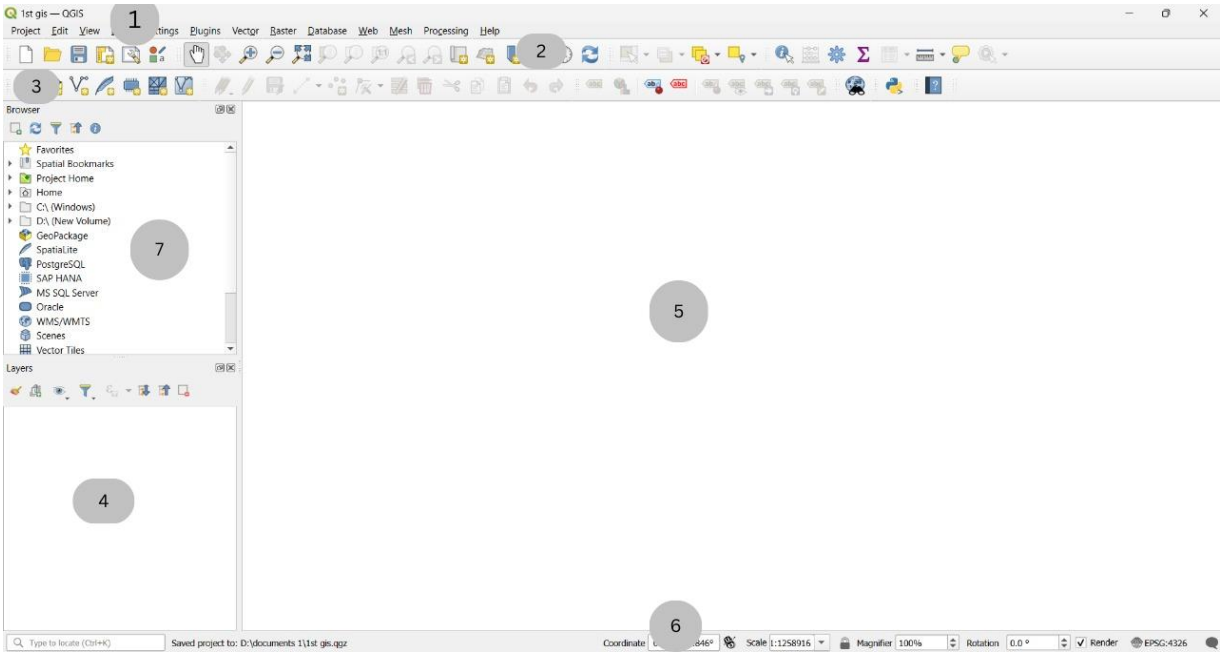
Practical 1

A)Exploring QGIS



1. **Project Title -** Displays the title of the project you are about to review.

2. **Menu Bar –** Grants access to various Quantum GIS features through a standard hierarchical menu.

3. Toolbars – Provide access to functions similar to the menus, along with extra tools for map interaction. These tools include commands for zooming in, zooming out, panning, returning to the original view, navigating to the previous or next extent, accessing object information, reading coordinates, measuring, printing, and accessing help.

4. Table of Contents/Map Legend (TOC) - Reveals layers that can be toggled on or off, along with the legend, attribute symbols, and query symbols pertinent to the project.

5. Display Window - Exhibits the features that have been activated from the Table of Contents (TOC).

6. Status Bar - Displays the current map coordinates (e.g., meters or decimal degrees) as the mouse pointer moves across the map view. On the left of the coordinate display, there is a small button that toggles between showing the coordinate position and the view extents of the map as you pan and zoom.

7. Data Sources Browser – In previous versions, the QGIS browser was only available as an external application for exploring spatial data sets. In QGIS 2.0.1-Dufour, this application is now integrated into the QGIS framework as an additional panel located just below the Table of Contents.

