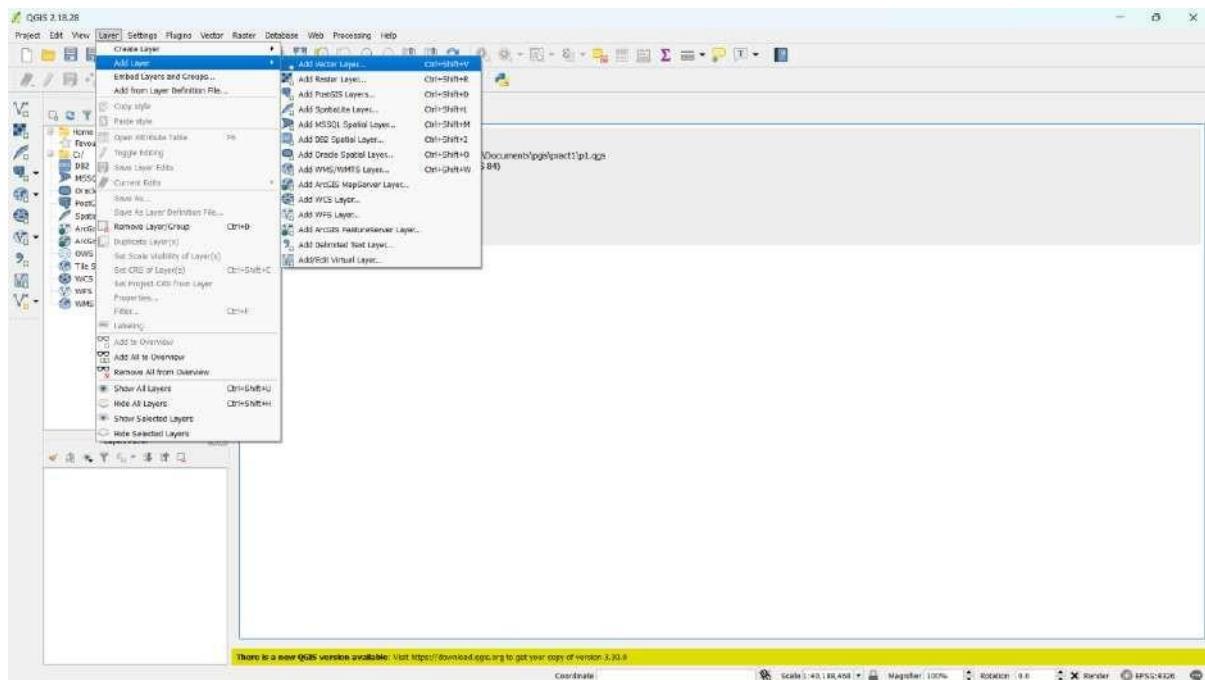




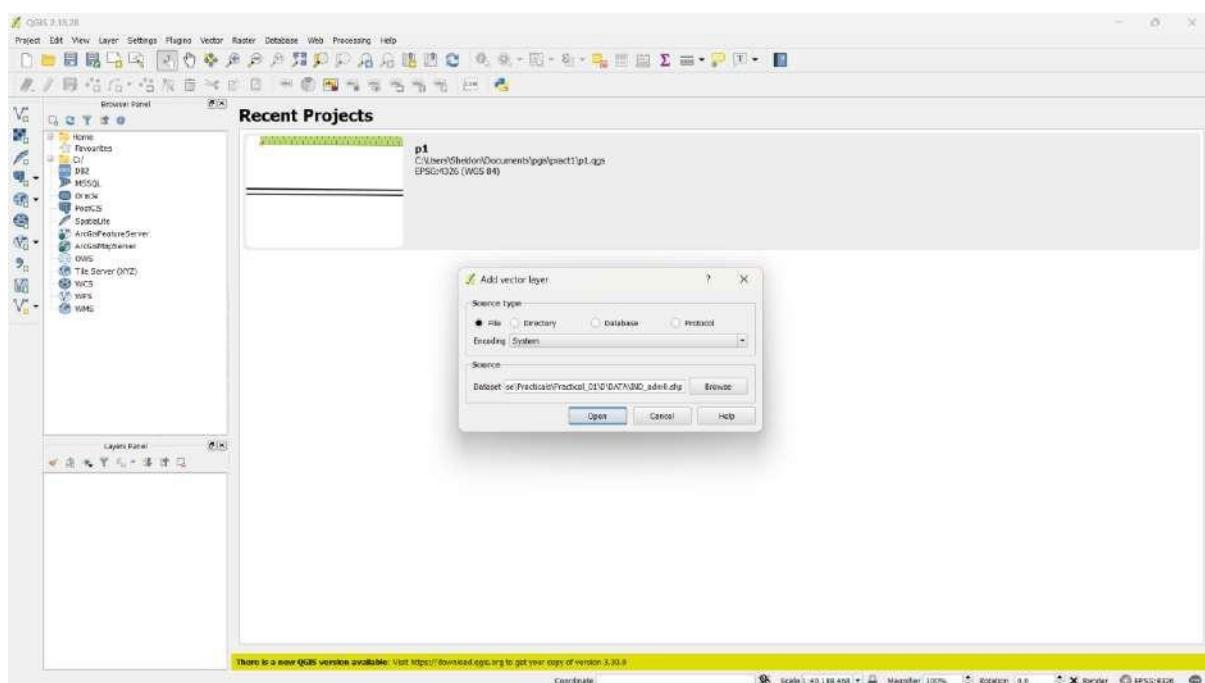
Step 19 – Now to save the project click on Project > Save As enter file name and then click Save.



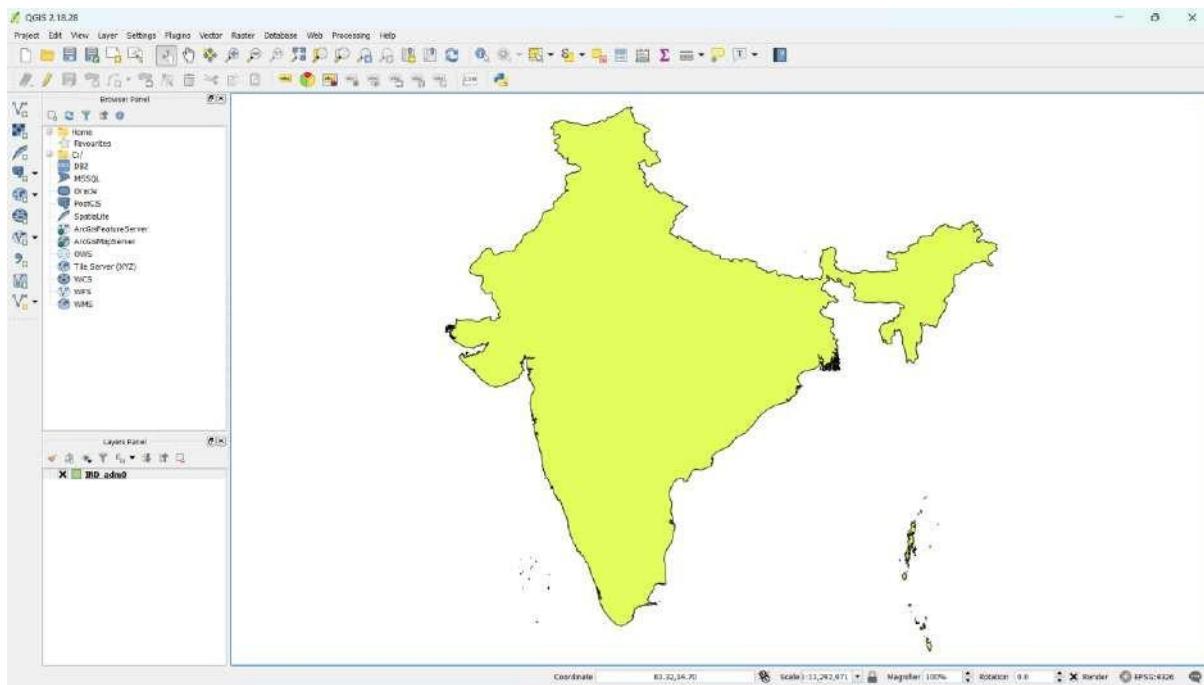
Step 20 – Now to calculate line length and statistics create a new project. In the Layer Tab click on Add Layer and select Add Vector Layer.



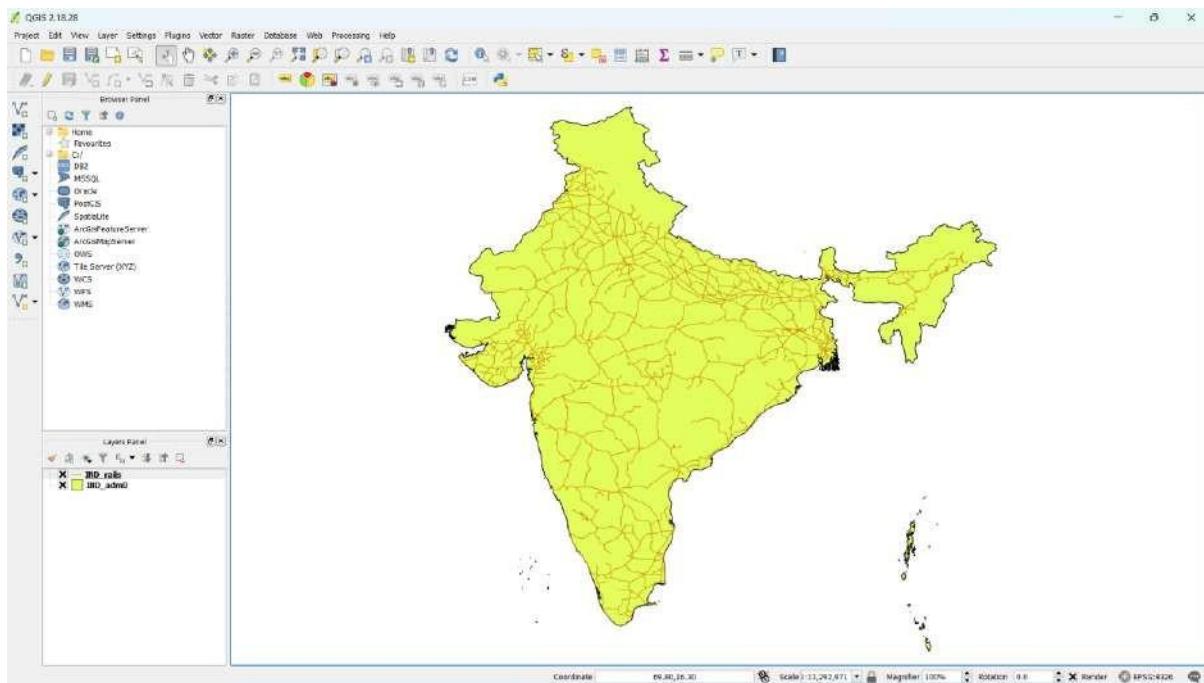
Step 21 – Select the option as shown below then choose the .shp file you want to add and then click Open.



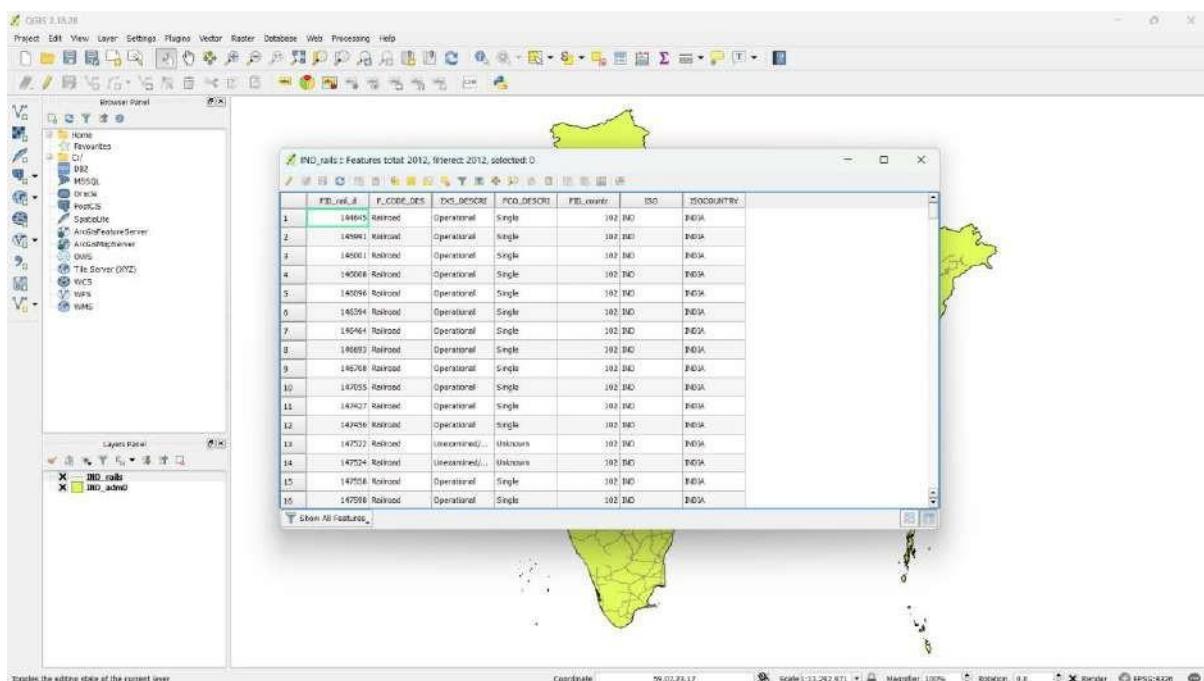
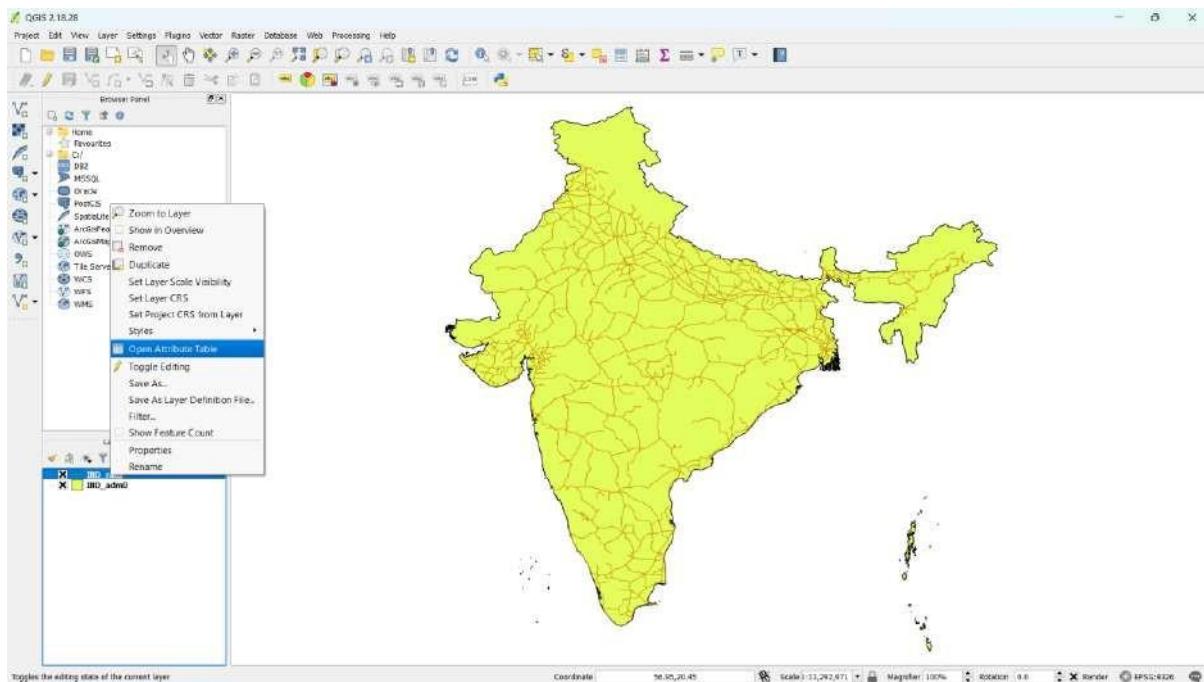
The file is loaded.



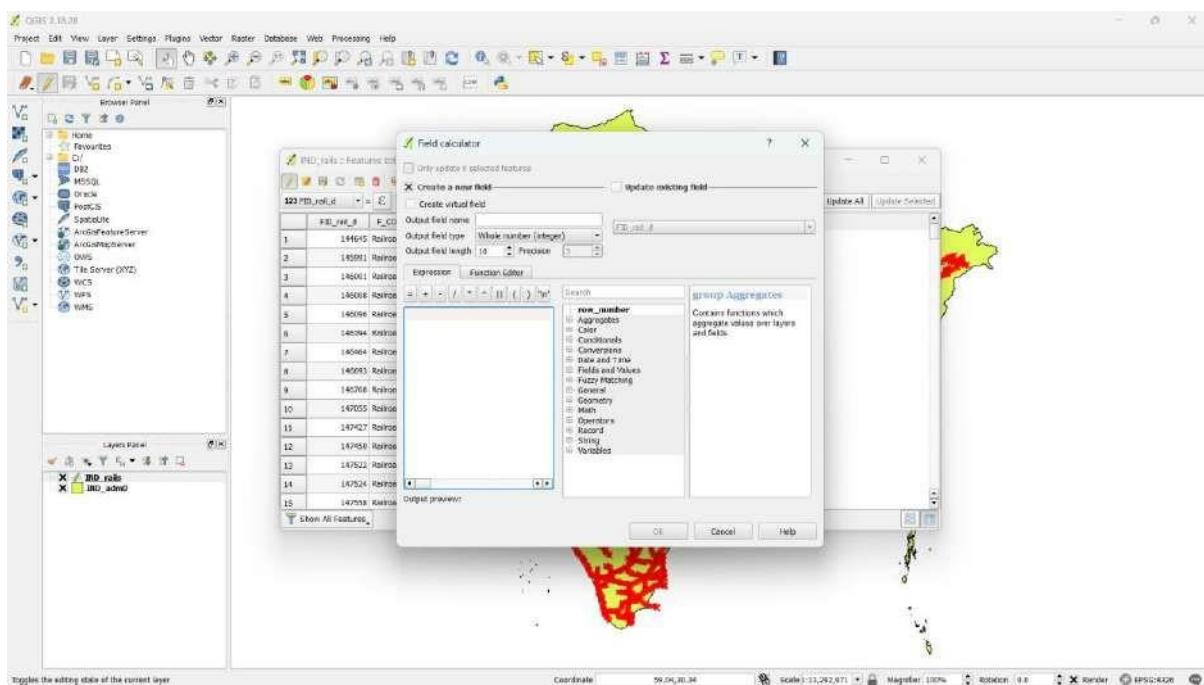
You can add as many layers you like using this method.



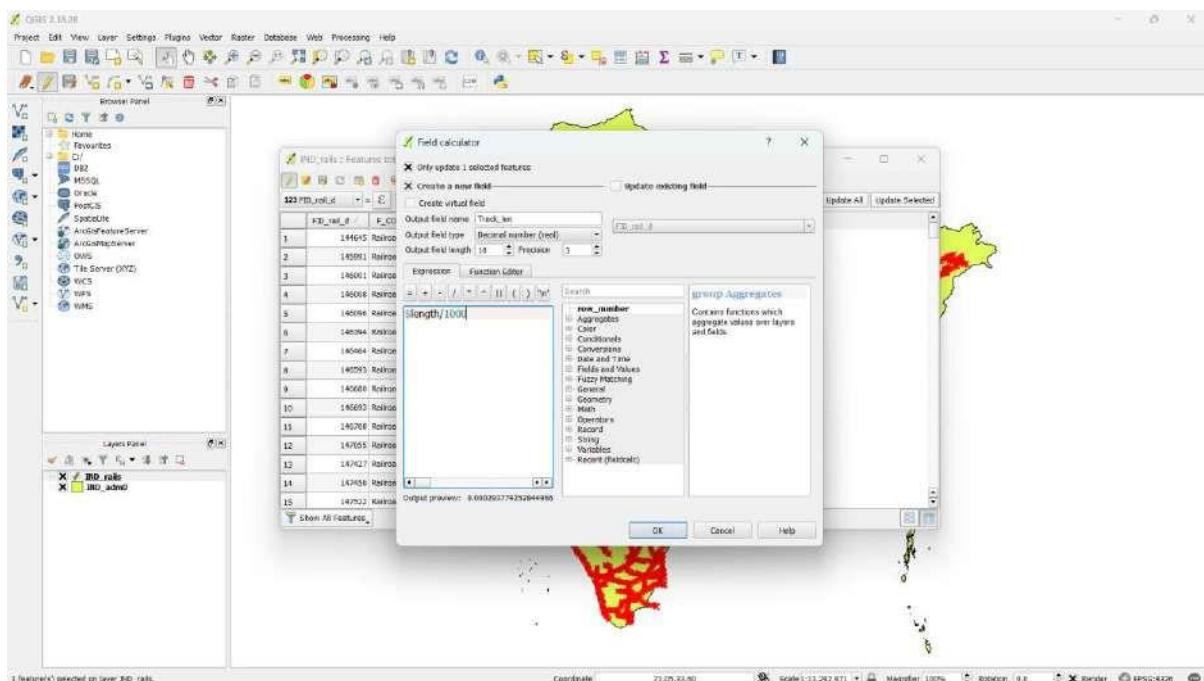
Step 22 – Now right click on a Layer and click Open Attribute Table.



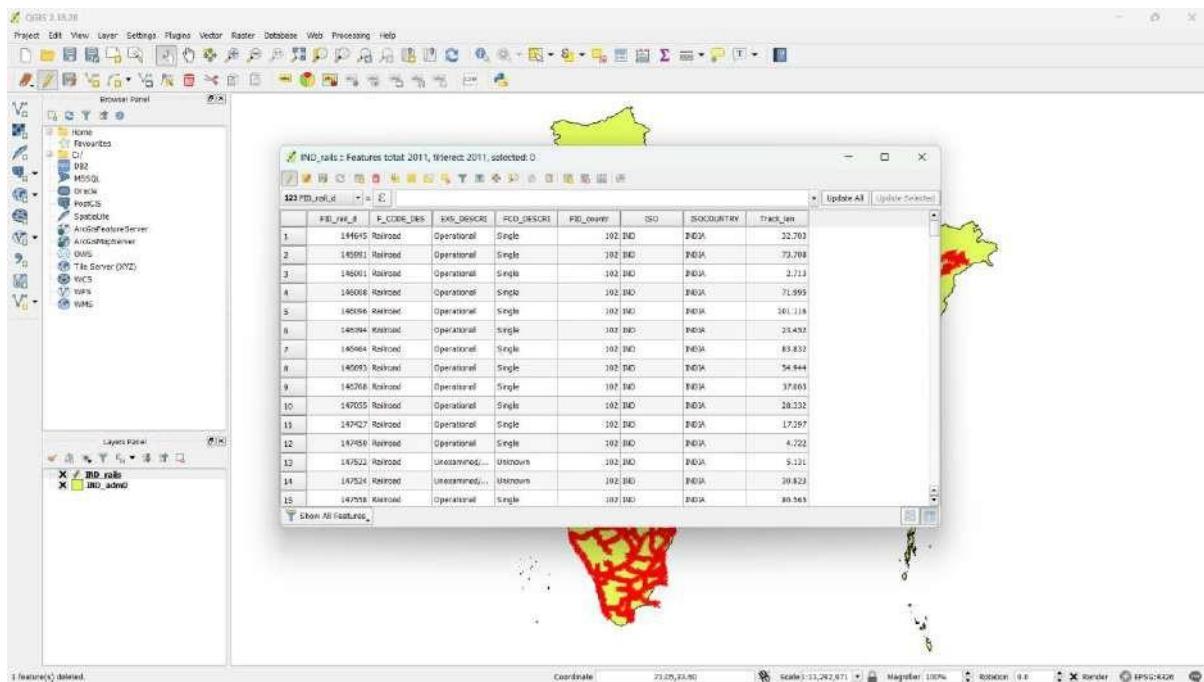
Step 23 – Now toggle editing and click on Open Field calculator.



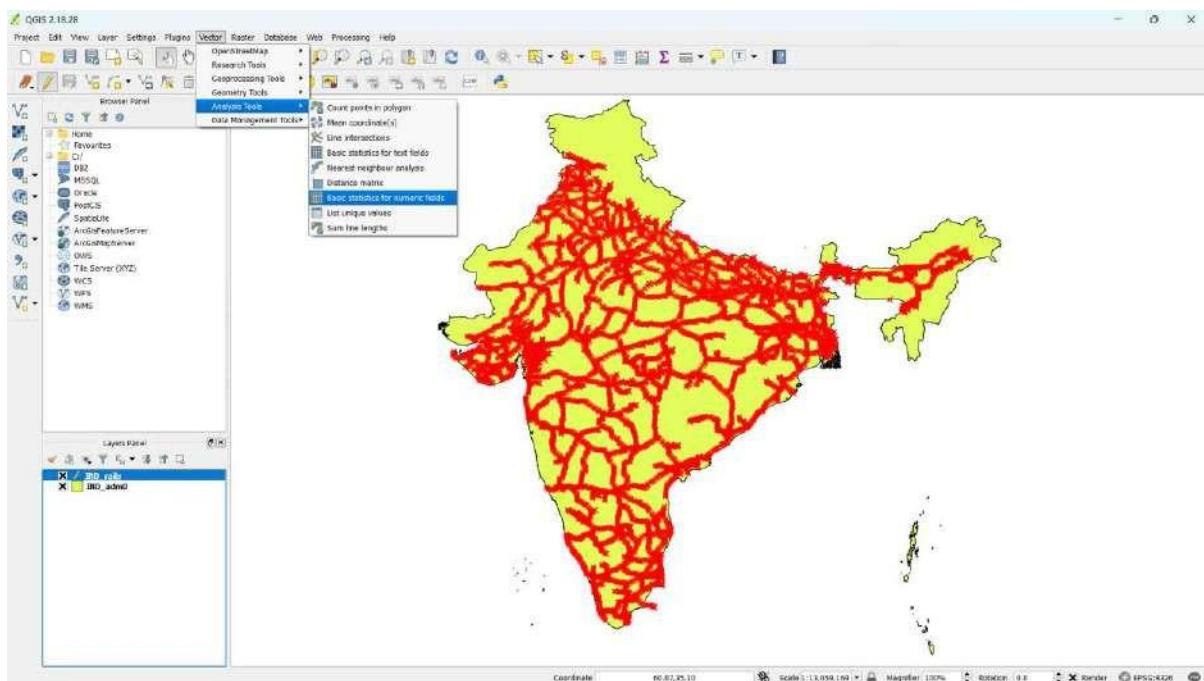
Step 24 – Enter data as shown below and then click OK.



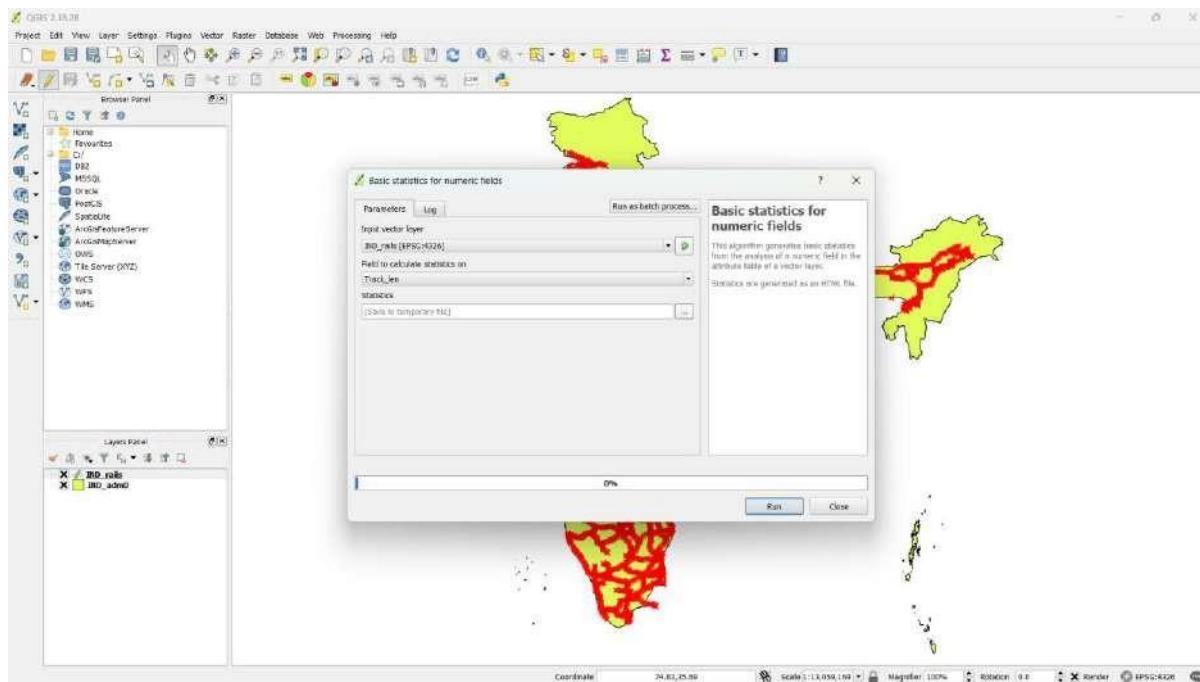
New Field is added.



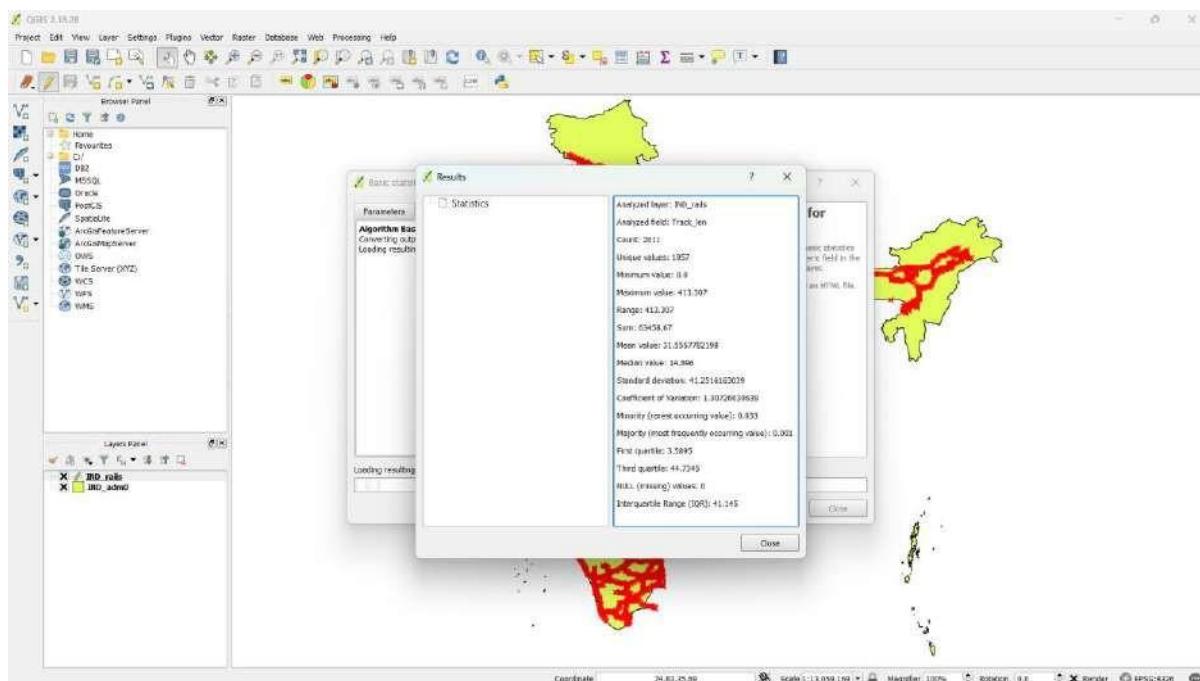
Step 25 – Now in the Vector tab click on Analysis Tools and select Basic Statistics for numeric fields.



Step 26 – Select the options as shown below and then click Run.



The following result gets generated.

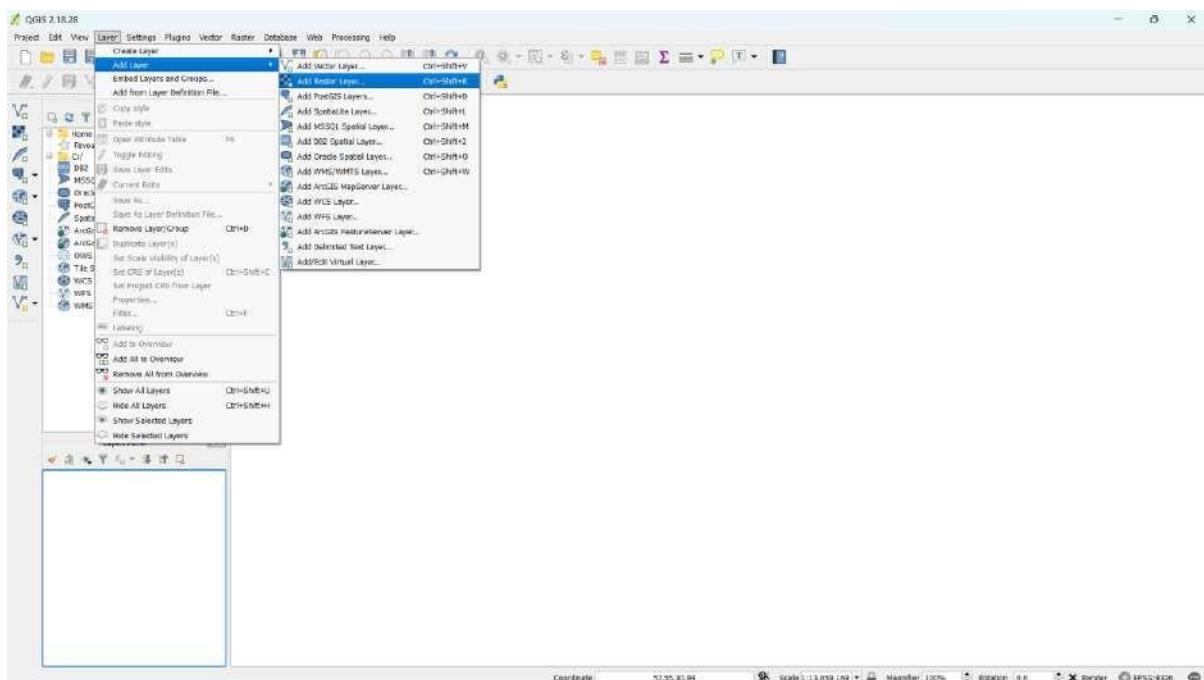


PRACTICAL – 2

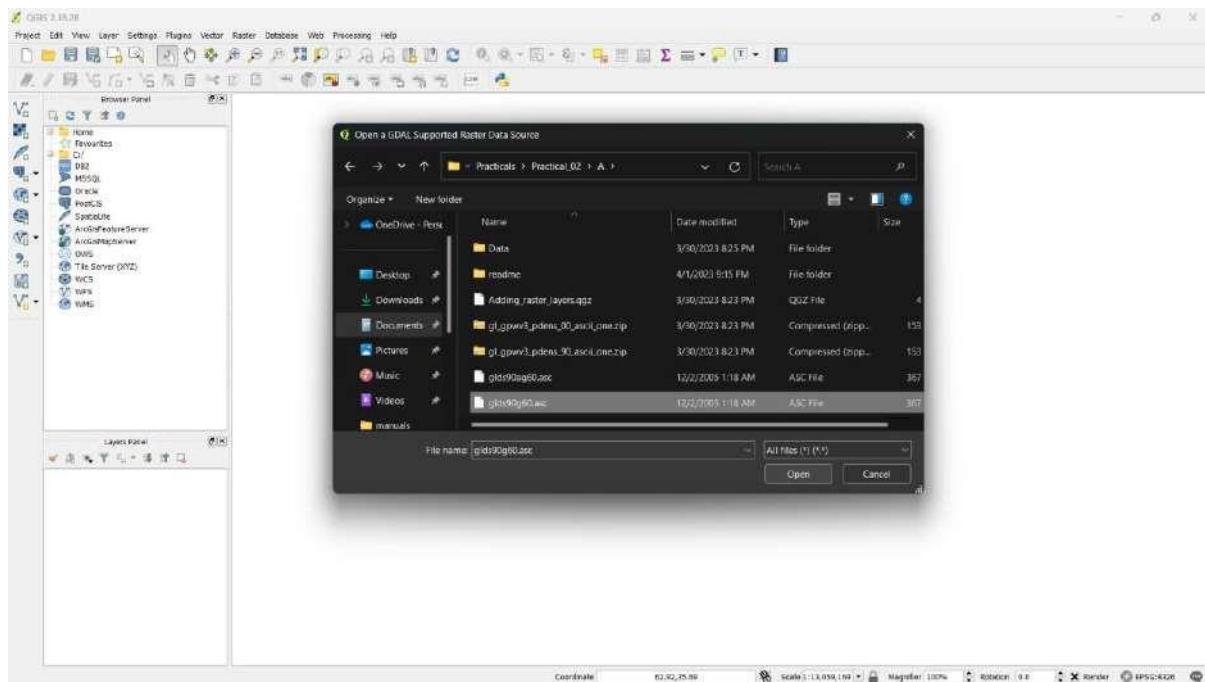
Aim: Exploring and Managing Raster data: Adding raster layers, raster styling and analysis, raster mosaicking and clipping.

Steps:

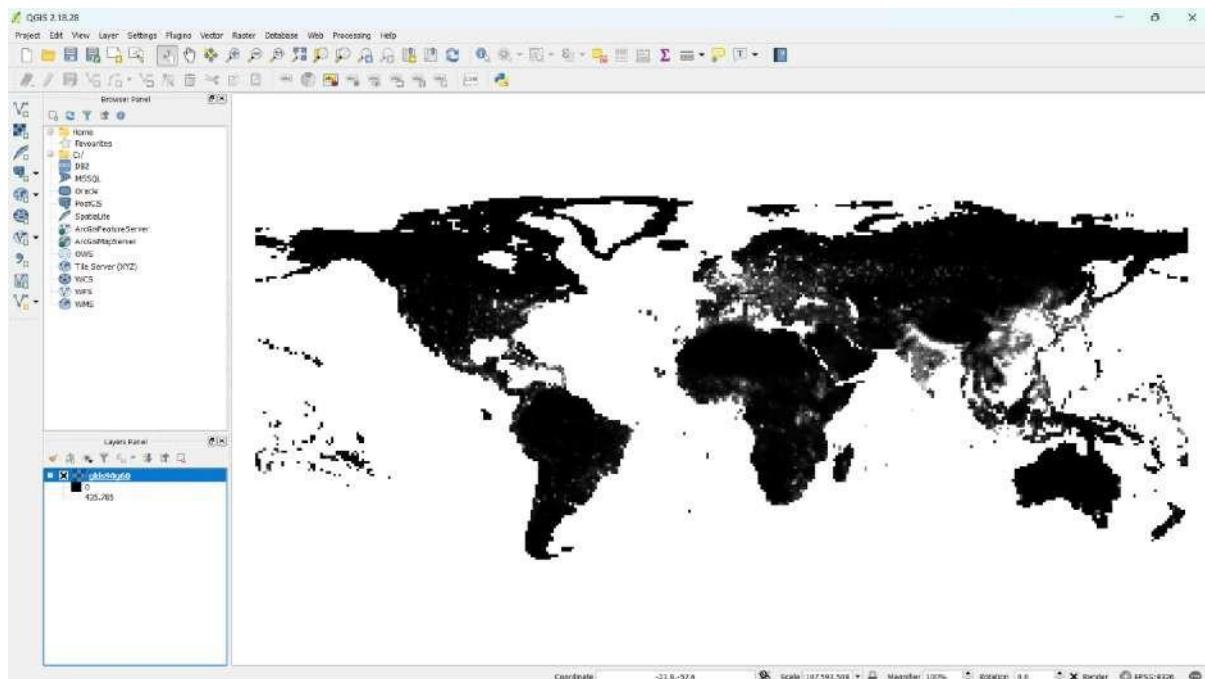
Step 1 – Open QGIS 2.18 Desktop and Create a new project. In Layer tab click Add Layer and select Add Raster Layer.



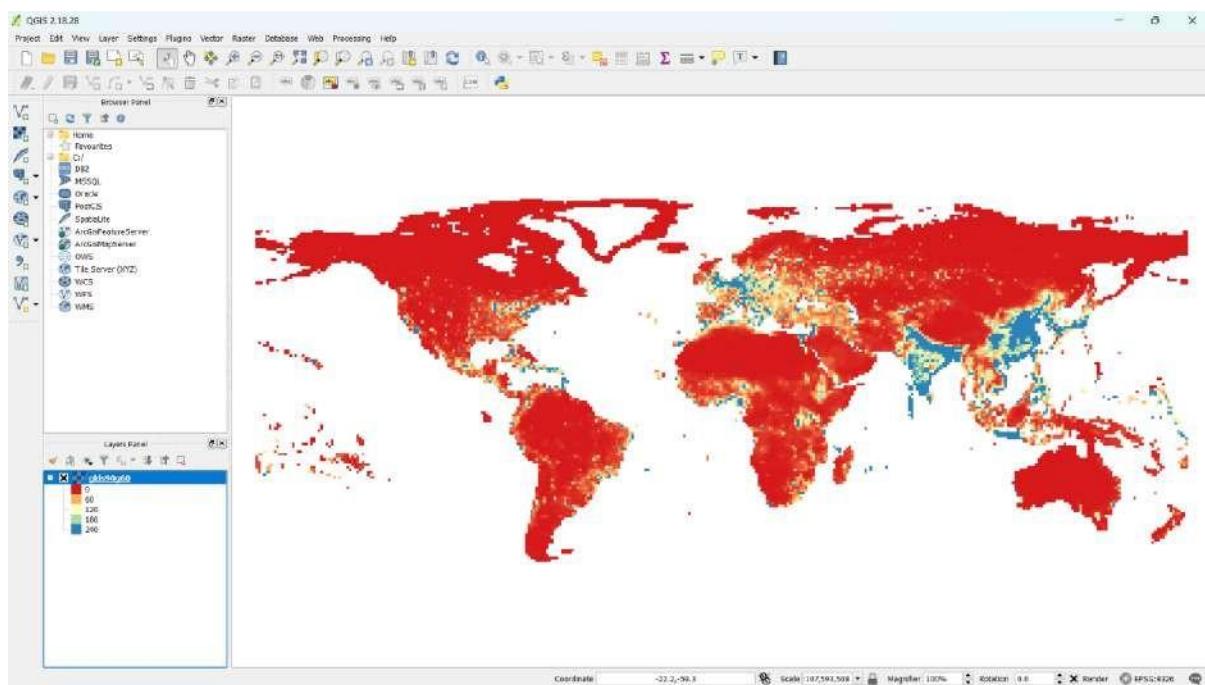
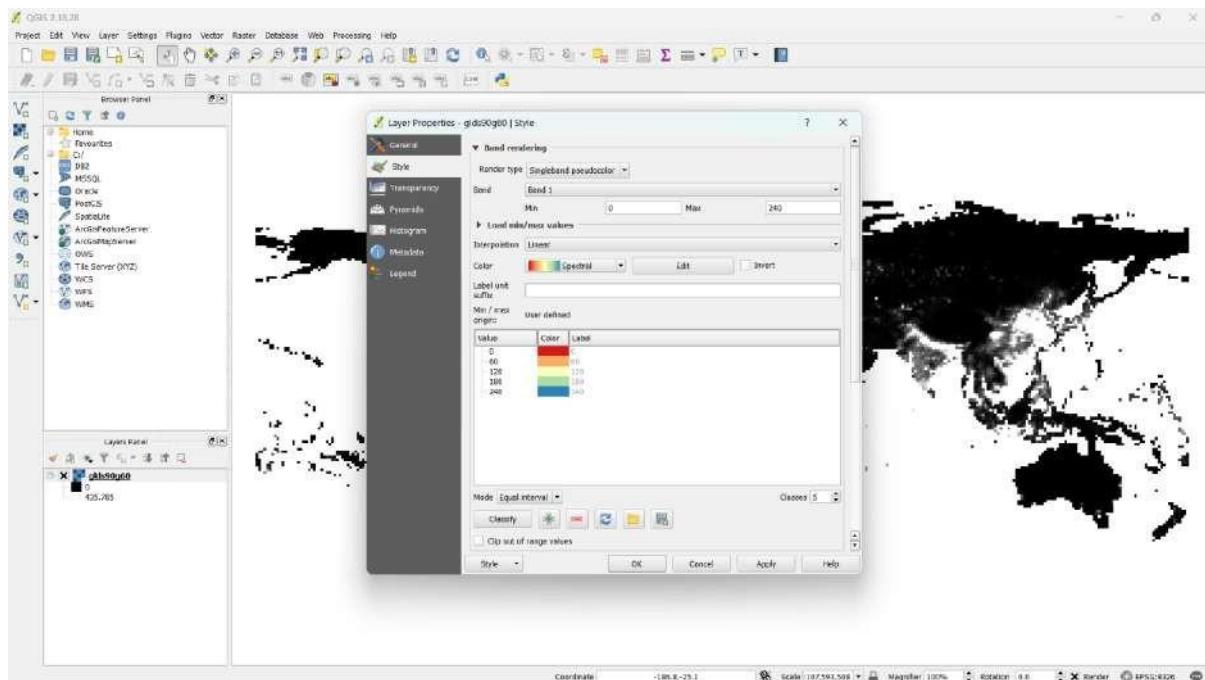
Step 2 – Select the file you want and then click Open.



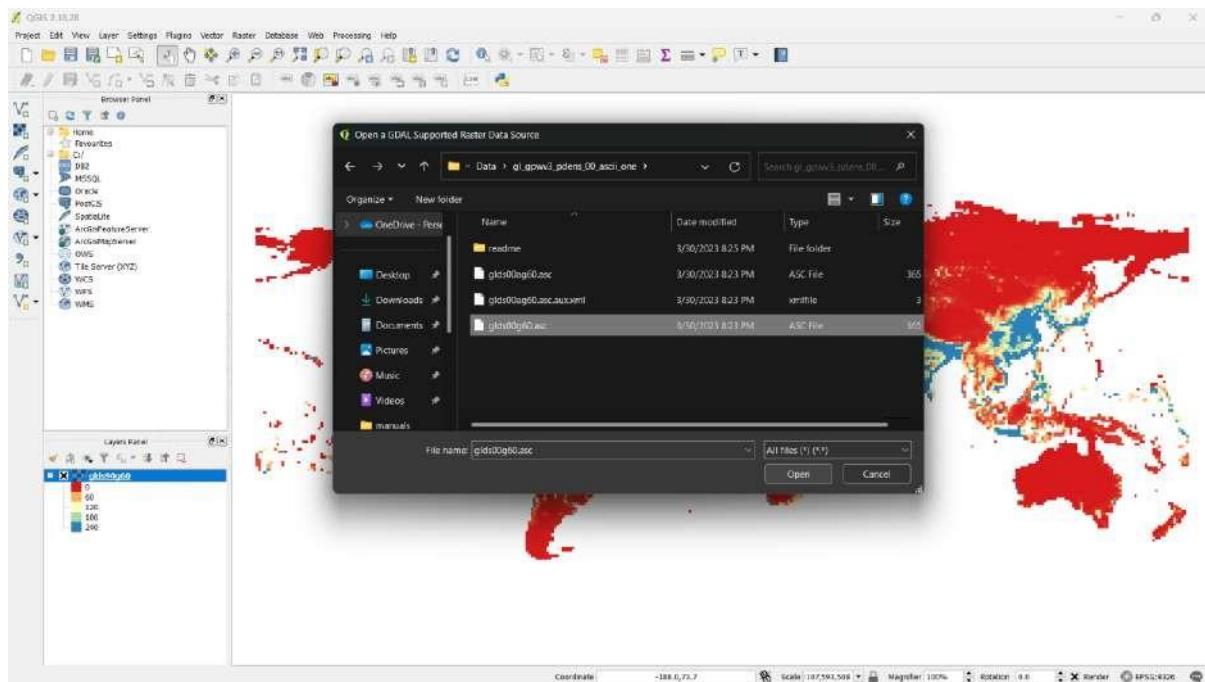
New Layer is added.



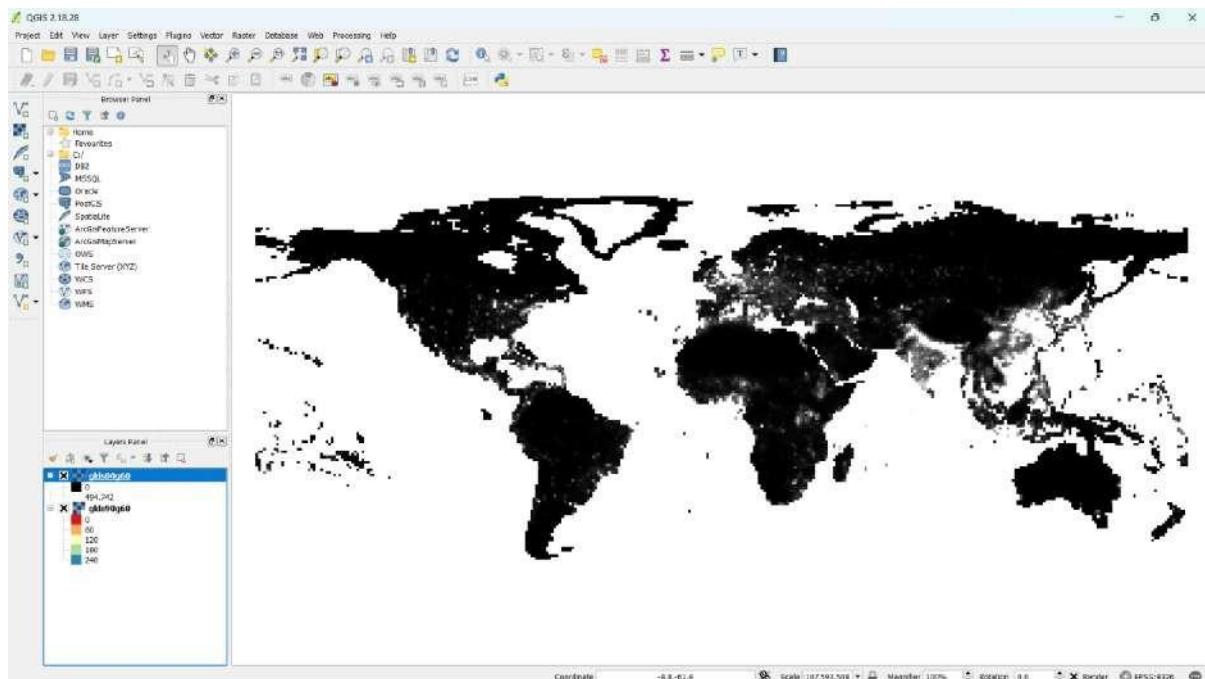
Step 3 – Open Layer Properties, set them as following and then click apply.



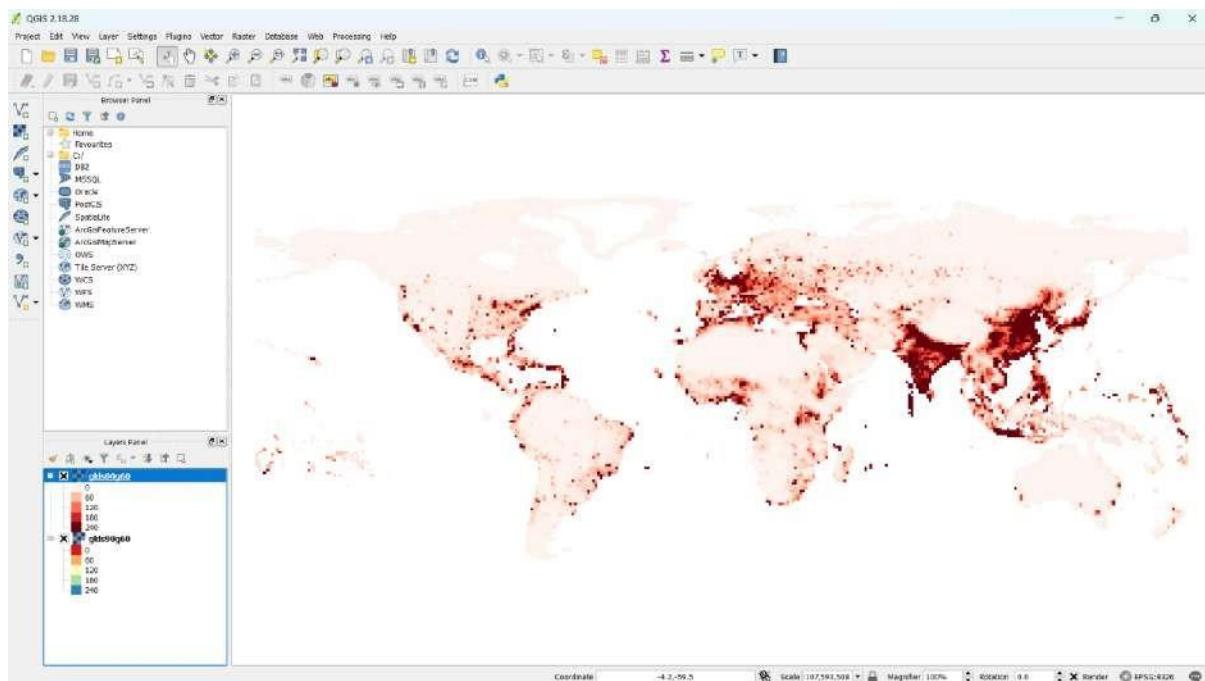
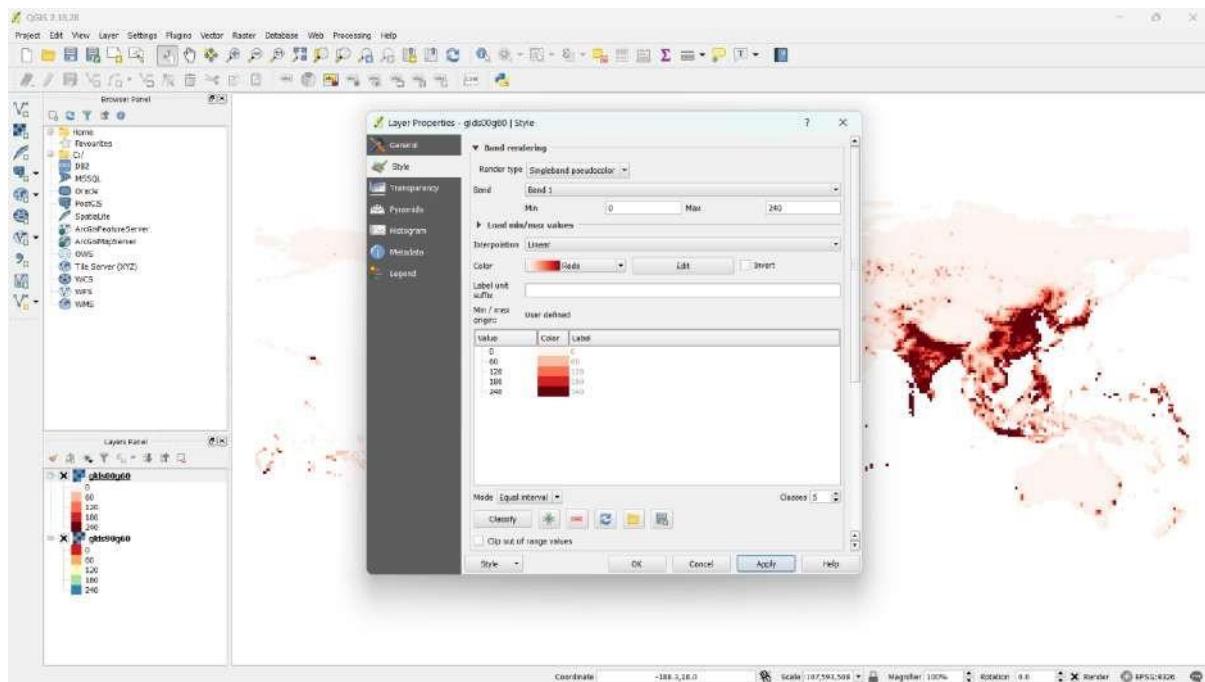
Step 4 – Add another layer using the previous method.



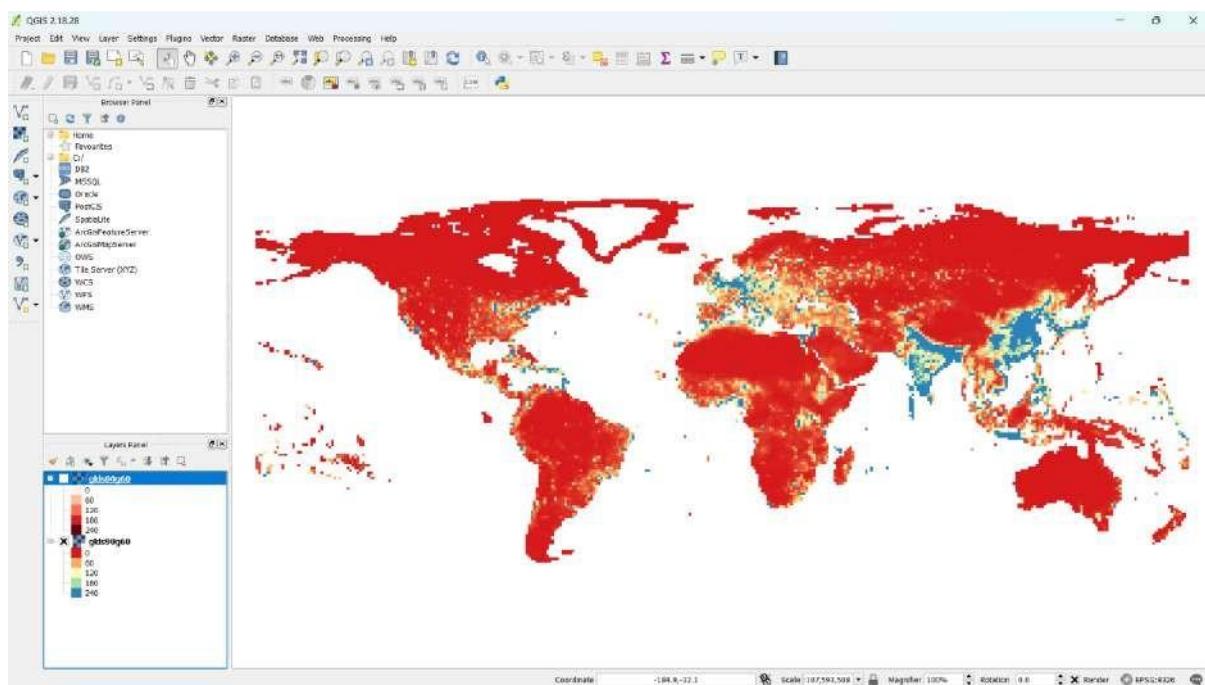
Another layer is added.



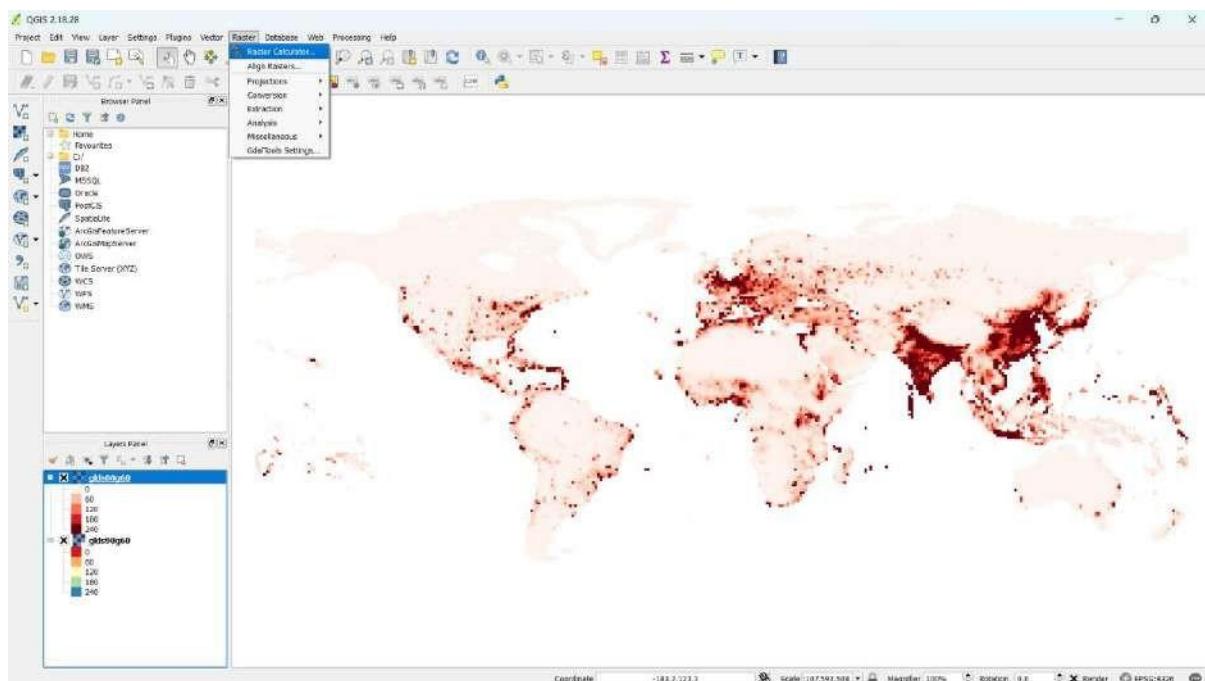
Step 5 – Set its properties as shown below.

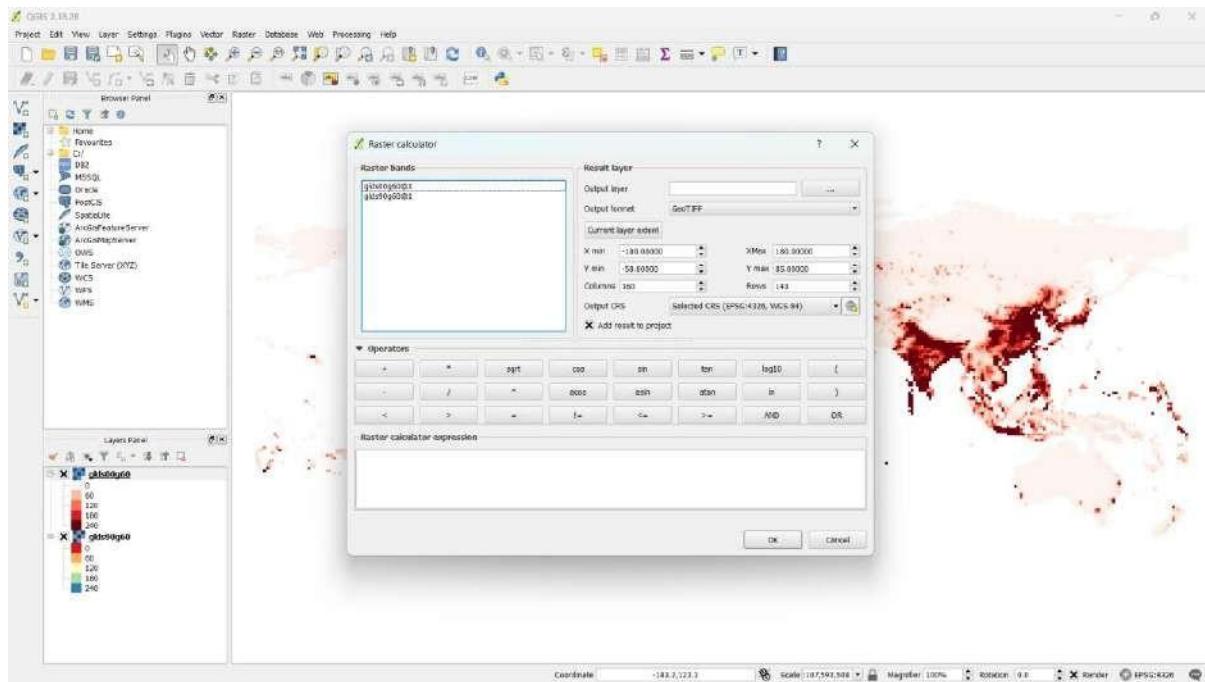


You can untick a layer to hide it.

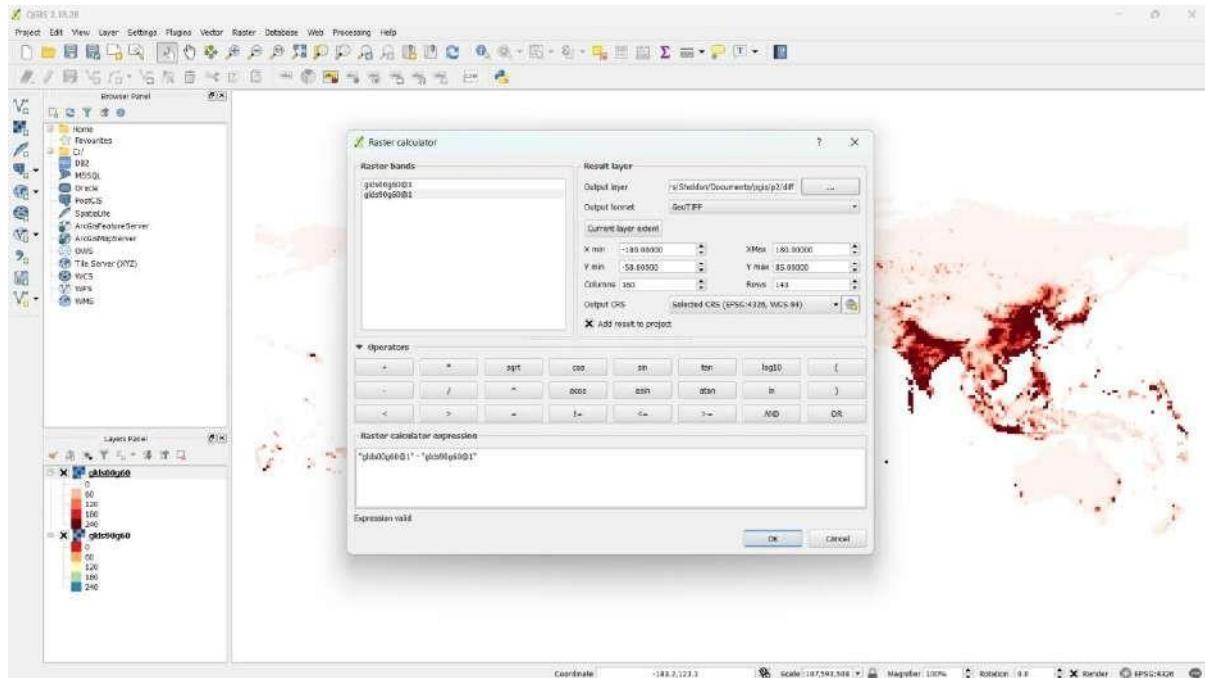


Step 6 – In the Raster tab click Raster Calculator.

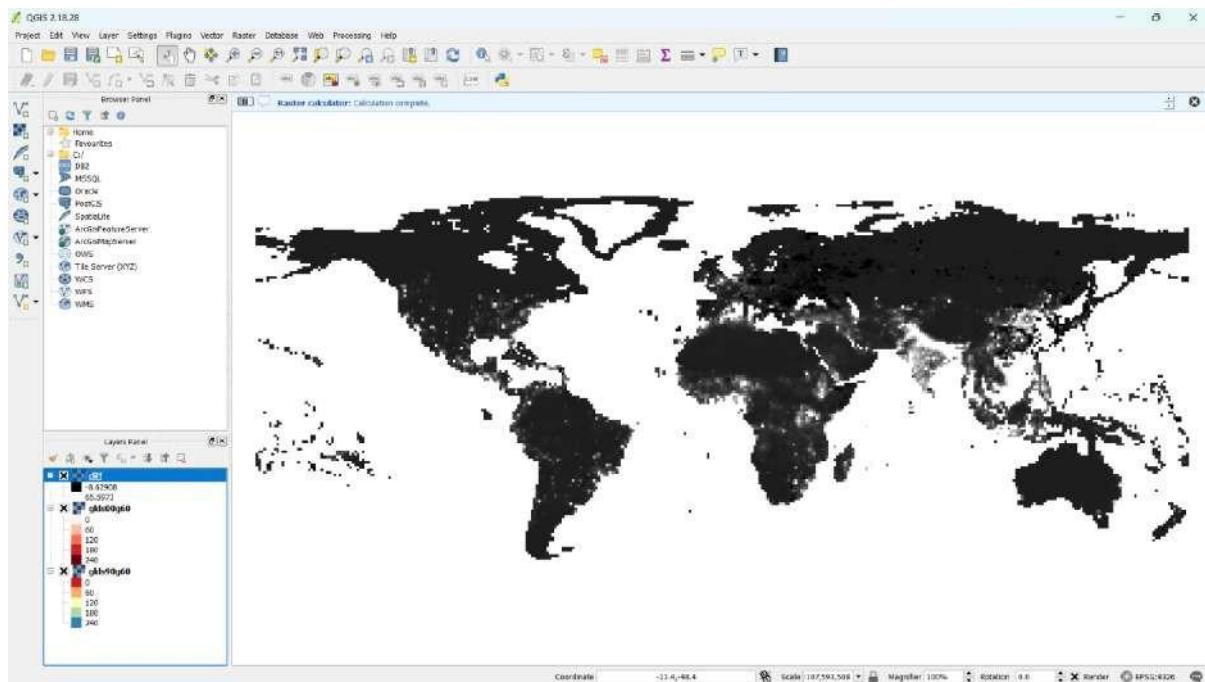




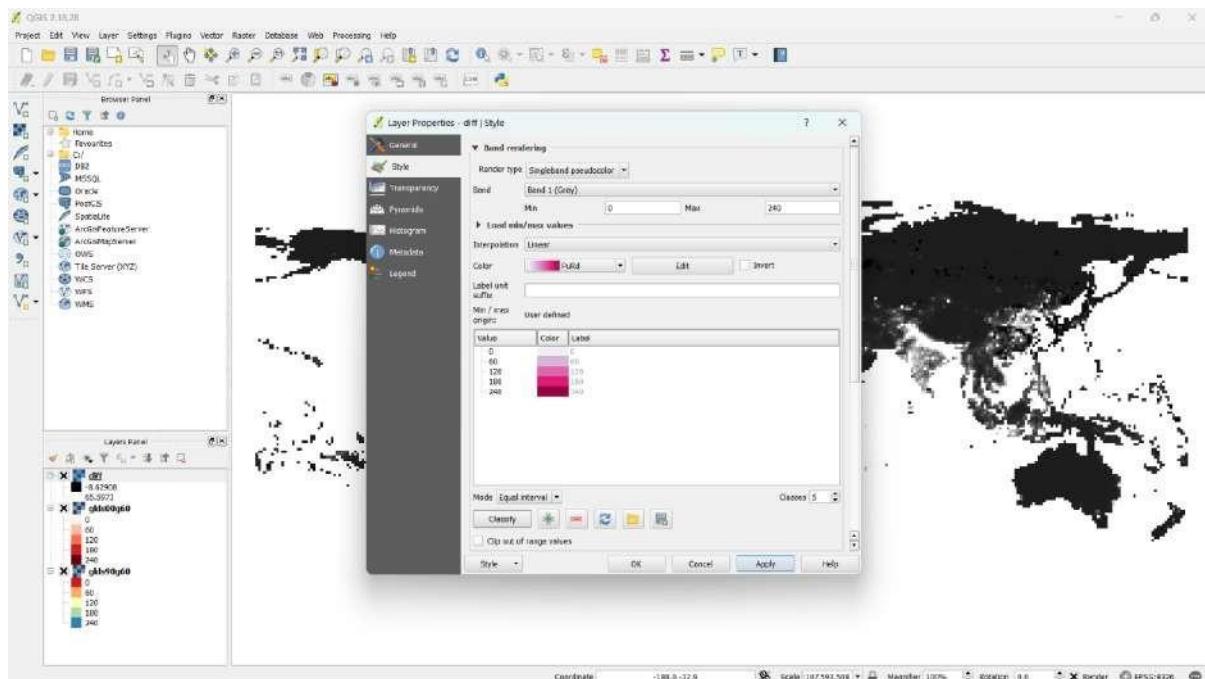
Step 7 – Select the output layer then insert your raster calculator expression and then click OK.

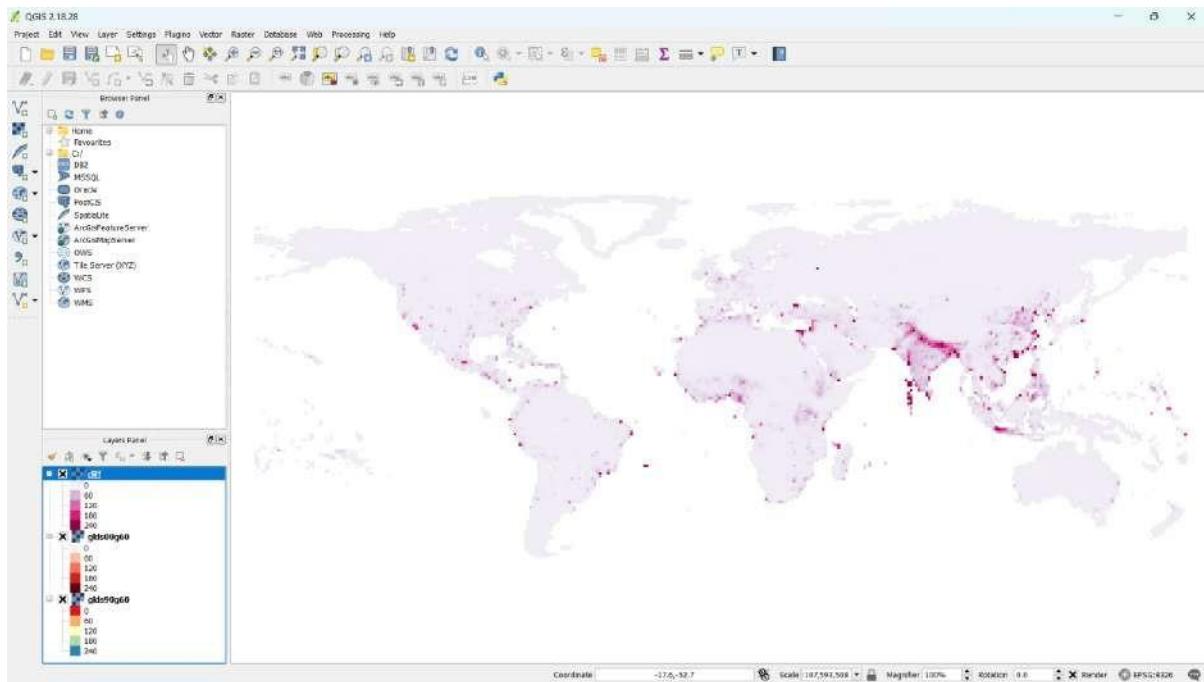


A new layer gets created.

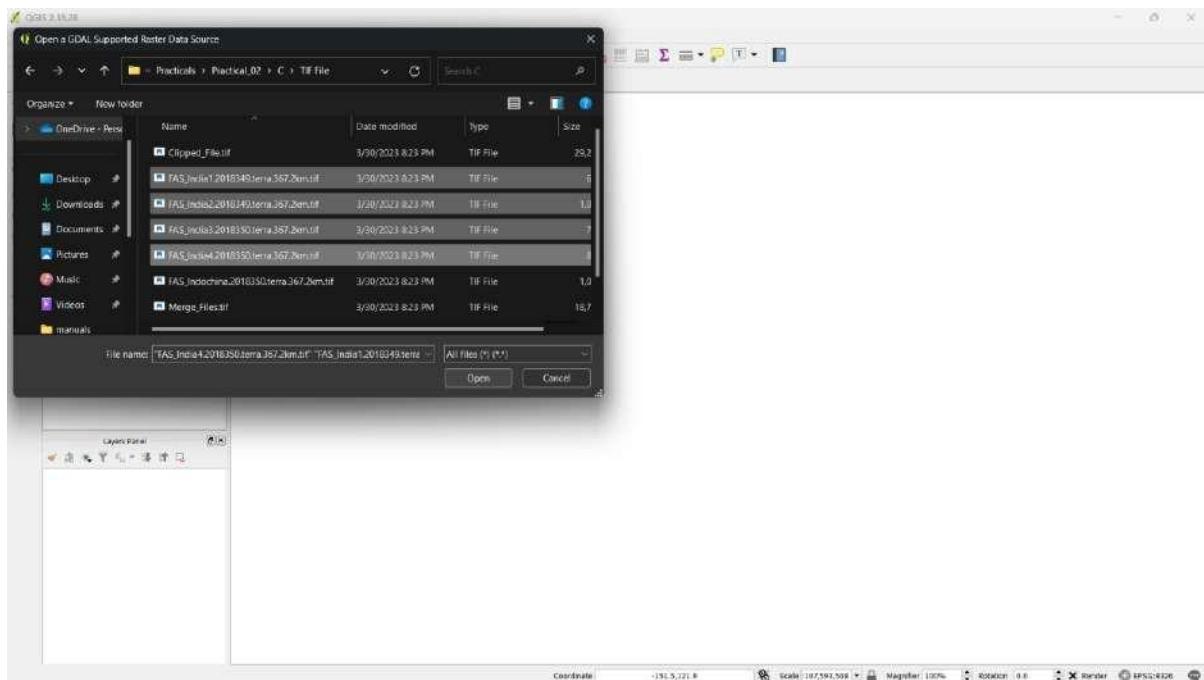


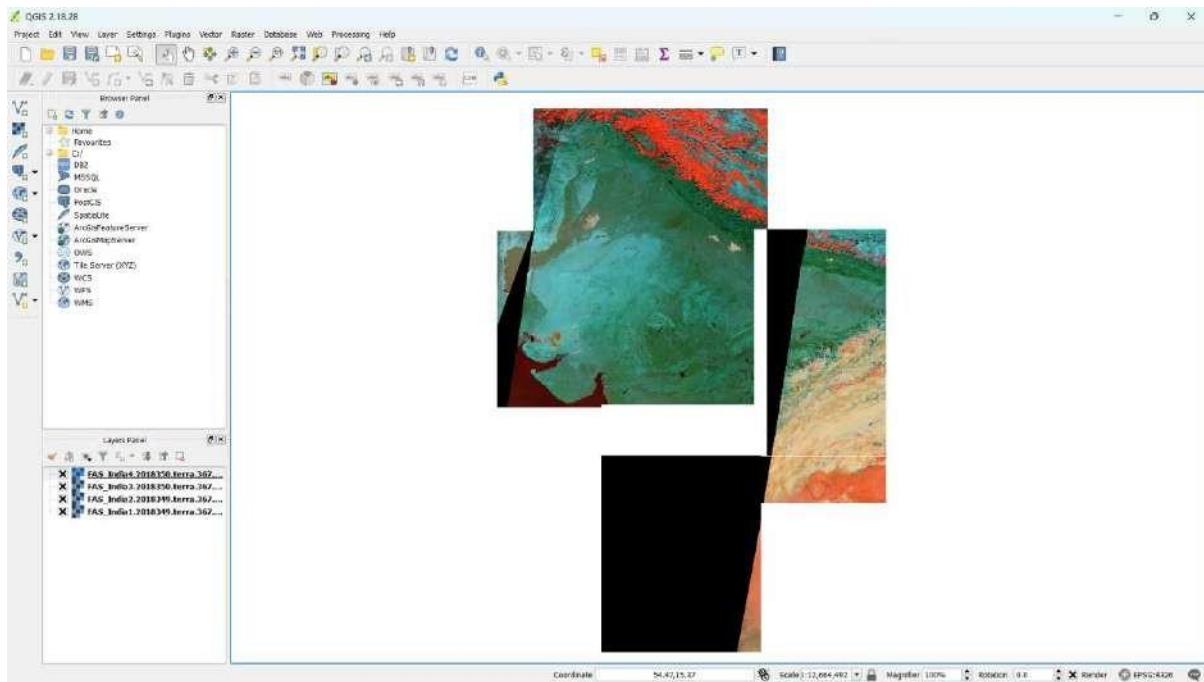
Step 8 – Set the properties as shown below and then click apply.



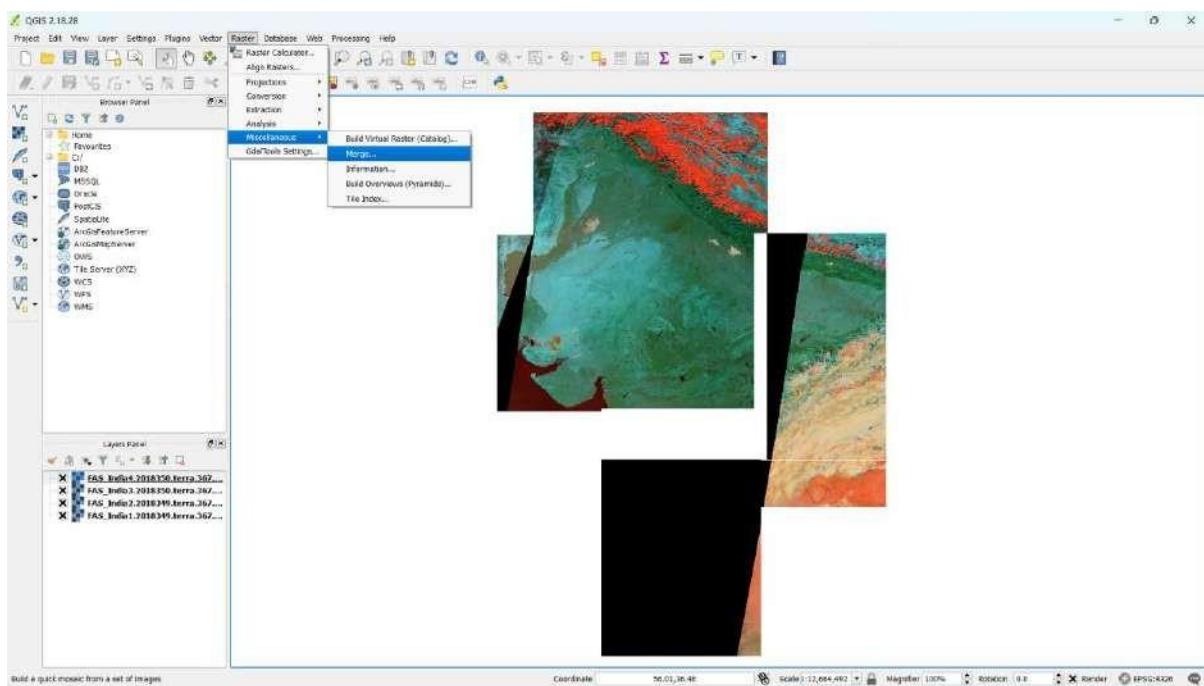


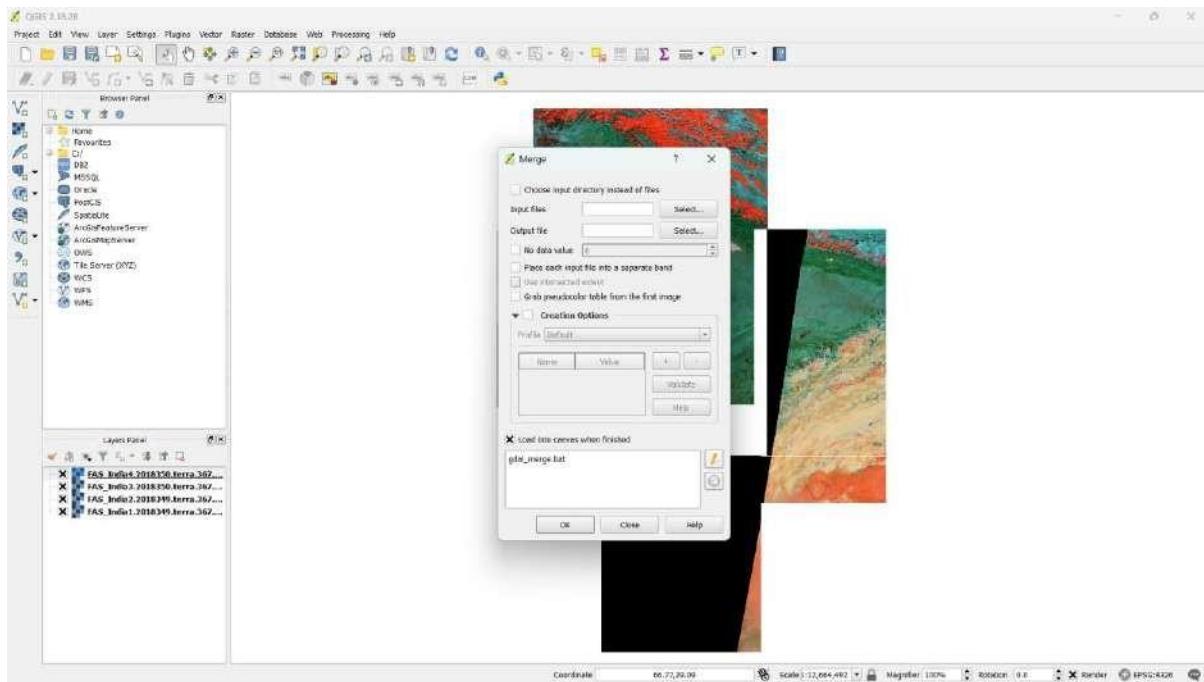
Step 9 – For Raster Clipping create a New Project. And add these 4 .tif files.



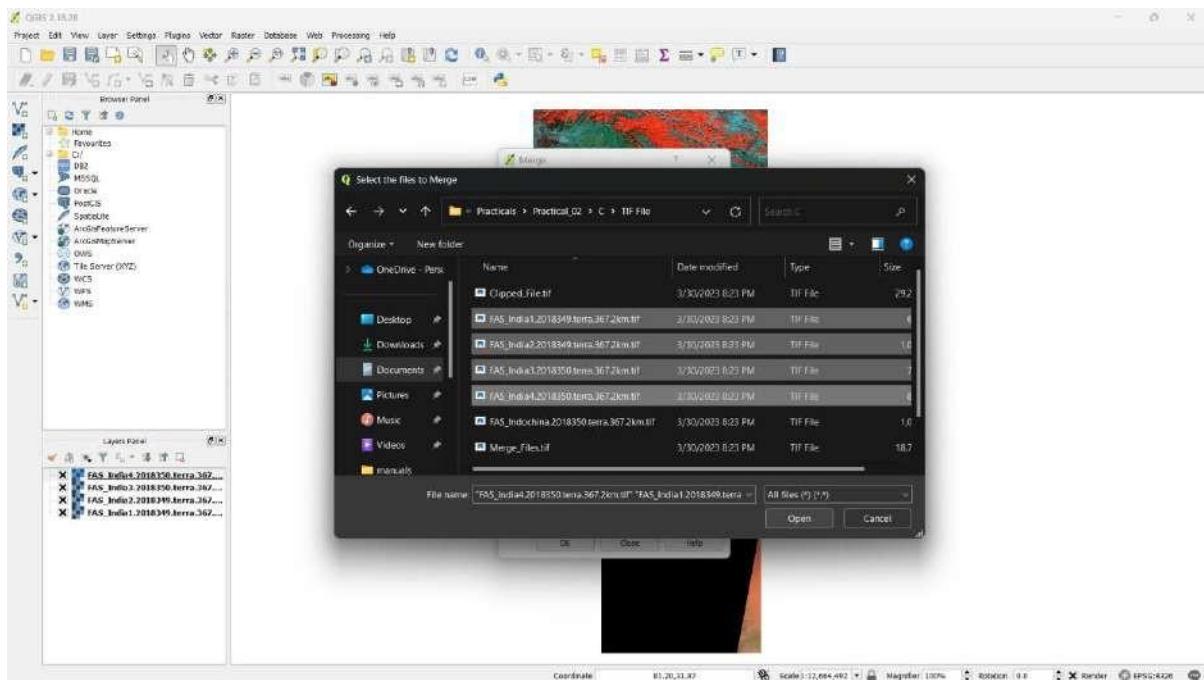


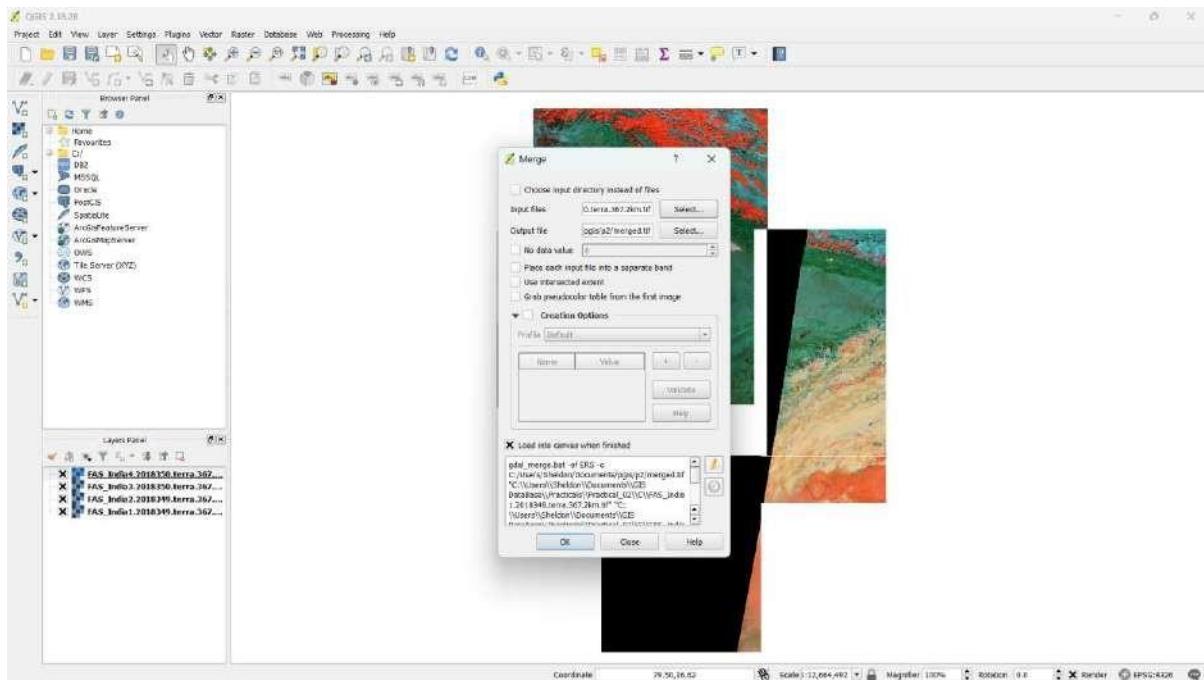
Step 10 – In Raster tab click on miscellaneous and select Merge.



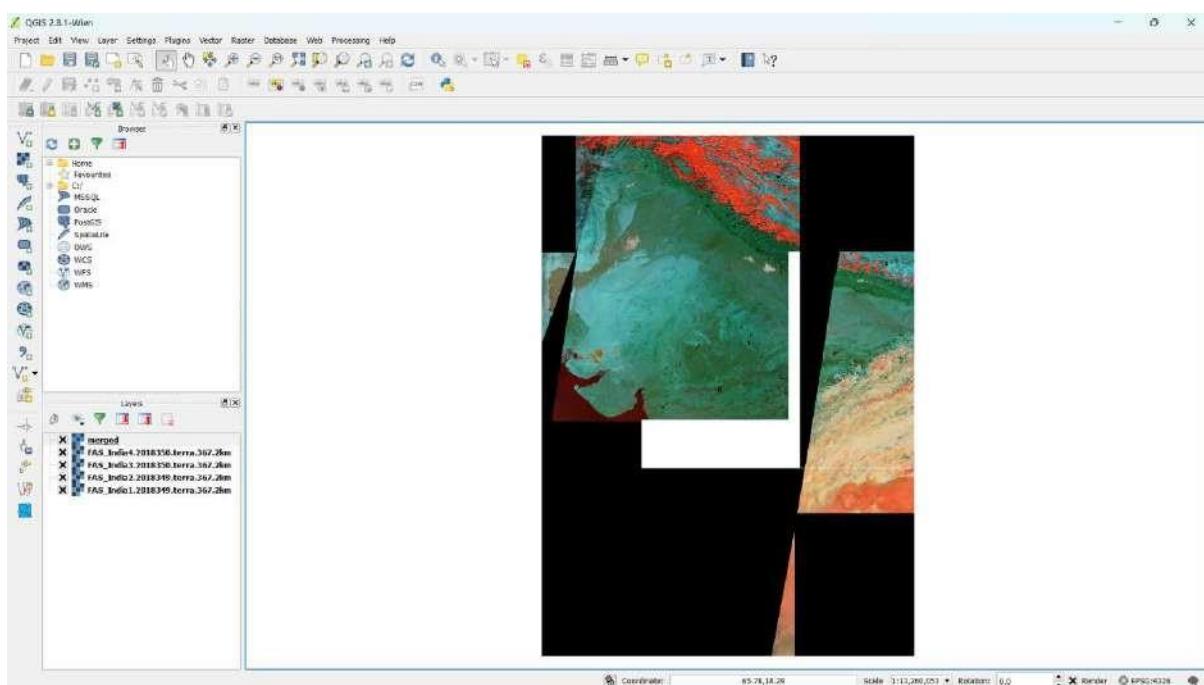


Step 11 – Select the input and output files and then click OK.

