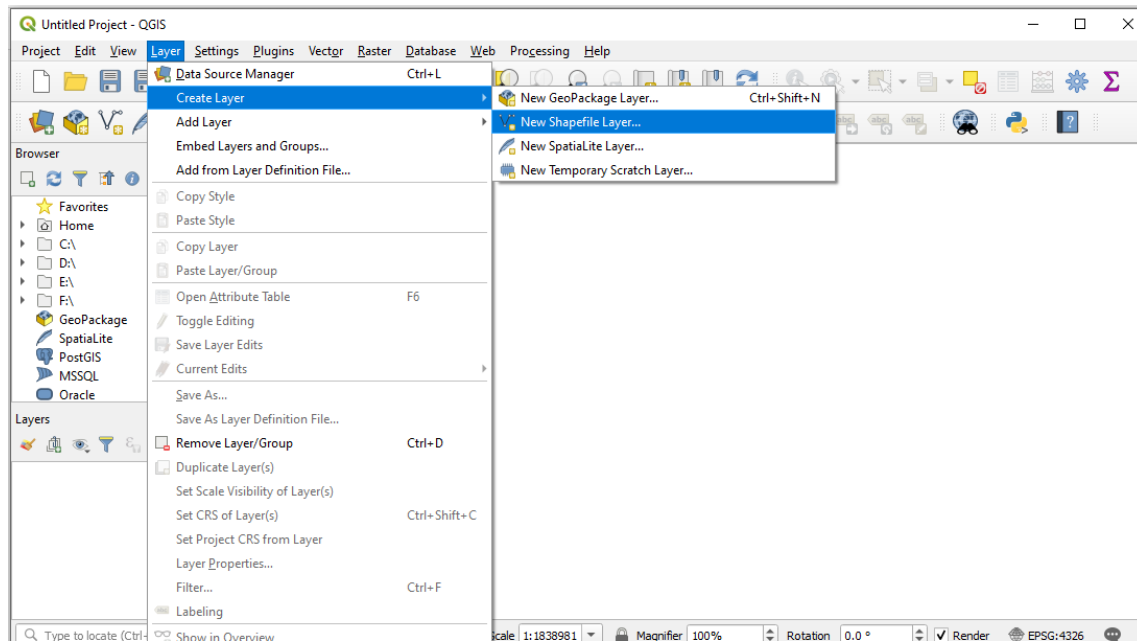


## Practical No. 1:

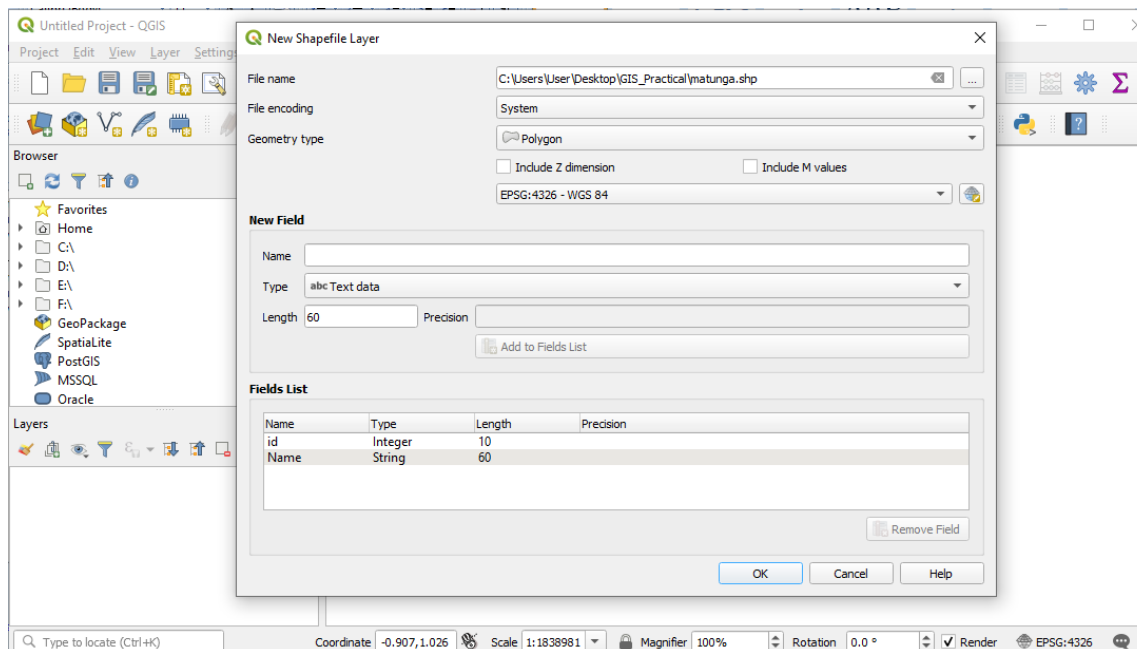
Aim: Creating and managing vector data: Adding vector layer, setting properties, formatting, calculating line length and statistics.

## A) Adding Vector layer.

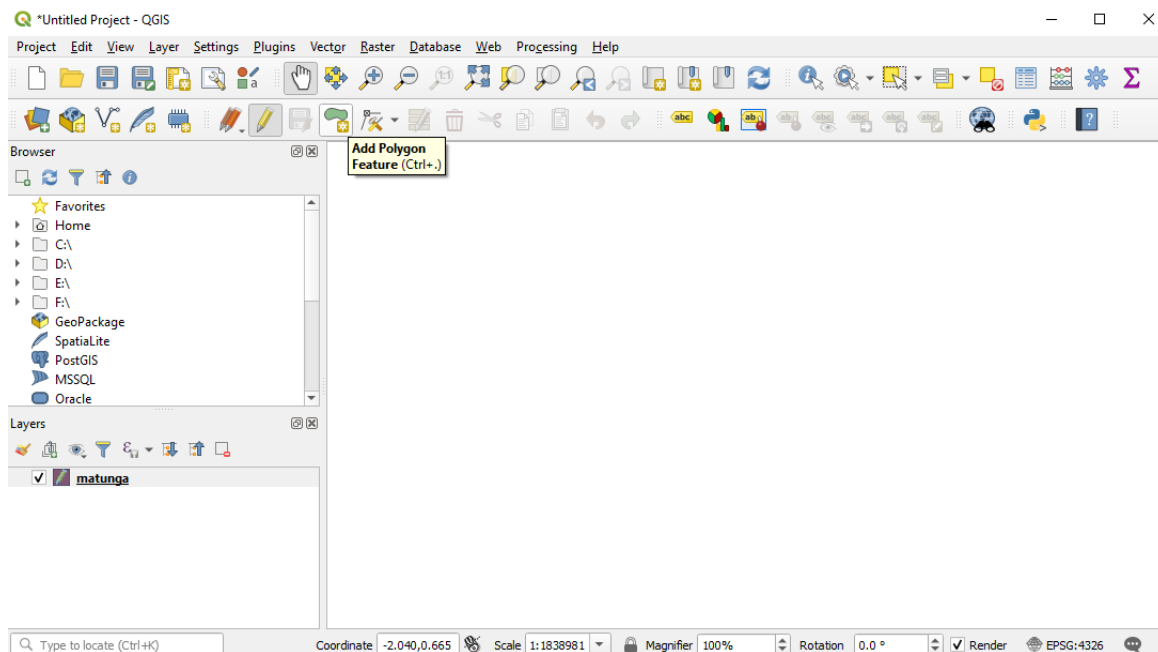
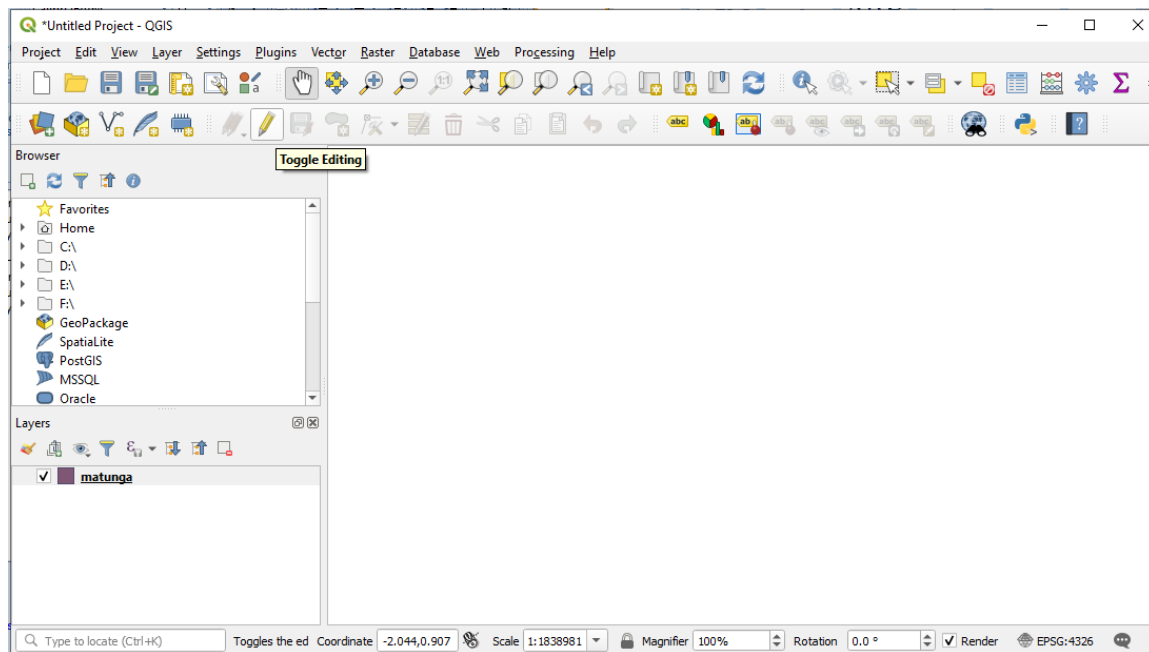
1. Create new project. Click on Layer → Create Layer → New Shapefile Layer...

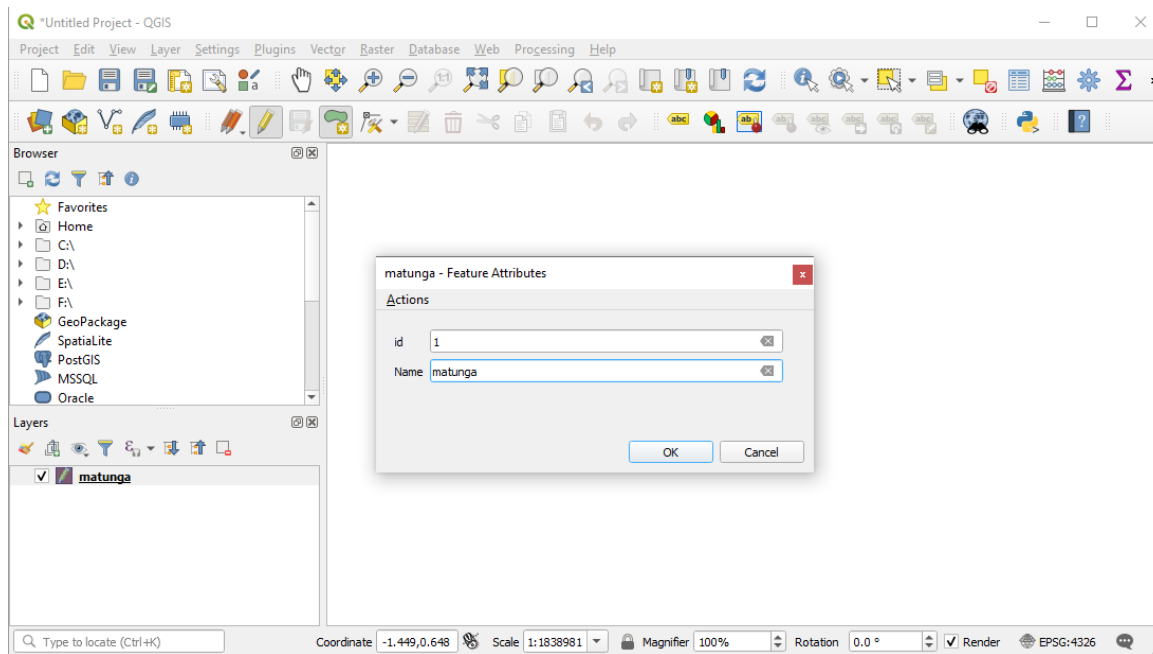


2. Set the name and location of file. Select geometry type as polygon. Add new field as Name and click on Add to field list button.