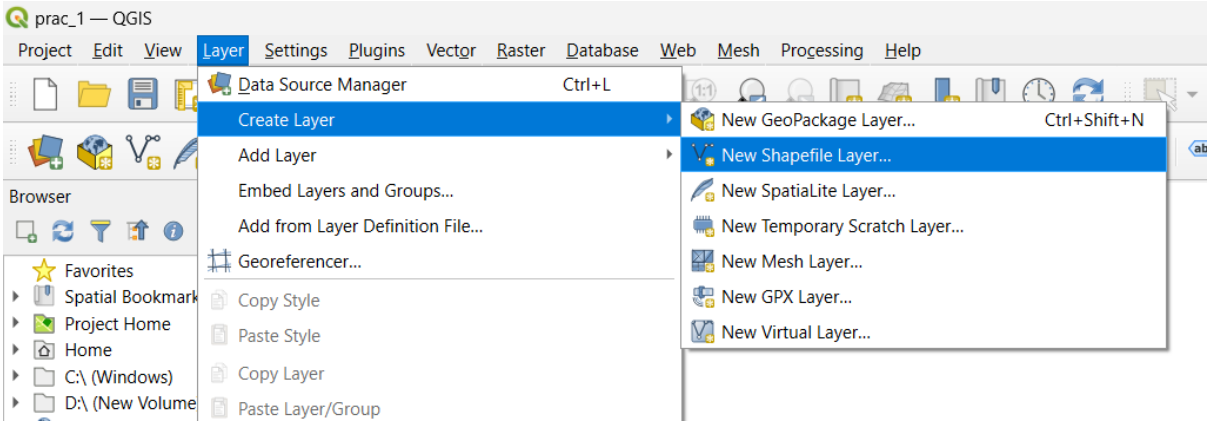
AIM : - Creating and Managing Vector Data:

Adding vector layer

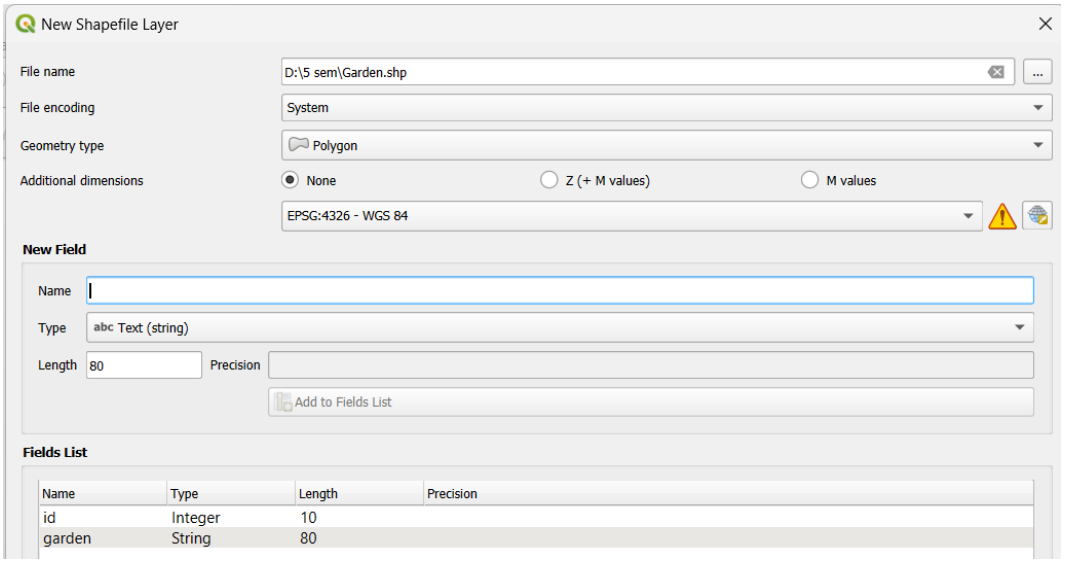
Setting properties

Vector Layer Formatting

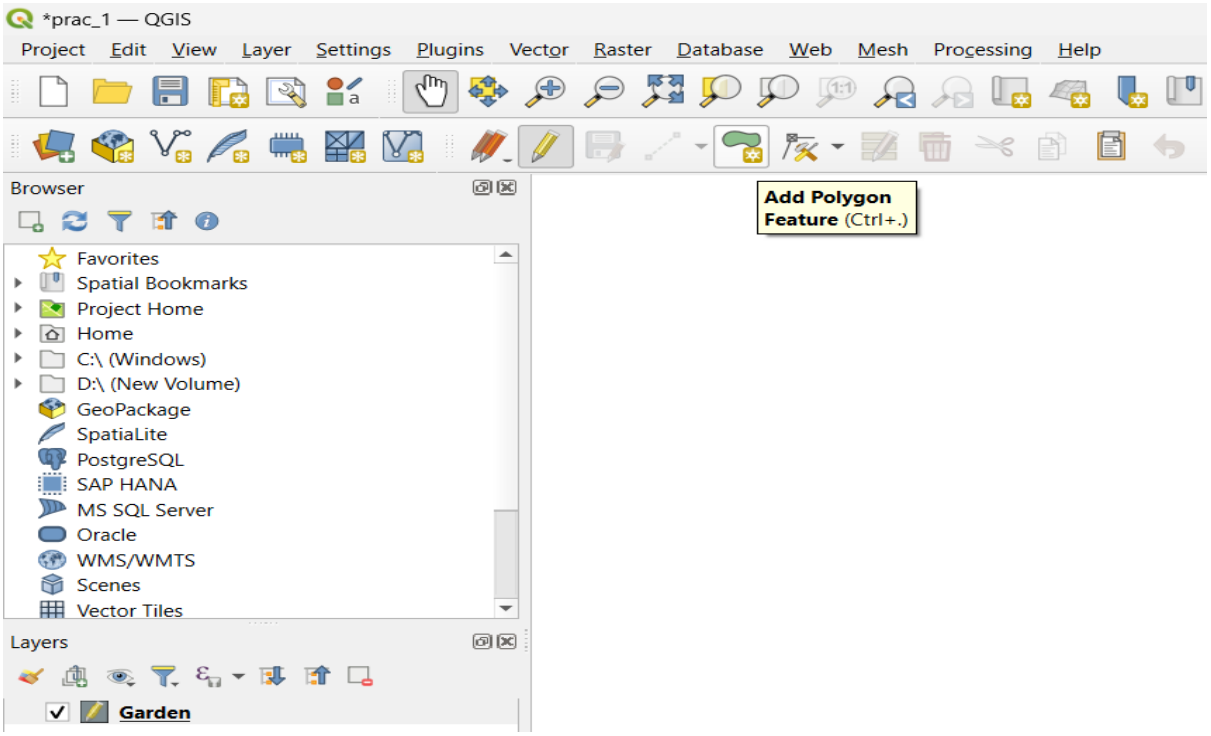
New project > go to layers > Create Layer > New ShapeFile Layer