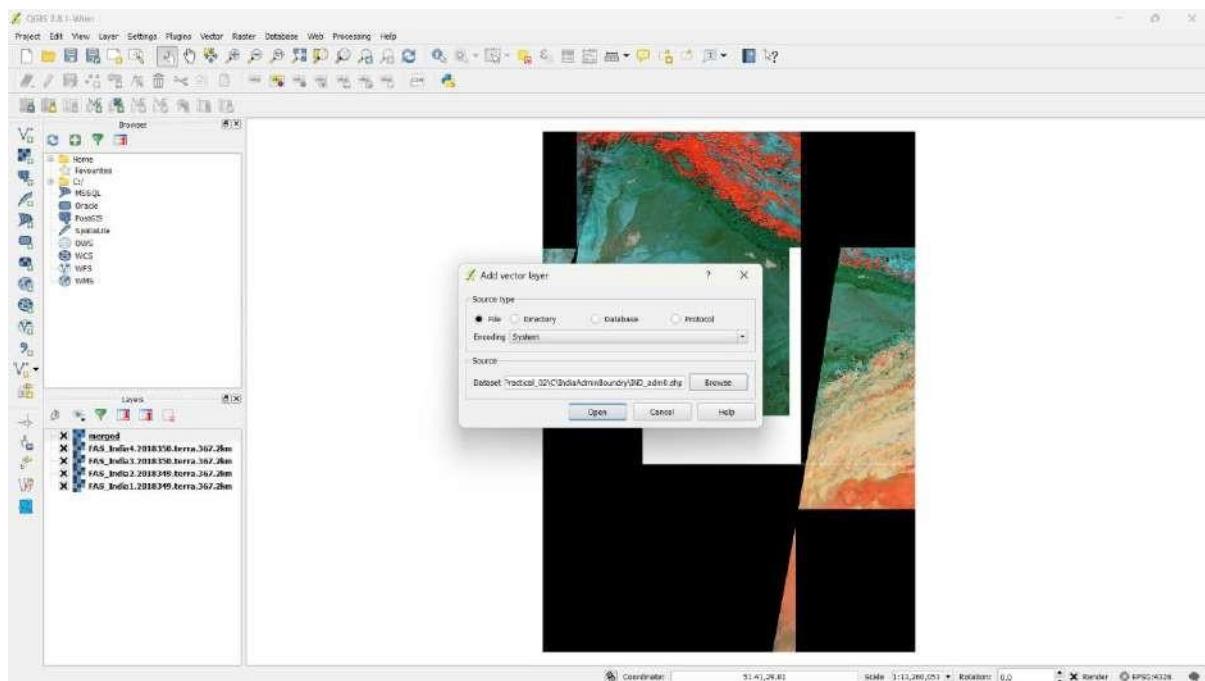
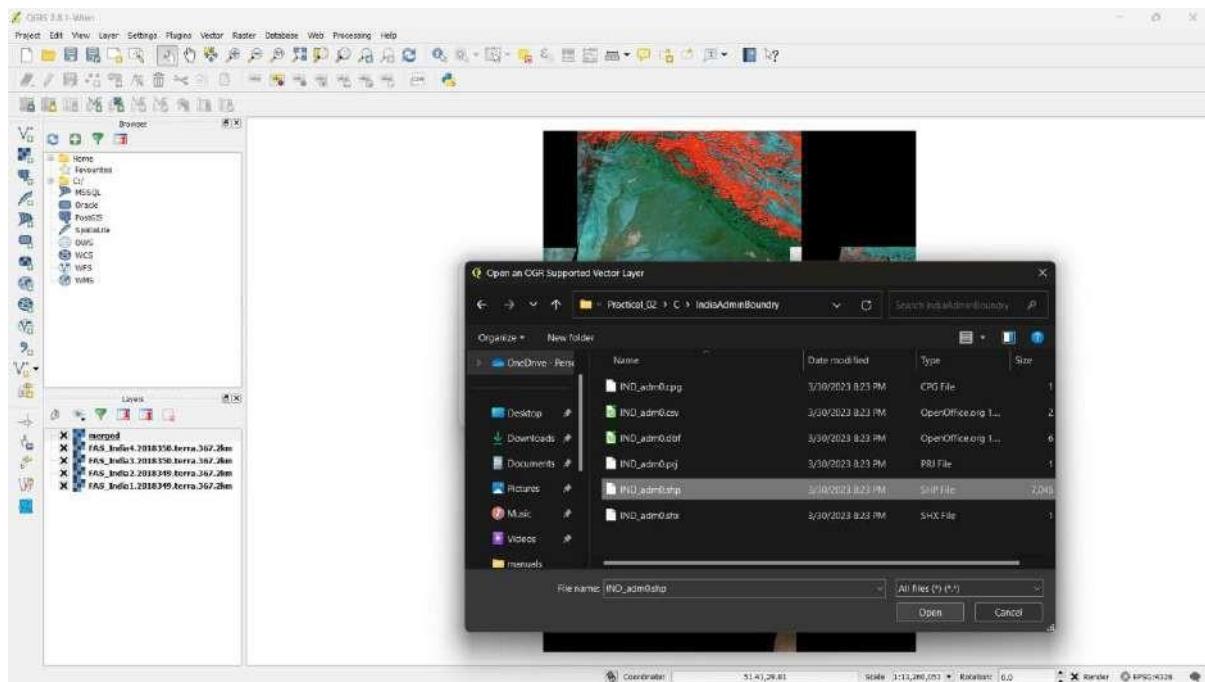


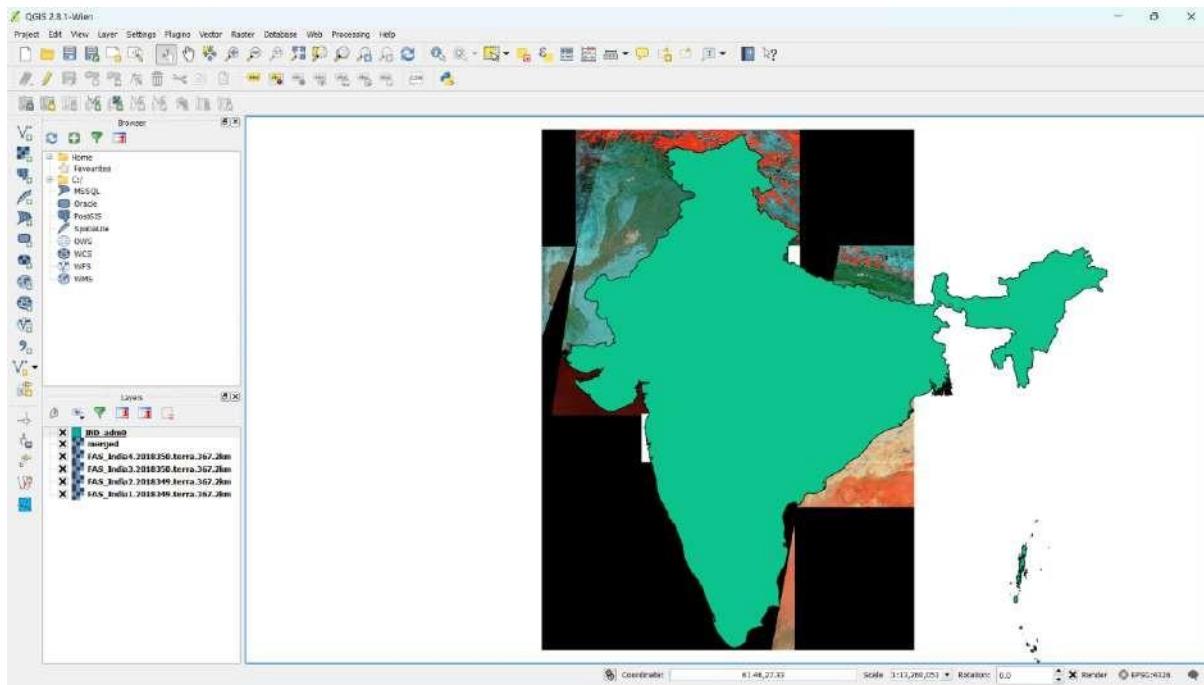


New merged layer is added.

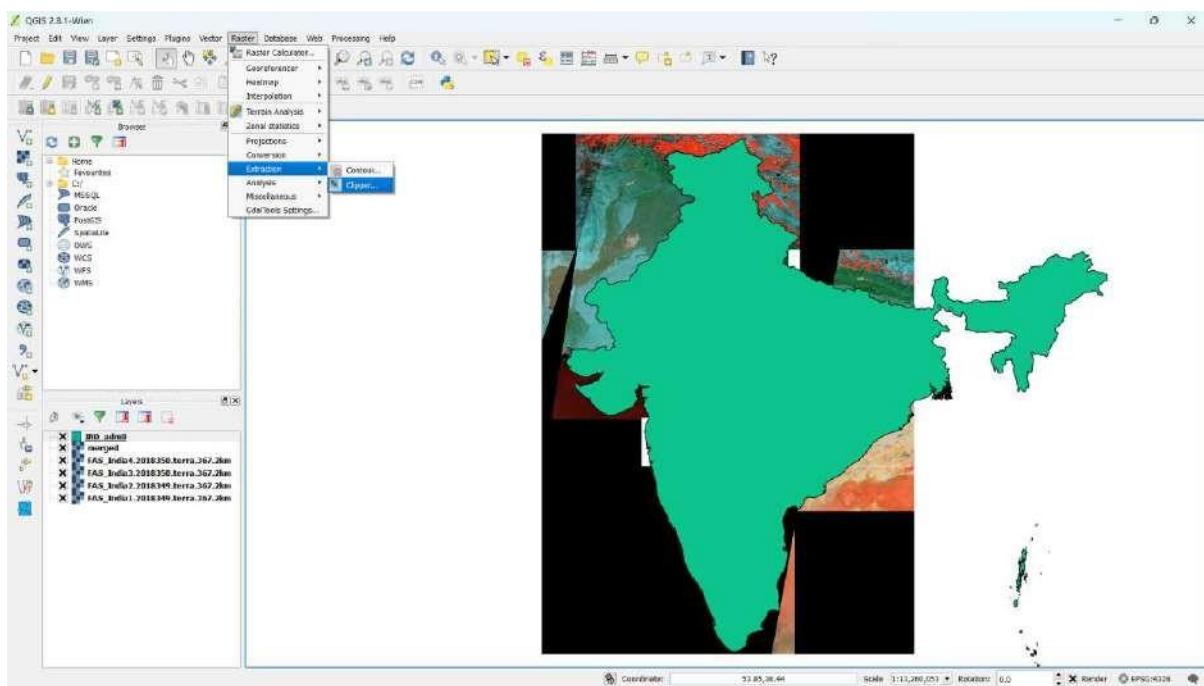


Step 12 – Now add a new vector layer as shown below.

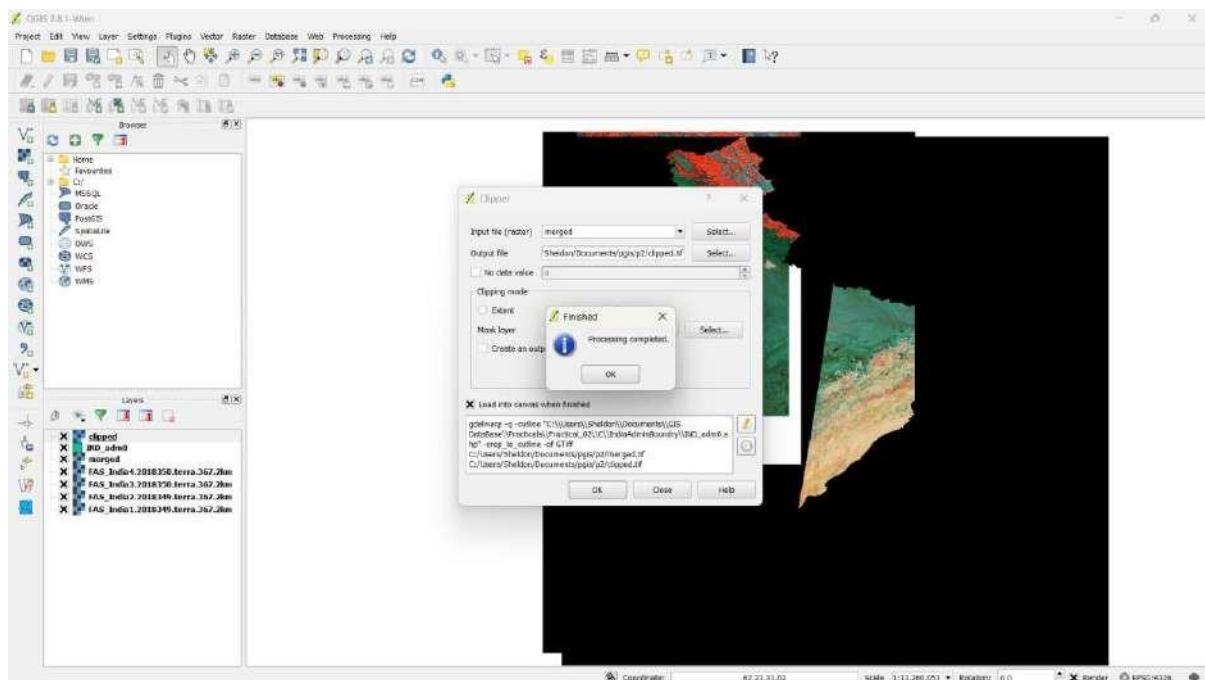
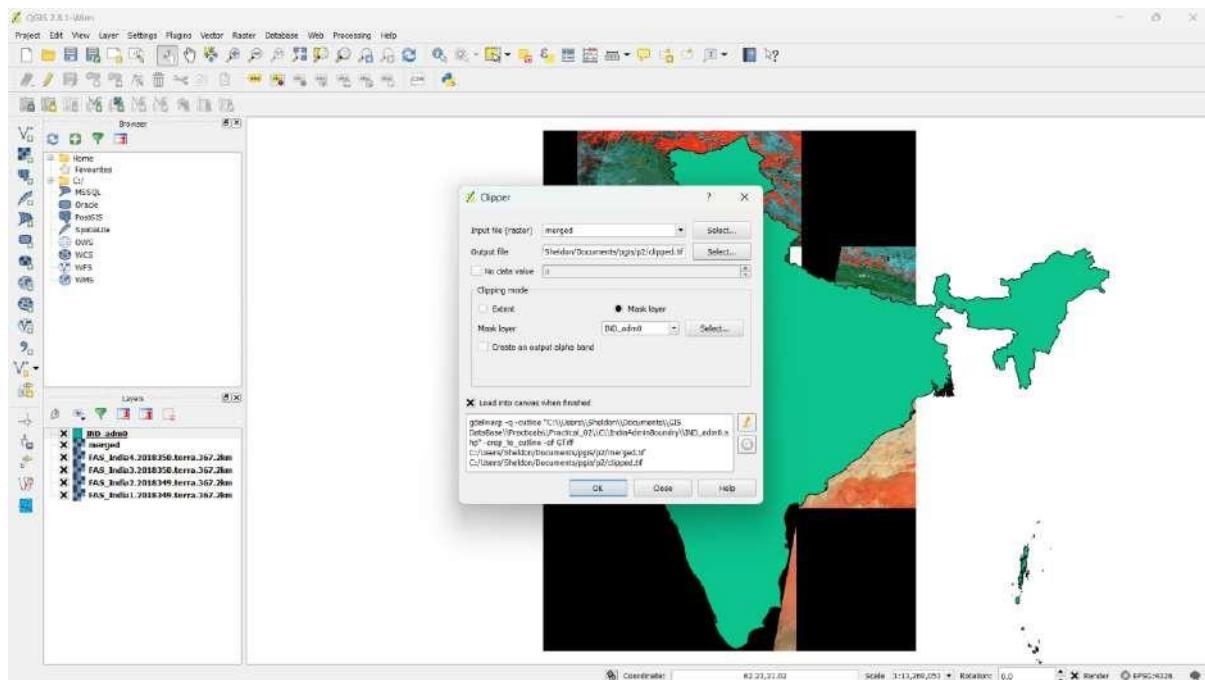




Step 13 – In Raster Tab click on Extraction and click on Clipper.



Step 14 – Select the input and output layer, select clip type as mask select the mask you want to clip and then click OK.

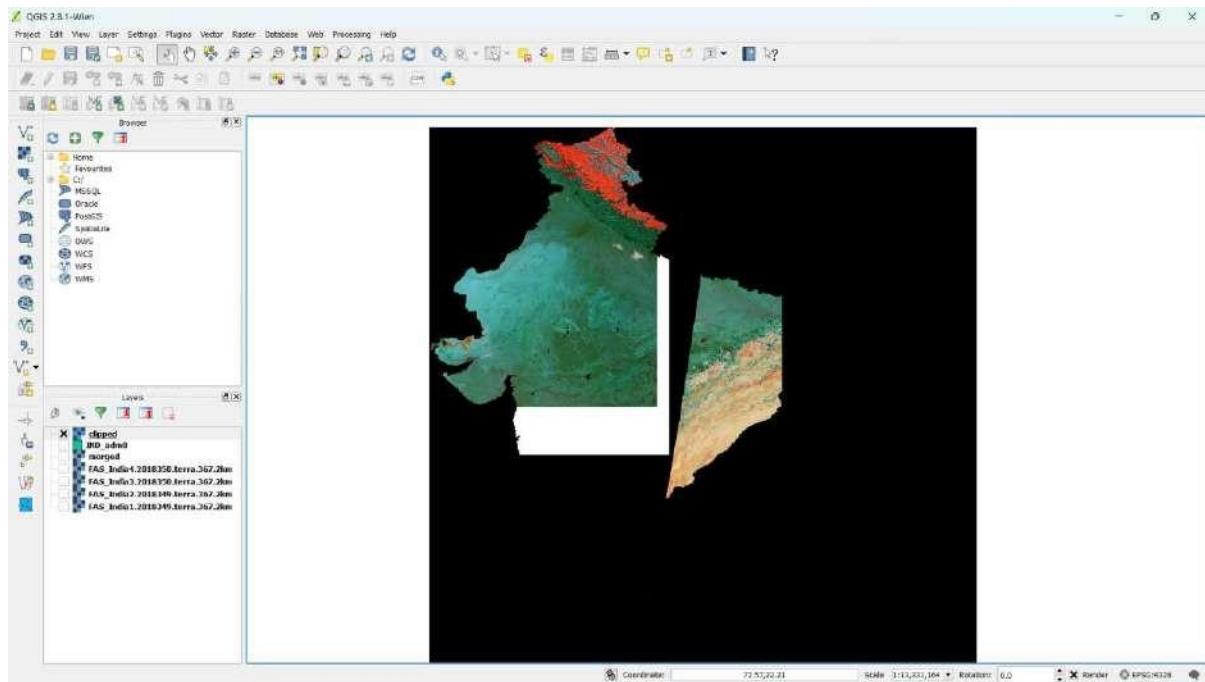


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Subject Code: USIT6P4

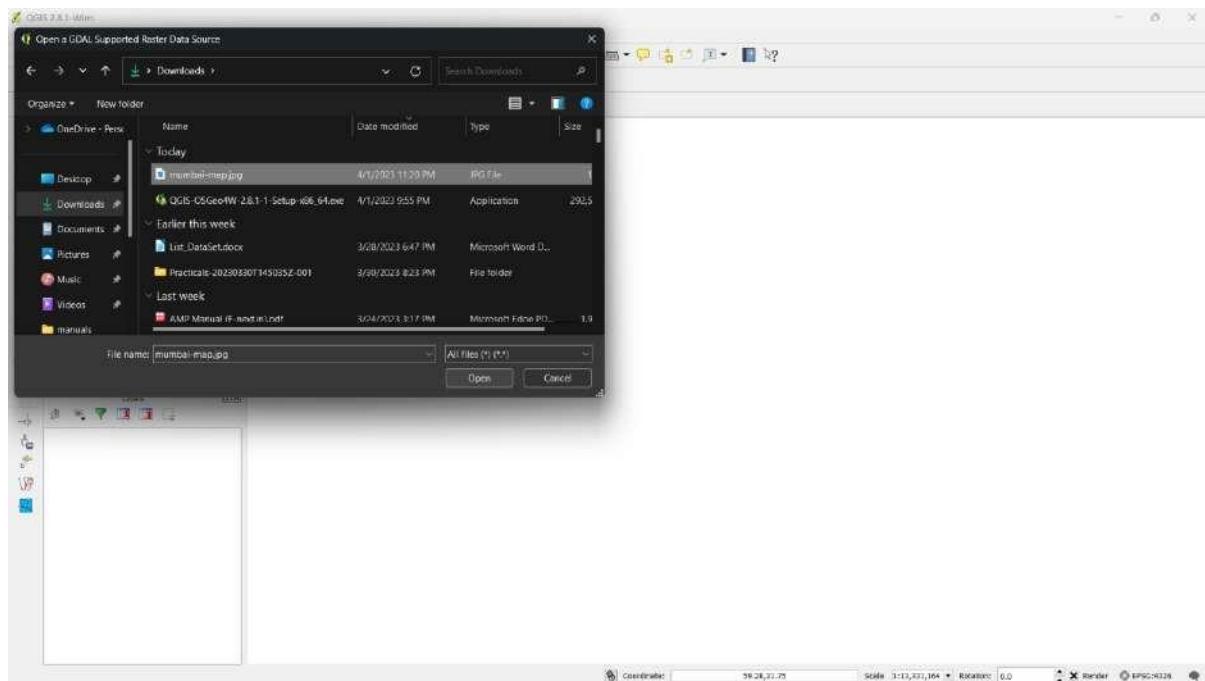


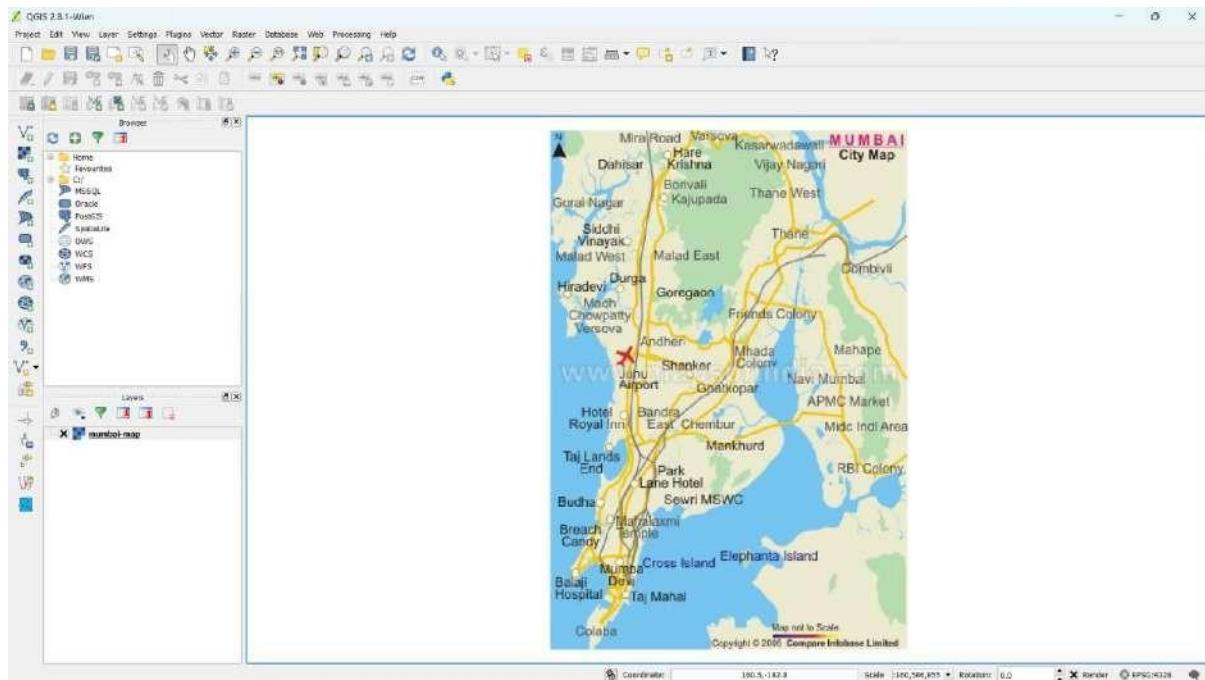
PRACTICAL – 3

Aim: Making a Map, Working with Attributes, Importing Spreadsheets or CSV files
Using Plugins, Searching and Downloading OpenStreetMap Data.

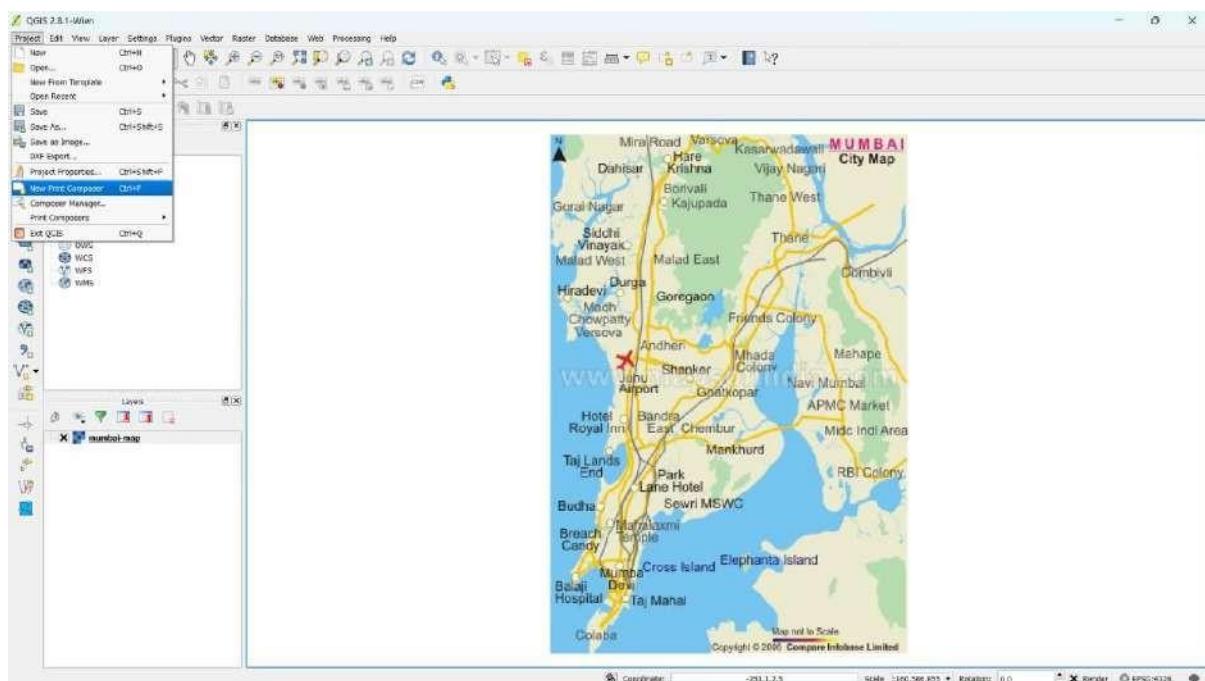
Steps:

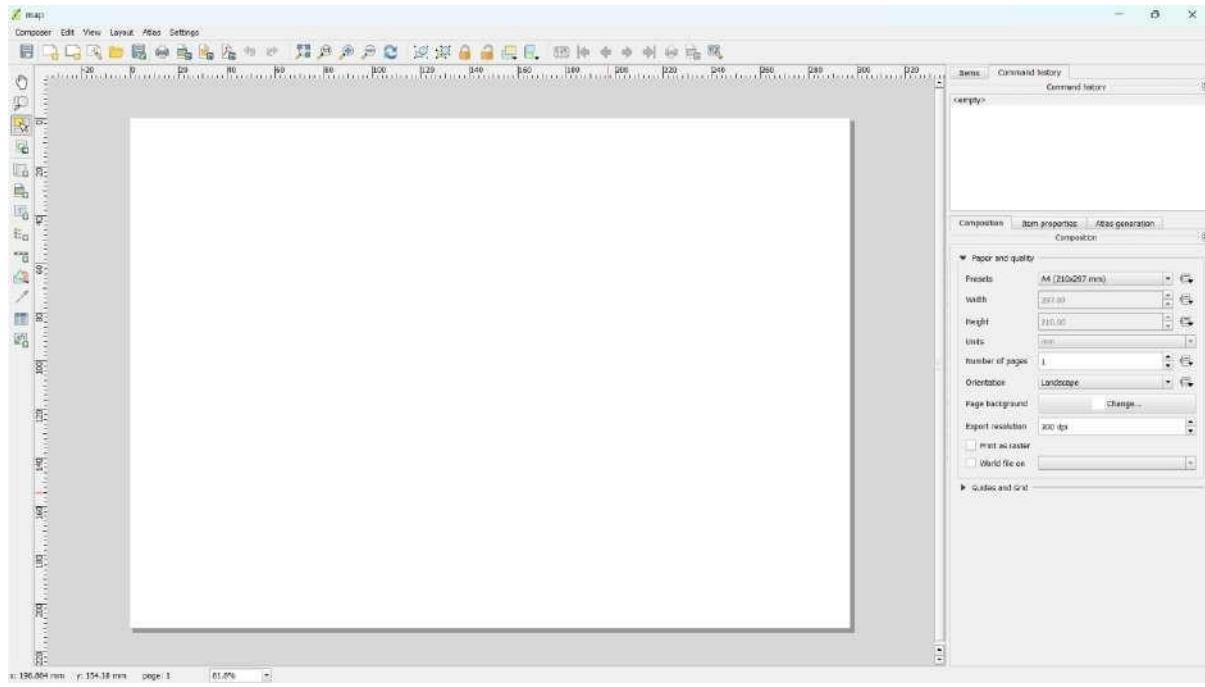
Step 1 – To make a map with Raster Data – Open QGIS Desktop and open a new project.
Add a Raster Layer with the image shown below.



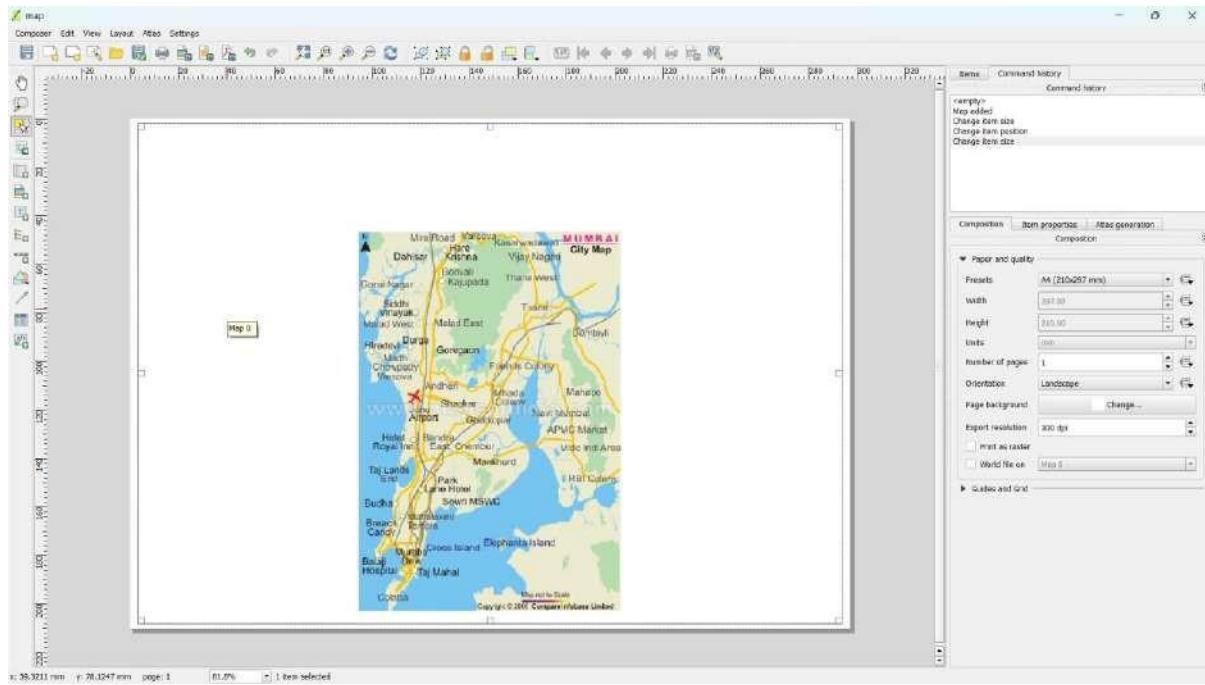


Step 2 – In Project tab click Project Composer. Give it a name and open it.





Step 3 – Select the add new map tool and select the entire canvas.



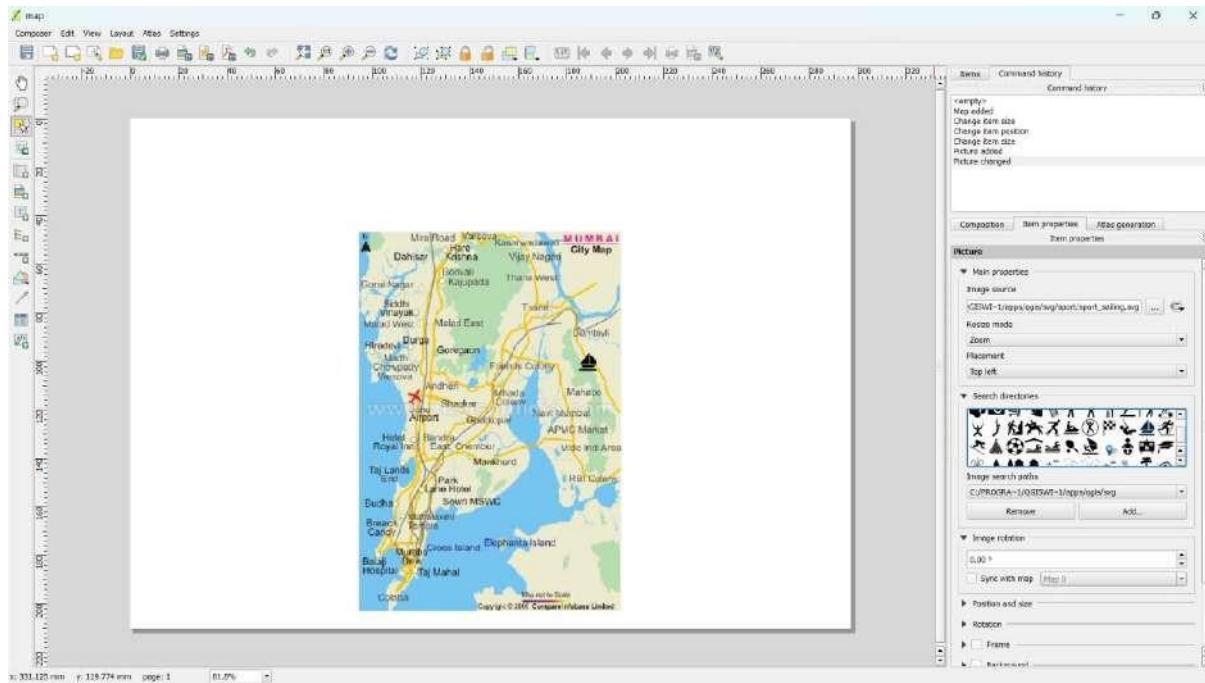
Name: Ankit Roshan

Subject: Principles of Geographical Information System Practical

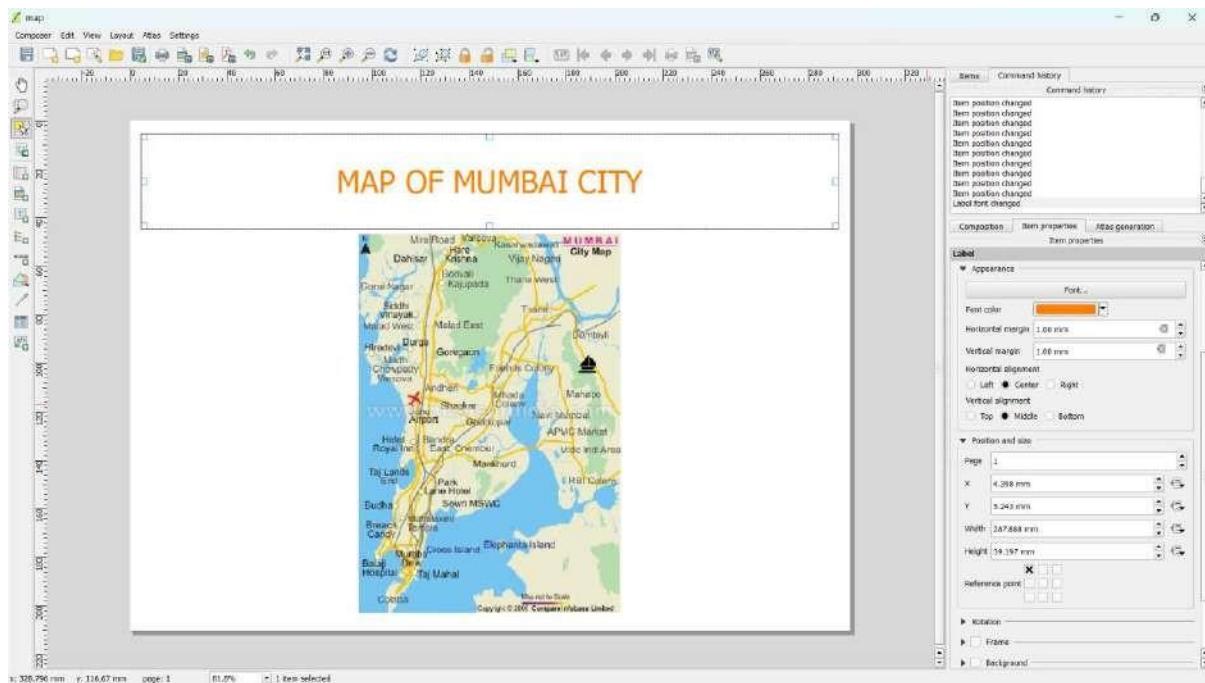
Roll No: IT21063

Subject Code: USIT6P4

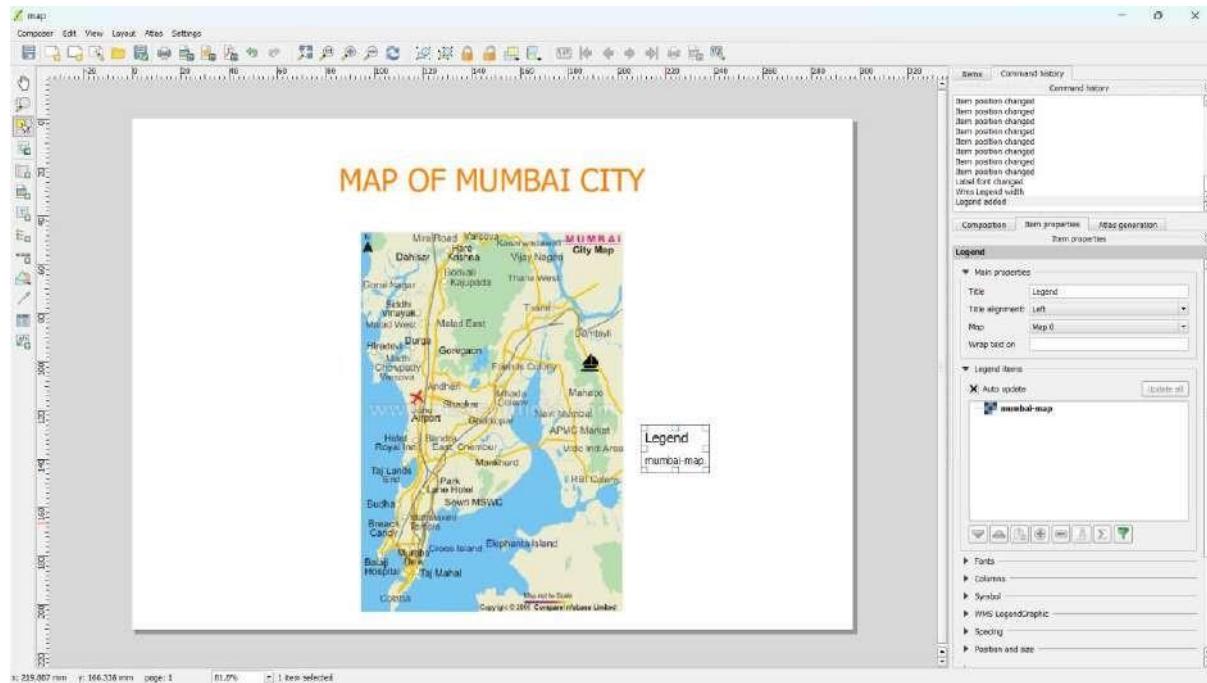
Step 4 – To insert an image on the map select the add image tool and in the item properties tab select the icon you want to insert.



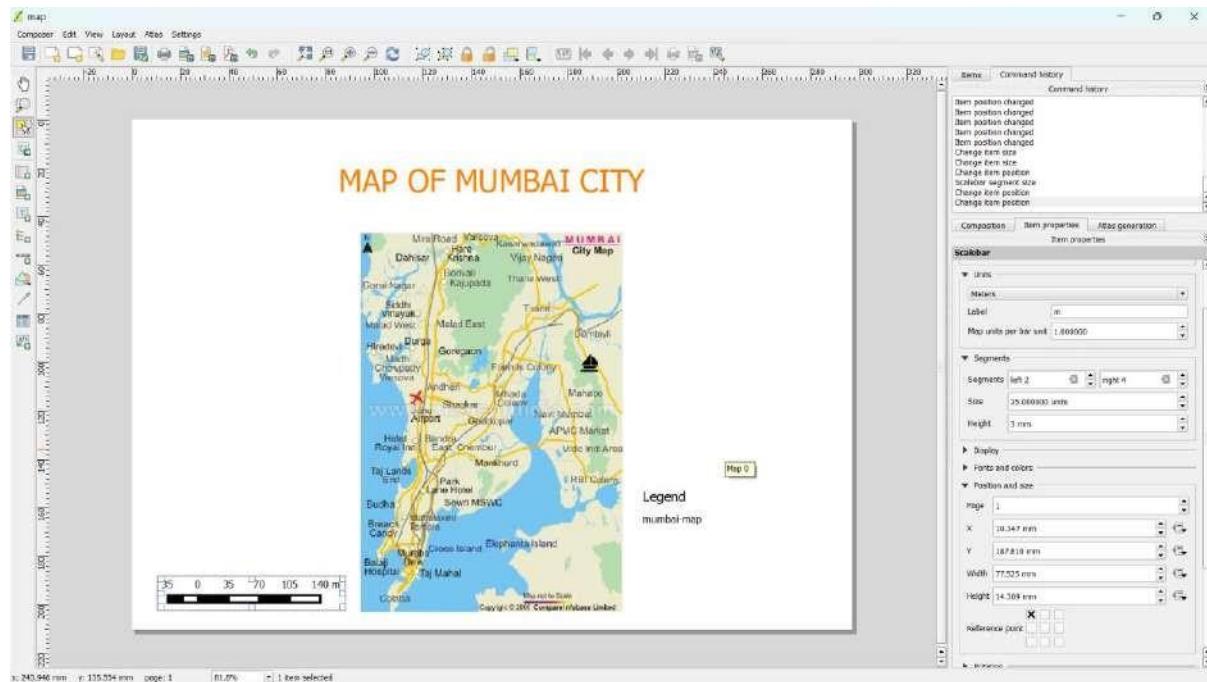
Step 5 – To add a Label to the map select the Add Label tool and select the text field. You can also change the label properties as per your liking.



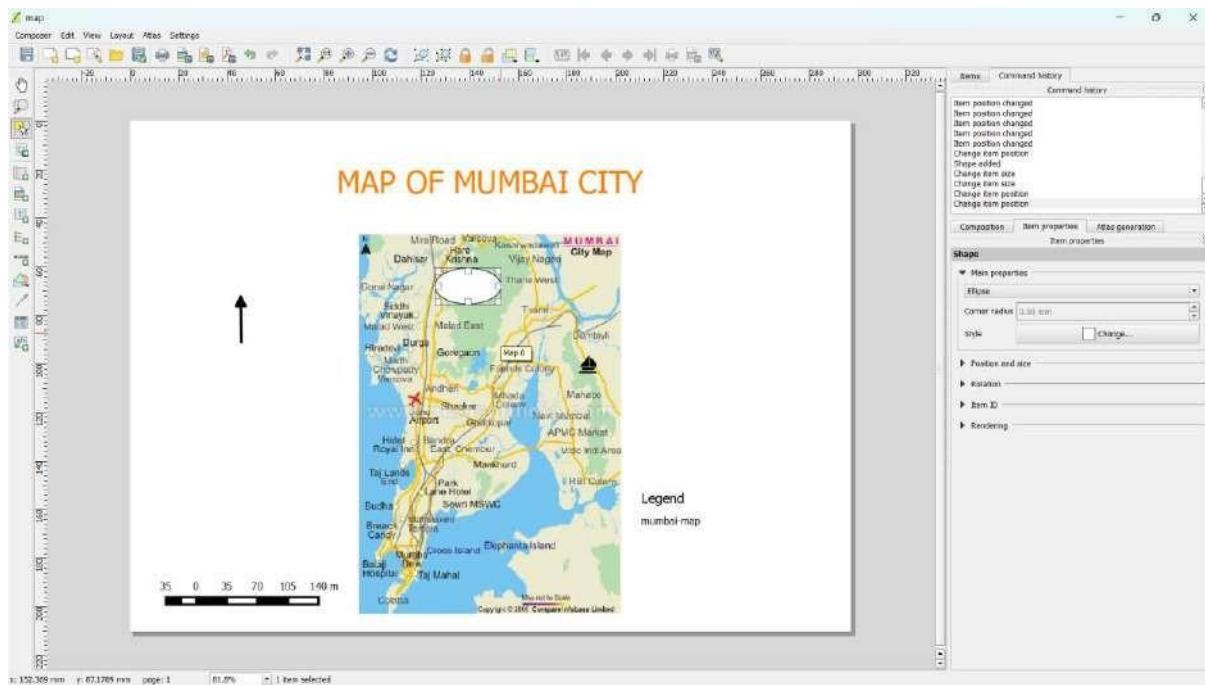
Step 6 – To add a legend select the add legend tool and select the legend area.



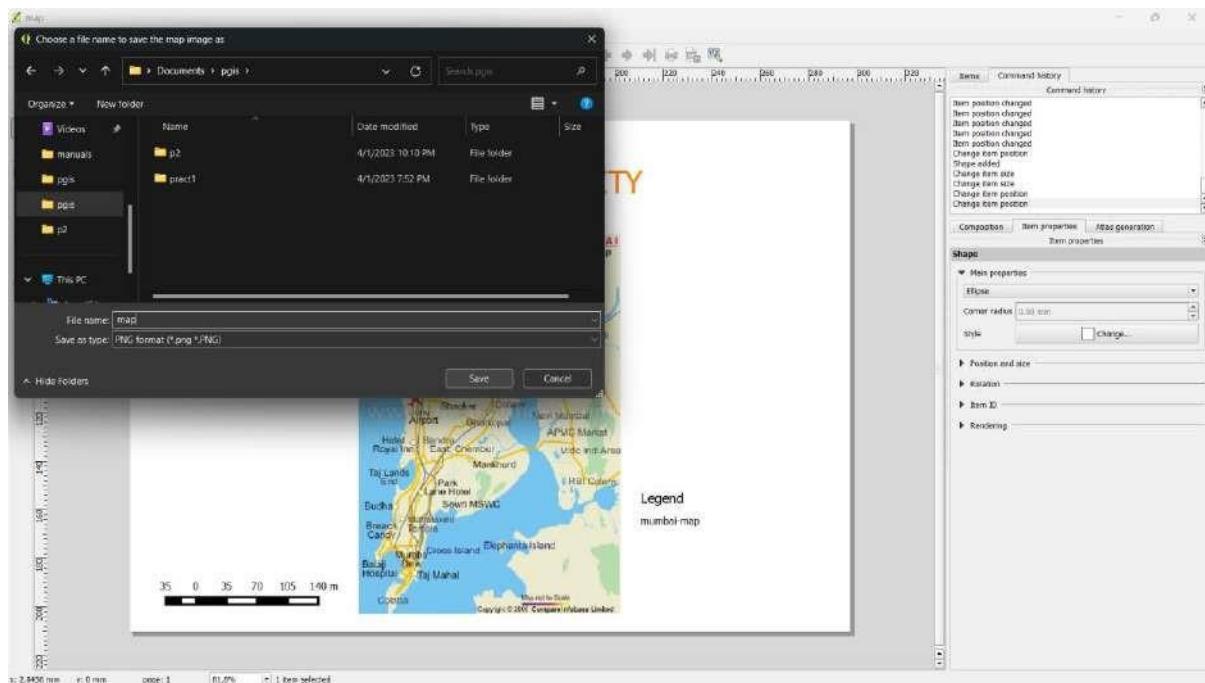
Step 7 – To add a Scalebar select the add a scalebar tool and select where you want the scalebar to be placed.



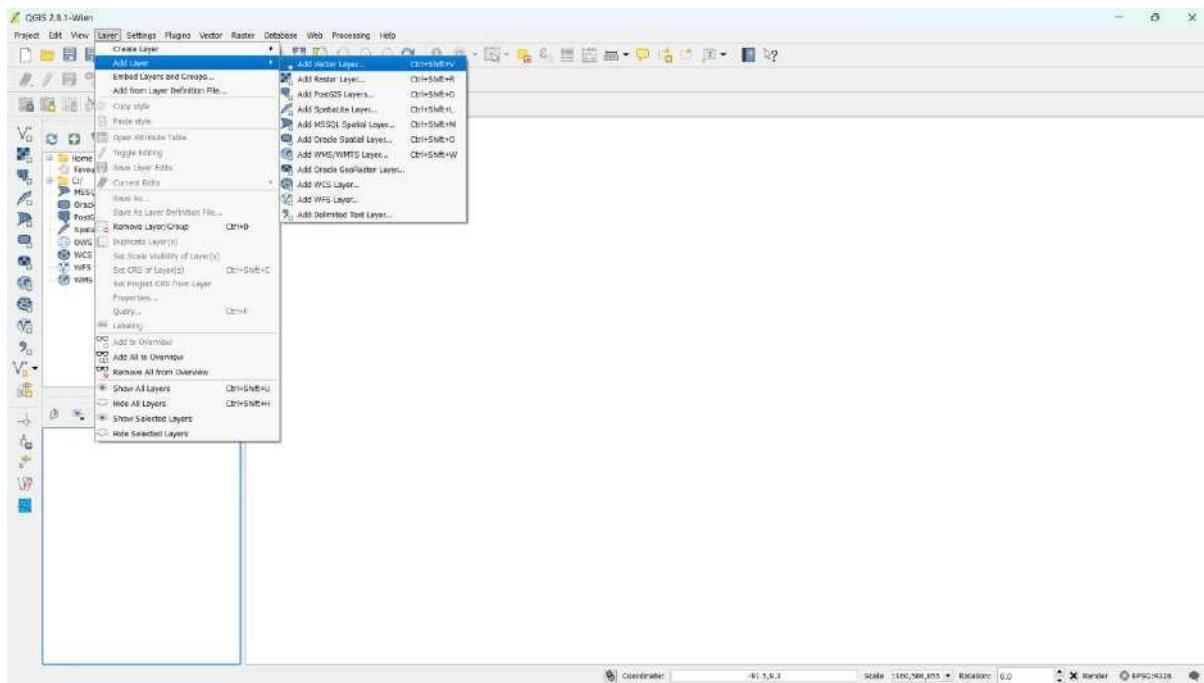
Step 8 – Similarly you can add arrows, shapes, node items, etc.



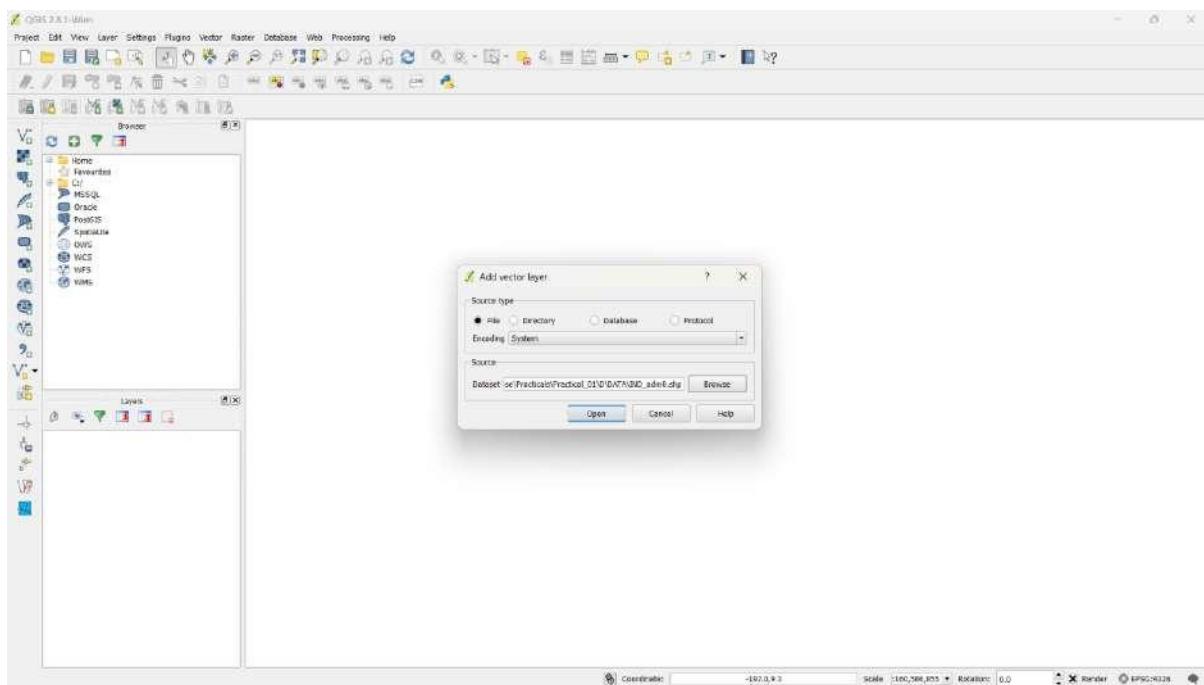
Step 9 – Finally you click the save as image button then enter the name and then hit save.

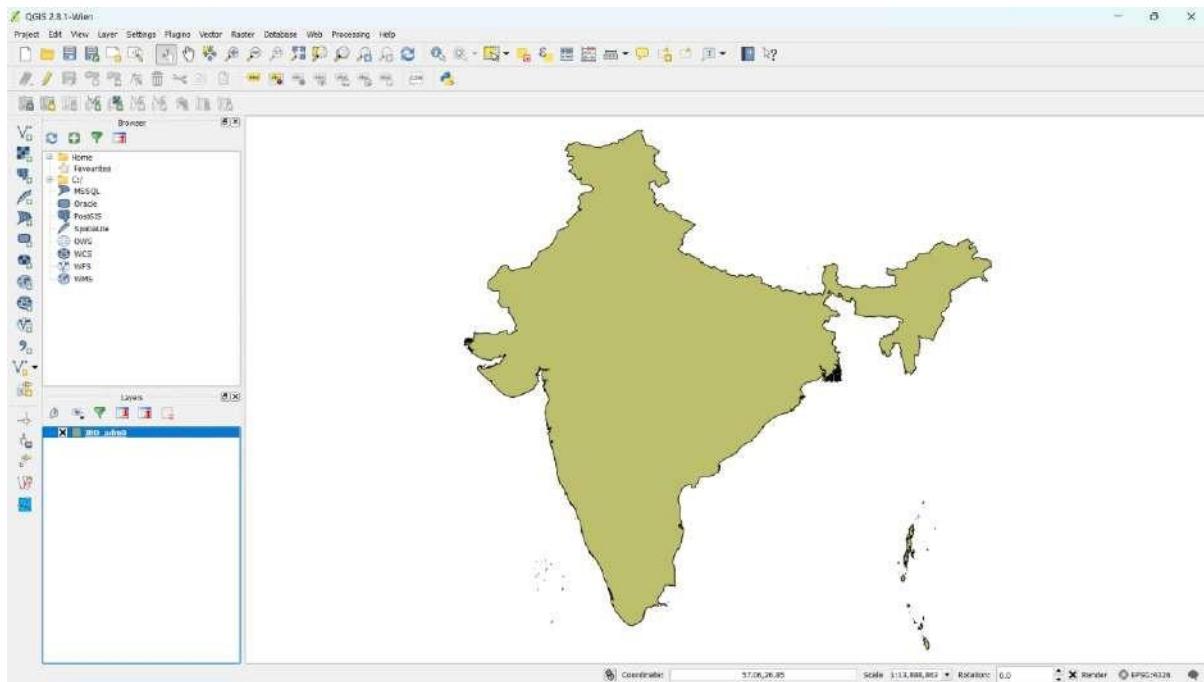


Step 10 – To create a map with Vector Data – Open QGIS Desktop. Layer > Add Layer > Add Vector Layer.

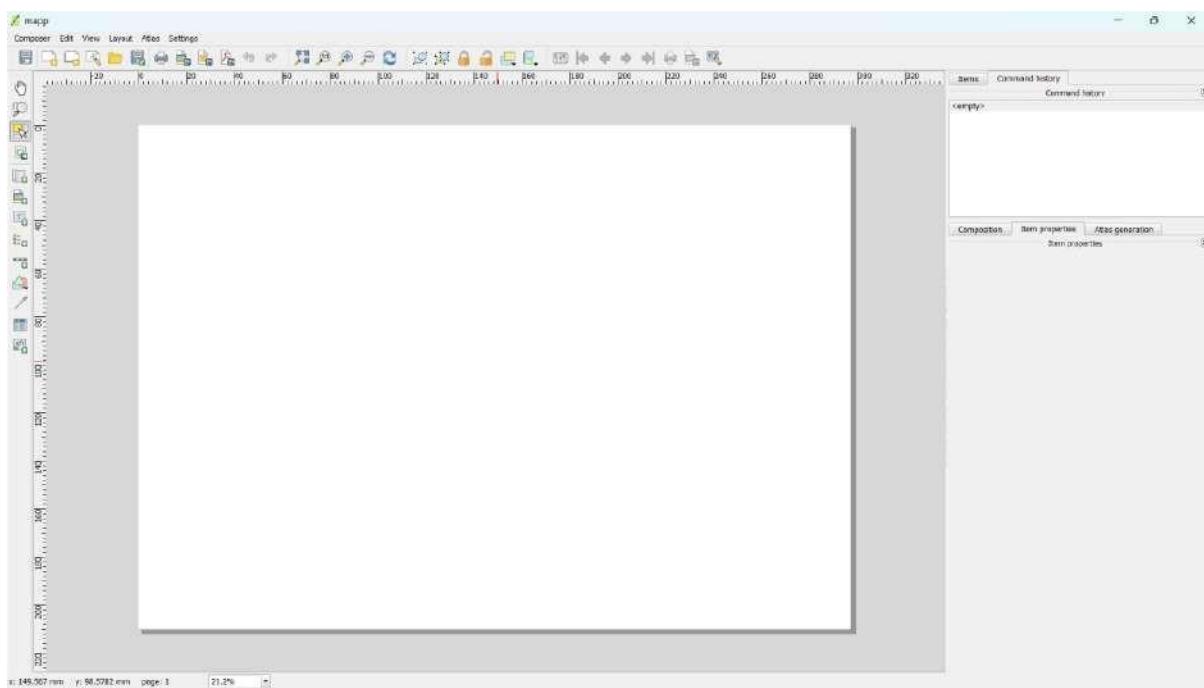


Step 11 – Select the vector file and hit open.

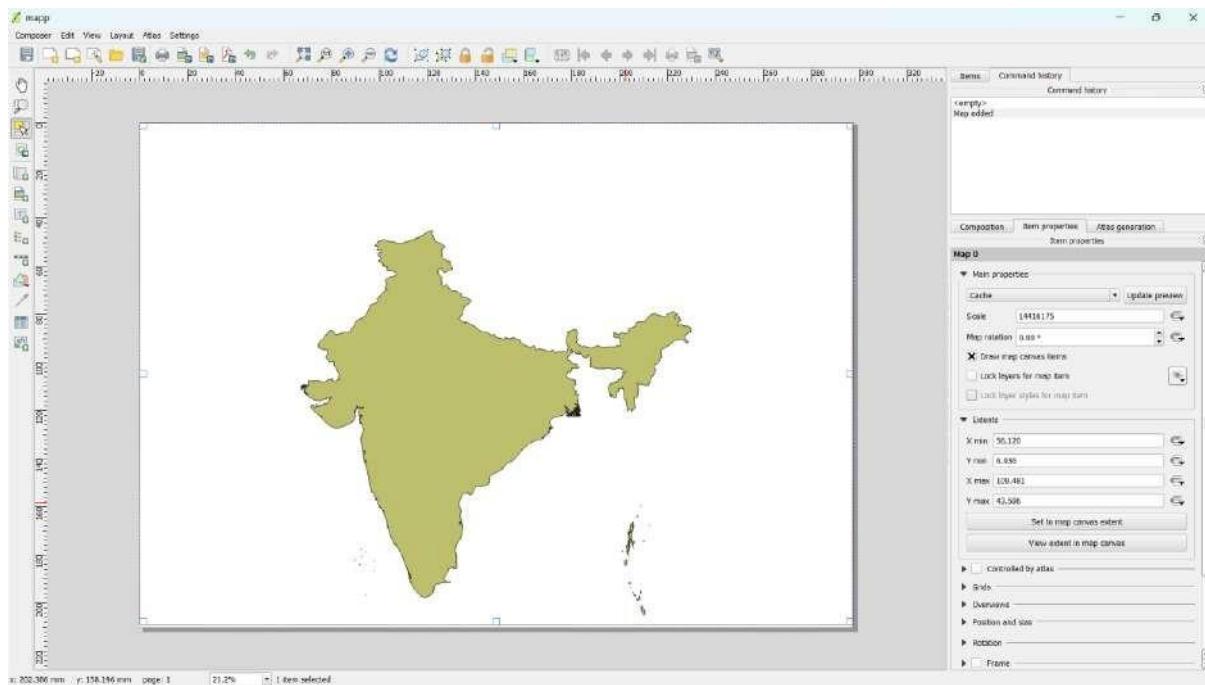




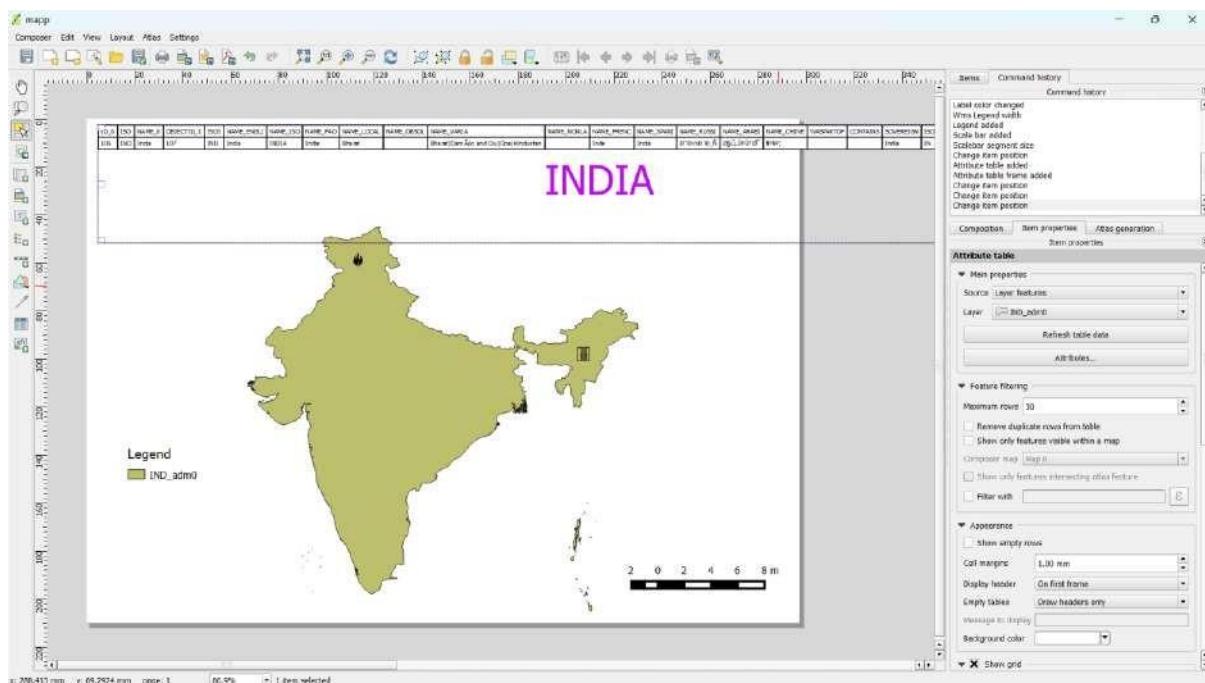
Step 12 – Project > New Print Composer. Enter a name and click OK.



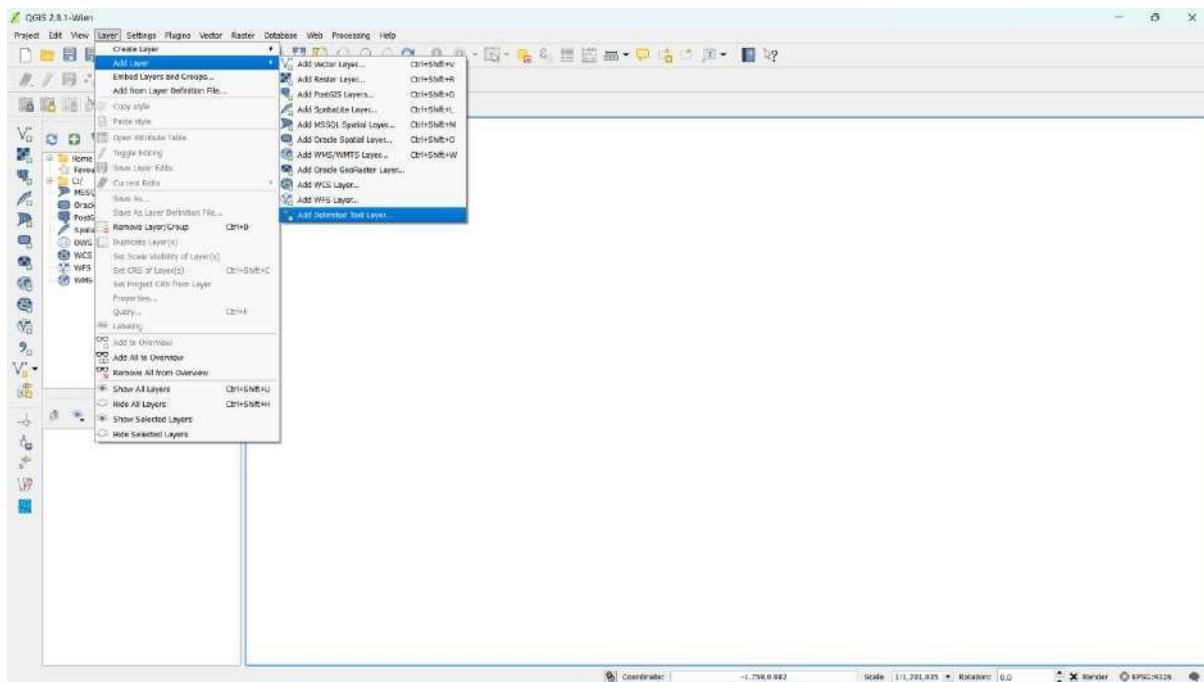
Step 13 – Select the add new map tool and select the entire canvas.



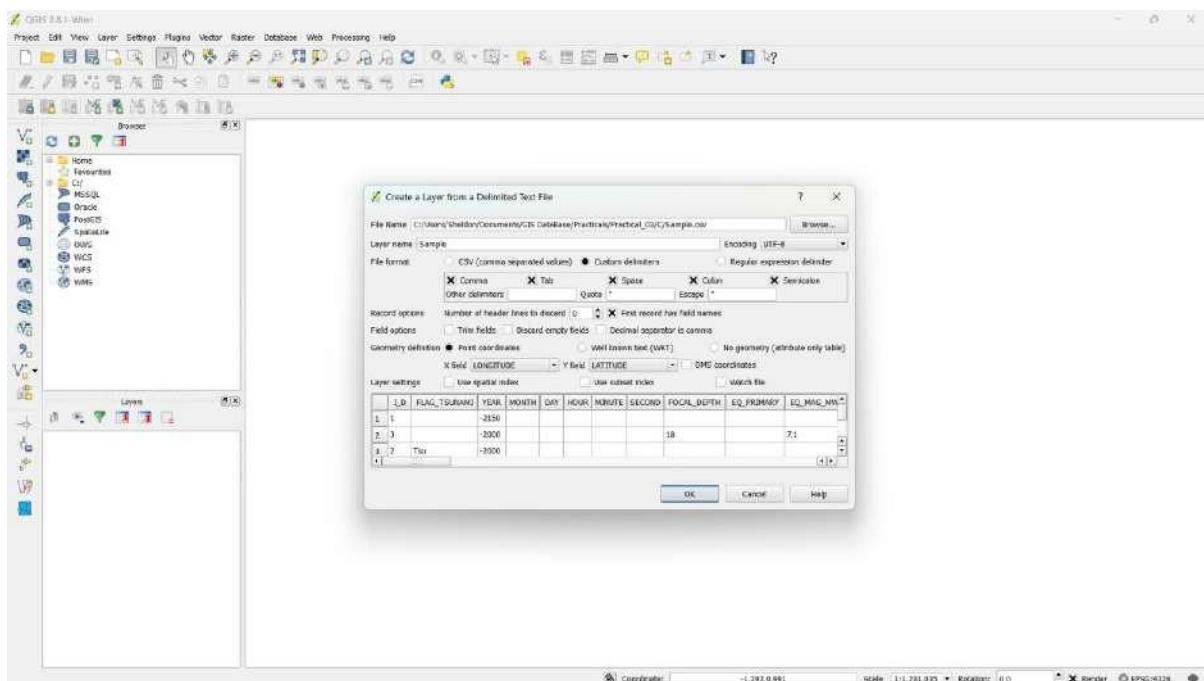
Step 14 – You can add the same things you could add to the map made with raster data. And then finally save as image.



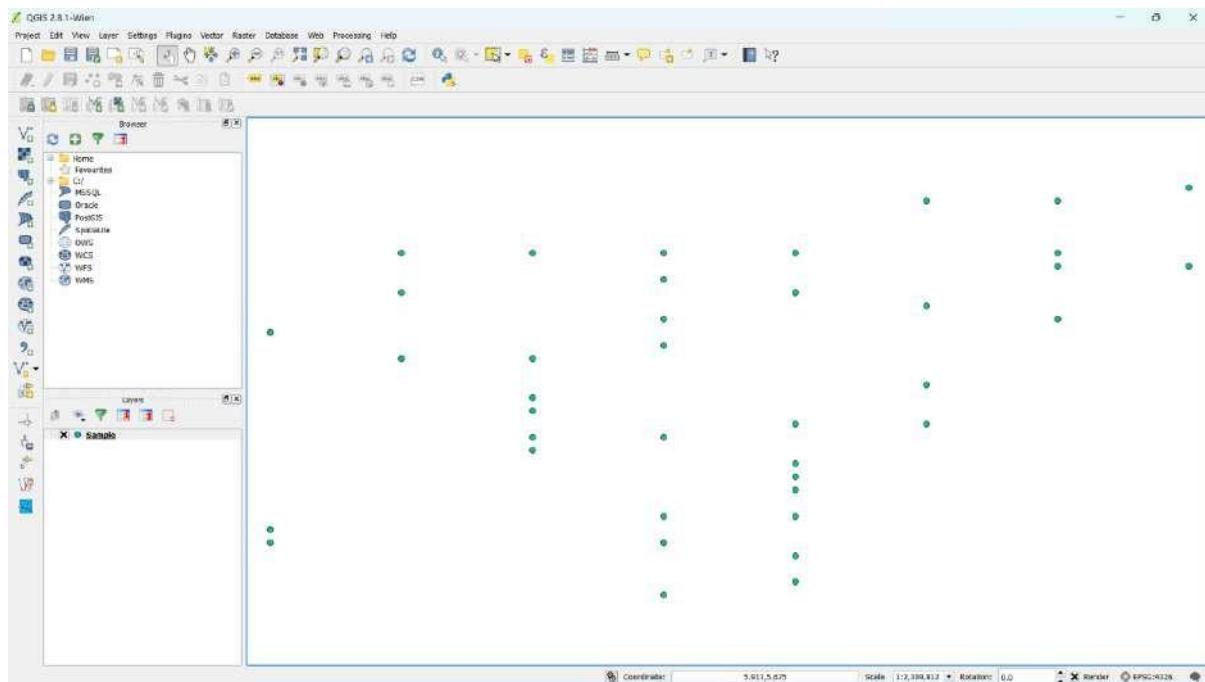
Step 15 – Now create a new project. Layer > Add Layer > Add Delimited Text Layer.



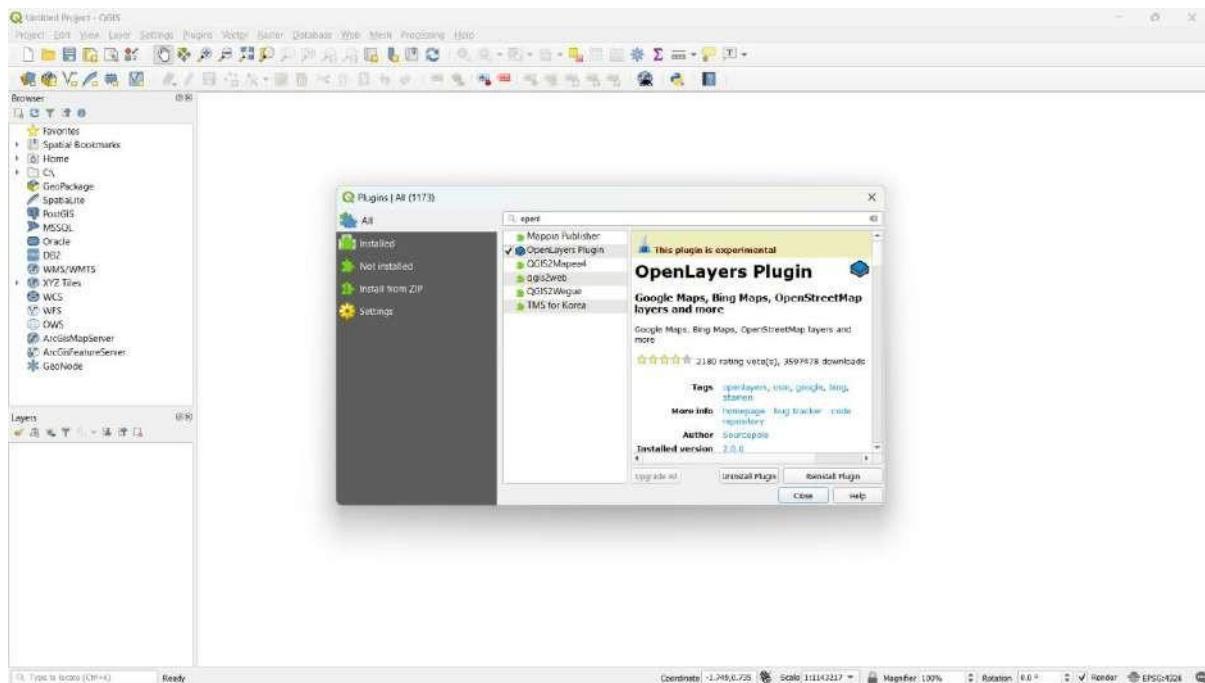
Step 16 – Enter data as shown and then click OK.

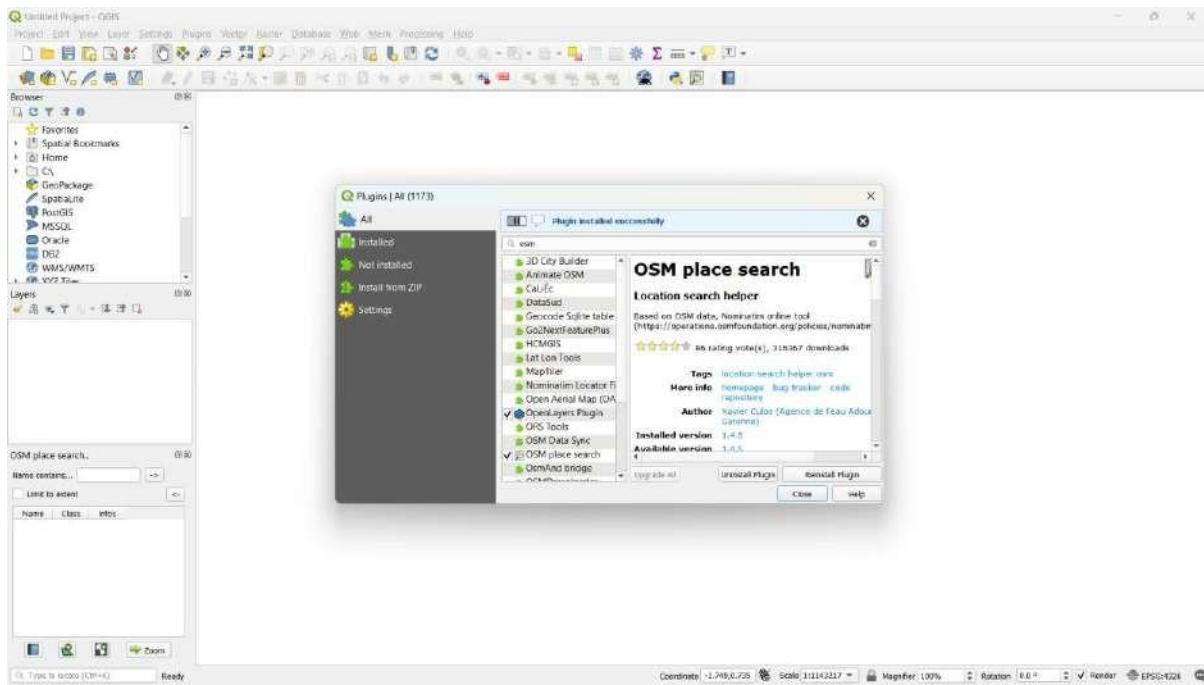


CSV file has been added.

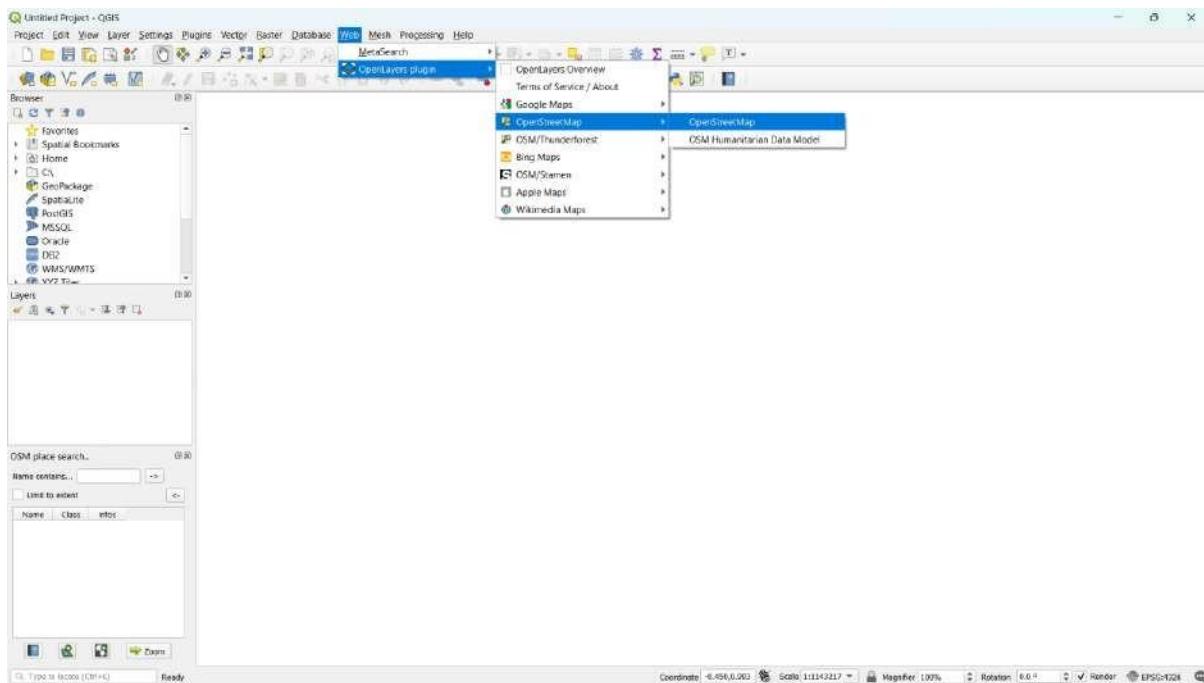


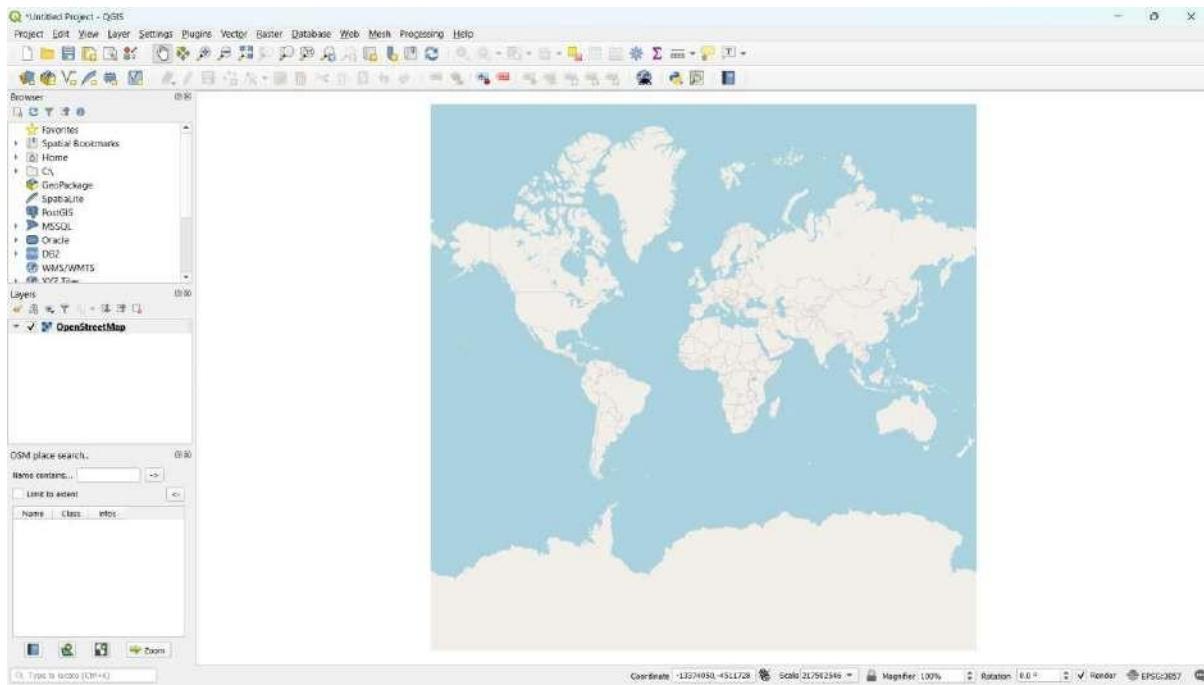
Step 17 – Install the OpenLayers and OSM place search plugin.



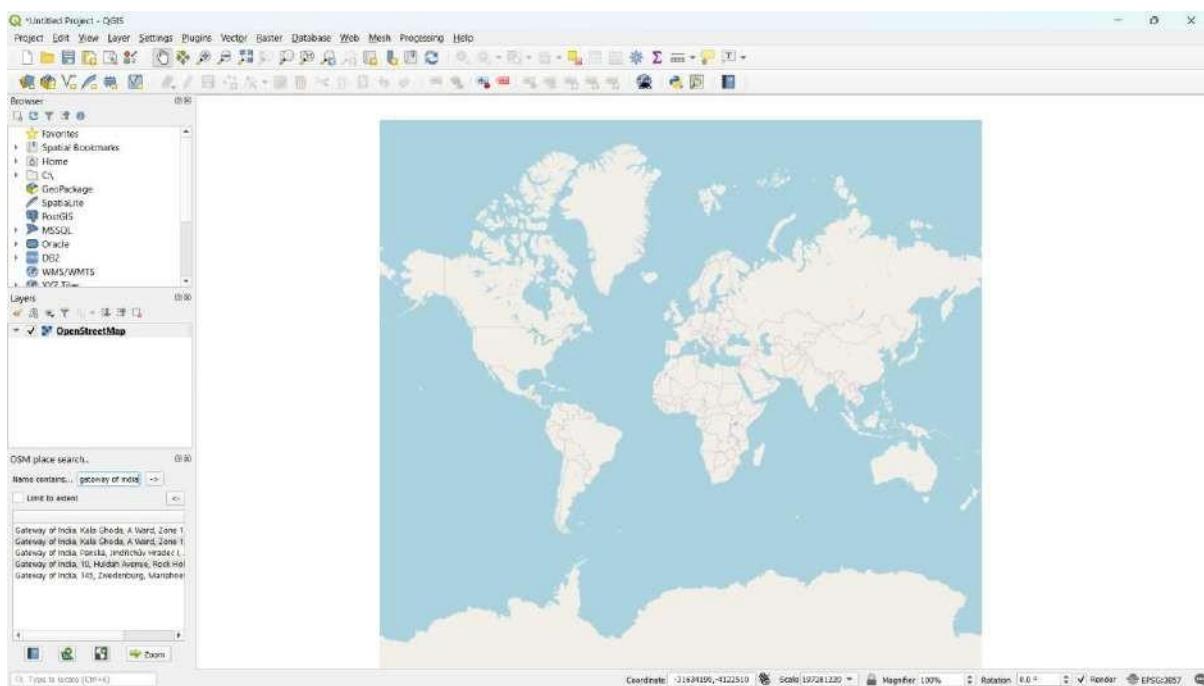


Step 18 – Web > OpenLayers plugin > OpenStreetMap

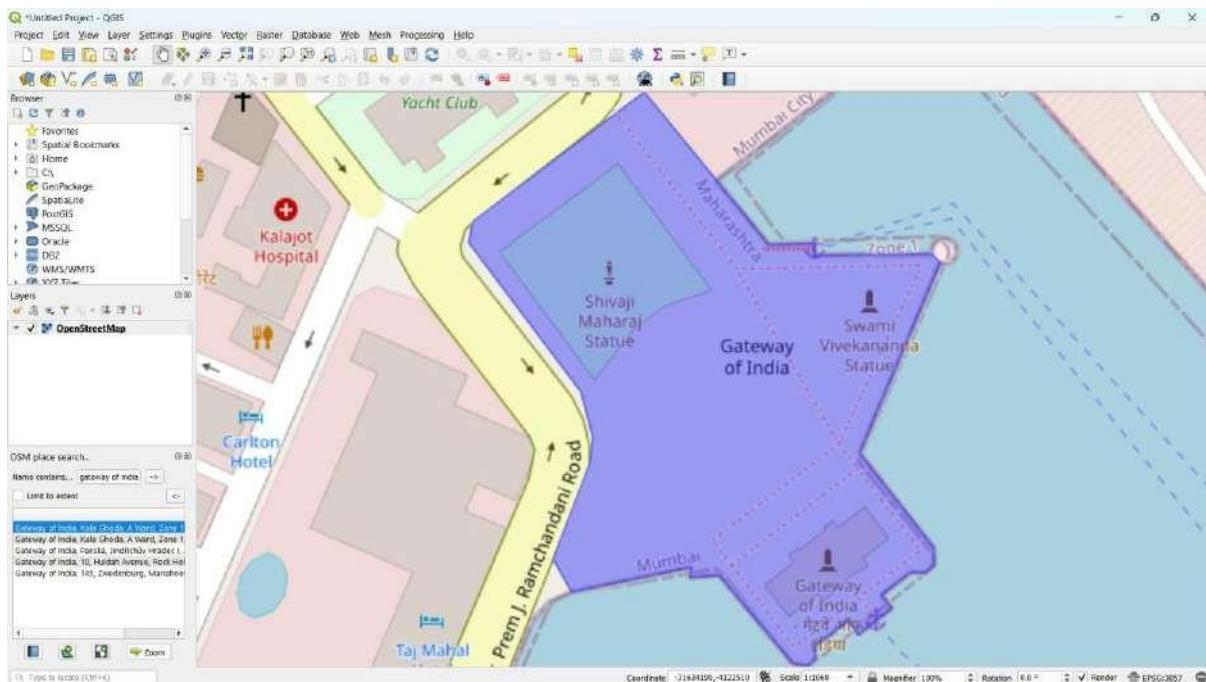




Step 19 – To search for a place type its name in the OSM place search.



Step 20 – Select the one you want to find and hit zoom.

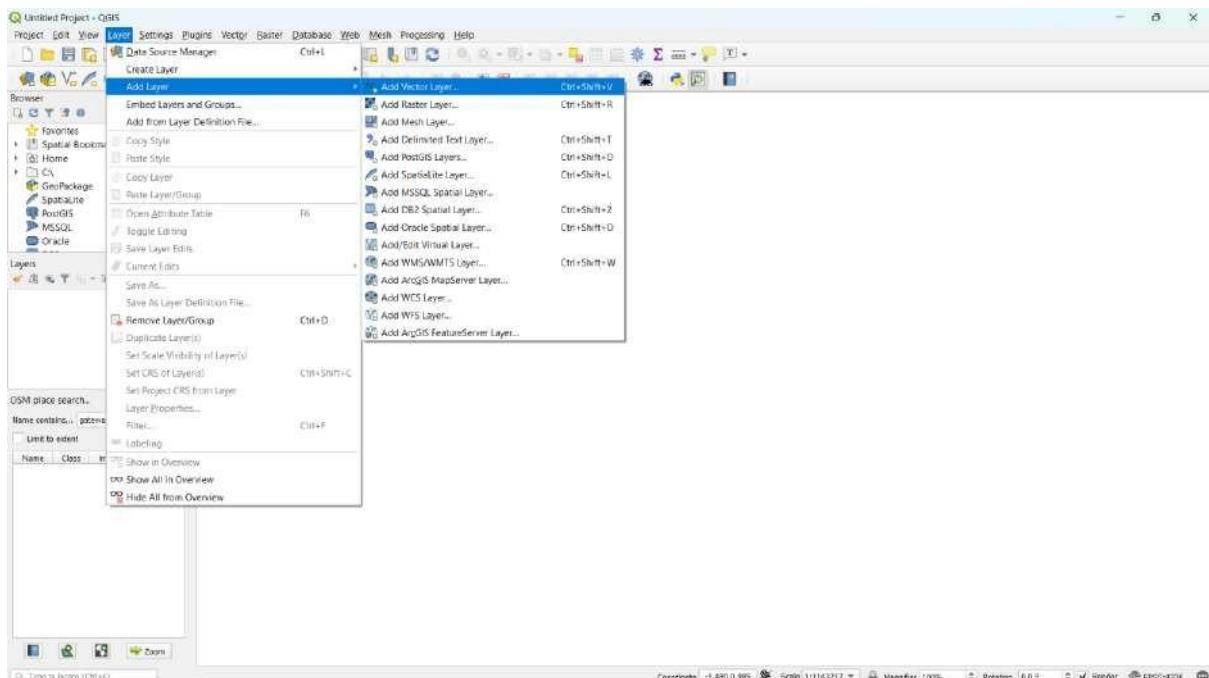


PRACTICAL – 4

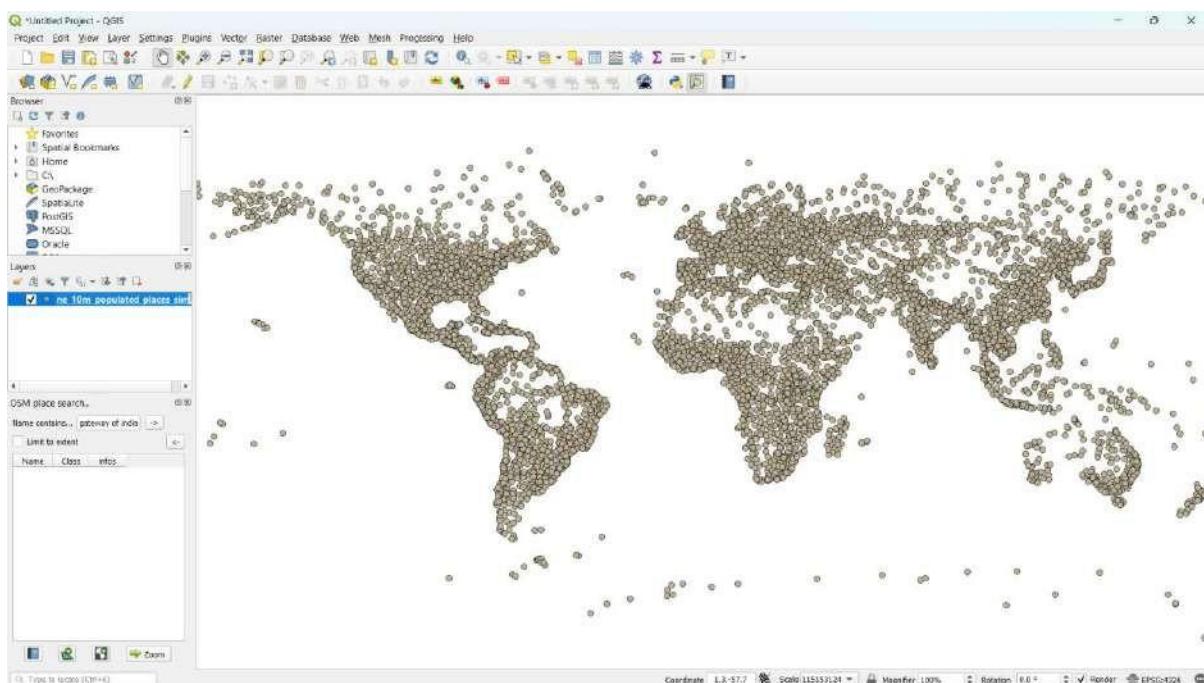
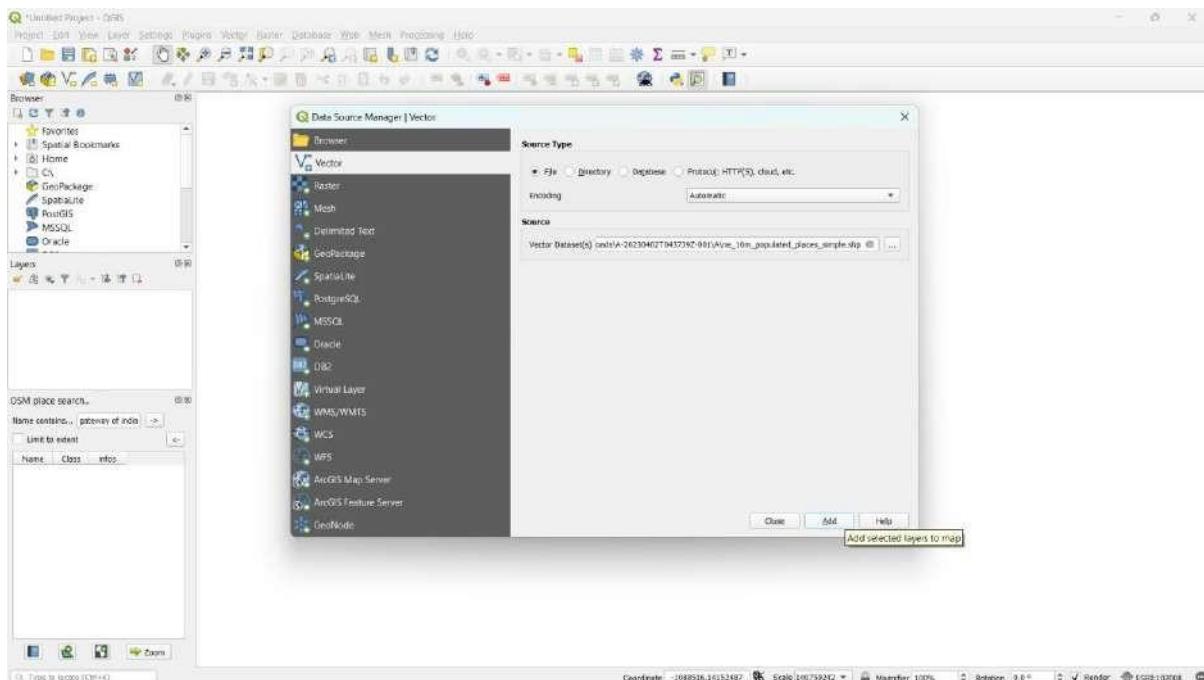
Aim: Working with attributes, terrain Data.