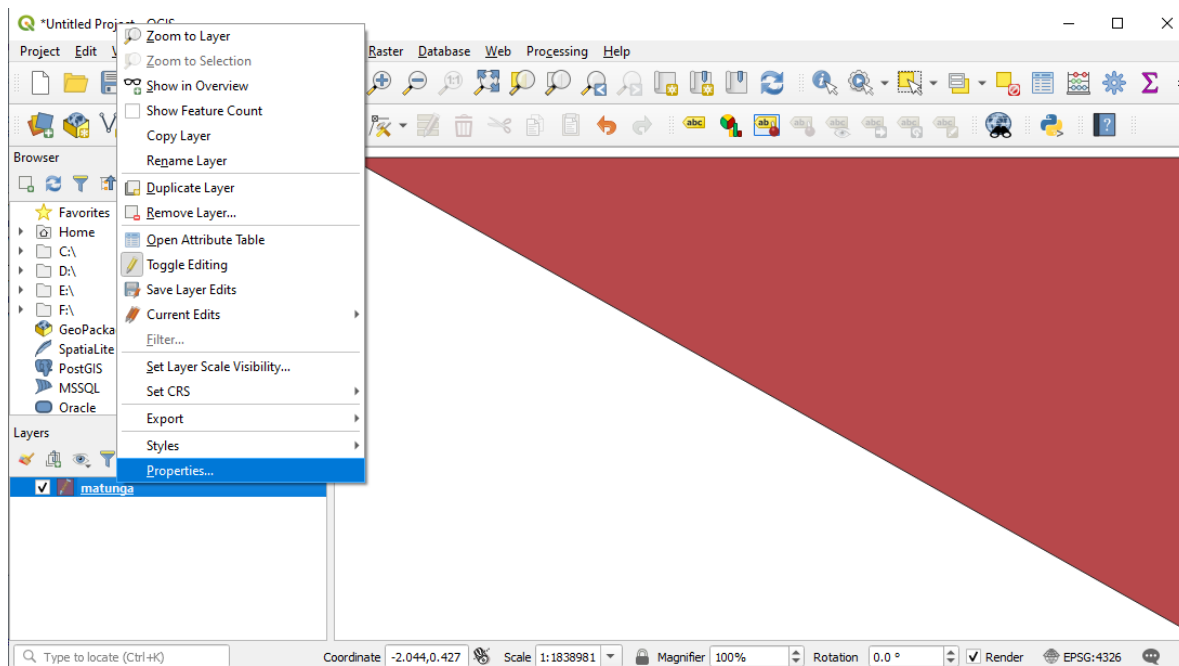


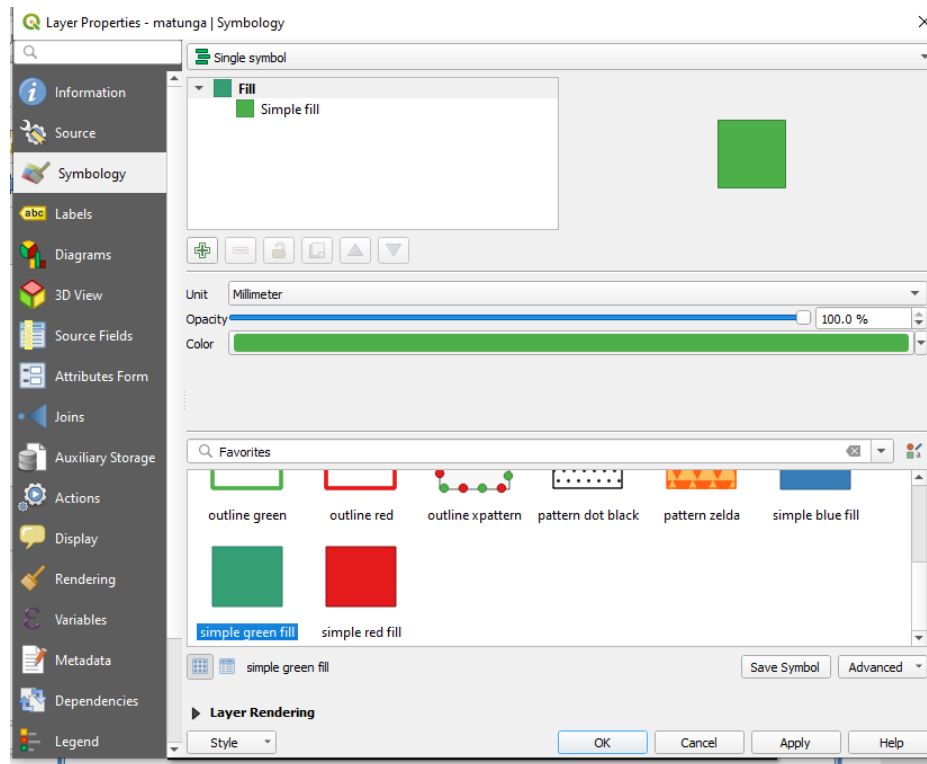
3. Click Toggle Editing Button → then Click on Add Polygon; Now place the cursor at the location where you want to place the polygon. For polygon layer minimum 3 points should be selected. Give id and Name to the polygon.