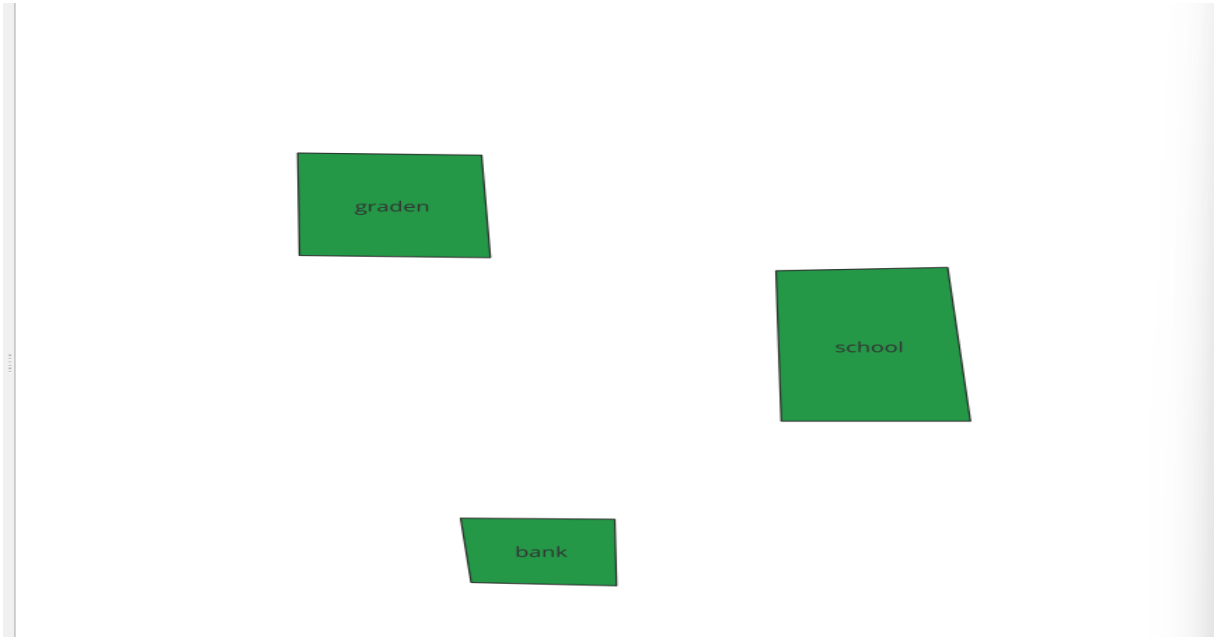


Give name to the file choose geometry type as > **Polygon** > add name field > add to field list > and hit enter



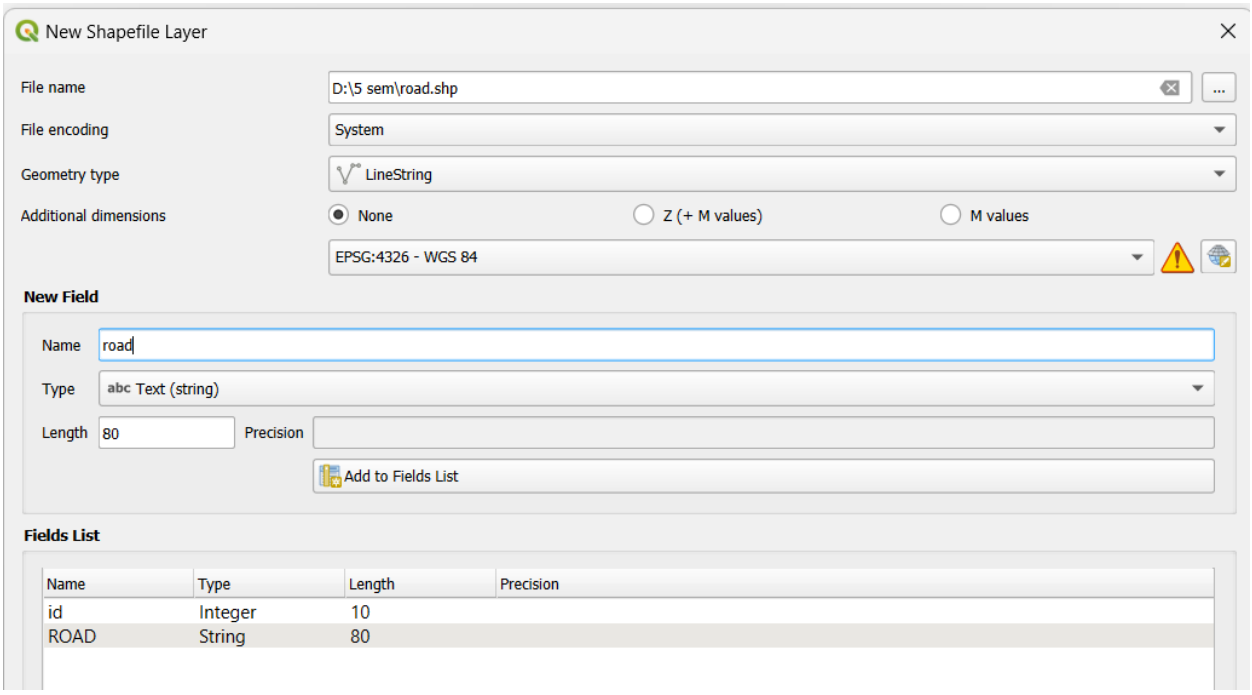
Choose the Layer Created and click on the below icon to add polygon .