Steps:

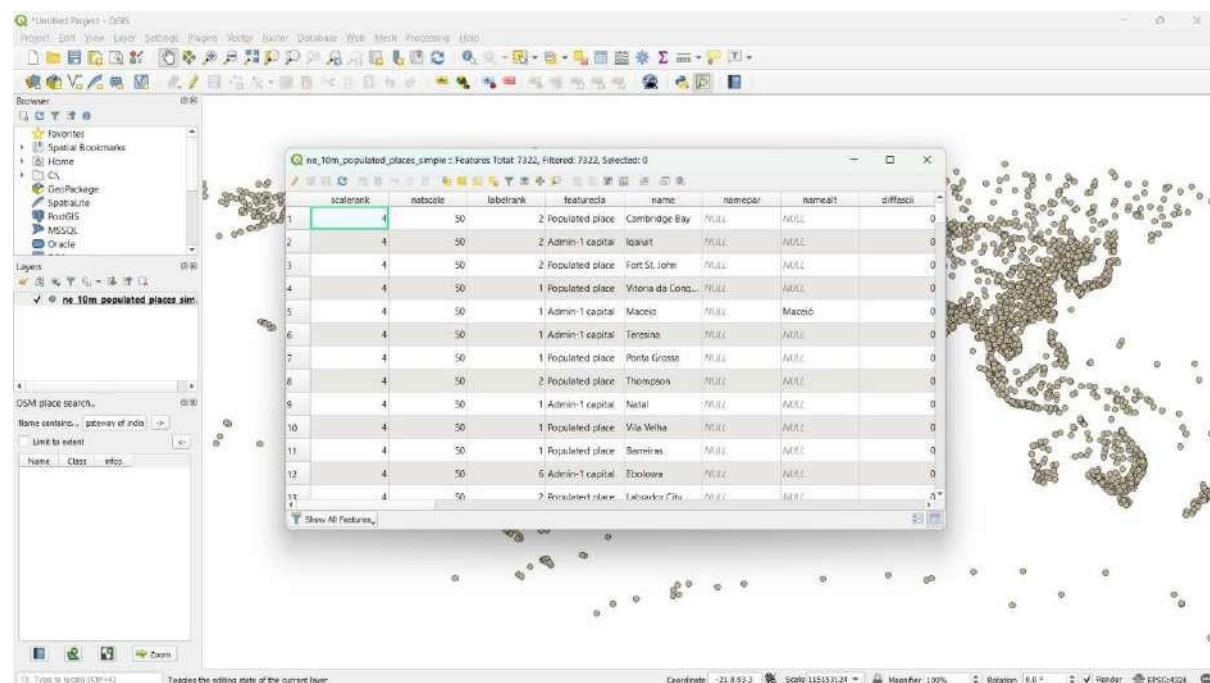
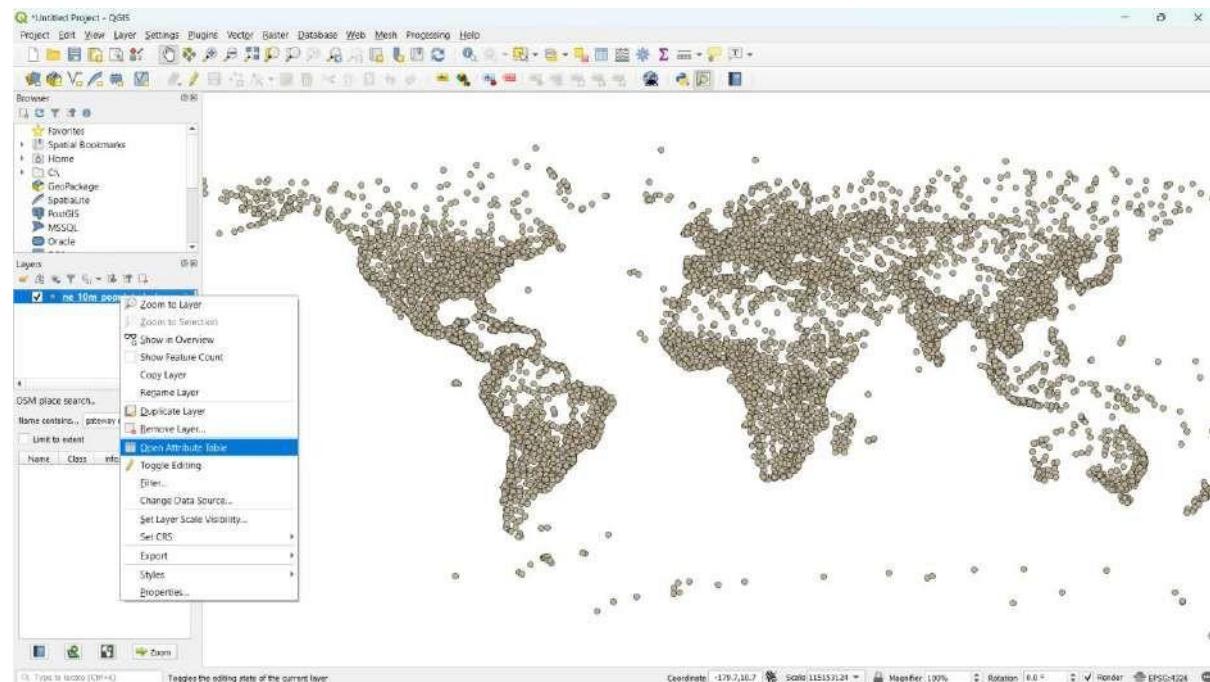
Step 1 – Open QGIS Desktop and create a new project. Layer > Add Layer > Add Vector Layer.



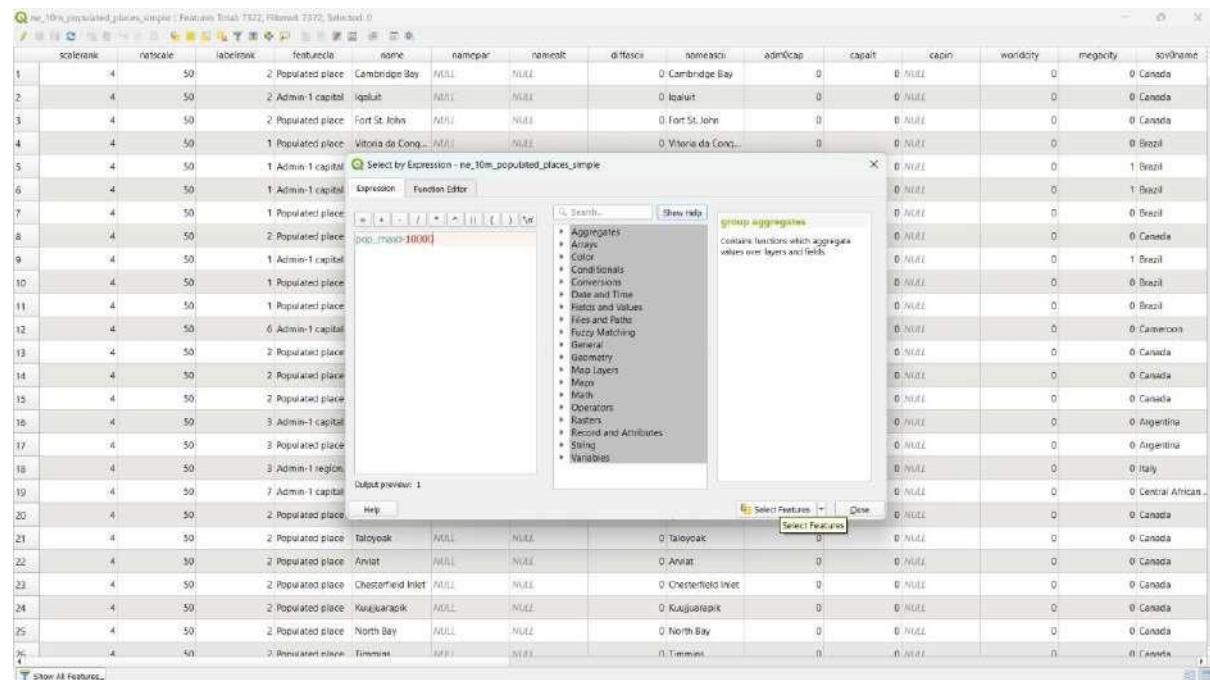
Step 2 – Select the following file and click add.



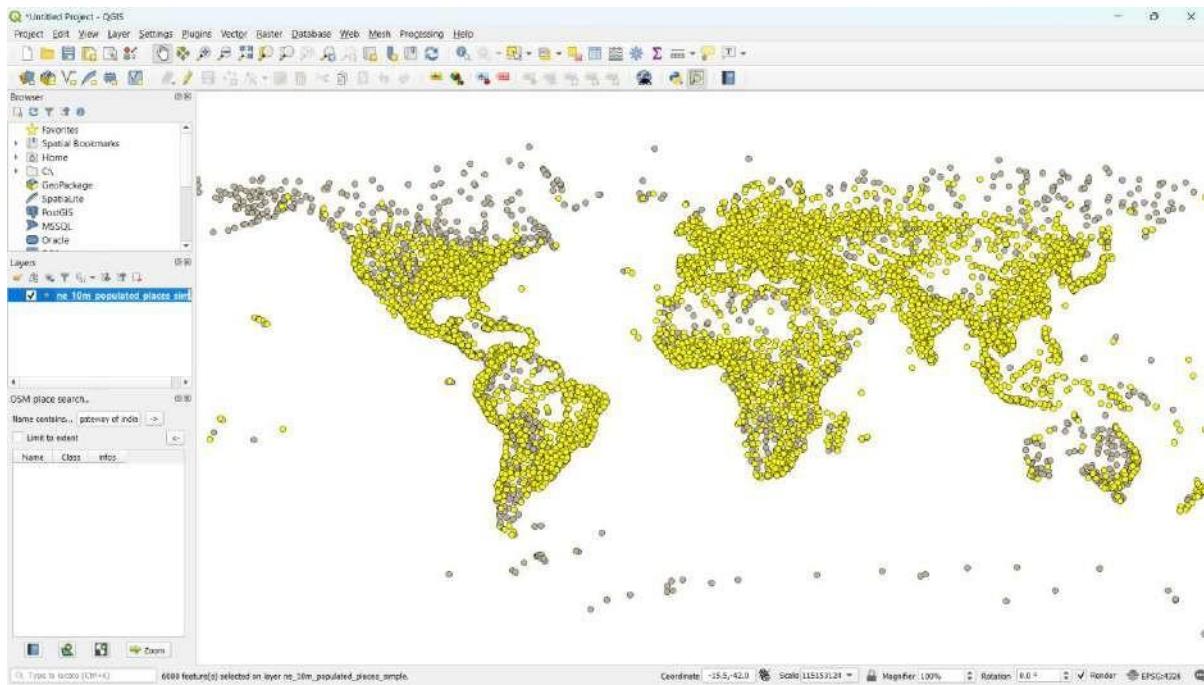
Step 3 – Right click on the layer and open Attribute Table.



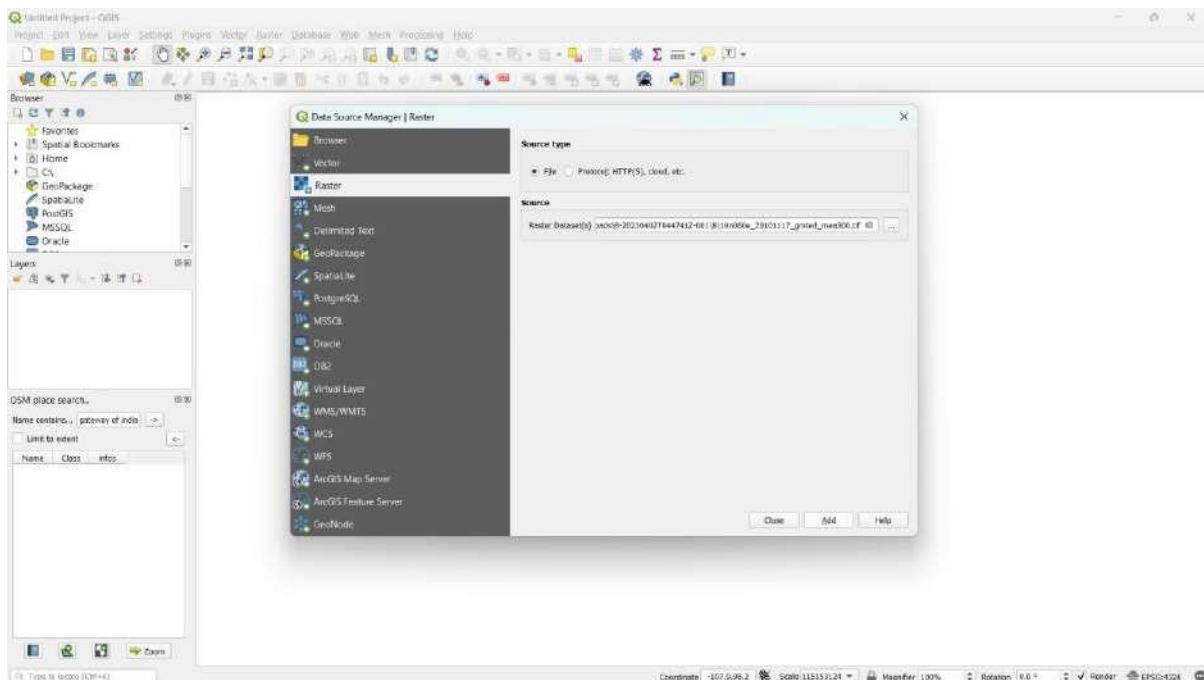
Step 4 – Click the select features using expression tool and enter the following expression then click select features.



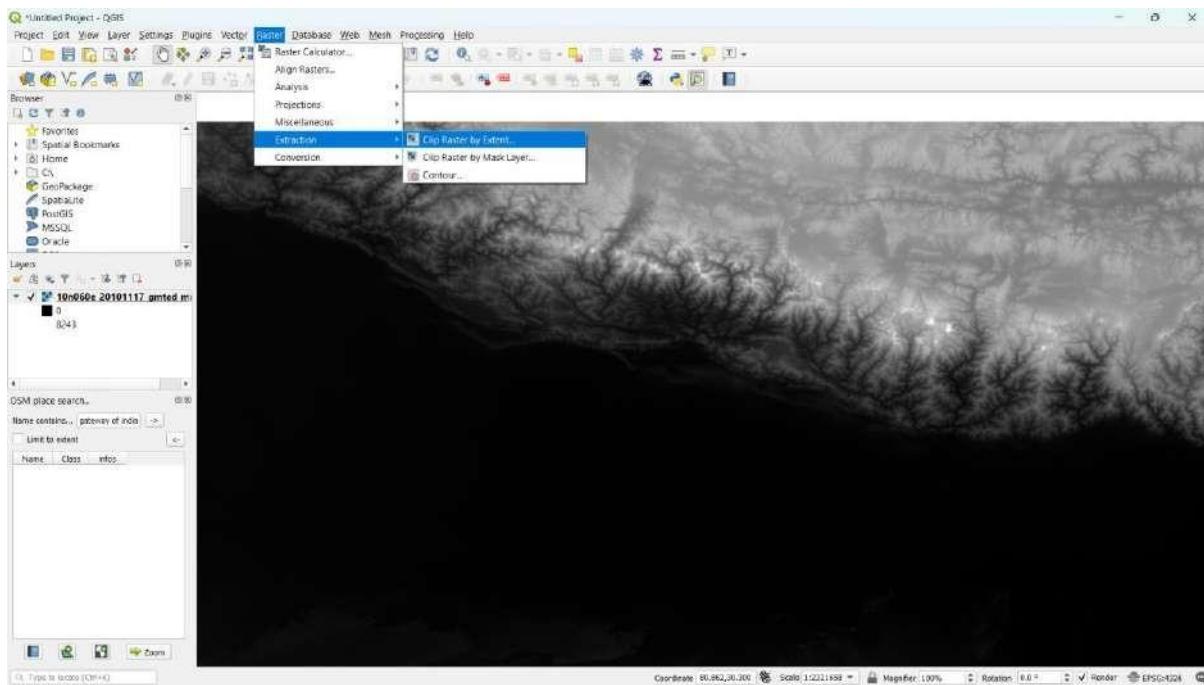
scalerank	notscale	labelrank	featurecla	name	nametpar	namealt	difscil	nameasci	admincap	capital	capin	woridty	megicity	sovname
1	4	50	2_Populated place	Cambridge Bay	NULL	NULL	0	Cambridge Bay	0	0 NULL	0	0	0	0 Canada
2	4	50	2_Admin-1 capital	Iqaluit	NULL	NULL	0	Iqaluit	0	0 NULL	0	0	0	0 Canada
3	4	50	2_Populated place	Fort St John	NULL	NULL	0	Fort St John	0	0 NULL	0	0	0	0 Canada
4	4	50	1_Populated place	Vitoria da Conq...	NULL	NULL	0	Vitoria da Conq...	0	0 NULL	0	0	0	0 Brazil
5	4	50	1 Admin-1 capital	Maceio	NULL	Maceio	0	Maceio	0	0 NULL	0	0	0	0 Brazil
6	4	50	1 Admin-1 capital	Teresina	NULL	NULL	0	Teresina	0	0 NULL	0	0	0	0 Brazil
7	4	50	1_Populated place	Rio Branco	NULL	NULL	0	Rio Branco	0	0 NULL	0	0	0	0 Brazil
8	4	50	2_Populated place	Thompson	NULL	NULL	0	Thompson	0	0 NULL	0	0	0	0 Canada
9	4	50	1 Admin-1 capital	Natal	NULL	NULL	0	Natal	0	0 NULL	0	0	0	0 Brazil
10	4	50	1_Populated place	Vila Velha	NULL	NULL	0	Vila Velha	0	0 NULL	0	0	0	0 Brazil
11	4	50	1_Populated place	Barneska	NULL	NULL	0	Barneska	0	0 NULL	0	0	0	0 Brazil
12	4	50	6 Admin-1 capital	Ebodavi	NULL	NULL	0	Ebodavi	0	0 NULL	0	0	0	0 Cameroon
13	4	50	2_Populated place	Labrador City	NULL	NULL	0	Labrador City	0	0 NULL	0	0	0	0 Canada
14	4	50	2_Populated place	Sydney	NULL	NULL	0	Sydney	0	0 NULL	0	0	0	0 Canada
15	4	50	2_Populated place	Kuujjuaq	NULL	NULL	0	Kuujjuaq	0	0 NULL	0	0	0	0 Canada
16	4	50	3 Admin-1 capital	San Juan	NULL	NULL	0	San Juan	0	0 NULL	0	0	0	0 Argentina
17	4	50	3_Populated place	El Calafate	NULL	NULL	0	El Calafate	0	0 NULL	0	0	0	0 Argentina
18	4	50	3 Admin-1 region	Venice	NULL	NULL	0	Venice	0	0 NULL	0	0	0	0 Italy
19	4	50	7 Admin-1 capital	Bambari	NULL	NULL	0	Bambari	0	0 NULL	0	0	0	0 Central African...
20	4	50	2_Populated place	Igloolik	NULL	NULL	0	Igloolik	0	0 NULL	0	0	0	0 Canada
21	4	50	2_Populated place	Taloyoak	NULL	NULL	0	Taloyoak	0	0 NULL	0	0	0	0 Canada
22	4	50	2_Populated place	Aniak	NULL	NULL	0	Aniak	0	0 NULL	0	0	0	0 Canada
23	4	50	2_Populated place	Chesterville Inlet	NULL	NULL	0	Chesterville Inlet	0	0 NULL	0	0	0	0 Canada
24	4	50	2_Populated place	Kuujjuaq	NULL	NULL	0	Kuujjuaq	0	0 NULL	0	0	0	0 Canada
25	4	50	2_Populated place	North Bay	NULL	NULL	0	North Bay	0	0 NULL	0	0	0	0 Canada
26	4	50	2_Populated place	Timmins	NULL	NULL	0	Timmins	0	0 NULL	0	0	0	0 Canada



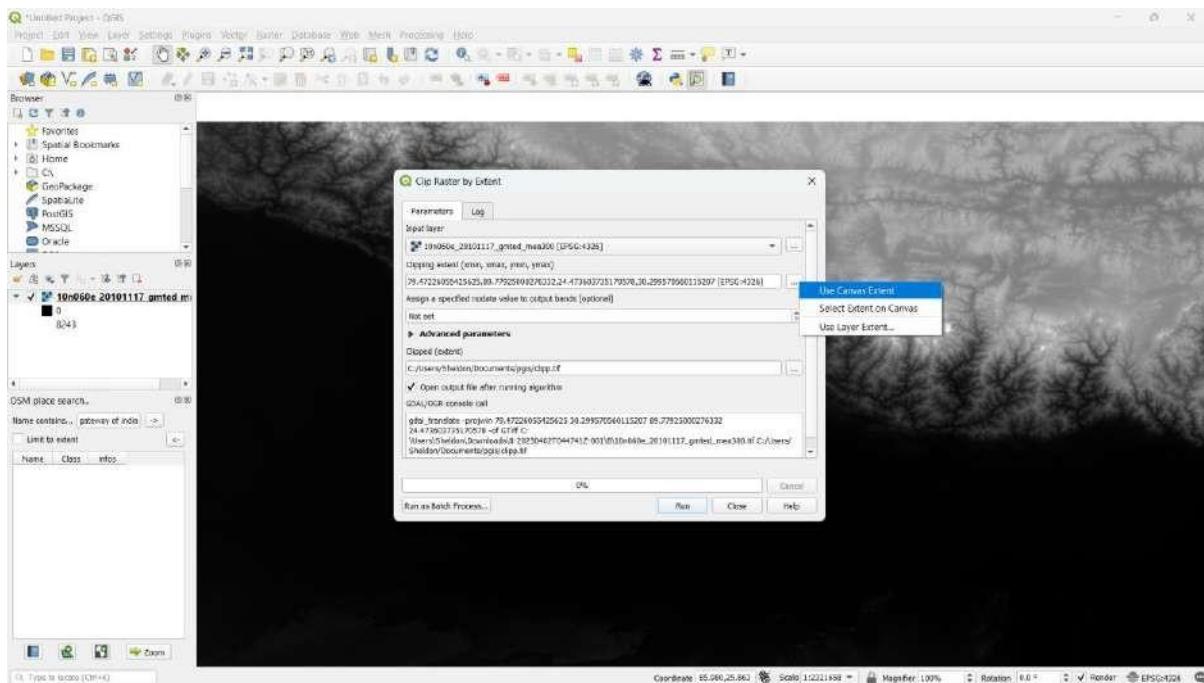
Step 5 – Create a new project and add the following raster layer.



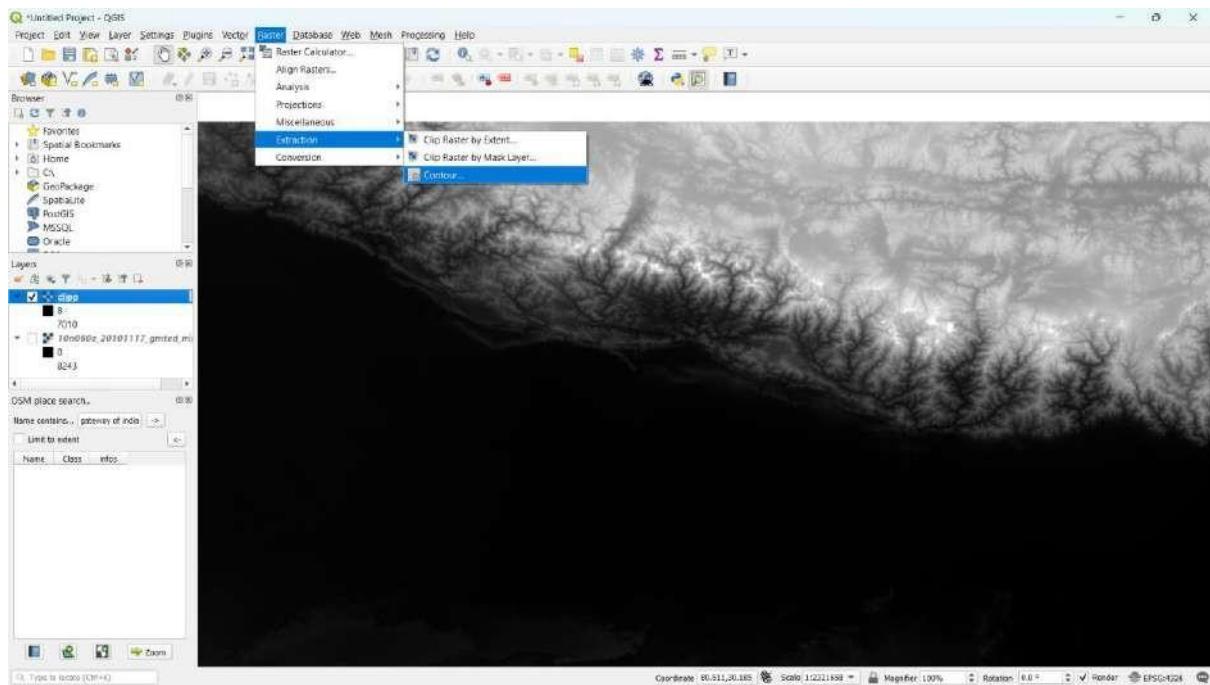
Step 6 – Raster > Extraction > Clip Raster by Extent.



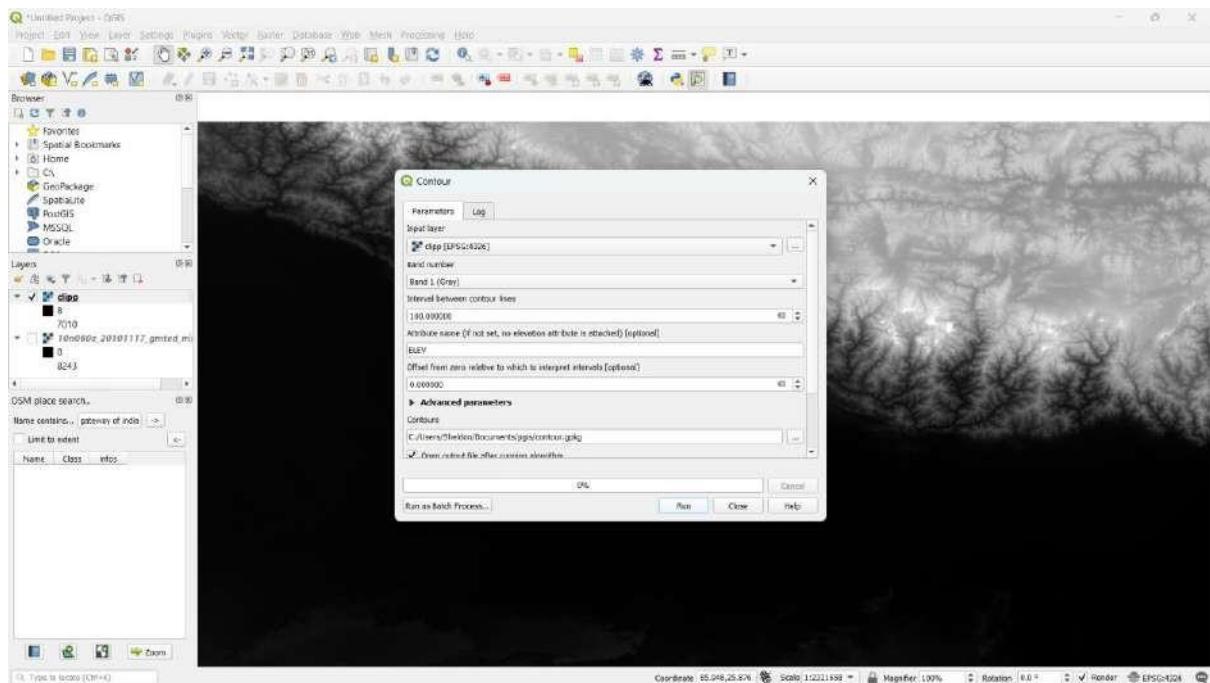
Step 7 – Set the following parameters and hit run.

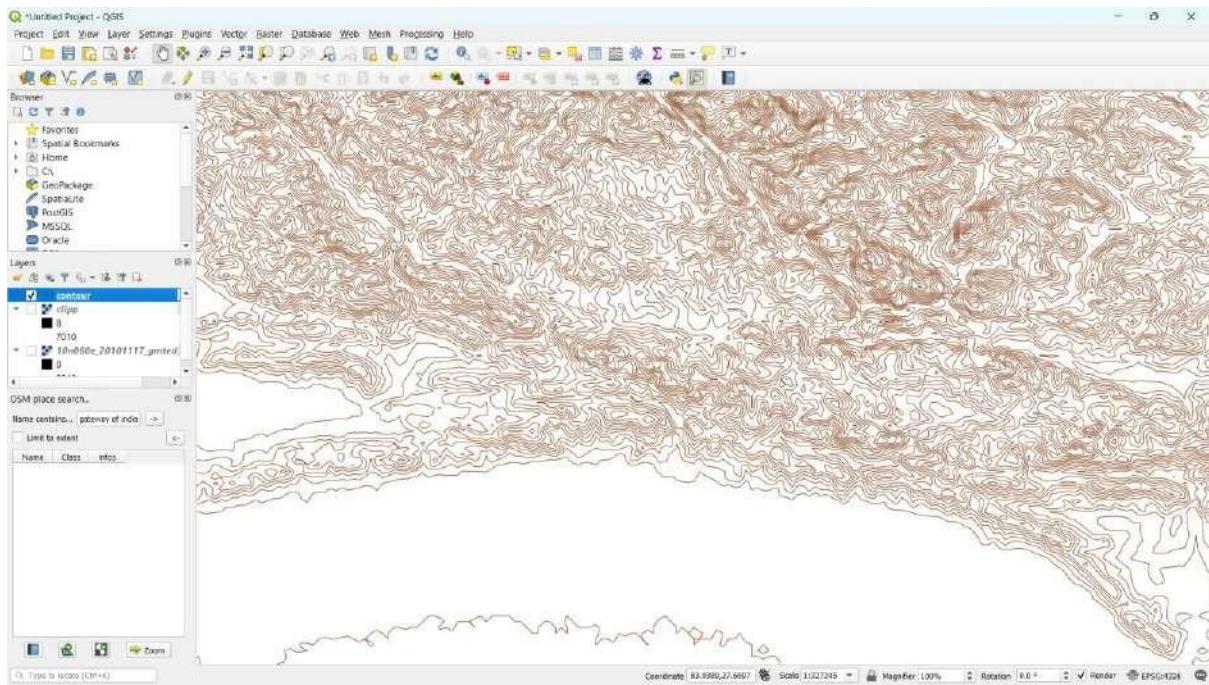


Step 8 – Raster > Extraction > Contour.



Step 9 – Set the following parameters and hit run.



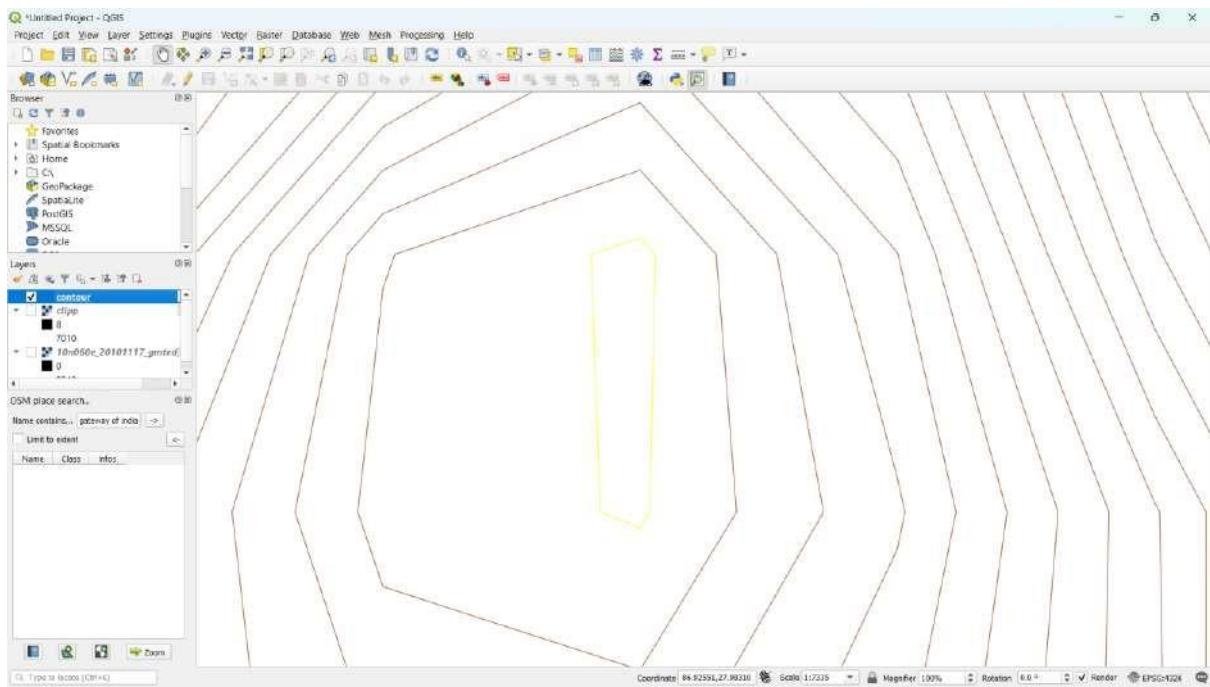


Step 10 – To find the highest point open the attribute table. Sort the elev column in descending order, select th first row and click the zoom map to selected rows tool.

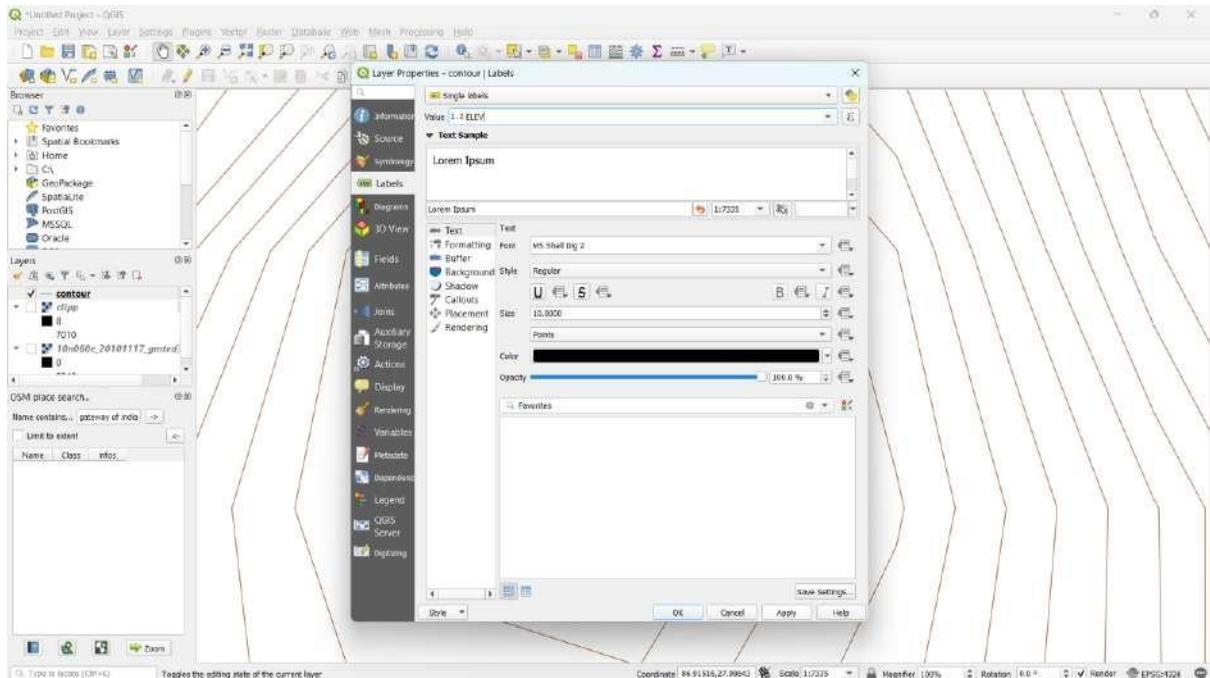
The screenshot shows the attribute table for the 'contour' layer in QGIS. The table has three columns: 'fid', 'ID', and 'ELEV'. The data is sorted by 'ELEV' in descending order. The first few rows are:

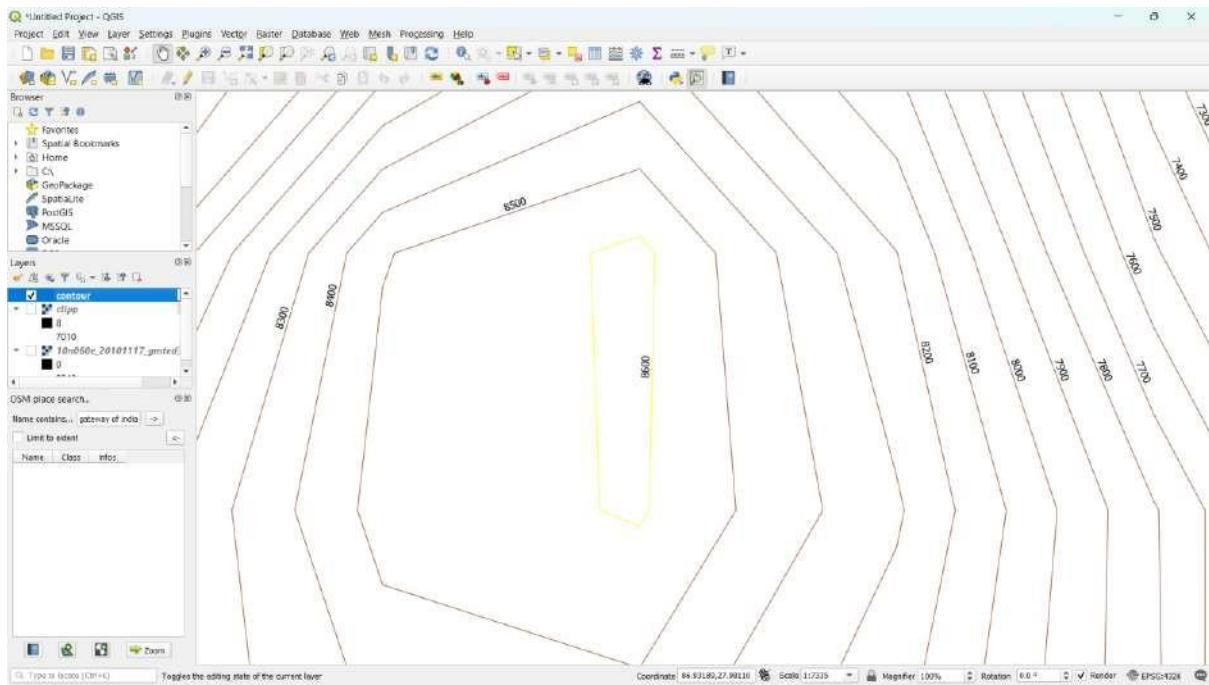
	fid	ID	ELEV
1	14493	14493	8600
2	14493	14492	8500
3	14559	14558	8400
4	15207	15206	8400
5	14558	14557	8300
6	15205	15205	8300
7	14557	14556	8200
8	15205	15204	8200
9	14623	14628	8100
10	15204	15203	8100
11	16501	16500	8100
12	14628	14627	8000
13	15203	15202	8000
14	16543	16542	8000
15	14713	14712	7900
16	15274	15273	7900
17	16542	16541	7900
18	13785	13784	7800
19	14712	14711	7800
20	15273	15272	7800
21	16541	16540	7800
22	10228	10227	7700
23	13784	13783	7700
24	14711	14710	7700
25	15272	15271	7700
26	16540	16539	7700

The point with highest elevation is highlighted.

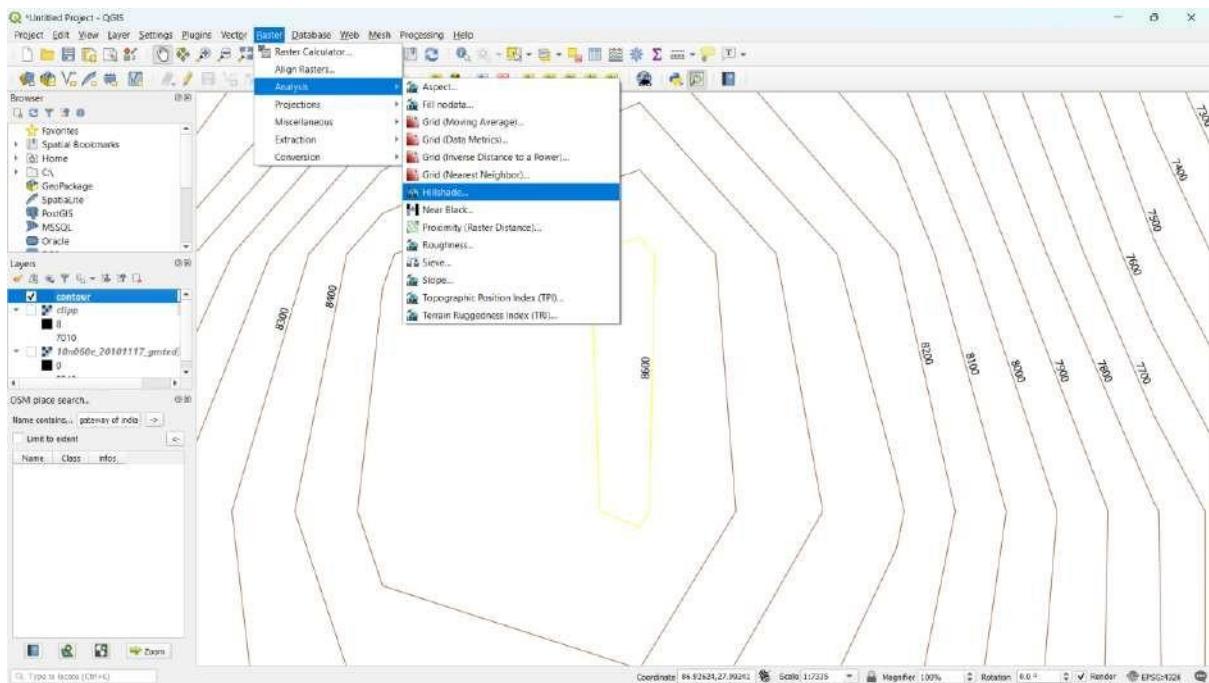


Step 11 – To get labels, open layer properties in that open the layer menu then select the following options and then hit apply.

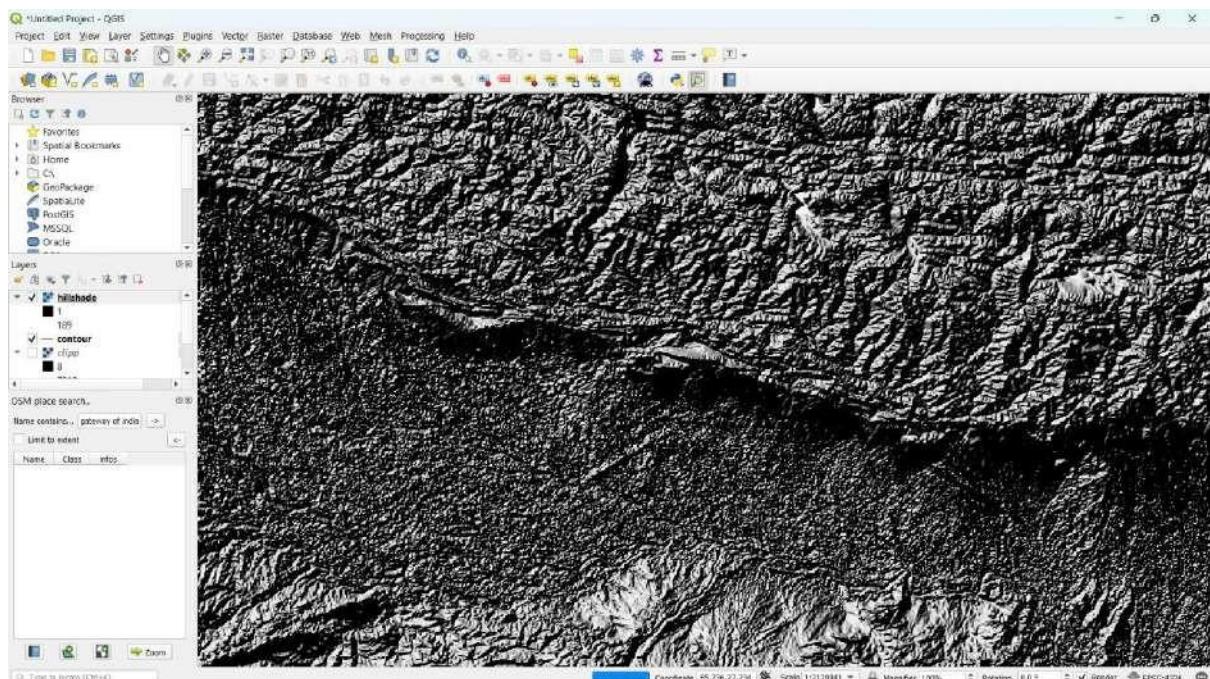
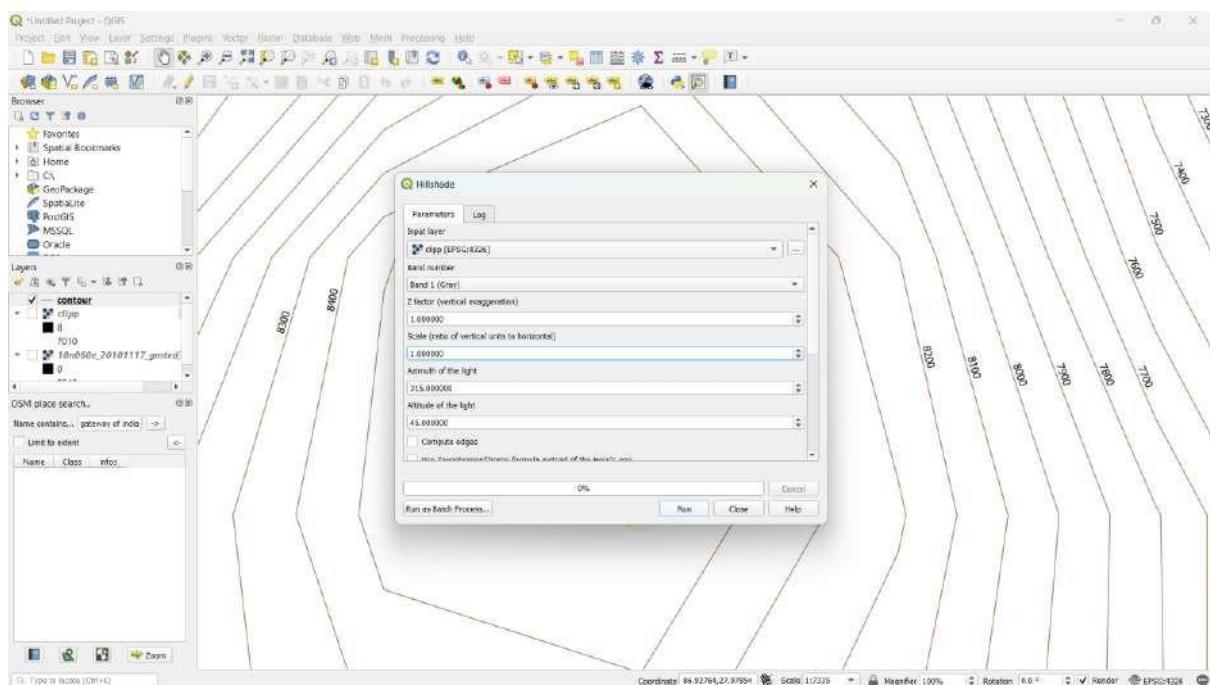




Step 12 – Raster > Analysis > Hill Shade.



Step 13 – Set the following parameters and hit run.

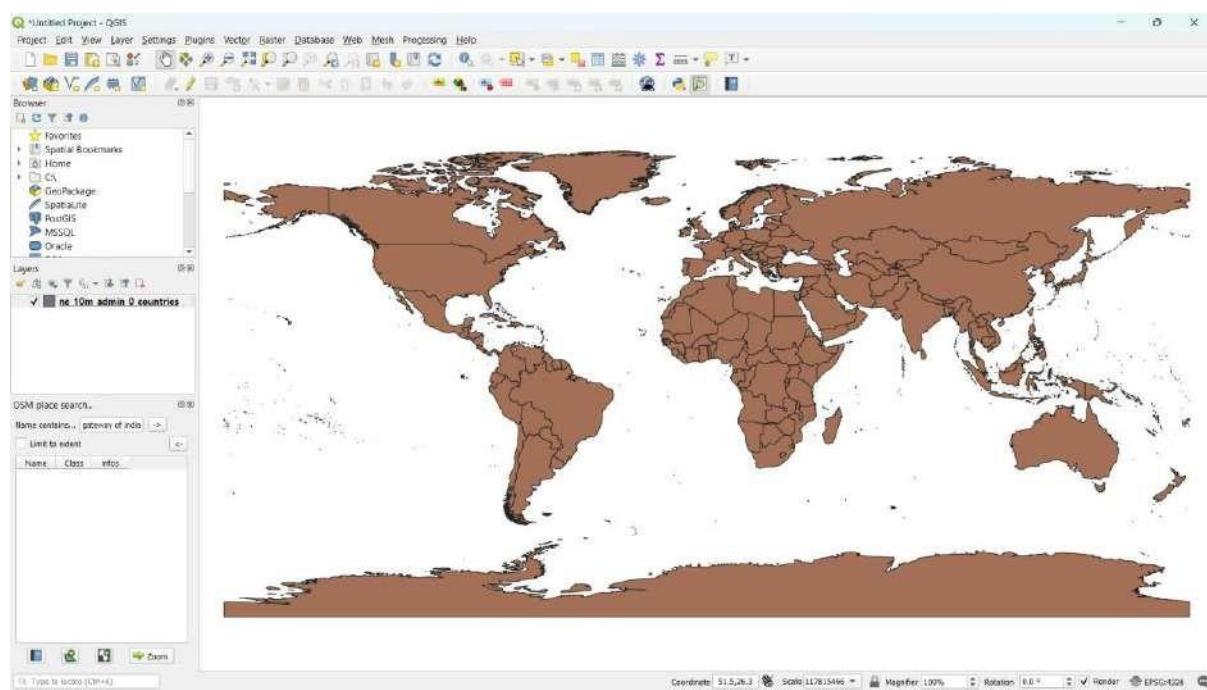
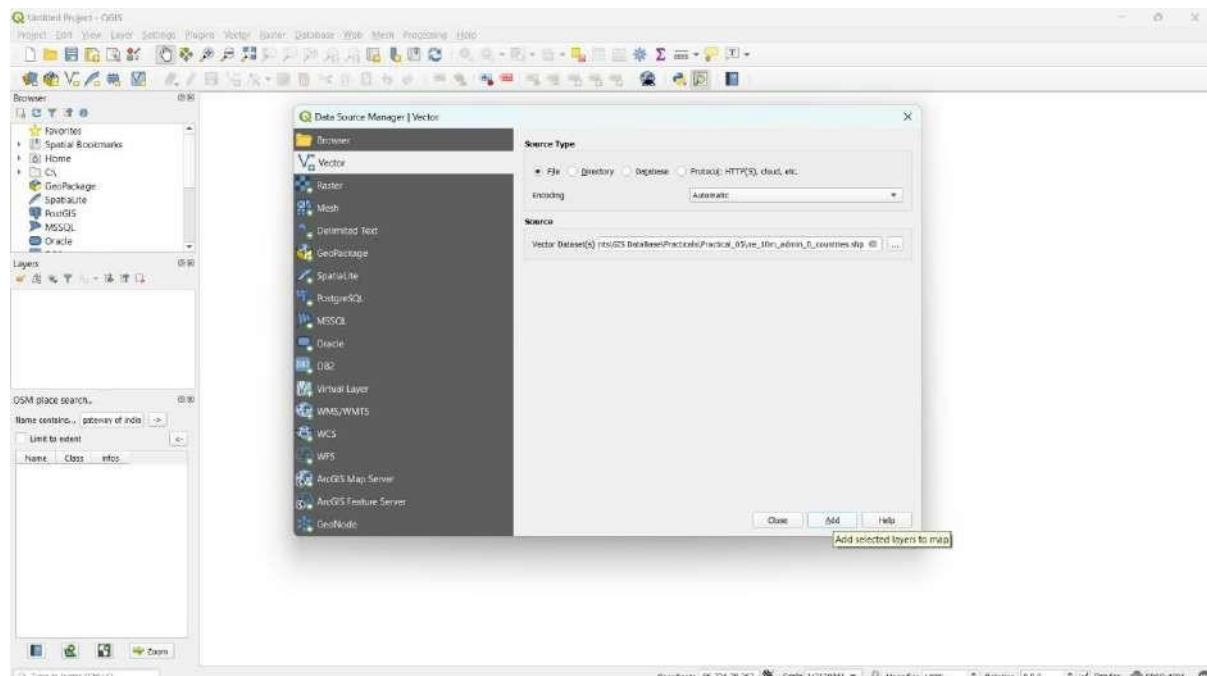


PRACTICAL – 5

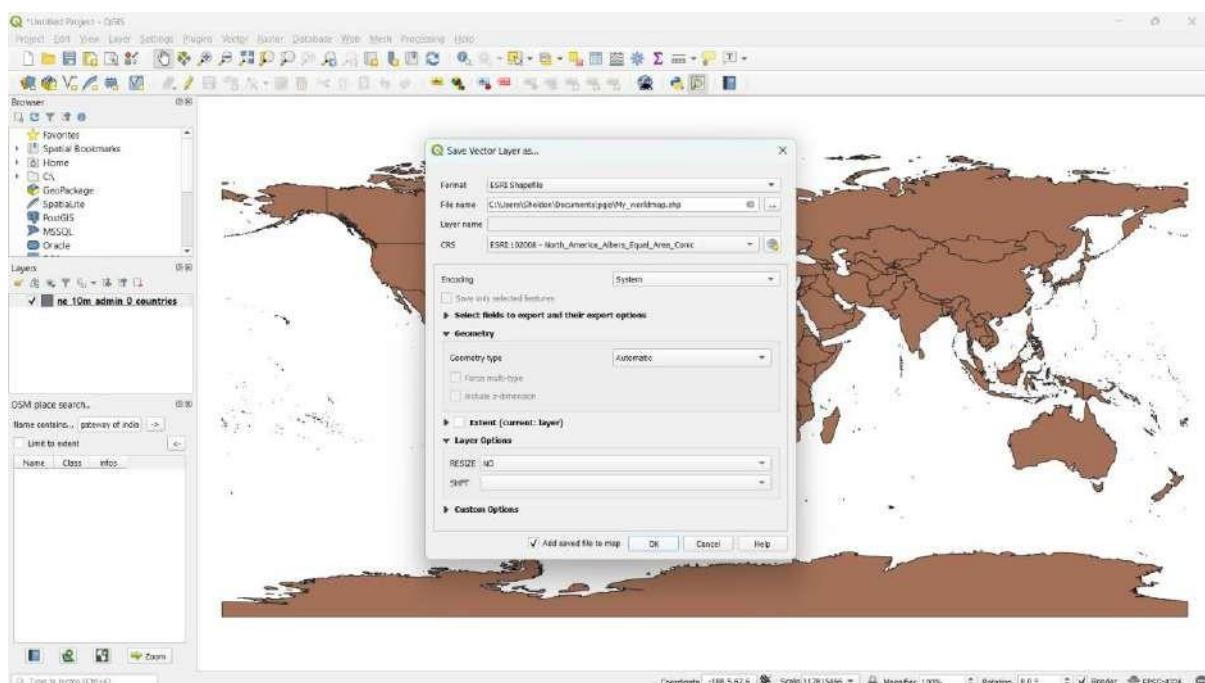
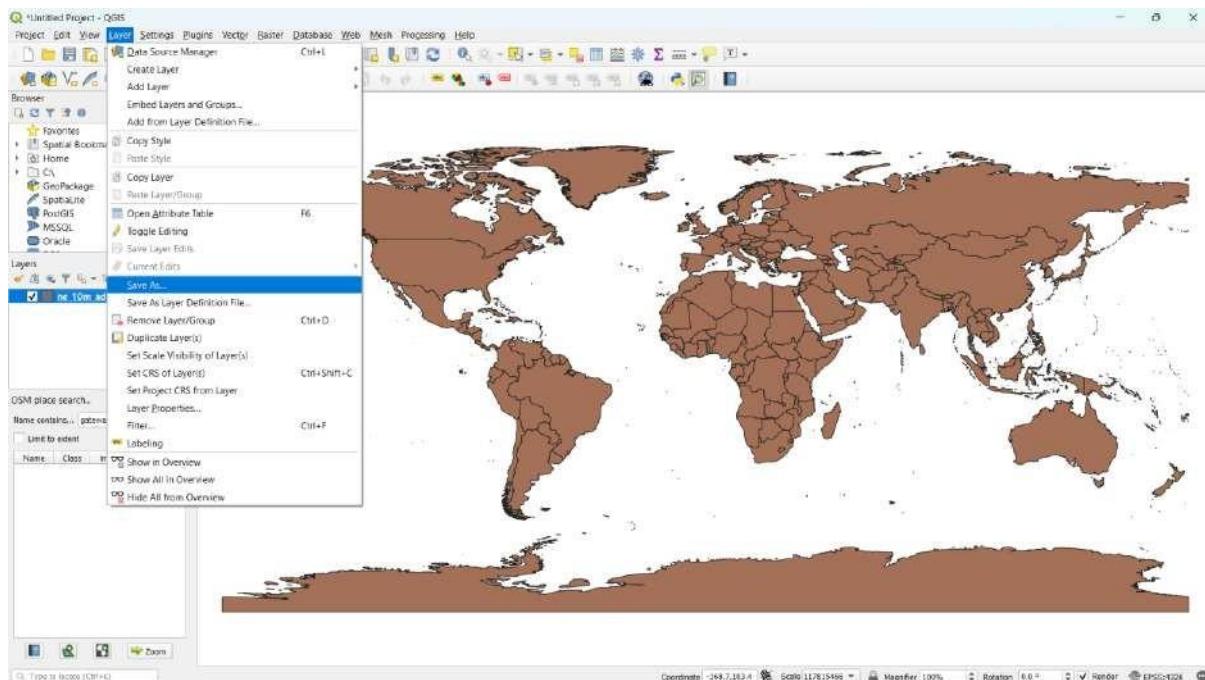
Aim: Working with Projections and WMS Data.

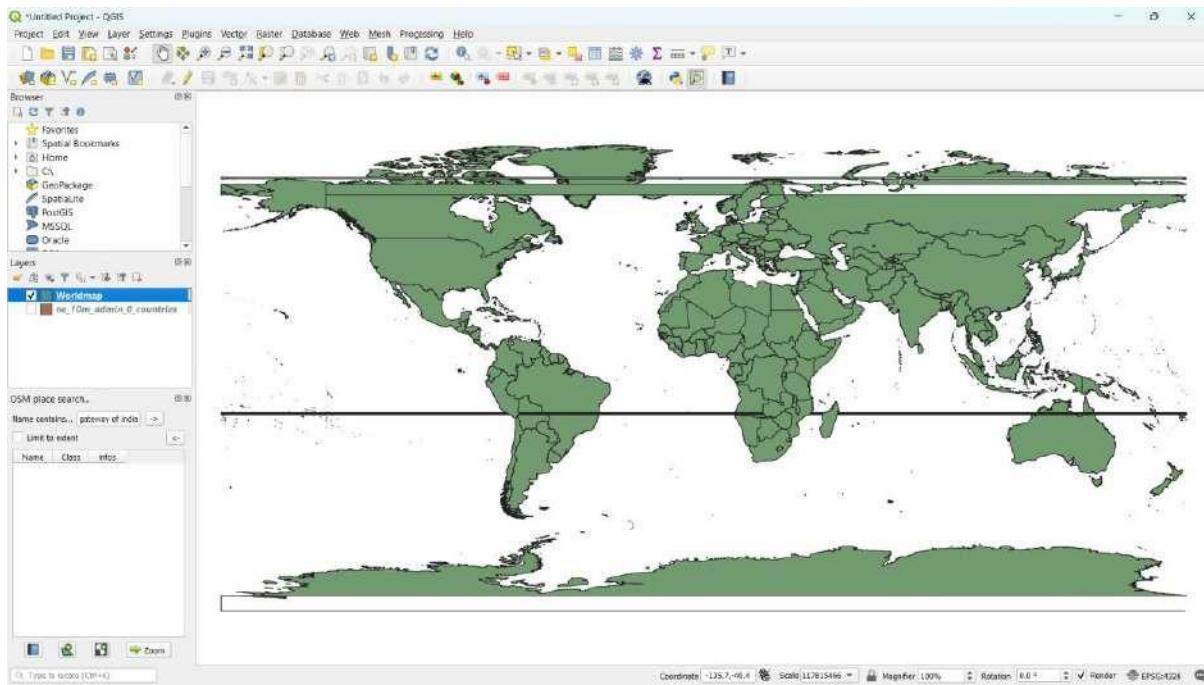
Steps:

Step 1 – Layers > Add Layers > Add Raster Layer. Select the following file and hit add.

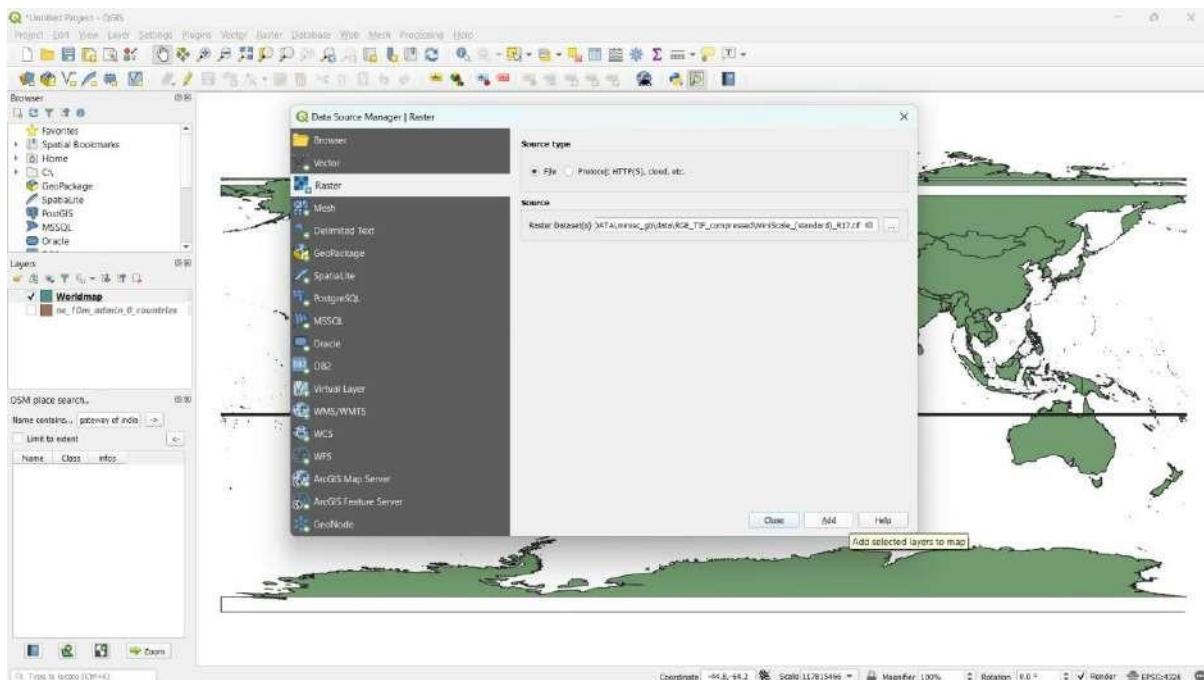


Step 2 – Select the layer go in the layer tab and select Save as, enter the following parameters and click OK.

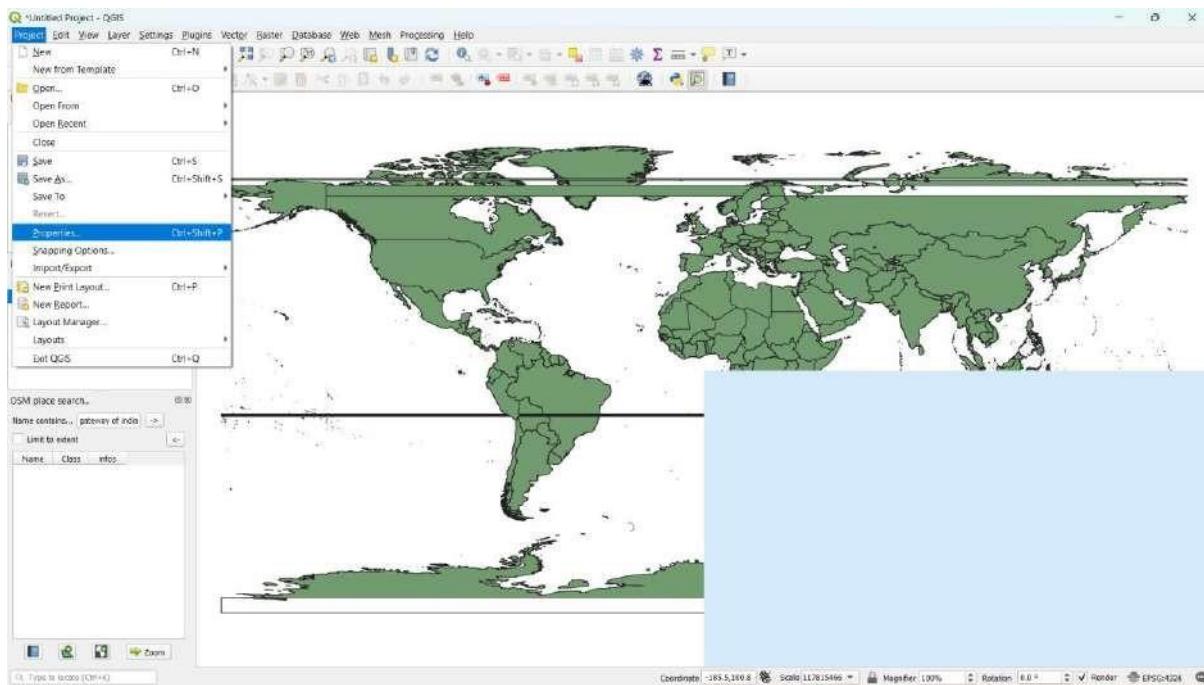




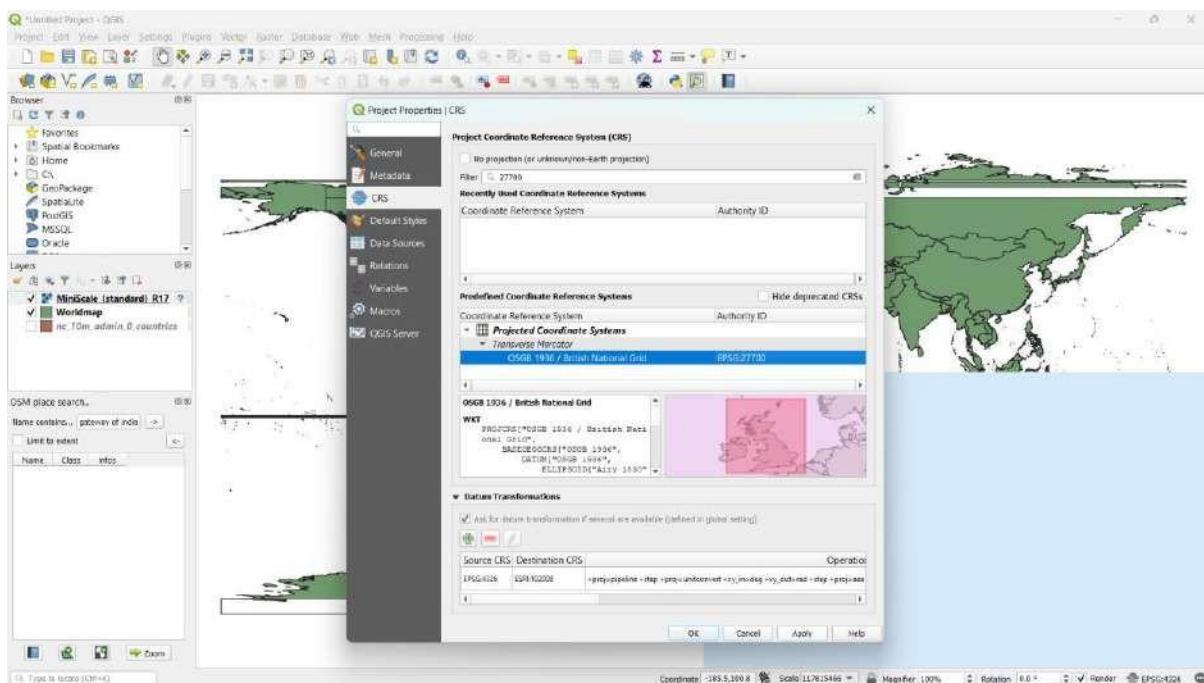
Step 3 – Layer > Add layer > Add raster layer. Select the following layer and hit add.



Step 4 – Project > Properties.



Step 5 – In the project properties open the CRS menu, select the following parameters and hit apply.

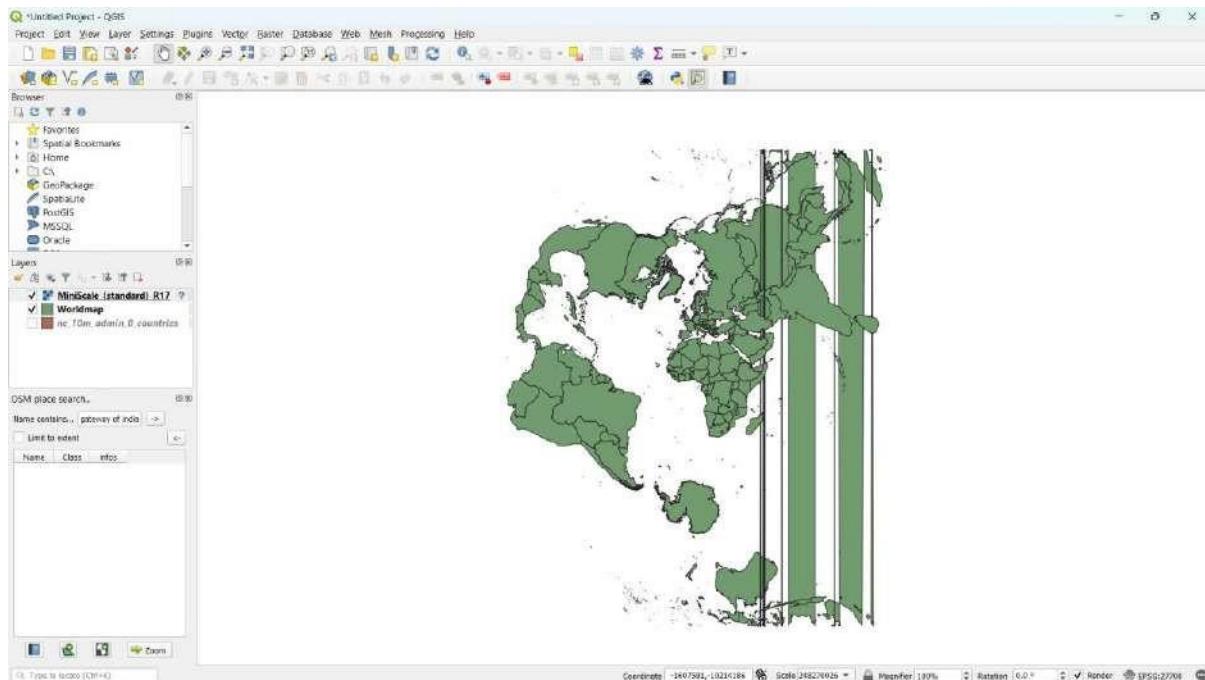


Name: Ankit Roshan

Subject: Principles of Geographical Information System Practical

Roll No: IT21063

Subject Code: USIT6P4

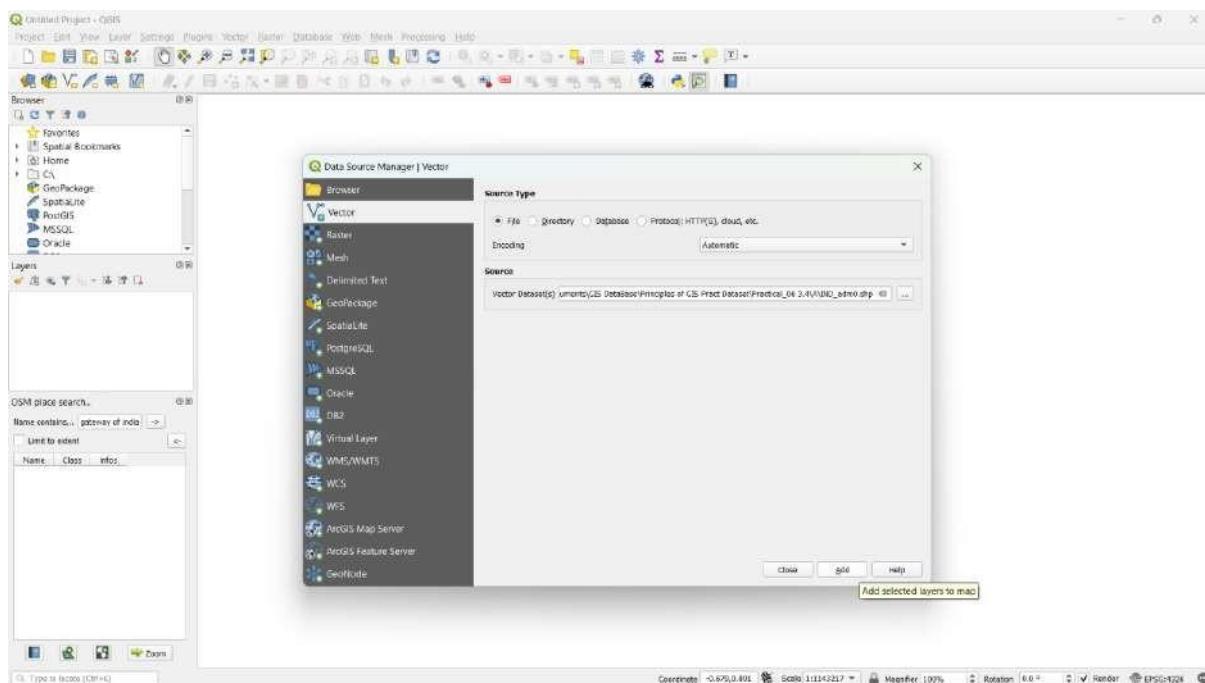


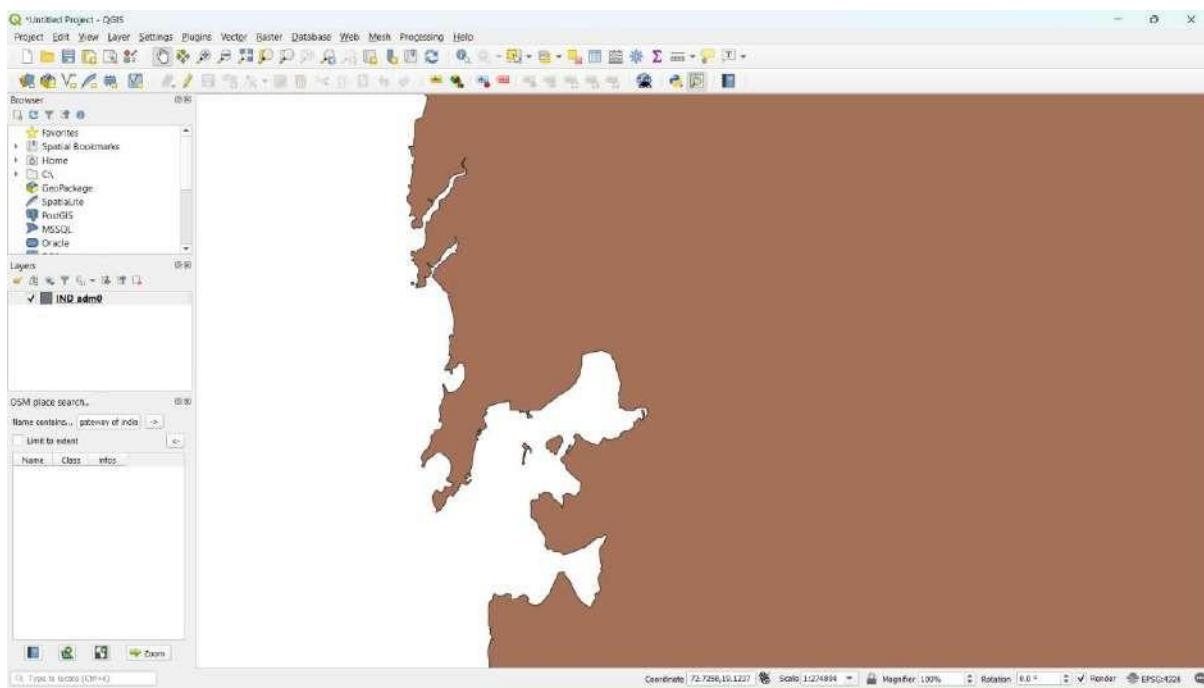
PRACTICAL - 6

Aim: Georeferencing Topo Sheets and Scanned Maps, Georeferencing Aerial Imagery and Digitizing Map Data.

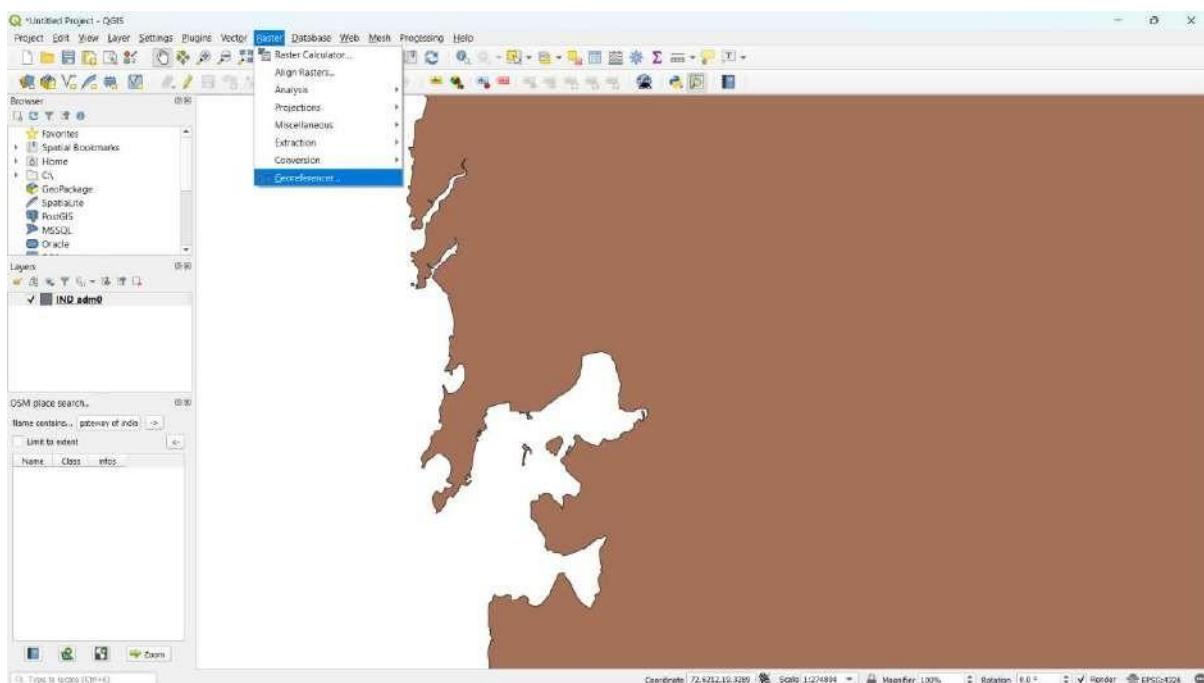
Steps:

Step 1 – Layer > Add Layer > Add Vector Layer. Select the following .shp file and hit add.

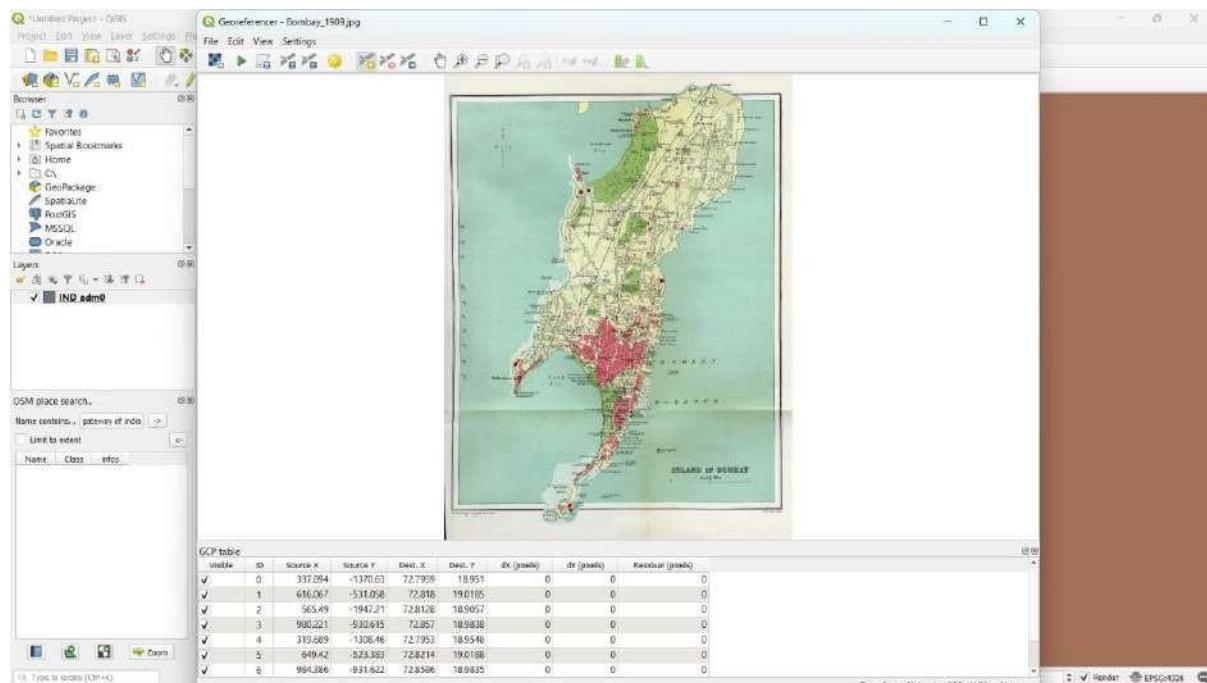
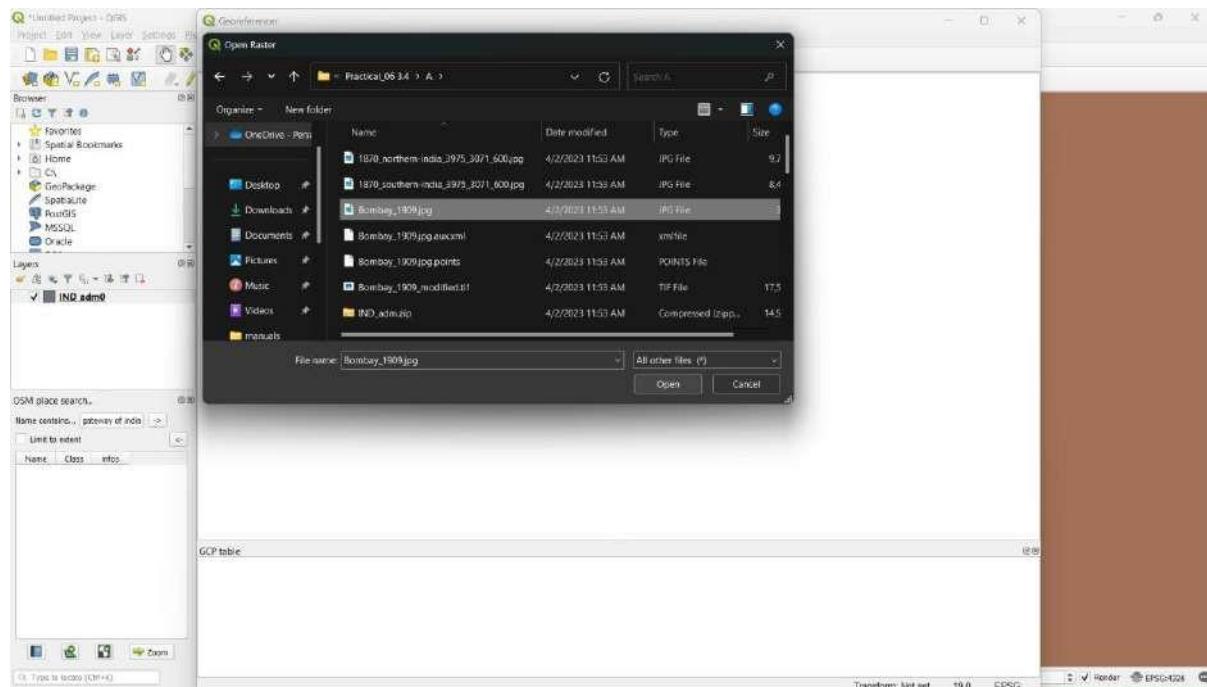




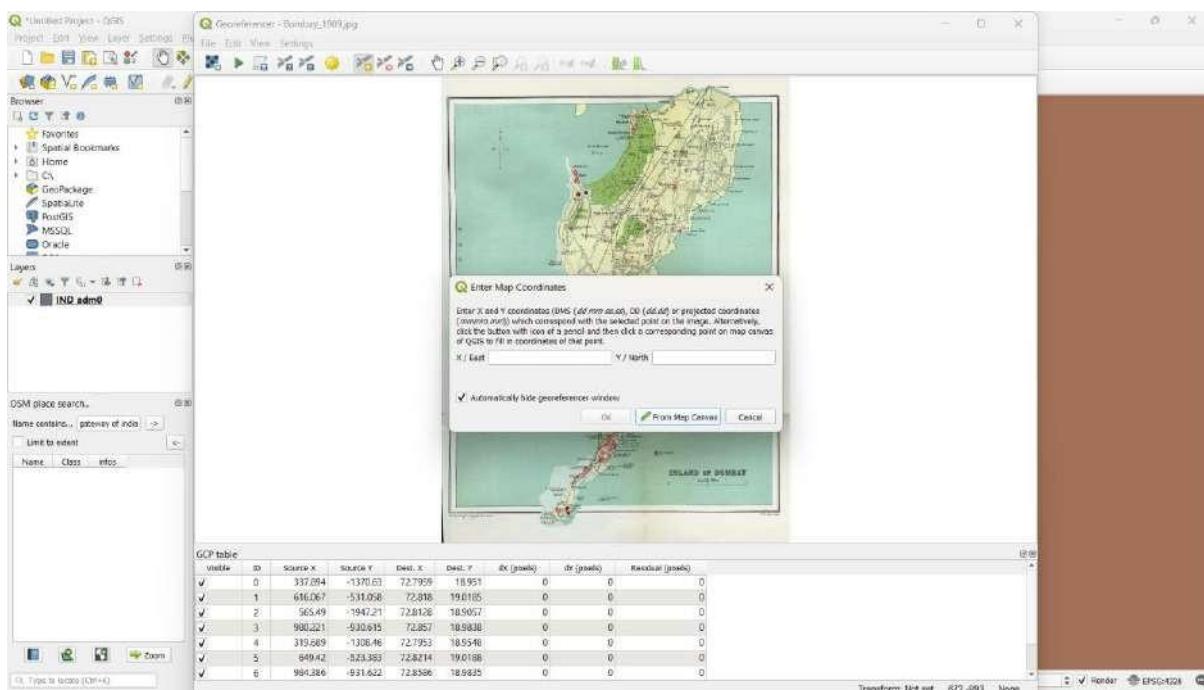
Step 2 – Make sure that the georeferencer plugin is installed. Raster > Georeferencer.



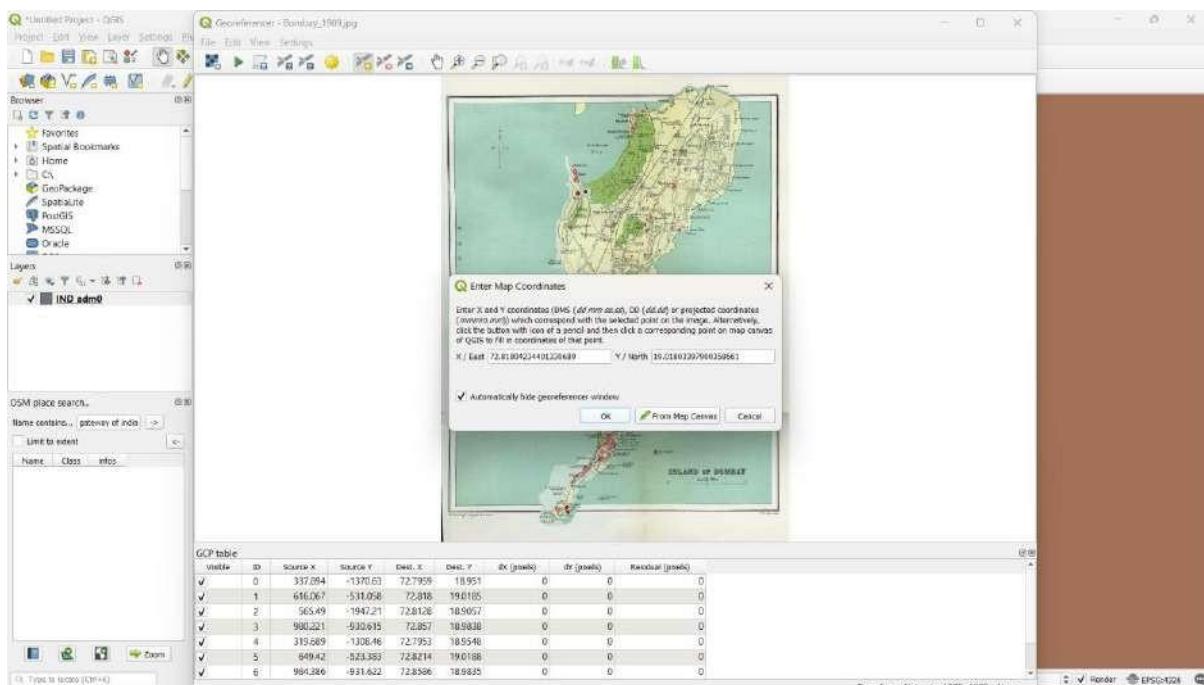
Step 3 – File > Open Raster. Select the file you want to open and click open.



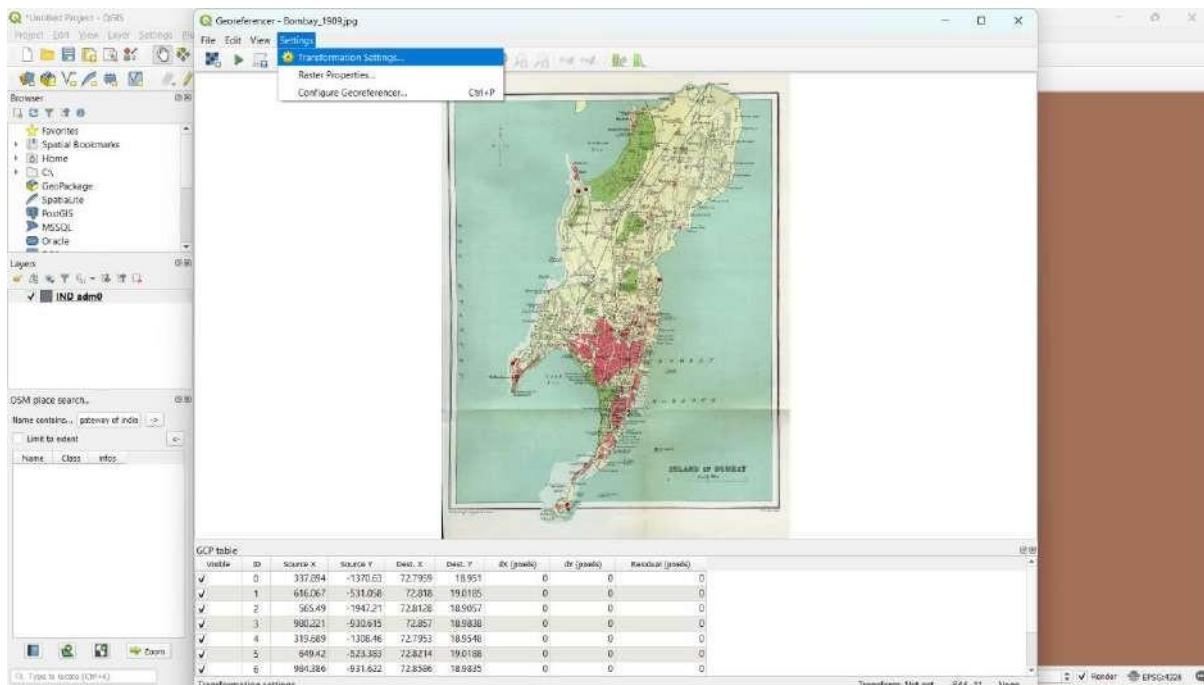
Step 4 – Select any point on the map and then click on from map canvas.



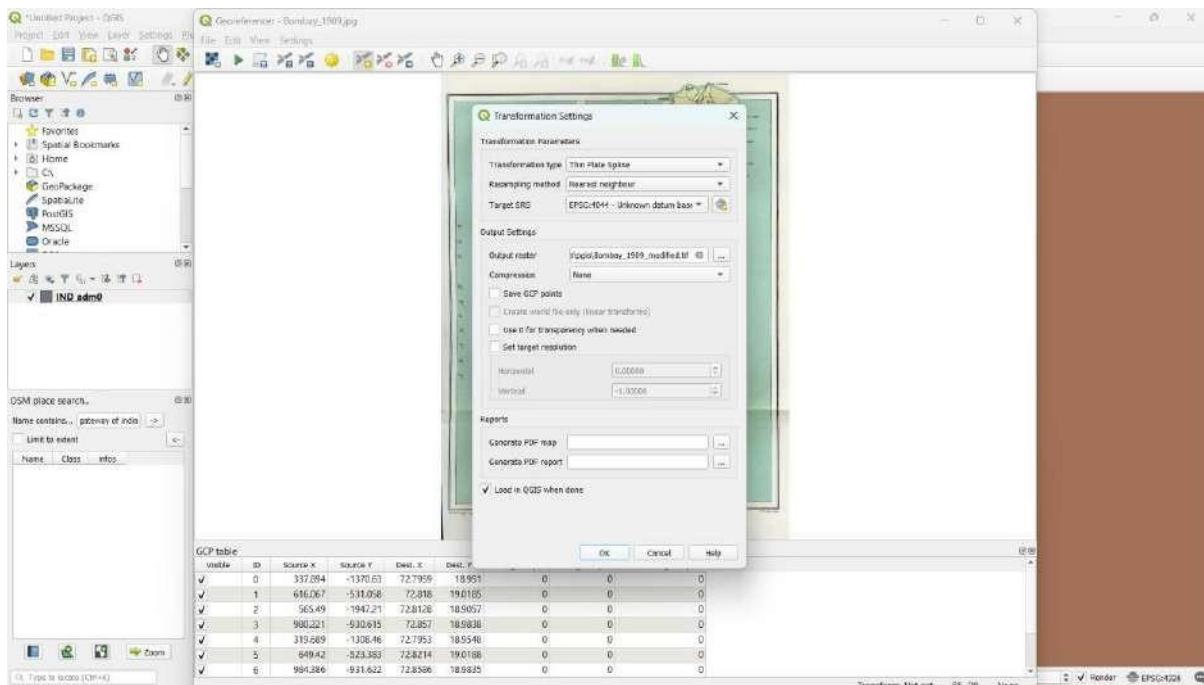
Step 5 – Click the approximately at the same point from map canvas and then hit OK.