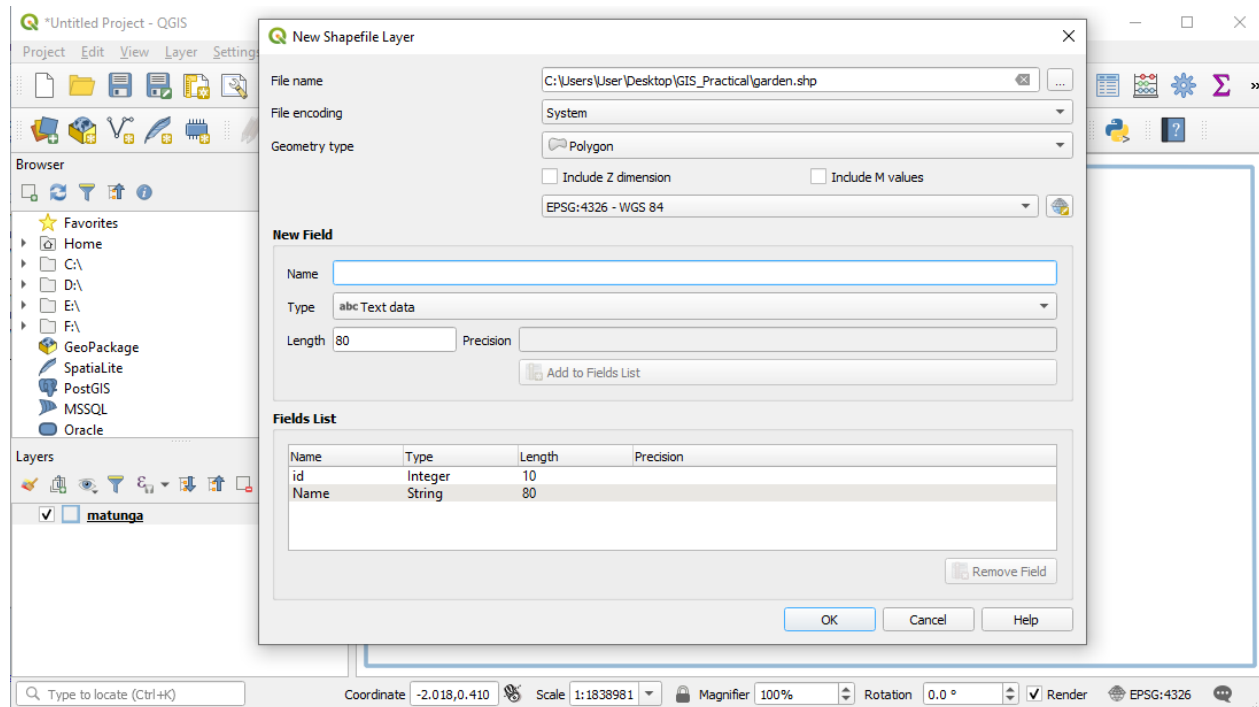


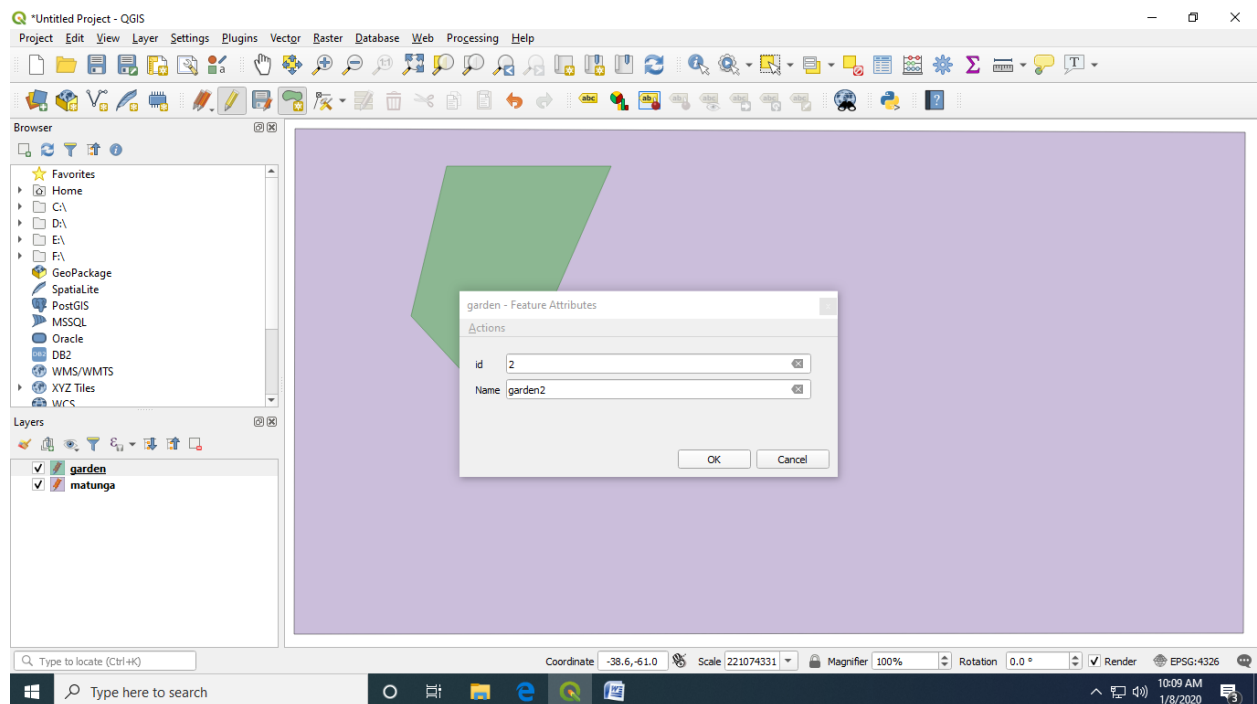
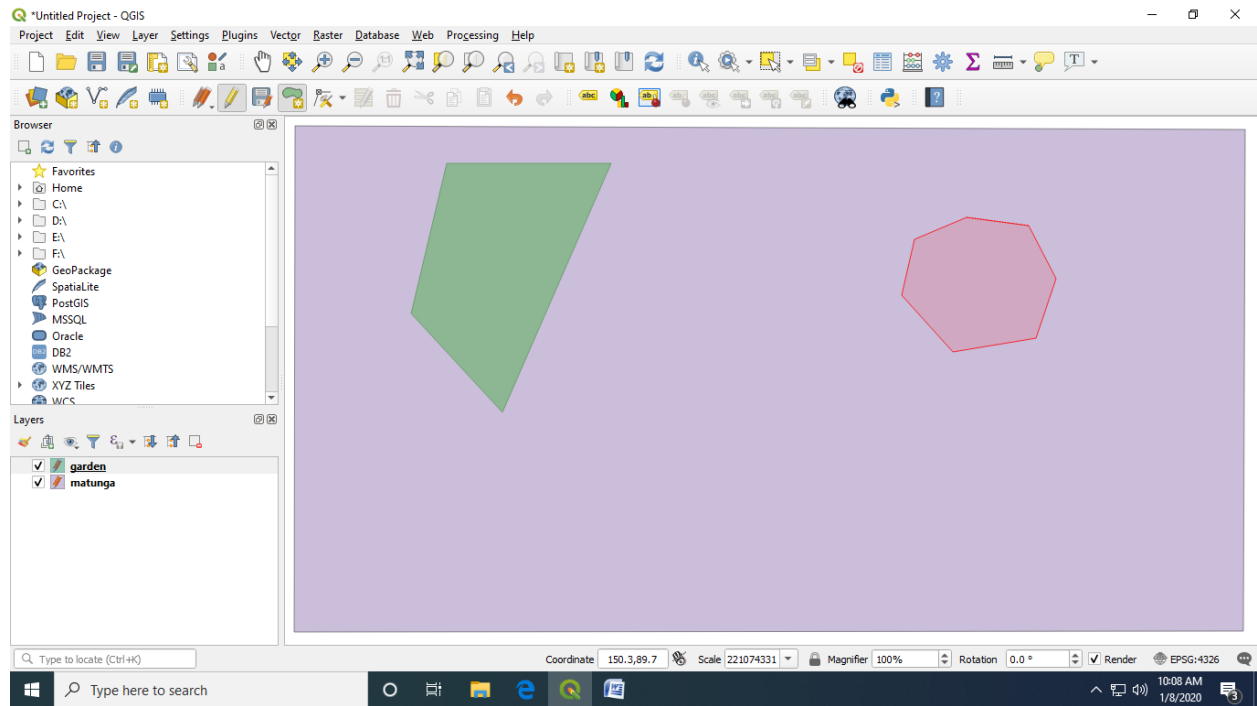
4. To change the property of layer right click on layer matunga from Layers pane and select Properties...





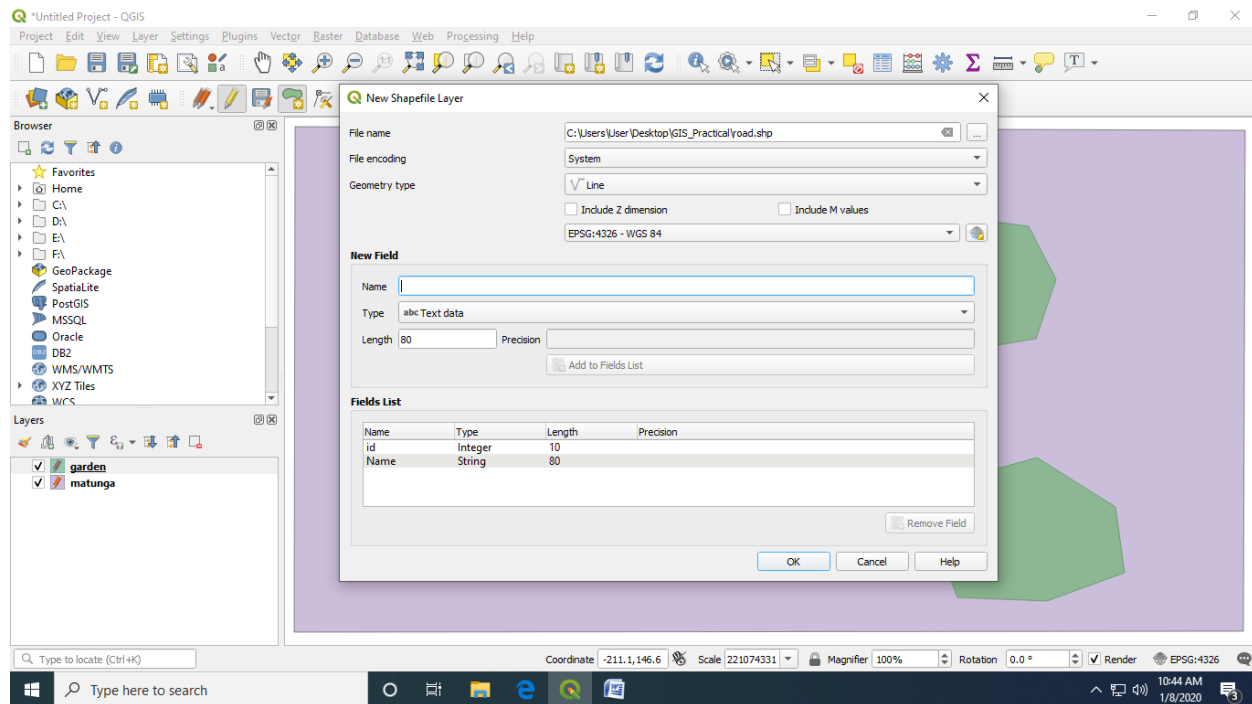
5. Similarly add one more layer garden and add polygons to represent garden, also provide id and Name of each polygon being created.



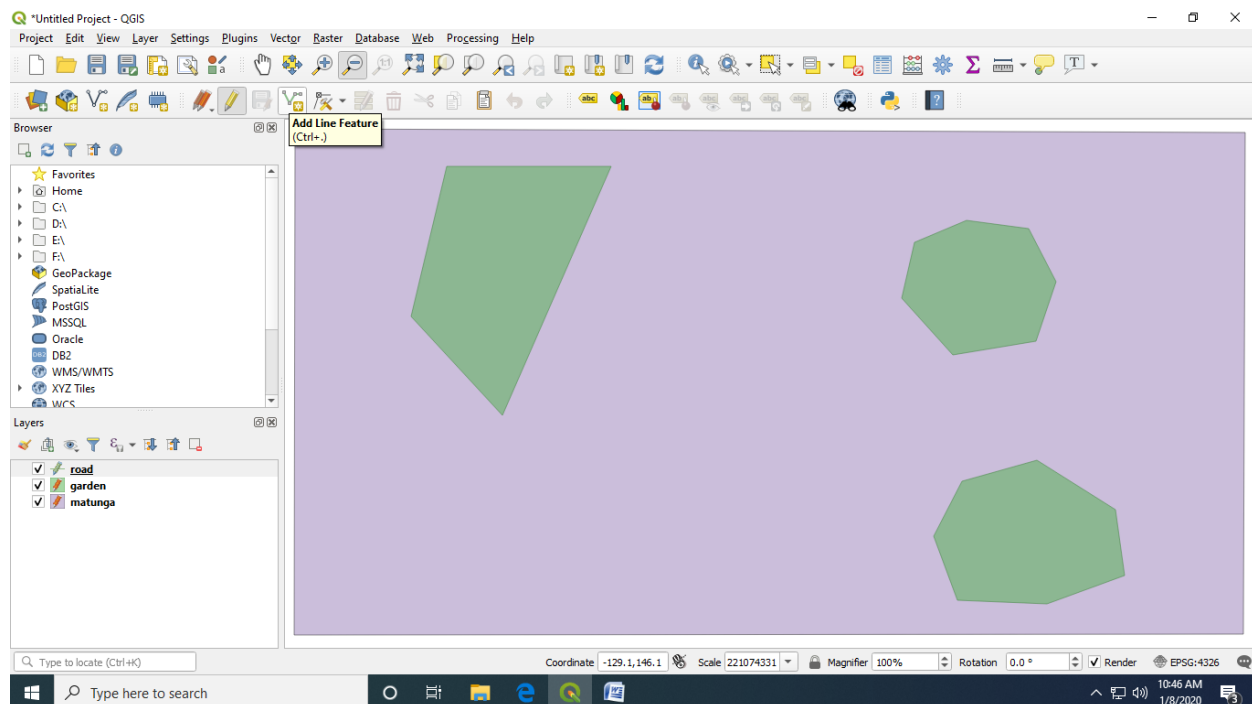


## 6. Creating Line vector layer:

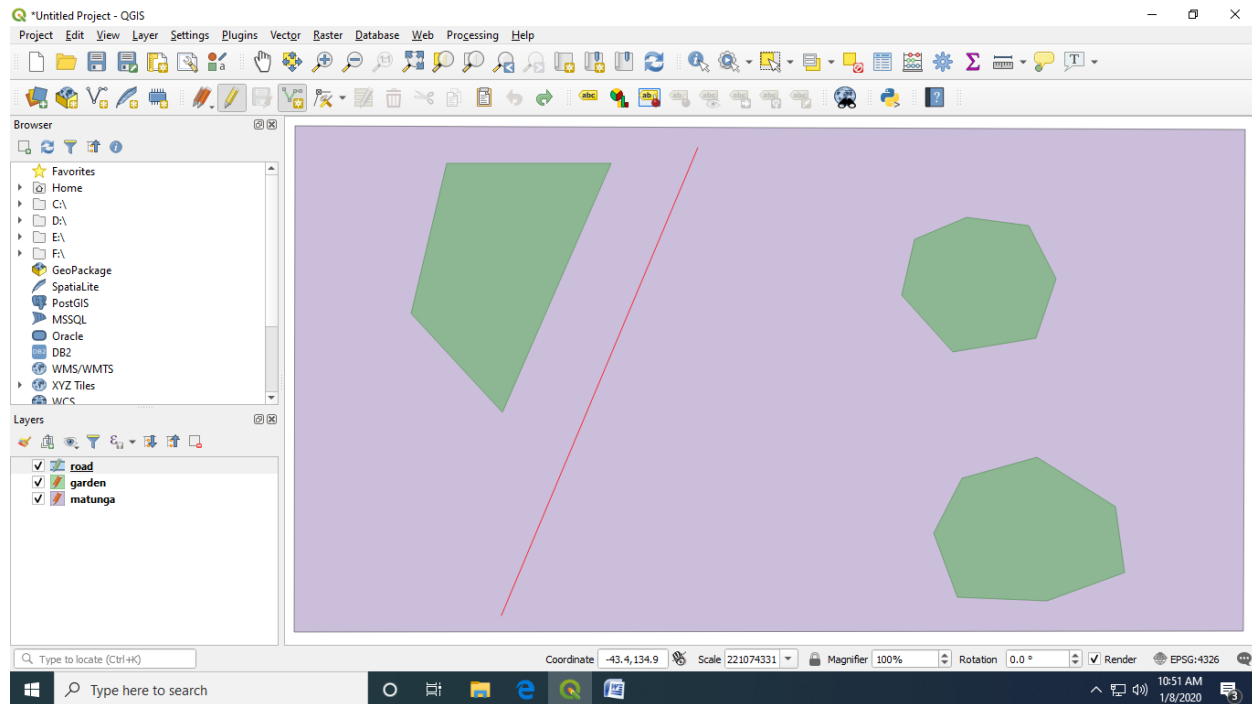
Repeat the same steps as we have done for polygon layer. ➤ Select geometry type Line.