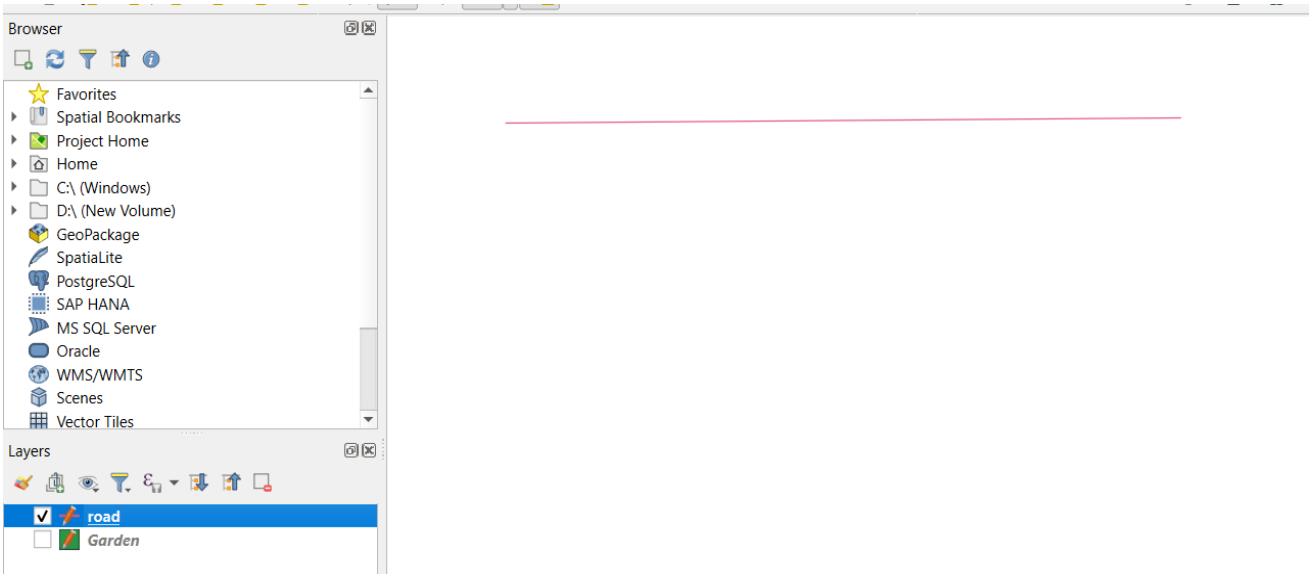


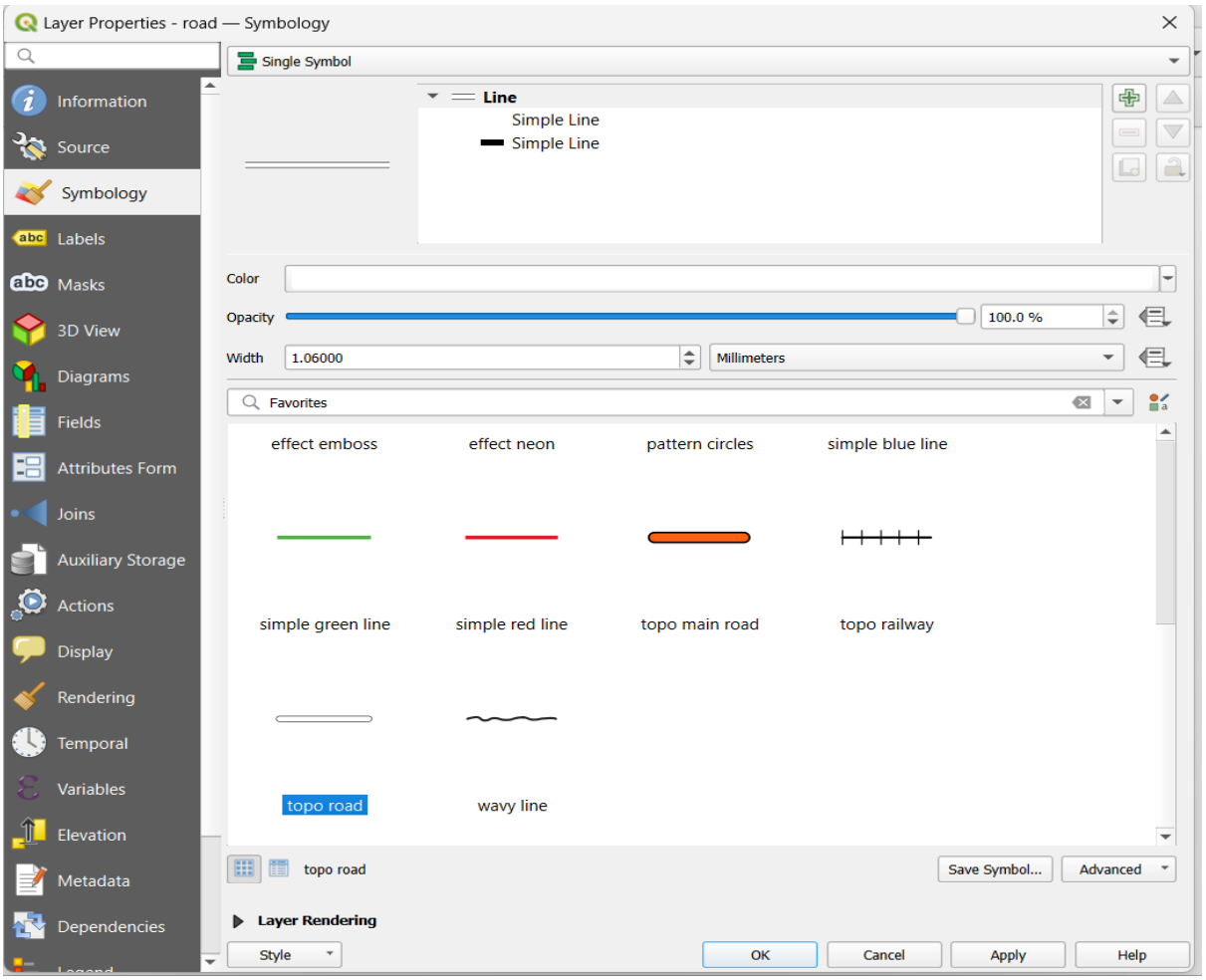


For setting properties we will use roads as an example

Using the above procedure we are going to insert a new layer with geometry as > **LineString**