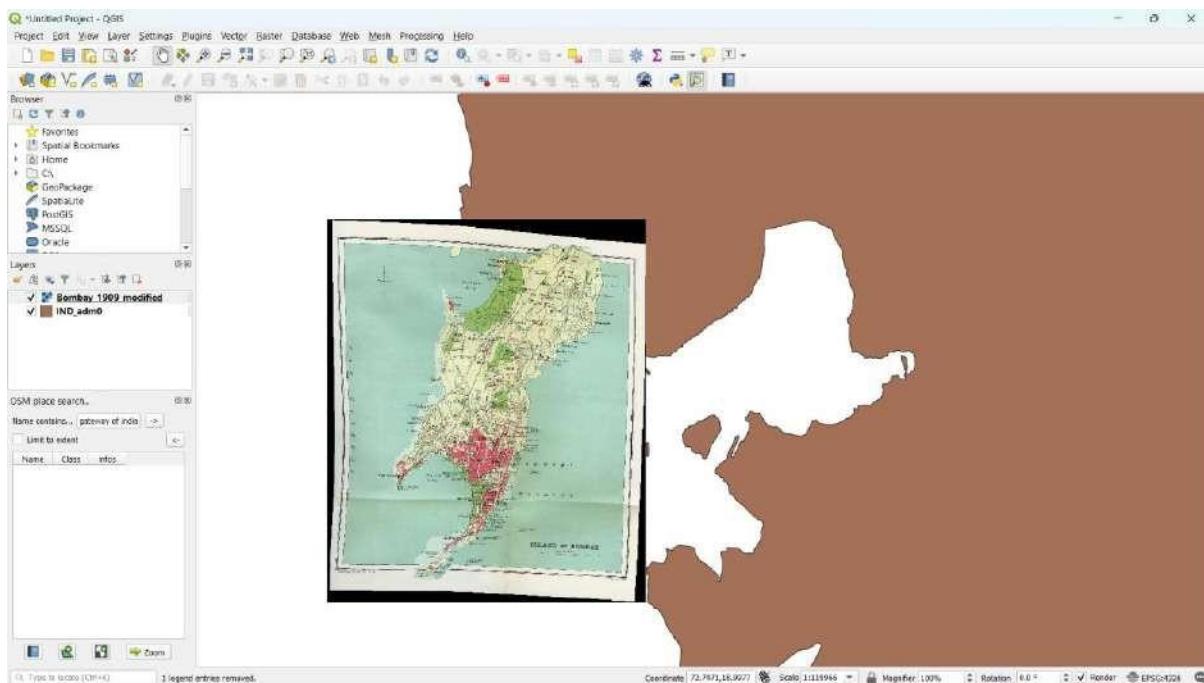
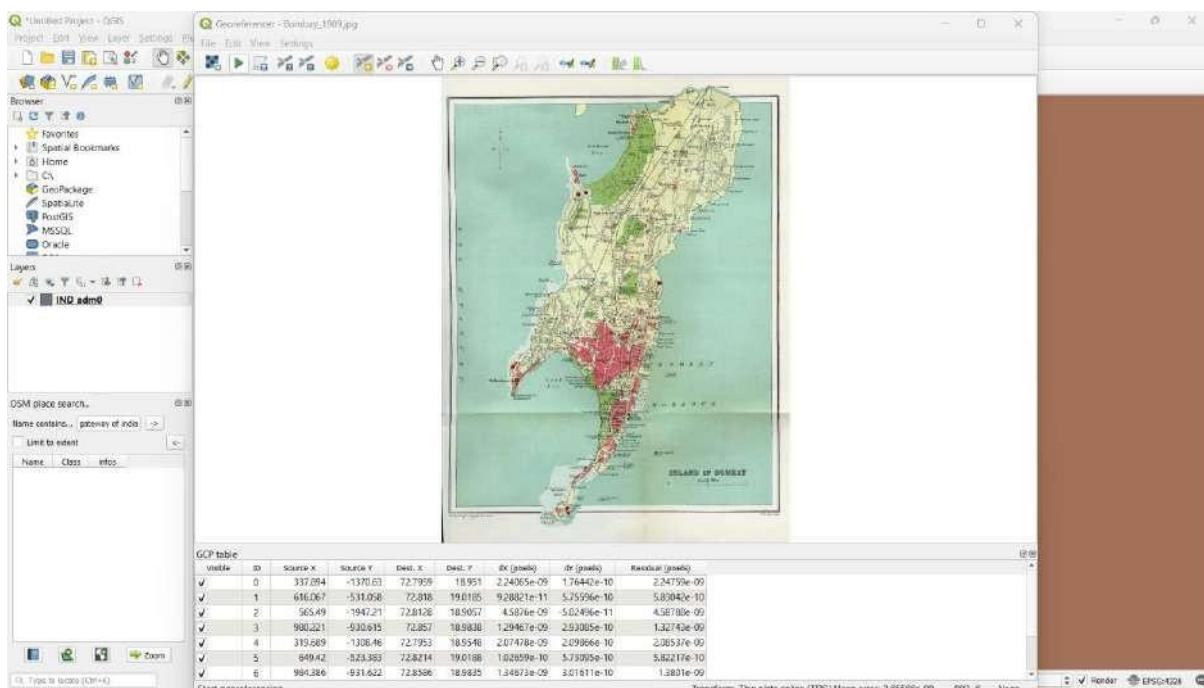
Step 6 – Similarly you can add as many points as you like. Once you are done click on settings > transform settings.



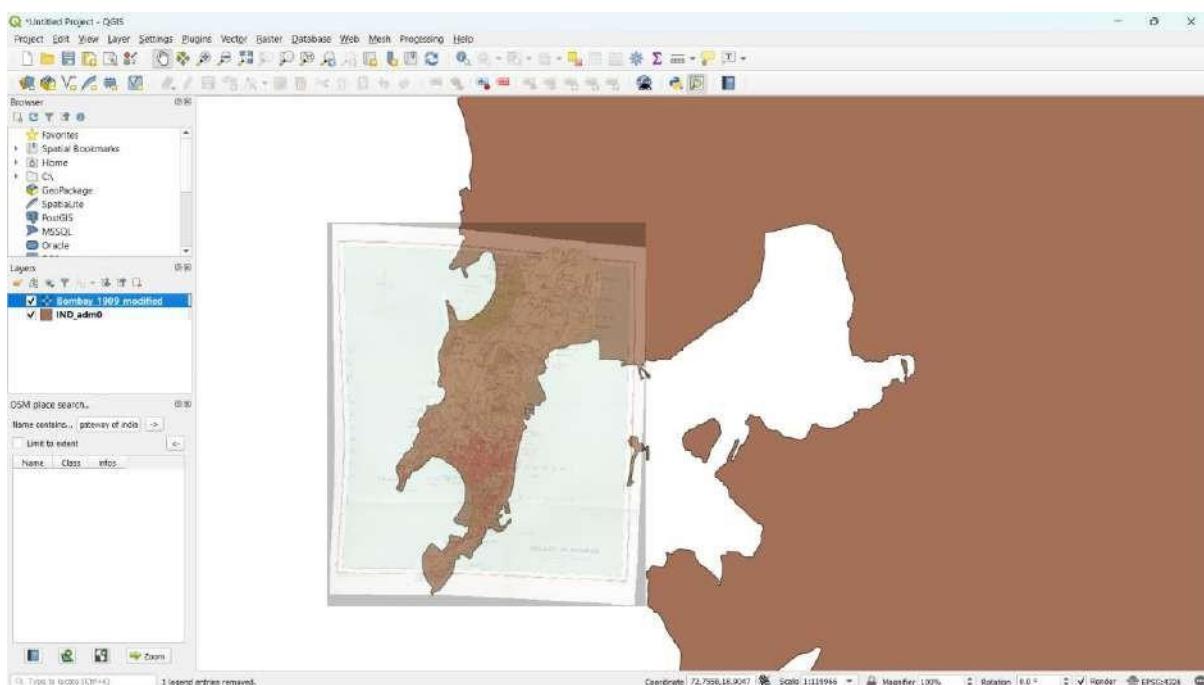
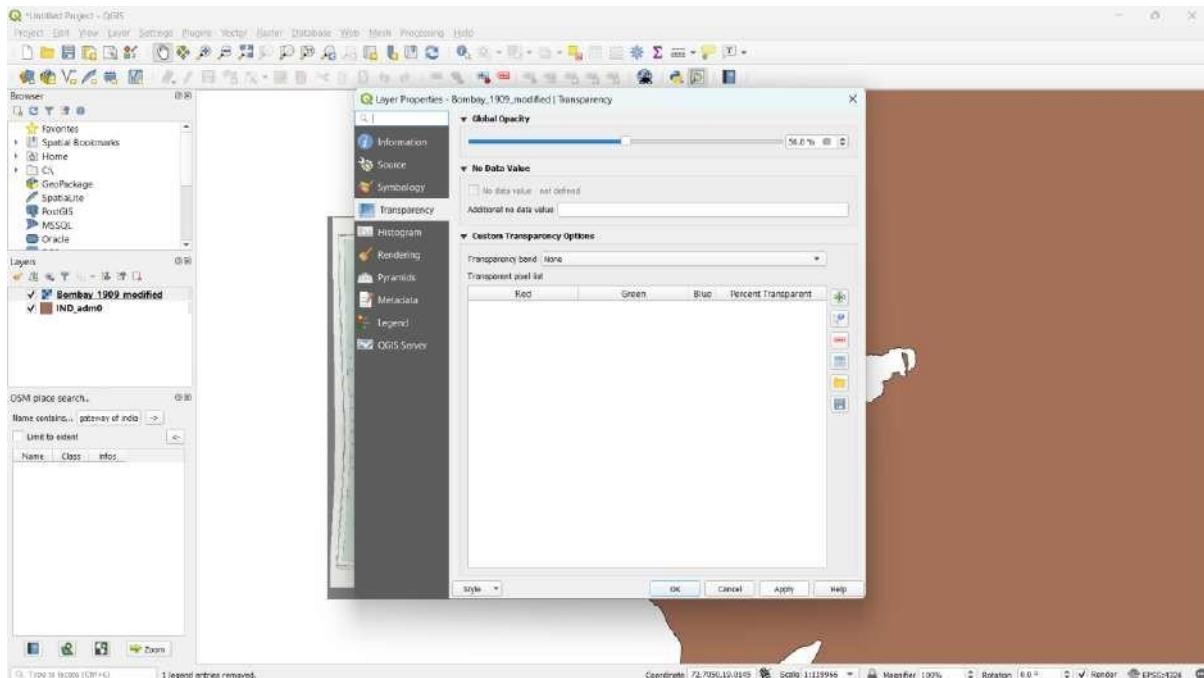
Step 7 – Set the following parameters and then click OK.



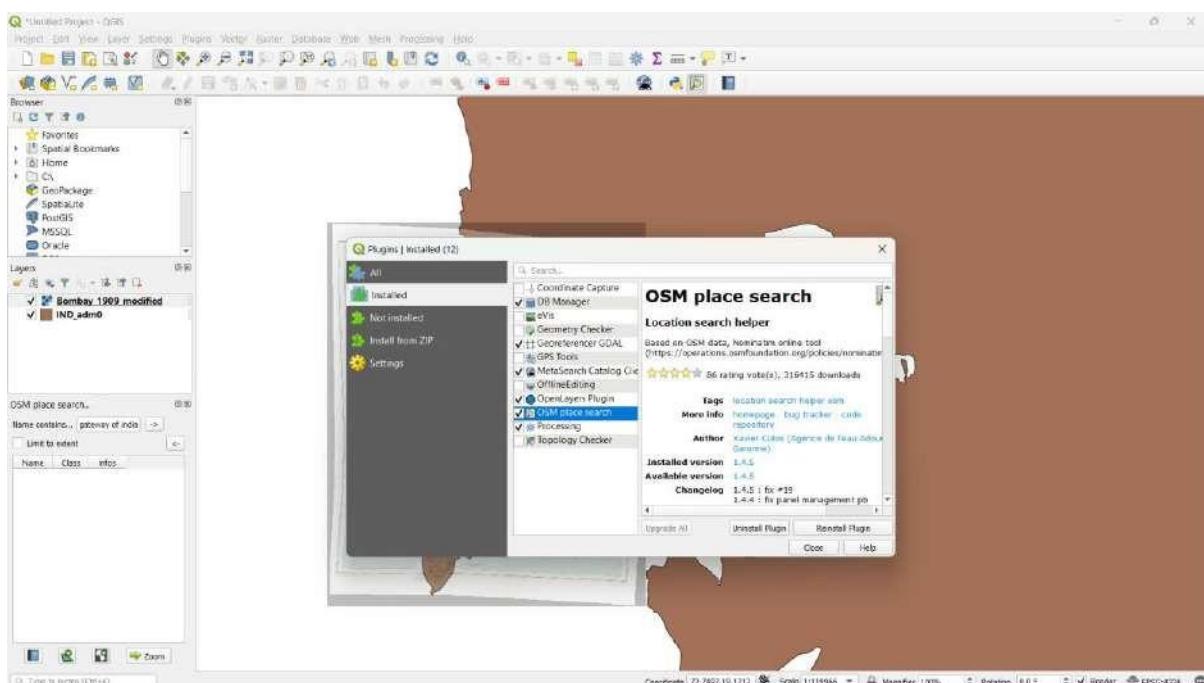
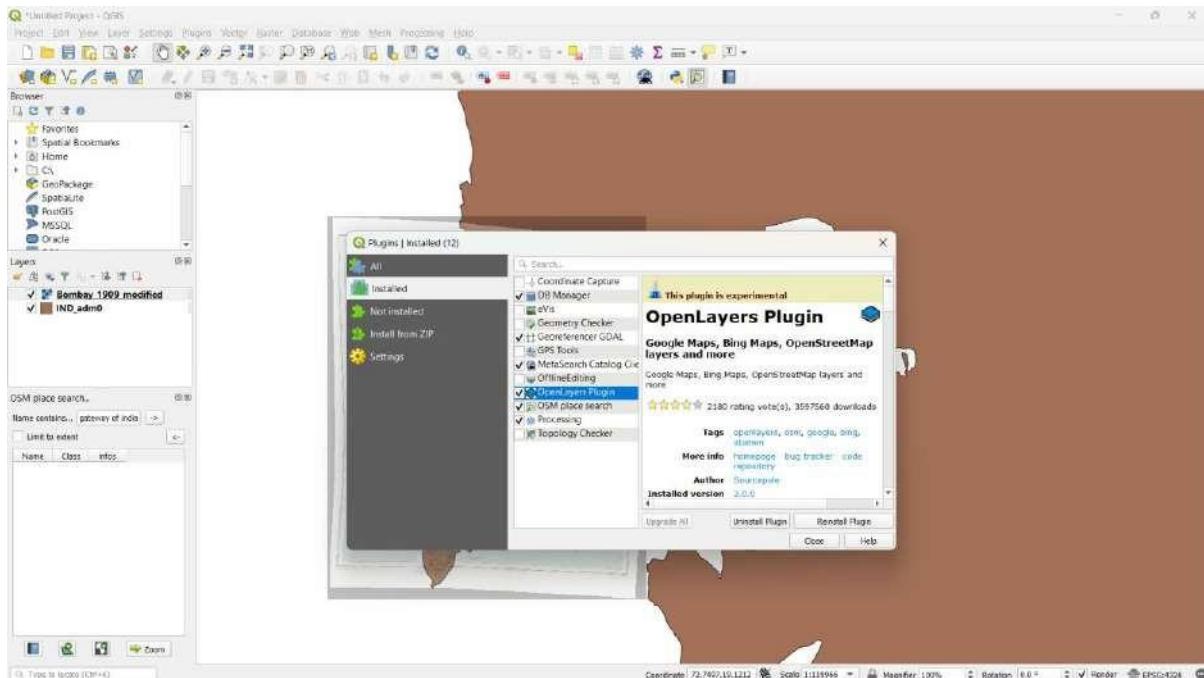
Step 8 – Now click the start georeferencing button.



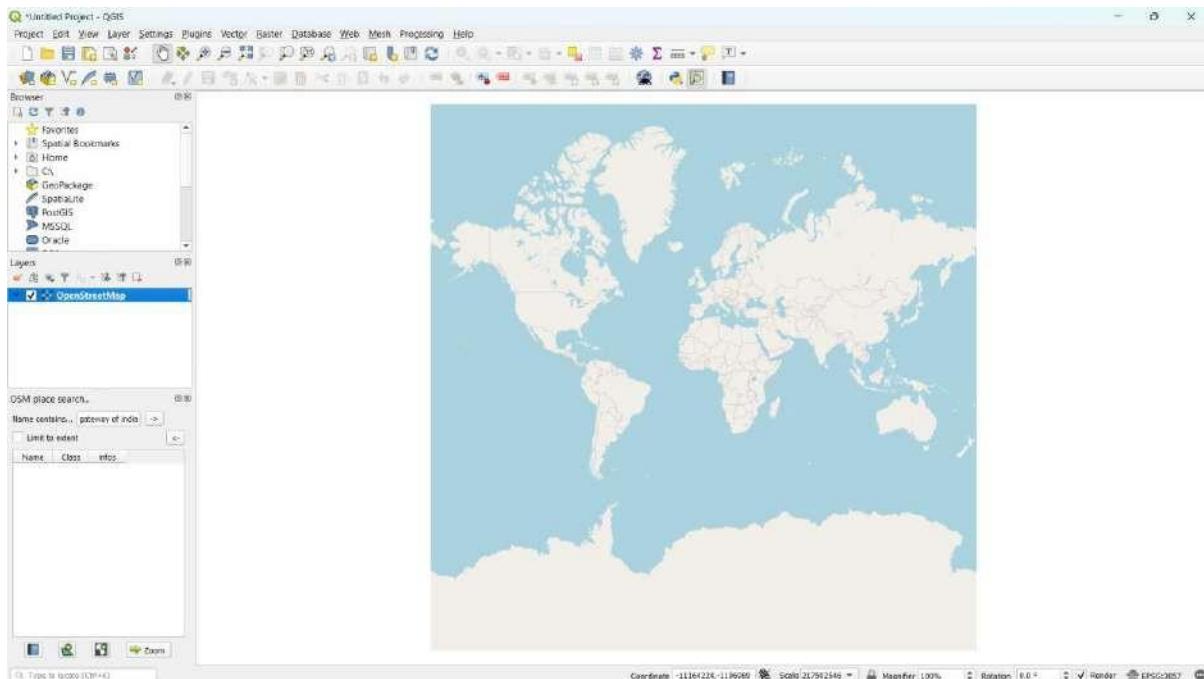
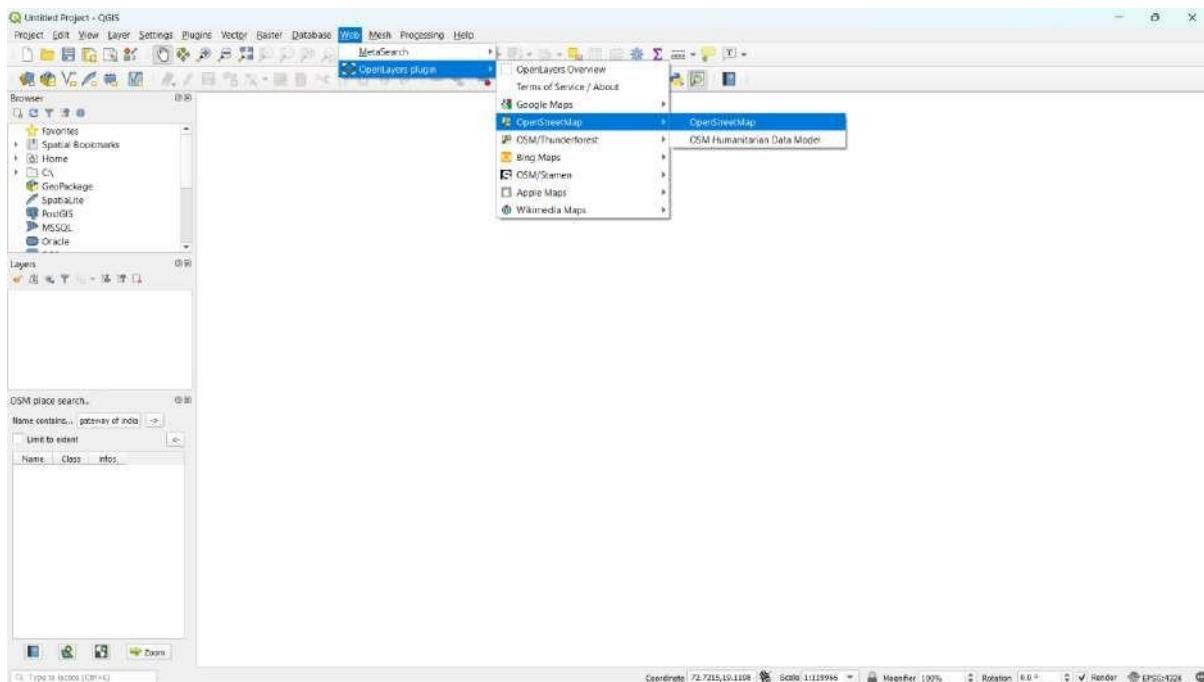
Step 9 – You can reduce the transparency from layer properties to see if georeferencing is done properly.



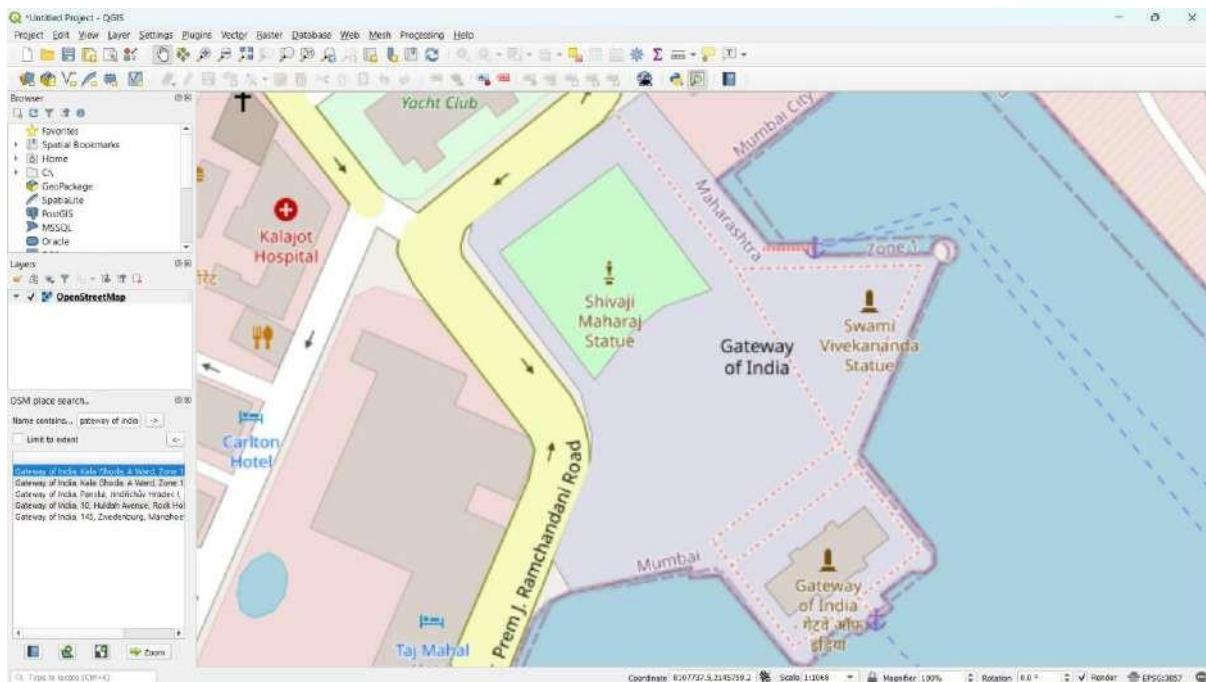
Step 10 – Now open a new project. And install the open layers and OSM place search plugin plugin.



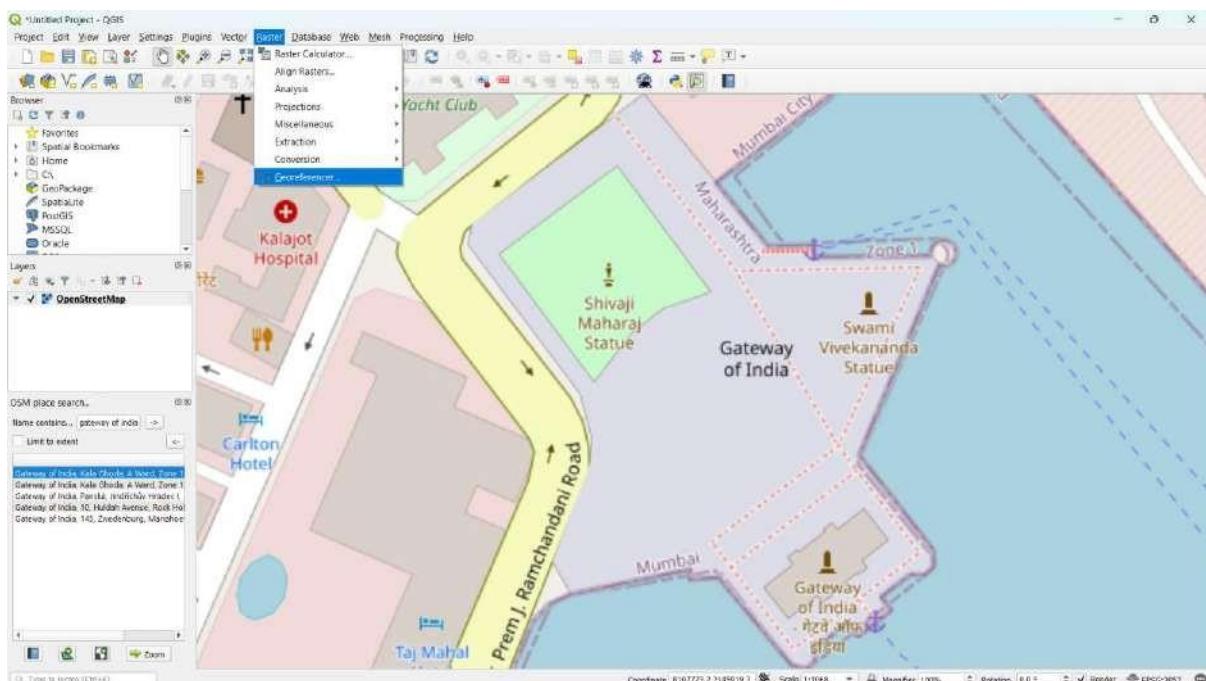
Step 11 – Web > OpenLayers plugin > OpenStreetMap.



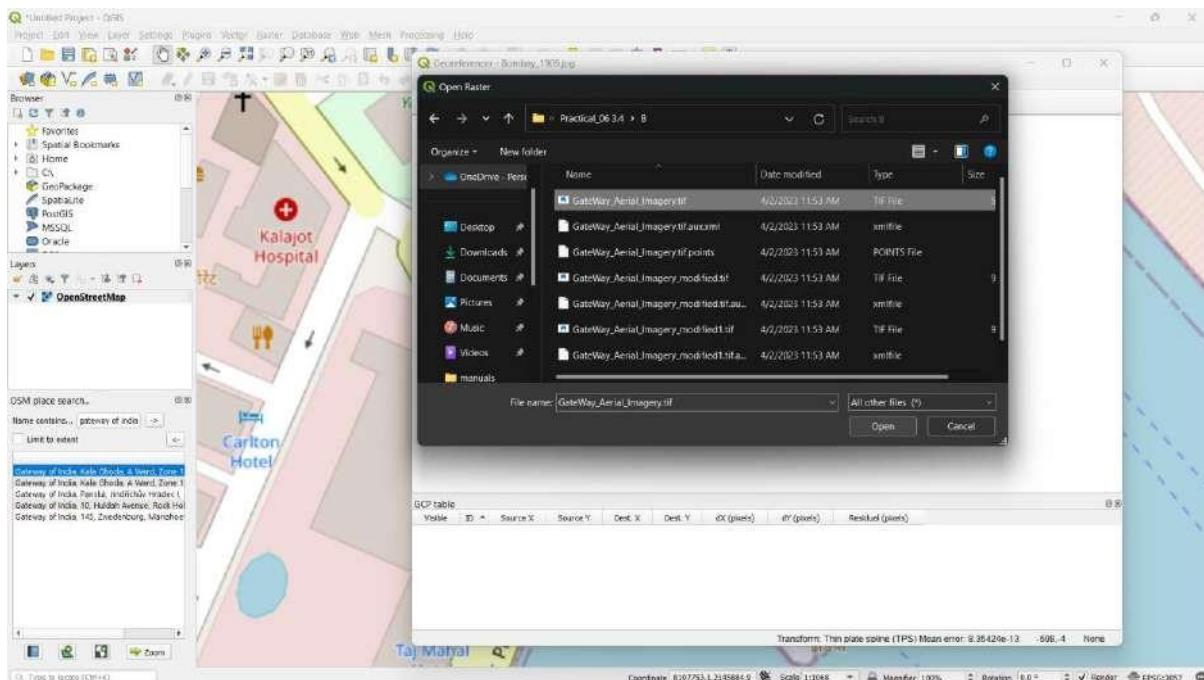
Step 12 – Find the gateway of India using OSM place search.



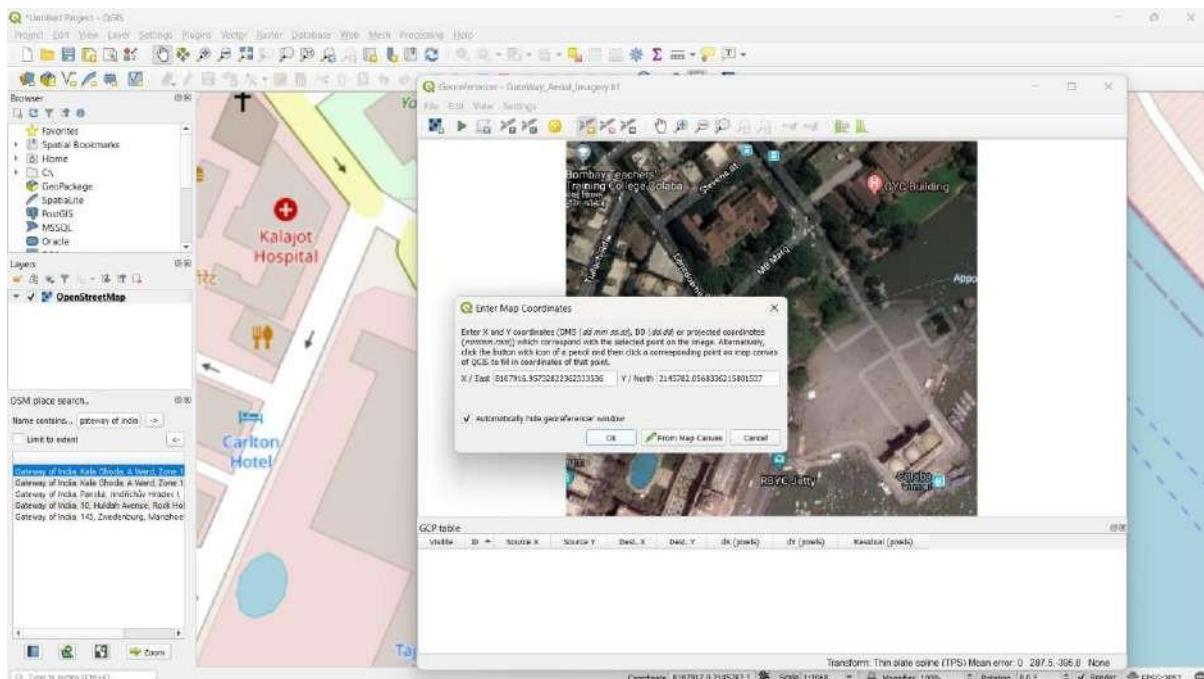
Step 13 – Raster > Georeferencer.



Step 14 – Using the open raster tool open the following .tif file.

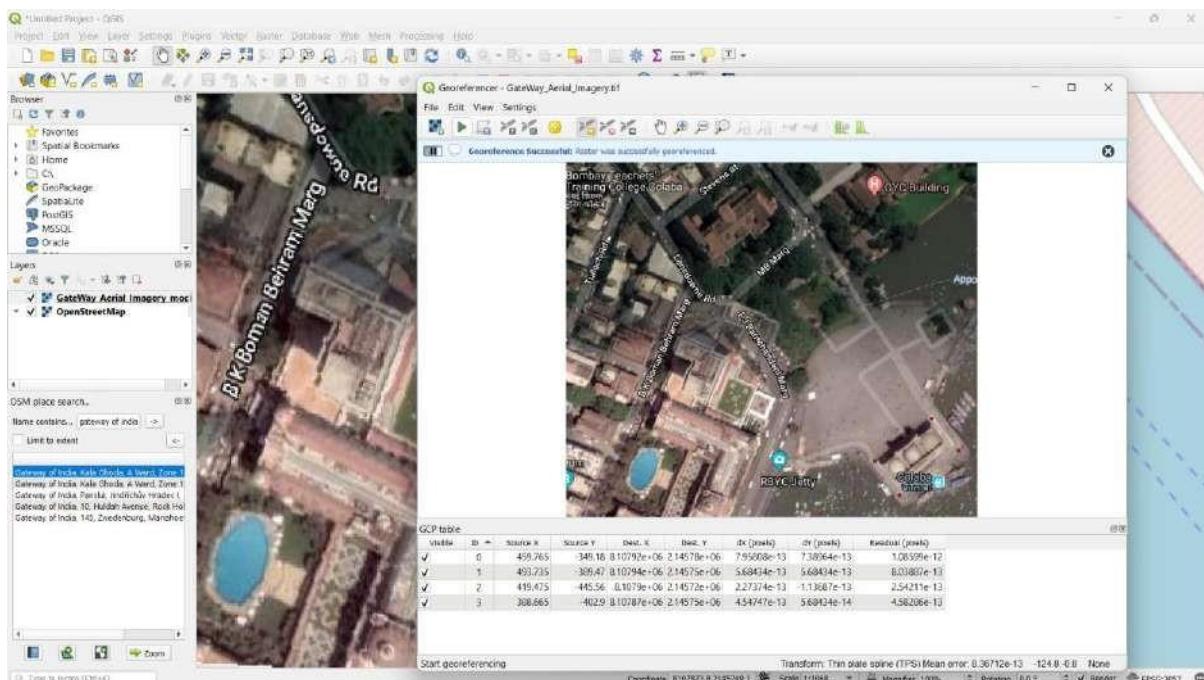
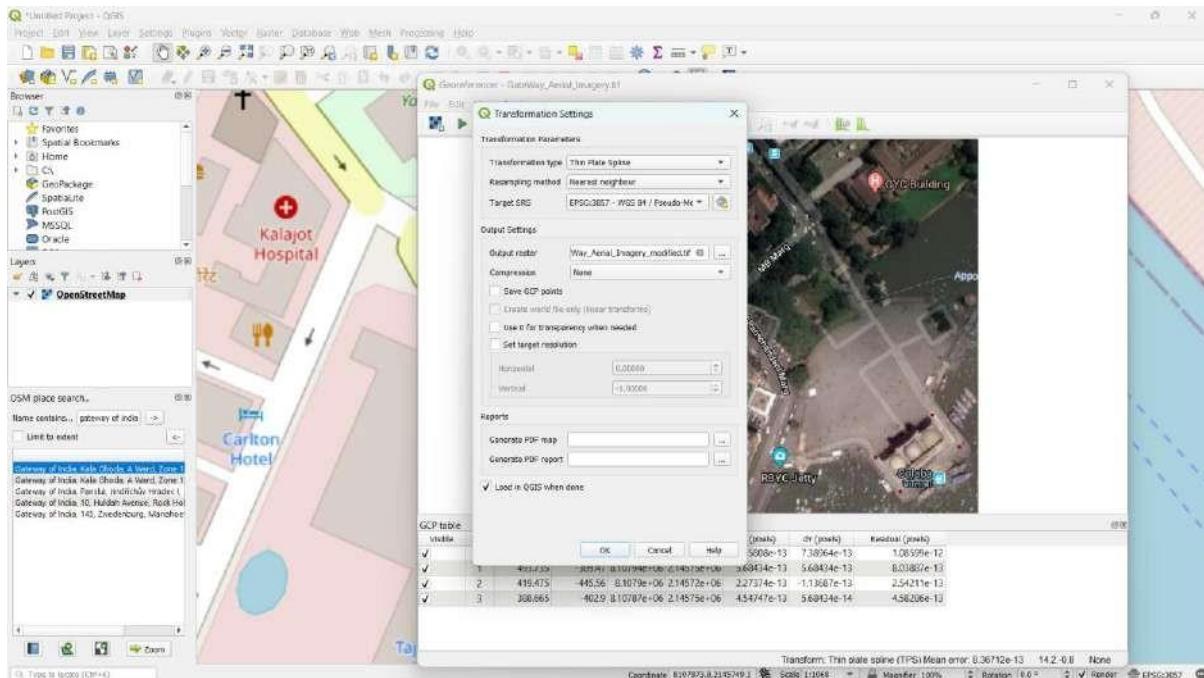


Step 15 – Add points as done before.

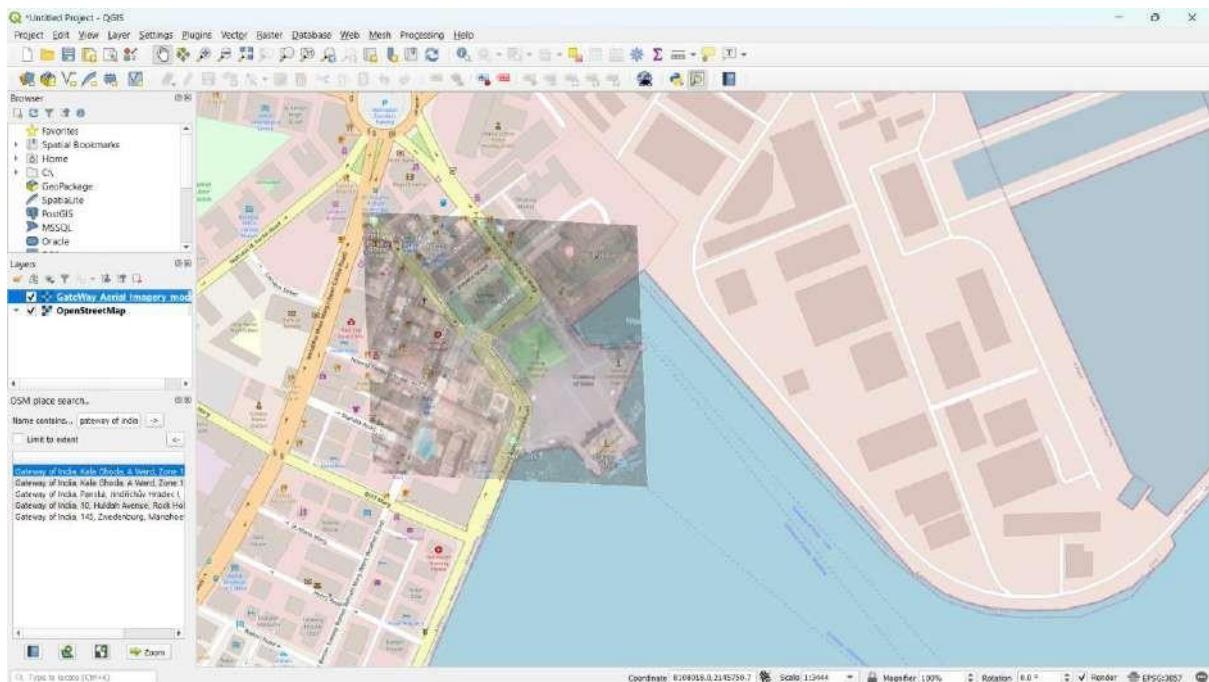


Step 16 – Set the following parameters in Transformation settings and then click run

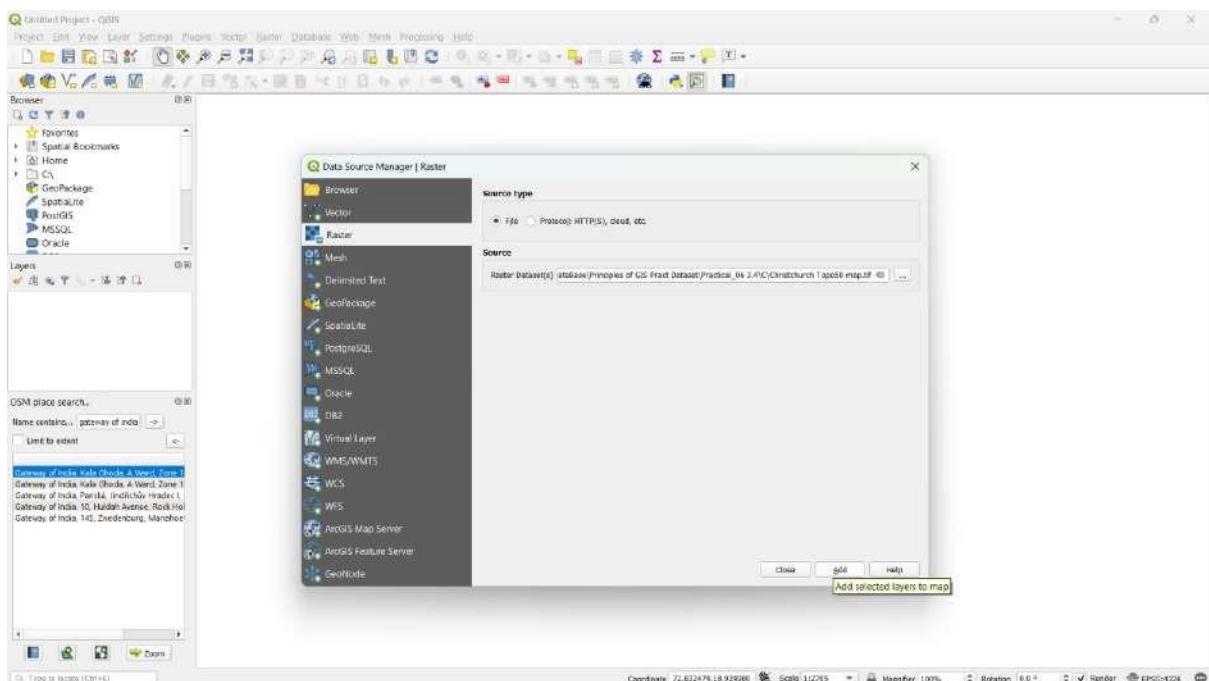
Georeferencing.

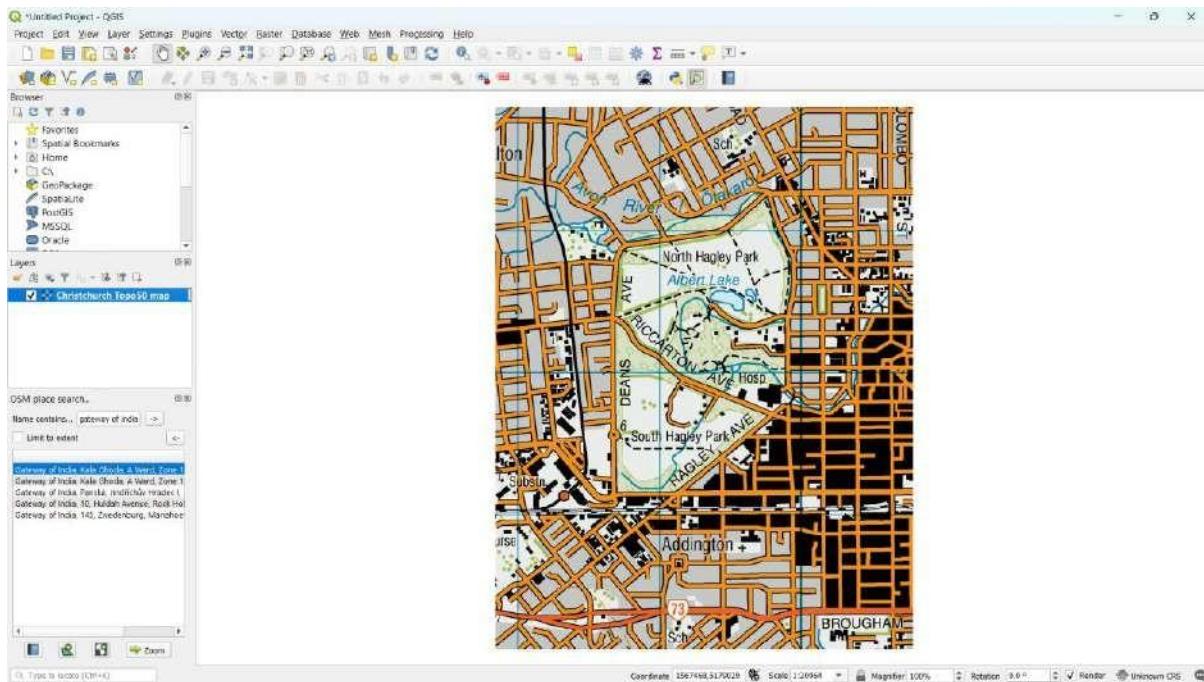


You can reduce the transparency to make sure that georeferencing is done properly.

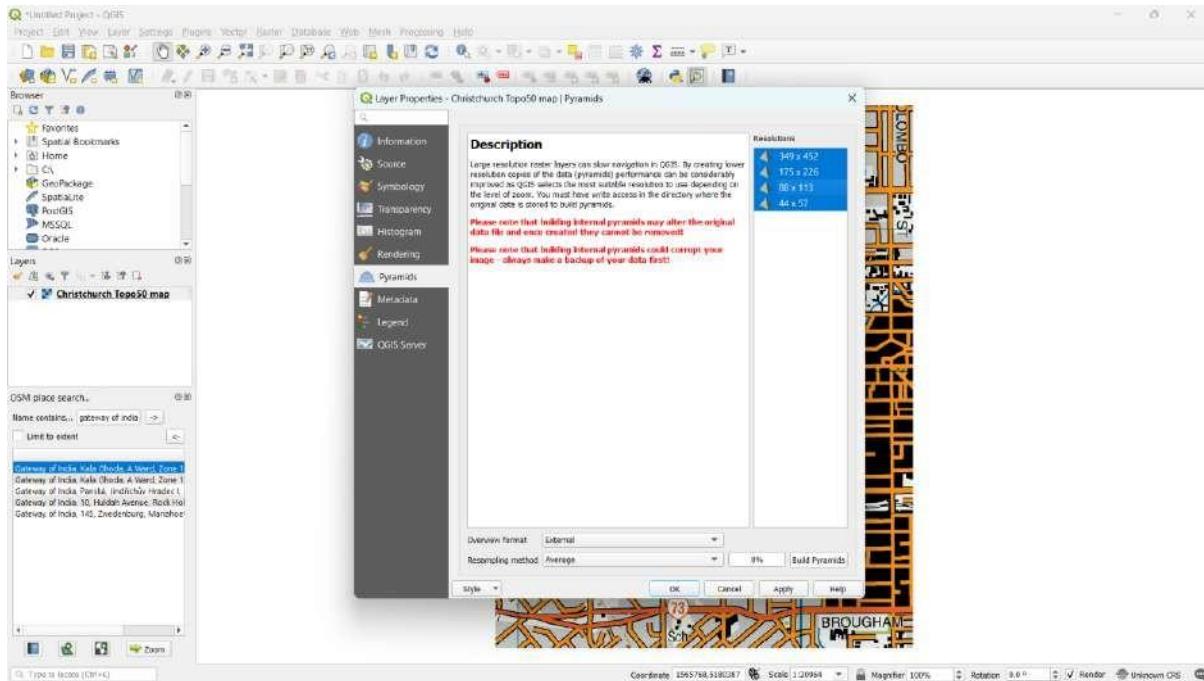


Step 17 – Now open a new project. Layer > Add new layer > Add Raster Layer. Select the following .tif file and hit add.

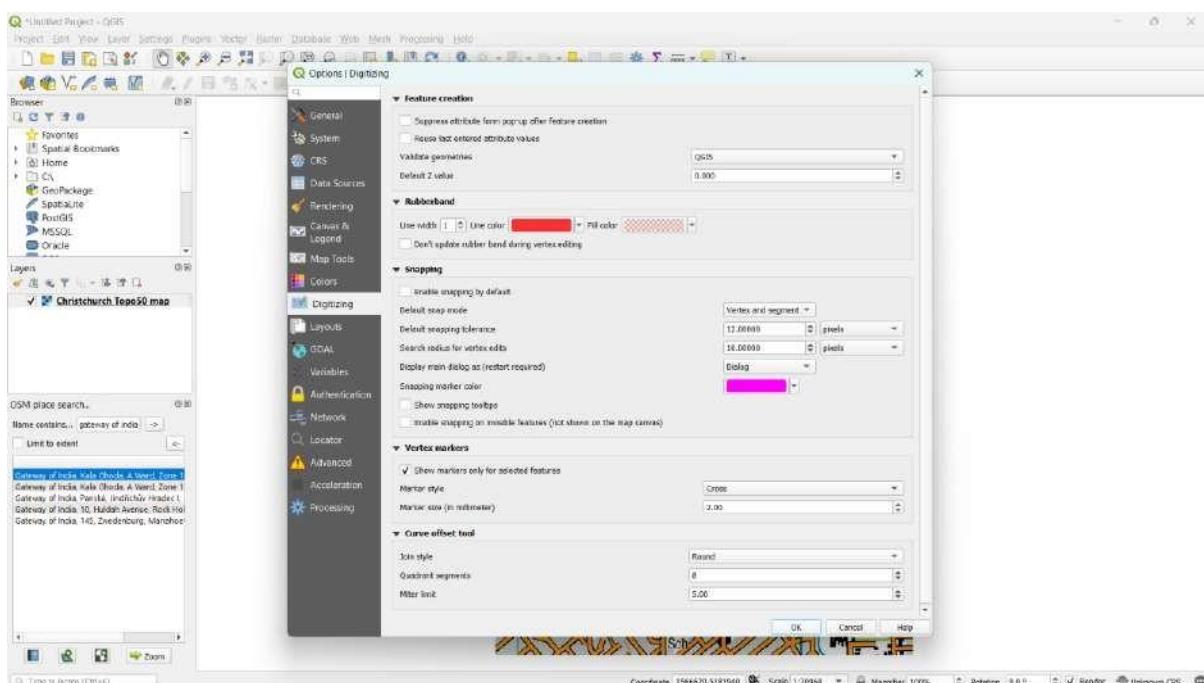
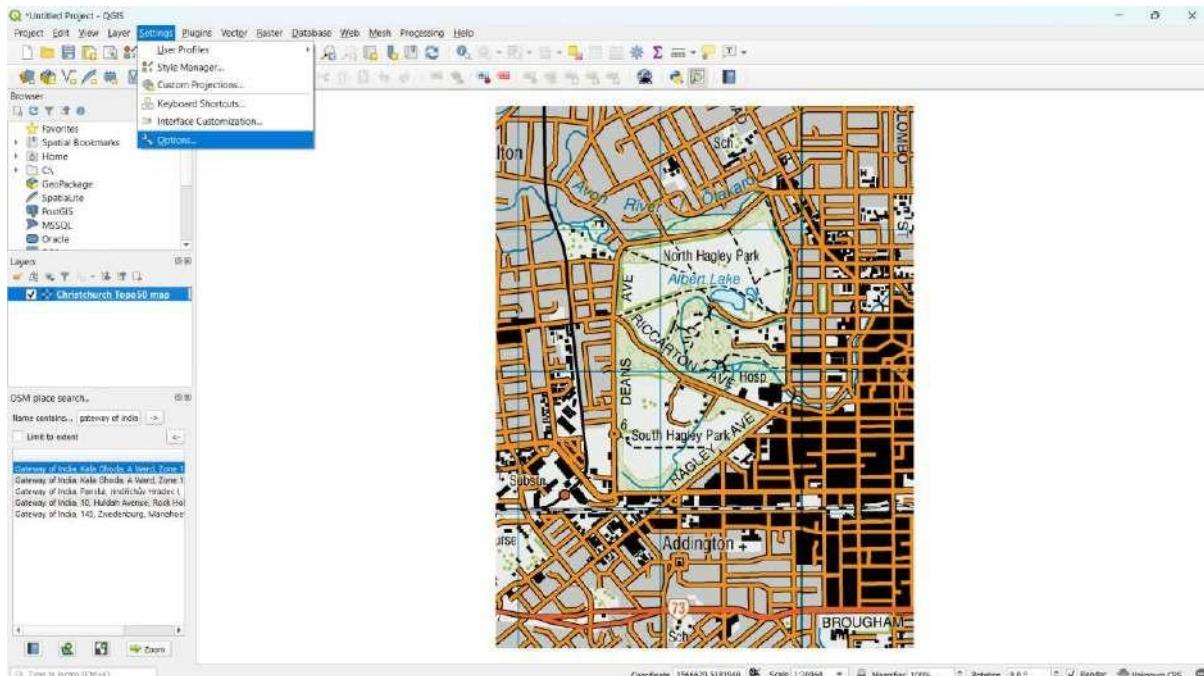




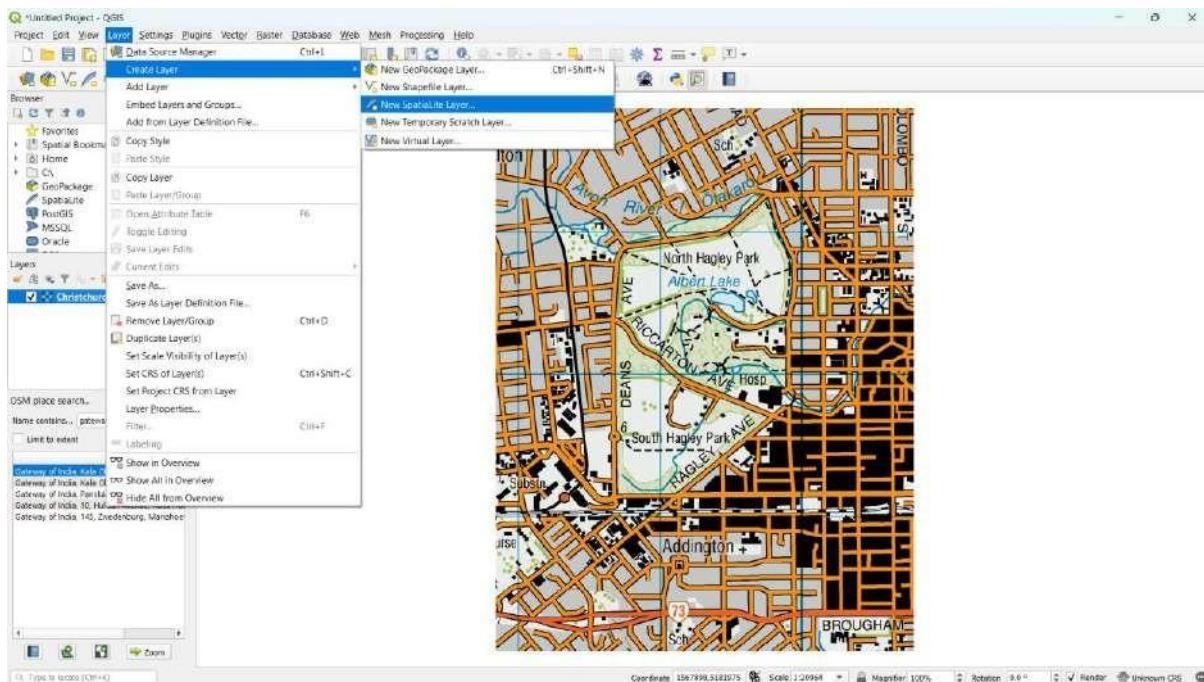
Step 18 – Open layer properties go to the pyramids tab, select all the pyramids and click build pyramids.



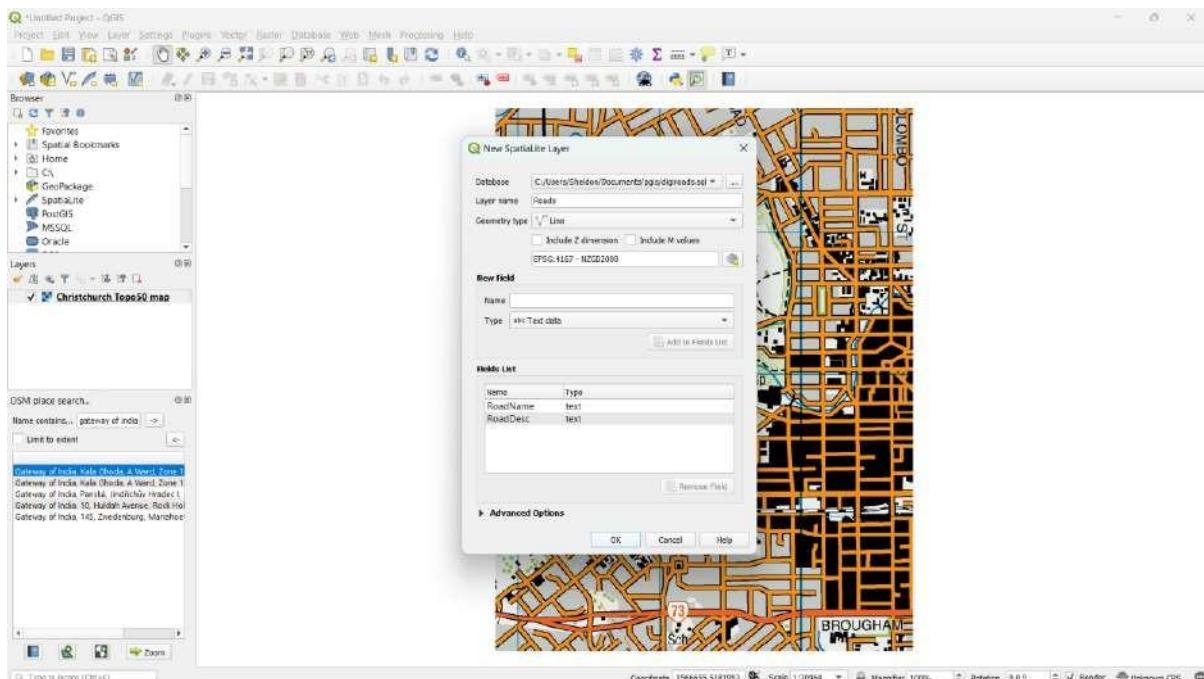
Step 19 – Settings > Option. Go to the digitizing tab and set the following parameters and click OK.



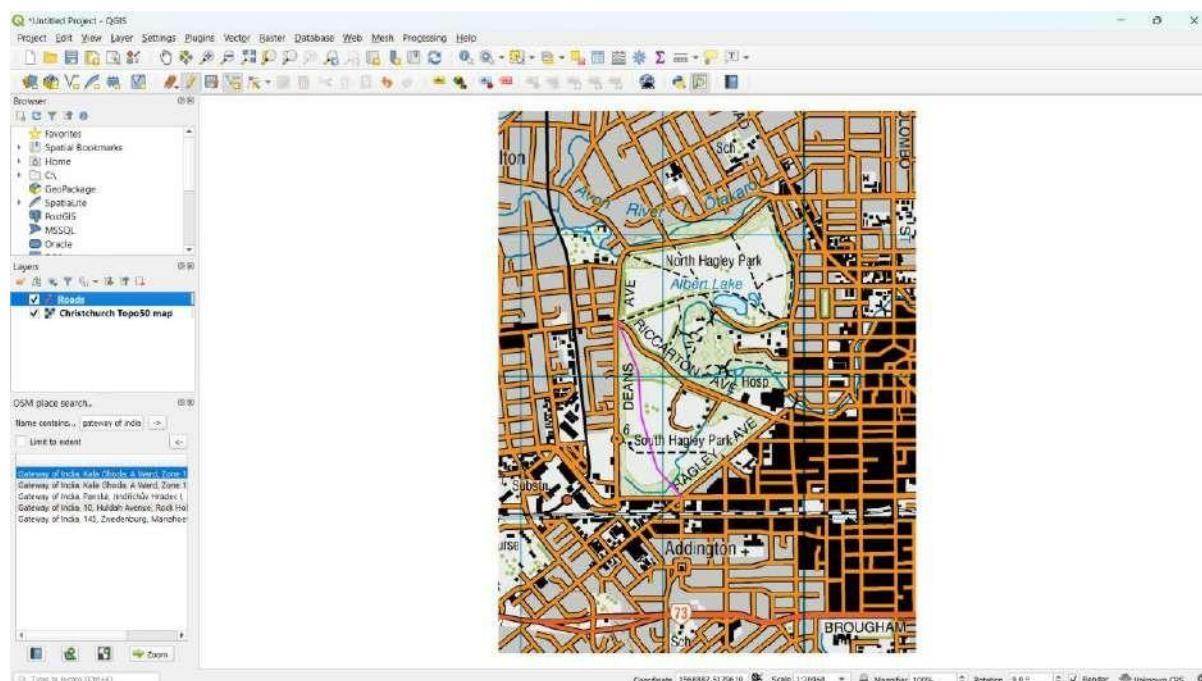
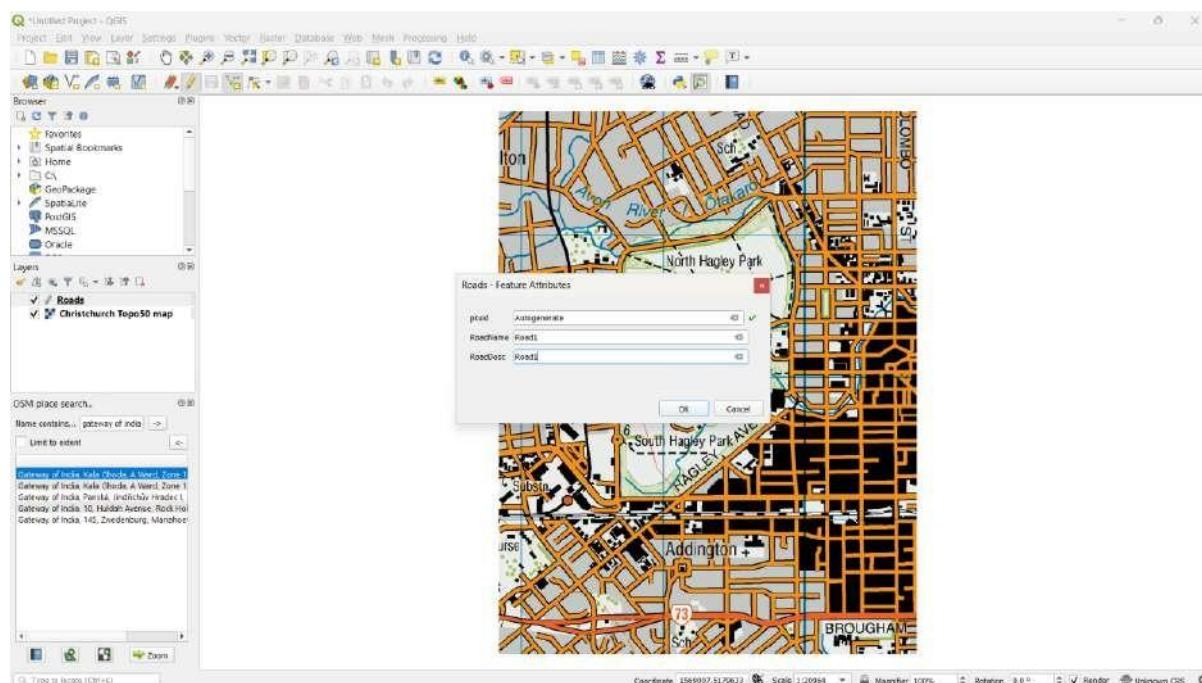
Step 20 – Layers > New Layer > New SpatialLite layer.



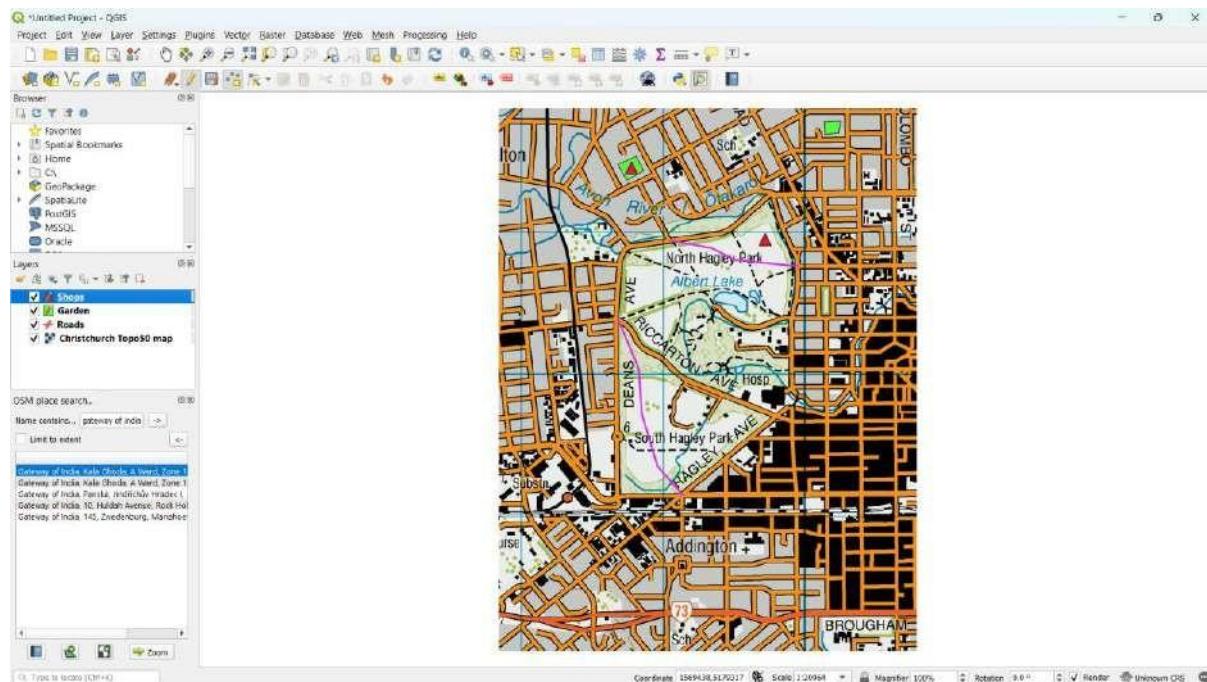
Step 21 – Set the following parameters and click OK.



Step 22 – Add roads as you like and change their properties.



Similarly you can add polygons, points, etc and even change their properties.

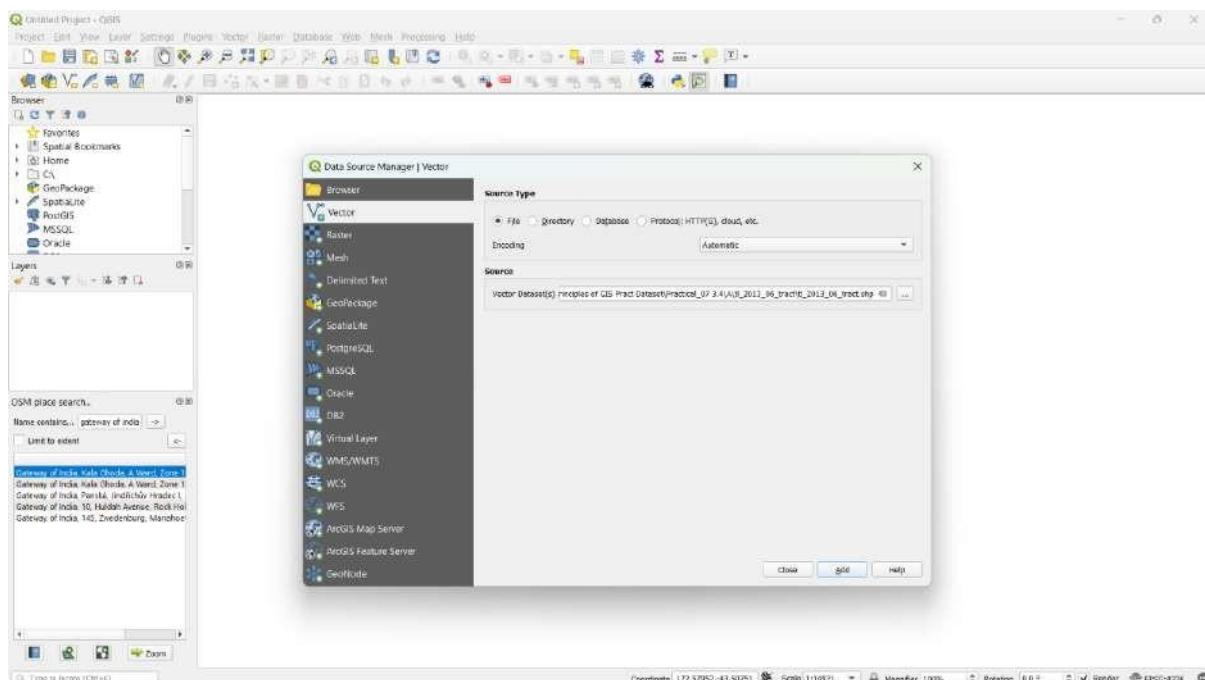


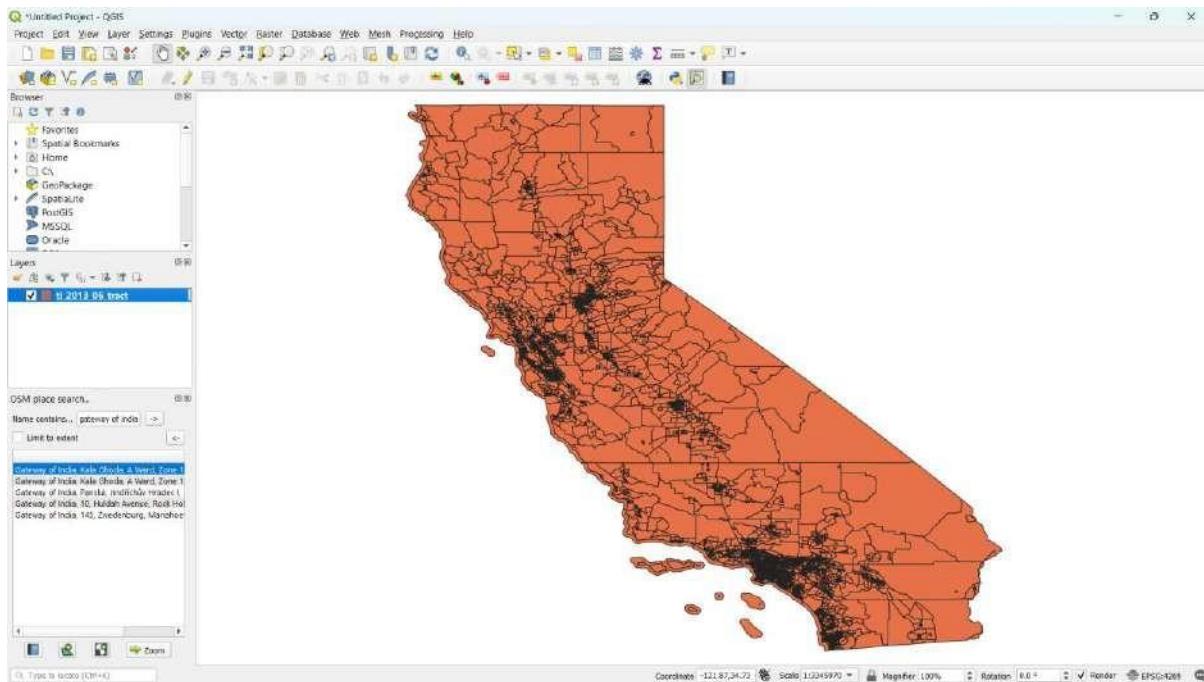
PRACTICAL – 7

Aim: Managing Data Tables and Saptial data Sets: Table joins, spatial joins, points in polygon analysis, performing spatial queries.

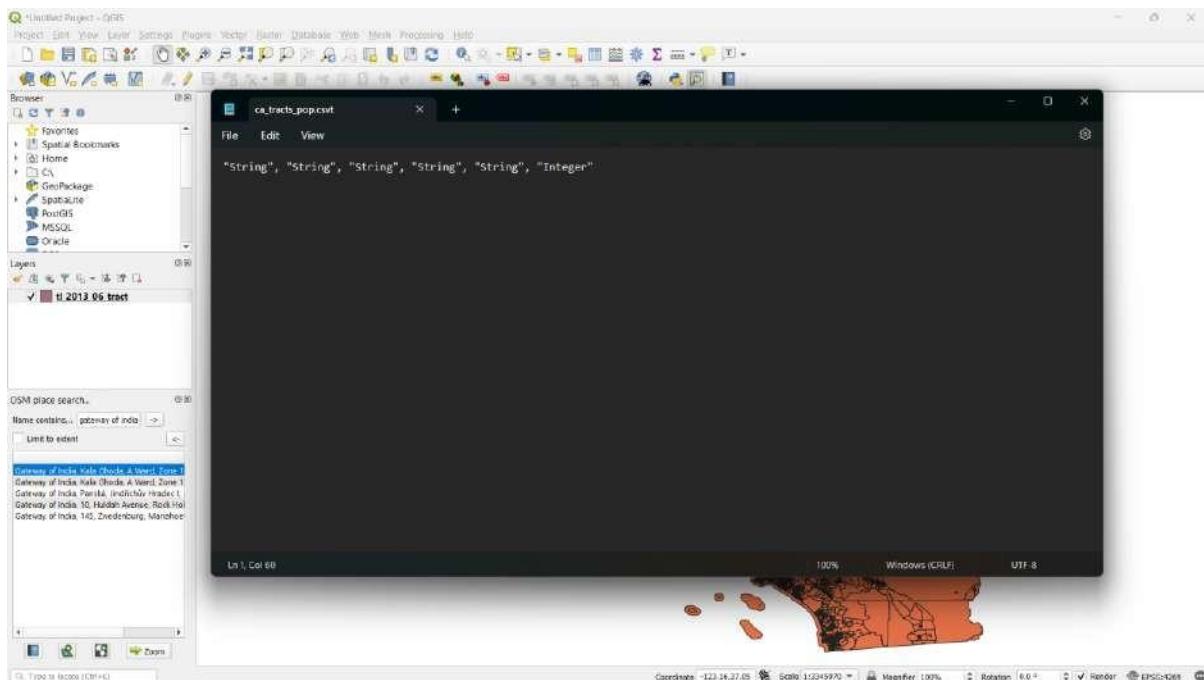
Steps:

Step 1 – Layer > Add Layer > Add Vector Layer. Select the following layer and hit add.

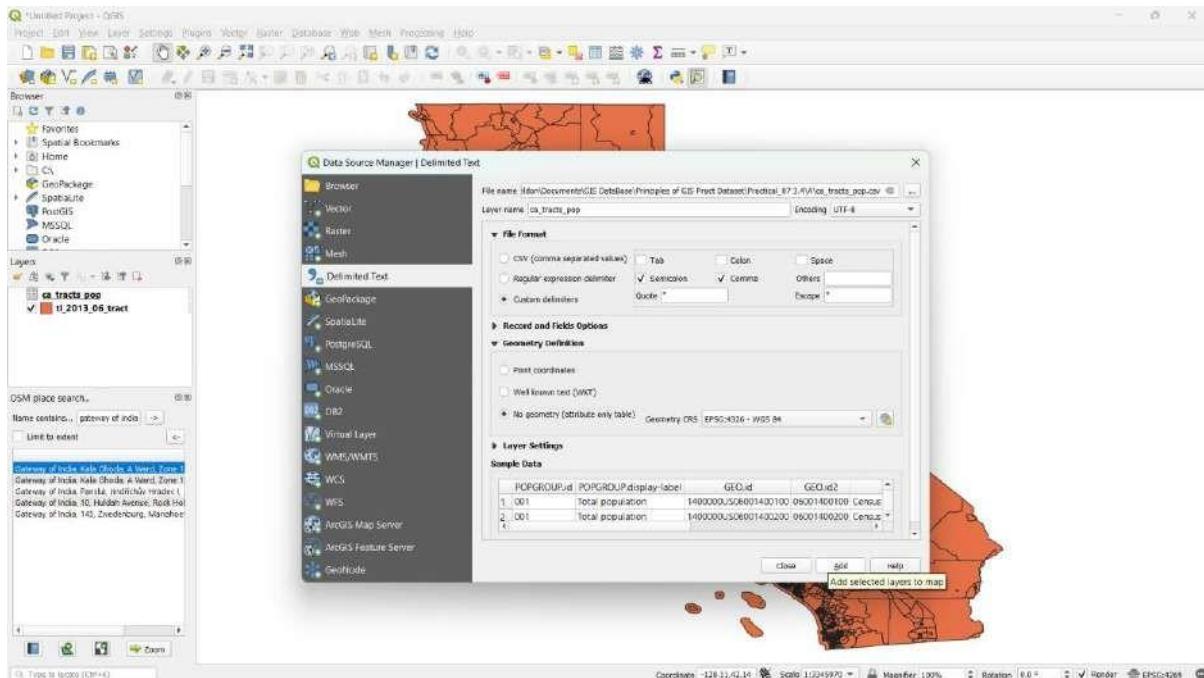




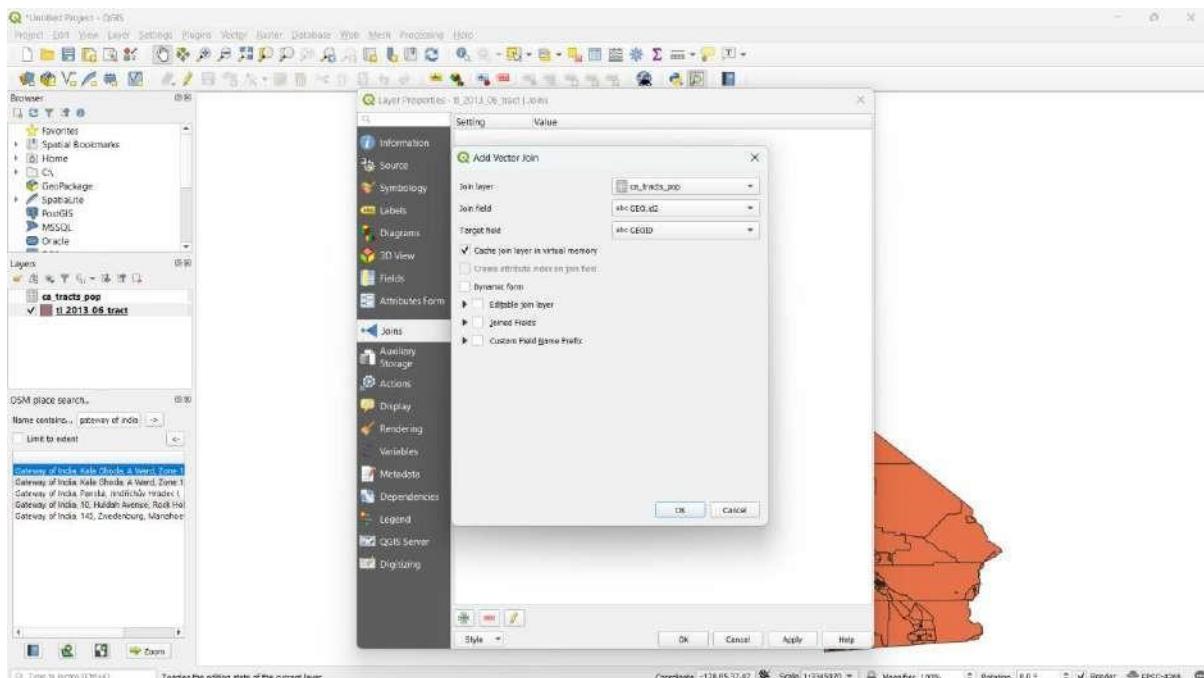
Step 2 – Open Notepad and create the following file.



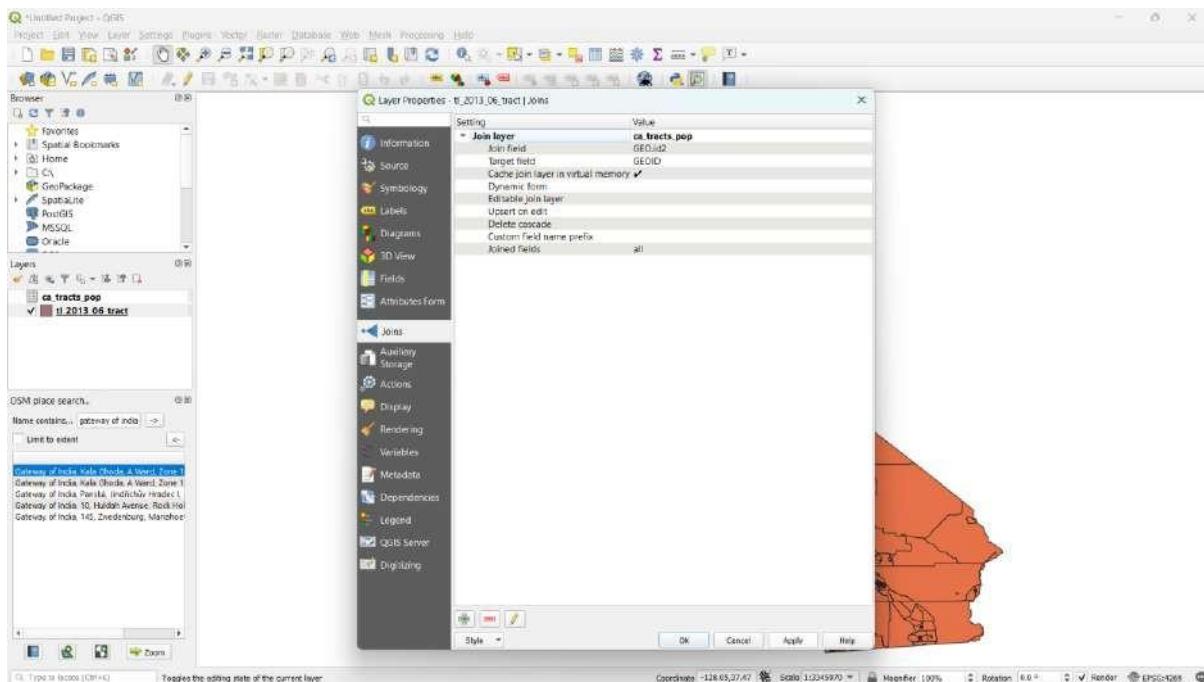
Step 3 – Layer > Add Layer > Add Delimited Text Layer. Set the following attributes and hit add.



Step 4 – Open the properties of the first layer and click on the Joins menu. There set the following parameters.



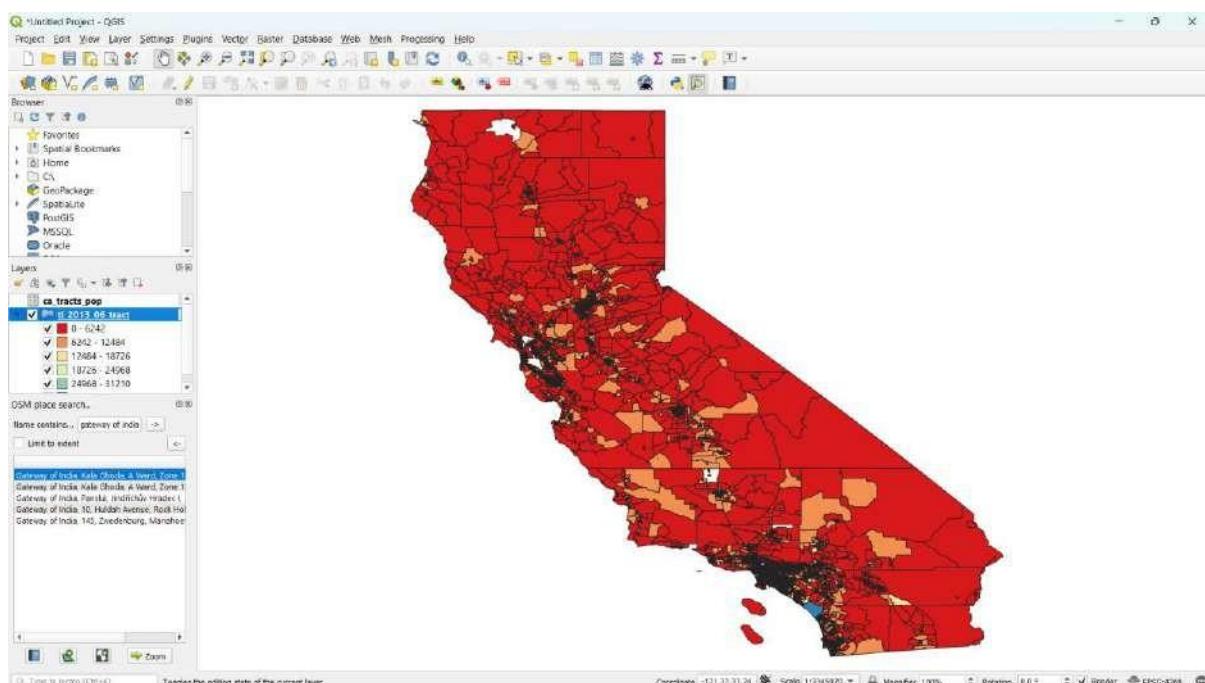
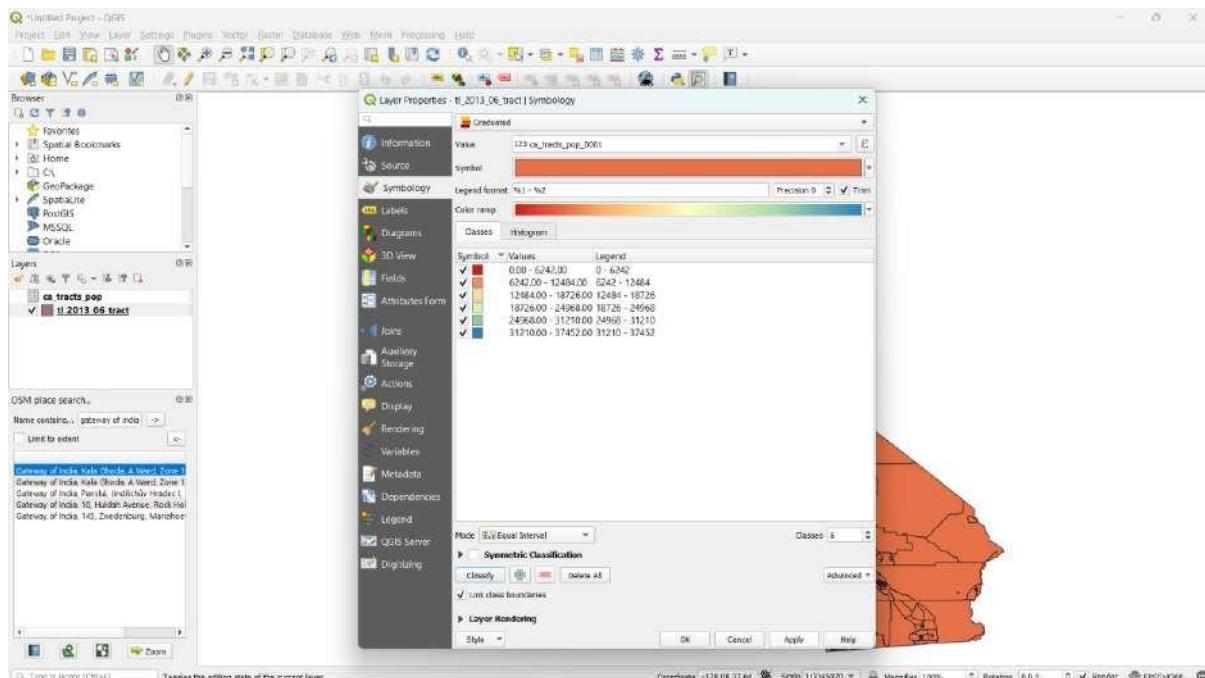
Step 5 – Finally click Apply.



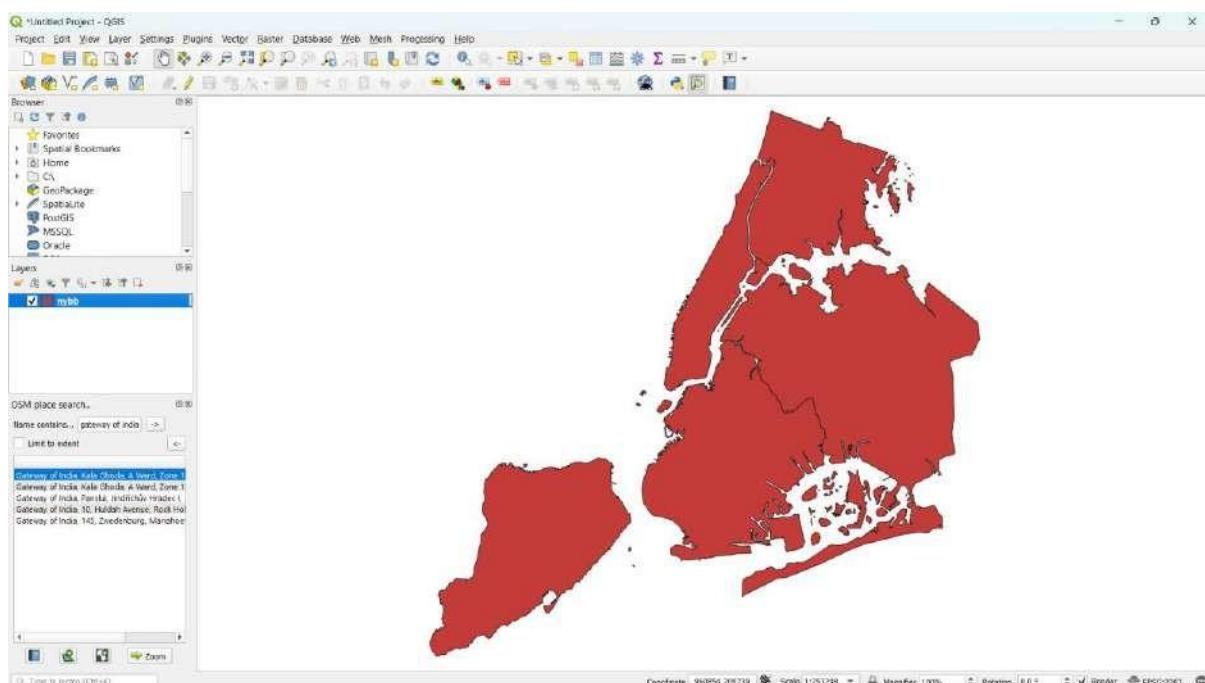
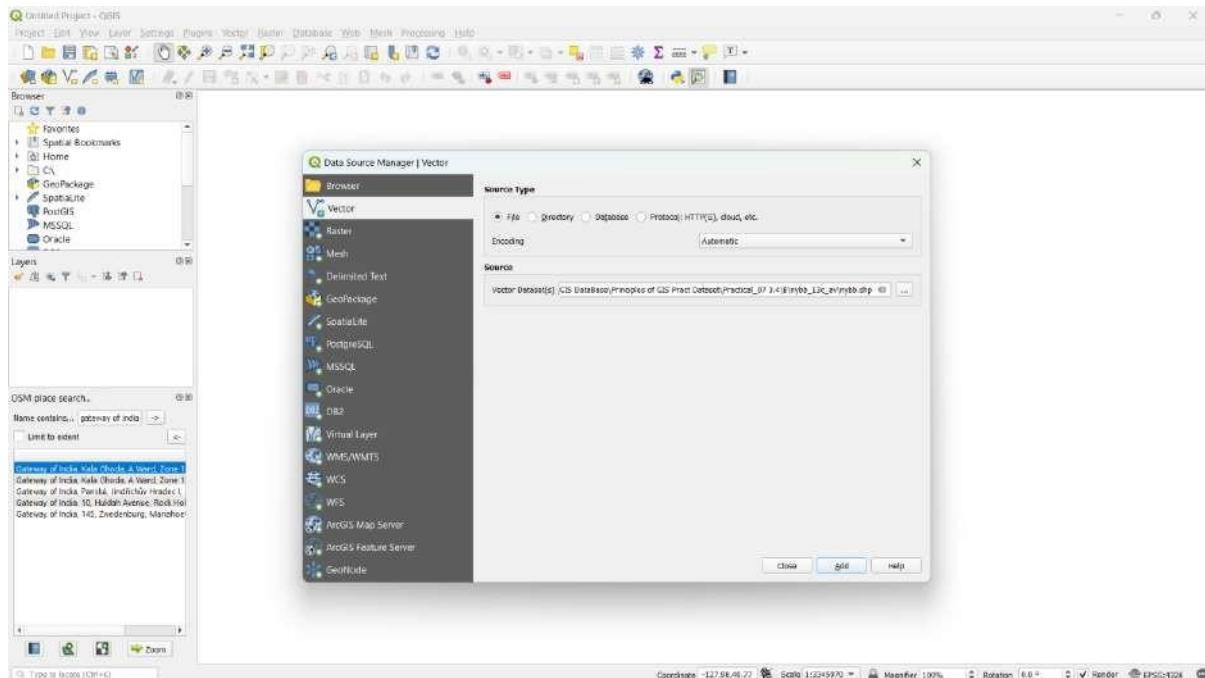
If you want to check if the join worked open the attribute table of the first layer.