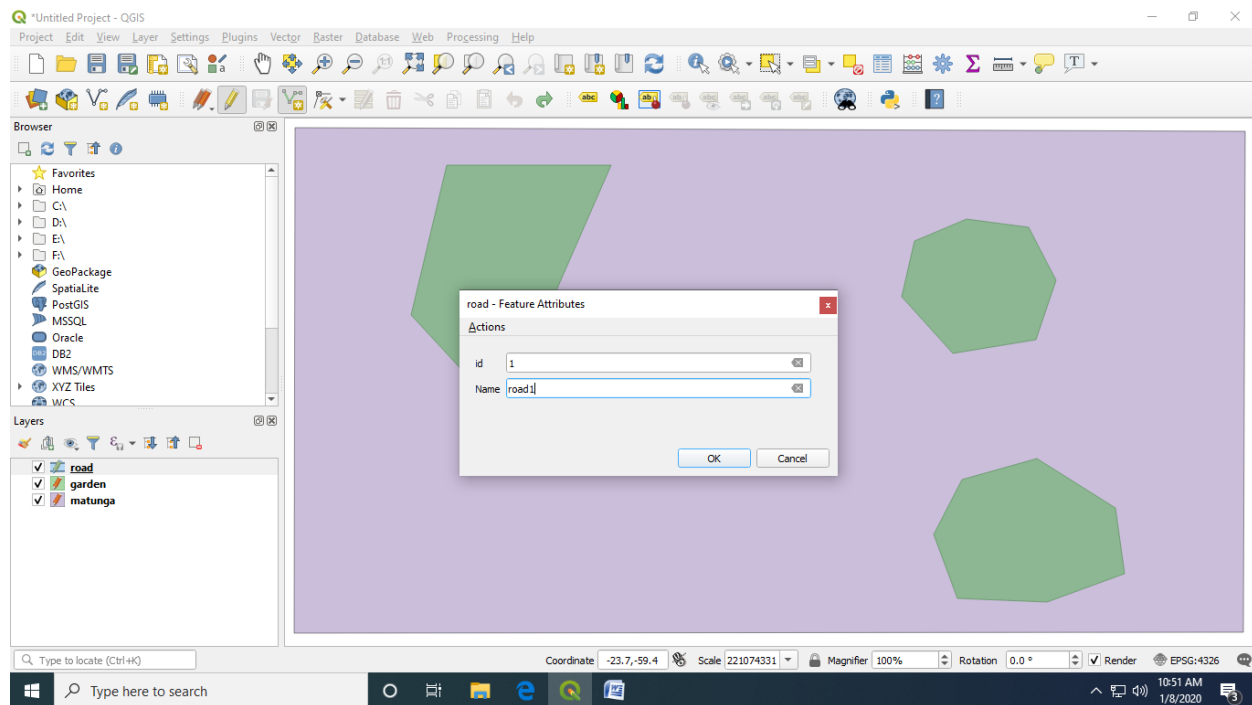
## 7. To plot road click on Add Line Feature.

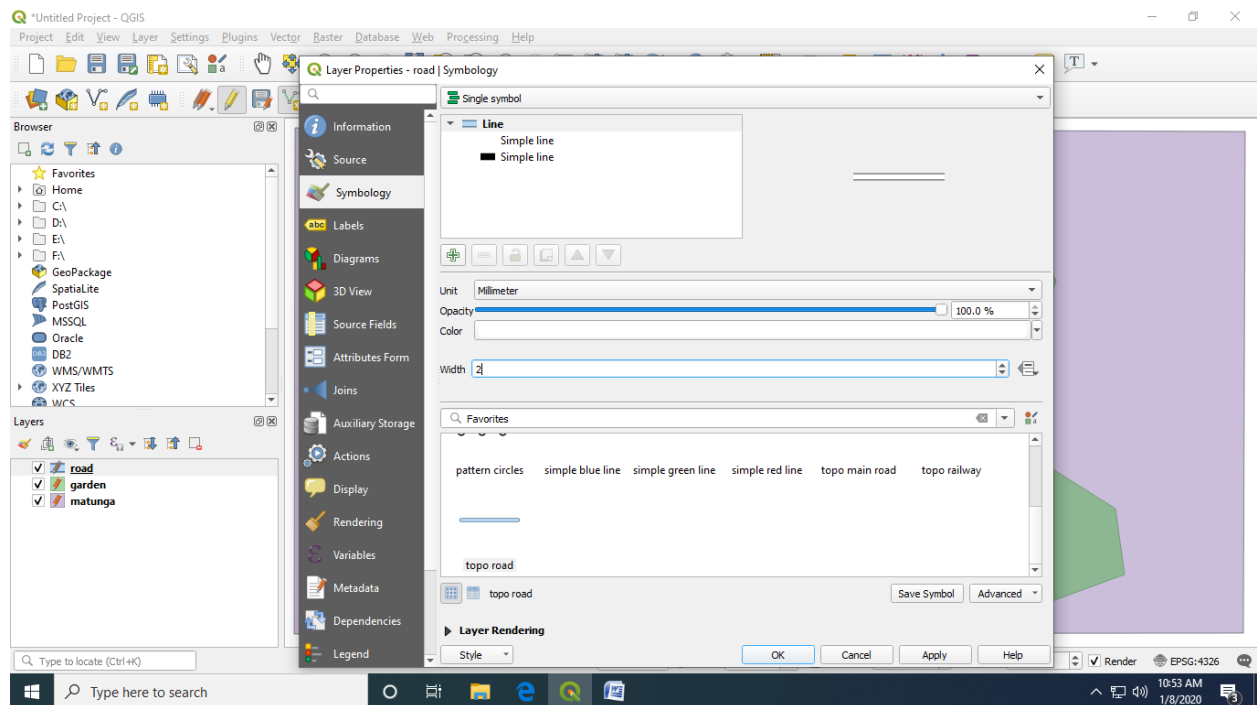


- Click on the map where you want to draw line. Once you are done then right click on map (Dotted line turn into solid line).

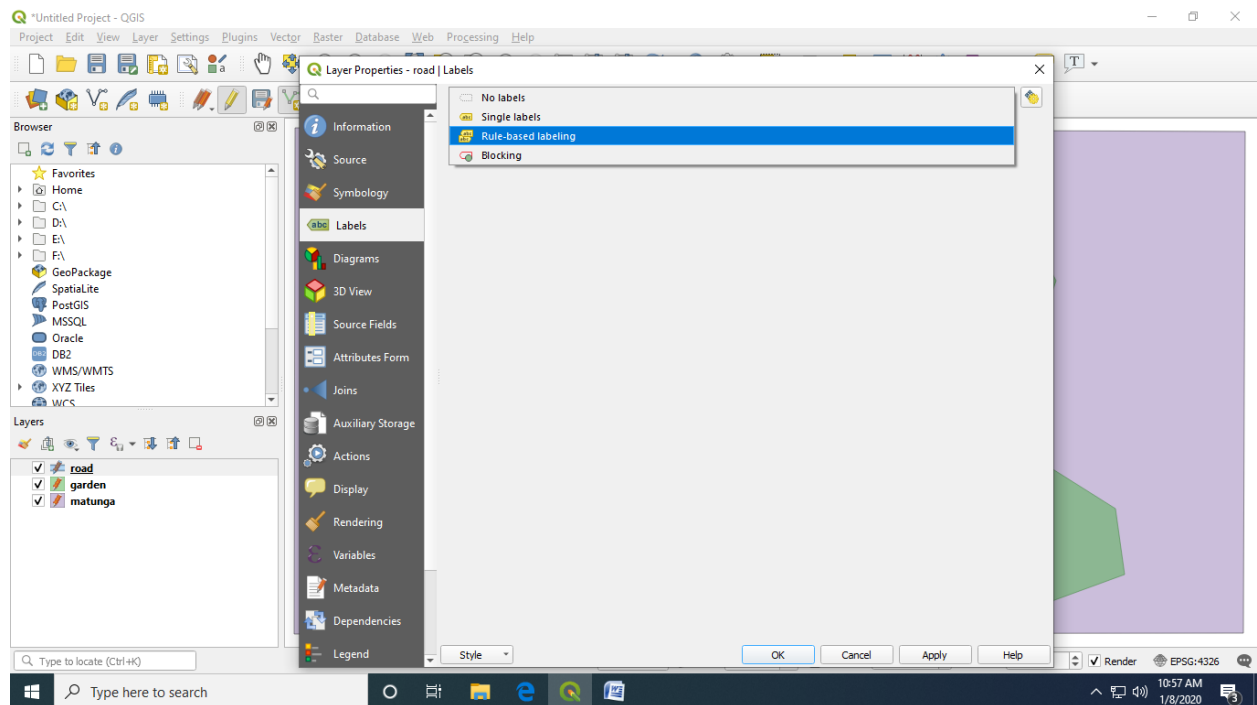


- Save your data. And also change properties of road layer.