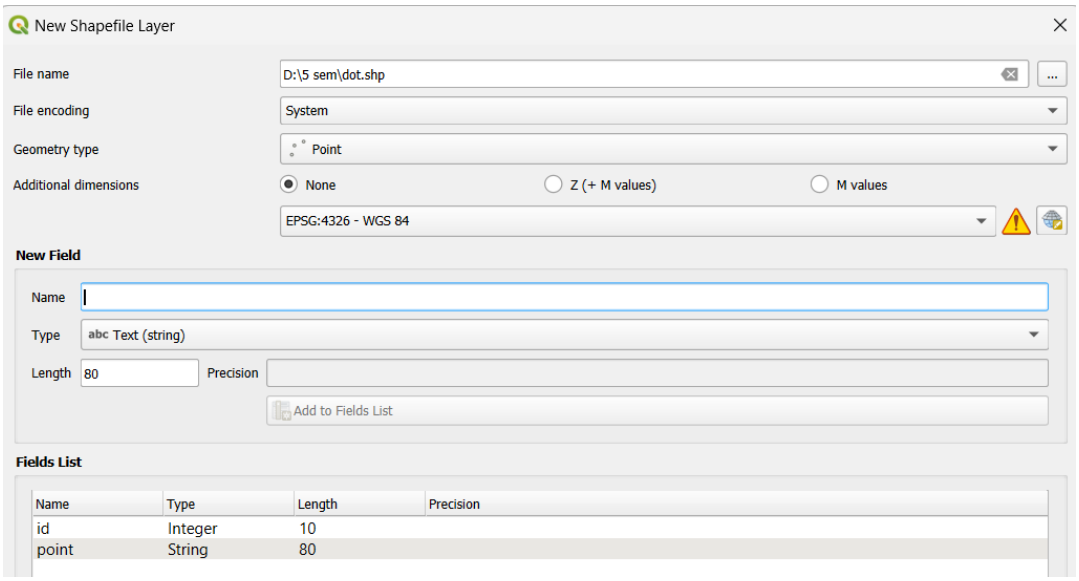

New Shapefile Layer
File name
D:\5 sem\road.shp
File encoding
System
Geometry type
LineString
Additional dimensions
None
Z (+ M values)
M values
EPSG:4326 - WGS 84
New Field
Name
road
Type
abc Text (string)
Length
80
Precision
Add to Fields List
Fields List
Name
Type
Length
Precision
id
Integer
10
ROAD
String
80

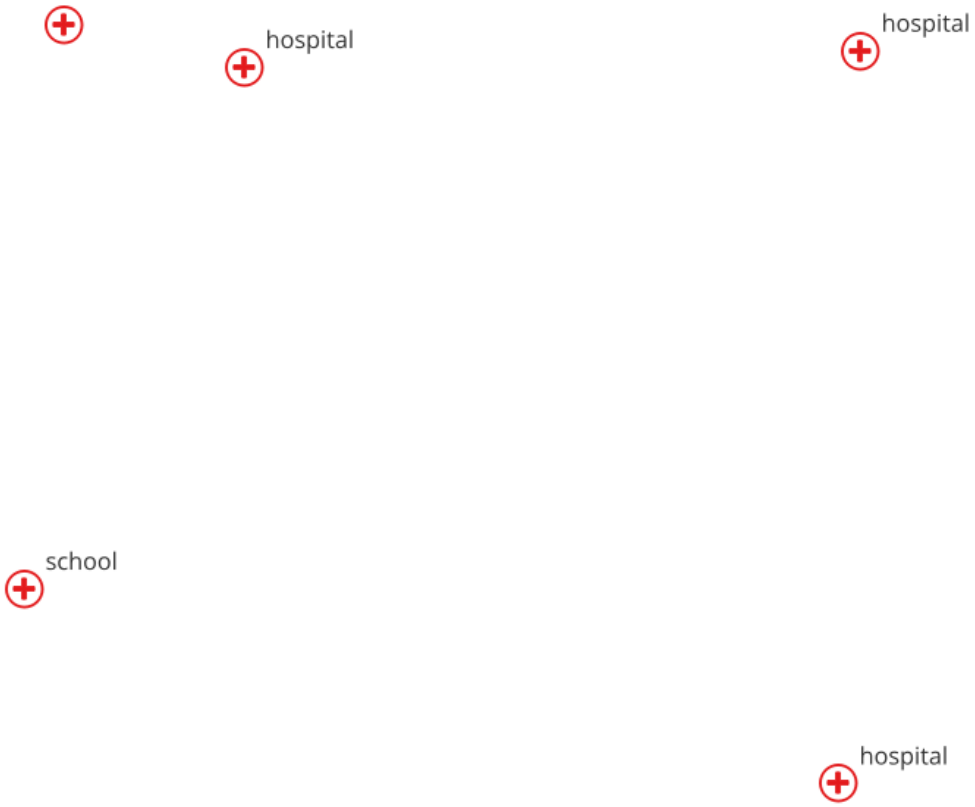

Browser
Favorites
Spatial Bookmarks
Project Home
Home
C:\ (Windows)
D:\ (New Volume)
GeoPackage
SpatiaLite
PostgreSQL
SAP HANA
MS SQL Server
Oracle
WMS/WMTS
Scenes
Vector Tiles
Layers
road
Garden