	STATEFP	COUNTYFP	TRACTCE	GEOID	NAME	NAMELSAD	MTFCC	FUNCSTAT	ALAND	AWATER	INTPTLAT	INTPTLON	acres.pop_POPGRD.xip_POPGROUPNAME.pop_GEOID
1	06	073	017053	06073017053	17053	Census Tract 17...	GS020	S	5151589	0 +33.0012075	-117.0315278	001	Total population 1400000/50607
2	06	073	017813	06073017813	17813	Census Tract 17...	GS020	S	4925274	2140970 -32.9297194	-117.3202158	001	Total population 1400000/50607
3	06	073	990100	06073990100	9901	Census Tract 9901	GS020	S	0	656401783 -32.9297174	-117.32927174	NULL	NULL
4	06	013	355117	06061355117	355117	Census Tract 35...	GS020	S	7670552	0 +31.7460385	-121.8966919	001	Total population 1400000/50601
5	06	005	50329	0606050329	50329	Census Tract 50...	GS020	S	1173816	0 +37.3115066	-121.7792597	001	Total population 1400000/50608
6	06	001	451703	06060451703	451703	Census Tract 45...	GS020	S	1704816	0 +37.6672948	-121.6009991	001	Total population 1400000/50600
7	06	001	990000	06060199000	9900	Census Tract 9900	GS020	S	0	139280202 +37.6839579	-122.2281492	NULL	NULL
8	06	005	511916	06060511916	511916	Census Tract 51...	GS020	S	1034523	0 +37.2367224	-121.6956686	001	Total population 1400000/50608
9	06	001	442302	06060442302	442302	Census Tract 44...	GS020	S	963013	0 +37.5362999	-121.9600524	001	Total population 1400000/50600
10	06	005	512032	06060512032	512032	Census Tract 51...	GS020	S	2916448	0 +37.2327886	-121.7823587	001	Total population 1400000/50608
11	06	005	512033	06060512033	512033	Census Tract 51...	GS020	S	3946021	0 +37.2389613	-121.7950503	001	Total population 1400000/50608
12	06	001	407102	06060407102	407102	Census Tract 40...	GS020	S	560863	0 +37.7807761	-122.210385	001	Total population 1400000/50600
13	06	001	432561	06060432561	432561	Census Tract 43...	GS020	S	1861846	0 +37.7167158	-122.1661446	001	Total population 1400000/50600
14	06	001	408602	06060408602	408602	Census Tract 40...	GS020	S	414724	0 +37.7964782	-122.2143072	001	Total population 1400000/50600
15	06	001	407101	06060407101	407101	Census Tract 40...	GS020	S	370838	0 +37.7831287	-122.2143966	001	Total population 1400000/50600
16	06	005	045698	0606045698	045698	Census Tract 45...	GS020	S	9105477	0 +33.647995	-116.1520834	001	Total population 1400000/50605
17	06	005	046900	0606046900	469	Census Tract 469	GS020	S	9860037868	266683 -33.7785595	-115.3607419	001	Total population 1400000/50606
18	06	005	045222	0606045222	45222	Census Tract 45...	GS020	S	7873862	0 +33.7239739	-116.1809843	001	Total population 1400000/50605
19	06	005	045228	0606045228	45228	Census Tract 45...	GS020	S	107416076	0 +33.8820117	-116.2439647	001	Total population 1400000/50605
20	06	037	192001	06060192001	192001	Census Tract 19...	GS020	S	590779	0 +45.0852771	-118.3472967	001	Total population 1400000/50603
21	06	037	211122	06060211122	211122	Census Tract 21...	GS020	S	365552	0 +40.252794	-118.2892214	001	Total population 1400000/50603
22	06	037	123902	06060123902	123902	Census Tract 12...	GS020	S	964412	0 +41.1736783	-118.3922286	001	Total population 1400000/50603
23	06	037	134522	06060134522	134522	Census Tract 13...	GS020	S	515306	0 +34.2046744	-118.6017183	001	Total population 1400000/50603
24	06	059	062645	0606062645	62645	Census Tract 62...	GS020	S	526308	219626 +33.6147651	-117.8350605	001	Total population 1400000/50605
25	06	059	088702	0606088702	88702	Census Tract 88...	GS020	S	1113868	0 +33.7703605	-117.9579748	001	Total population 1400000/50605
26	06	037	104022	06060104022	104022	Census Tract 10...	GS020	S	605348	0 +34.2452696	-118.4799372	001	Total population 1400000/50603

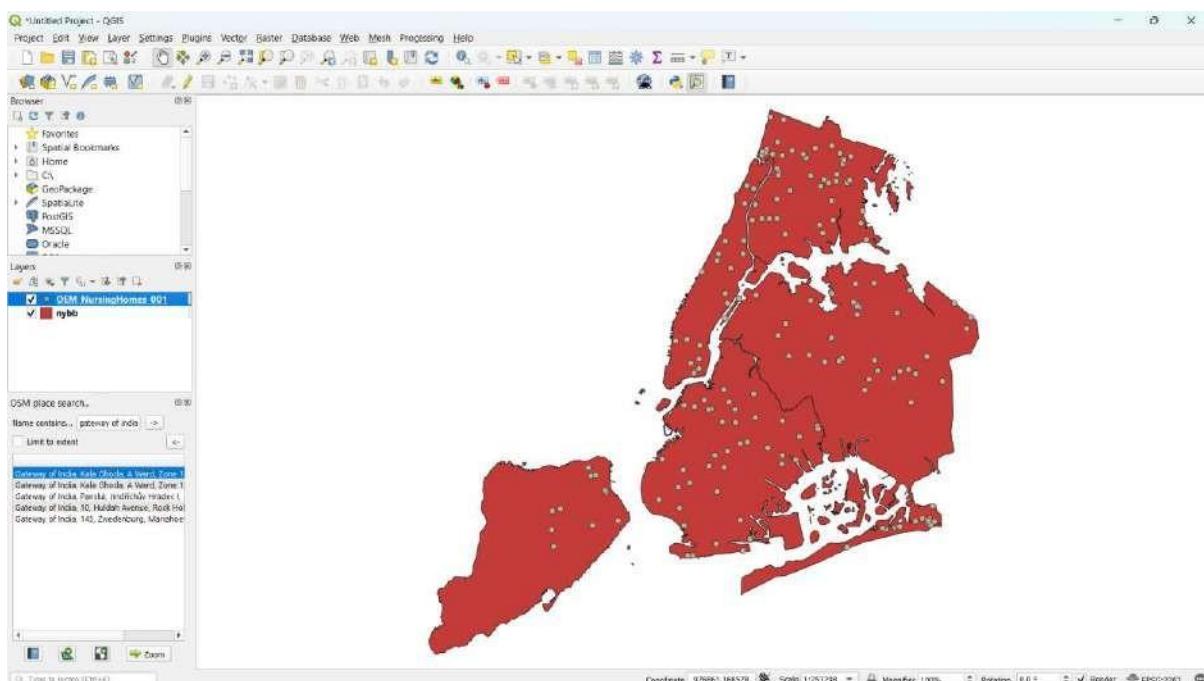
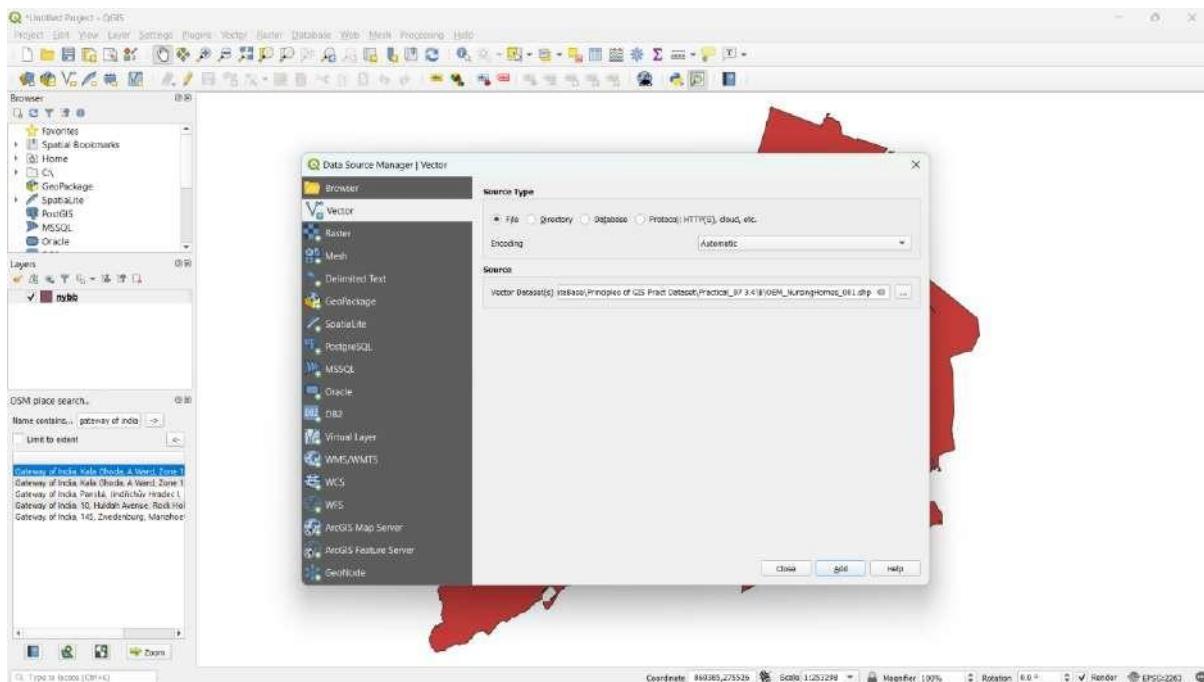
Step 6 – Now open the properties of the first layer go to the symbology menu and set the following parameters then hit apply.



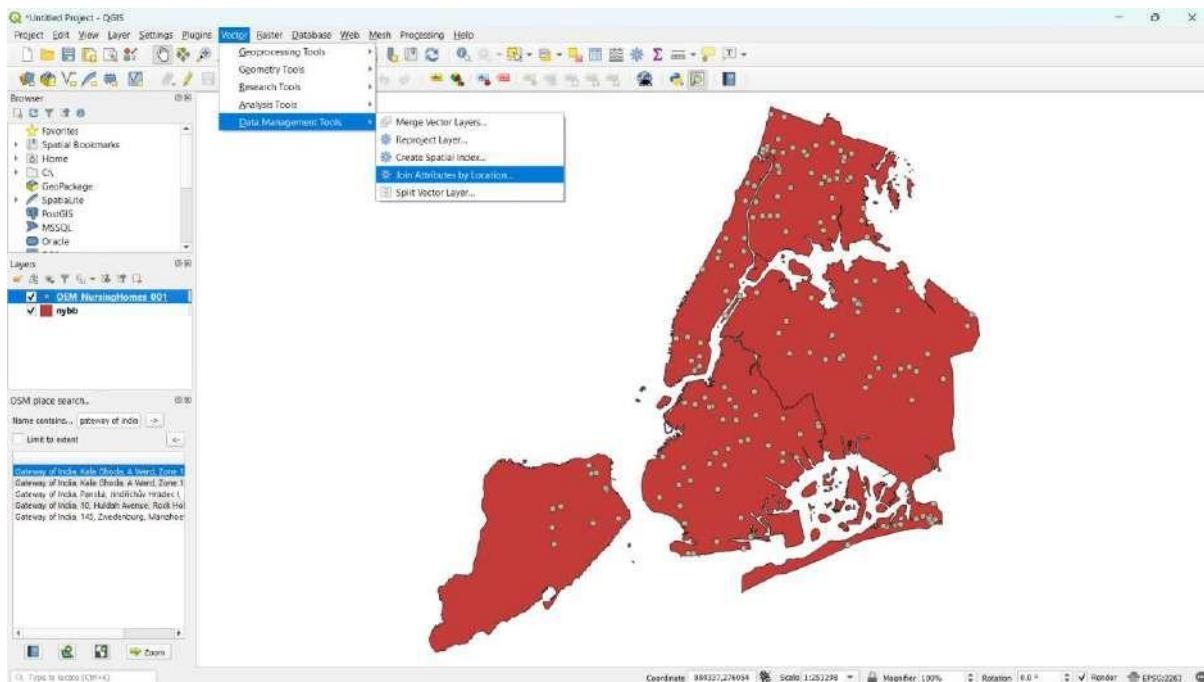
Step 7 – Now open a new project. Layer > Add Layer > Add Vector Layer. Select the following file and click add.



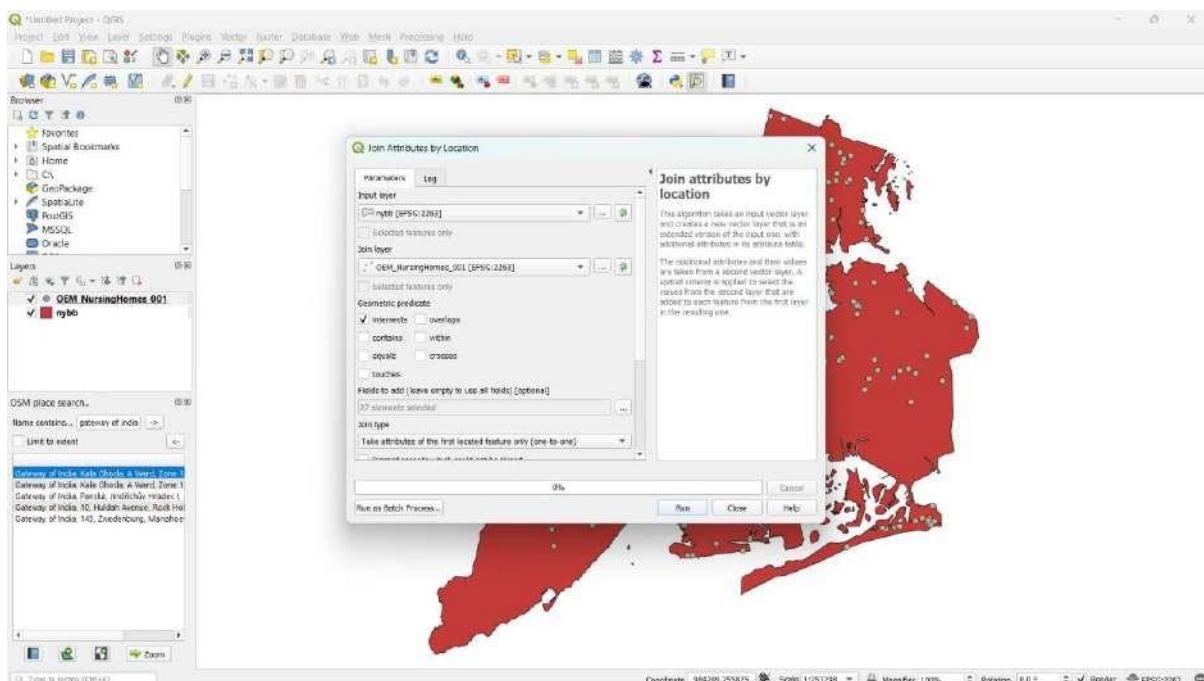
Step 8 – Add another .shp file the same way.



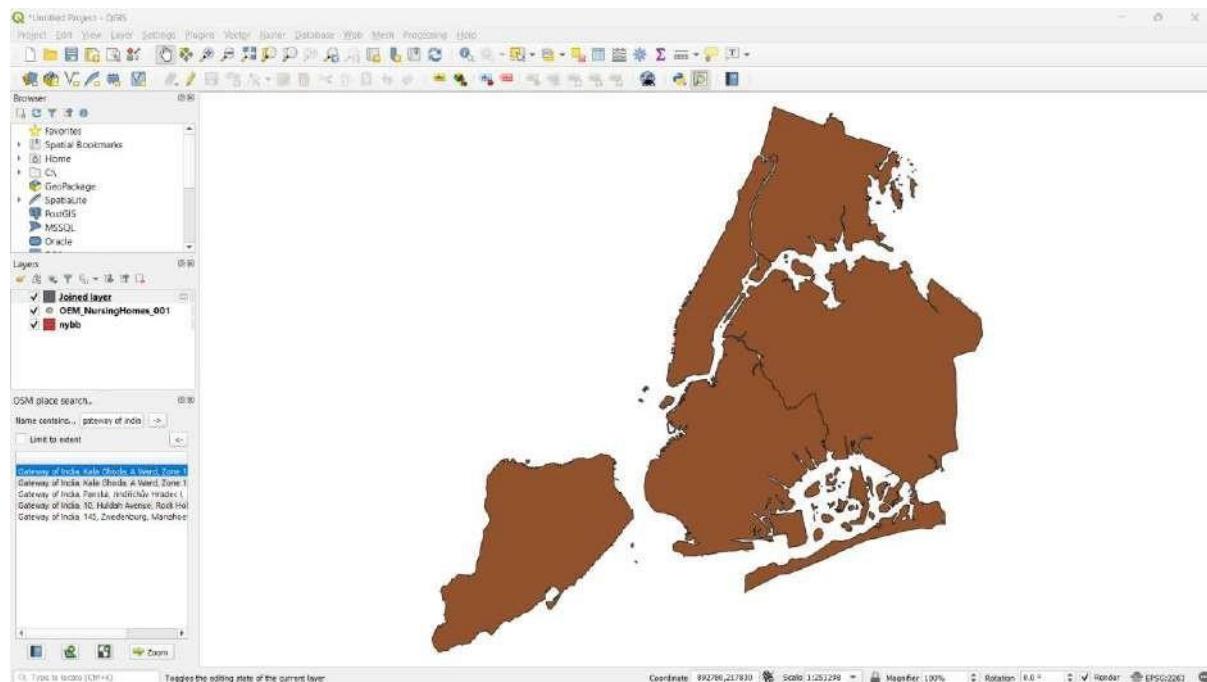
Step 9 – Vector > Data Management Tools > Join Attributes by Location.



Step 10 – Set the following parameters and hit run.



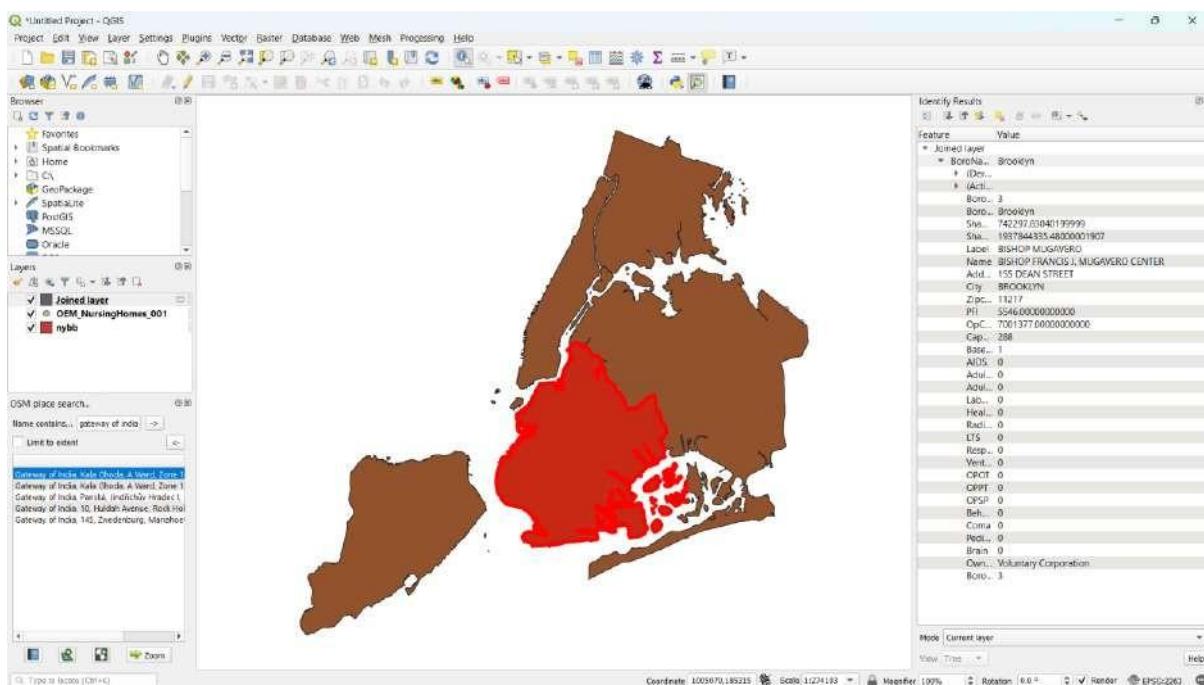
A new layer is created.



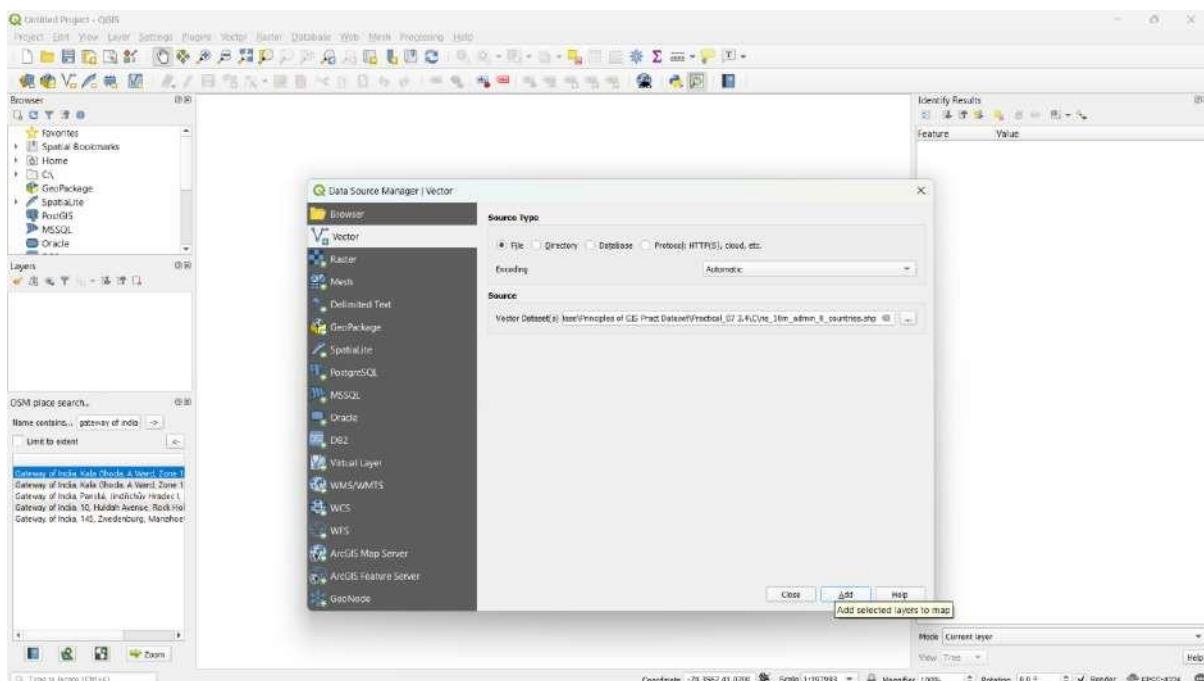
You can open its attribute table to verify.

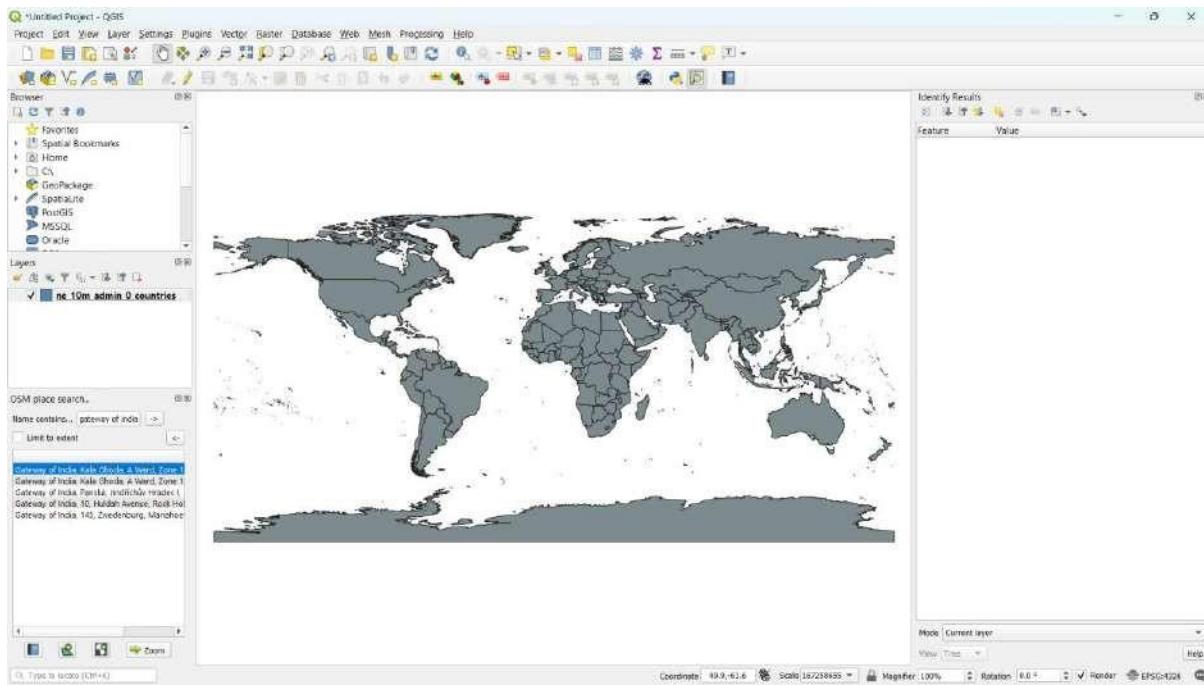
	BoroCode	BoroName	Shape_Leng	Shape_Area	Label	Name	Address	City	Zipcode	PFI	DpCert	Capacity	Baseline	AIDS	AdultDay
1	1	Manhattan	257176.132580...	636297842.672...	ROBERT MAPPL...	ROBERT MAPPL...	227 EAST 17TH...	NEW YORK	10003	4807.00000000...	7002351.00000...	26	1	1	0
2	4	Queens	874225.139404...	394878676.51...	NY CRN	NY CENTER FO...	26-13 21ST STR...	ASTORIA	11102	5384.00000000...	7003405.00000...	290	1	0	0
3	3	Brooklyn	74297.830401...	193784435.46...	BISHOP FRANC...	BISHOP FRANC...	155 DEAN STRE...	BROOKLYN	11217	5546.00000000...	700177.00000...	298	1	0	0
4	2	Bronx	46447.5067699...	1166820812.95...	BRONX CENTER	BRONX CENTER	1010 UNDERH...	BRONX	10472	1251.00000000...	700381.00000...	200	1	1	0
5	5	Staten Island	330454.606607...	1623846991.52...	CARMEL RICHM...	CARMEL RICHM...	68 OLD TOWN ...	STATEN ISLAND	10304	1255.00000000...	7004310.00000...	300	1	0	1

Step 11 – Select the identify features tools and click on an area to see its features.

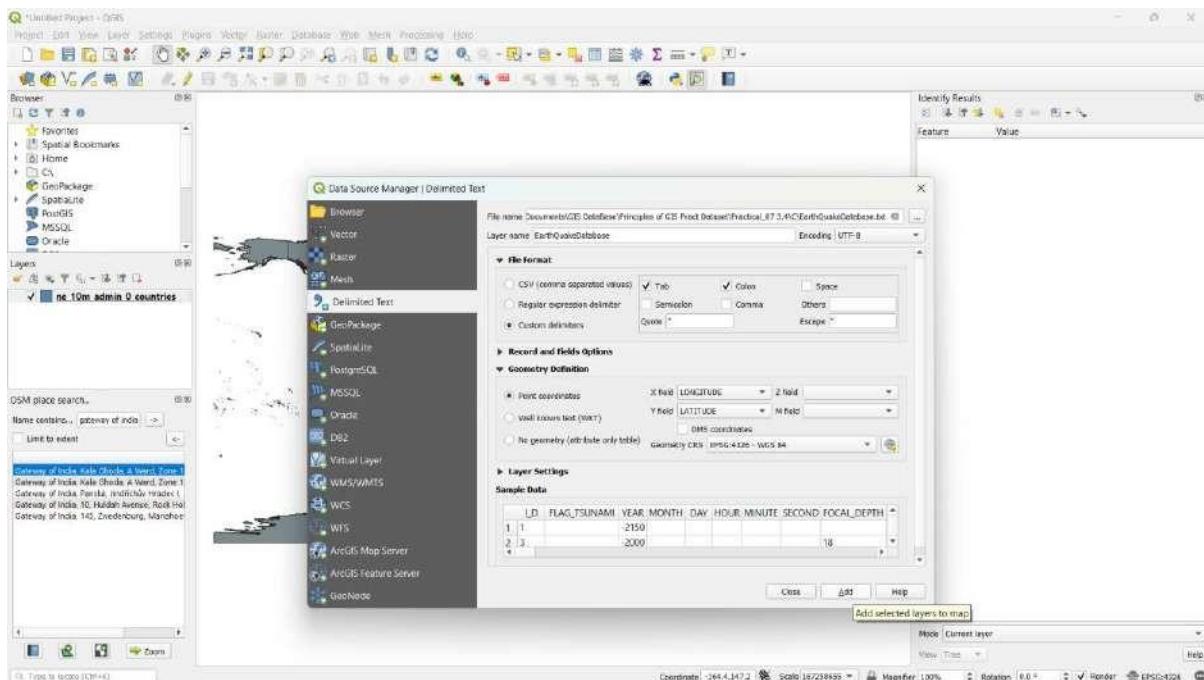


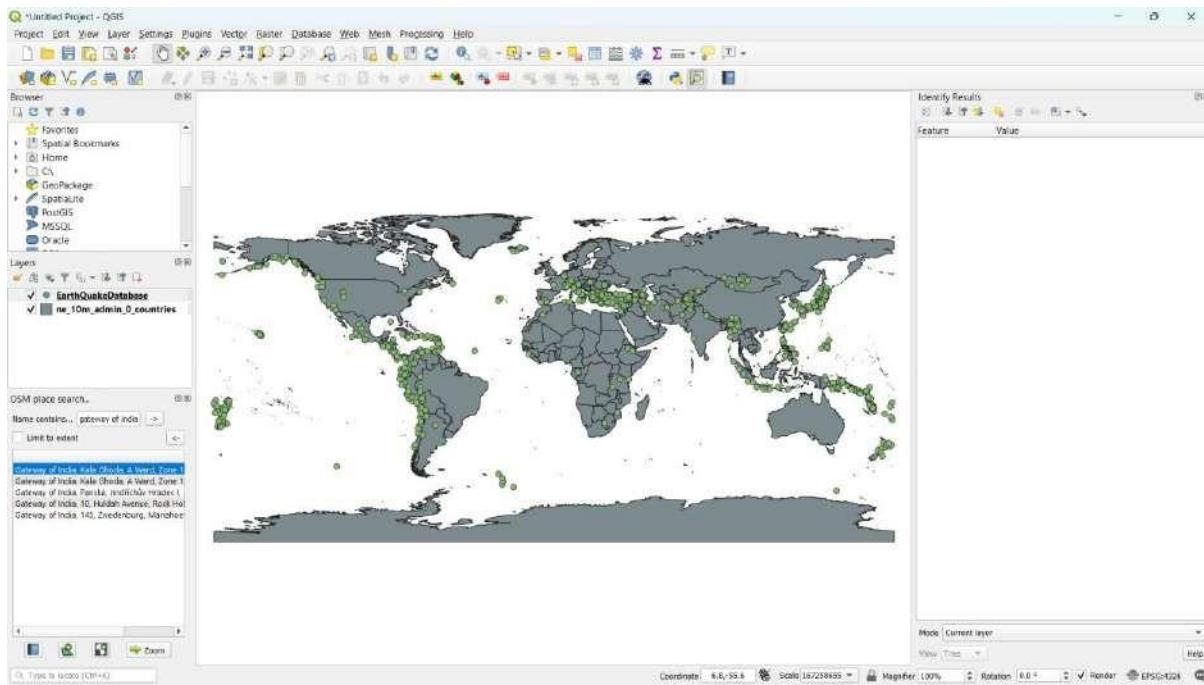
Step 12 – Create a new project. Add a new vector layer.



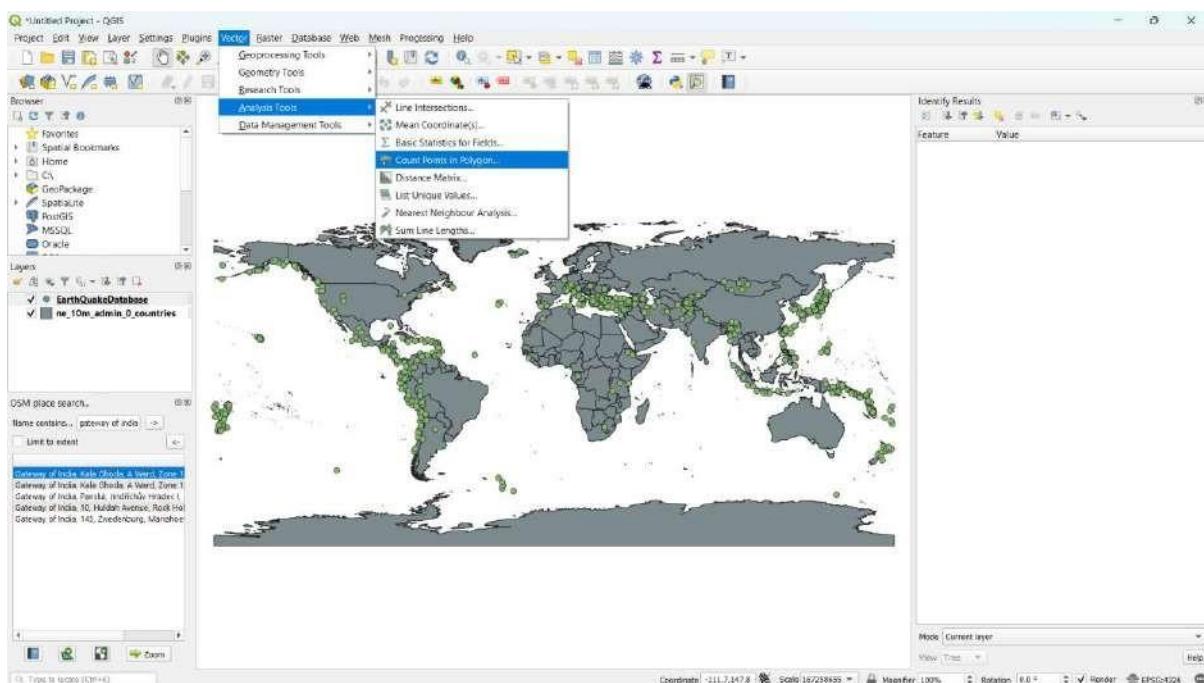


Step 13 – Add a new delimited text layer. Set the following parameters and hit add.

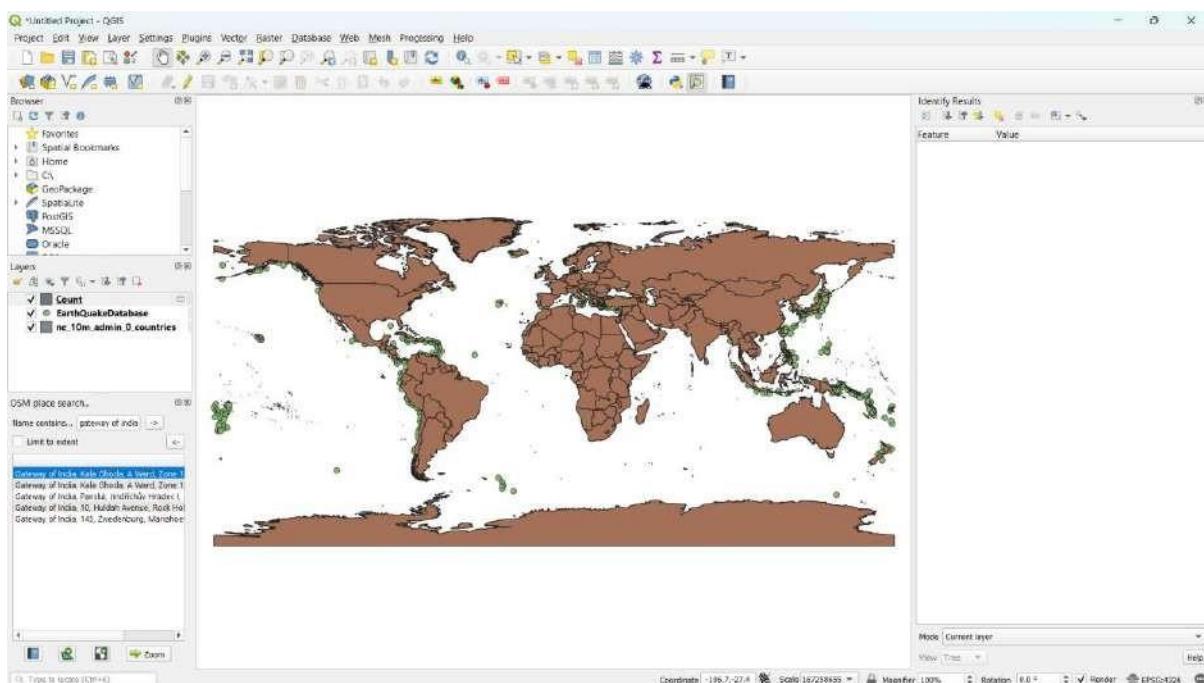
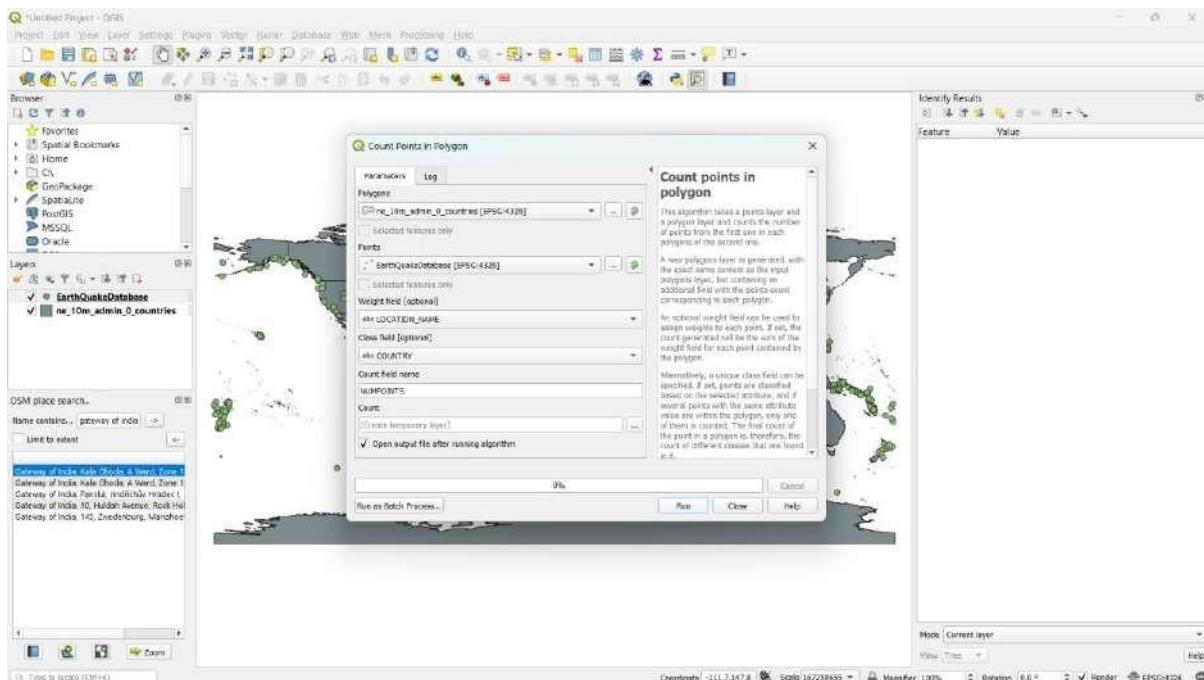




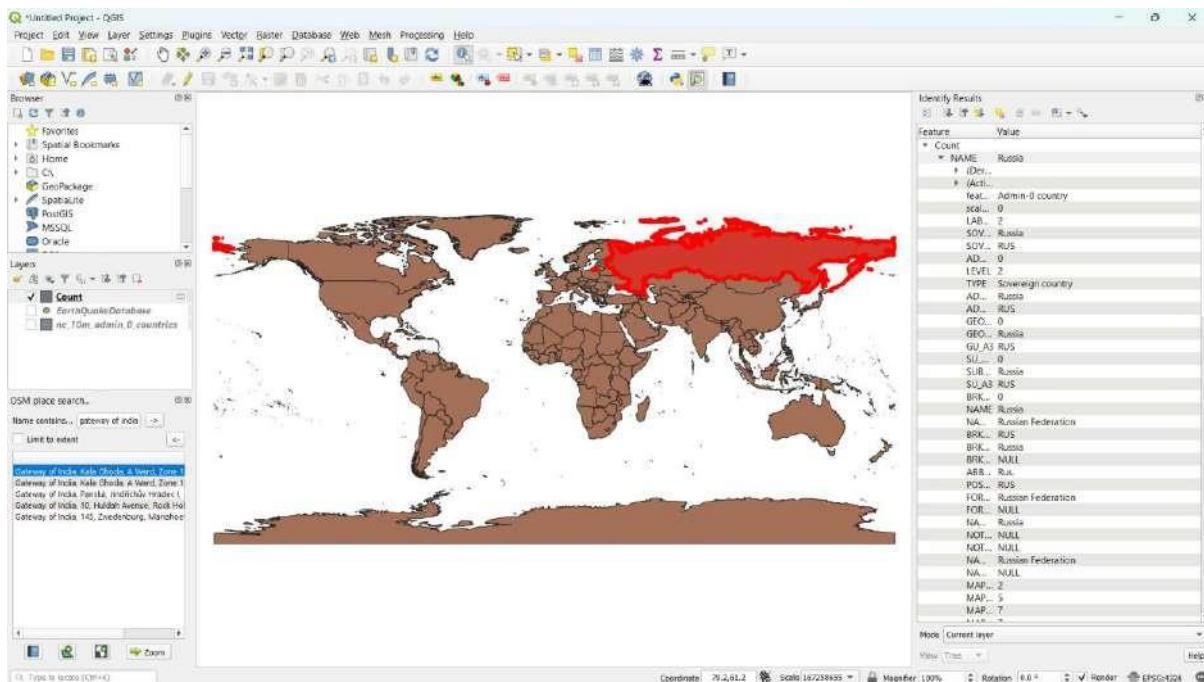
Step 14 – Vector > Analysis Tools > Count Points in Polygons.



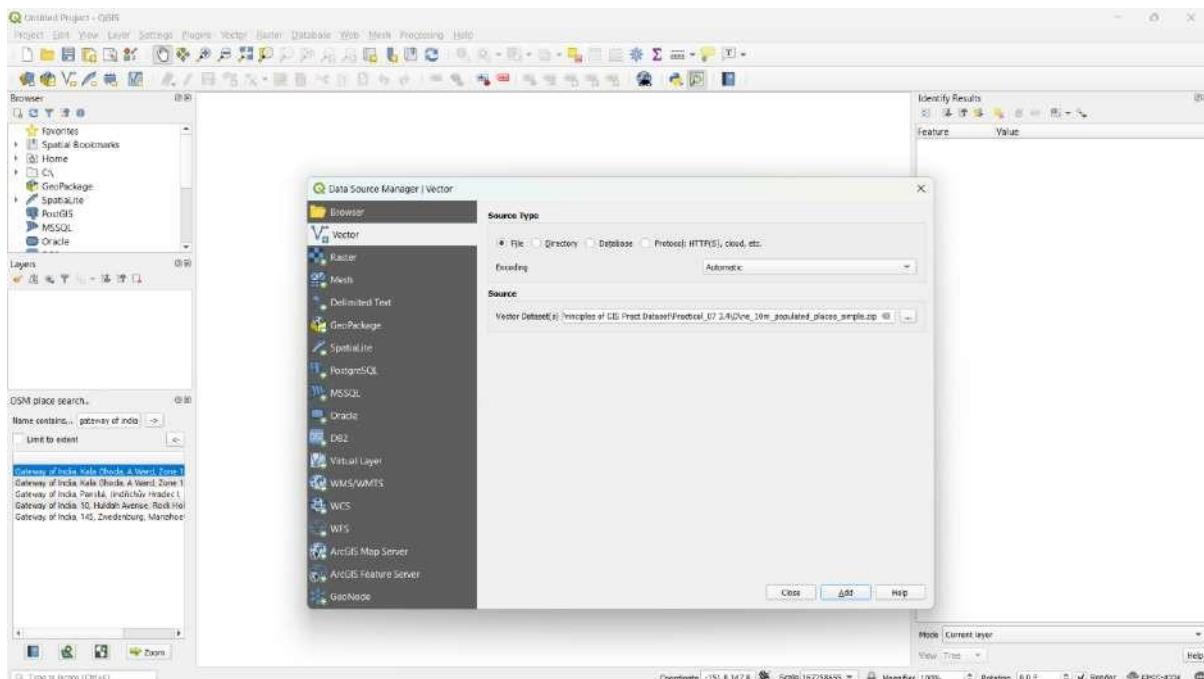
Step 15 – Set the following parameters and hit run.

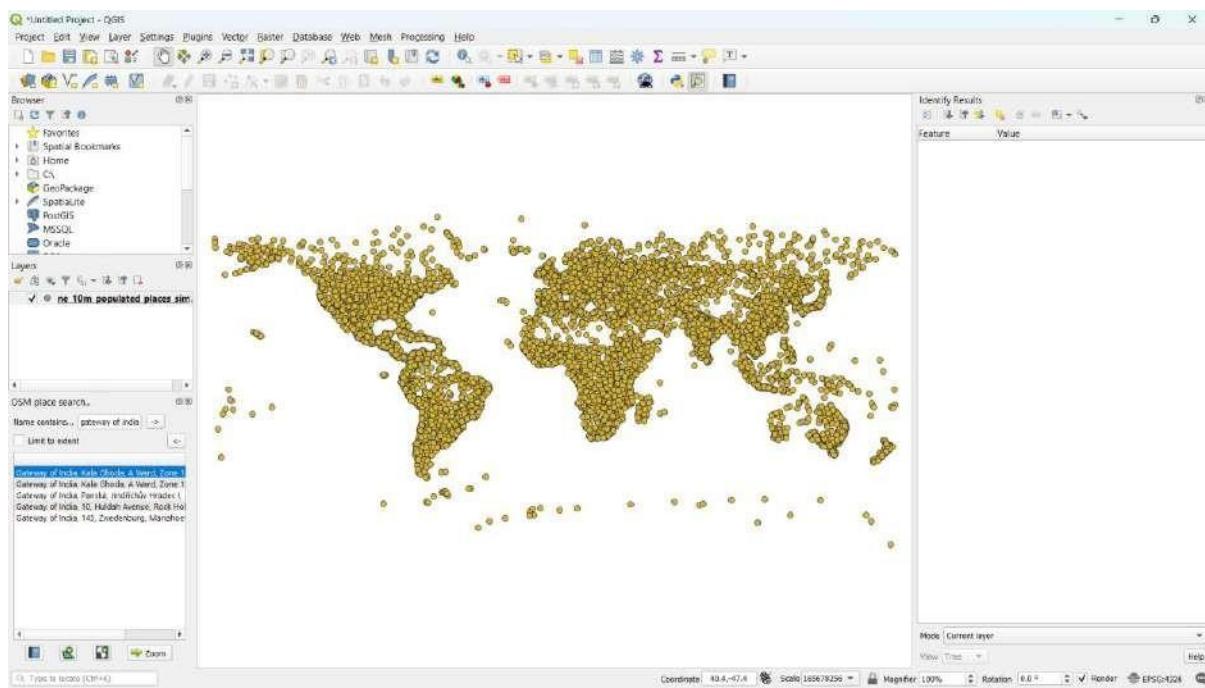


Step 16 – Again select the identify features tool and click on a region to show its features.

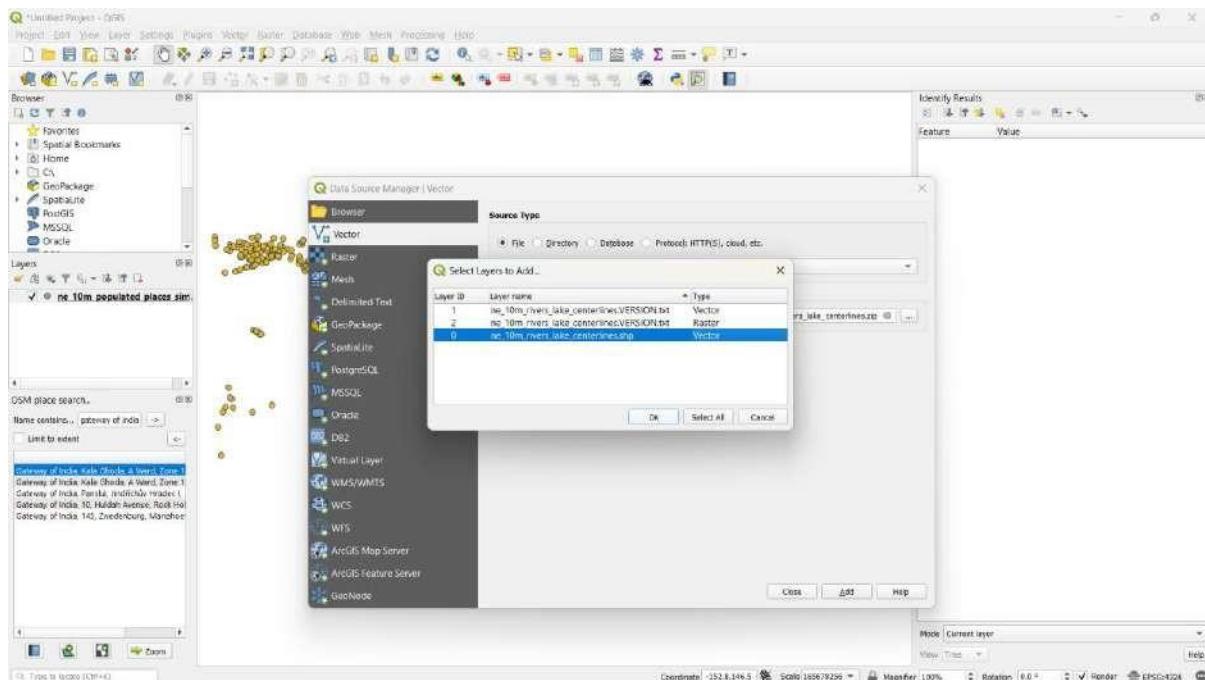


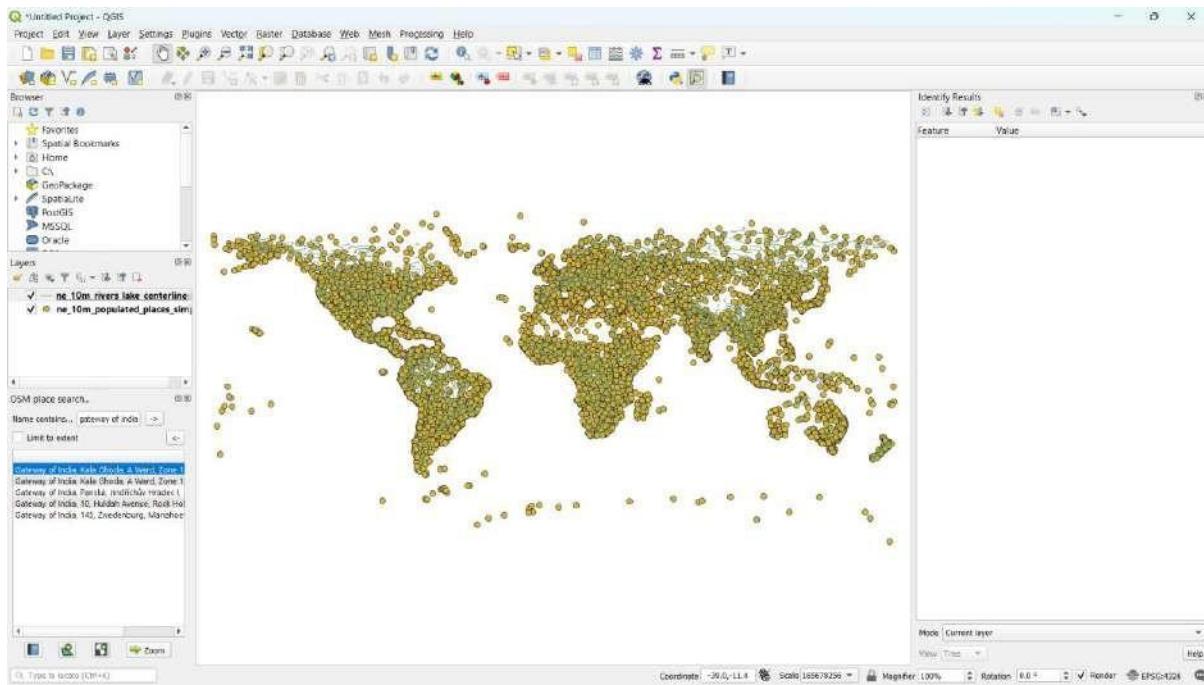
Step 17 – Open a new project. Add a new Vector layer.



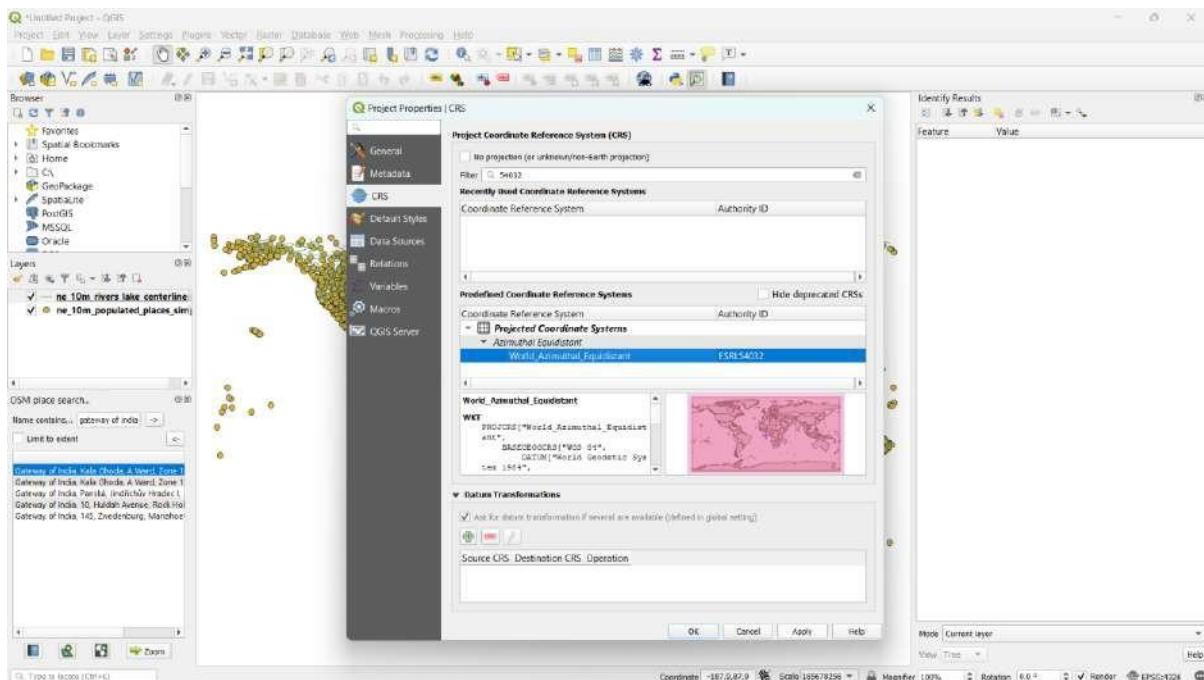


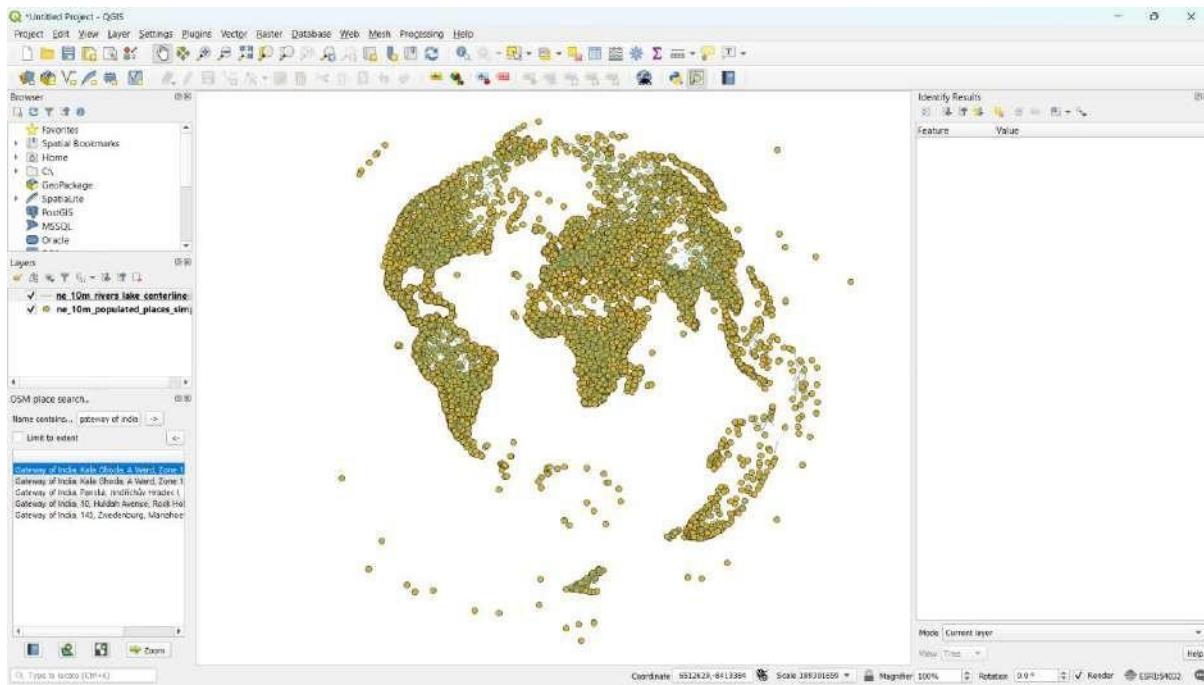
Step 18 – Add another vector layer.



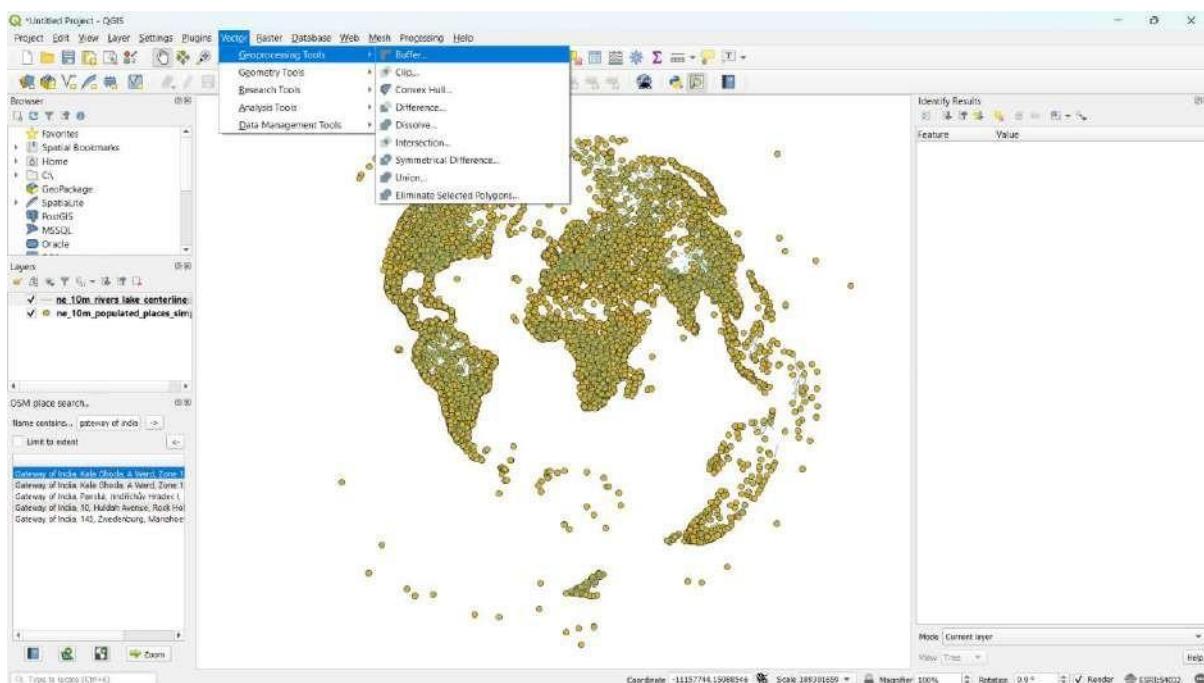


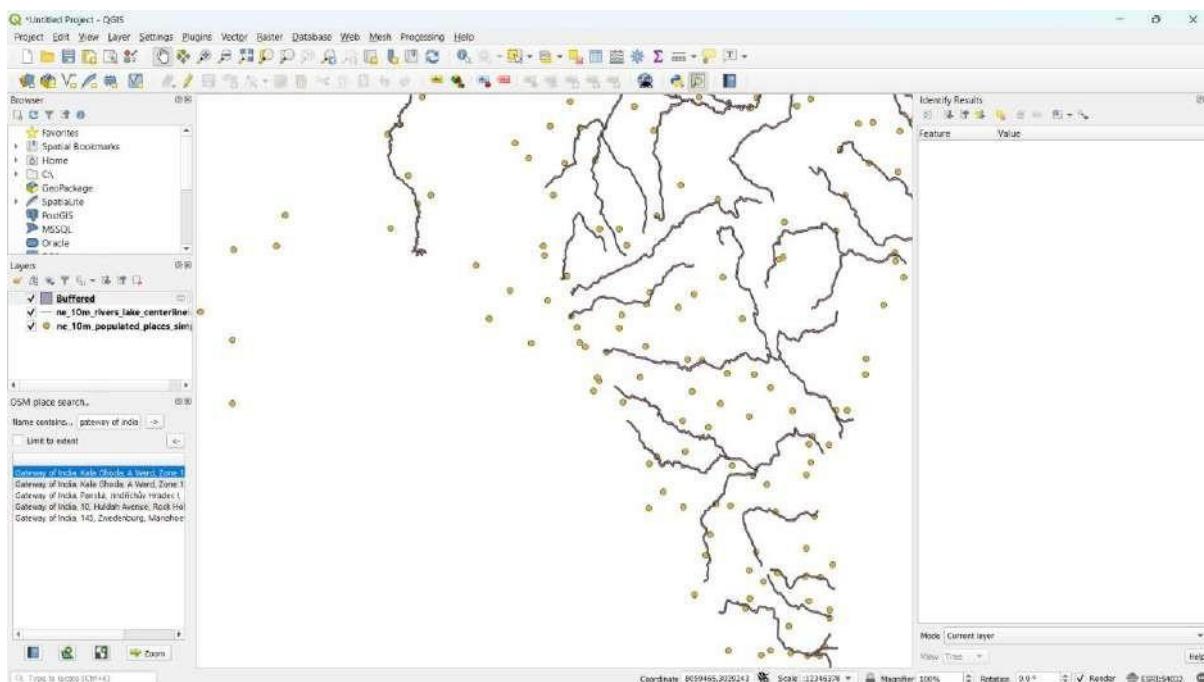
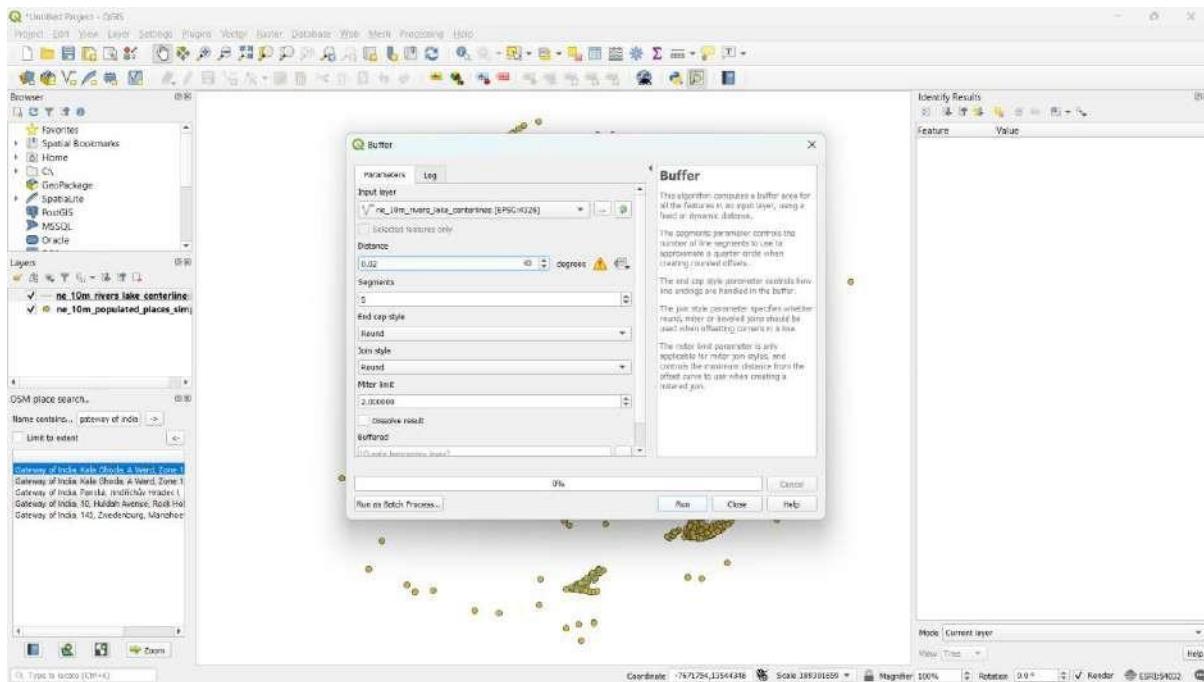
Step 19 – Project > Properties. Set the following parameters and click apply.



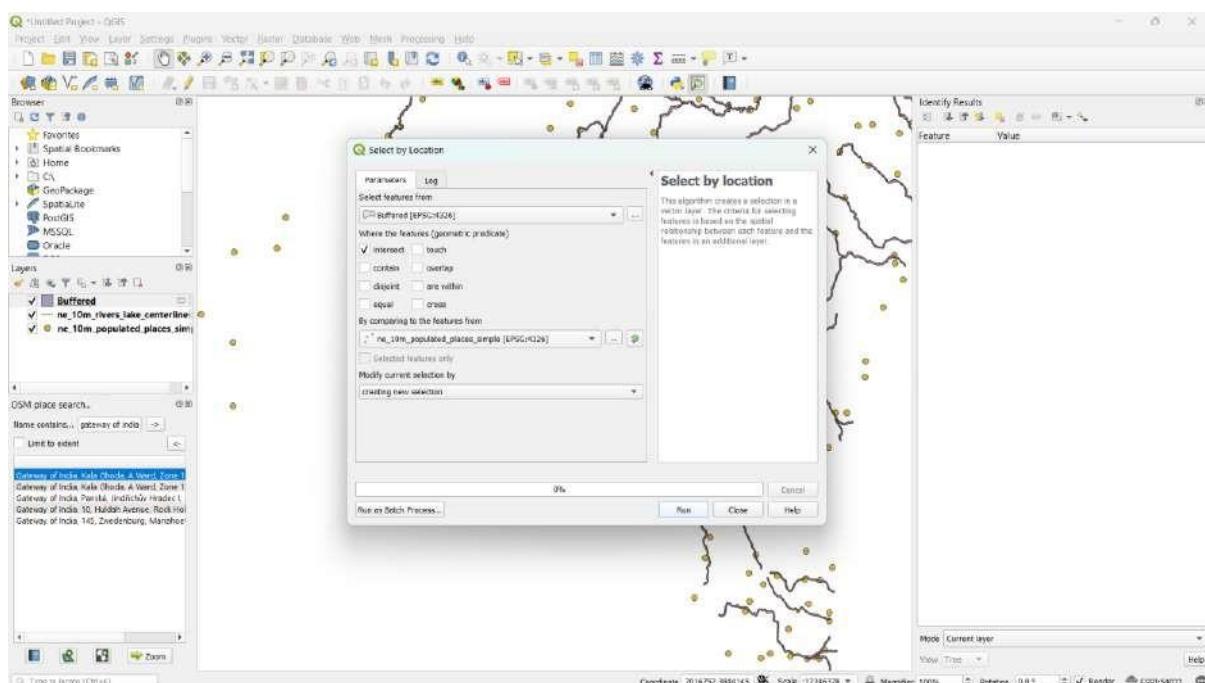
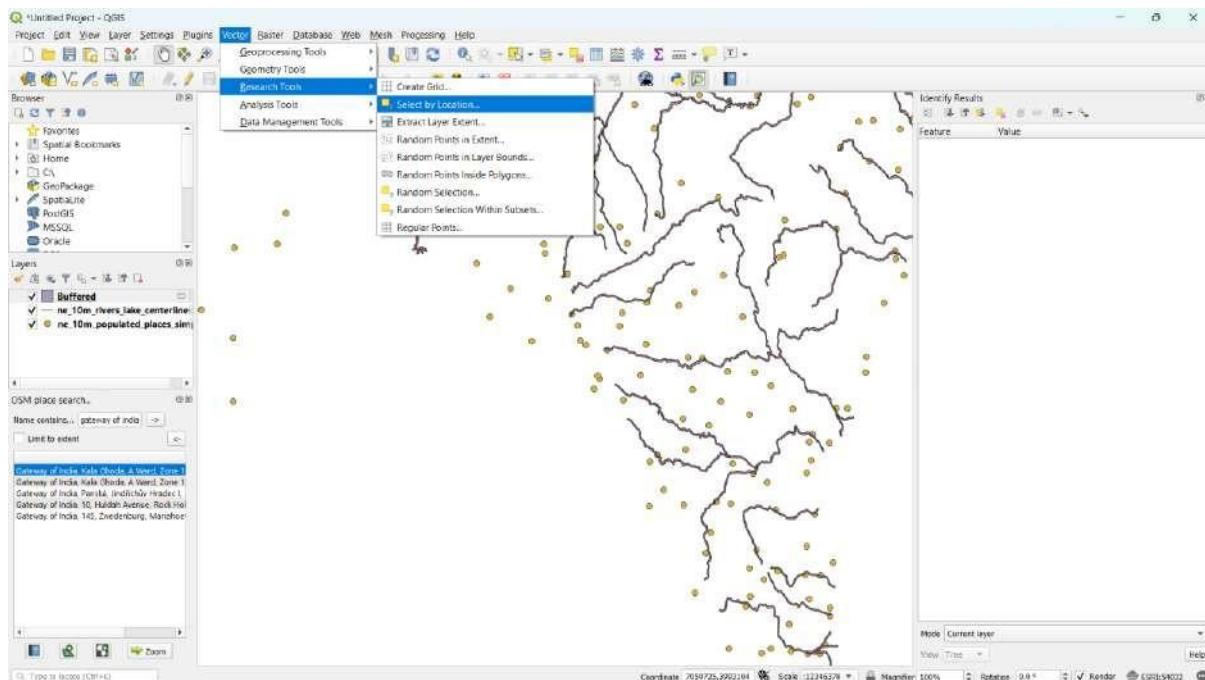


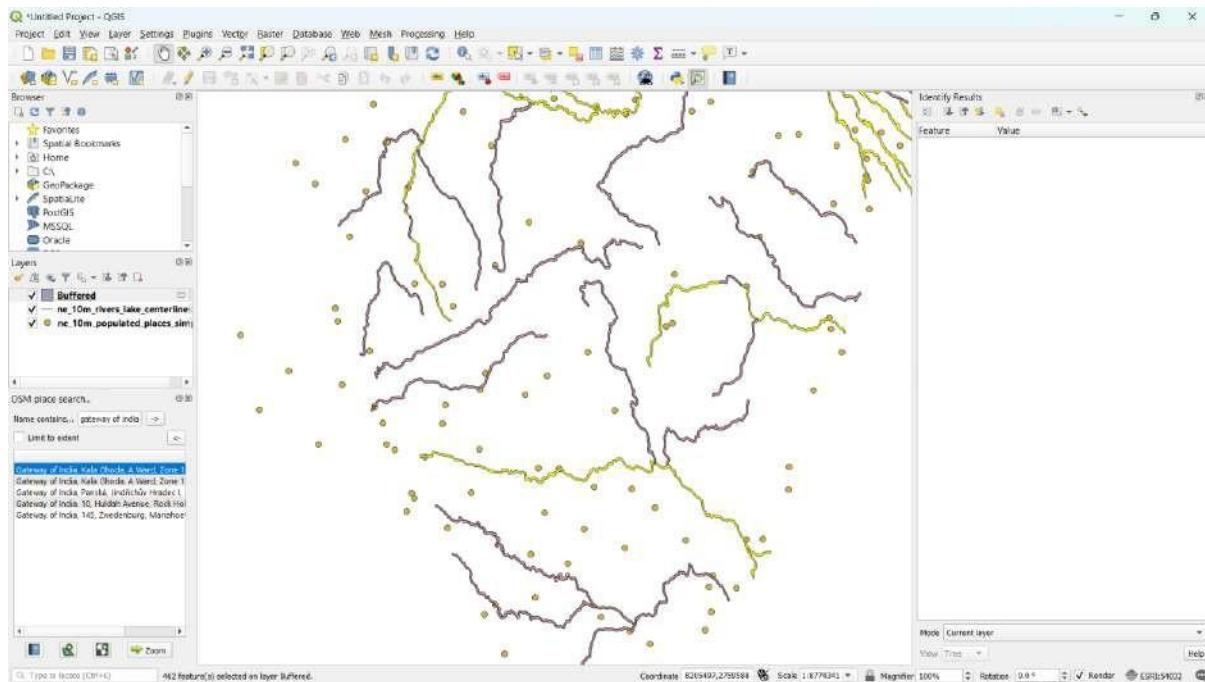
Step 20 – Vector > Geoprocessing > Buffer. Set the following parameters and hit run.





Step 21 – Vector > Research Tools > Select by Location. Set the following parameters and hit run.



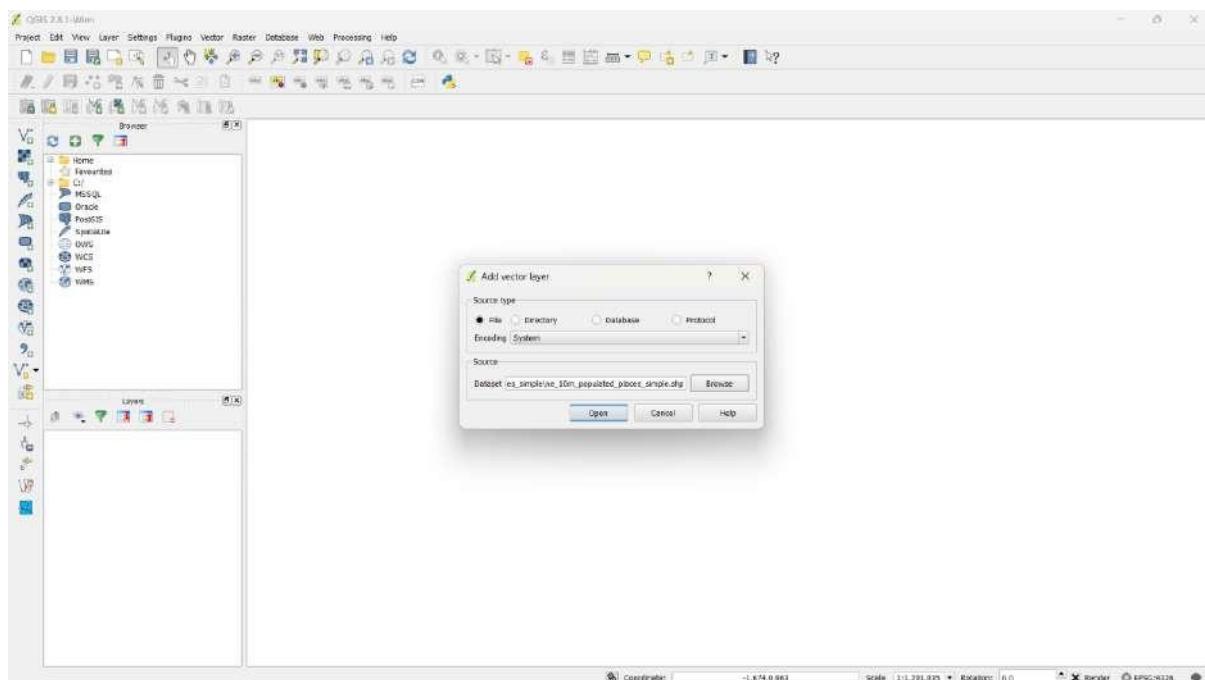


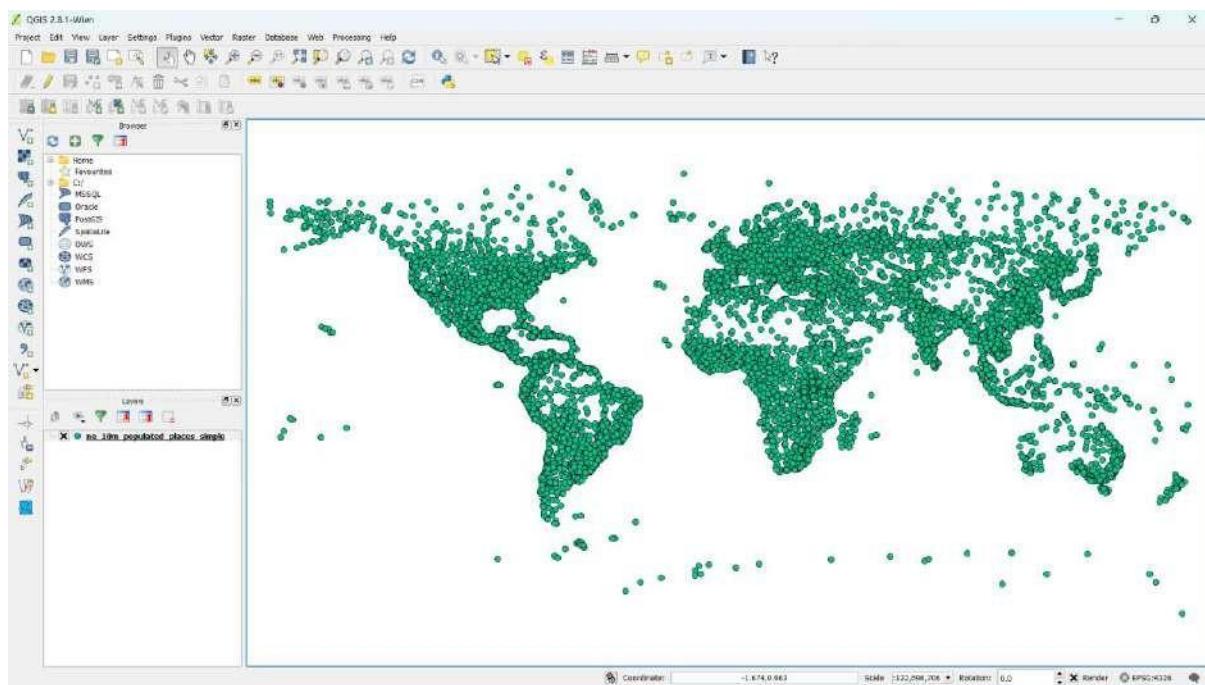
PRACTICAL – 8

Aim: Advanced GIS Operations 1: Nearest Neighbor Analysis, Sampling Raster Data using Points or Polygons, Interpolating Point Data.

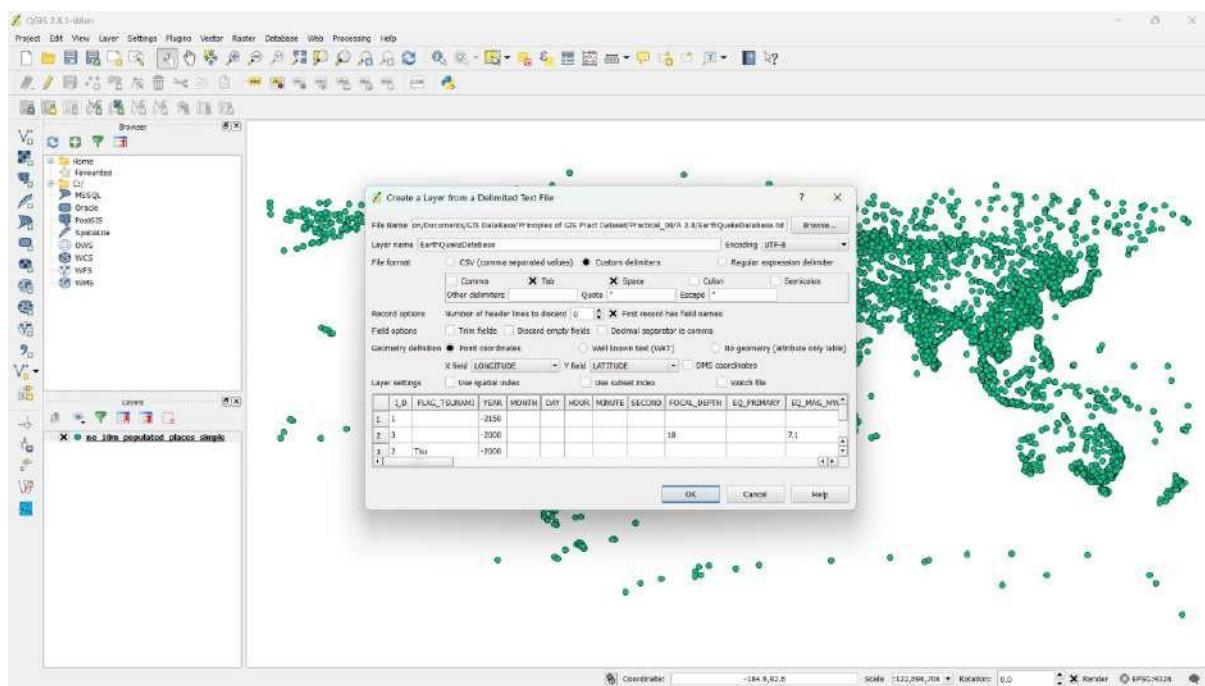
Steps:

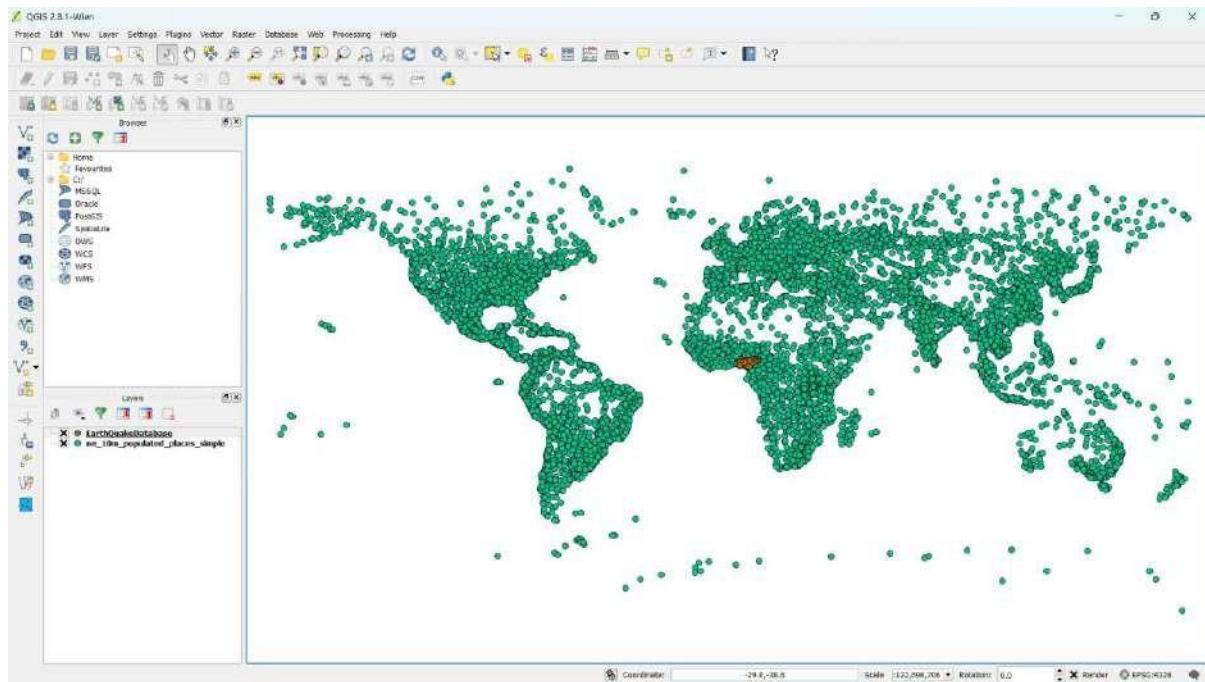
Step 1 – Add the following vector layer.



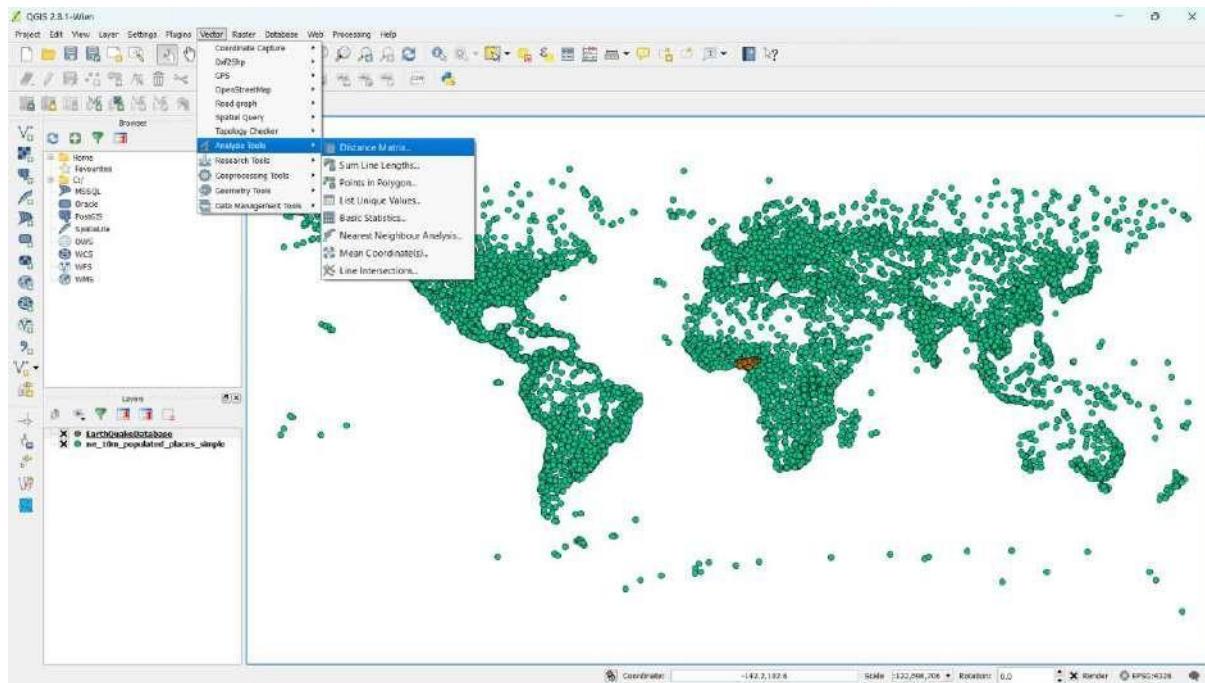


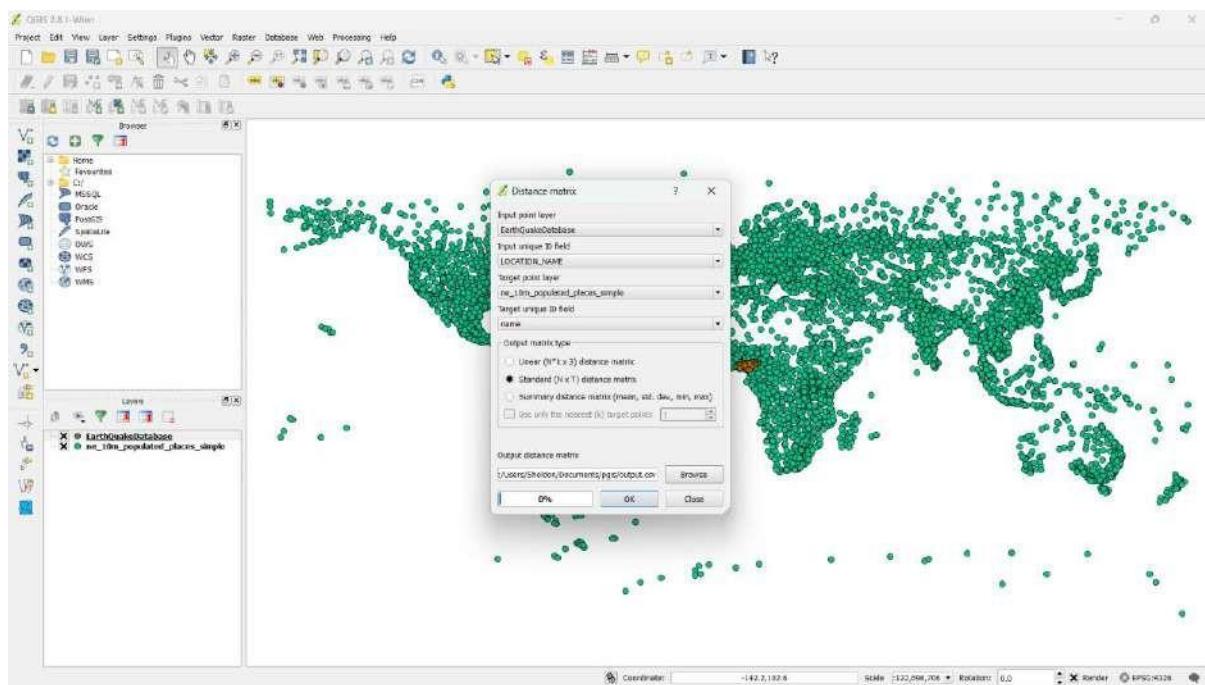
Step 2 – Add a delimited text layer. Set the following parameters and click OK.



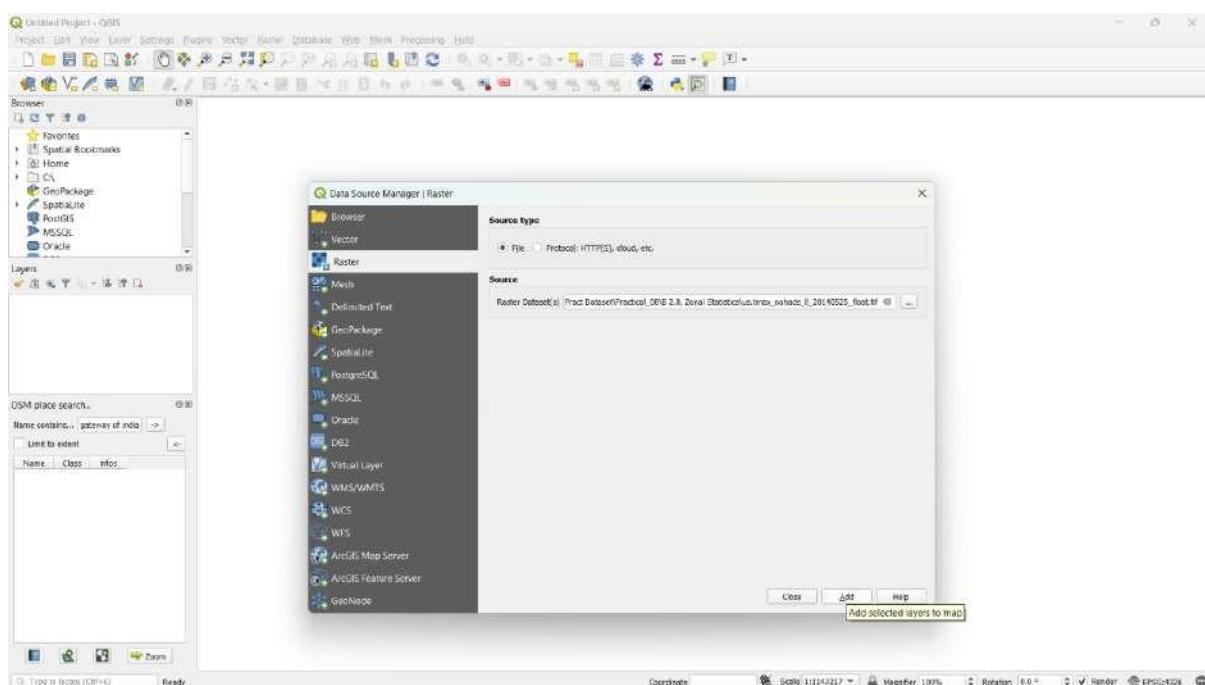


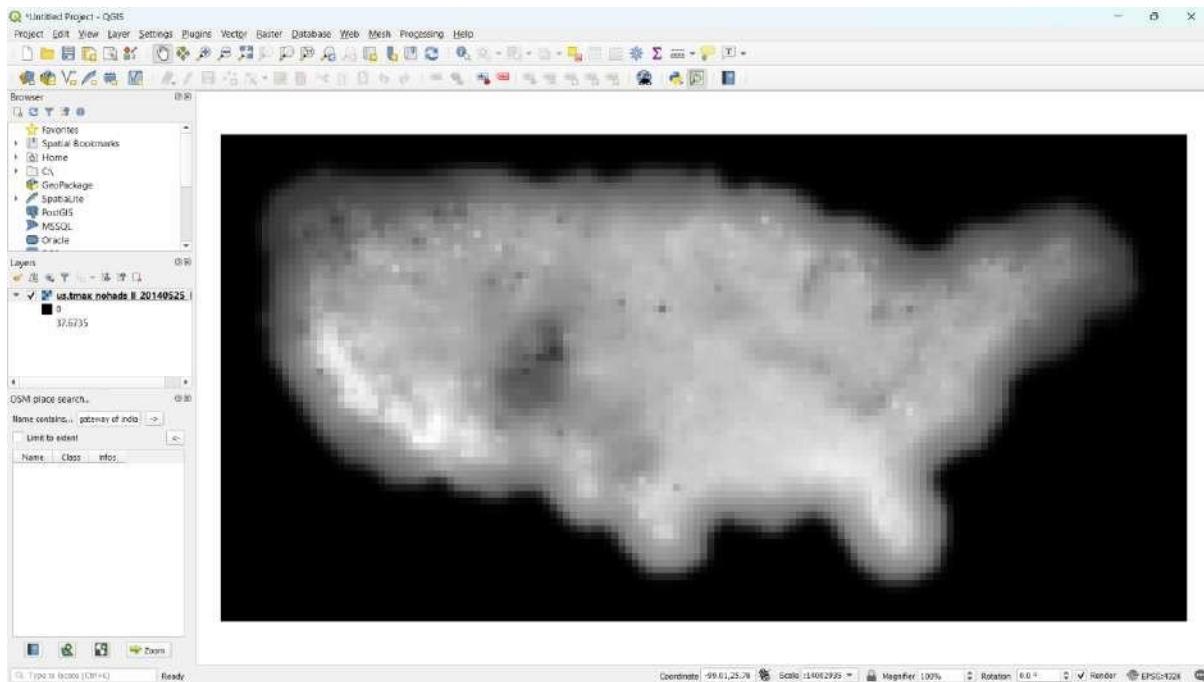
Step 3 – Vector > Analysis Tools > Distance Matrix. Set the following parameters and hit OK.