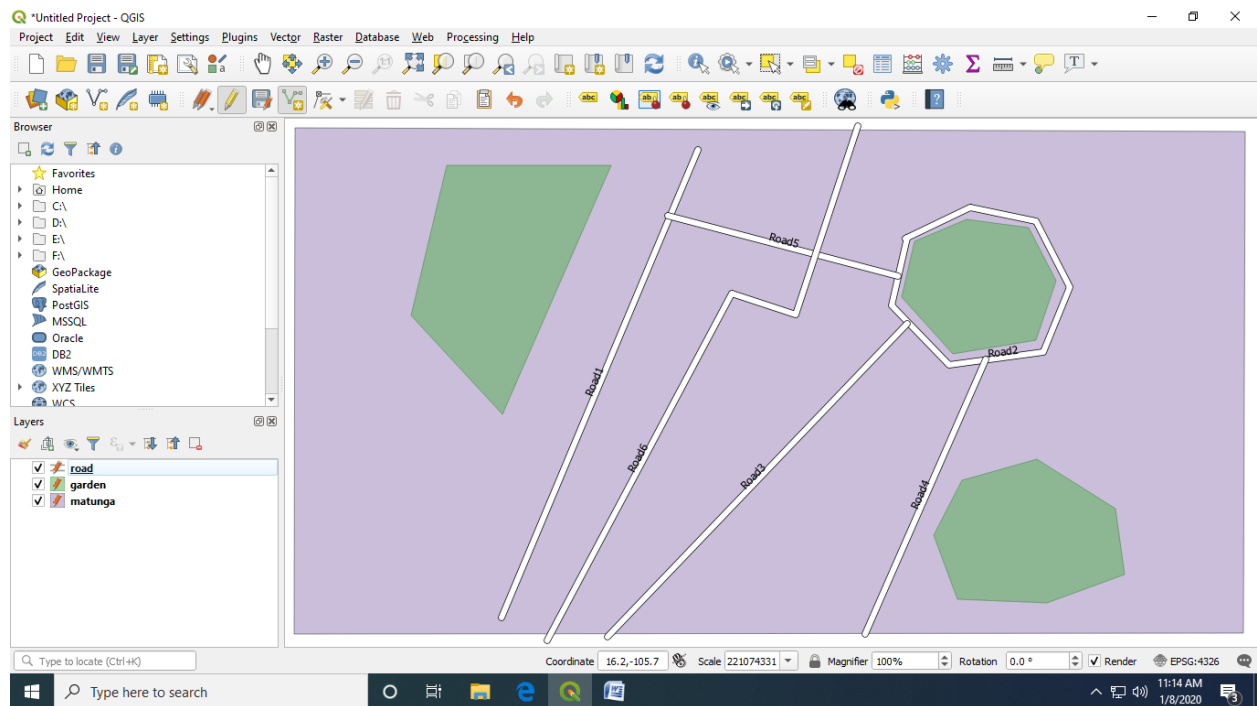
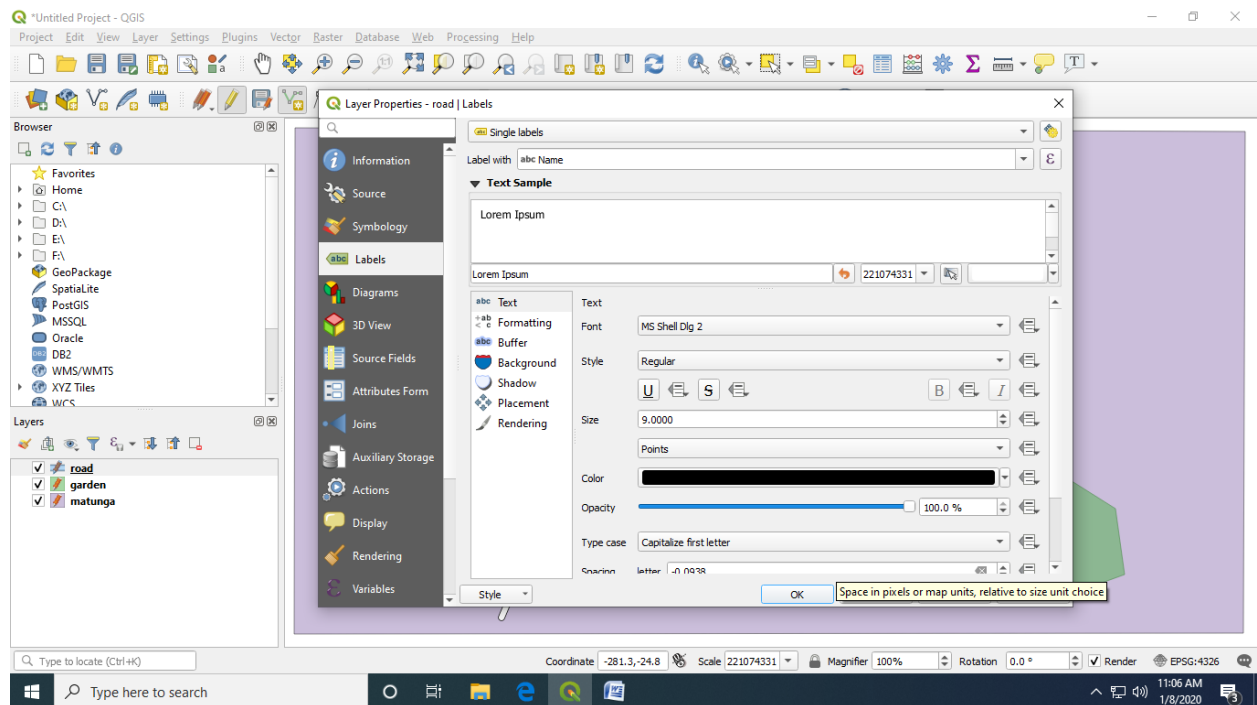




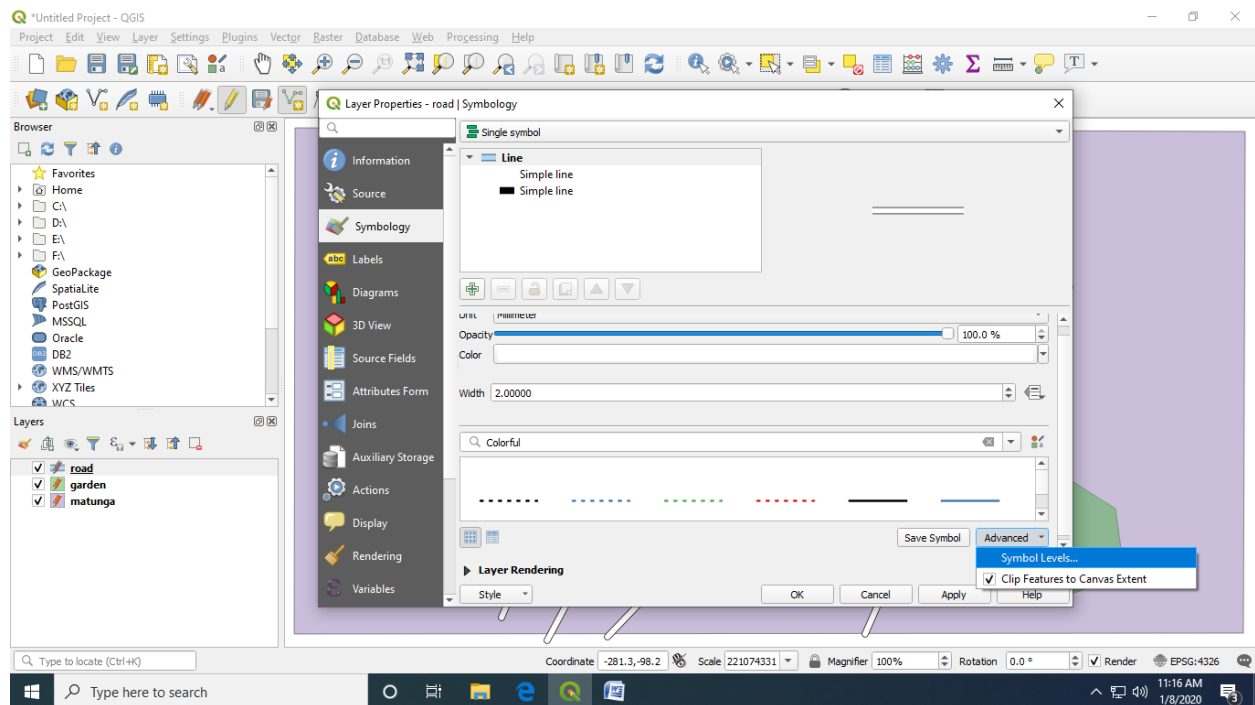
10. To label your roads Right click on Road layer .Go to properties window then select label and set single label property.



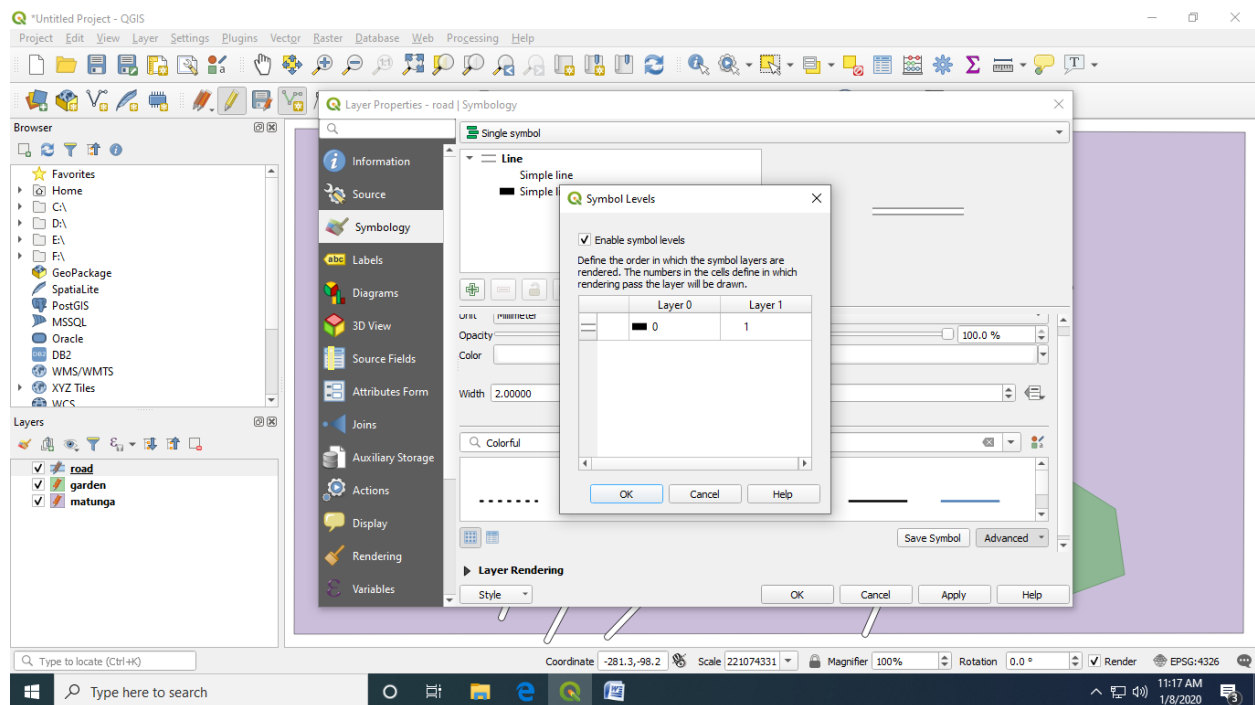




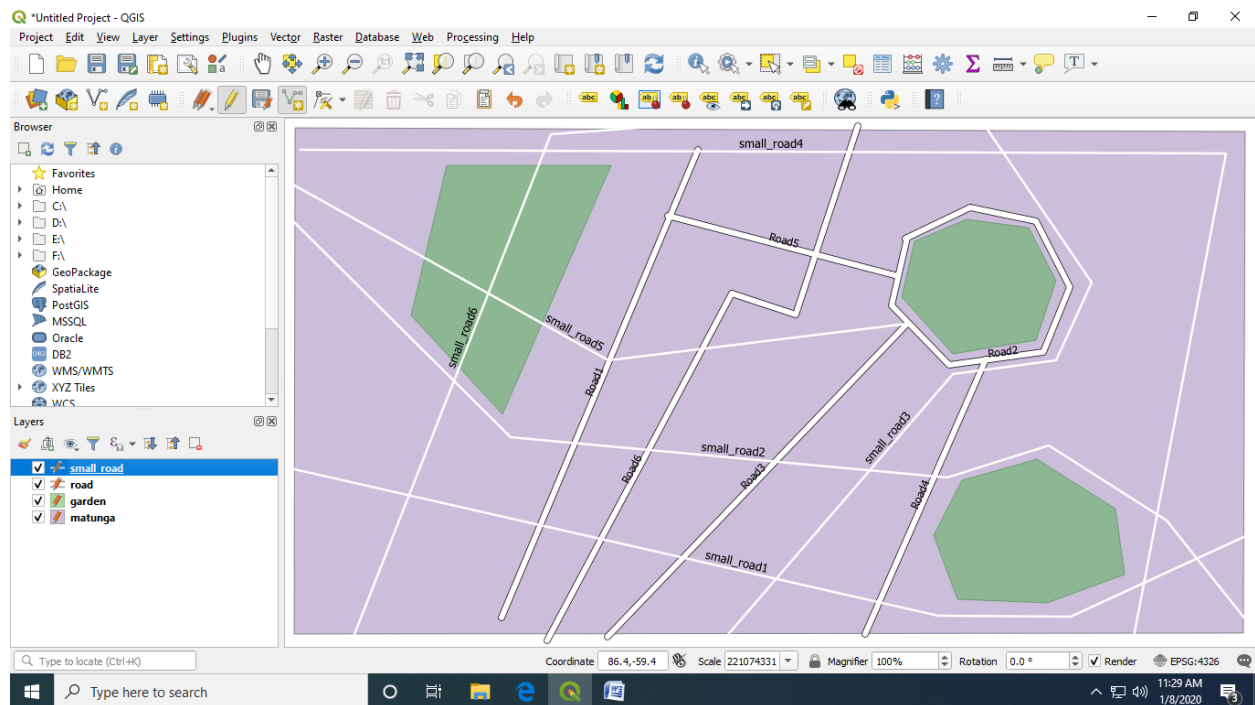
11. To merge roads go to properties of road then select symbology. Click on Advanced button select Symbol levels.



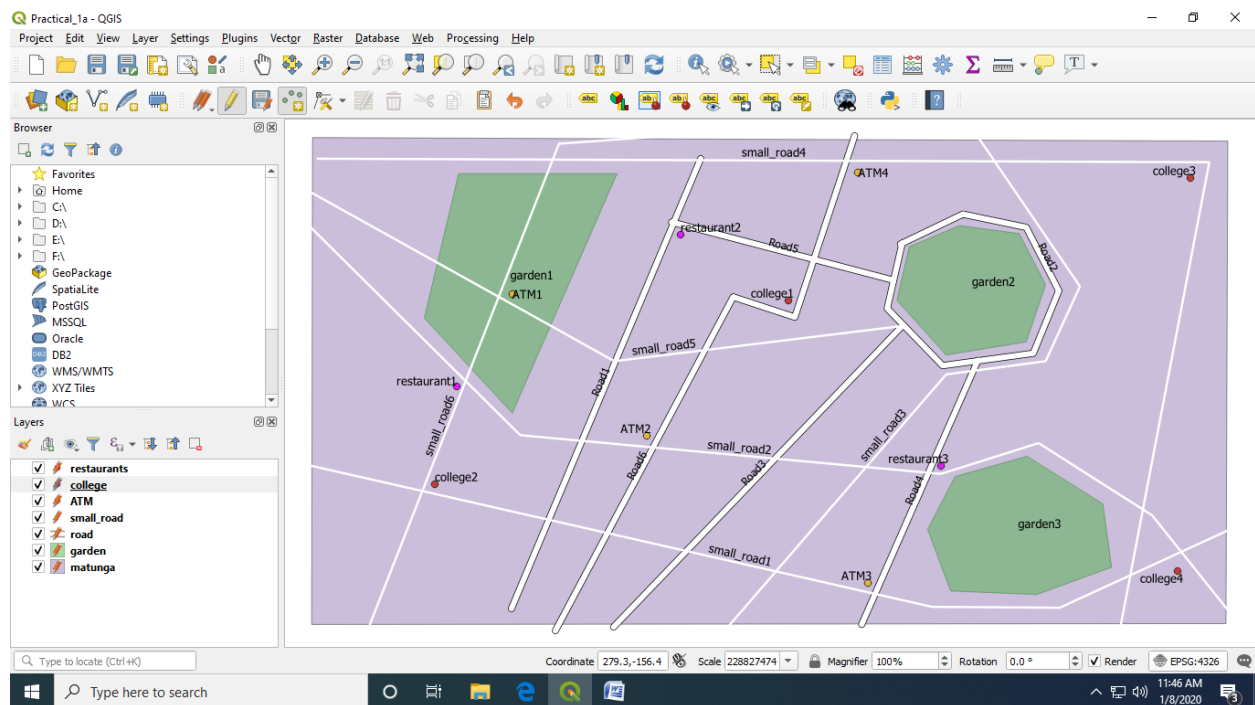
12. Check Enable symbol levels option and click on OK.



13. Similarly add two more layers as small\_road and flyover.

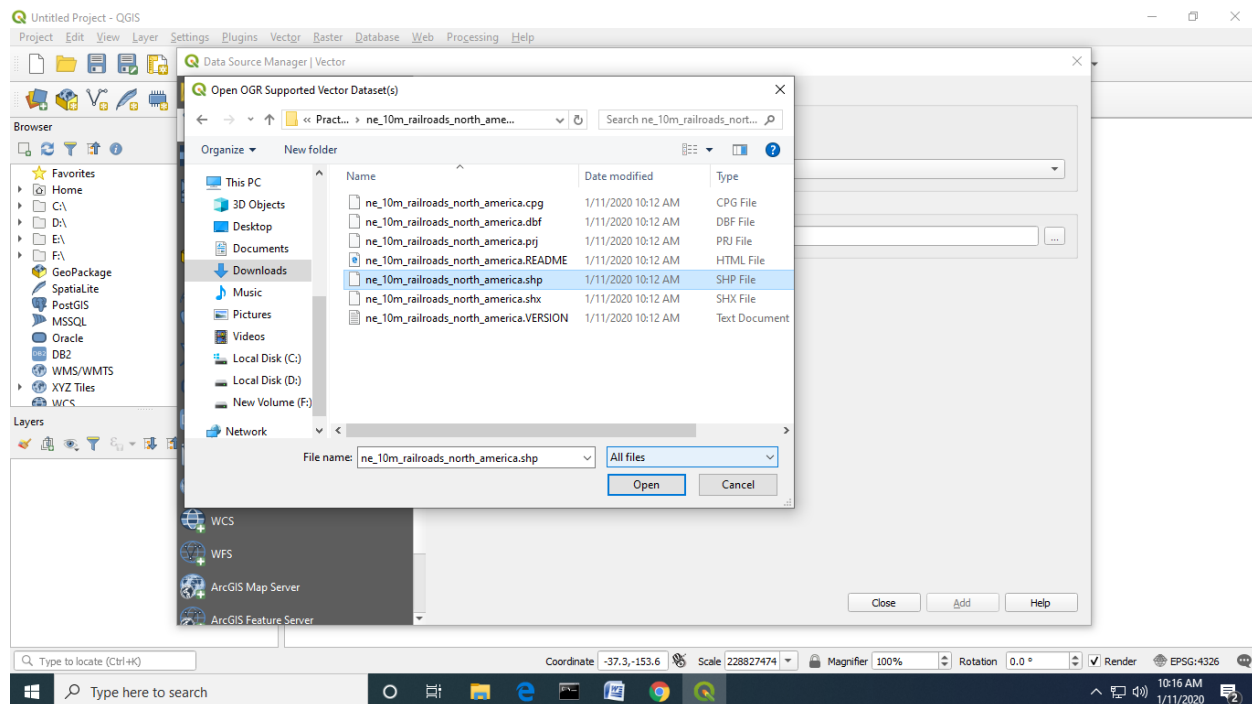
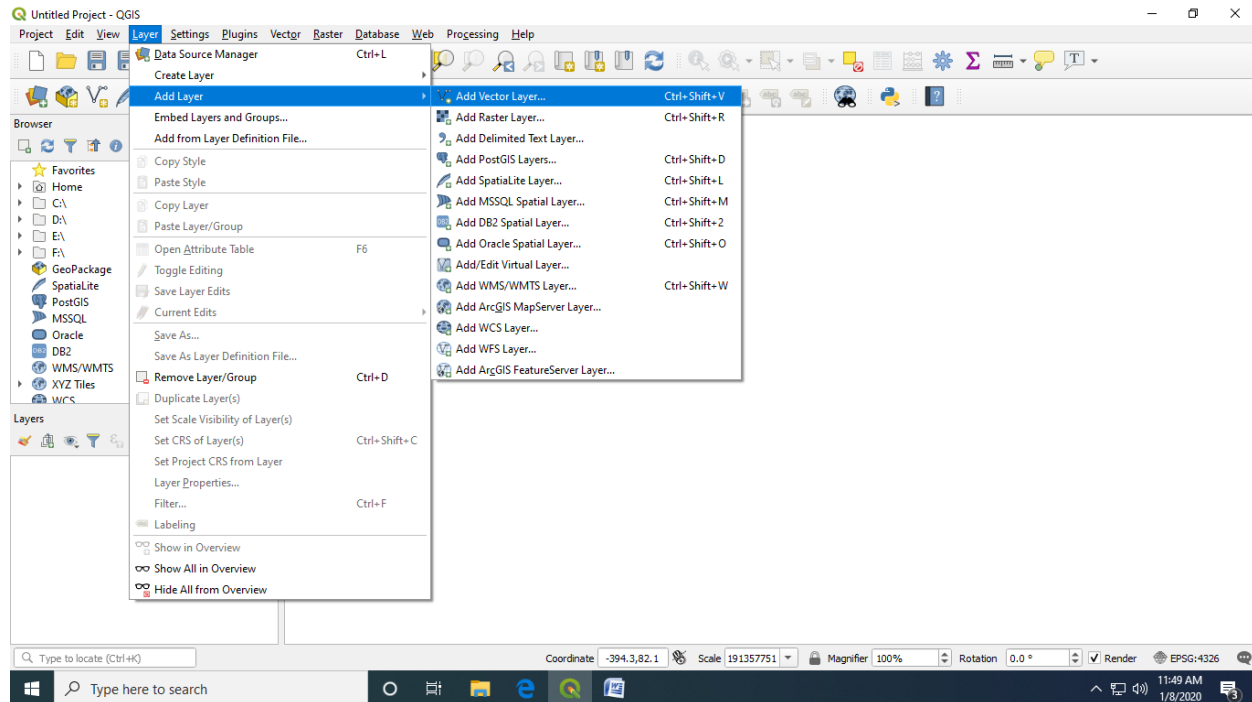


14. Create Point vector layer ➤ Repeat same steps to add point layers as we have done in previous layers. (For ATM, Restaurants, Banks, Bus Stops etc).