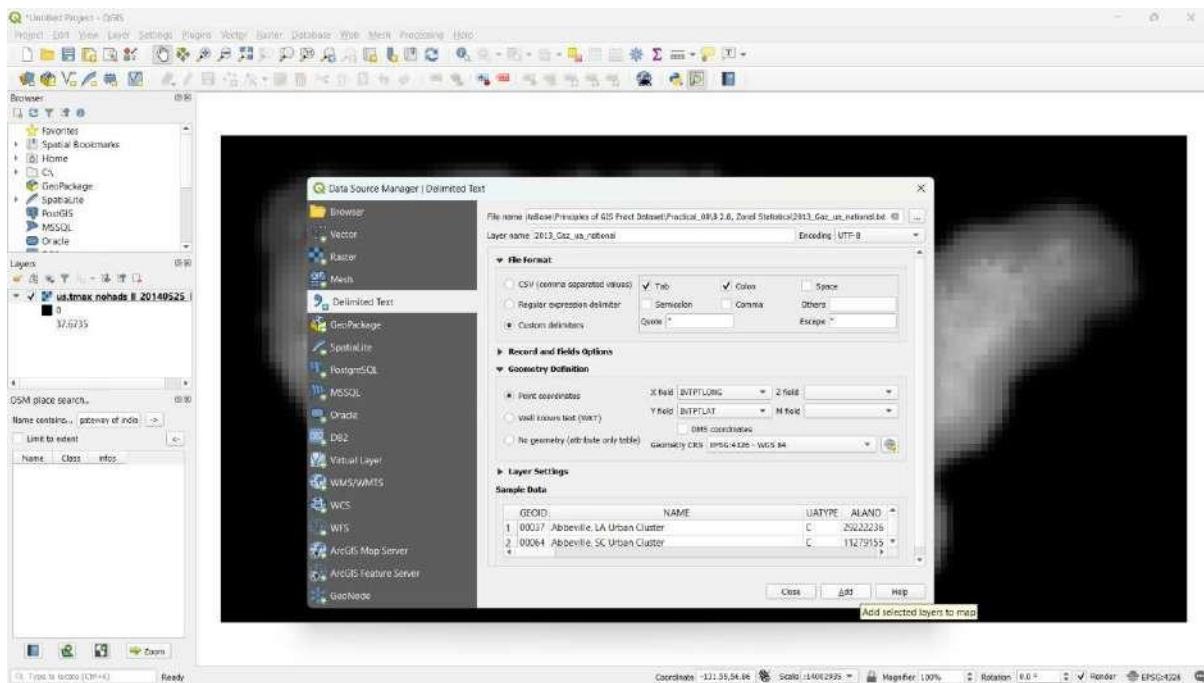


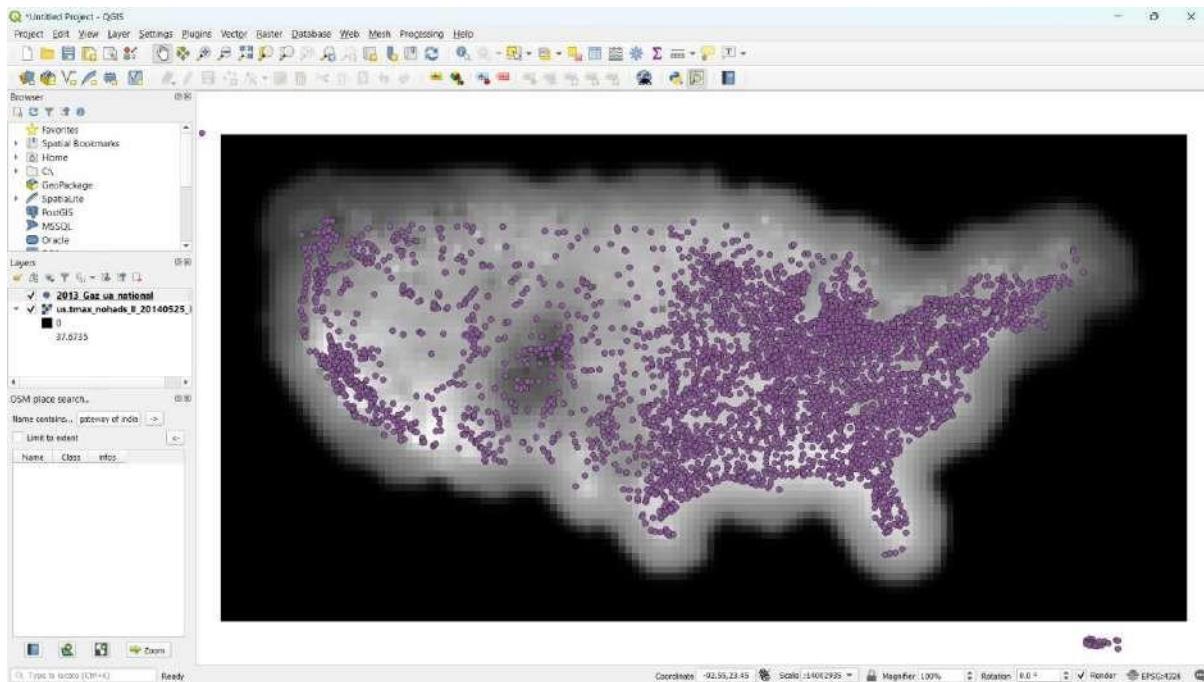
Step 4 – Create a new project. Add the following Raster Layer.



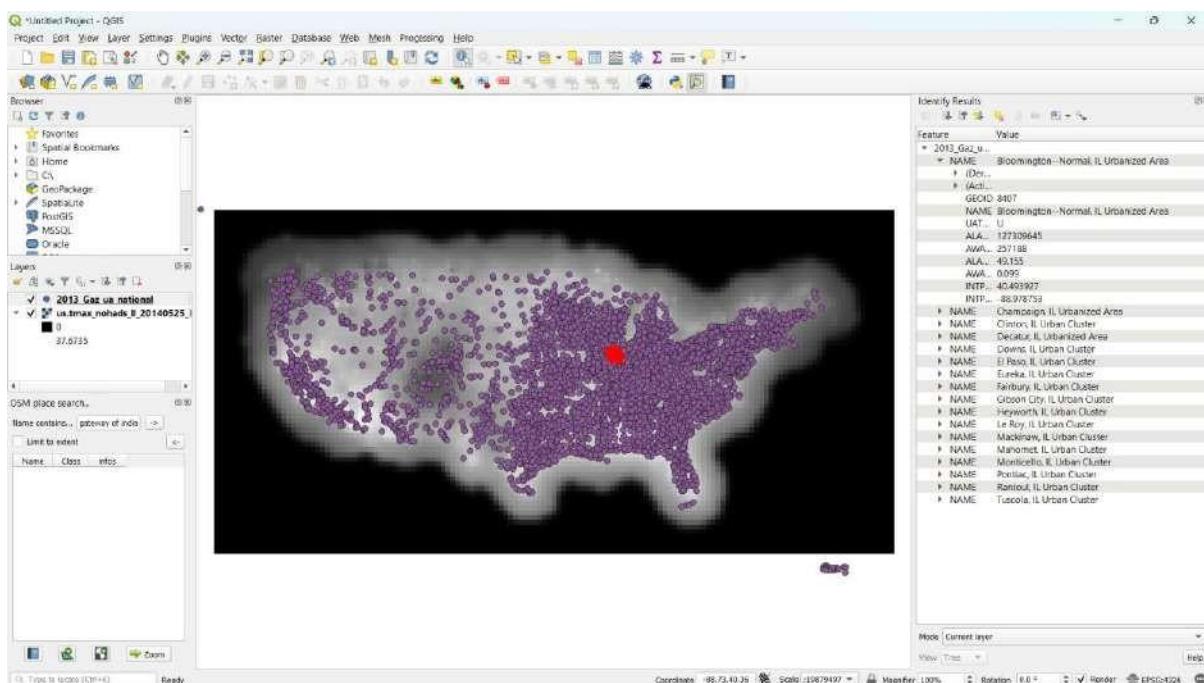


Step 5 – Add the following Delimited Text Layer. Set the following attributes and click add.

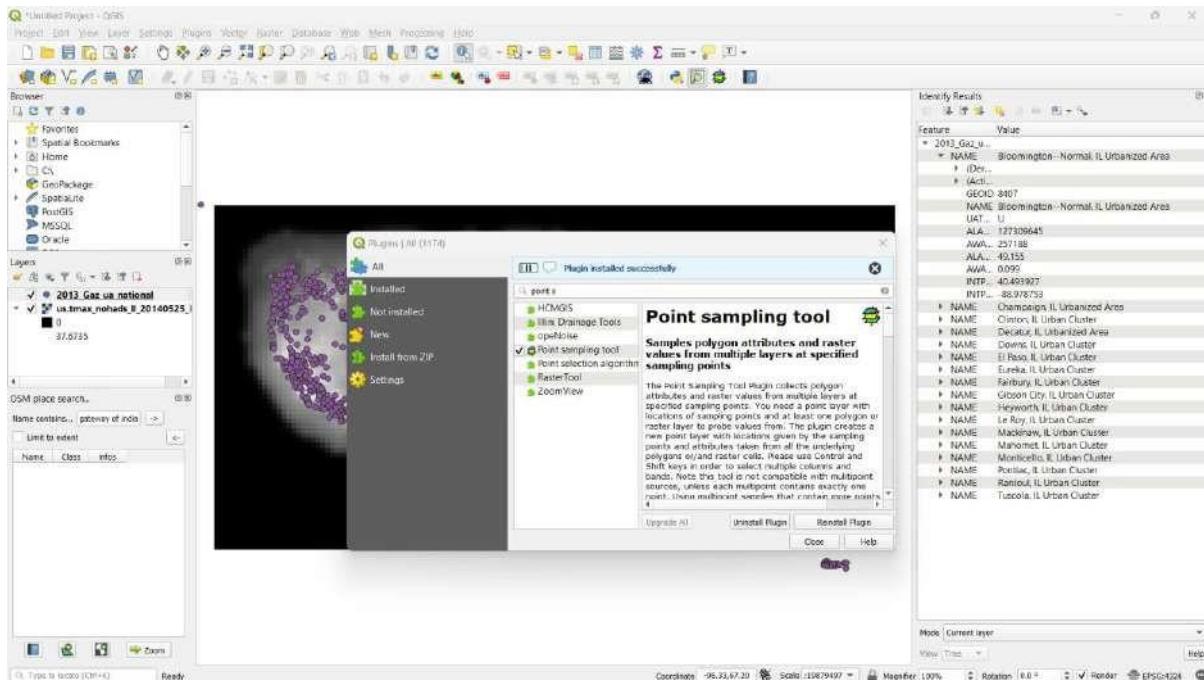




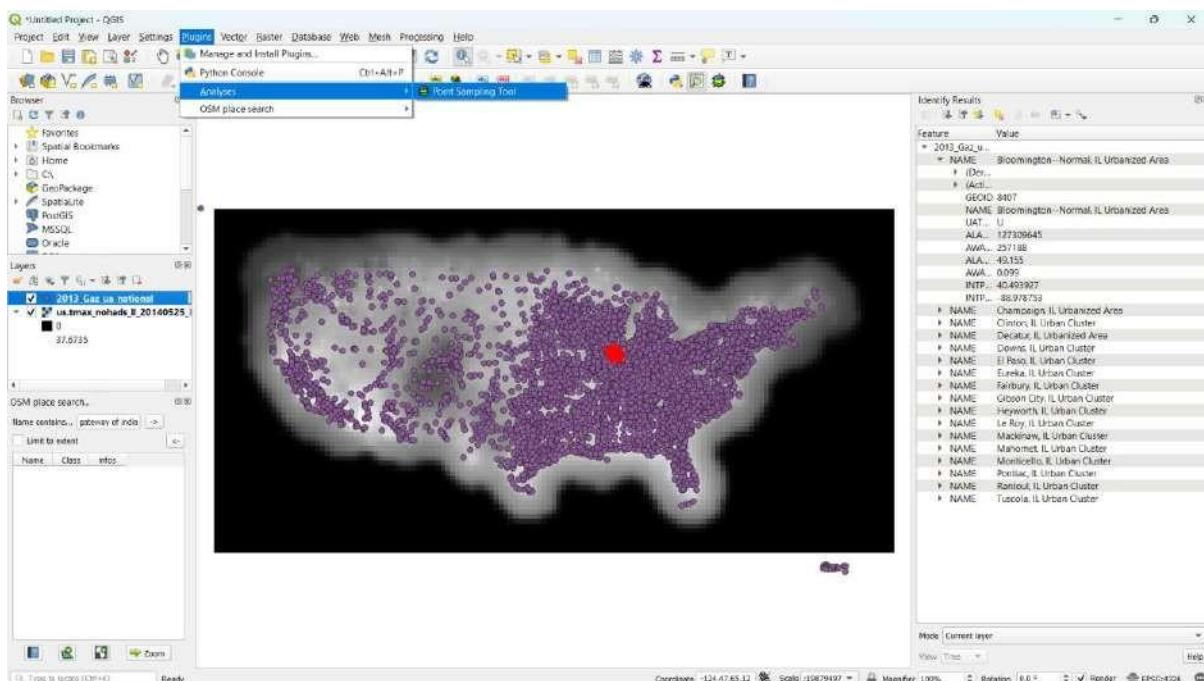
Step 6 – Select the identify features tool and click on any area to show its features.

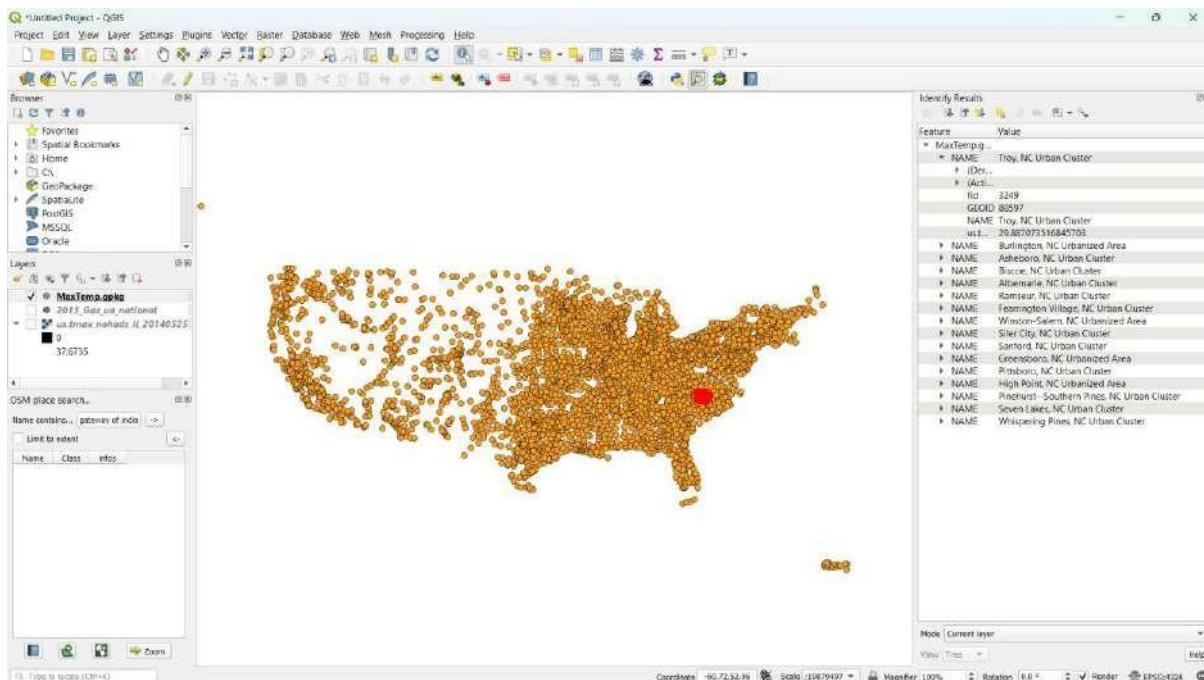
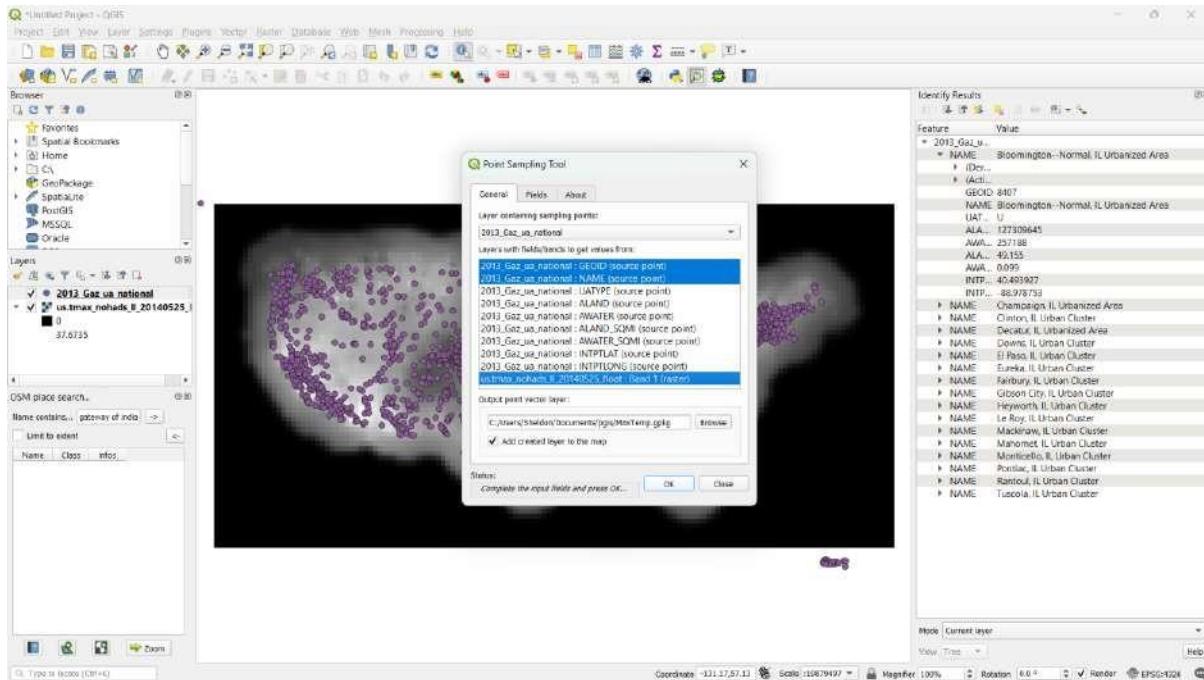


Step 7 – Install the point sampling tool plugin.

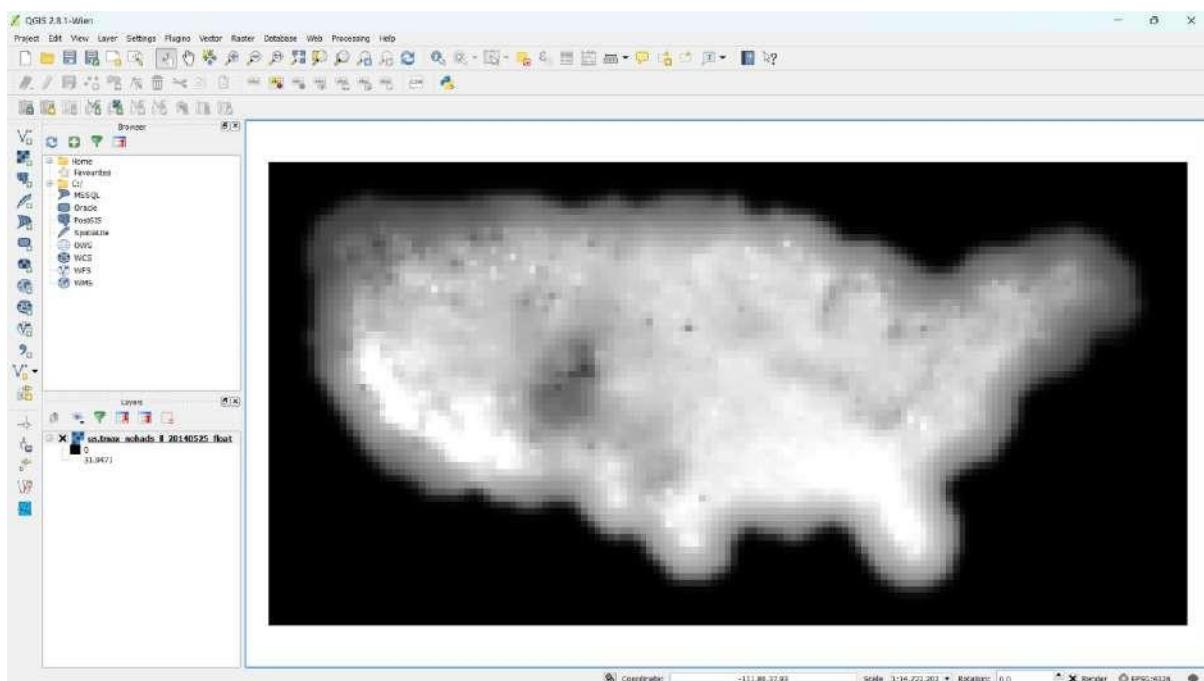
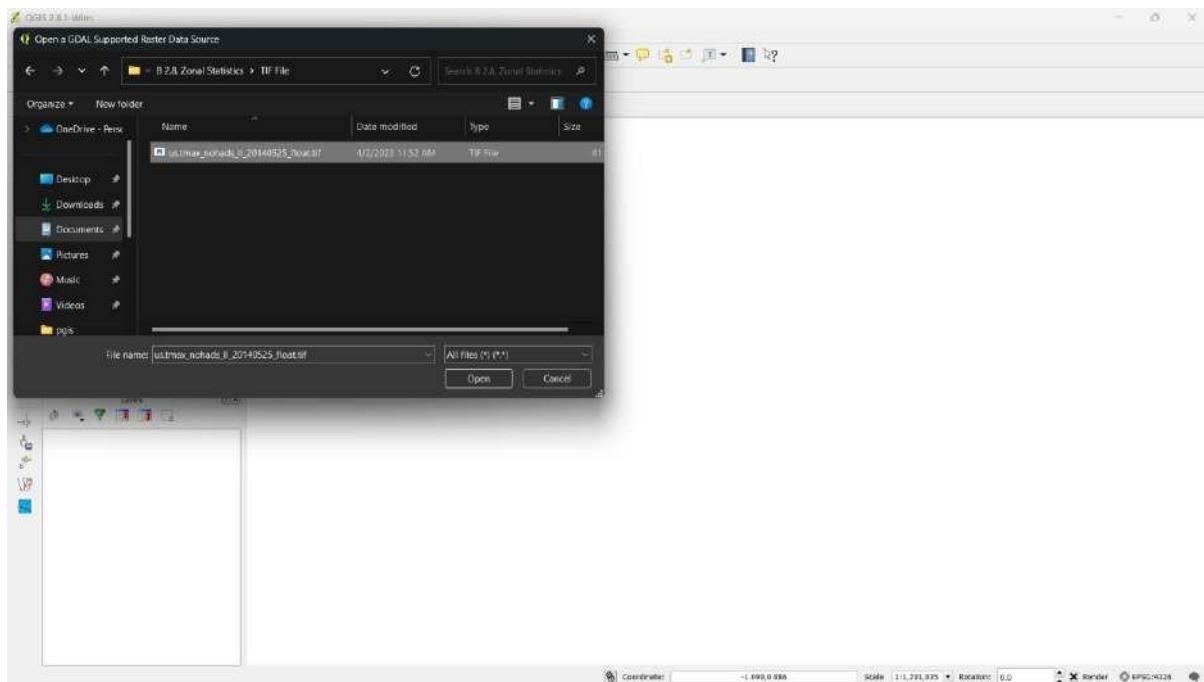


Step 8 – Select the Delimited Text Layer and then Plugin > Analysis > Point Sampling Tool. Set the following parameters and click OK.

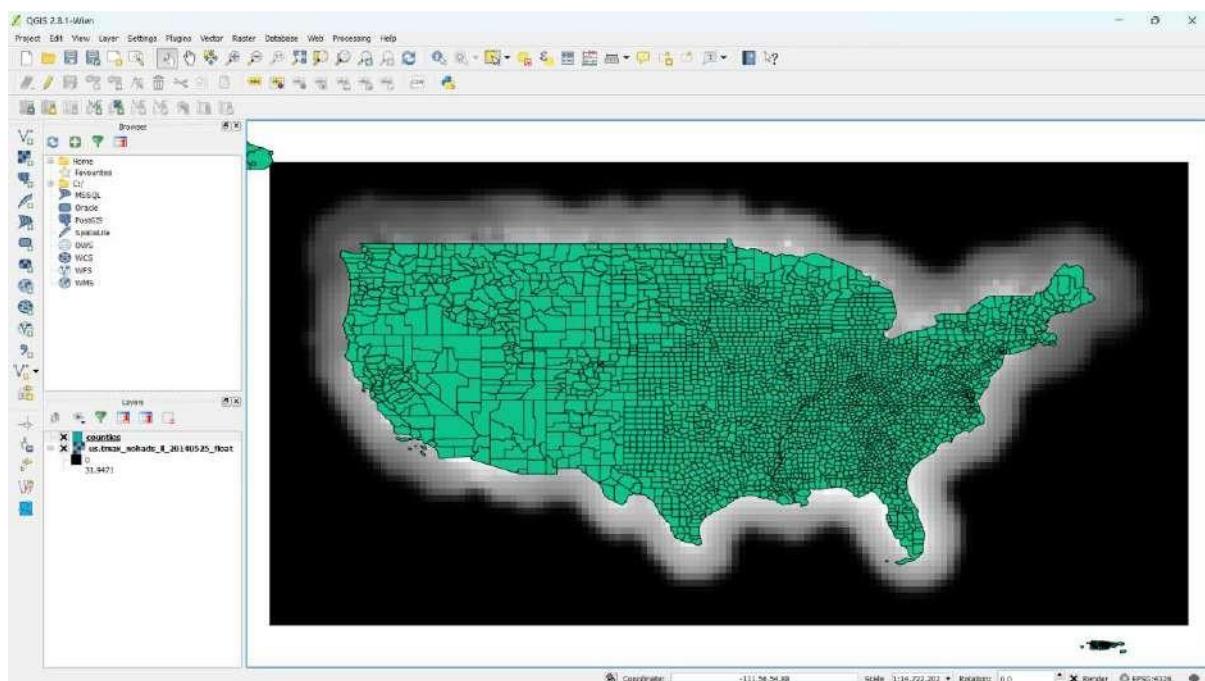
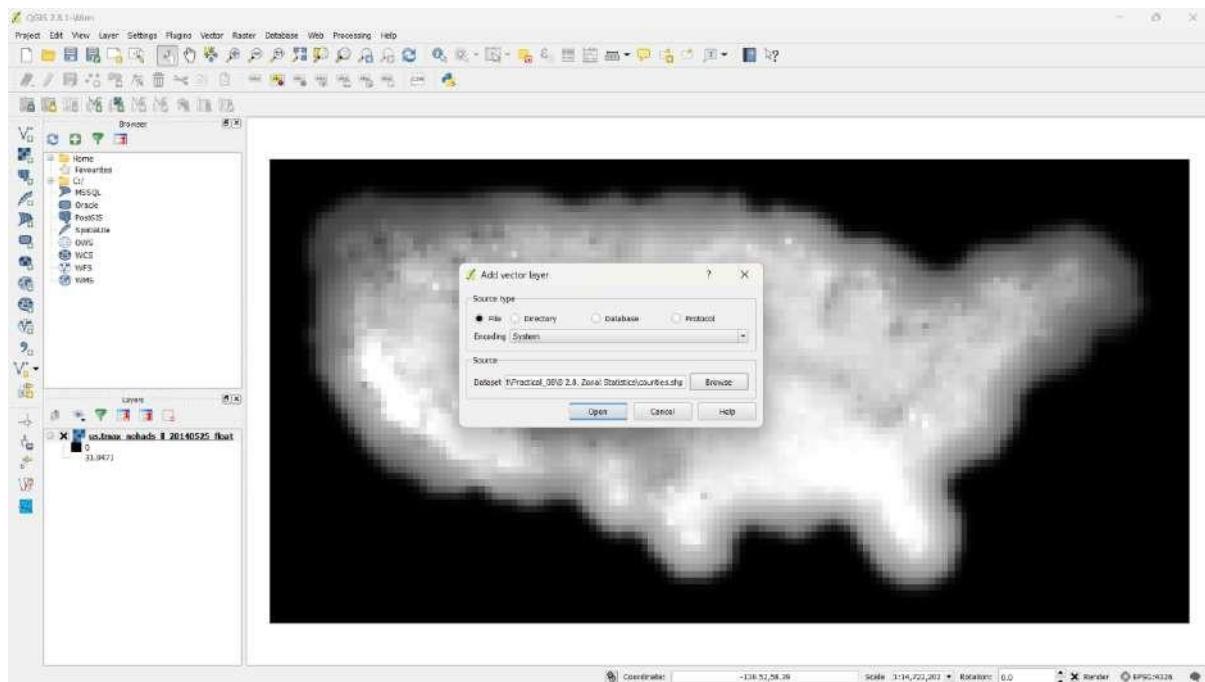




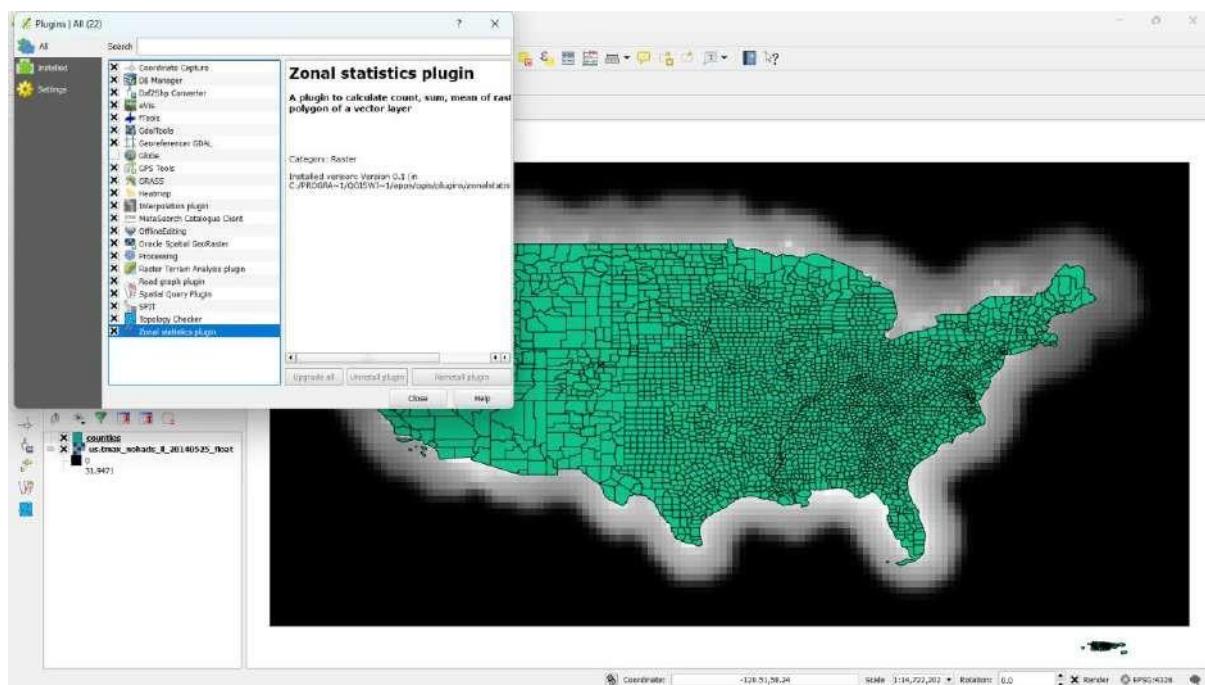
Step 9 – Create a new project. And add a new Raster layer.



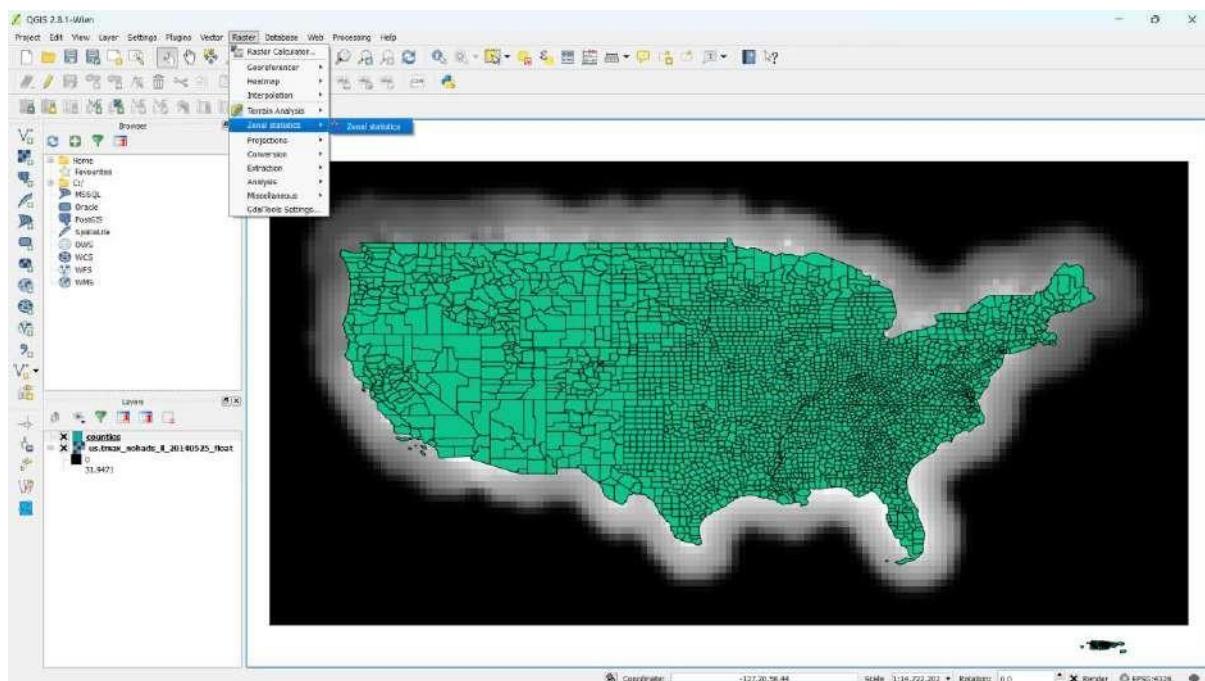
Step 10 – Add the following Vector layer.

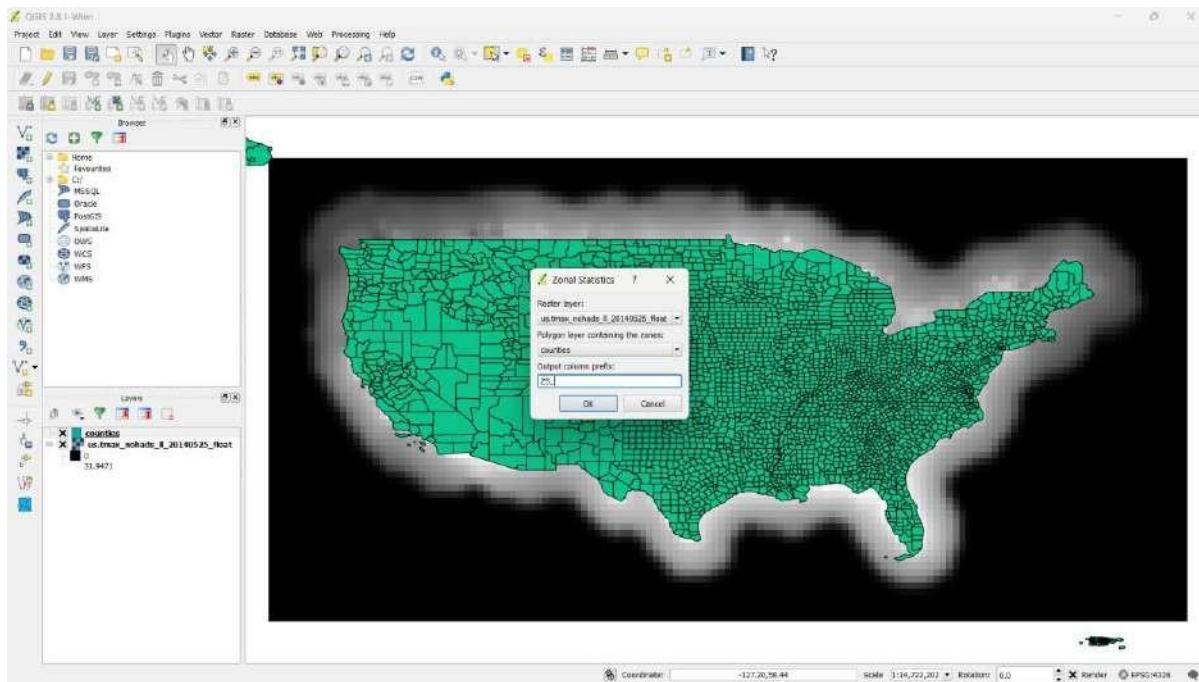


Step 11 – Install Zonal Statistics plugin.



Step 12 – Raster > Zonal Statistics. Set the following preferences and click OK.

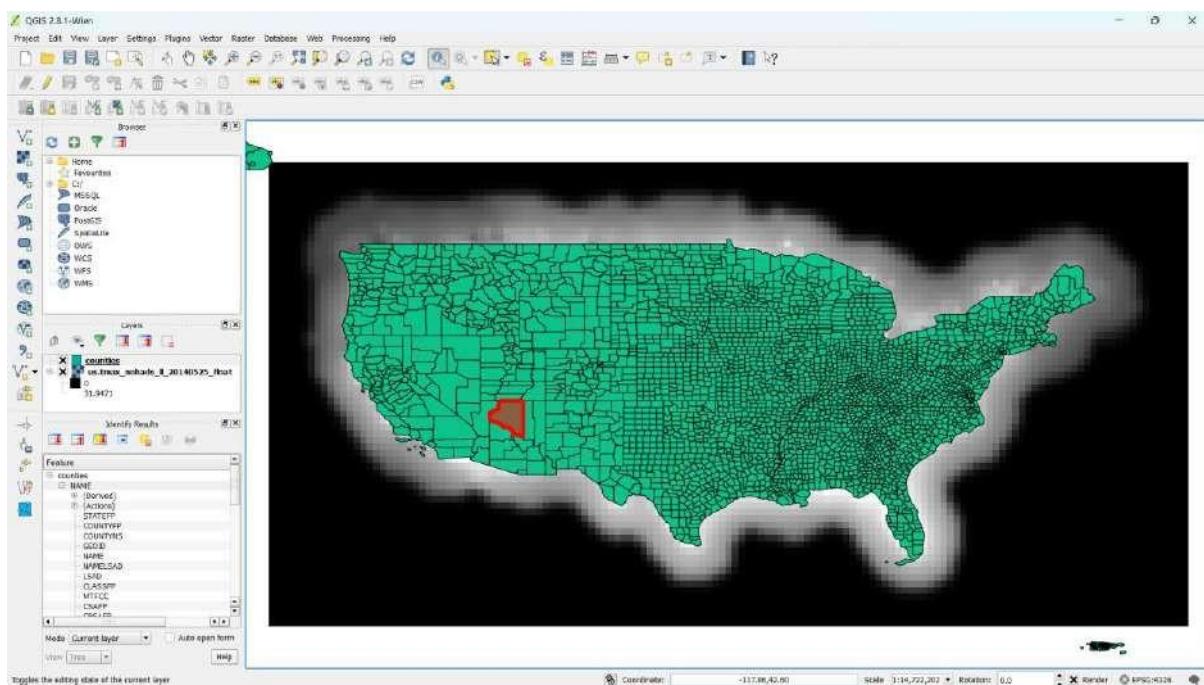




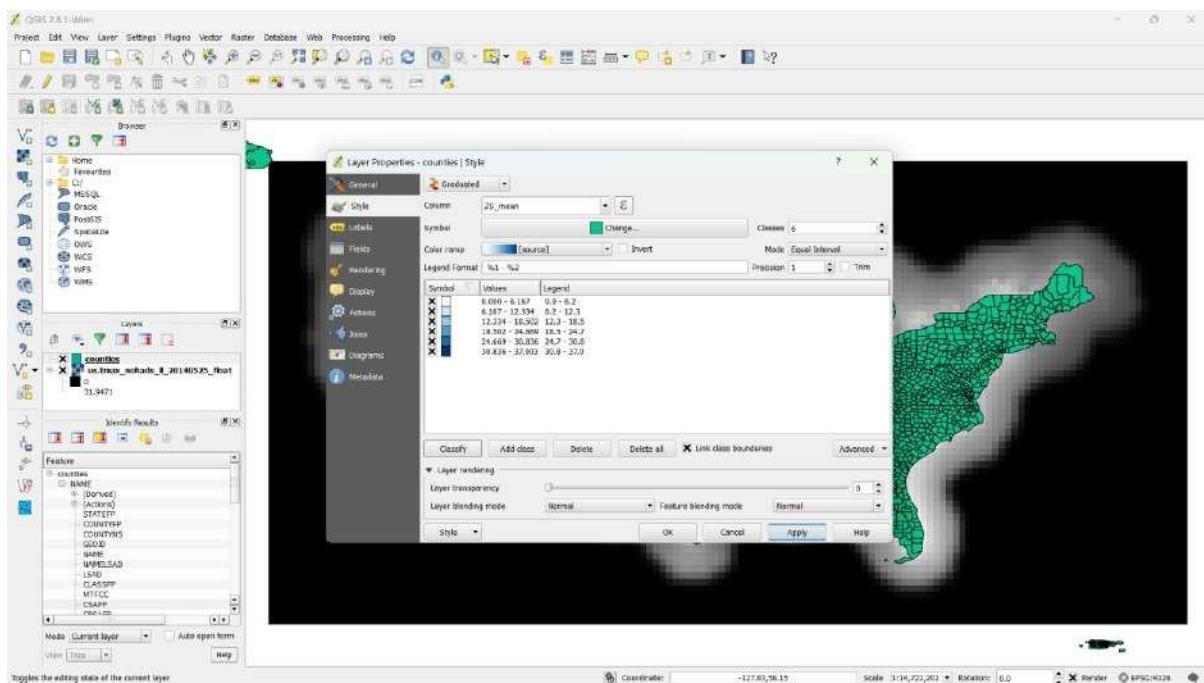
Step 13 – Open the Attribute Table of the vector layer.

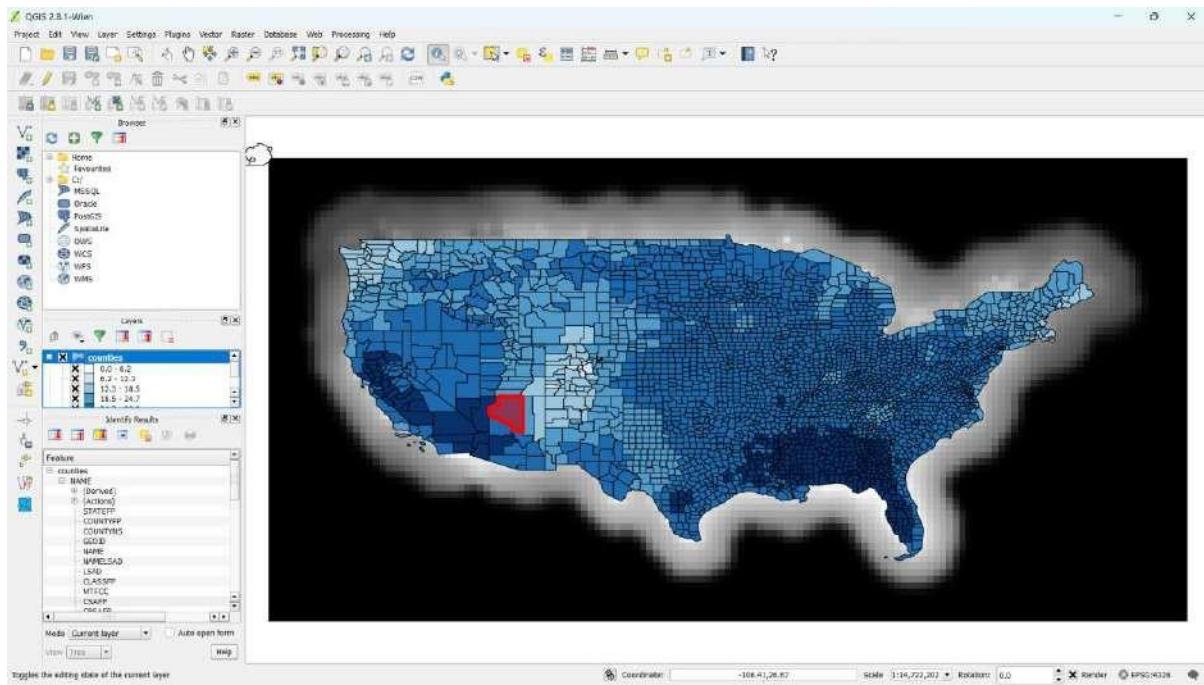
	STATEFP	COUNTYFP	COUNTYNAME	GRDID	NAME	NAMLSAD	LSAD	CLASSPP	MTFCC	CSAPP	CBAPP	METCAPP	RANCSTAT	ALAND	AWATER	INTPTLAT	INTPTLON	ZS_count	ZS_mean
0	34	029	6883500	31029	Canning	Canning County	96	H3	G4900	NULL	NULL	NULL	A	147995771	184477526	41.0159651	-106.7935168	0	0
1	33	069	1513232	33069	Waukesha	Waukesha C.	95	H2	G4900	NULL	NULL	NULL	A	89318834	61638246	+42.946137	-123.4244053	3,673,341,931	5,514,175
2	35	011	6992678	35011	De Soto	De Soto County	96	H3	G4900	NULL	NULL	NULL	A	4095000	2610000	3,000,000	87,07658	3,000,000	87,07658
3	34	309	6883500	31109	Waukesha	Waukesha	99	H2	G4900	200	20000	NULL	A	216902444	22801322	+46.765918	-106.795679	0,0354461912	25,9465
4	31	124	6633500	31124	West Allis	West Allis	96	H3	G4900	NULL	NULL	NULL	A	145064330	17346454	+43.136618	-106.795679	0,0354461912	17,7914
5	22	085	6183403	22085	Ces. Pekos	Ces. Pekos	93	H3	G4900	480	41000	NULL	A	7358270	32901	+18.873748	-105.971286	0	0
6	59	099	6129572	48029	Minnehaha	Minnehaha Co.	96	H3	G4900	4920	41000	NULL	A	209008935	173981818	+43.5670123	-99.952741	0,0354265095	25,28312
7	68	527	1303936	48027	Menard	Menard County	96	H3	G4900	NULL	NULL	NULL	A	2205045914	613558	+30.894055	99.8528861	0,081795381	18,7882
8	59	081	60277318	00981	Pierra	Pierra County	96	H3	G4900	NULL	NULL	NULL	A	249006631	217291312	+39.395923	-125.321955	2,000,000,000	38,7176
9	21	023	6093887	21023	Clinton	Clinton County	96	H2	G4900	NULL	NULL	NULL	A	510864239	21184416	+28.288647	-98.139426	0,214479331	3,471743
10	39	061	6127404	20061	Hancock	Hancock County	96	H2	G4900	249	22000	NULL	A	1276210359	3993085	+41.000711	-98.4993023	0,597129176	18,85951
11	43	189	6103086	48125	Hale	Hale County	96	H2	G4900	30500	30000	NULL	A	260211569	2465076	+30.822242	-102.0207	0,0354265095	22,23119
12	46	027	6093887	48127	Owy	Owy County	96	H2	G4900	100	10000	NULL	A	1594000	738400	+31.770584	-101.050724	0,075509715	5,4457
13	48	011	6181819	48111	Hannibal	Hannibal County	96	H2	G4900	11000	11000	NULL	A	3294503104	32110001	+44.9447100	-101.280008	0,0354265095	21,18308
14	50	061	6184045	30061	Aliso	Aliso County	96	H2	G4900	350	35000	NULL	A	1040310381	12164544	+161.716174	-101.061012	0,495572228	12,18001
15	13	188	6038289	13188	McMullie	McMullie County	96	H2	G4900	12266	12266	NULL	A	666625151	23116801	+33.029637	-98.4726469	0,267721367	8,42562
16	55	111	6151115	55111	Seal	Seal County	96	H3	G4900	357	12000	NULL	A	2172024414	5803232	+43.278976	-88.943524	0,5772497617	27,54531
17	39	137	6099696	09337	Stark	Stark County	96	H3	G4900	NULL	NULL	NULL	A	1575784101	7842008	+39.3870312	-98.148522	0,281984854	18,47039
18	41	062	61156318	41062	Walworth	Walworth County	96	H3	G4900	NULL	NULL	NULL	A	1404654303	1419920	+45.3625239	-117.18553	2,000,000,000	35,93228
19	42	007	6121412	42007	Bearer	Bearer County	96	H2	G4900	430	35000	NULL	A	211499100	241499100	+43.0941461	-98.350229	0,495572228	12,18001
20	28	061	6093887	28061	Leiper	Leiper County	96	H2	G4900	28600	28600	NULL	A	751944897	21184416	+29.156594	-101.350715	0,0354265095	21,89894
21	40	061	6093887	28061	Henry	Henry County	96	H2	G4900	NULL	NULL	NULL	A	1489000	929000	+39.269715	-98.250000	22,0000	22,0000
22	39	208	6019178	80001	Sergeant	Sergeant County	96	H2	G4900	11000	11000	NULL	A	80712477	4149454	+30.301014	-101.2346652	0,200000000	9,934924
23	37	037	6100564	58037	Cherokee	Cherokee County	96	H2	G4900	450	20500	NULL	A	170707000	72412561	+35.769519	-98.394542	0,723,509492	18,79767
24	49	031	61448638	49031	Rich	Rich County	96	H2	G4900	NULL	NULL	NULL	A	7664717929	24893012	+41.029776	-111.780269	1,210000713	37,46947
25	40	001	61102168	40001	Arap	Arapahoe County	96	H3	G4900	NULL	NULL	NULL	A	1485305952	52547375	+35.880612	-98.451023	0,3646971658	16,99566
26	39	081	61174053	39081	Lake	Lake County	96	H2	G4900	184	17400	NULL	A	590216700	159491024	+11.2911363	-98.1321051	26,37391	26,37391
27	51	775	6179807	51775	Salem	Salem County	96	C7	G4900	40220	40220	F	F	265940	93730032	0,0354265095	9,0375487	0,0354265095	9,0375487
28	31	121	6151840	51121	Marygown	Marygown ...	96	H2	G4900	11000	11000	NULL	A	1010159473	5811834	+37.788943	-98.187318	0,408413406	18,73388
29	47	065	61332049	47065	Hamilton	Hamilton County	96	H2	G4900	12400	12400	NULL	A	1494078997	86385702	+35.152689	-98.212051	16,68441	16,68441
30	35	025	6093887	32025	Otsego	Otsego County	96	H2	G4900	15460	15460	NULL	A	7212116	21170175	+32.3837761	-101.701785	0,0354265095	15,37394
31	35	010	60995108	32010	Colton	Colton County	96	H2	G4900	NULL	NULL	NULL	A	17022000	17121916	+31.91761	-101.19161	0,0354265095	19,1593
32	30	061	60141132	00061	Marquette	Marquette County	96	H2	G4900	NULL	NULL	NULL	A	388012048	1499000	+33.703911	-98.75889	0,034189823	10,93700
33	66	023	6150578	58023	Lincoln	Lincoln County	96	H2	G4900	NULL	NULL	NULL	A	185200024	6923245	+42.220993	-110.680614	0,0354265095	30,44644
34	29	011	6093887	29011	Barton	Barton County	96	H2	G4900	NULL	NULL	NULL	A	153306792	12134954	+37.303783	-98.344083	0,259332052	18,71928
35	48	057	61383814	48057	Coffey	Coffey County	96	H2	G4900	544	38620	NULL	A	1312787392	1361903536	+28.444516	-98.595757	0,985317976	27,18308
36	51	231	61496618	31723	Freighton	Freighton City	96	C7	G4900	545	47260	NULL	F	30846967	16343703	+37.788948	-98.3035157	0,062479318	16,68498
37	54	079	61350504	54079	Pecoskawas	Pecoskawas Co.	96	H2	G4900	NULL	NULL	NULL	A	242521454	297950	+30.3126860	-98.0101246	1,003251408	24,30310
38	48	077	6133024	48077	Clay	Clay County	96	H2	G4900	45600	45600	NULL	A	2813786751	72391173	+33.769542	-98.212051	1,124,223009	31,35132
39	51	065	6148135	51065	James City	James City Co.	96	H2	G4900	543	47260	NULL	A	38867779	9313055	+39.26853	-98.7799878	0,0354265095	3,818184
40	21	101	61109872	41011	Kent	Kent County	96	H2	G4900	NULL	NULL	NULL	A	274695172	12011394	+41.02904	-101.18482	0,42418482	39,16900
41	32	077	6093887	32077	Welder	Welder County	96	H2	G4900	11000	11000	NULL	A	1288000	344000	+34.703911	-98.75889	0,034189823	10,93700
42	39	018	60350468	52018	Caledonia	Caledonia Parish	95	H2	G4900	29040	29040	NULL	A	275461006	79221951	+30.329568	-99.3300154	1,061332452	37,24444
43	22	111	6093887	21111	Union	Union Parish	95	H2	G4900	384	33340	NULL	A	227318494	23194895	+32.828588	-98.395681	0,0354265095	22,07008
44	40	120	6110185	40120	Saqayamn	Saqayamn Co.	95	H2	G4900	22000	22000	NULL	A	1763771484	10384605	+25.3021043	-99.757549	2,000,000,000	38,18102
45	01	048	60101508	01048	Dakota	Dakota County	95	H2	G4900	NULL	NULL	NULL	A	291266442	4121495	+34.665529	-98.03952	0,791340257	24,40502
46	35	101	60974140	30101	Stephen	Stephen County	95	H2	G4900	230	10560	NULL	A	1091565101	74993038	+42.295725	-101.737941	39,94767	414

Step 14 – Select the identify features tool and click to any area to see its features.

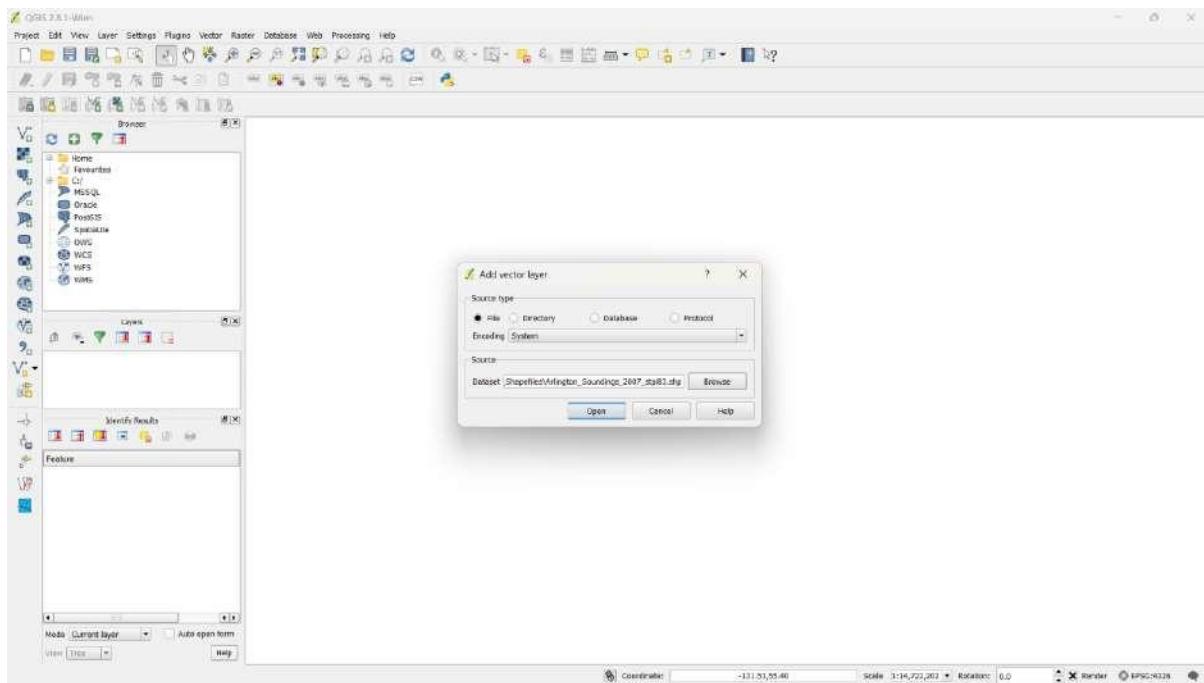


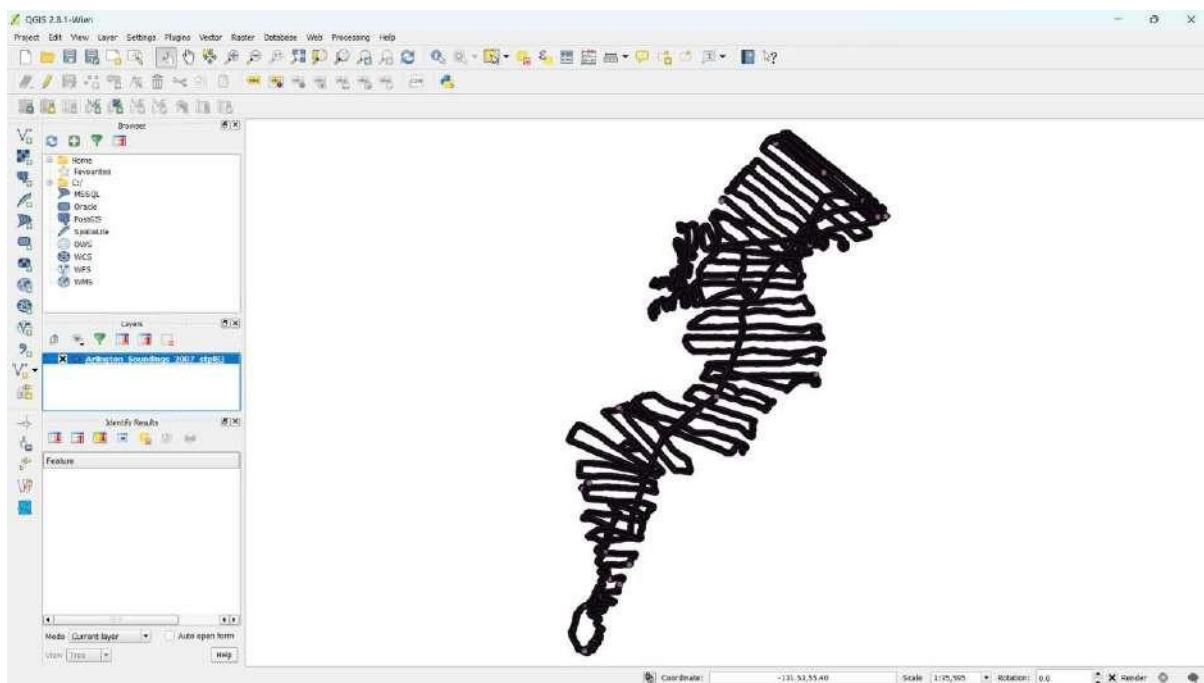
Step 15 – Open the Properties panel of the vector layer and set the following attributes then click apply.



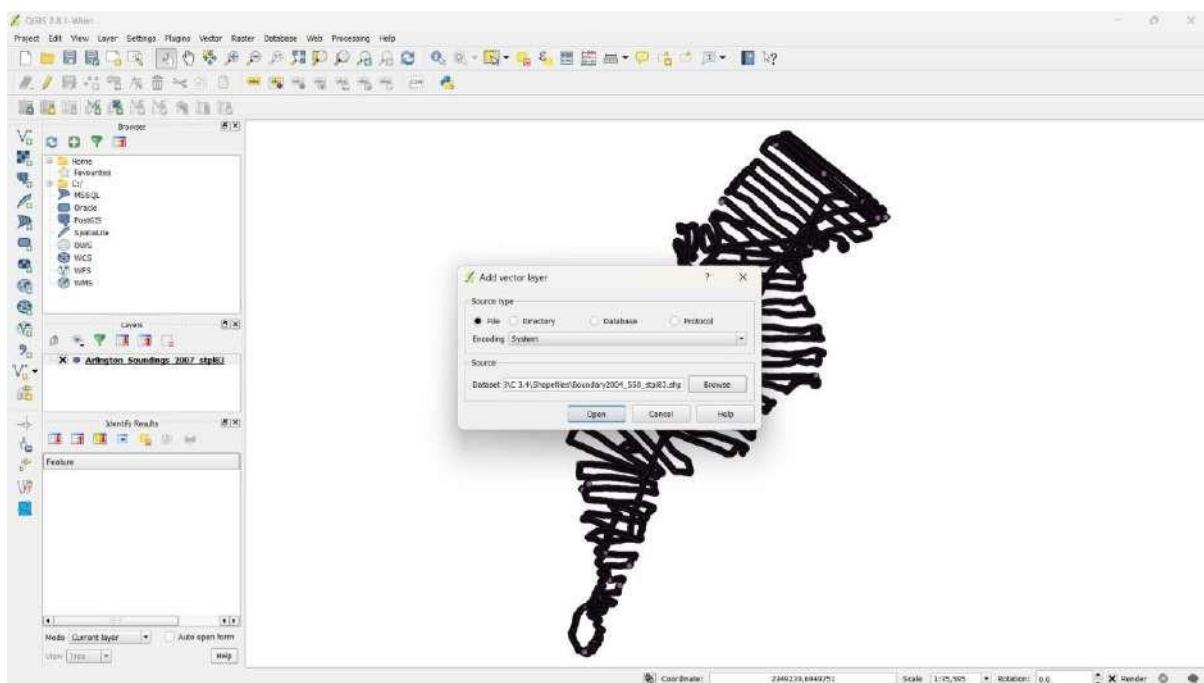


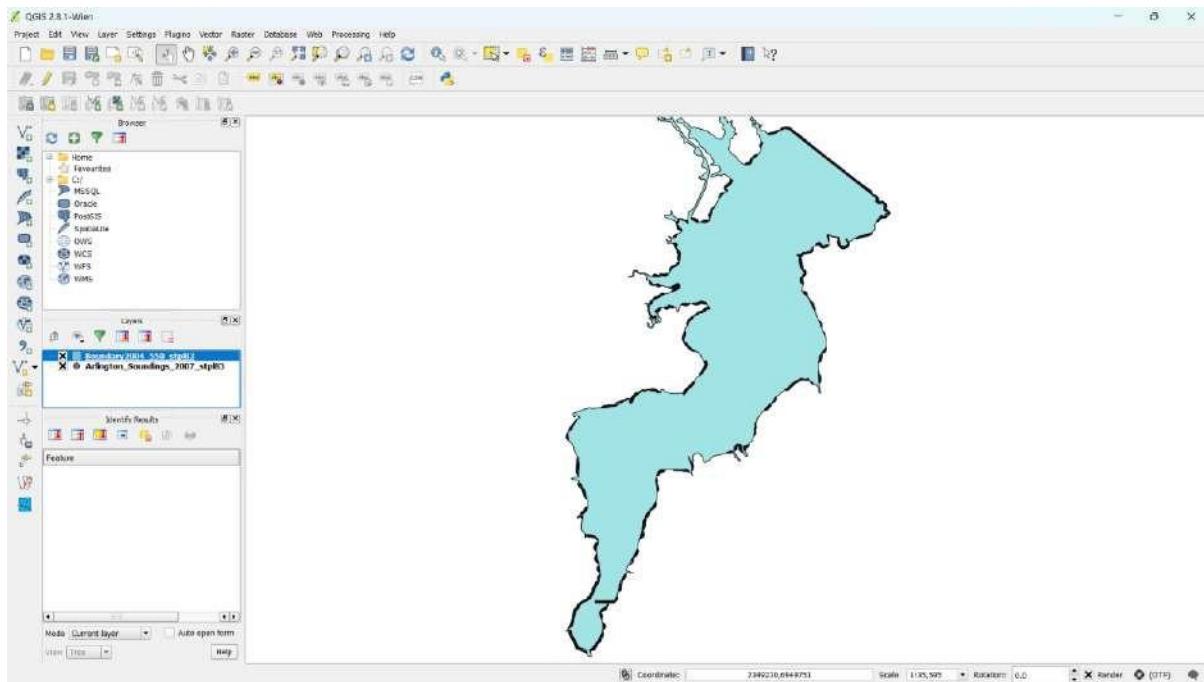
Step 16 – Create a new project. Add the following Vector Layer.



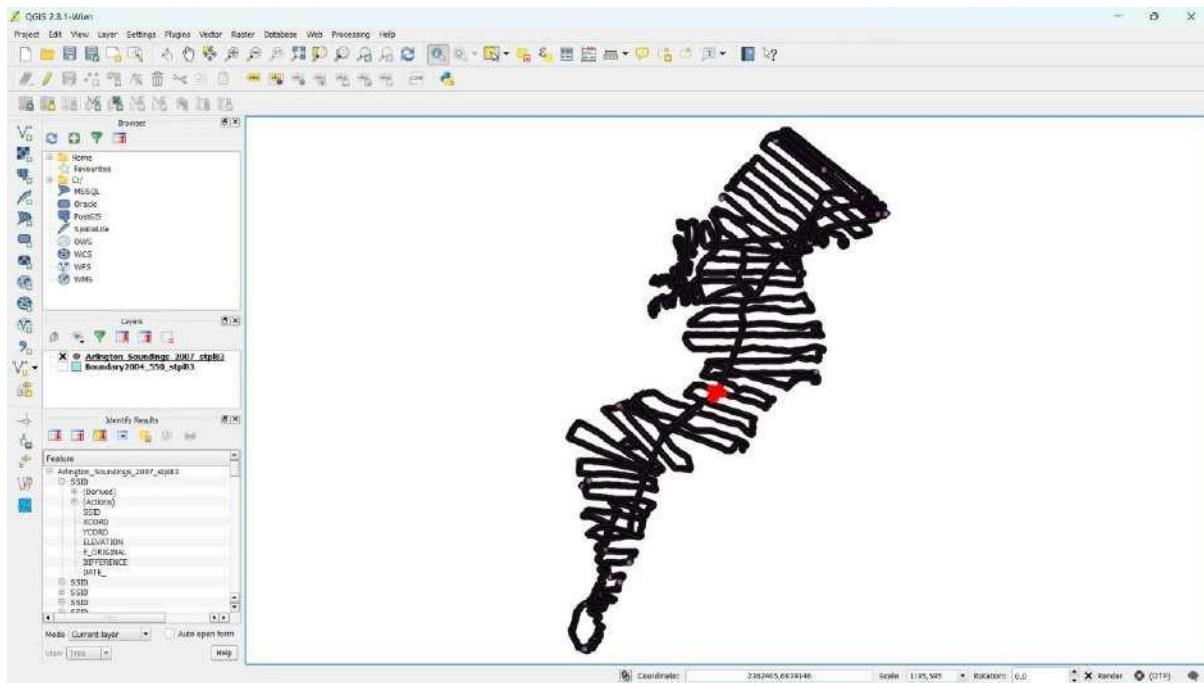


Step 17 – Add the following .shp file.

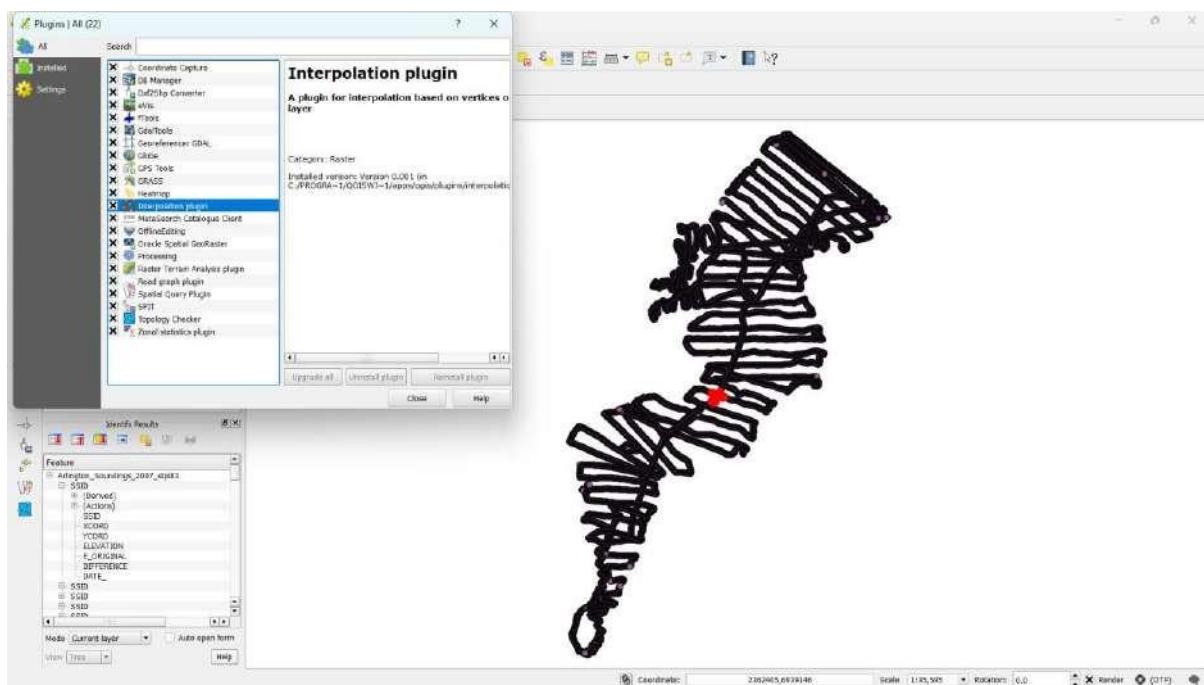




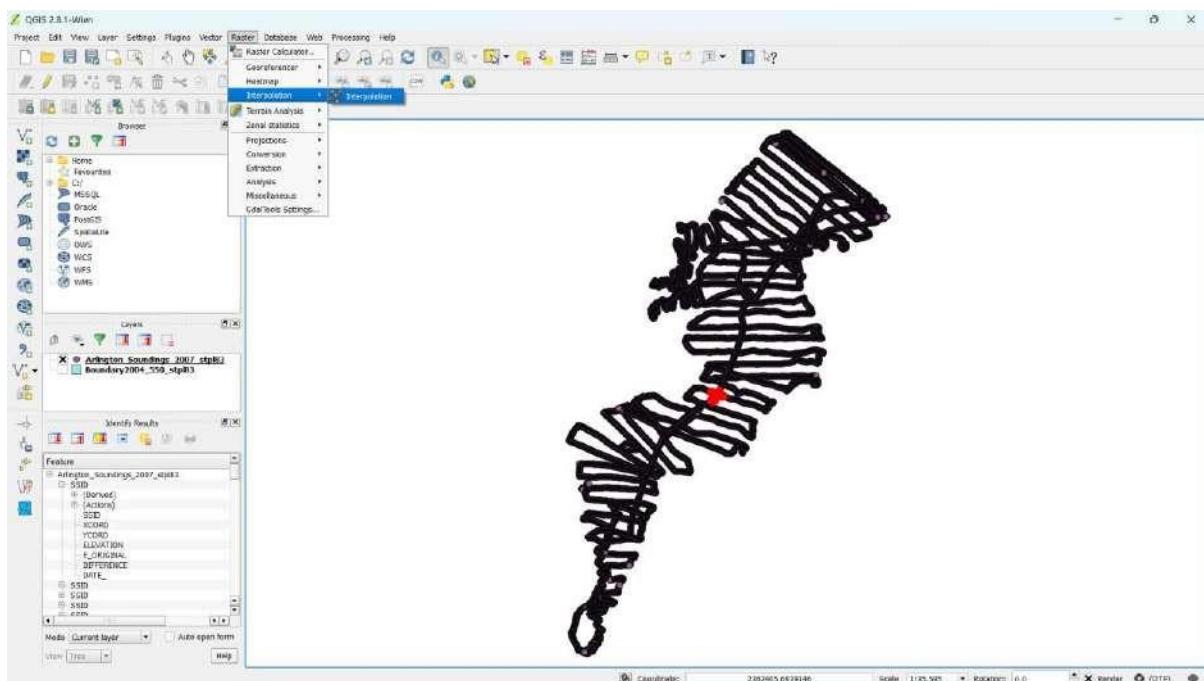
Step 18 – Click anywhere with the identify features tool on to find out the features of that region.

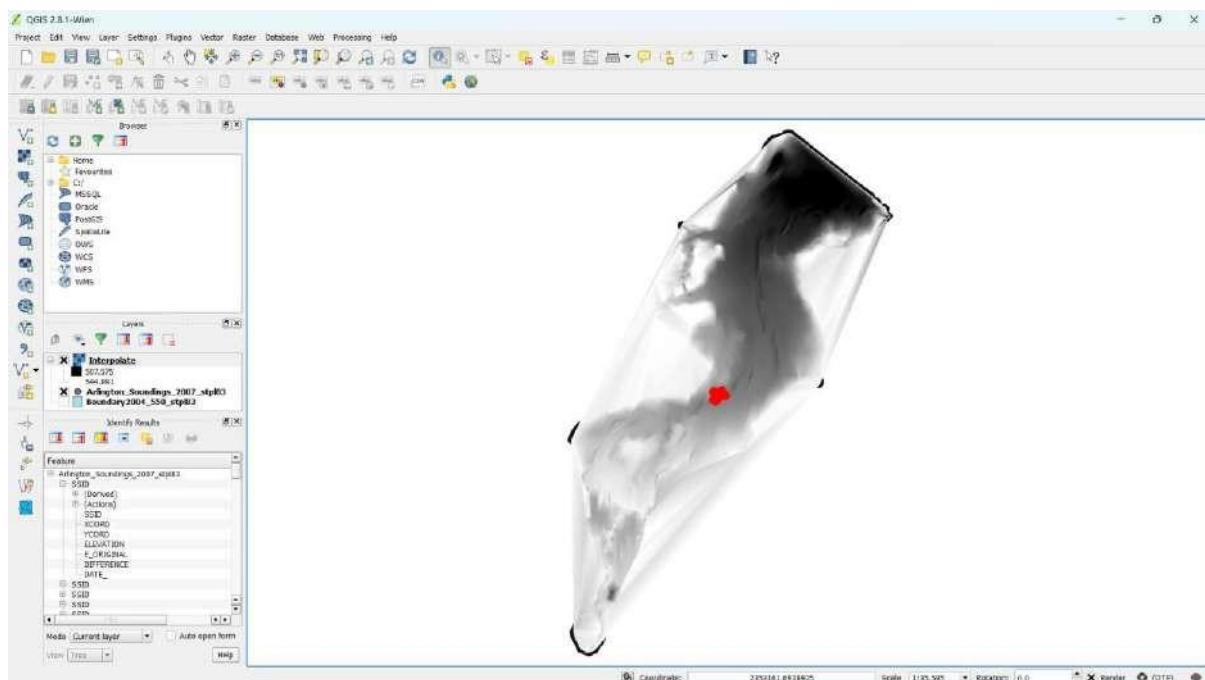
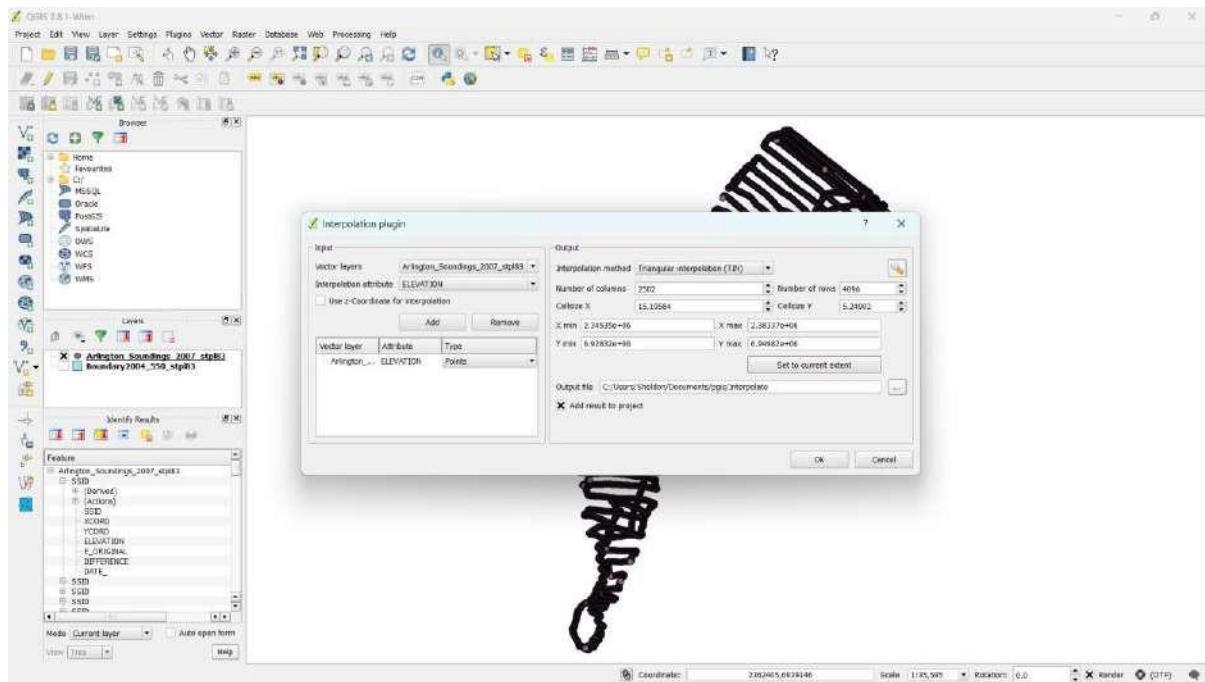


Step 19 – Install Interpolation plugin.

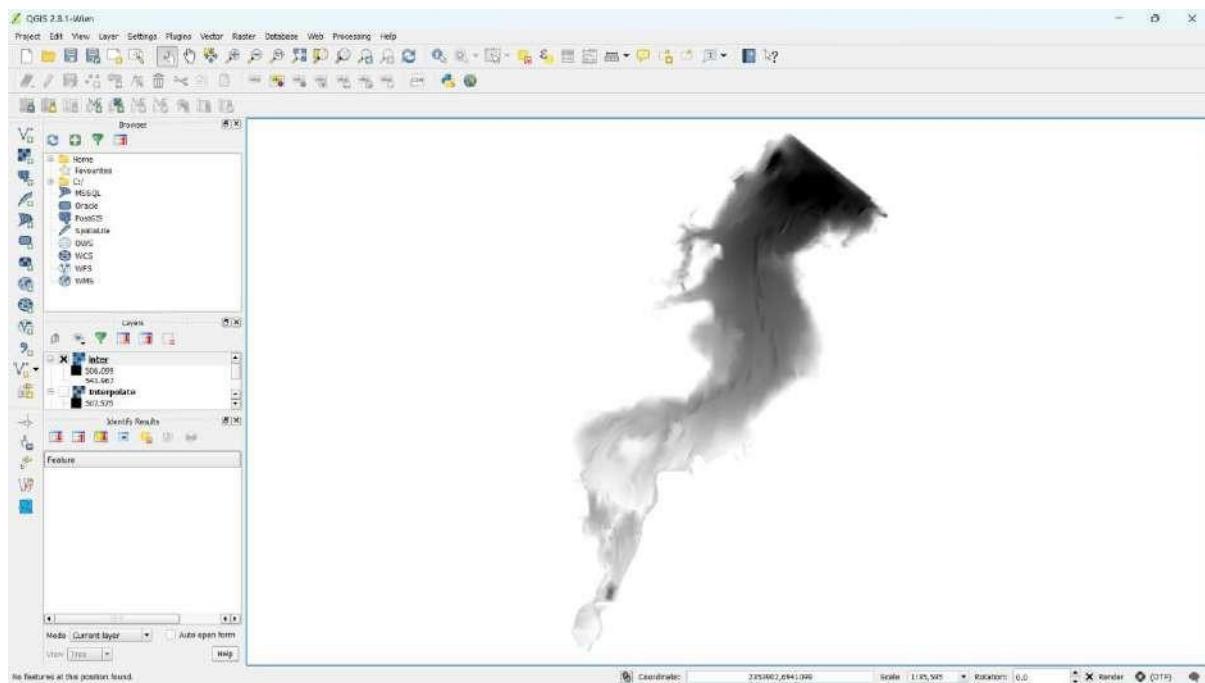
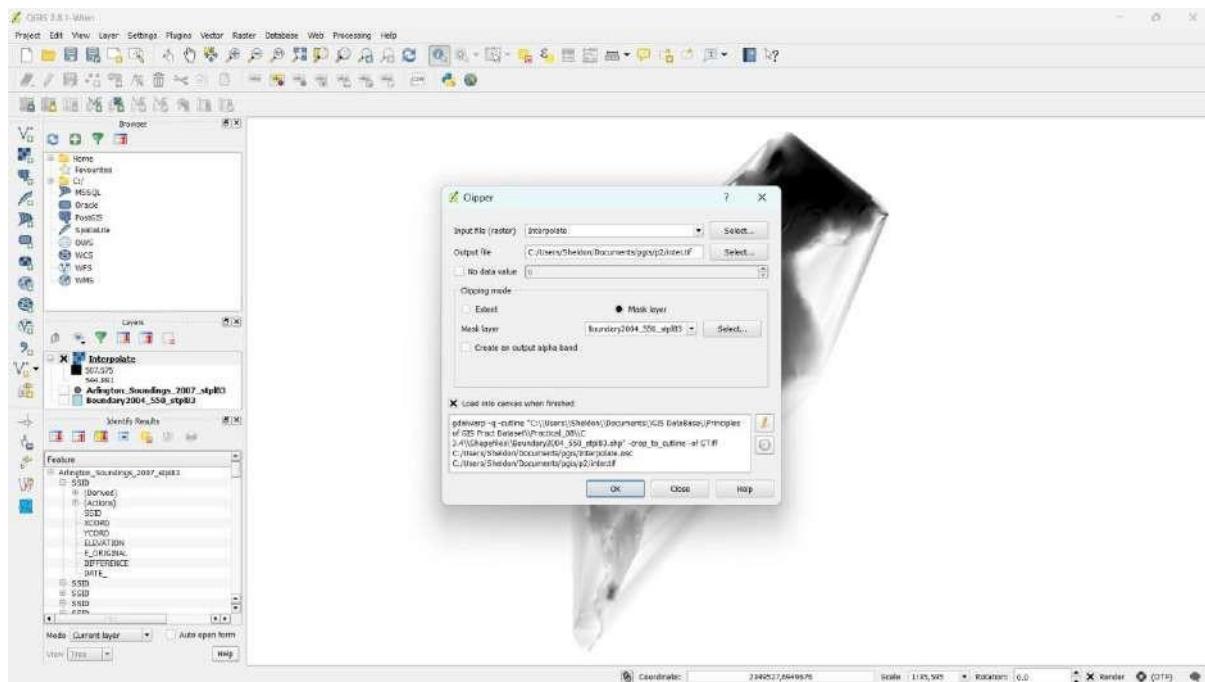


Step 20 – Raster > Interpolation. Set the following parameters and click OK.

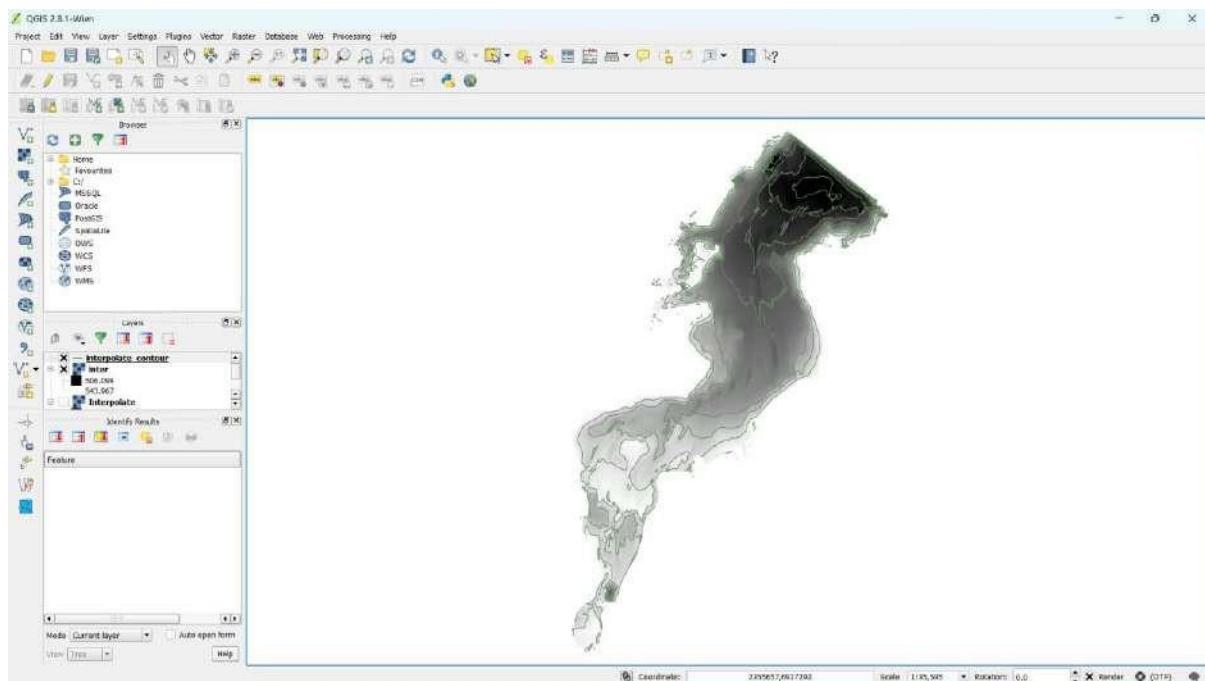
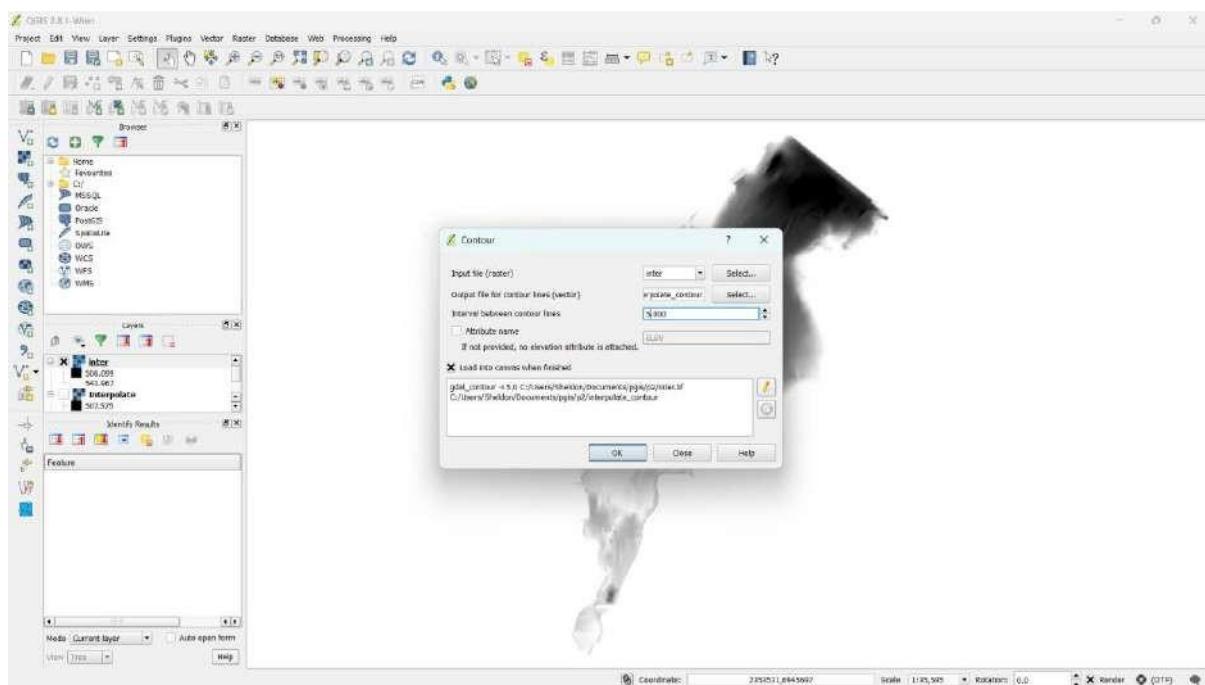




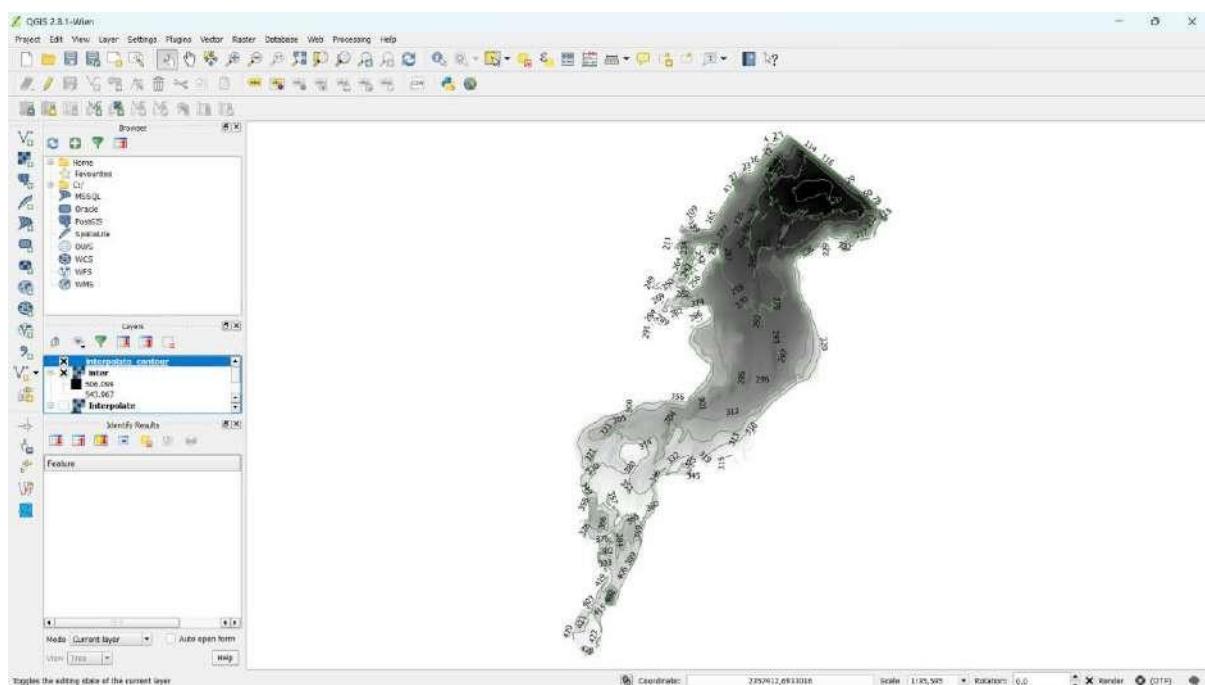
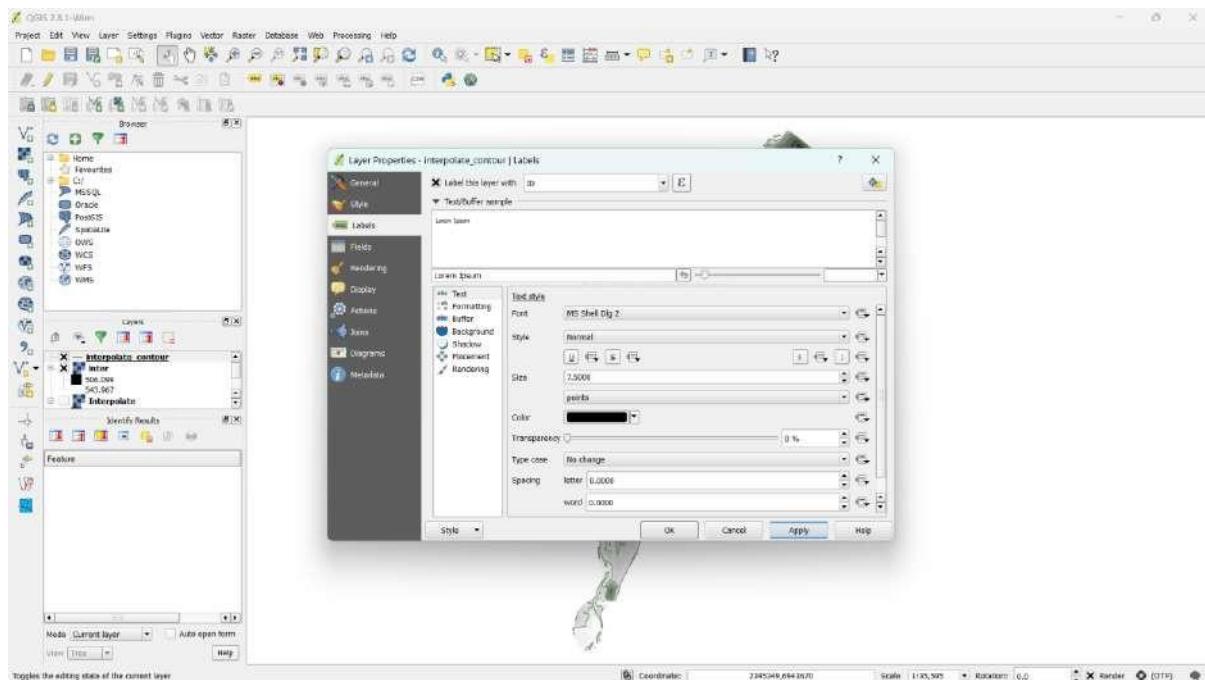
Step 21 – Raster > Extraction > Clipper. Set the following parameters and click OK.



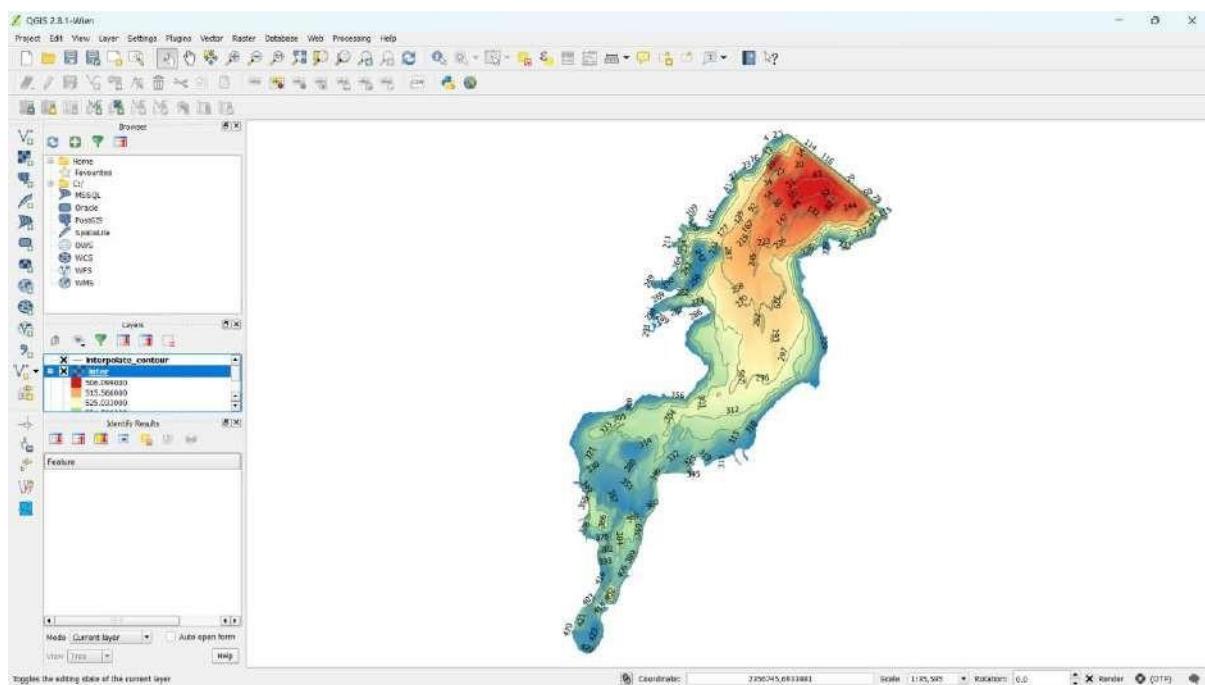
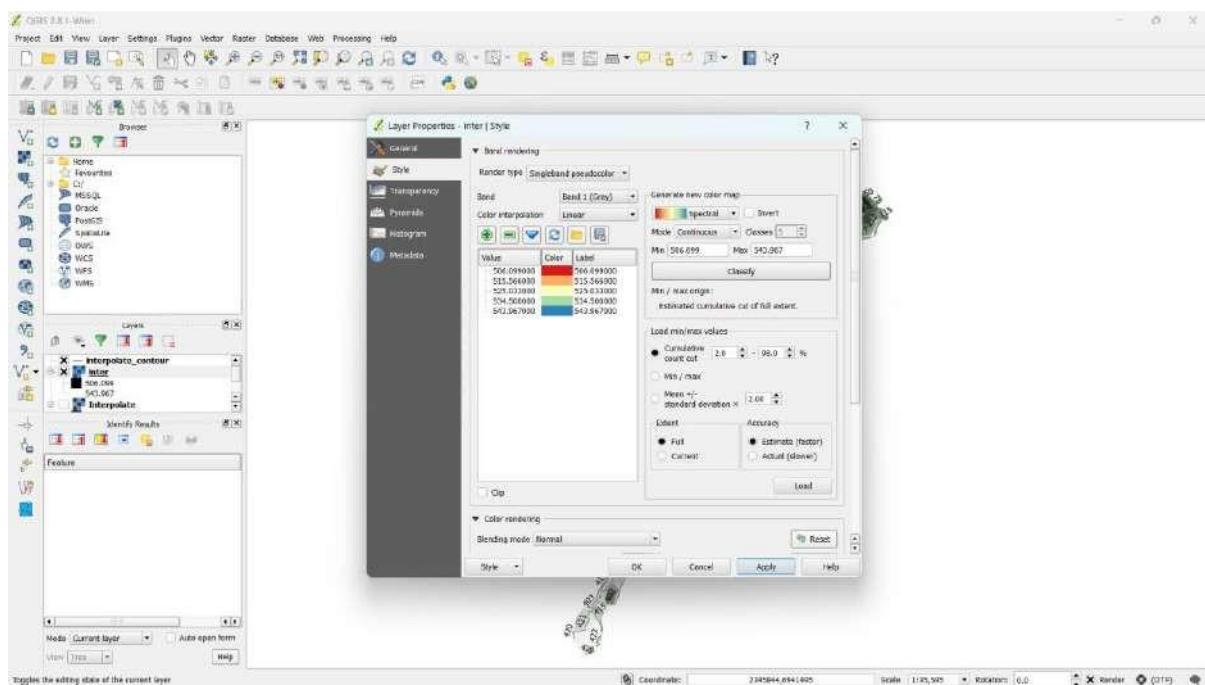
Step 22 – Raster > Extraction > Contour. Set the following attributes and click OK.