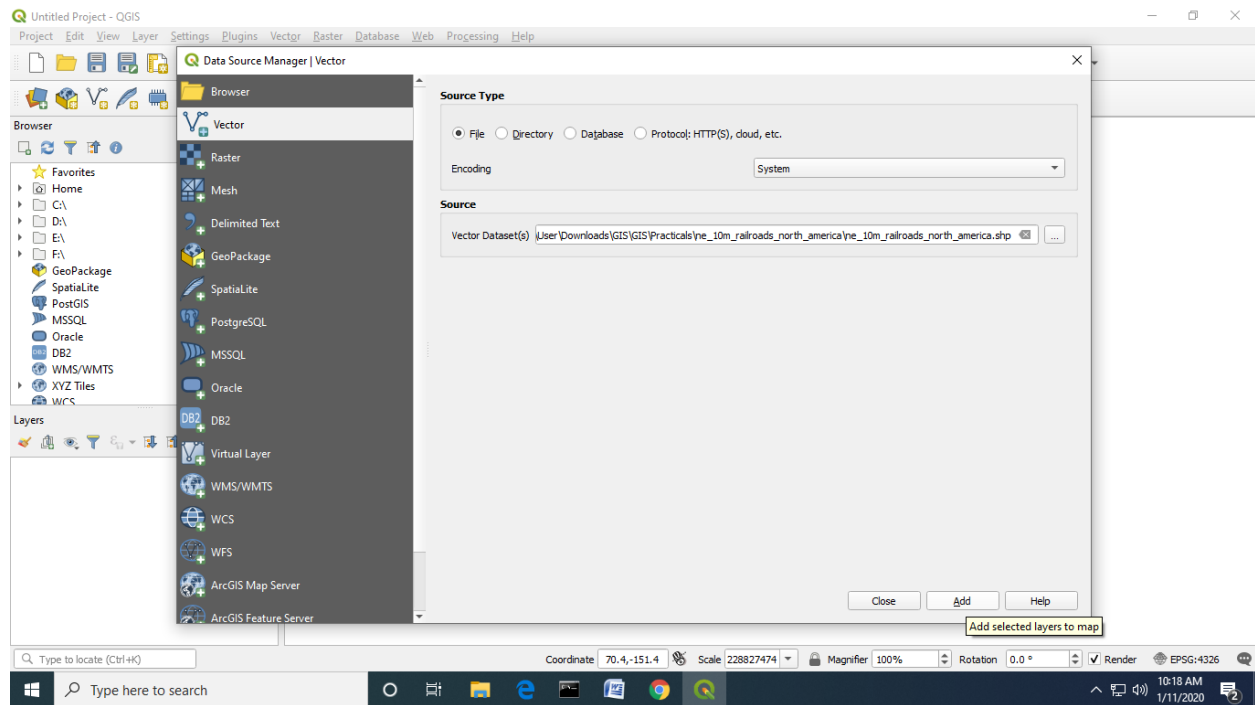


## Calculating line lengths and statistics

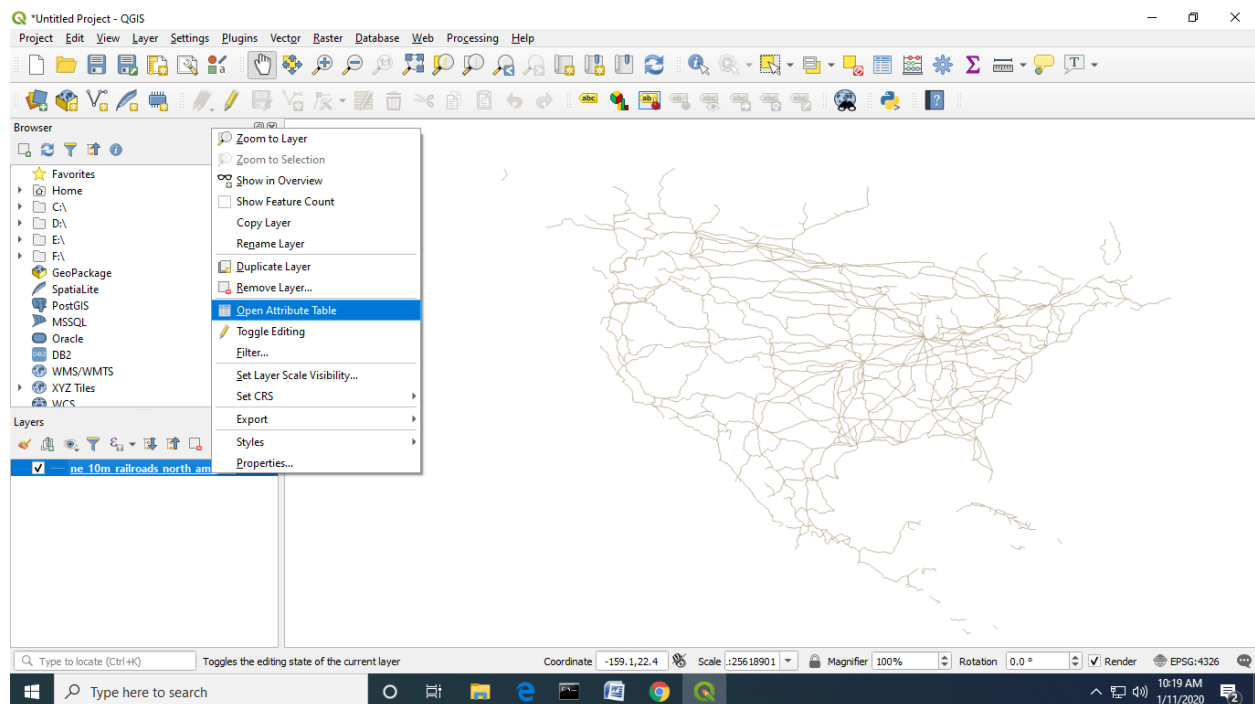
15. Go to Layer → Add Layer → Add Vector Layer ➤ Add the following file to project.



16. Add the file and then click on close button.



17. Right click on the current layer from layer window and select Open Attribute Table



18. Press Toggle Editing button, on Attribute table window toolbar then we have to add length attribute. Click on "Open field calculator" or press "Ctrl+i"

ne\_10m\_railroads\_north\_america :: Features Total: 1127, Filtered: 1127, Selected: 0

	id	scalerank	featurecla	sov_a3	uident	add	natrisc	continent
1	8	Railroad	USA	58406	0	0	0	North America
2	8	Railroad	USA	58506	0	0	0	North America
3	9	Railroad	USA	25406	1	5	5	North America
4	8	Railroad	USA	18206	0	0	0	North America
5	9	Railroad	USA	23706	1	5	5	North America
6	8	Railroad	USA	23706	0	0	0	North America
7	9	Railroad	USA	10506	1	5	5	North America
8	8	Railroad	USA	42706	0	0	0	North America
9	9	Railroad	USA	30406	1	5	5	North America
10	9	Railroad	USA	35306	1	5	5	North America
11	8	Railroad	USA	19406	0	0	0	North America
12	8	Railroad	USA	38706	0	0	0	North America
13	8	Railroad	USA	38706	0	0	0	North America
14	9	Railroad	USA	69306	1	5	5	North America
15	9	Railroad	USA	71306	1	5	5	North America
16	8	Railroad	USA	67306	0	0	0	North America
17	8	Railroad	USA	11006	0	0	0	North America
18	8	Railroad	USA	1606	0	0	0	North America
19	8	Railroad	CAN	86106	0	0	0	North America
20	8	Railroad	USA	3006	0	0	0	North America
21	8	Railroad	USA	2906	0	0	0	North America

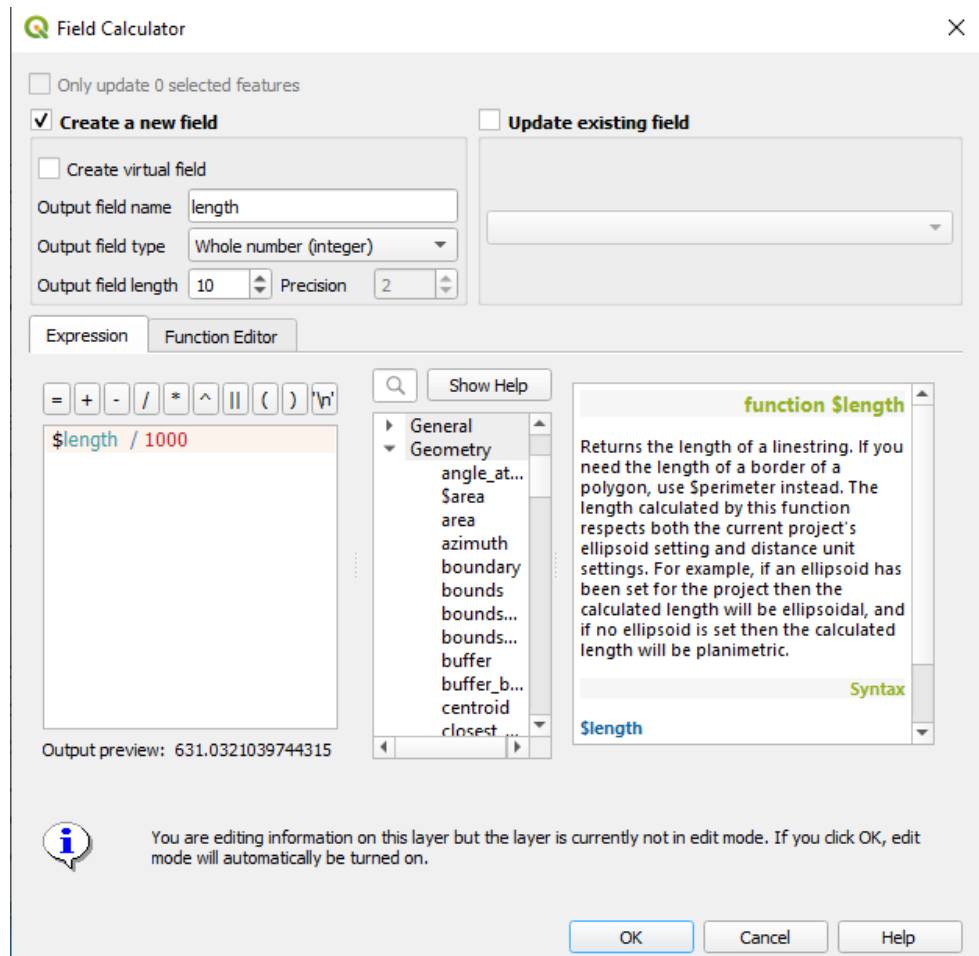
Show All Features

ne\_10m\_railroads\_north\_america :: Features Total: 1127, Filtered: 1127, Selected: 0

	scalerank	featurecla	sov_a3	uident	add	natrisc	continent
1	8	Railroad	USA	58406	0	0	North America
2	8	Railroad	USA	58506	0	0	North America
3	9	Railroad	USA	25406	1	5	North America
4	8	Railroad	USA	18206	0	0	North America
5	9	Railroad	USA	23706	1	5	North America
6	8	Railroad	USA	23706	0	0	North America
7	9	Railroad	USA	10506	1	5	North America
8	8	Railroad	USA	42706	0	0	North America
9	9	Railroad	USA	30406	1	5	North America
10	9	Railroad	USA	35306	1	5	North America
11	8	Railroad	USA	19406	0	0	North America
12	8	Railroad	USA	38706	0	0	North America
13	8	Railroad	USA	38706	0	0	North America
14	9	Railroad	USA	69306	1	5	North America
15	9	Railroad	USA	71306	1	5	North America
16	8	Railroad	USA	67306	0	0	North America

Show All Features

19. In field calculator enter following values.

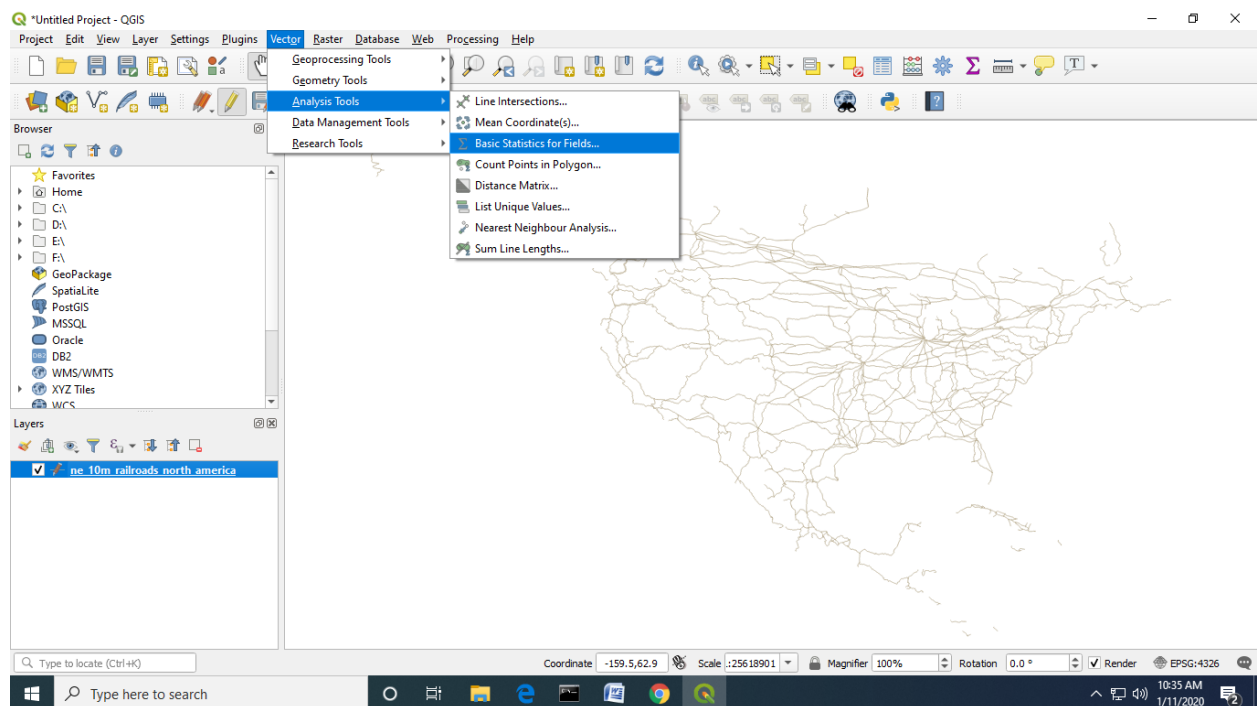


ne\_10m\_railroads\_north\_america :: Features Total: 1127, Filtered: 1127, Selected: 0