Step 23 – Open the properties of the contour layer. Go to the labels tab, set the following attributes and then click Apply.



Step 24 – Open the properties of the clipped layer. Set the following attributes and hit Apply.

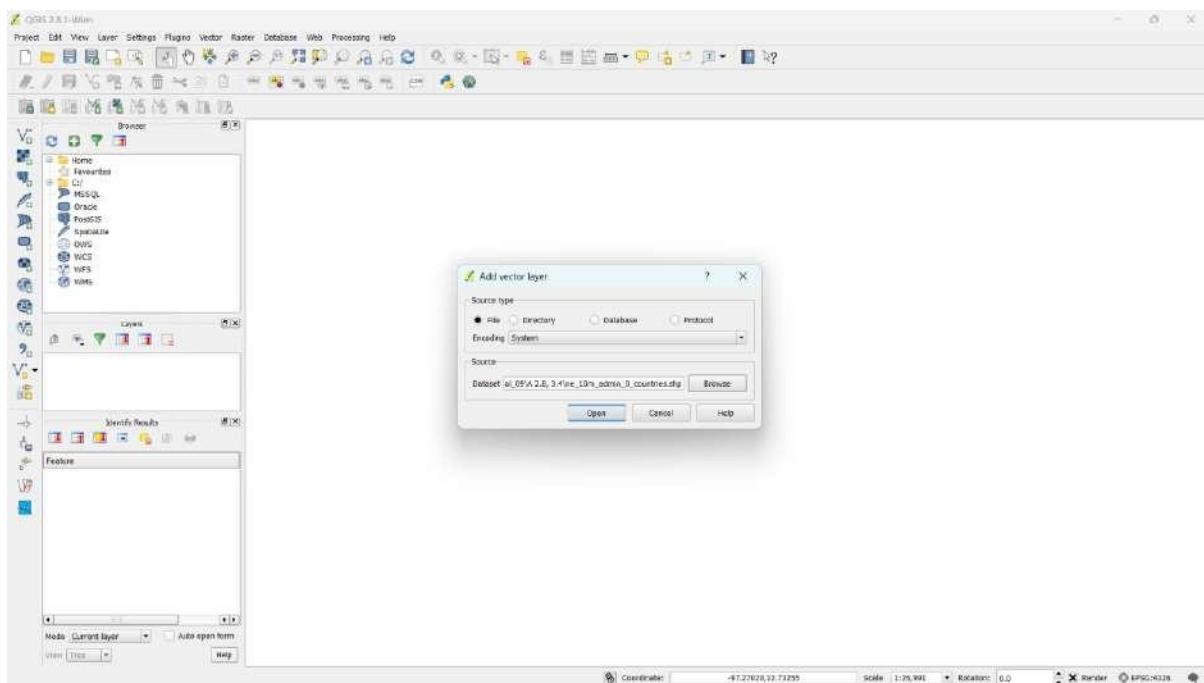


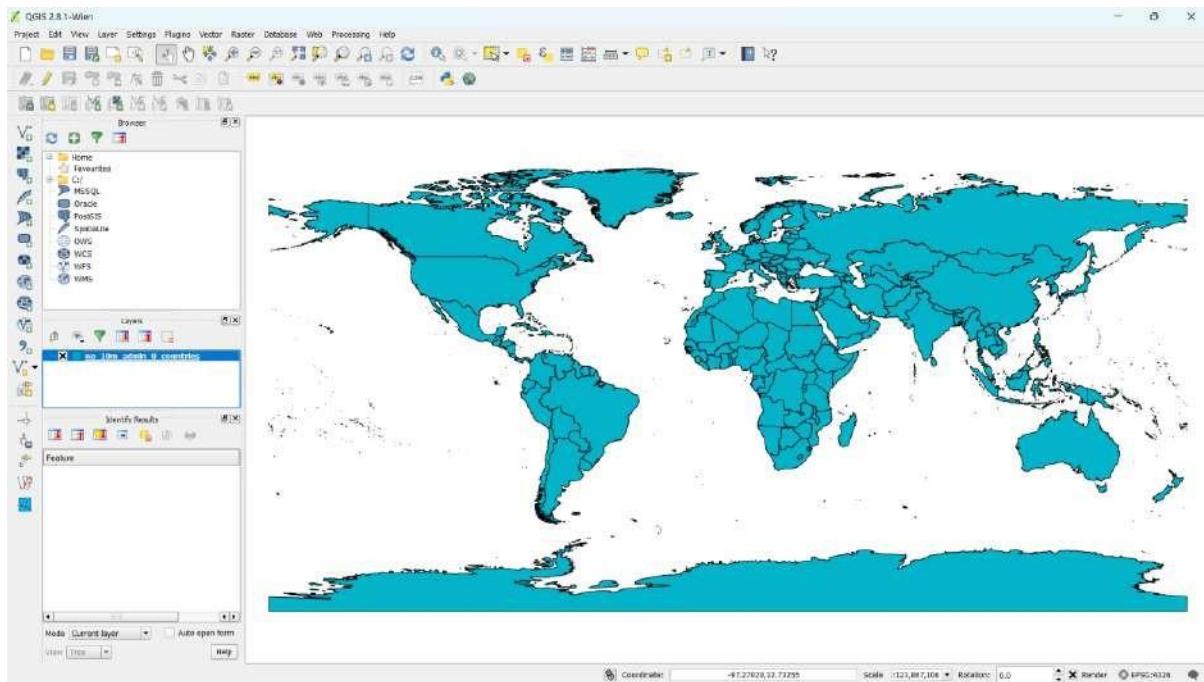
PRACTICAL – 9

Aim: Advance GIS Operations 2: Batch Processing using Processing Framework, Automating Complex Workflows using Processing Modeler and Automating Map Creation with Print Composer Atlas.

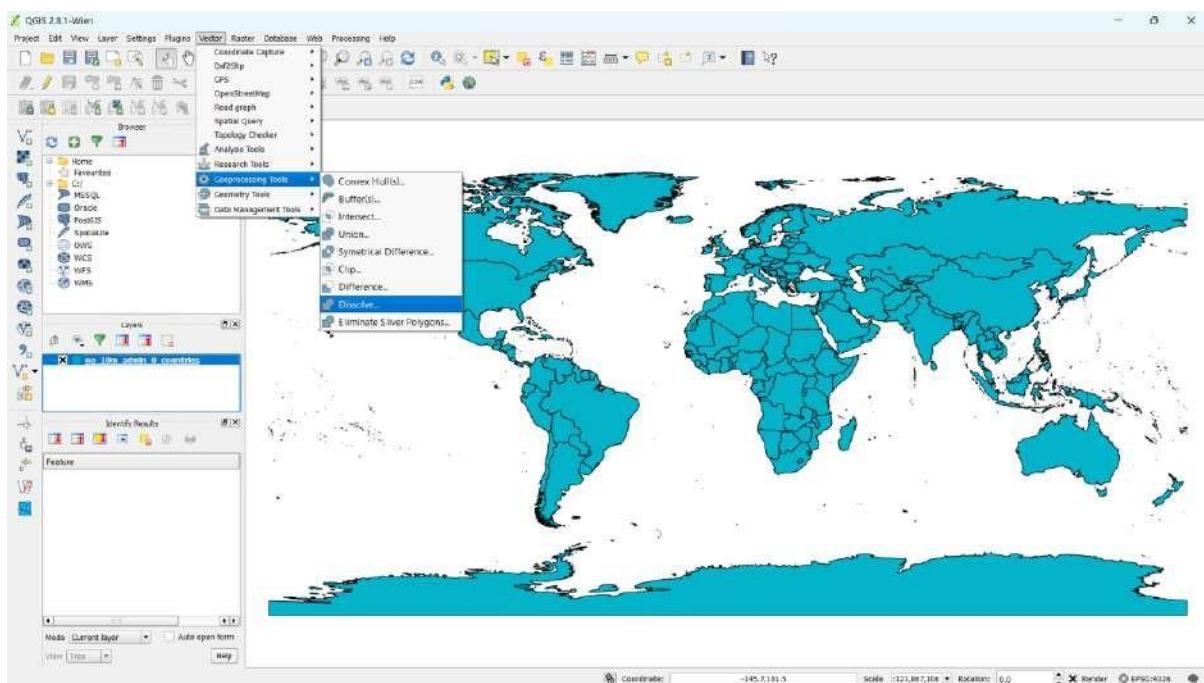
Steps:

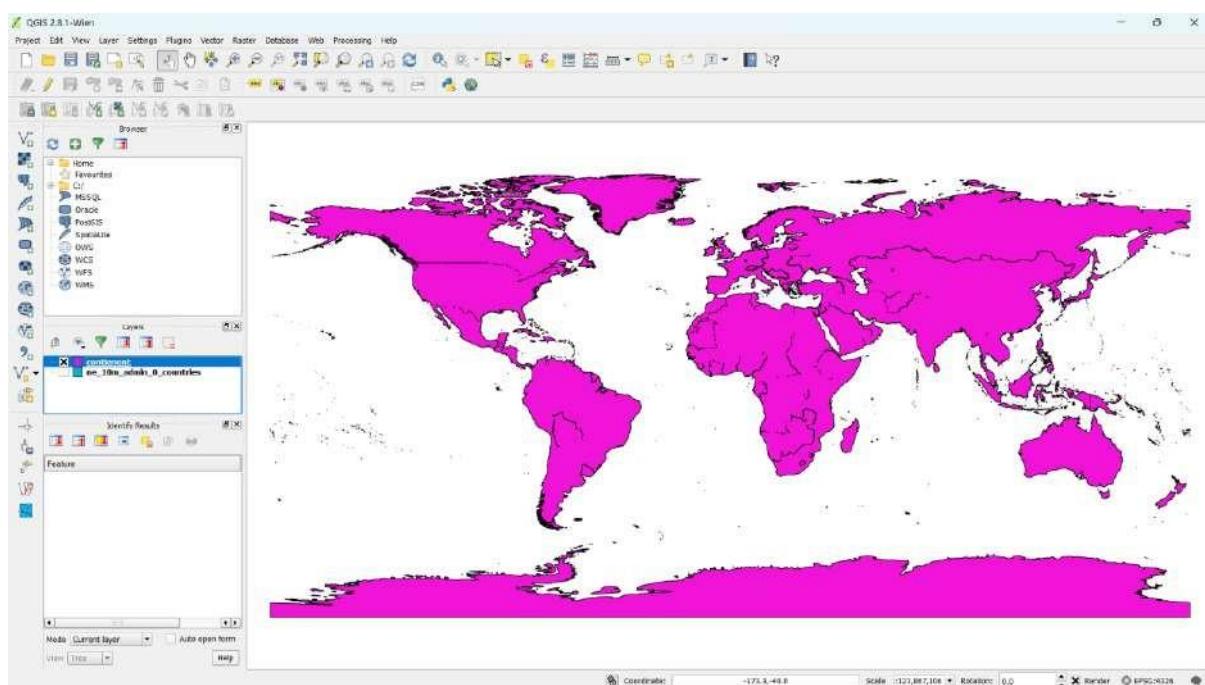
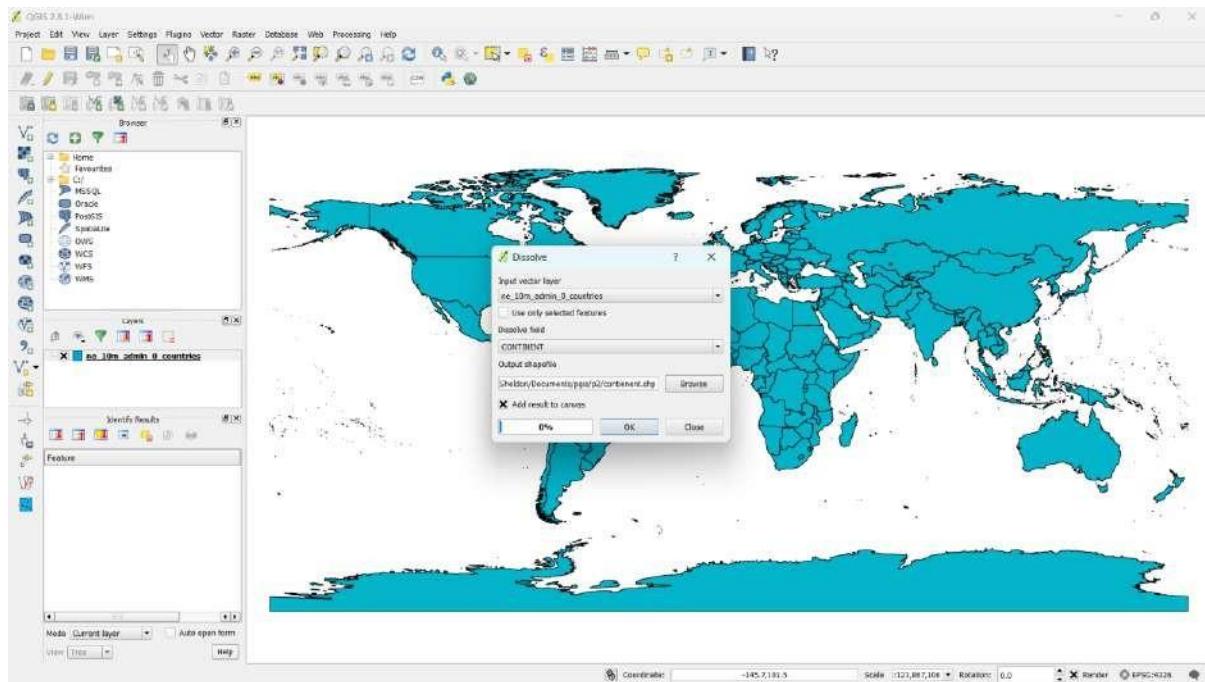
Step 1 – Add the following vector layer.



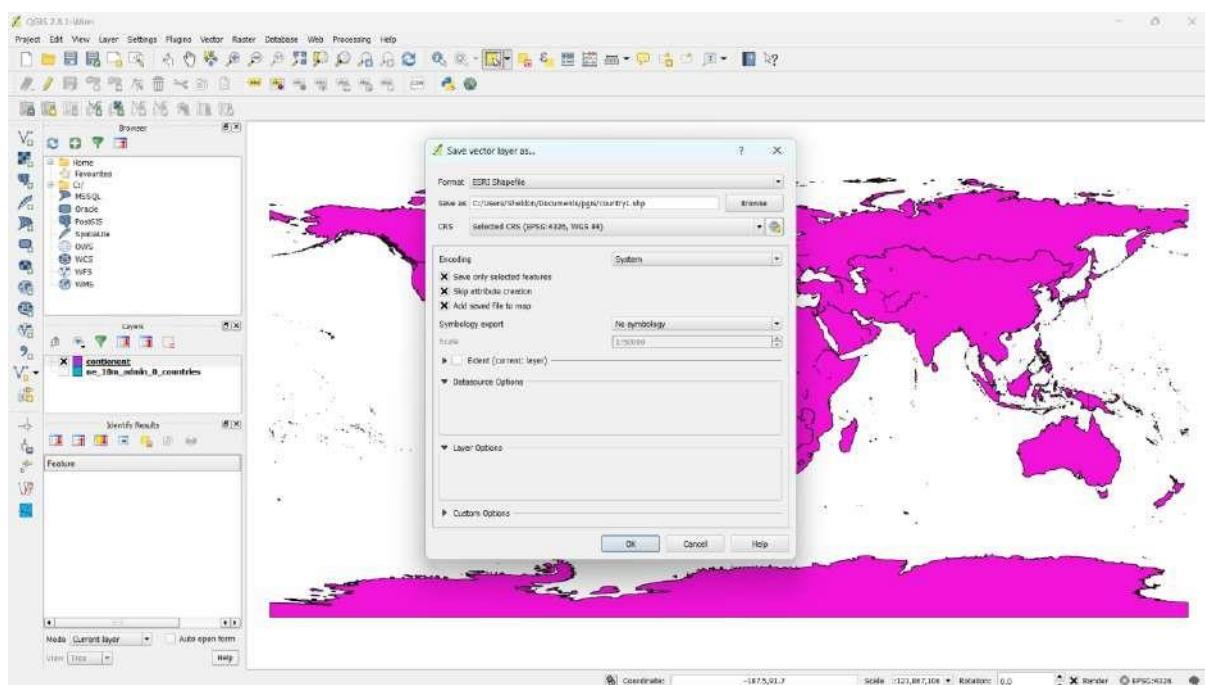
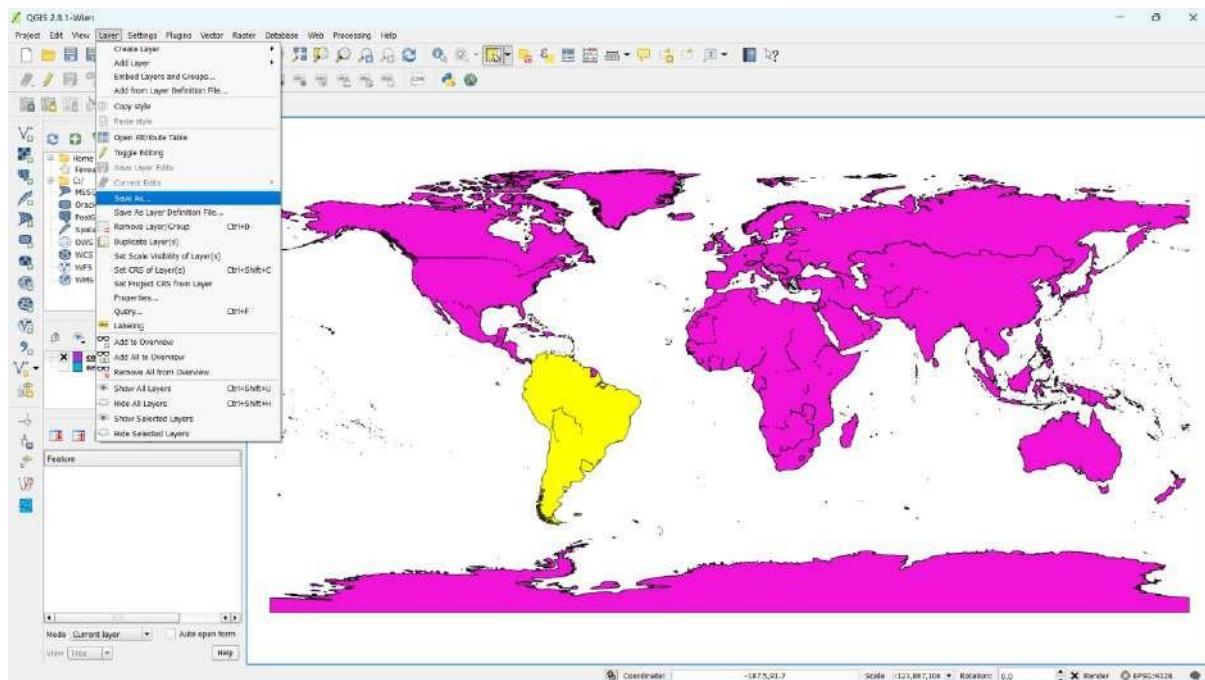


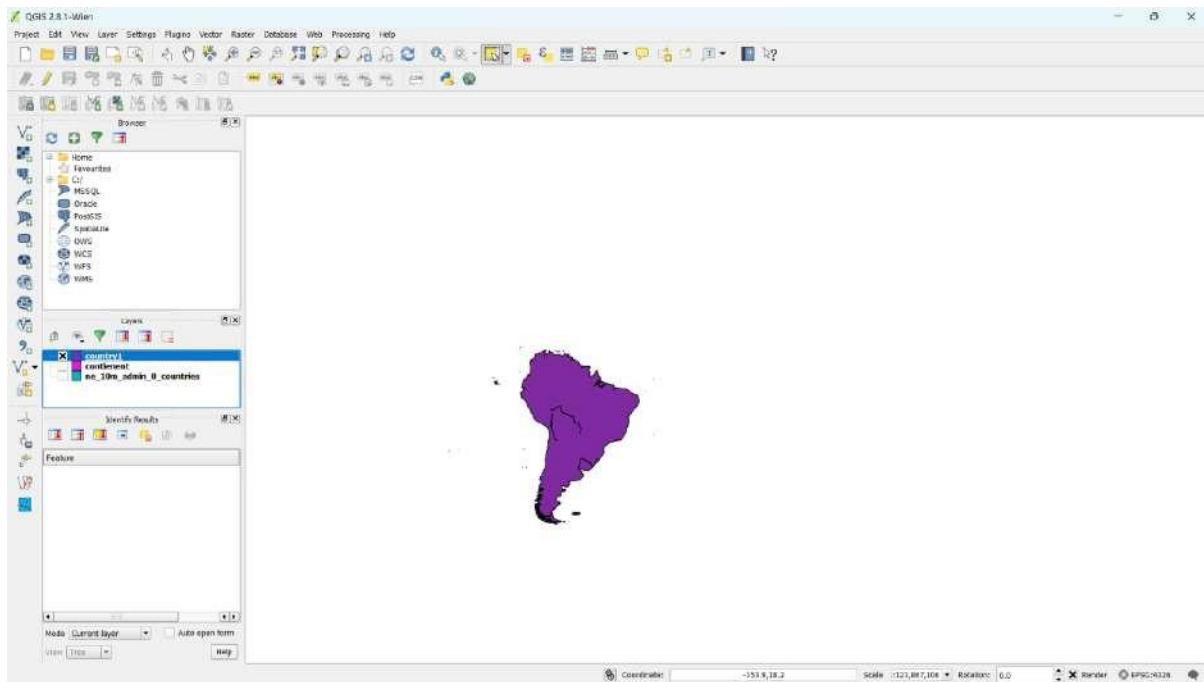
Step 2 – Vector > Geoprocessing Tools > Dissolve. Set the following attributes and click OK.



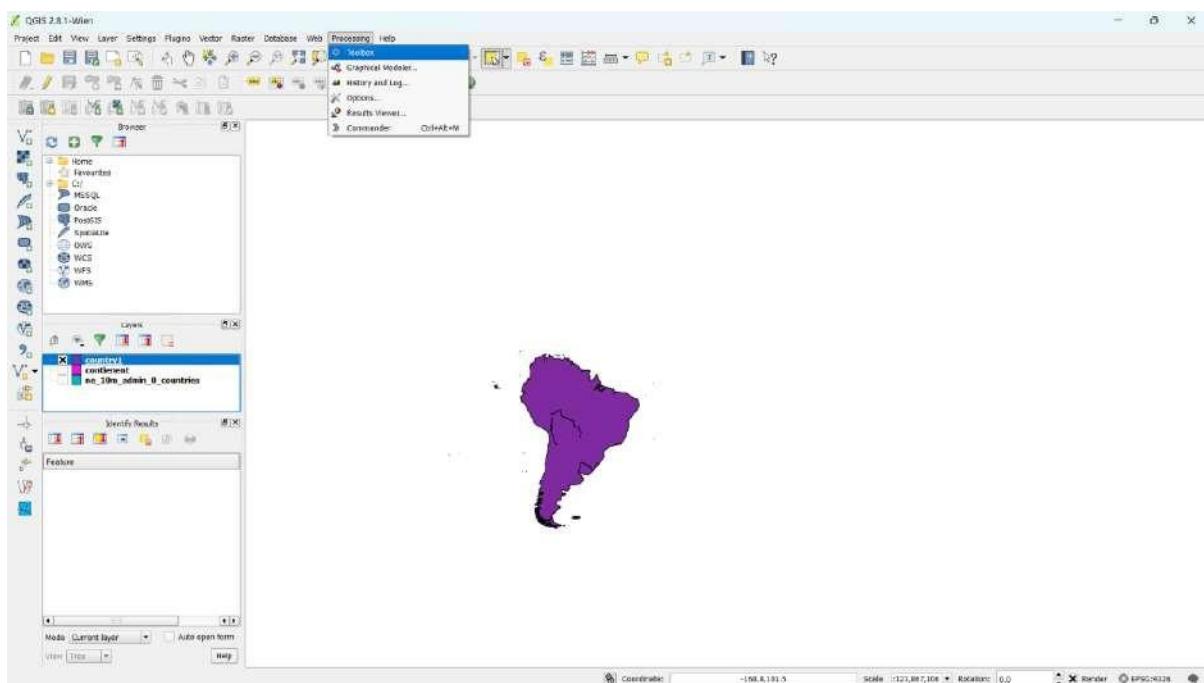


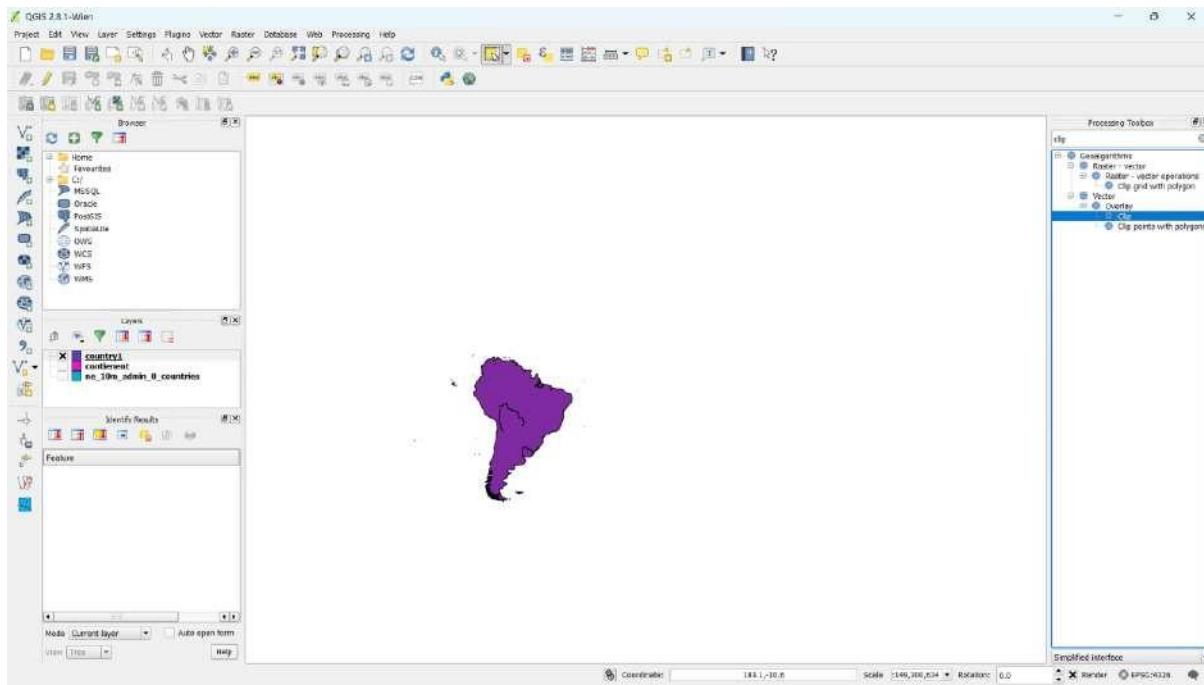
Step 3 – Select a layer. Go to the layers tab and click Save As. Set the following attributes and click OK.



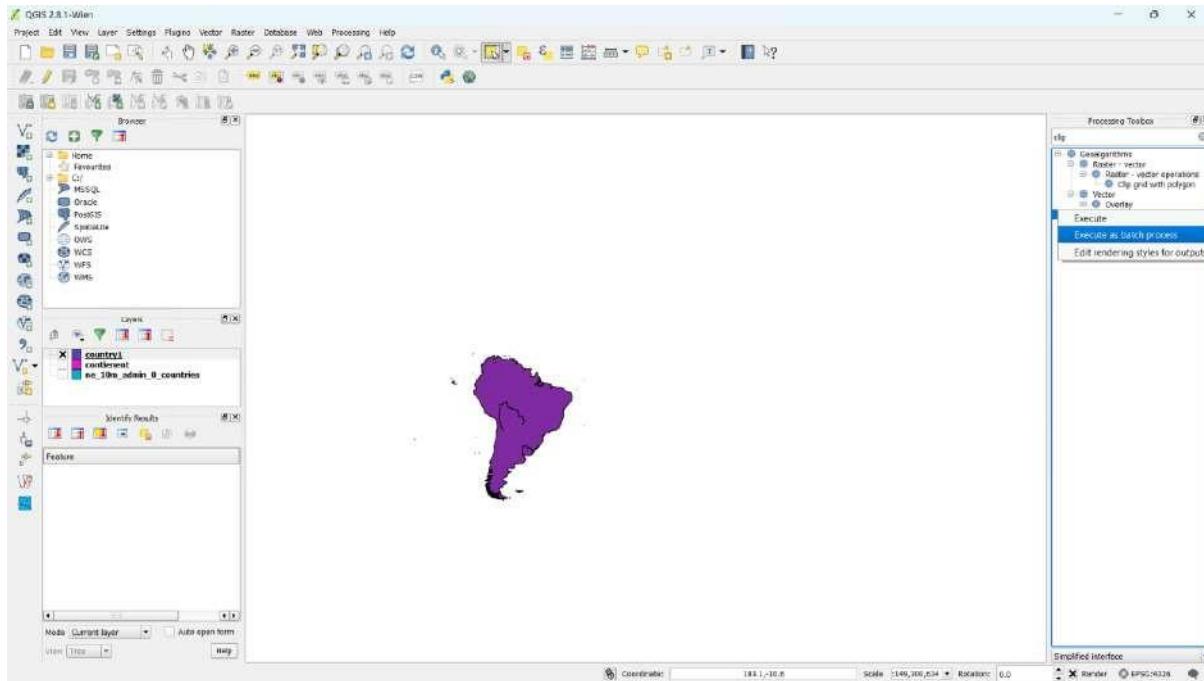


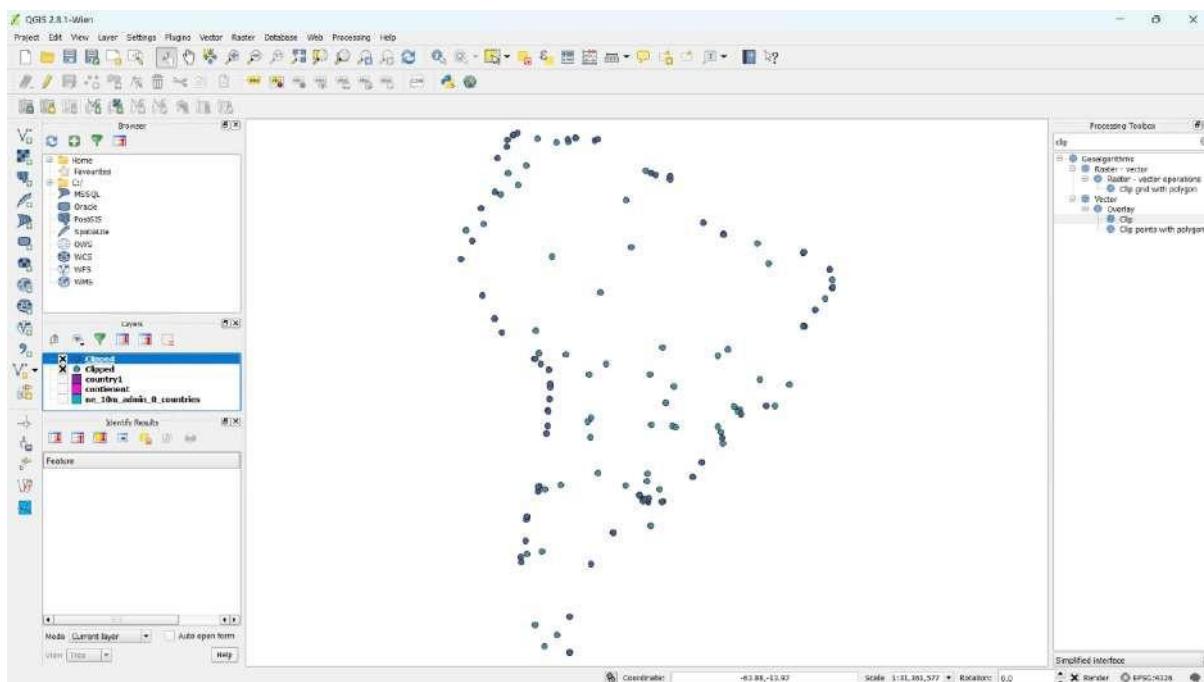
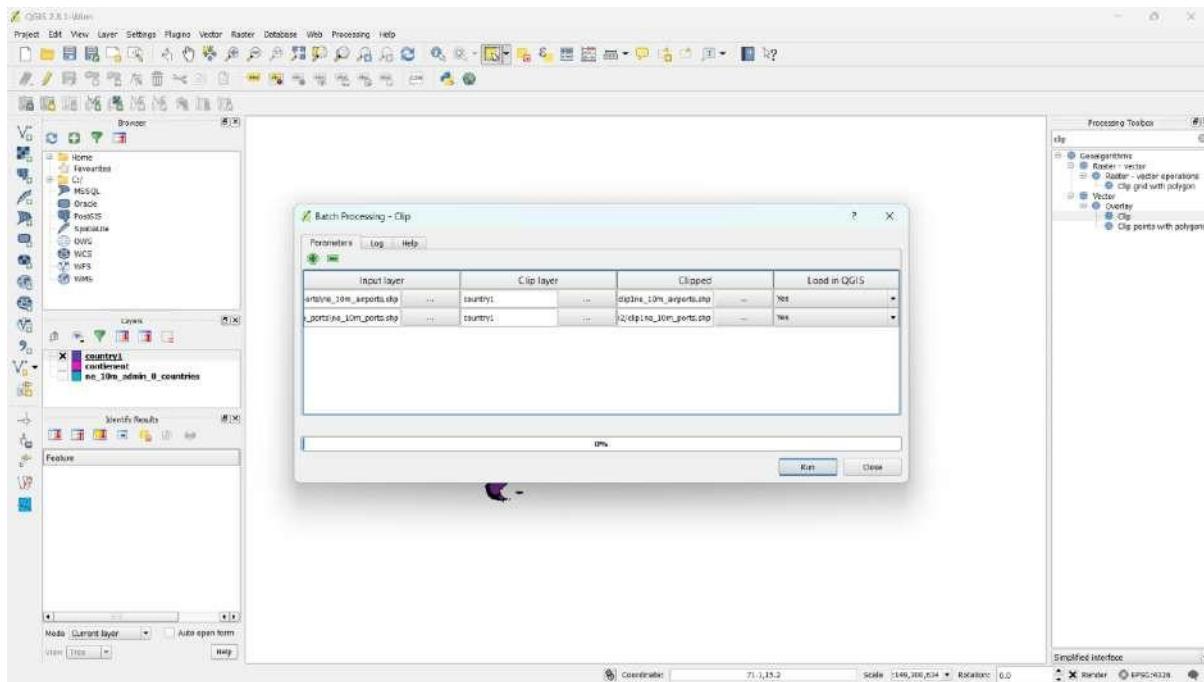
Step 4 – Processing > Toolbox. Search for Clip.



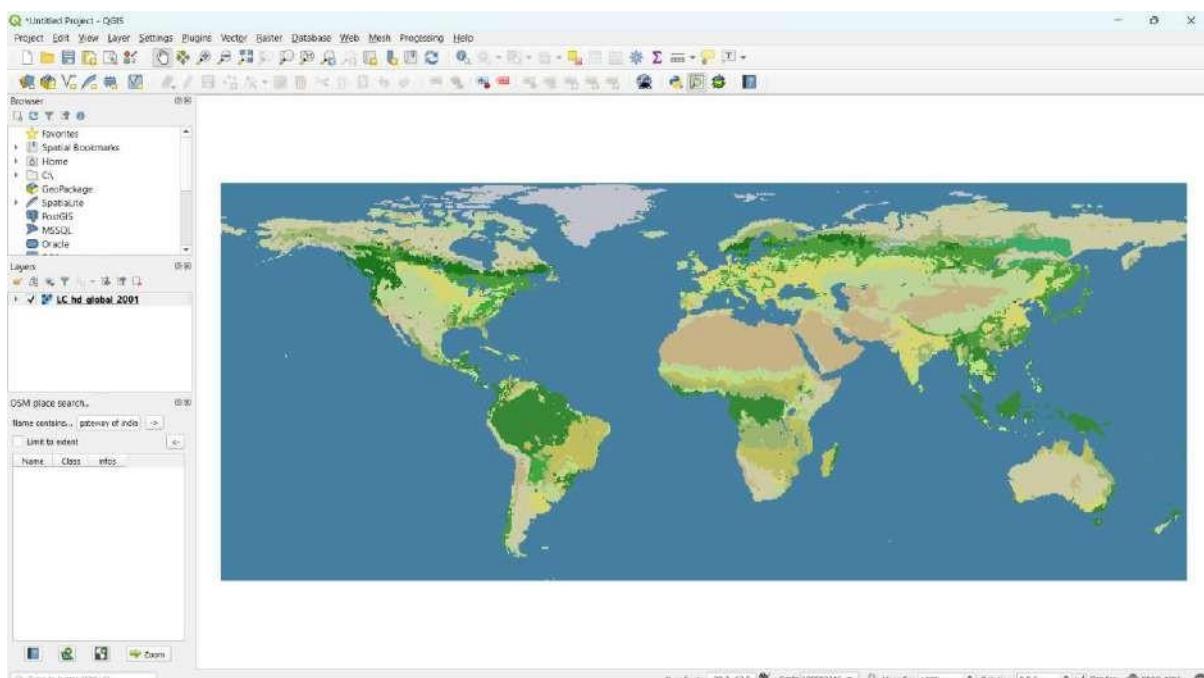
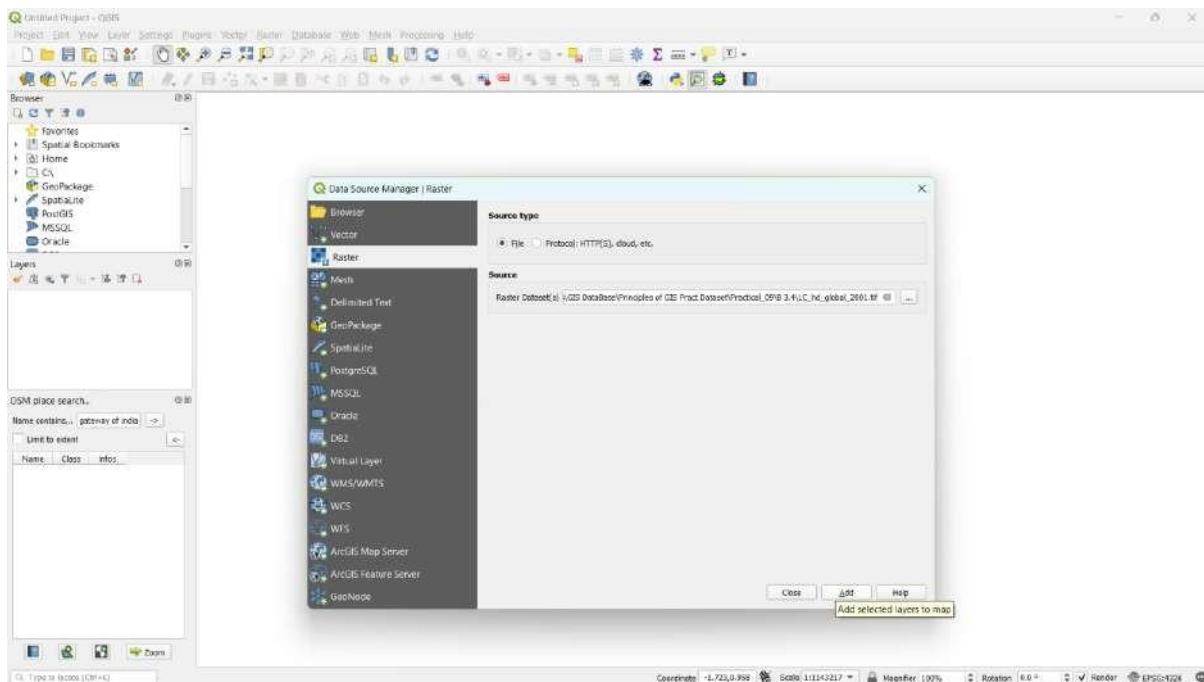


Step 5 – Right click on Clip and select execute as batch process. Set the following parameters and click run.

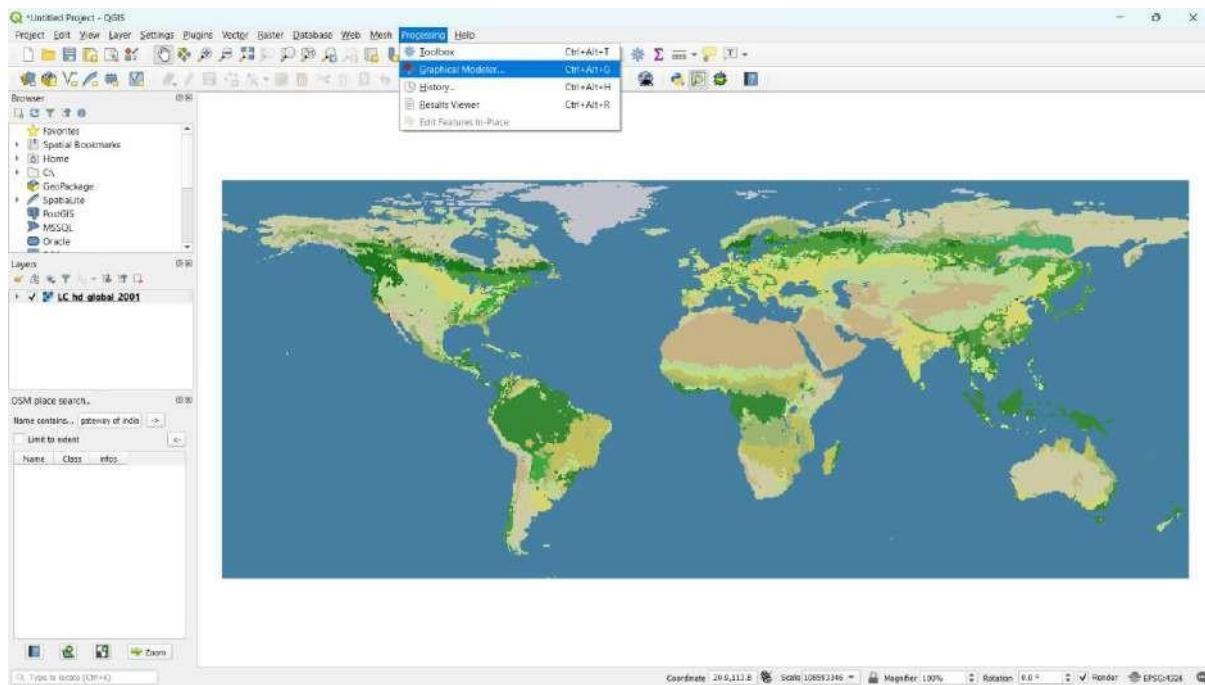




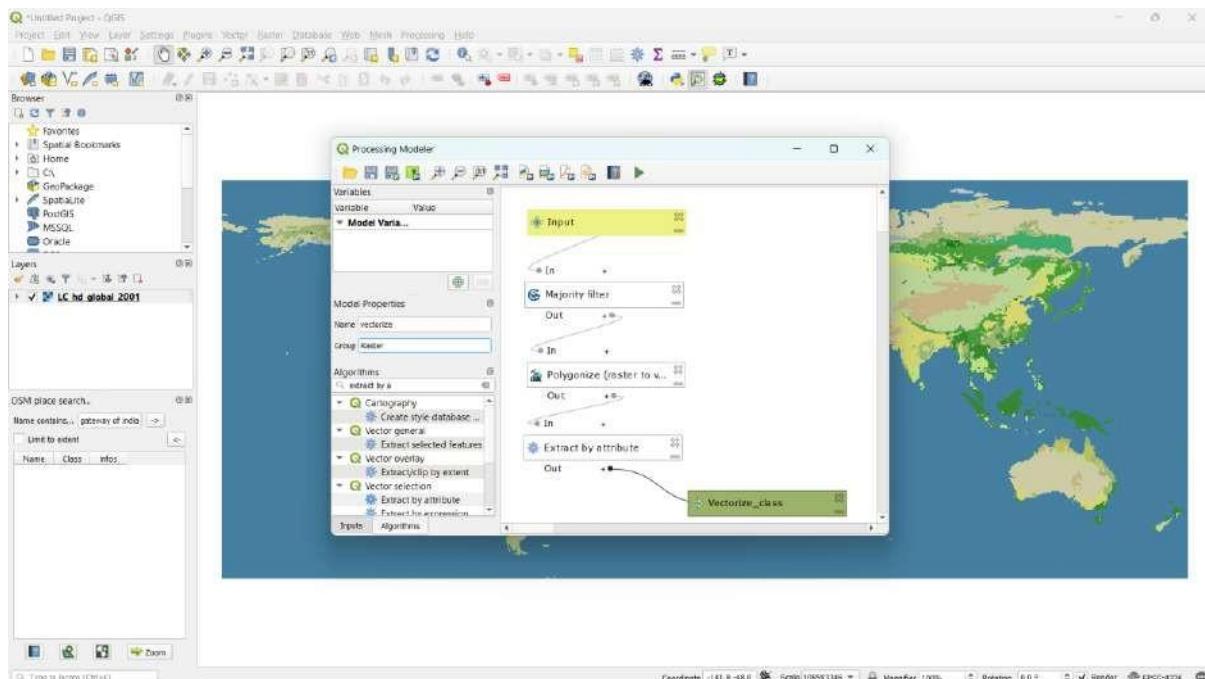
Step 6 – Create a new project. Add the following raster layer.



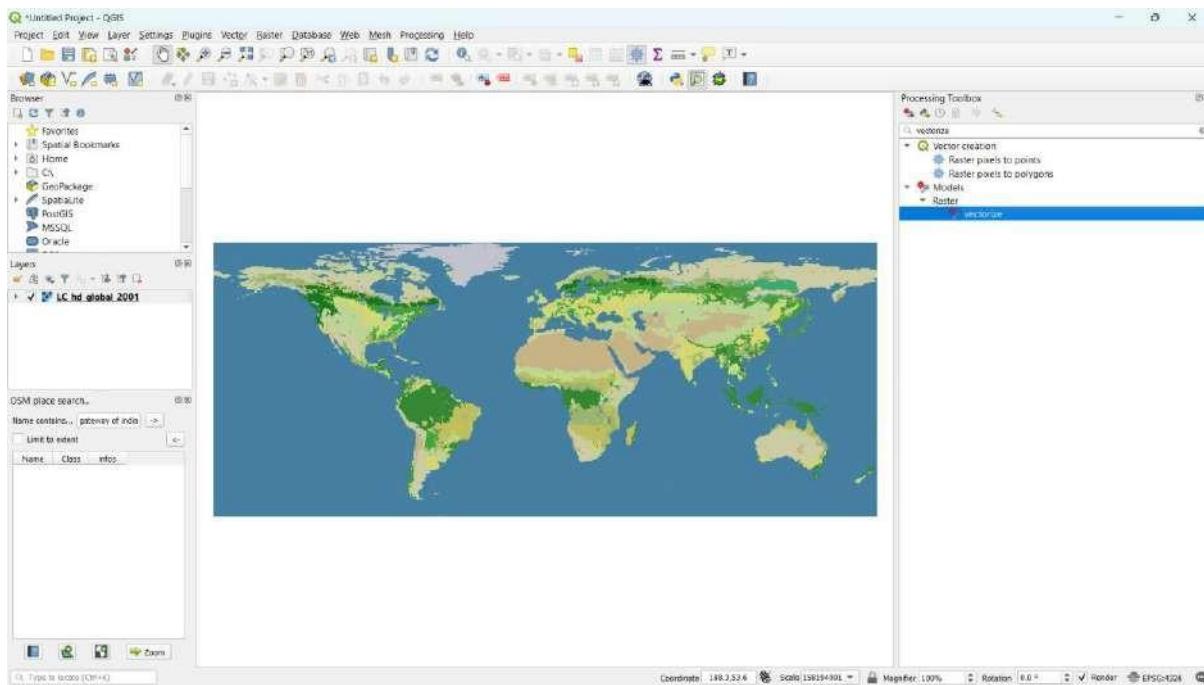
Step 7 – Processing > Graphical Modular.



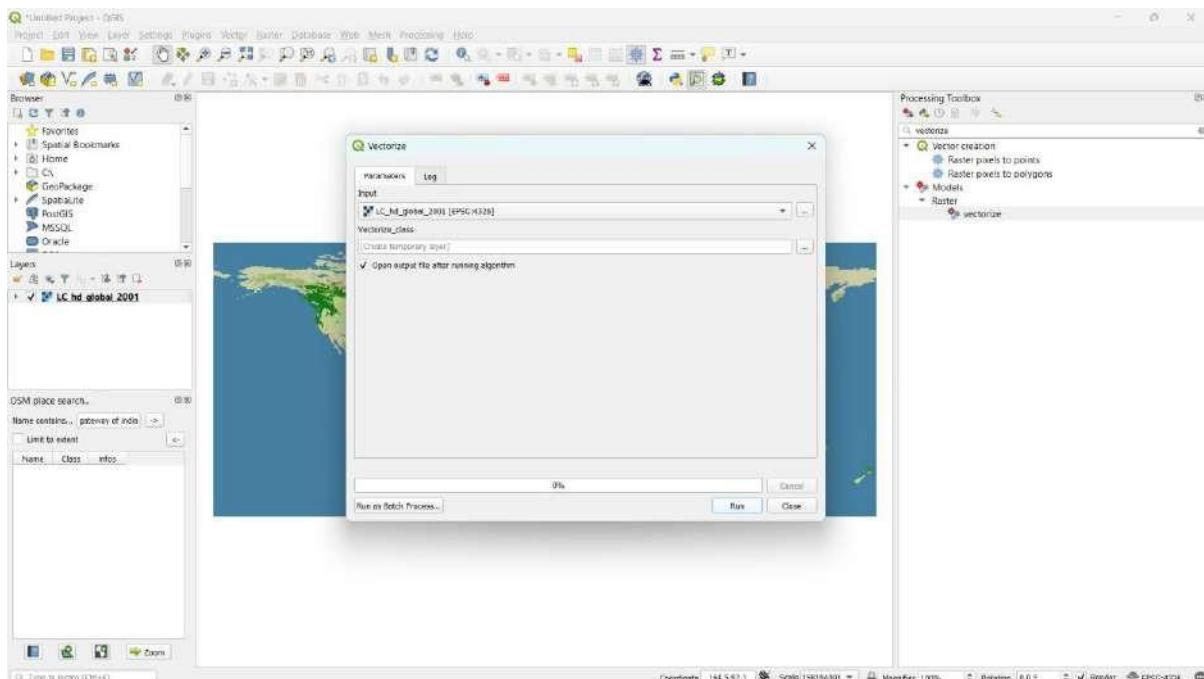
Step 8 – Set the input and algorithms as following and save the model.

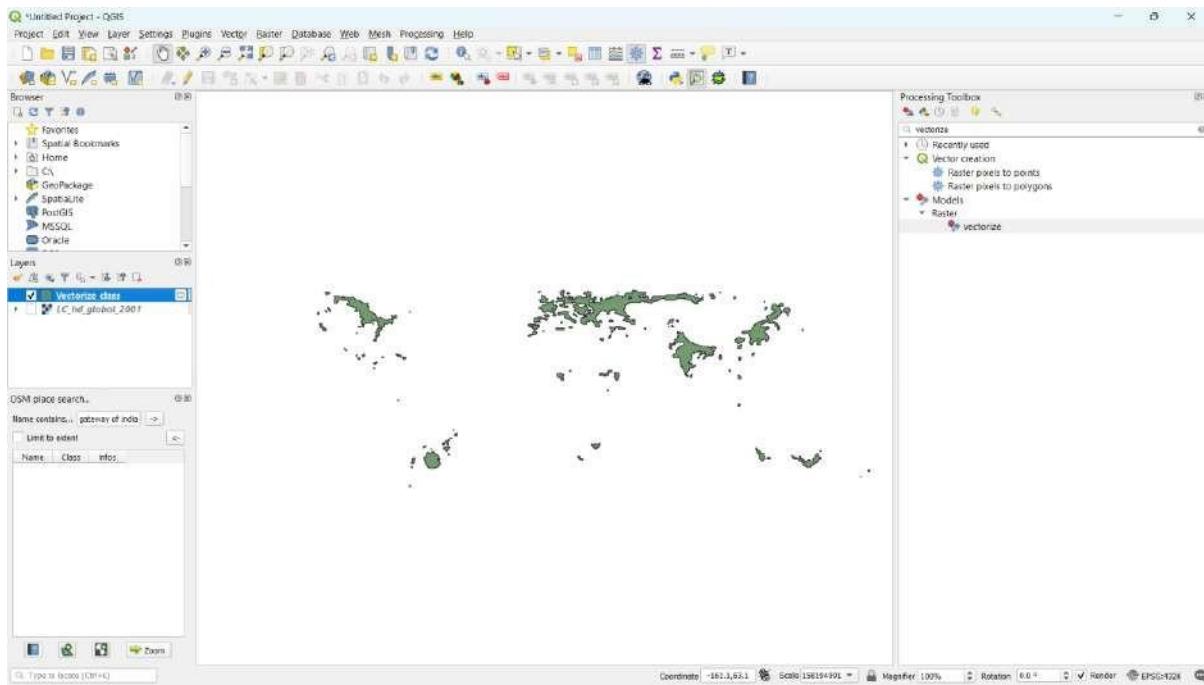


Step 9 – Processing > Toolbox. Search for vectorize.

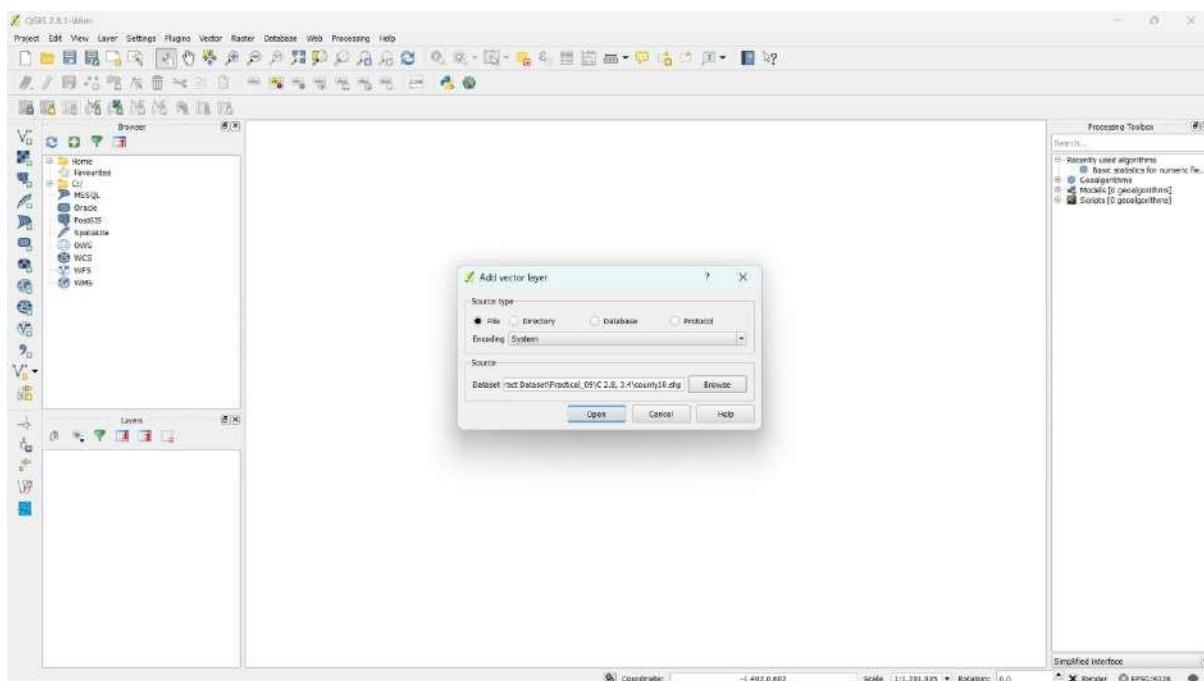


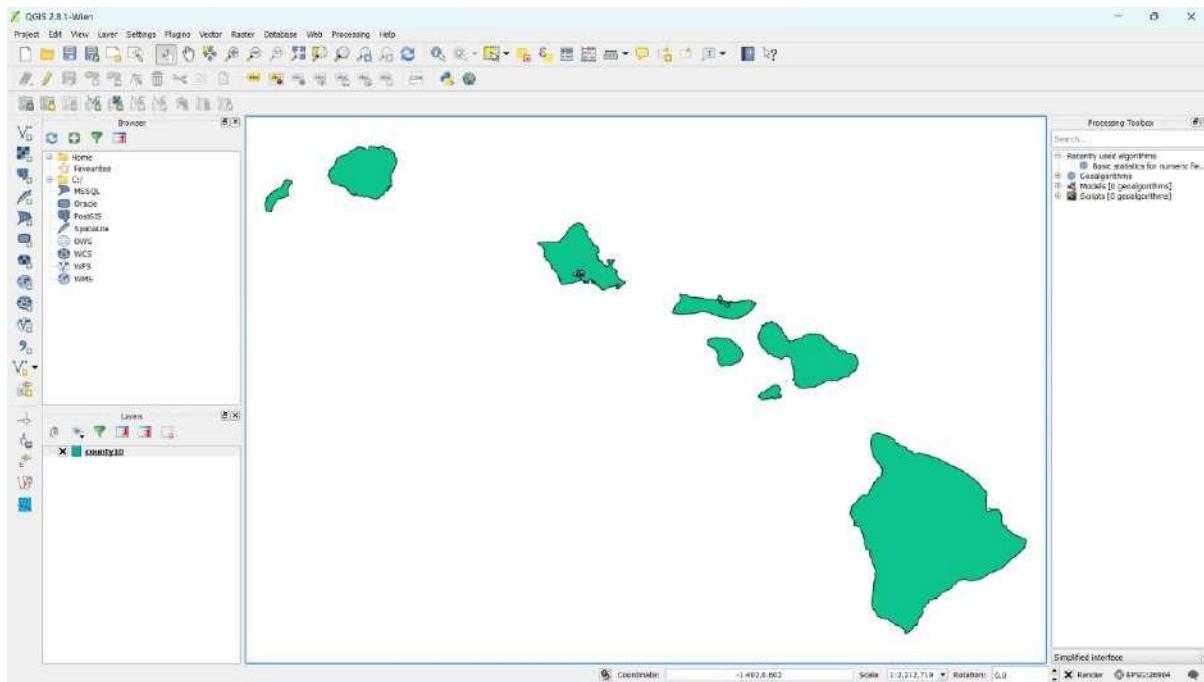
Step 10 – Double click the vectorize tool, select the input layer and click run.



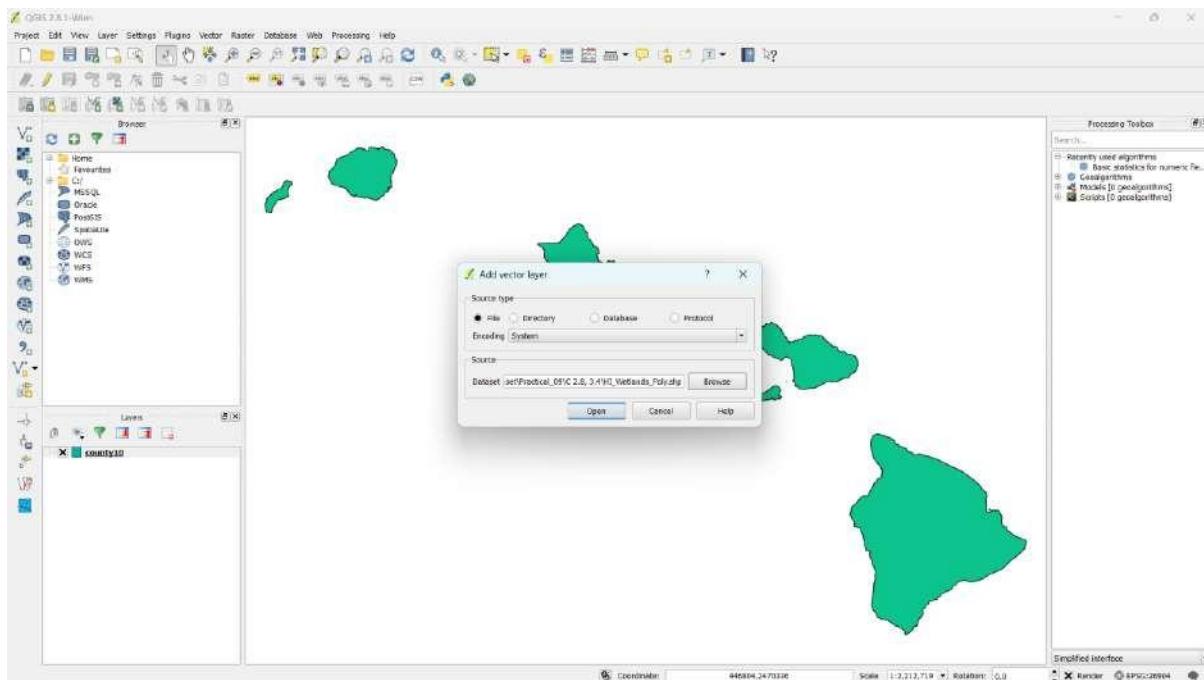


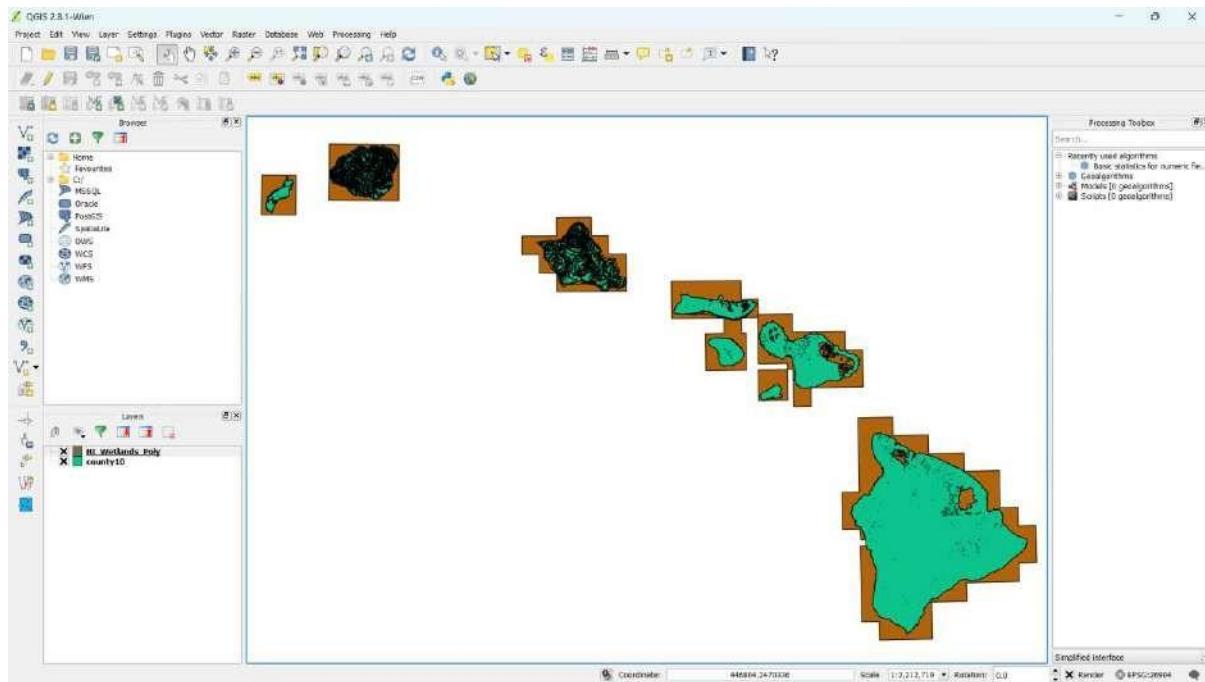
Step 11 – Create a new project. Add the following Vector layer.



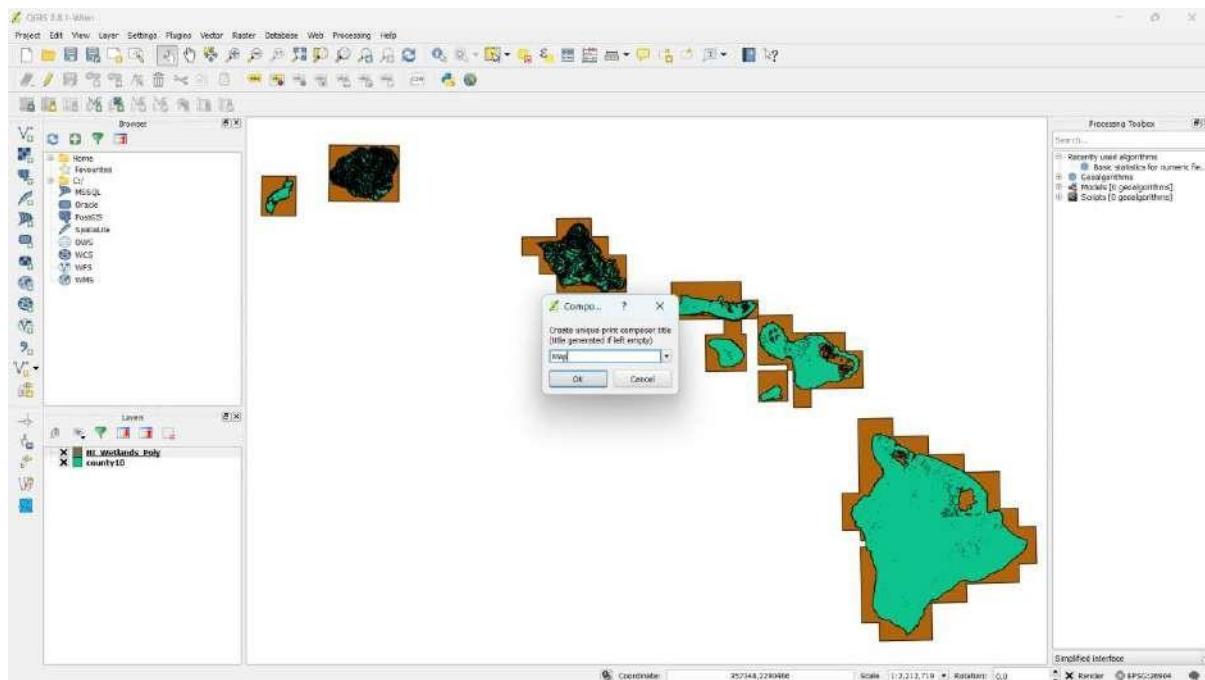


Step 12 – Add the following vector layer.

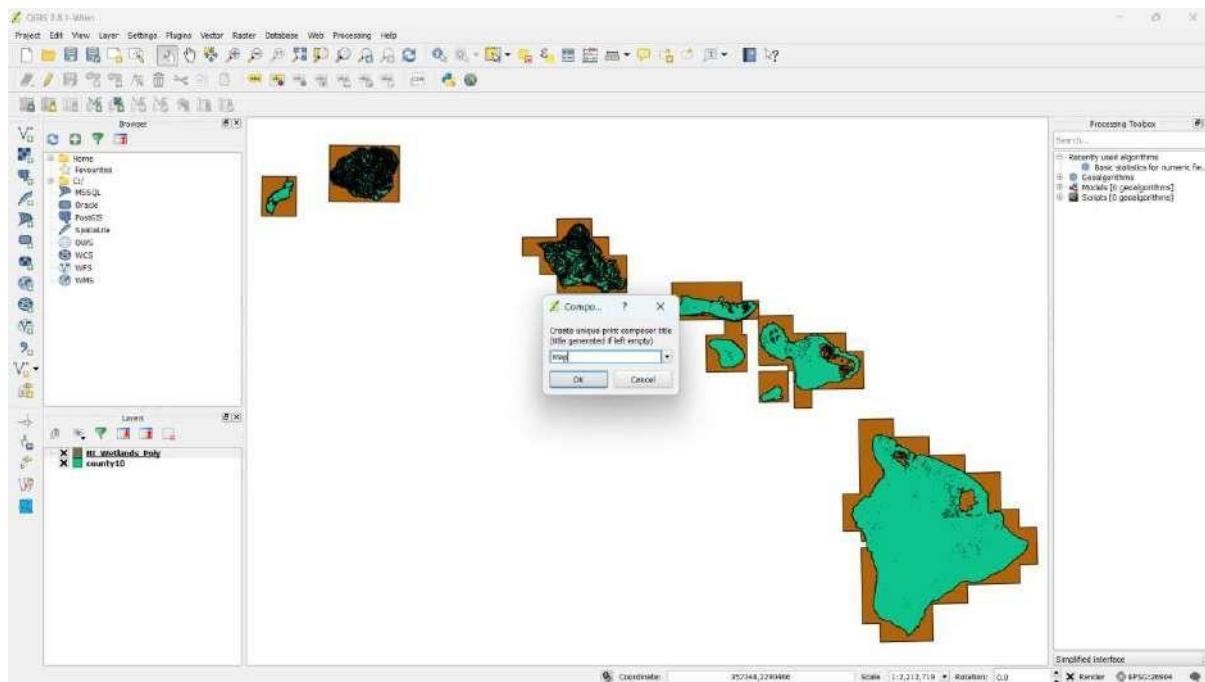




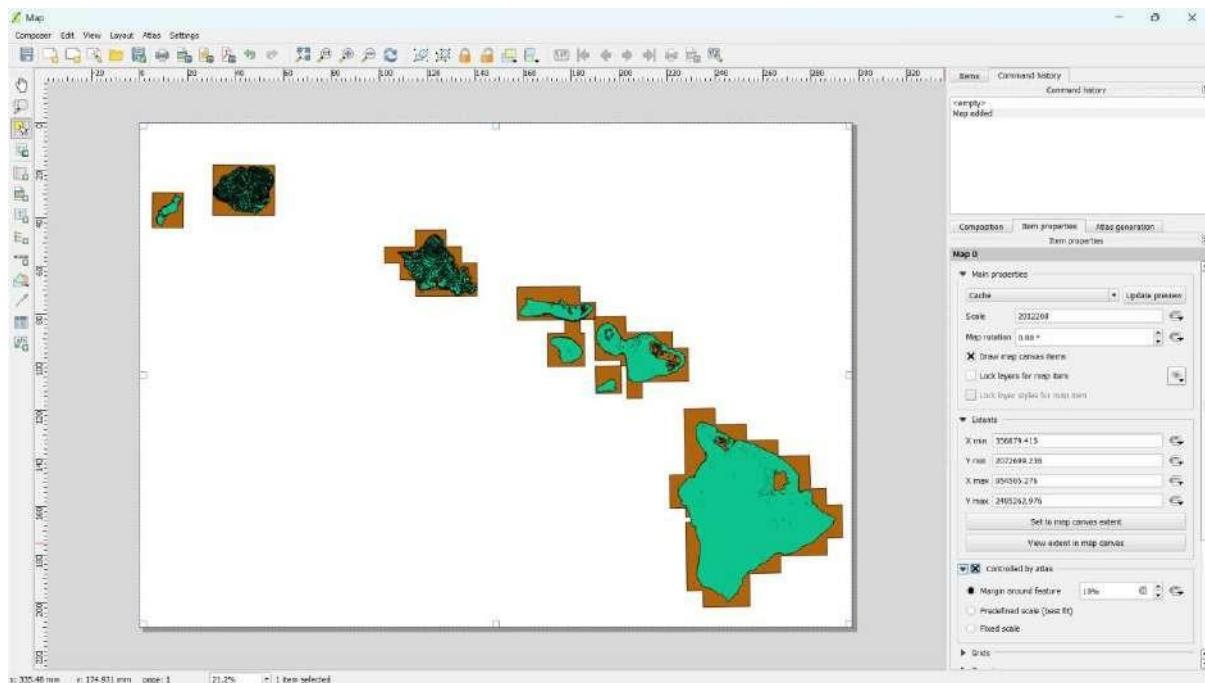
Step 13 – Project > New Print Composer.



Step 14 – Layout > Add Map. Select the entire canvas.



Step 15 – Tick the Controlled by Atlas checkbox in item properties.



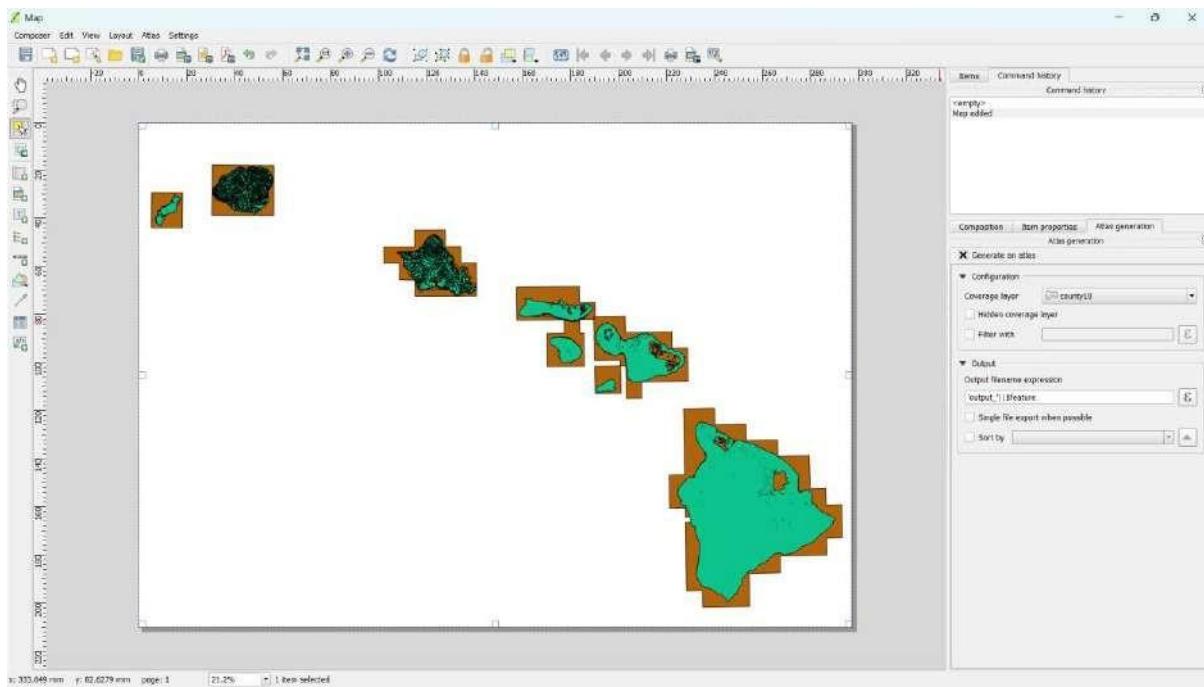
Name: Ankit Roshan

Subject: Principles of Geographical Information System Practical

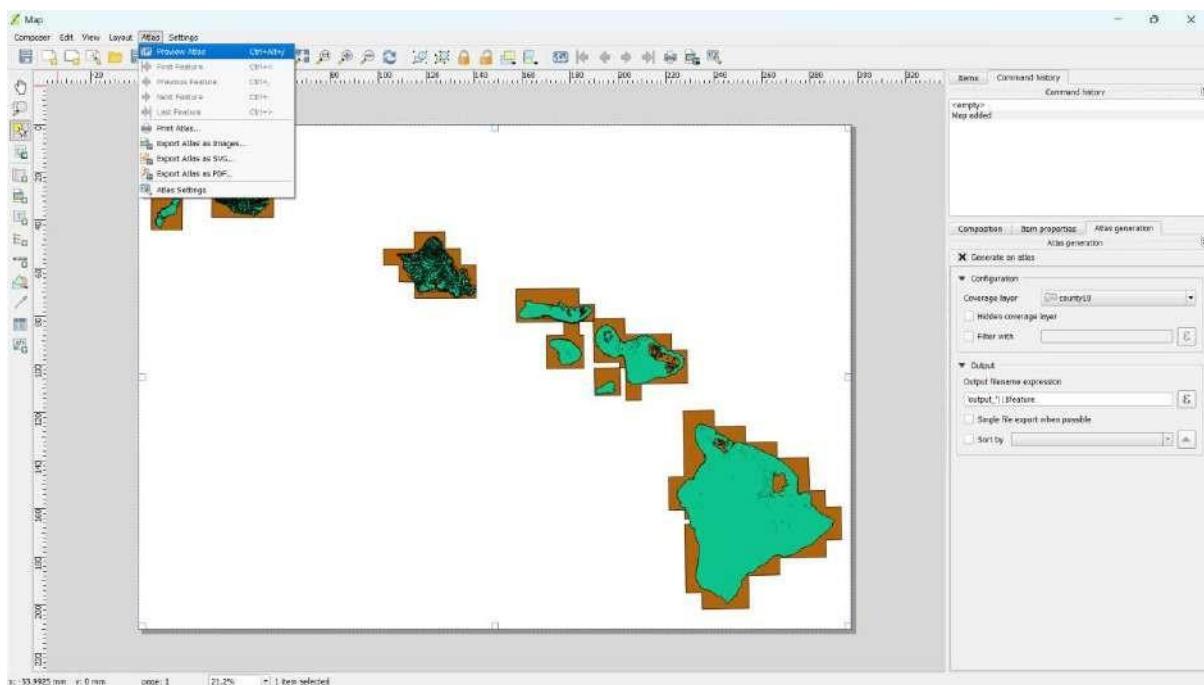
Roll No: IT21063

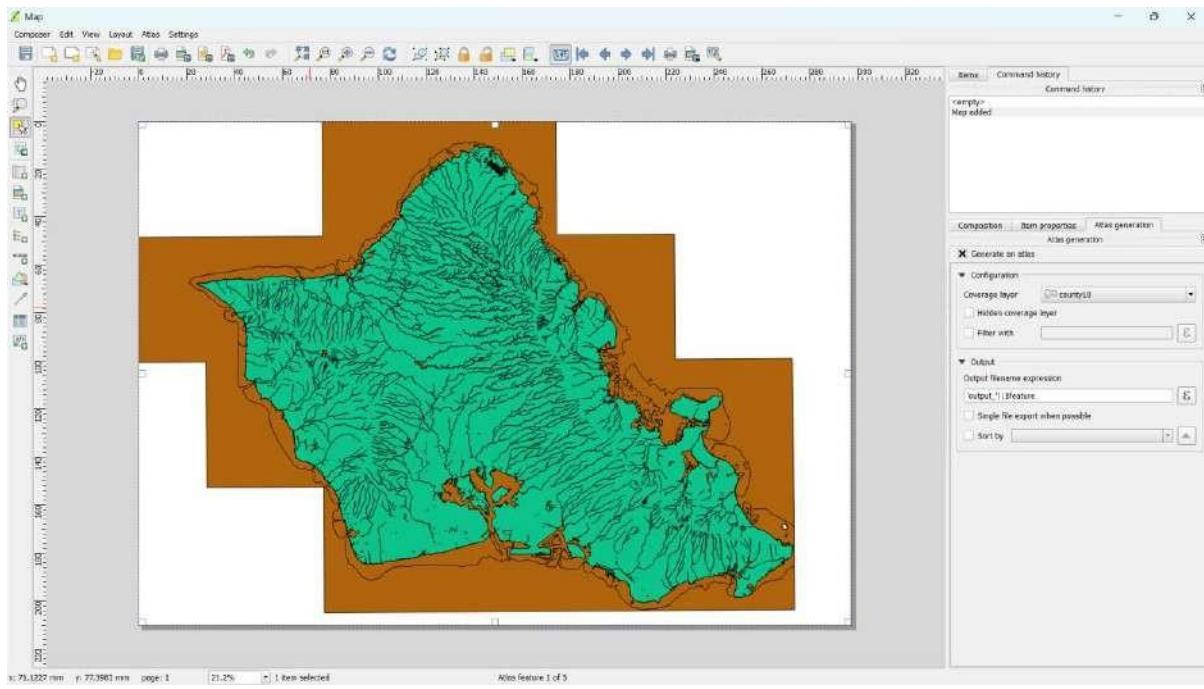
Subject Code: USIT6P4

Step 16 – Go to Atlas generation and set the following attributes.

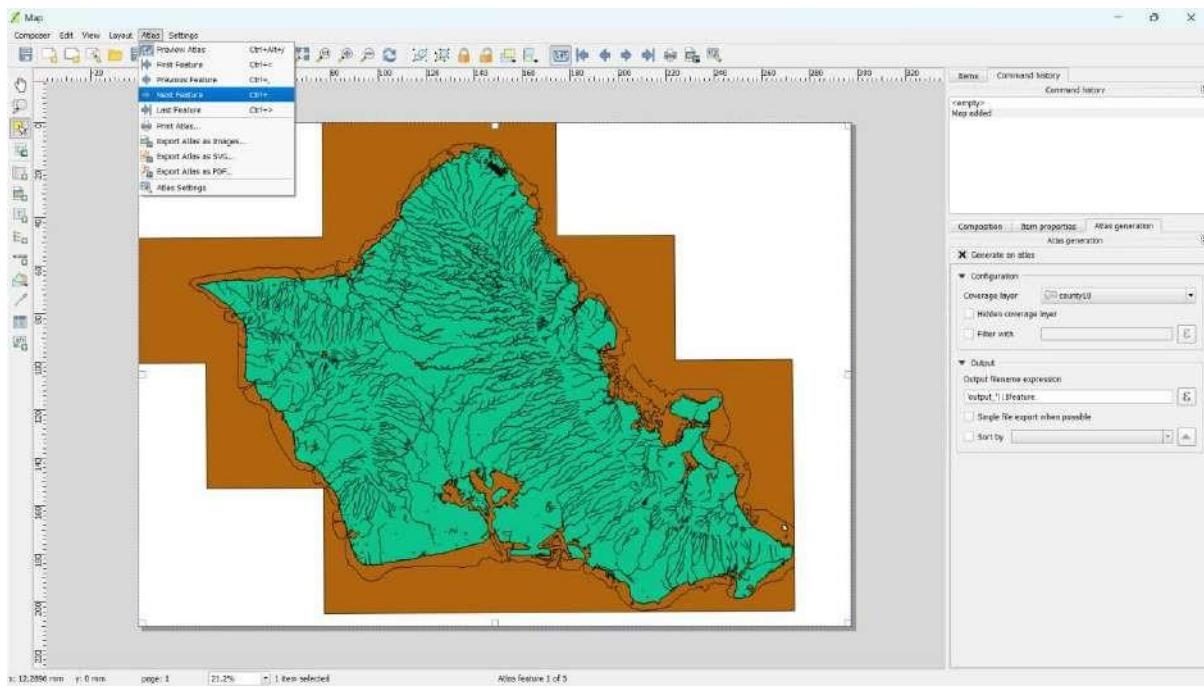


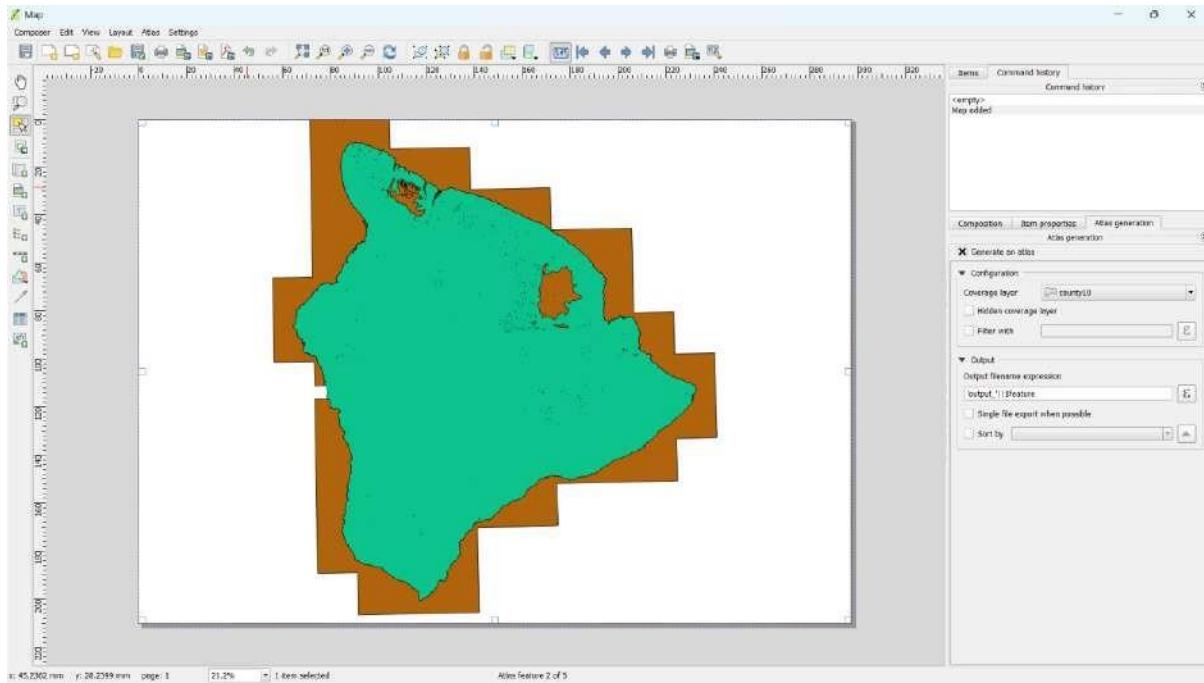
Step 17 – Atlas > Preview Atlas.



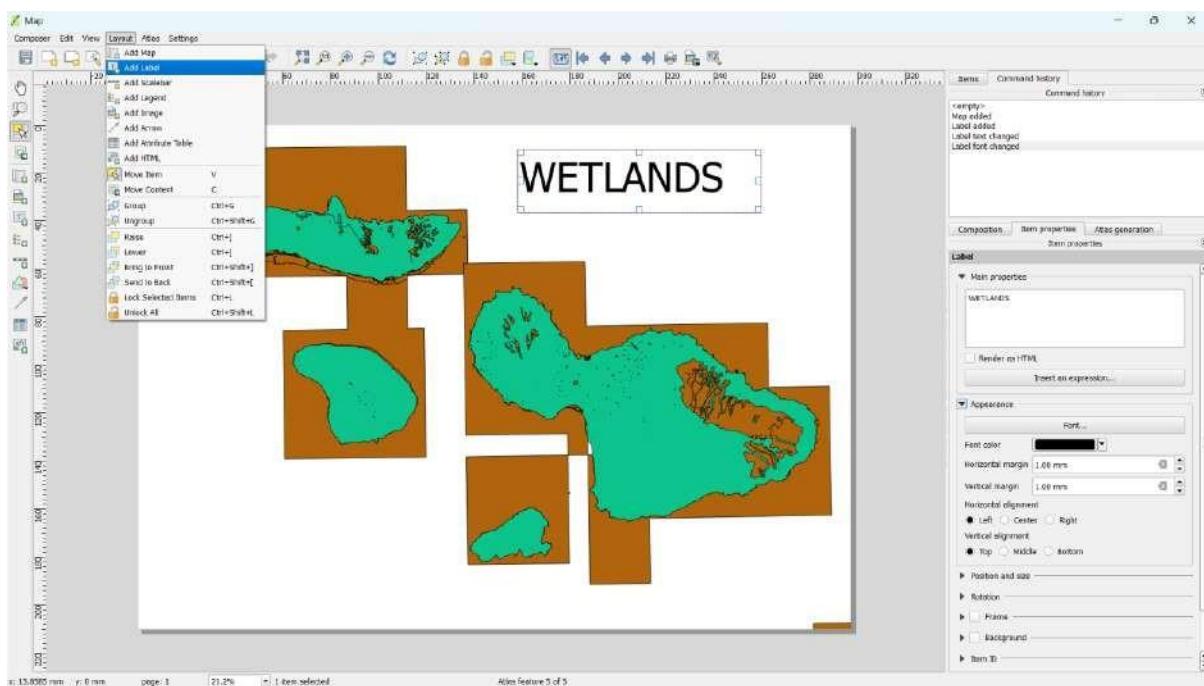


Step 18 – Atlas > Next Feature.

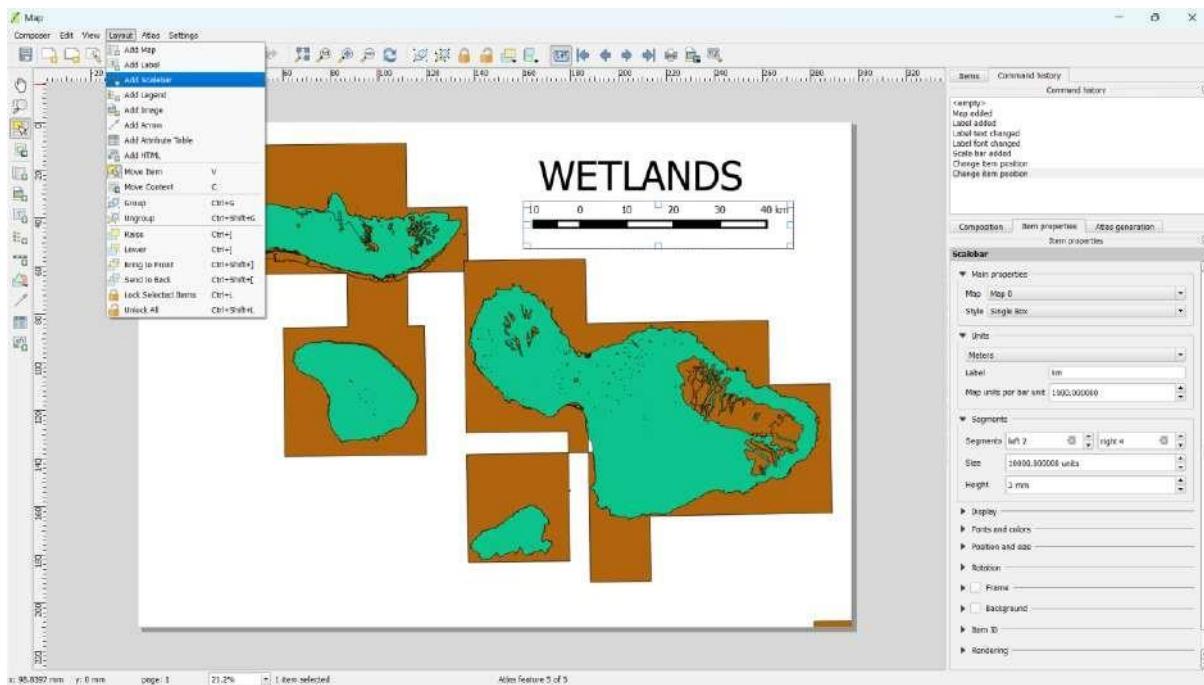




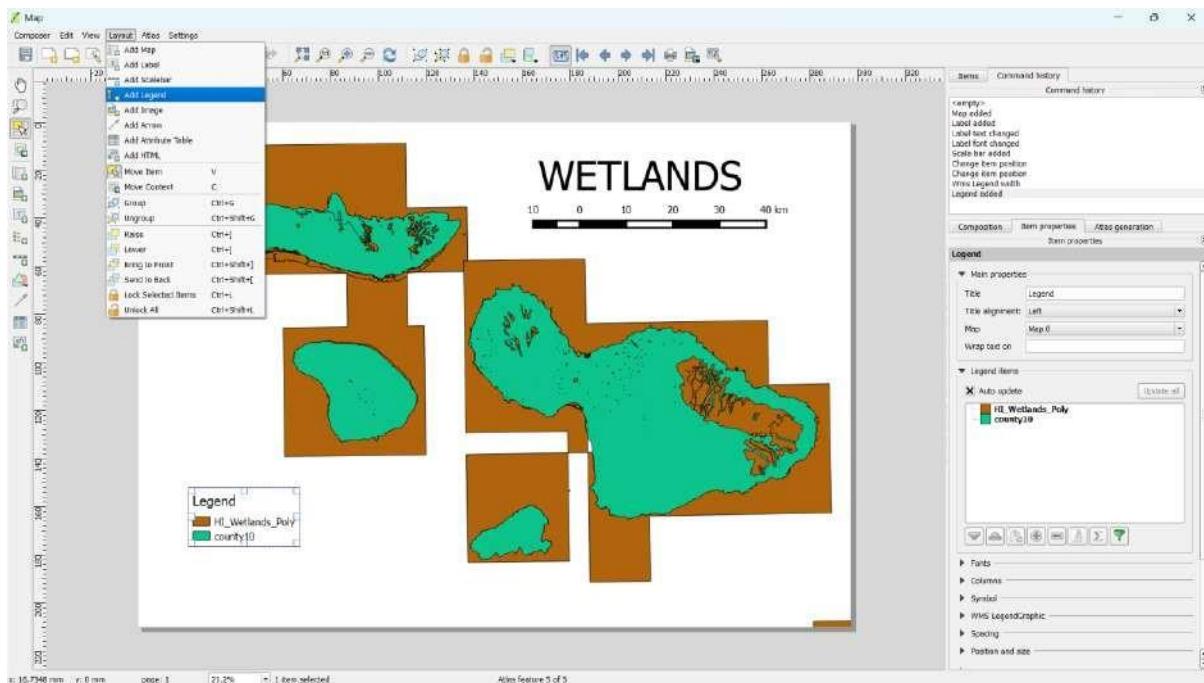
Step 19 – Layout > Add Label.



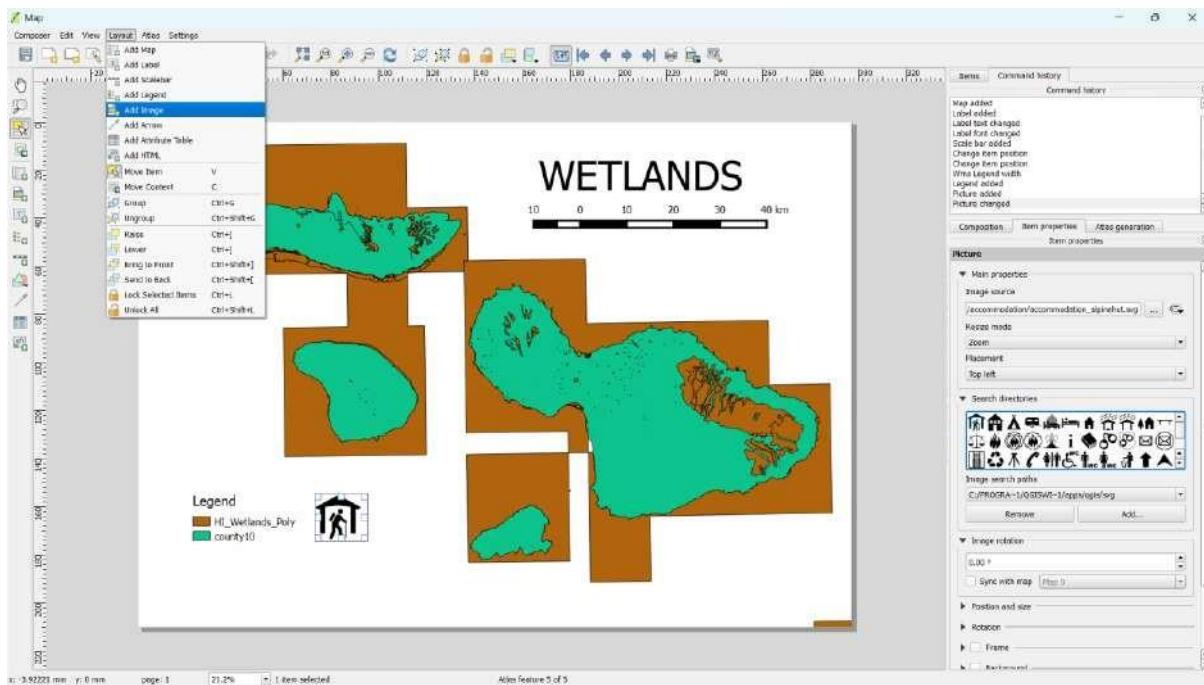
Step 20 – Layout > Add Scalebar.



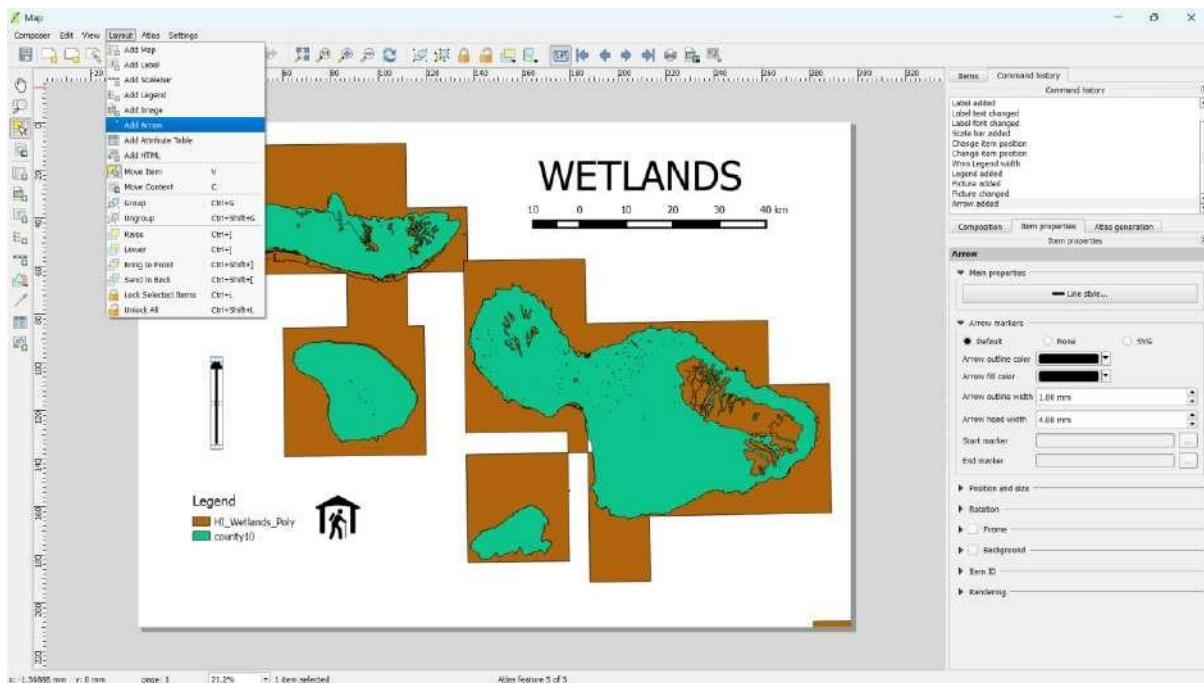
Step 21 – Layout > Add Legend.



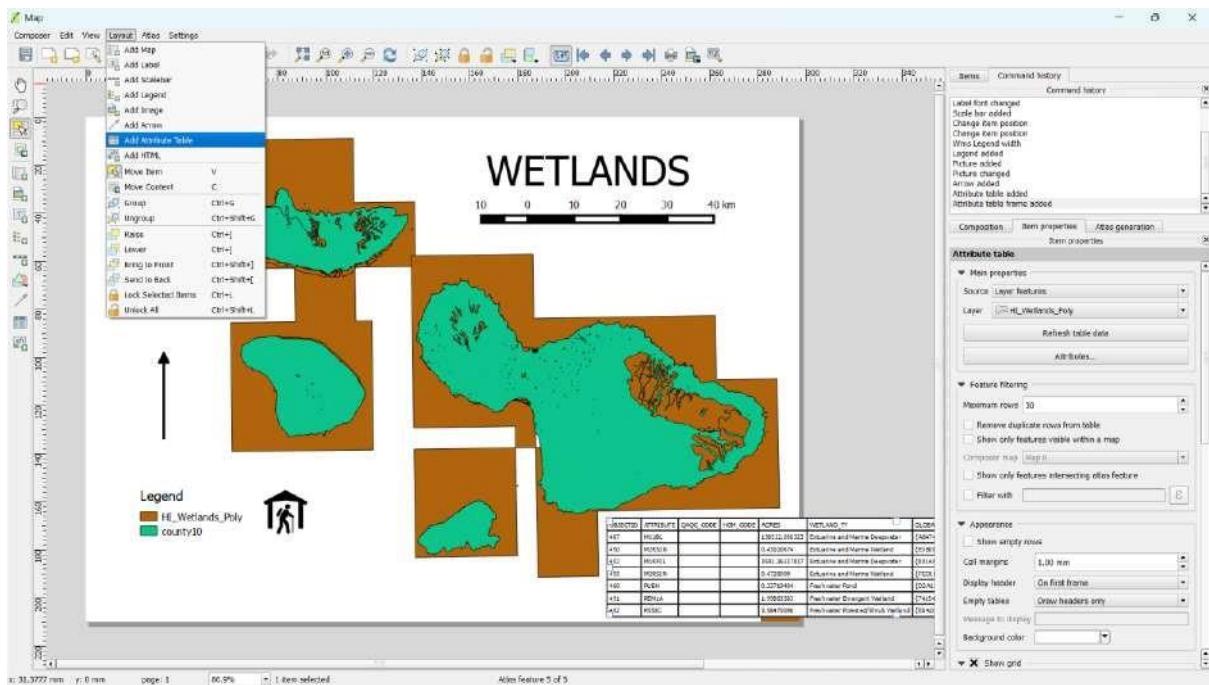
Step 22 – Layout > Add Image.



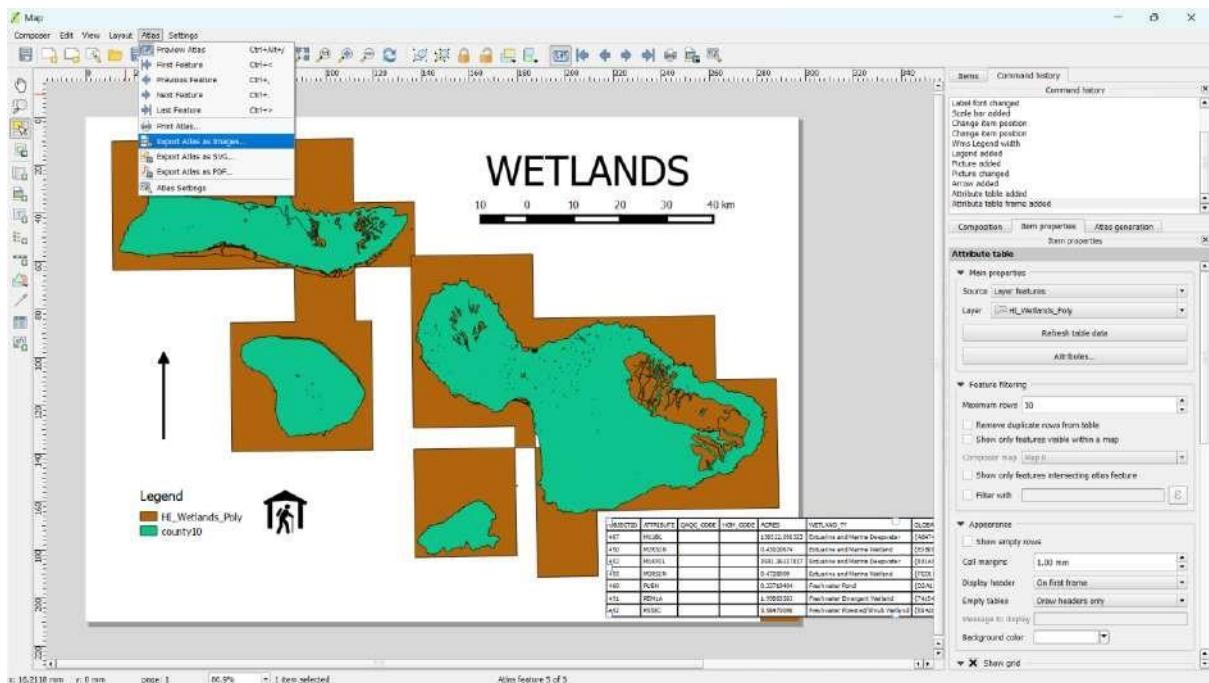
Step 23 – Layout > Add Arrow.



Step 24 – Layout > Add Attribute Table.



Step 25 – Atlas > Export Atlas as Images.

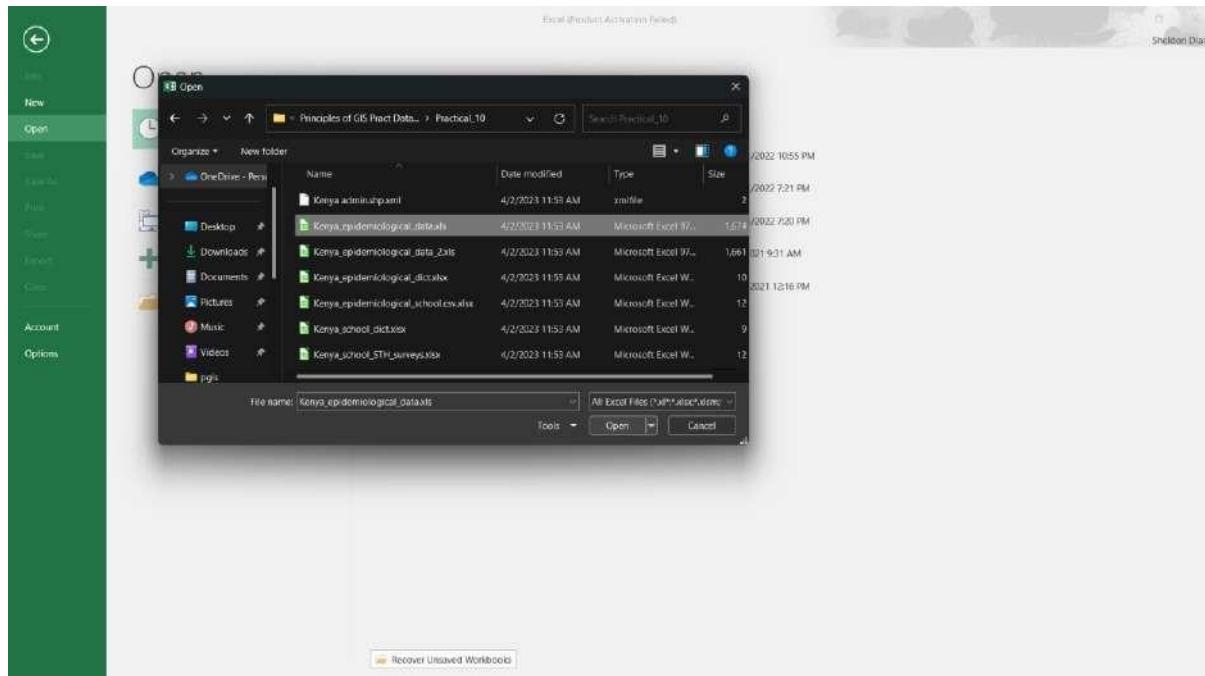


PRACTICAL – 10

Aim: Validating Map data.

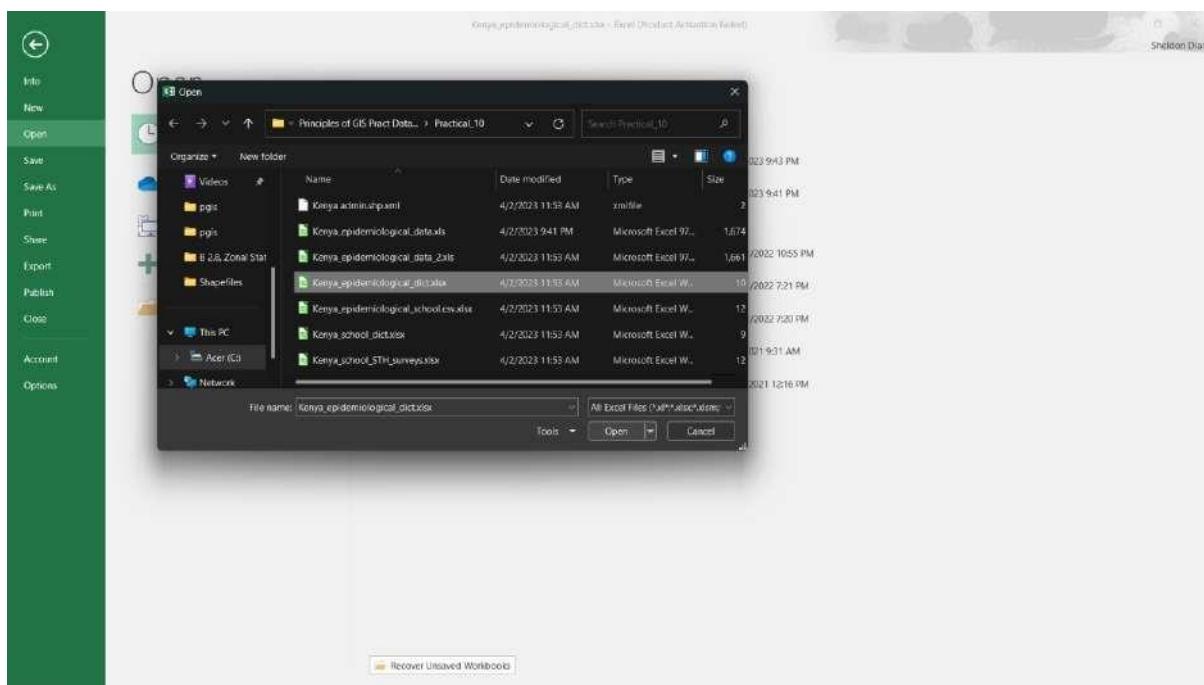
Steps:

Step 1 – Open MS Excel and open the following file.



Kenya_epidemiological_data.xls [Compatibility Mode] - Excel (Product Activation Failed)			
1	child_id	school	C
143	70105079	NGINYANK	1203 BARINGO
142	70105091	NGINYANK	1203 BARINGO
143	70107046	TEREBEN	1190 BARINGO
144	70105078	NGINYANK	1203 BARINGO
145	70105011	NGINYANK	1203 BARINGO
146	70105068	NGINYANK	1203 BARINGO
147	70107047	TEREBEN	1190 BARINGO
148	70105004	NGINYANK	1203 BARINGO
149	70107070	TEREBEN	1190 BARINGO
150	70105090	NGINYANK	1203 BARINGO
151	70105071	NGINYANK	1203 BARINGO
152	70105058	NGINYANK	1203 BARINGO
153	70105099	NGINYANK	1203 BARINGO
154	70105047	NGINYANK	1203 BARINGO
155	70105027	NGINYANK	1203 BARINGO
156	70105016	NGINYANK	1203 BARINGO
157	70107042	TEREBEN	1190 BARINGO
158	70105106	NGINYANK	1203 BARINGO
159	70105007	NGINYANK	1203 BARINGO
160	70105093	NGINYANK	1203 BARINGO
161	70105035	NGINYANK	1203 BARINGO
162	70105046	NGINYANK	1203 BARINGO
163	70105037	NGINYANK	1203 BARINGO
164	70105100	NGINYANK	1203 BARINGO
165	70105003	NGINYANK	1203 BARINGO
166	70105028	NGINYANK	1203 BARINGO
167	70105101	NGINYANK	1203 BARINGO
168	70107025	TEREBEN	1190 BARINGO
169	70105038	NGINYANK	1203 BARINGO
170	70107011	TEREBEN	1190 BARINGO
171	70105017	NGINYANK	1203 BARINGO

Step 2 – Open the following file.



The screenshot shows the 'Kenya_epidemiological_dict.xlsx' spreadsheet in Microsoft Excel. The table lists variables and their descriptions:

Variable	Description
child_id	unique child identification number
school	name of school
school_id	unique school identification number
district	name of district
district_id	unique district identification number
age	age in years
sex	F=female; M = male
stool	0= no stool sample provided, 1= stool sample provided
hookworm_eggs	mean hookworm egg count in eggs per gram faeces
ascaris_eggs	mean ascaris egg count in eggs per gram faeces
trichuris_eggs	mean trichuris egg count in eggs per gram faeces
smanson_eggs	mean S. mansoni egg count in eggs per gram faeces
hookworm_inf	1=infected with hookworm
ascaris_inf	1=infected with ascaris
trichuris_inf	1=infected with hookworm
smanson_inf	1=infected with S. mansoni
ampth_inf	1=infected with any STH
dewormed	1=reports receiving deworming medication in past 6 months

Step 3 – View > Freeze Panes > Freeze Top Row.

The screenshot shows the Microsoft Excel ribbon with the 'View' tab selected. In the 'Freeze Panes' dropdown, 'Freeze Top Row' is highlighted. The main area of the screen displays a table of data with columns for child_id, school, district, age, sex, stool, hookwi, ascaris, trichuris, and deworm. The first row of the table is frozen at the top.

Step 4 – Select the A Column. Home > Conditional Formatting > Highlight Cell Rules > Duplicate Values.

The screenshot shows the Microsoft Excel ribbon with the 'Home' tab selected. In the 'Conditional Formatting' dropdown, the 'Highlight Cells Rules' section is open, and 'Duplicate Values...' is selected. The main area of the screen displays the same table of data as in the previous step, with the first column (child_id) selected.

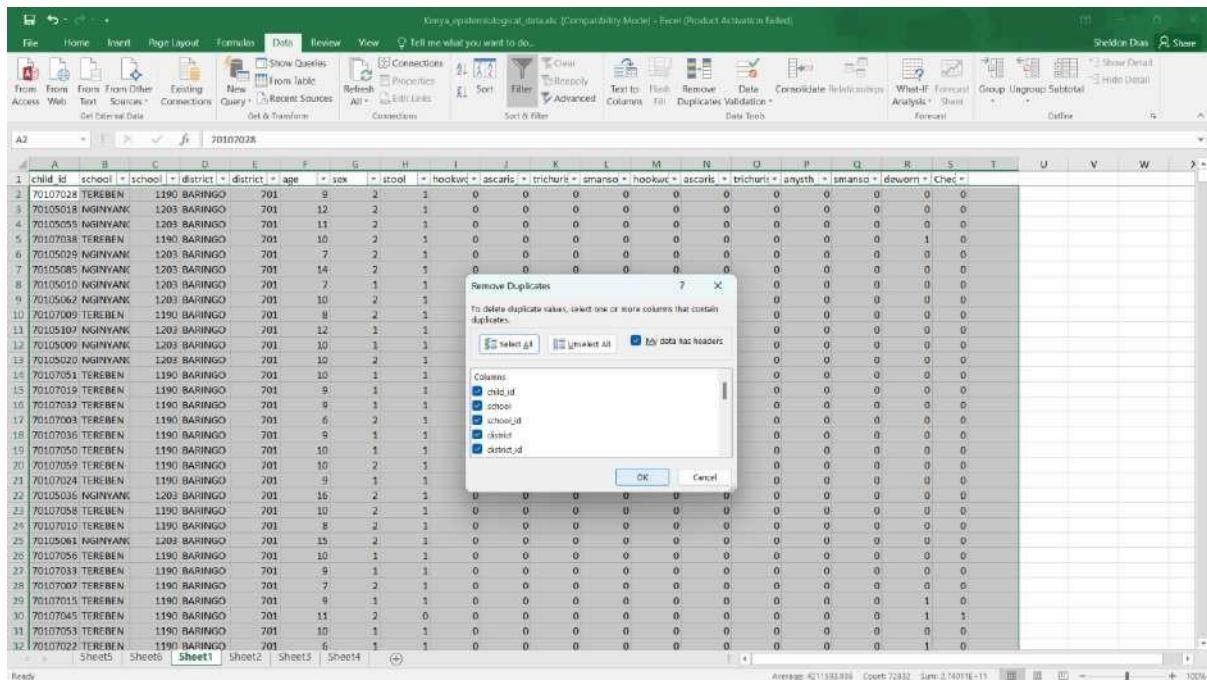
Kenya_epidemiological_details [Compatibility Mode] - Excel (Product Activation Failed)

child_id	school	school	district	district	age	sex	stool	hookworm	ascariasis	trichuris	smanso	hookworm	ascariasis	trichuris	ankylostomiasis	deworm	Che6	
70105087	NGINYANK	1203	BARINGO	701	12	2	1	0	0	0	0	0	0	0	0	0	1	0
70105108	NGINYANK	1203	BARINGO	701	13	1	1	0	0	0	0	0	0	0	0	0	0	0
70107069	TEREBEN	1190	BARINGO	701	10	1	1	0	0	0	0	0	0	0	0	0	0	0
70105060	NGINYANK	1203	BARINGO	701	13	2	1	0	0	0	0	0	0	0	0	0	0	0
70105015	NGINYANK	1203	BARINGO	701	9	2	1	0	0	0	0	0	0	0	0	0	0	0
70107043	TEREBEN	1190	BARINGO	701	10	2	1	0	0	0	0	0	0	0	0	0	0	0
70107023	TEREBEN	1190	BARINGO	701	6	1	1	0	0	0	0	0	0	0	0	0	0	0
70105041	NGINYANK	1203	BARINGO	701	10	1	1	0	0	0	0	0	0	0	0	0	0	0
70105031	NGINYANK	1203	BARINGO	701	13	1	1	0	0	0	0	0	0	0	0	0	0	0
70105039	NGINYANK	1203	BARINGO	701	9	1	1	0	0	0	0	0	0	0	0	0	0	0
70107049	TEREBEN	1190	BARINGO	701	11	1	1	0	0	0	0	0	0	0	0	0	0	0
70105083	NGINYANK	1203	BARINGO	701	16	1	3	0	0	0	0	0	0	0	0	0	0	0
70105065	NGINYANK	1203	BARINGO	701	13	1	2	0	0	0	0	0	0	0	0	0	0	0
70107031	TEREBEN	1190	BARINGO	701	9	1	3	0	0	0	0	0	0	0	0	0	0	0
70107052	TEREBEN	1190	BARINGO	701	12	1	1	0	0	0	0	0	0	0	0	0	0	0
70105080	NGINYANK	1203	BARINGO	701	13	2	1	0	0	0	0	0	0	0	0	0	0	0
70105084	NGINYANK	1203	BARINGO	701	13	1	1	0	0	0	0	0	0	0	0	0	0	0
70105095	NGINYANK	1203	BARINGO	701	12	1	1	0	0	0	0	0	0	0	0	0	0	0
70105013	NGINYANK	1203	BARINGO	701	8	2	1	0	0	0	0	0	0	0	0	0	0	0
70105077	NGINYANK	1203	BARINGO	701	13	2	1	0	0	0	0	0	0	0	0	0	0	0
70105069	NGINYANK	1203	BARINGO	701	13	1	1	0	0	0	0	0	0	0	0	0	0	0
70105049	NGINYANK	1203	BARINGO	701	10	1	1	0	0	0	0	0	0	0	0	0	0	0
70107044	TEREBEN	1190	BARINGO	701	11	2	1	0	0	12	0	0	0	1	1	0	0	0
70105014	NGINYANK	1203	BARINGO	701	8	2	1	0	0	0	0	0	0	0	0	0	0	0
70105043	NGINYANK	1203	BARINGO	701	11	2	1	0	0	0	0	0	0	0	0	0	0	0
70105021	NGINYANK	1203	BARINGO	701	8	2	1	0	0	0	0	0	0	0	0	0	0	0
70105052	NGINYANK	1203	BARINGO	701	14	1	3	0	0	0	0	0	0	0	0	0	0	0
70107030	TEREBEN	1190	BARINGO	701	9	2	1	0	0	0	0	0	0	0	0	0	0	0
70105053	NGINYANK	1203	BARINGO	701	12	1	1	0	0	0	0	0	0	0	0	0	0	0
70107026	TEREBEN	1190	BARINGO	701	9	1	1	0	0	0	0	0	0	0	0	0	0	0

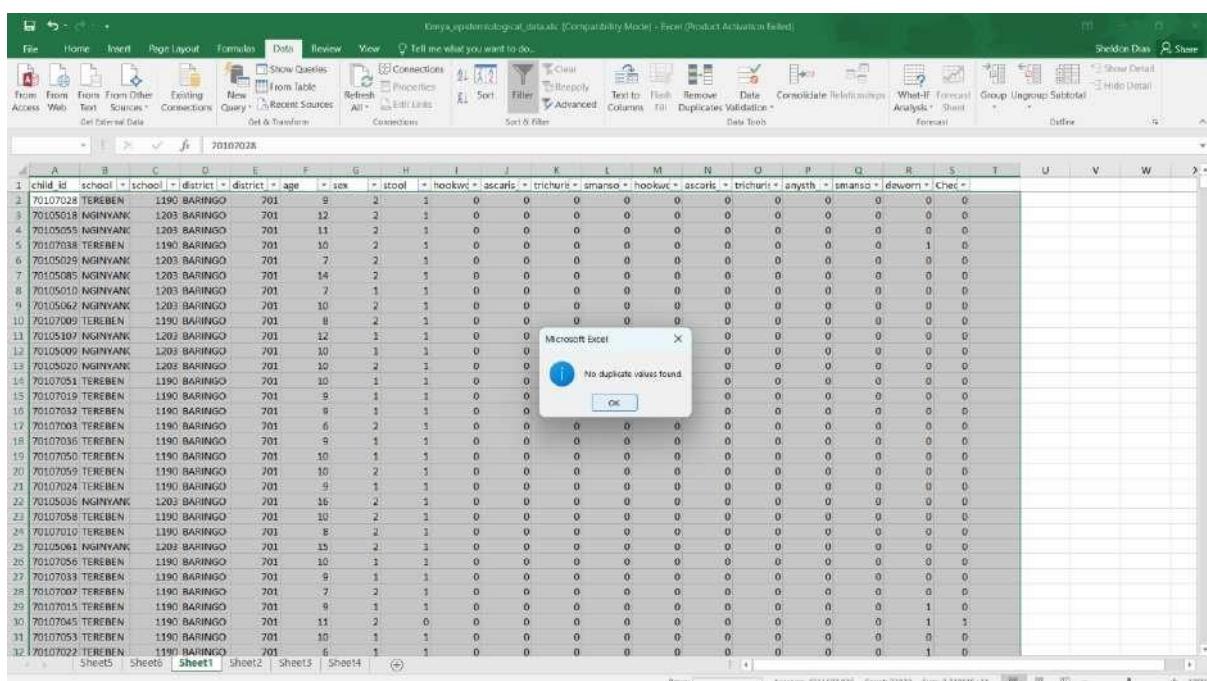
Step 5 – Select the entire data. Data > Remove Duplicates.

Kenya_epidemiological_details [Compatibility Mode] - Excel (Product Activation Failed)

child_id	school	school	district	district	age	sex	stool	hookworm	ascariasis	trichuris	smanso	hookworm	ascariasis	trichuris	ankylostomiasis	deworm	Che6	
70105087	NGINYANK	1203	BARINGO	701	12	2	1	0	0	0	0	0	0	0	0	0	1	0
70105108	NGINYANK	1203	BARINGO	701	13	1	1	0	0	0	0	0	0	0	0	0	0	0
70107069	TEREBEN	1190	BARINGO	701	10	1	1	0	0	0	0	0	0	0	0	0	0	0
70105060	NGINYANK	1203	BARINGO	701	13	2	1	0	0	0	0	0	0	0	0	0	0	0
70105015	NGINYANK	1203	BARINGO	701	9	2	1	0	0	0	0	0	0	0	0	0	0	0
70107043	TEREBEN	1190	BARINGO	701	10	2	1	0	0	0	0	0	0	0	0	0	0	0
70107023	TEREBEN	1190	BARINGO	701	6	1	1	0	0	0	0	0	0	0	0	0	0	0
70105041	NGINYANK	1203	BARINGO	701	10	1	1	0	0	0	0	0	0	0	0	0	0	0
70105031	NGINYANK	1203	BARINGO	701	13	1	1	0	0	0	0	0	0	0	0	0	0	0
70105039	NGINYANK	1203	BARINGO	701	9	1	1	0	0	0	0	0	0	0	0	0	0	0
70107049	TEREBEN	1190	BARINGO	701	11	1	1	0	0	0	0	0	0	0	0	0	0	0
70105083	NGINYANK	1203	BARINGO	701	16	1	3	0	0	0	0	0	0	0	0	0	0	0
70105065	NGINYANK	1203	BARINGO	701	13	1	1	0	0	0	0	0	0	0	0	0	0	0
70107031	TEREBEN	1190	BARINGO	701	9	1	1	0	0	0	0	0	0	0	0	0	0	0
70107052	TEREBEN	1190	BARINGO	701	12	1	1	0	0	0	0	0	0	0	0	0	0	0
70105080	NGINYANK	1203	BARINGO	701	13	2	1	0	0	0	0	0	0	0	0	0	0	0
70105084	NGINYANK	1203	BARINGO	701	13	1	1	0	0	0	0	0	0	0	0	0	0	0
70105095	NGINYANK	1203	BARINGO	701	12	1	1	0	0	0	0	0	0	0	0	0	0	0
70105013	NGINYANK	1203	BARINGO	701	8	2	1	0	0	0	0	0	0	0	0	0	0	0
70105077	NGINYANK	1203	BARINGO	701	12	2	1	0	0	0	0	0	0	0	0	0	0	0
70105069	NGINYANK	1203	BARINGO	701	13	1	3	0	0	0	0	0	0	0	0	0	0	0
70105049	NGINYANK	1203	BARINGO	701	10	1	1	0	0	0	0	0	0	0	0	0	0	0
70107044	TEREBEN	1190	BARINGO	701	11	2	1	0	0	12	0	0	0	0	1	1	0	0
70105014	NGINYANK	1203	BARINGO	701	8	2	1	0	0	0	0	0	0	0	0	0	0	0
70105043	NGINYANK	1203	BARINGO	701	11	2	1	0	0	0	0	0	0	0	0	0	0	0
70105021	NGINYANK	1203	BARINGO	701	8	2	1	0	0	0	0	0	0	0	0	0	0	0
70105052	NGINYANK	1203	BARINGO	701	14	1	1	0	0	0	0	0	0	0	0	0	0	0
70107030	TEREBEN	1190	BARINGO	701	9	2	1	0	0	0	0	0	0	0	0	0	0	0
70105053	NGINYANK	1203	BARINGO	701	12	1	1	0	0	0	0	0	0	0	0	0	0	0
70107026	TEREBEN	1190	BARINGO	701	9	1	1	0	0	0	0	0	0	0	0	0	0	0



child_id	school	district	age	sex	stool	hookwt	ascarsis	trichuris	smanso	hookwt	ascarsis	trichuris	anayth	smanso	deworm	Chec
70107028	TEREBEN	1190 BARINGO	701	9	2	1	0	0	0	0	0	0	0	0	0	0
70105018	NGINYANK	1203 BARINGO	701	12	2	1	0	0	0	0	0	0	0	0	0	0
70105055	NGINYANK	1190 BARINGO	701	11	2	1	0	0	0	0	0	0	0	0	0	0
70107038	TEREBEN	1190 BARINGO	701	10	2	1	0	0	0	0	0	0	0	0	0	1
70105029	NGINYANK	1203 BARINGO	701	7	2	1	0	0	0	0	0	0	0	0	0	0
70105085	NGINYANK	1203 BARINGO	701	14	2	1	0	0	0	0	0	0	0	0	0	0
70105010	NGINYANK	1203 BARINGO	701	7	1	1										
70105062	NGINYANK	701	10	2	1											
70107009	TEREBEN	1190 BARINGO	701	8	2	1										
70105010	NGINYANK	1203 BARINGO	701	12	1	1										
70105009	NGINYANK	1203 BARINGO	701	10	3	1										
70105020	NGINYANK	1203 BARINGO	701	10	2	1										
70107051	TEREBEN	1190 BARINGO	701	10	1	1										
70107019	TEREBEN	1190 BARINGO	701	9	1	1										
70107033	TEREBEN	1190 BARINGO	701	9	1	1										
70107003	TEREBEN	1190 BARINGO	701	6	2	1										
70107036	TEREBEN	1190 BARINGO	701	9	1	1										
70107050	TEREBEN	1190 BARINGO	701	10	1	1										
70107059	TEREBEN	1190 BARINGO	701	10	2	1										
70107024	TEREBEN	1190 BARINGO	701	9	1	1										
70105036	NGINYANK	1203 BARINGO	701	16	2	1	0	0	0	0	0	0	0	0	0	0
70107058	TEREBEN	1190 BARINGO	701	10	2	1	0	0	0	0	0	0	0	0	0	0
70107010	TEREBEN	1190 BARINGO	701	8	2	1	0	0	0	0	0	0	0	0	0	0
70105061	NGINYANK	1203 BARINGO	701	13	2	1	0	0	0	0	0	0	0	0	0	0
70107056	TEREBEN	1190 BARINGO	701	10	1	2	0	0	0	0	0	0	0	0	0	0
70107033	TEREBEN	1190 BARINGO	701	9	1	1	0	0	0	0	0	0	0	0	0	0
70107002	TEREBEN	1190 BARINGO	701	7	2	1	0	0	0	0	0	0	0	0	0	0
70107015	TEREBEN	1190 BARINGO	701	9	1	1	0	0	0	0	0	0	0	0	0	0
70107045	TEREBEN	1190 BARINGO	701	11	2	0	0	0	0	0	0	0	0	0	0	1
70107053	TEREBEN	1190 BARINGO	701	10	1	1	0	0	0	0	0	0	0	0	0	0
70107022	TEREBEN	1190 BARINGO	701	6	1	1	0	0	0	0	0	0	0	0	1	0



child_id	school	district	age	sex	stool	hookwt	ascarsis	trichuris	smanso	hookwt	ascarsis	trichuris	anayth	smanso	deworm	Chec
70107028	TEREBEN	1190 BARINGO	701	9	2	1	0	0	0	0	0	0	0	0	0	0
70105018	NGINYANK	1203 BARINGO	701	12	2	1	0	0	0	0	0	0	0	0	0	0
70105055	NGINYANK	1203 BARINGO	701	11	2	1	0	0	0	0	0	0	0	0	0	0
70107038	TEREBEN	1190 BARINGO	701	10	2	1	0	0	0	0	0	0	0	0	0	1
70105029	NGINYANK	1203 BARINGO	701	7	2	1	0	0	0	0	0	0	0	0	0	0
70105085	NGINYANK	1203 BARINGO	701	14	2	1	0	0	0	0	0	0	0	0	0	0
70105010	NGINYANK	1203 BARINGO	701	7	1	1	0	0	0	0	0	0	0	0	0	0
70105062	NGINYANK	701	10	2	1	0	0	0	0	0	0	0	0	0	0	0
70107009	TEREBEN	1190 BARINGO	701	8	2	1	0	0	0	0	0	0	0	0	0	0
70105010	NGINYANK	1203 BARINGO	701	12	1	1	0	0	0	0	0	0	0	0	0	0
70105009	NGINYANK	1203 BARINGO	701	10	3	1	0	0	0	0	0	0	0	0	0	0
70105020	NGINYANK	1203 BARINGO	701	10	2	1	0	0	0	0	0	0	0	0	0	0
70107051	TEREBEN	1190 BARINGO	701	10	1	1	0	0	0	0	0	0	0	0	0	0
70107019	TEREBEN	1190 BARINGO	701	9	1	1	0	0	0	0	0	0	0	0	0	0
70107033	TEREBEN	1190 BARINGO	701	9	1	1	0	0	0	0	0	0	0	0	0	0
70107003	TEREBEN	1190 BARINGO	701	6	2	1	0	0	0	0	0	0	0	0	0	0
70107050	TEREBEN	1190 BARINGO	701	10	1	1	0	0	0	0	0	0	0	0	0	0
70107059	TEREBEN	1190 BARINGO	701	10	2	1	0	0	0	0	0	0	0	0	0	0
70107024	TEREBEN	1190 BARINGO	701	9	1	1	0	0	0	0	0	0	0	0	0	0
70105036	NGINYANK	1203 BARINGO	701	16	2	1	0	0	0	0	0	0	0	0	0	0
70107058	TEREBEN	1190 BARINGO	701	10	2	1	0	0	0	0	0	0	0	0	0	0
70107010	TEREBEN	1190 BARINGO	701	8	2	1	0	0	0	0	0	0	0	0	0	0
70105061	NGINYANK	1203 BARINGO	701	15	2	1	0	0	0	0	0	0	0	0	0	0
70107056	TEREBEN	1190 BARINGO	701	10	1	2	0	0	0	0	0	0	0	0	0	0
70107033	TEREBEN	1190 BARINGO	701	9	1	1	0	0	0	0	0	0	0	0	0	0
70107002	TEREBEN	1190 BARINGO	701	7	2	1	0	0	0	0	0	0	0	0	0	0
70107024	TEREBEN	1190 BARINGO	701	9	1	1	0	0	0	0	0	0	0	0	0	0
70105036	NGINYANK	1203 BARINGO	701	16	2	1	0	0	0	0	0	0	0	0	0	0
70107058	TEREBEN	1190 BARINGO	701	10	2	1	0	0	0	0	0	0	0	0	0	0
70107010	TEREBEN	1190 BARINGO	701	8	2	1	0	0	0	0	0	0	0	0	0	0
70105061	NGINYANK	1203 BARINGO	701	15	2	1	0	0	0	0	0	0	0	0	0	0
70107056	TEREBEN	1190 BARINGO	701	10	3	2	0	0	0	0	0	0	0	0	0	0
70107033	TEREBEN	1190 BARINGO	701	9	1	1	0	0	0	0	0	0	0	0	0	0
70107003	TEREBEN	1190 BARINGO	701	6	2	1	0	0	0	0	0	0	0	0	0	0
70107050	TEREBEN	1190 BARINGO	701	10	1	5	0	0	0	0	0	0	0	0	0	0
70107059	TEREBEN	1190 BARINGO	701	10	1	5	0	0	0	0	0	0	0	0	0	0
70107024	TEREBEN	1190 BARINGO	701	9	1	1	0	0	0	0	0	0	0	0	0	0
70107024	TEREBEN	1190 BARINGO	701	9	1	1	0	0	0	0	0	0	0	0	0	0
70107024	TEREBEN	1190 BARINGO	701	6	1	1	0	0	0	0	0	0	0	0	0	1

Step 6 – Select the G column and press ctrl + F.

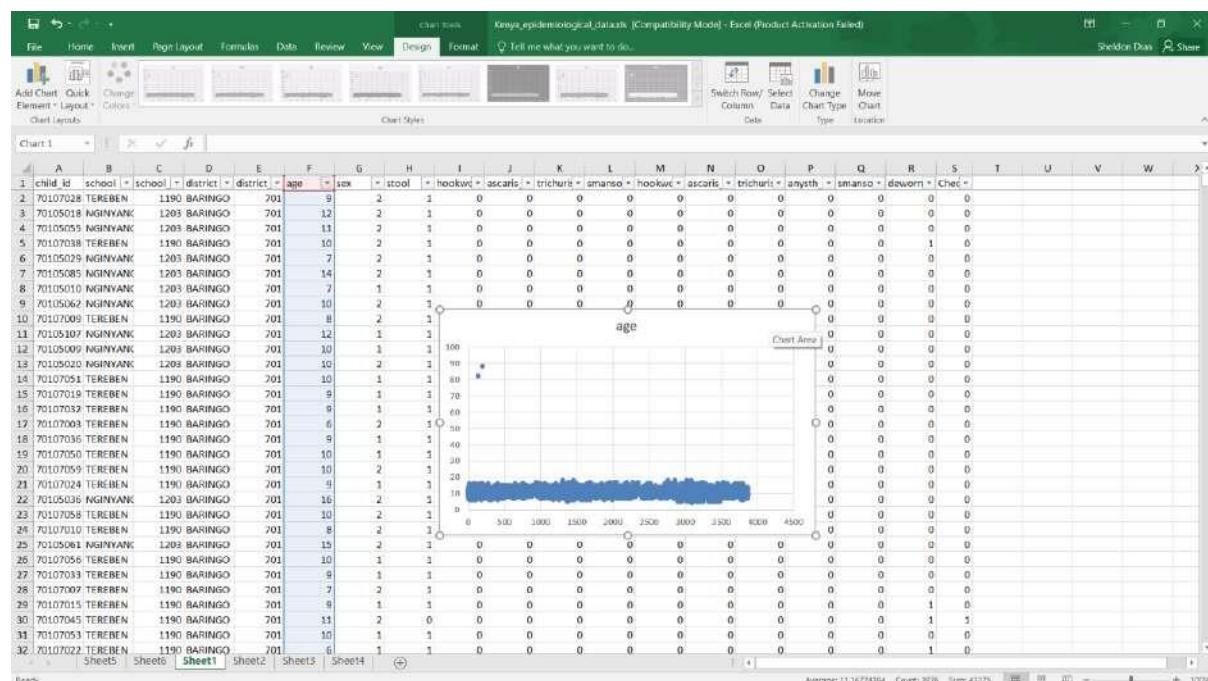
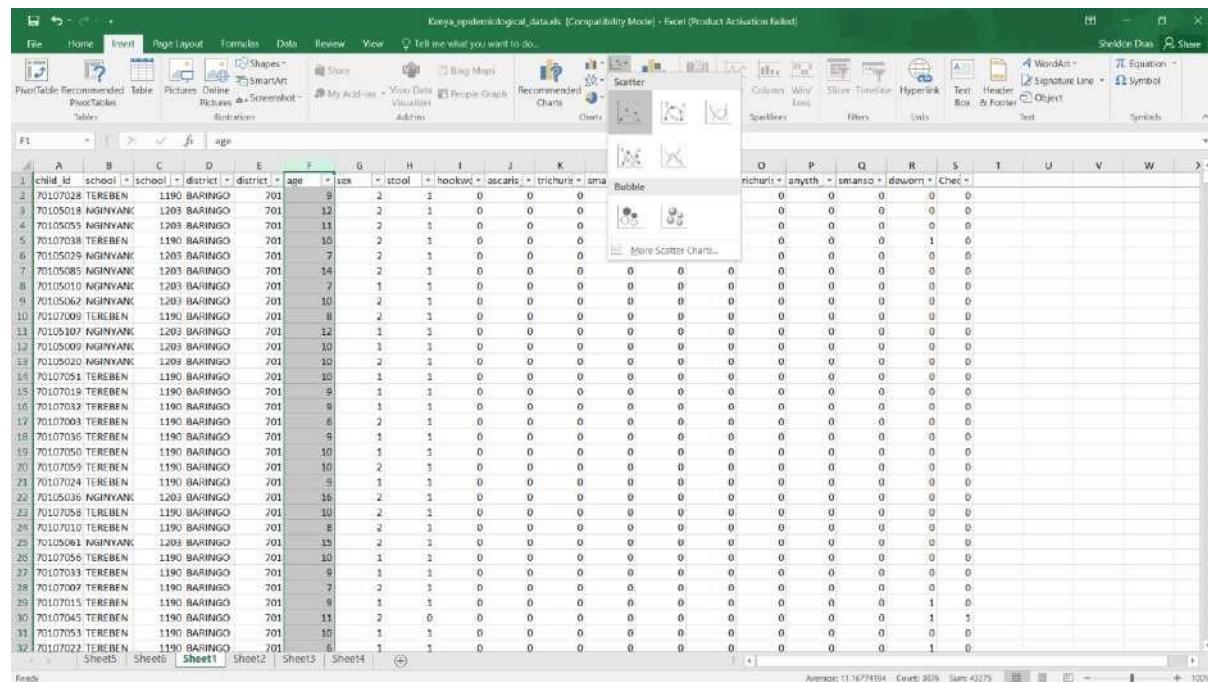
The screenshot shows a Microsoft Excel spreadsheet titled "Kenya_epidemiological_details [Compatibility Mode] - Excel (Product Activation failed)". The data consists of 32 rows of child information across columns A through W. Column G contains the value 'sex' for all rows. A 'Find and Replace' dialog box is overlaid on the screen, centered over the data. The 'Find what' field is set to 'M' and the 'Replace with' field is set to '1'. The 'Replace All' button at the bottom left of the dialog box is highlighted with a yellow background. The status bar at the bottom right indicates "Count 2076".

This screenshot shows the same Excel spreadsheet and data as the previous one. The 'Find and Replace' dialog box is now closed, and a message box from Microsoft Excel is displayed in the center of the screen, stating "All done. We made 2001 replacements." with an "OK" button. The status bar at the bottom right still shows "Count 2076".

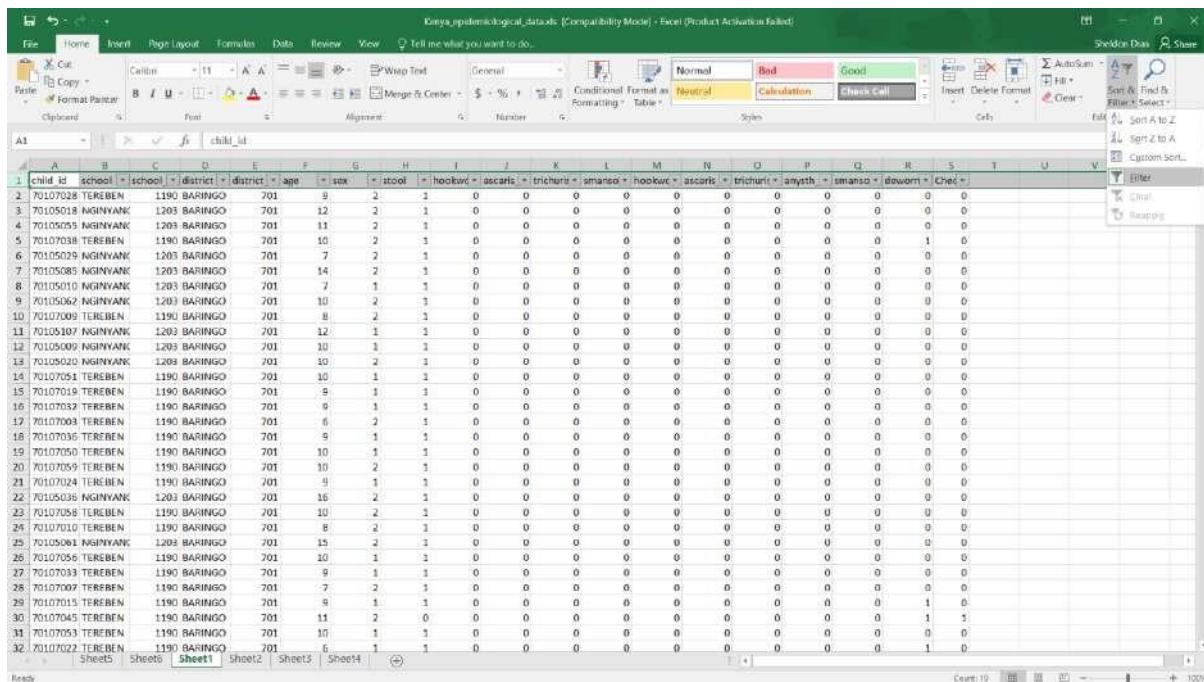
child_id	school	school	district	district	age	sex	stool	hookworm	ascaris	trichuris	smanso	hookworm	ascaris	trichuris	anhyd	smanso	deworm	Chew
70107028	TEREBEN	1190 BARINGO	701	9	F	1	0	0	0	0	0	0	0	0	0	0	0	0
70105018	NGINYANK	1203 BARINGO	701	12	F	1	0	0	0	0	0	0	0	0	0	0	0	0
4	70105055	NGINYANK	1203 BARINGO	701	11	F	1	0	0	0	0	0	0	0	0	0	0	0
5	70107038	TEREBEN	1190 BARINGO	701	10	F	1	0	0	0	0	0	0	0	0	0	1	0
6	70105029	NGINYANK	1203 BARINGO	701	7	F	1	0	0	0	0	0	0	0	0	0	0	0
7	70105085	NGINYANK	1203 BARINGO	701	14	F	1	0	0	0	0	0	0	0	0	0	0	0
8	70105010	NGINYANK	1203 BARINGO	701	7	F	1	1	0	0	0	0	0	0	0	0	0	0
9	70105062	NGINYANK	1203 BARINGO	701	10	F	1	0	0	0	0	0	0	0	0	0	0	0
10	70107009	TEREBEN	1190 BARINGO	701	8	F	1	0	0	0	0	0	0	0	0	0	0	0
11	70105010	NGINYANK	1203 BARINGO	701	12	F	1	0	0	0	0	0	0	0	0	0	0	0
12	70105009	NGINYANK	1203 BARINGO	701	10	F	1	1	0	0	0	0	0	0	0	0	0	0
13	70105020	NGINYANK	1203 BARINGO	701	10	F	1	0	0	0	0	0	0	0	0	0	0	0
14	70107051	TEREBEN	1190 BARINGO	701	10	F	1	0	0	0	0	0	0	0	0	0	0	0
15	70107019	TEREBEN	1190 BARINGO	701	9	F	1	0	0	0	0	0	0	0	0	0	0	0
16	70107032	TEREBEN	1190 BARINGO	701	9	F	1	0	0	0	0	0	0	0	0	0	0	0
17	70107003	TEREBEN	1190 BARINGO	701	6	F	2	1	0	0	0	0	0	0	0	0	0	0
18	70107036	TEREBEN	1190 BARINGO	701	9	F	2	1	0	0	0	0	0	0	0	0	0	0
19	70107050	TEREBEN	1190 BARINGO	701	10	F	2	1	0	0	0	0	0	0	0	0	0	0
20	70107059	TEREBEN	1190 BARINGO	701	10	F	2	1	0	0	0	0	0	0	0	0	0	0
21	70107024	TEREBEN	1190 BARINGO	701	9	F	2	1	0	0	0	0	0	0	0	0	0	0
22	70105036	NGINYANK	1203 BARINGO	701	16	F	2	1	0	0	0	0	0	0	0	0	0	0
23	70107058	TEREBEN	1190 BARINGO	701	10	F	2	1	0	0	0	0	0	0	0	0	0	0
24	70107010	TEREBEN	1190 BARINGO	701	8	F	2	1	0	0	0	0	0	0	0	0	0	0
25	70105061	NGINYANK	1203 BARINGO	701	15	F	2	1	0	0	0	0	0	0	0	0	0	0
26	70107056	TEREBEN	1190 BARINGO	701	10	F	2	1	0	0	0	0	0	0	0	0	0	0
27	70107033	TEREBEN	1190 BARINGO	701	10	F	2	1	0	0	0	0	0	0	0	0	0	0
28	70107007	TEREBEN	1190 BARINGO	701	7	F	2	1	0	0	0	0	0	0	0	0	0	0
29	70107015	TEREBEN	1190 BARINGO	701	9	F	2	1	0	0	0	0	0	0	0	0	0	0
30	70107045	TEREBEN	1190 BARINGO	701	11	F	2	0	0	0	0	0	0	0	0	0	1	0
31	70107053	TEREBEN	1190 BARINGO	701	10	F	2	1	0	0	0	0	0	0	0	0	0	0
32	70107022	TEREBEN	1190 BARINGO	701	6	F	2	1	0	0	0	0	0	0	0	0	0	1

child_id	school	school	district	district	age	sex	stool	hookworm	ascaris	trichuris	smanso	hookworm	ascaris	trichuris	anhyd	smanso	deworm	Chew
70107028	TEREBEN	1190 BARINGO	701	9	F	1	0	0	0	0	0	0	0	0	0	0	0	0
3	70105018	NGINYANK	1203 BARINGO	701	12	F	1	0	0	0	0	0	0	0	0	0	0	0
4	70105055	NGINYANK	1203 BARINGO	701	11	F	1	0	0	0	0	0	0	0	0	0	0	0
5	70107038	TEREBEN	1190 BARINGO	701	10	F	1	0	0	0	0	0	0	0	0	0	0	0
6	70105029	NGINYANK	1203 BARINGO	701	7	F	1	0	0	0	0	0	0	0	0	0	0	0
7	70105085	NGINYANK	1203 BARINGO	701	14	F	1	0	0	0	0	0	0	0	0	0	0	0
8	70105010	NGINYANK	1203 BARINGO	701	7	F	1	1	0	0	0	0	0	0	0	0	0	0
9	70105062	NGINYANK	1203 BARINGO	701	10	F	1	0	0	0	0	0	0	0	0	0	0	0
10	70107009	TEREBEN	1190 BARINGO	701	8	F	1	0	0	0	0	0	0	0	0	0	0	0
11	70105010	NGINYANK	1203 BARINGO	701	12	F	1	2	0	0	0	0	0	0	0	0	0	0
12	70105009	NGINYANK	1203 BARINGO	701	10	F	1	3	0	0	0	0	0	0	0	0	0	0
13	70105020	NGINYANK	1203 BARINGO	701	10	F	1	2	1	0	0	0	0	0	0	0	0	0
14	70107051	TEREBEN	1190 BARINGO	701	10	F	1	1	0	0	0	0	0	0	0	0	0	0
15	70107019	TEREBEN	1190 BARINGO	701	9	F	1	0	0	0	0	0	0	0	0	0	0	0
16	70107032	TEREBEN	1190 BARINGO	701	9	F	1	0	0	0	0	0	0	0	0	0	0	0
17	70107003	TEREBEN	1190 BARINGO	701	6	F	2	1	0	0	0	0	0	0	0	0	0	0
18	70107036	TEREBEN	1190 BARINGO	701	9	F	2	2	0	0	0	0	0	0	0	0	0	0
19	70107050	TEREBEN	1190 BARINGO	701	10	F	2	1	0	0	0	0	0	0	0	0	0	0
20	70107059	TEREBEN	1190 BARINGO	701	10	F	2	1	0	0	0	0	0	0	0	0	0	0
21	70107024	TEREBEN	1190 BARINGO	701	9	F	2	1	0	0	0	0	0	0	0	0	0	0
22	70105036	NGINYANK	1203 BARINGO	701	16	F	2	1	0	0	0	0	0	0	0	0	0	0
23	70107058	TEREBEN	1190 BARINGO	701	10	F	2	1	0	0	0	0	0	0	0	0	0	0
24	70107010	TEREBEN	1190 BARINGO	701	8	F	2	1	0	0	0	0	0	0	0	0	0	0
25	70105061	NGINYANK	1203 BARINGO	701	15	F	2	1	0	0	0	0	0	0	0	0	0	0
26	70107056	TEREBEN	1190 BARINGO	701	10	F	2	1	0	0	0	0	0	0	0	0	0	0
27	70107033	TEREBEN	1190 BARINGO	701	9	F	2	1	0	0	0	0	0	0	0	0	0	0
28	70107007	TEREBEN	1190 BARINGO	701	7	F	2	1	0	0	0	0	0	0	0	0	0	0
29	70107015	TEREBEN	1190 BARINGO	701	9	F	2	1	0	0	0	0	0	0	0	0	0	0
30	70107045	TEREBEN	1190 BARINGO	701	11	F	2	0	0	0	0	0	0	0	0	0	1	0
31	70107053	TEREBEN	1190 BARINGO	701	10	F	2	1	0	0	0	0	0	0	0	0	0	0
32	70107022	TEREBEN	1190 BARINGO	701	6	F	2	1	0	0	0	0	0	0	0	0	0	1

Step 7 – Select the F column. Insert > Scatter.

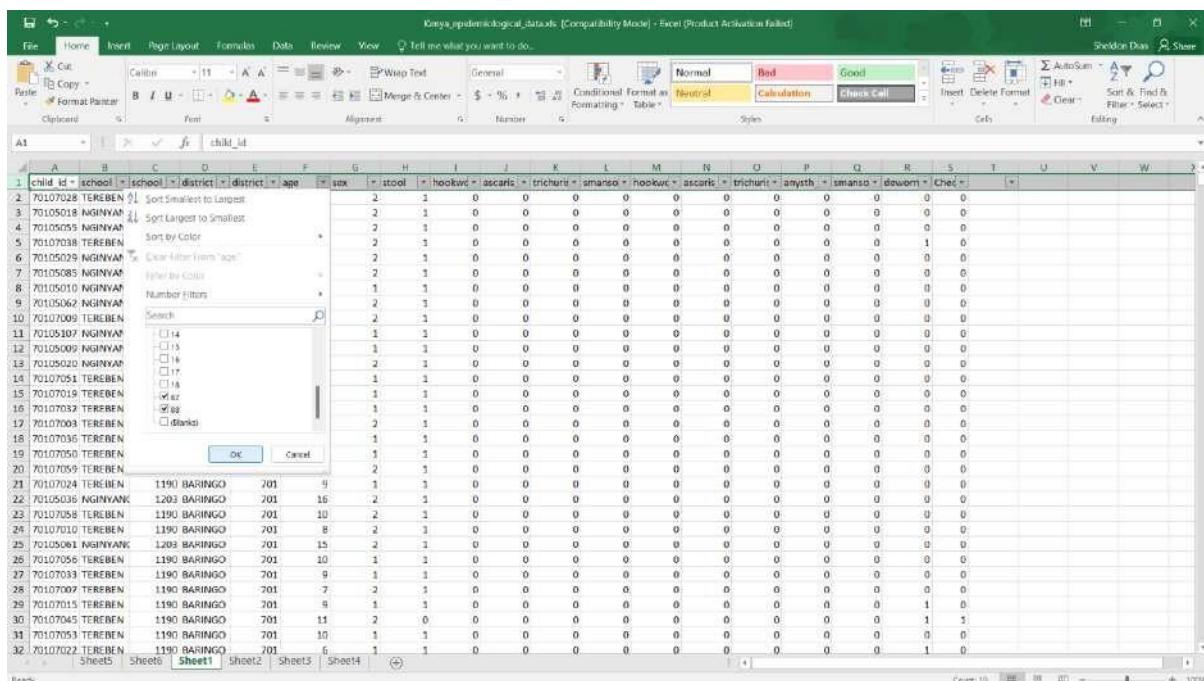


Step 8 – Select the first row. Home > Sort & Filter > Filter.



The screenshot shows a Microsoft Excel spreadsheet titled "Kenya_epidemiological_data.xls". The data consists of 32 rows of information, each containing various demographic and health-related fields such as child_id, school, district, age, size, stool, heallow, oscaris, trichuris, smanso, hookworm, ascaris, trichuris, anysth, smanso, deworm, and Che. The first row is selected, and the "Filter" option from the "Sort & Filter" dropdown menu is highlighted. The "Filter" menu also includes options like "Sort A to Z", "Sort Z to A", and "Custom Sort".

Step 9 – Click the arrow beside age. Only select 82 and 88 and then click OK.



The screenshot shows the same Excel spreadsheet with the "Number Filters" dialog box open over the "age" column. The dialog box lists two filter criteria: "82" and "88", both of which are checked. Below the list are "OK" and "Cancel" buttons. The background shows the filtered data where only rows with age values 82 and 88 are visible.

Step 10 – Select both the columns and click delete.

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W
1	child_id	=	school	=	school	=	district	=	district	=	age	=	sex	=	stool	=	hookwi	=	ascaris	=	trichuri	=
101	70105029	NGINYANK	1203	BARINGO	701	82	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
102	70203004	SONOWWE	1124	BOMET	702	88	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3878																						
3879																						
3880																						
3881																						
3882																						
3883																						
3884																						
3885																						
3886																						
3887																						
3888																						
3889																						
3890																						
3891																						
3892																						
3893																						
3894																						
3895																						
3896																						
3897																						
3898																						
3899																						
3900																						
3901																						
3902																						
3903																						
3904																						
3905																						
3906																						

Step 11 – Insert > Pivot Table. Set the following attributes and click OK.

district	child_id	age	sex	stool	hookwi	ascaris	trichuri	smanso	hookwi	ascaris	trichuri	anyth	smanso	deworm	Cher	
0	BARINGO	701	9	2	1	0	0	0	0	0	0	0	0	0	0	
1	BARINGO	701	12	2	1	0	0	0	0	0	0	0	0	0	0	
2	BARINGO	701	11	2	1	0	0	0	0	0	0	0	0	0	0	
3	BARINGO	701	10	2	1	0	0	0	0	0	0	0	0	0	1	
4	BARINGO	701	8	2	1	0	0	0	0	0	0	0	0	0	0	
5	70105029	NGINYANK	1203	BARINGO	701	7	2	1	0	0	0	0	0	0	0	0
6	70105085	NGINYANK	1203	BARINGO	701	14	2	1	0	0	0	0	0	0	0	0
7	70105010	NGINYANK	1203	BARINGO	701	7	1	1	0	0	0	0	0	0	0	0
8	70105062	NGINYANK	1203	BARINGO	701	10	2	1	0	0	0	0	0	0	0	0
9	70107009	TEREBEN	1190	BARINGO	701	8	2	1	0	0	0	0	0	0	0	0
10	70107051	TEREBEN	1190	BARINGO	701	10	1	1	0	0	0	0	0	0	0	0
11	70105107	NGINYANK	1203	BARINGO	701	12	1	1	0	0	0	0	0	0	0	0
12	70105009	NGINYANK	1203	BARINGO	701	10	1	1	0	0	0	0	0	0	0	0
13	70105020	NGINYANK	1203	BARINGO	701	10	2	1	0	0	0	0	0	0	0	0
14	70107051	TEREBEN	1190	BARINGO	701	10	1	3	0	0	0	0	0	0	0	0
15	70107019	TEREBEN	1190	BARINGO	701	9	1	3	0	0	0	0	0	0	0	0
16	70107032	TEREBEN	1190	BARINGO	701	0	1	1	0	0	0	0	0	0	0	0
17	70107003	TEREBEN	1190	BARINGO	701	6	2	1	0	0	0	0	0	0	0	0
18	70107036	TEREBEN	1190	BARINGO	701	9	1	5	0	0	0	0	0	0	0	0
19	70107050	TEREBEN	1190	BARINGO	701	10	1	5	0	0	0	0	0	0	0	0
20	70107059	TEREBEN	1190	BARINGO	701	10	2	5	0	0	0	0	0	0	0	0
21	70107024	TEREBEN	1190	BARINGO	701	9	1	3	0	0	0	0	0	0	0	0
22	70105036	NGINYANK	1203	BARINGO	701	16	2	1	0	0	0	0	0	0	0	0
23	70107058	TEREBEN	1190	BARINGO	701	10	2	1	0	0	0	0	0	0	0	0
24	70107010	TEREBEN	1190	BARINGO	701	8	2	1	0	0	0	0	0	0	0	0
25	70105061	NGINYANK	1203	BARINGO	701	15	2	1	0	0	0	0	0	0	0	0
26	70107056	TEREBEN	1190	BARINGO	701	10	1	2	0	0	0	0	0	0	0	0
27	70107033	TEREBEN	1190	BARINGO	701	9	1	3	0	0	0	0	0	0	0	0
28	70107009	TEREBEN	1190	BARINGO	701	7	2	3	0	0	0	0	0	0	0	0
29	70107015	TEREBEN	1190	BARINGO	701	9	1	3	0	0	0	0	0	0	0	0
30	70107045	TEREBEN	1190	BARINGO	701	11	2	0	0	0	0	0	0	0	0	1
31	70107053	TEREBEN	1190	BARINGO	701	10	1	3	0	0	0	0	0	0	0	0
32	70107022	TEREBEN	1190	BARINGO	701	6	1	1	0	0	0	0	0	0	0	1

Create PivotTable

Choose the data that you want to analyze:

Select a table or range: Sheet1!\$A\$2:\$W\$32

Use an external data source:

Choose connections...

Or use this workbook's Data Model:

Choose where you want the PivotTable report to be placed:

New Worksheet (selected)

Existing Worksheet:

Location:

Choose whether you want to analyze multiple tables:

Add this data to the Data Model

OK Cancel

PivotTable Fields

Choose fields to add to report:

Search

child_id
school
school_id
district
district_id
age
sex
stool
hookworm_egg
ascaris_egg
trichuris_egg
smanse_egg
hookworm
ascaris
trichuris
amphyt
smanse
deworm
check

FILTERS

COLUMNS

ROWS

VALUES

Step 12 – Drag and Drop fields as shown below.

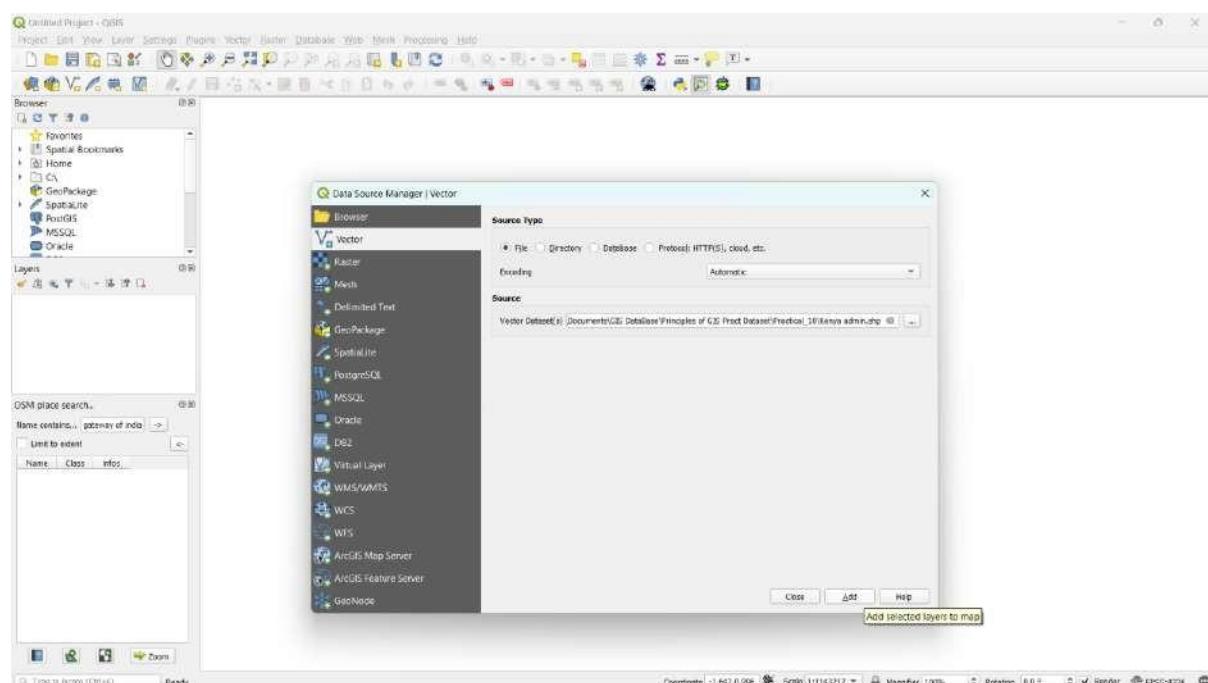
child_id	age	sex	stool	hookworm	ascaris	trichuris	amanso	hookworm	ascaris	trichuris	anhyd	smanso	deworm	Chec
60904001	4		1											
60904002	5			1										
60904003	6				1									
60904004	7					1								
60904005	8						1							
60904006	9							1						
60904007	10								1					
60904008	11									1				
60904009	12										1			
60904010	13											1		
60904011	14												1	
60904012	15													1
60904013	16													
60904014	17													
60904015	18													
60904016	19													
60904017	20													
60904018	21													
60904019	22													
60904020	23													
60904021	24													
60904022	25													
60904023	26													
60904024	27													
60904025	28													
60904026	29													
60904027	30													
60904028	31													
	32													

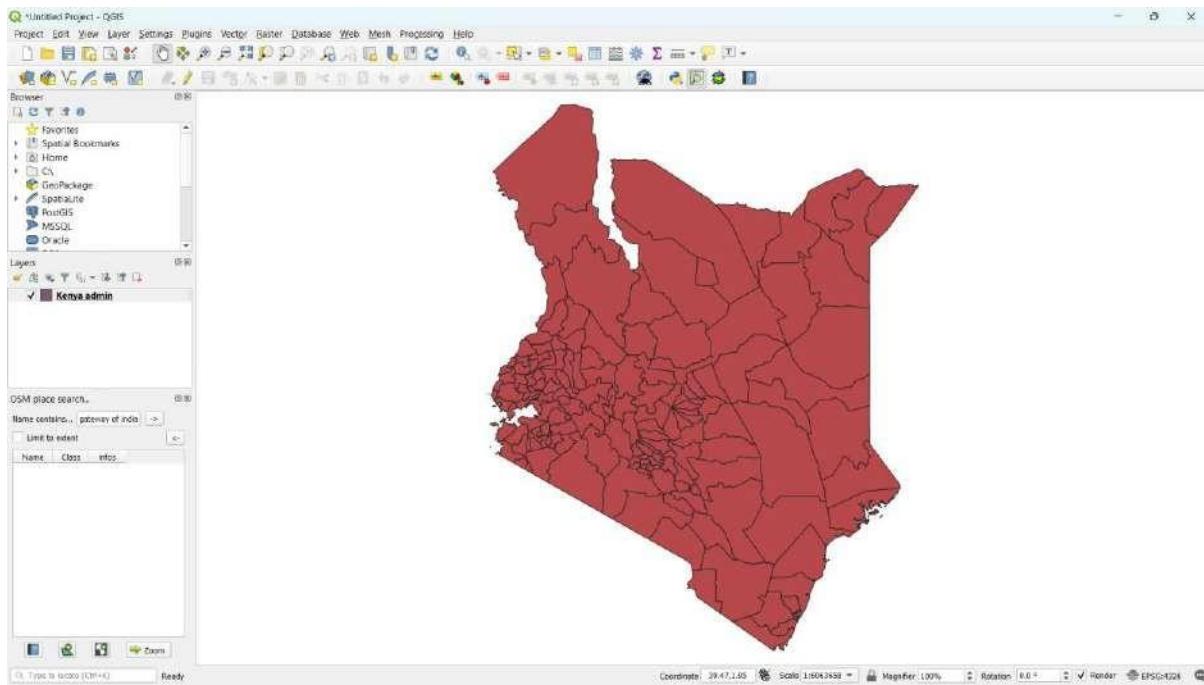
Step 13 – Select T2, type the following function and click enter.

child_id	school	district	age	sex	stool	hookworm	ascaris	trichuris	amanso	hookworm	ascaris	trichuris	anhyd	smanso	deworm	Chec	
70107028	TREBEN	110	BARINGO	701	9	2	3	0	0	0	0	0	0	0	0	0	0
70105018	NGNYANK	120	BARINGO	701	12	2	1	0	0	0	0	0	0	0	0	0	0
70105055	NGNYANK	120	BARINGO	701	11	2	1	0	0	0	0	0	0	0	0	0	0
70107038	TEREBEN	110	BARINGO	701	10	2	3	0	0	0	0	0	0	0	0	1	0
70105029	NGNYANK	120	BARINGO	701	7	2	1	0	0	0	0	0	0	0	0	0	0
70105085	NGNYANK	120	BARINGO	701	14	2	1	0	0	0	0	0	0	0	0	0	0
70105010	NGNYANK	120	BARINGO	701	7	1	1	0	0	0	0	0	0	0	0	0	0
70105062	NGNYANK	120	BARINGO	701	10	2	1	0	0	0	0	0	0	0	0	0	0
70107009	TEREBEN	110	BARINGO	701	8	2	1	0	0	0	0	0	0	0	0	0	0
70105107	NGNYANK	120	BARINGO	701	12	1	1	0	0	0	0	0	0	0	0	0	0
70105009	NGNYANK	120	BARINGO	701	10	1	3	0	0	0	0	0	0	0	0	0	0
70105020	NGNYANK	120	BARINGO	701	10	2	1	0	0	0	0	0	0	0	0	0	0
70107051	TEREBEN	110	BARINGO	701	10	1	3	0	0	0	0	0	0	0	0	0	0
70107019	TEREBEN	110	BARINGO	701	9	1	3	0	0	0	0	0	0	0	0	0	0
70107032	TEREBEN	110	BARINGO	701	0	1	1	0	0	0	0	0	0	0	0	0	0
70107003	TEREBEN	110	BARINGO	701	6	2	1	0	0	0	0	0	0	0	0	0	0
70107036	TEREBEN	110	BARINGO	701	9	1	5	0	0	0	0	0	0	0	0	0	0
70107050	TEREBEN	110	BARINGO	701	10	1	5	0	0	0	0	0	0	0	0	0	0
70107059	TEREBEN	110	BARINGO	701	10	2	5	0	0	0	0	0	0	0	0	0	0
70107024	TEREBEN	110	BARINGO	701	9	1	1	0	0	0	0	0	0	0	0	0	0
70105036	NGNYANK	120	BARINGO	701	16	2	1	0	0	0	0	0	0	0	0	0	0
70107058	TEREBEN	110	BARINGO	701	10	2	1	0	0	0	0	0	0	0	0	0	0
70107010	TEREBEN	110	BARINGO	701	8	2	1	0	0	0	0	0	0	0	0	0	0
70105061	NGNYANK	120	BARINGO	701	15	2	1	0	0	0	0	0	0	0	0	0	0
70107056	TEREBEN	110	BARINGO	701	10	1	2	0	0	0	0	0	0	0	0	0	0
70107033	TEREBEN	110	BARINGO	701	9	1	3	0	0	0	0	0	0	0	0	0	0
70107009	TEREBEN	110	BARINGO	701	7	2	3	0	0	0	0	0	0	0	0	0	0
70107015	TEREBEN	110	BARINGO	701	9	1	3	0	0	0	0	0	0	0	0	1	0
70107045	TEREBEN	110	BARINGO	701	11	2	0	0	0	0	0	0	0	0	0	0	1
70107053	TEREBEN	110	BARINGO	701	10	1	1	0	0	0	0	0	0	0	0	0	0
70107022	TEREBEN	110	BARINGO	701	6	1	1	0	0	0	0	0	0	0	0	0	1

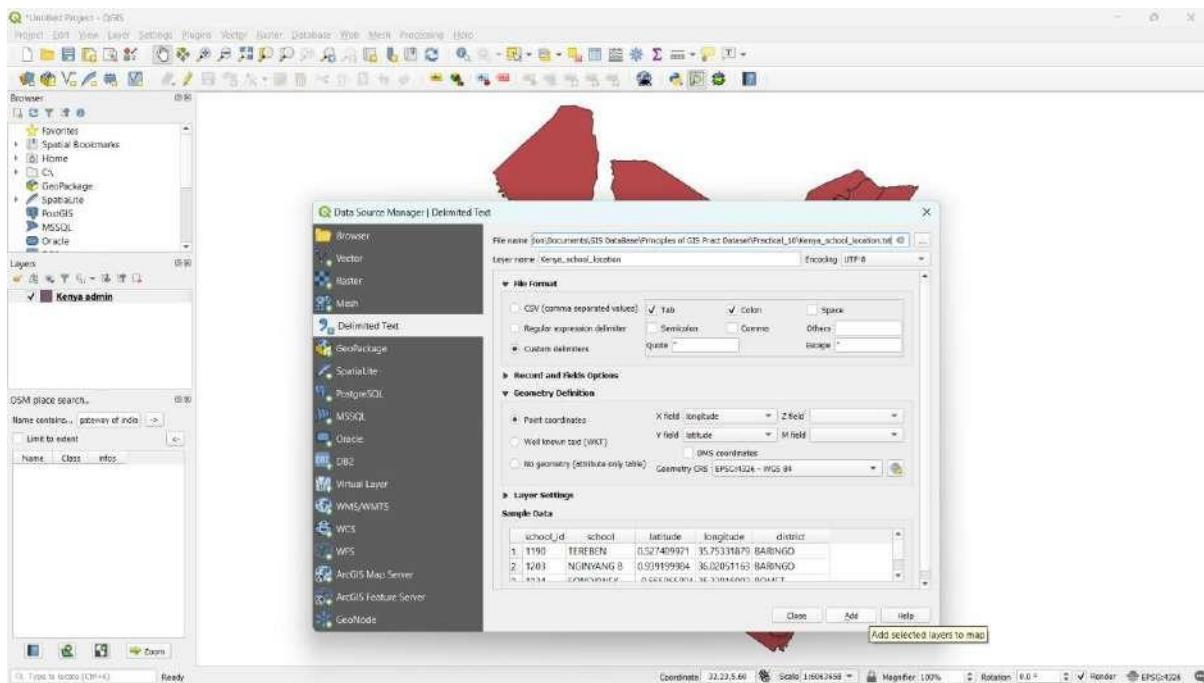
child_id	school	school	district	age	sex	stool	hookworm	ascaris	trichuris	smanso	hookworm	ascaris	trichuris	amylath	smanso	deworm	Chew	
2	70107028	TEREBEN	1190 BARINGO	701	9	2	1	0	0	0	0	0	0	0	0	0	0	
3	70105018	NGINYANK	1203 BARINGO	701	12	2	1	0	0	0	0	0	0	0	0	0	0	
4	70105055	NGINYANK	1203 BARINGO	701	11	2	1	0	0	0	0	0	0	0	0	0	0	
5	70107038	TEREBEN	1190 BARINGO	701	10	2	1	0	0	0	0	0	0	0	0	1	0	
6	70105029	NGINYANK	1203 BARINGO	701	7	2	1	0	0	0	0	0	0	0	0	0	0	
7	70105085	NGINYANK	1203 BARINGO	701	14	2	1	0	0	0	0	0	0	0	0	0	0	
8	70105010	NGINYANK	1203 BARINGO	701	7	1	1	0	0	0	0	0	0	0	0	0	0	
9	70105062	NGINYANK	1203 BARINGO	701	10	2	1	0	0	0	0	0	0	0	0	0	0	
10	70107009	TEREBEN	1190 BARINGO	701	8	2	1	0	0	0	0	0	0	0	0	0	0	
11	70105107	NGINYANK	1203 BARINGO	701	12	1	1	0	0	0	0	0	0	0	0	0	0	
12	70105009	NGINYANK	1203 BARINGO	701	10	1	1	0	0	0	0	0	0	0	0	0	0	
13	70105020	NGINYANK	1203 BARINGO	701	10	2	1	0	0	0	0	0	0	0	0	0	0	
14	70107051	TEREBEN	1190 BARINGO	701	10	1	3	0	0	0	0	0	0	0	0	0	0	
15	70107019	TEREBEN	1190 BARINGO	701	9	1	2	0	0	0	0	0	0	0	0	0	0	
16	70107032	TEREBEN	1190 BARINGO	701	9	1	3	0	0	0	0	0	0	0	0	0	0	
17	70107003	TEREBEN	1190 BARINGO	701	6	2	1	0	0	0	0	0	0	0	0	0	0	
18	70107036	TEREBEN	1190 BARINGO	701	9	1	1	0	0	0	0	0	0	0	0	0	0	
19	70107050	TEREBEN	1190 BARINGO	701	10	1	3	0	0	0	0	0	0	0	0	0	0	
20	70107059	TEREBEN	1190 BARINGO	701	10	2	1	0	0	0	0	0	0	0	0	0	0	
21	70107024	TEREBEN	1190 BARINGO	701	9	1	1	0	0	0	0	0	0	0	0	0	0	
22	70105036	NGINYANK	1203 BARINGO	701	16	2	1	0	0	0	0	0	0	0	0	0	0	
23	70107058	TEREBEN	1190 BARINGO	701	10	2	1	0	0	0	0	0	0	0	0	0	0	
24	70107010	TEREBEN	1190 BARINGO	701	8	2	1	0	0	0	0	0	0	0	0	0	0	
25	70105061	NGINYANK	1203 BARINGO	701	15	2	1	0	0	0	0	0	0	0	0	0	0	
26	70107056	TEREBEN	1190 BARINGO	701	10	1	2	0	0	0	0	0	0	0	0	0	0	
27	70107033	TEREBEN	1190 BARINGO	701	9	1	3	0	0	0	0	0	0	0	0	0	0	
28	70107009	TEREBEN	1190 BARINGO	701	7	2	3	0	0	0	0	0	0	0	0	0	0	
29	70107015	TEREBEN	1190 BARINGO	701	9	1	3	0	0	0	0	0	0	0	0	1	0	
30	70107045	TEREBEN	1190 BARINGO	701	13	2	0	0	0	0	0	0	0	0	0	0	1	0
31	70107053	TEREBEN	1190 BARINGO	701	10	1	1	0	0	0	0	0	0	0	0	0	0	
32	70107022	TEREBEN	1190 BARINGO	701	6	1	1	0	0	0	0	0	0	0	0	1	0	

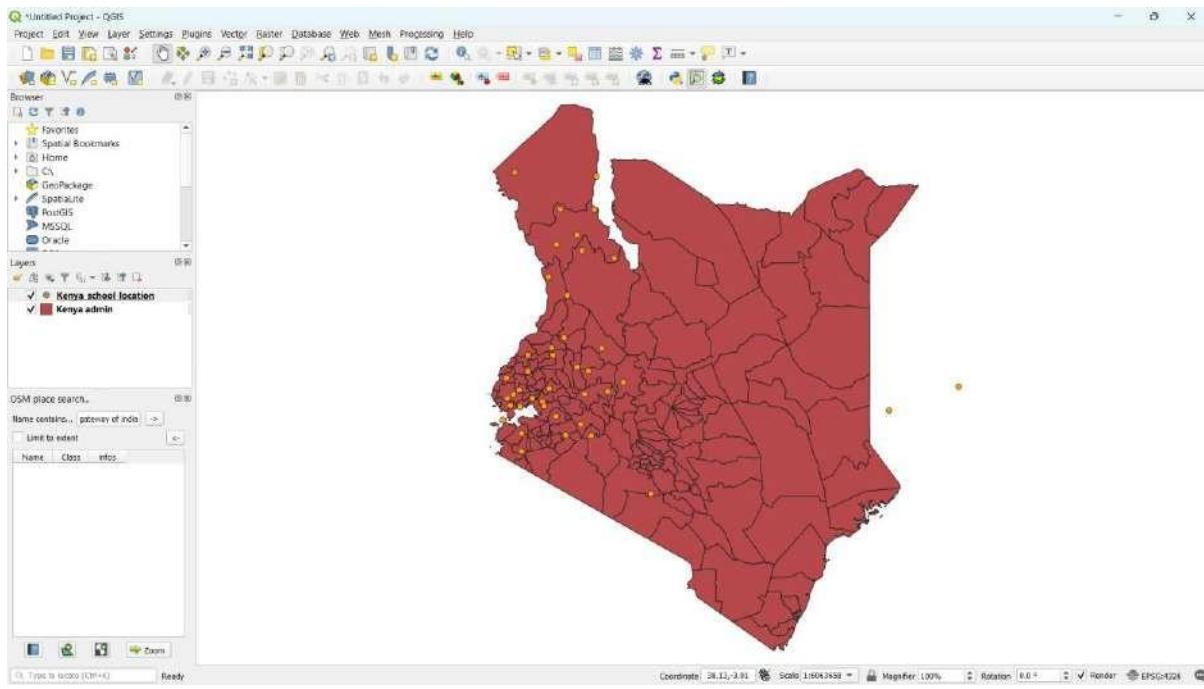
Step 14 – Open a new project in QGIS Desktop. Add the following vector layer.



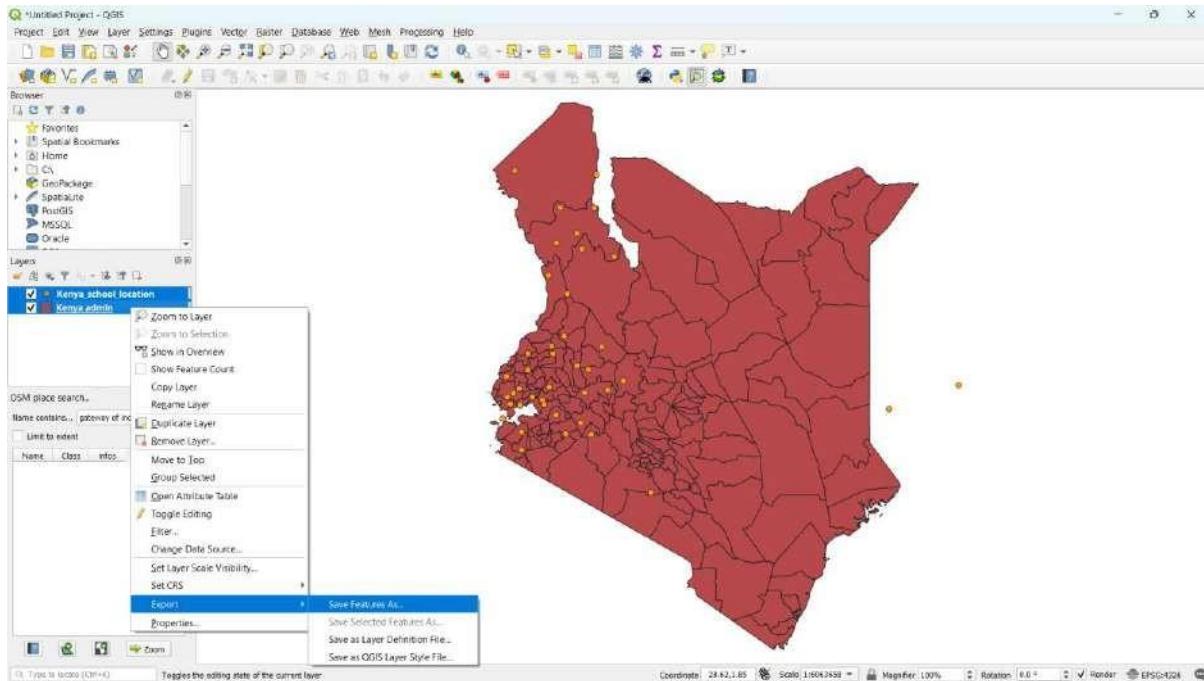


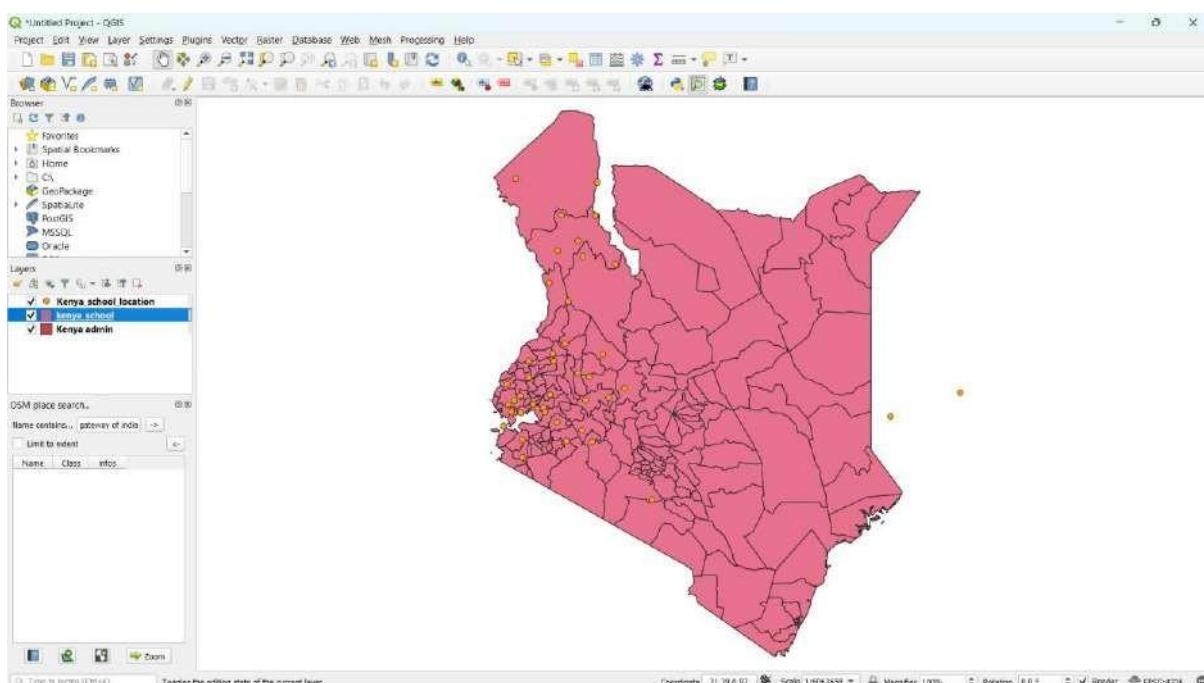
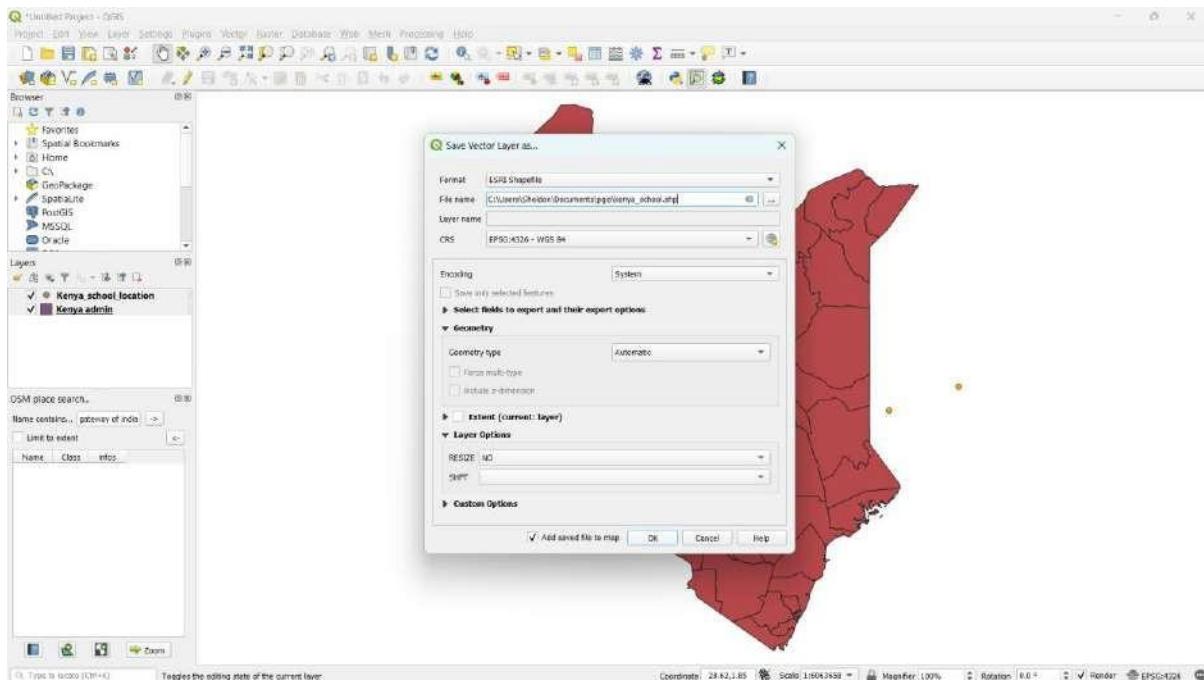
Step 15 – Add the following delimited text layer.



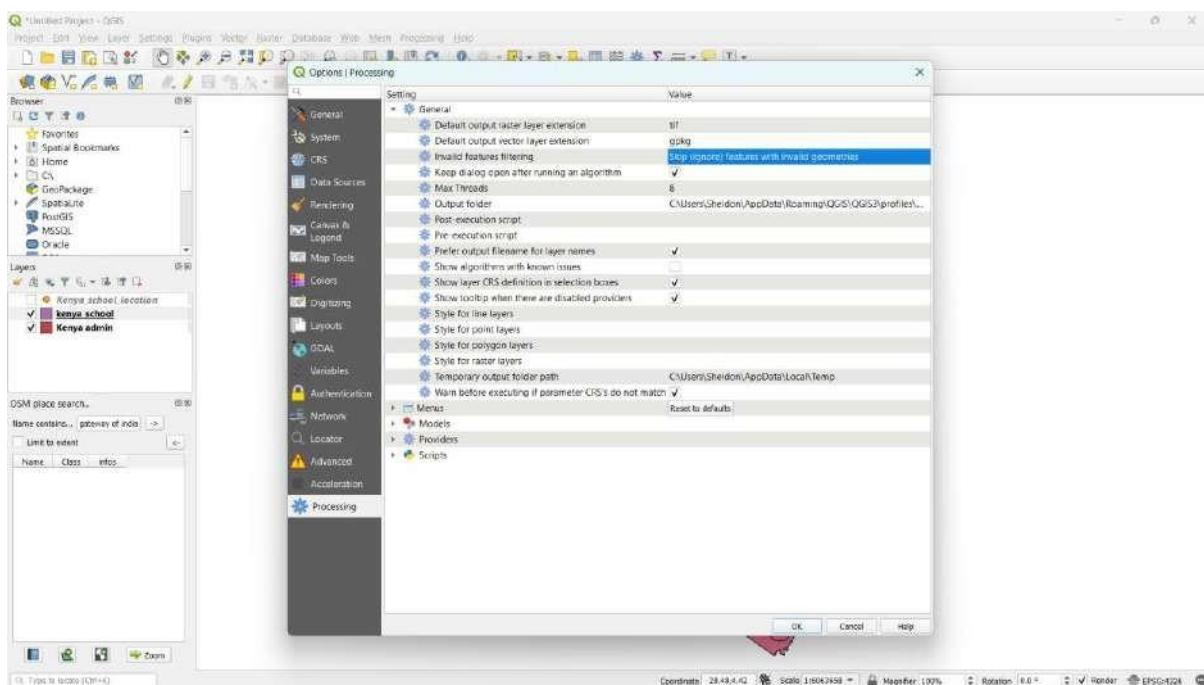


Step 16 – Select both the layers and right click. Export > Save Features as. Set the following parameters and click OK.





Step 17 – Settings > Option. Set the following parameters and then click OK.



Step 18 – Vector > Data Management Tools > Join Attributes by Location. Set the following attributes and hit run.