123 scalerank	featurecla	sov_a3	uident	add	natrscale	continent	length
1	9 Railroad	USA	1506	0	0	North America	631
2	9 Railroad	USA	1606	1	5	North America	16
3	8 Railroad	USA	1706	0	0	North America	96
4	8 Railroad	USA	1806	0	0	North America	20
5	8 Railroad	USA	1906	0	0	North America	0
6	8 Railroad	USA	2006	0	0	North America	84
7	8 Railroad	USA	2106	0	0	North America	68
8	9 Railroad	USA	2206	1	5	North America	200
9	8 Railroad	USA	2306	0	0	North America	63
10	8 Railroad	USA	2406	0	0	North America	20
11	8 Railroad	USA	2506	0	0	North America	154
12	8 Railroad	USA	2606	0	0	North America	70
13	8 Railroad	USA	2706	0	0	North America	2
14	8 Railroad	USA	2806	0	0	North America	5
15	9 Railroad	USA	2906	1	5	North America	62
16	9 Railroad	USA	3006	1	5	North America	161
17	8 Railroad	USA	3106	0	0	North America	134
18	8 Railroad	USA	3206	0	0	North America	61
19	8 Railroad	USA	3306	0	0	North America	451
20	8 Railroad	USA	3506	0	0	North America	30

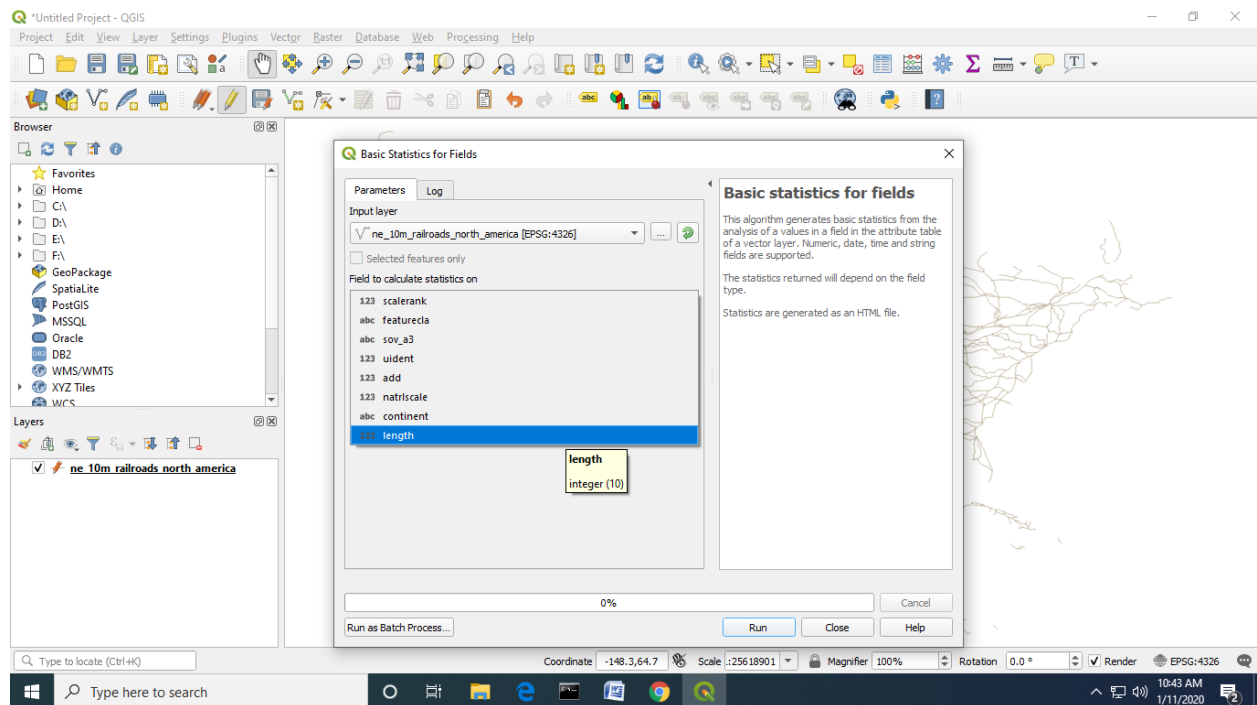
Show All Features

20. Now we have to generate Statistics. Go to Vector > Analysis Tools > Basic statics for numeric fields.

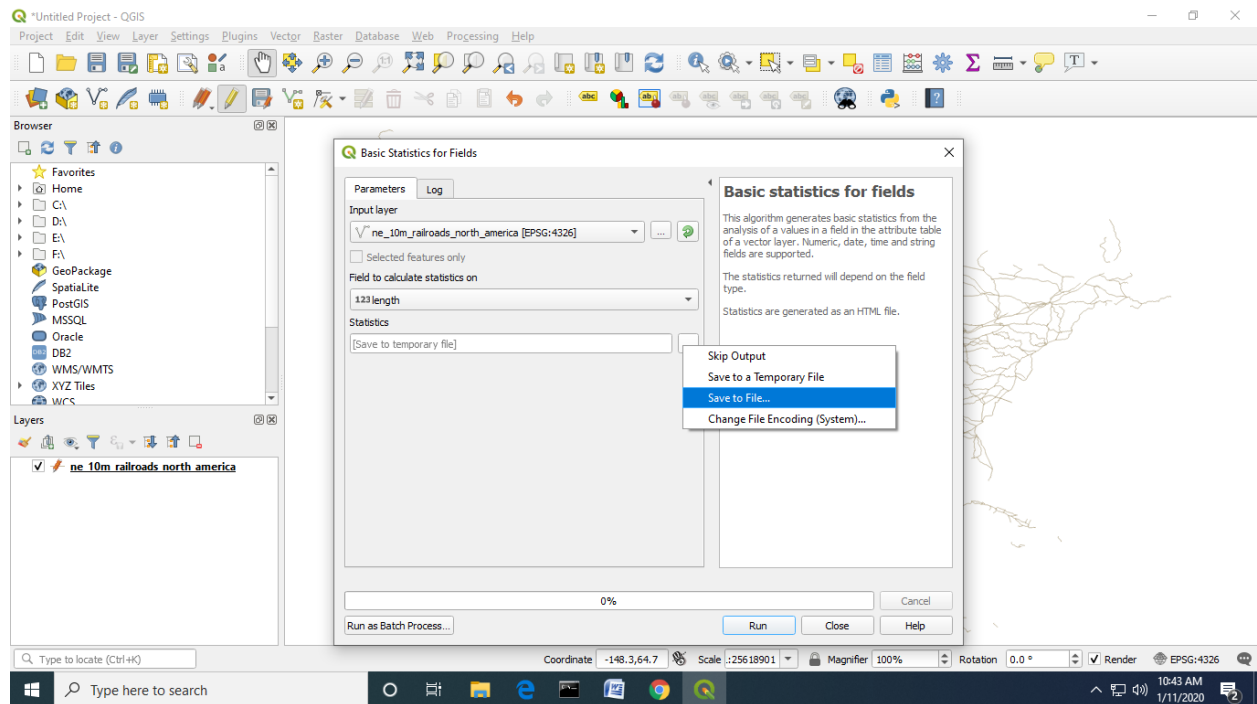


21. Select the railroads layer in "Input vector layer". Select "length" attribute in "Field to calculate statistics on".

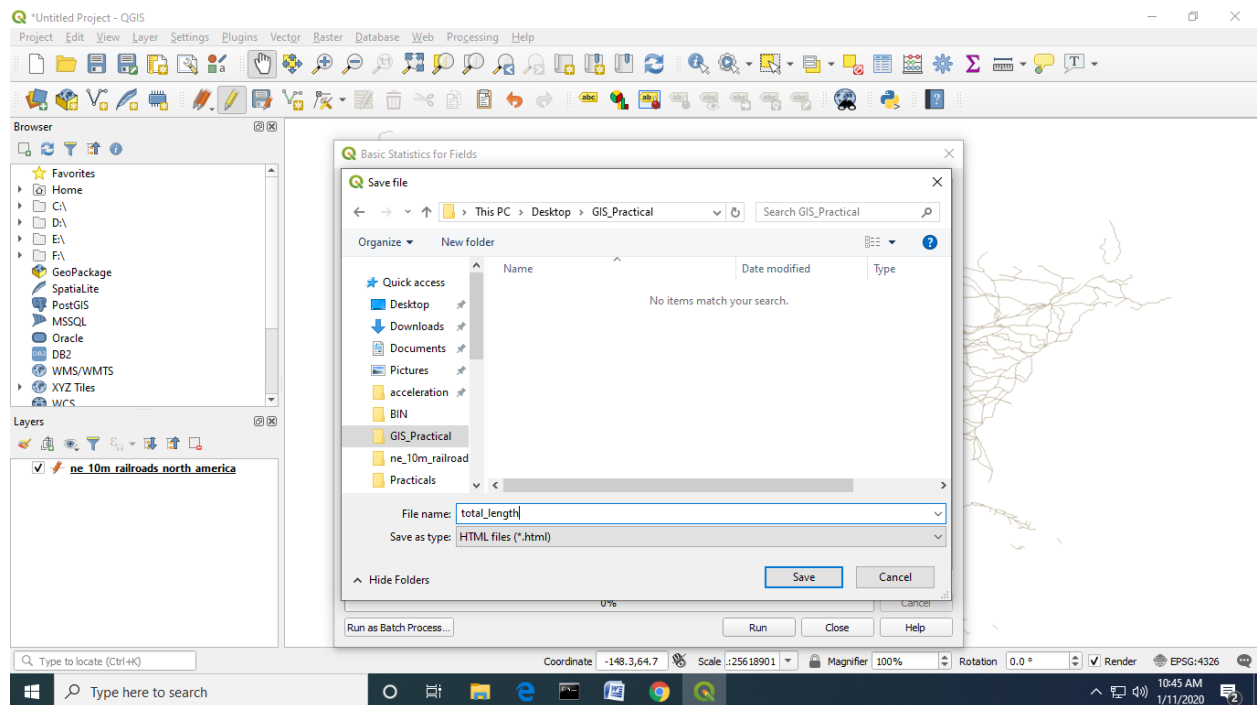




22. We have to save the result. Click on button and select “Save to file...”



23. Select the path and enter the file name “total-length” extension will be “.html” and click on “Save”.



24. Now click on Run button. It will generate statistics.