Layer Properties - road — Symbology
Single Symbol
Information
Source
Symbology
Labels
Masks
3D View
Diagrams
Fields
Attributes Form
Joins
Auxiliary Storage
Actions
Display
Rendering
Temporal
Variables
Elevation
Metadata
Dependencies
Line
Simple Line
Simple Line
Color
Opacity
100.0 %
Width
1.06000
Millimeters
Favorites
effect emboss
effect neon
pattern circles
simple blue line
simple green line
simple red line
topo main road
topo railway
topo road
wavy line
topo road
Save Symbol...
Advanced
Layer Rendering
Style
OK
Cancel
Apply
Help


road1
road2
null
graden
road 6
road 7
school
kj marg
road 3
road
bank
mk road

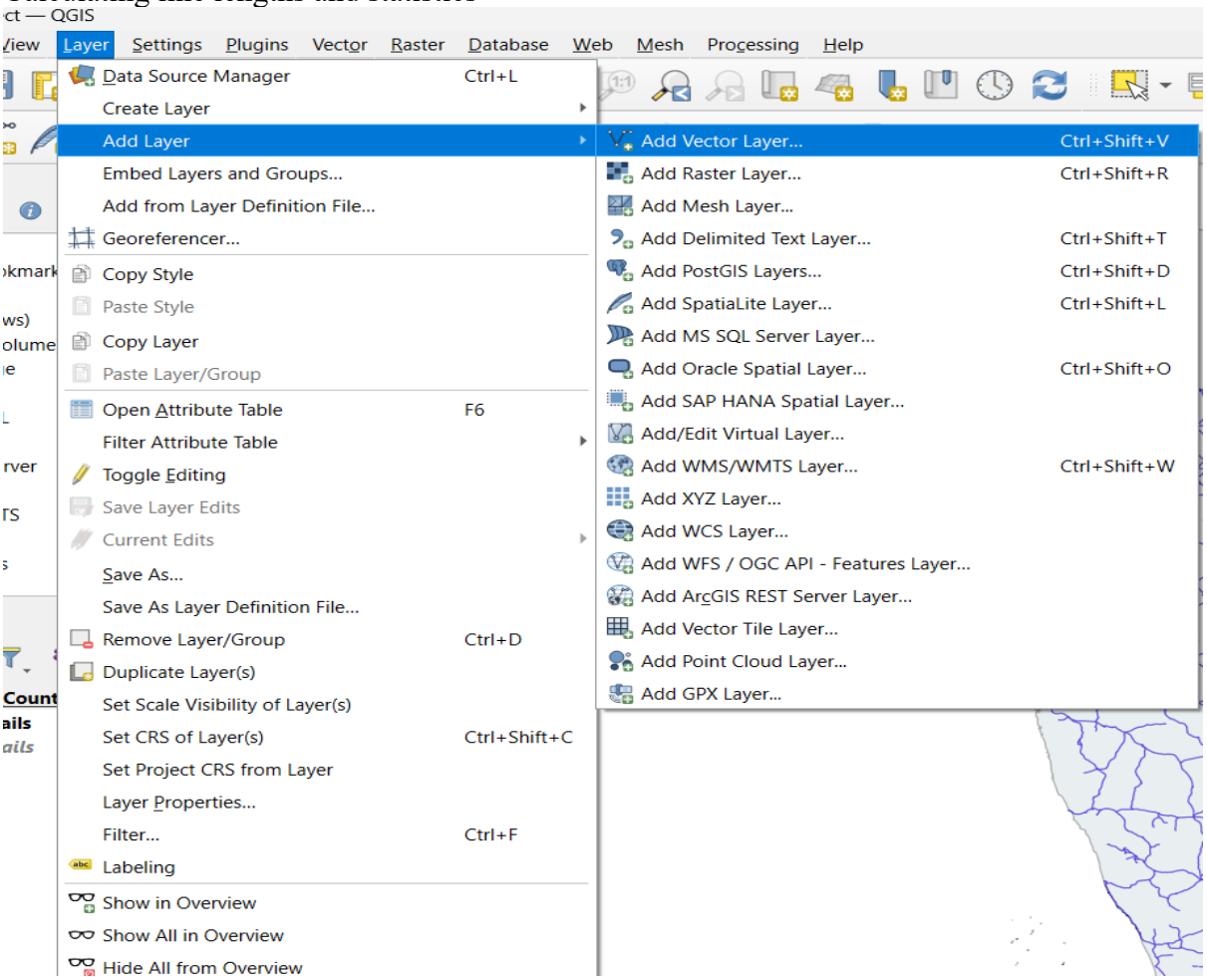
Repeat same steps to add point layers as we have done in previous layers

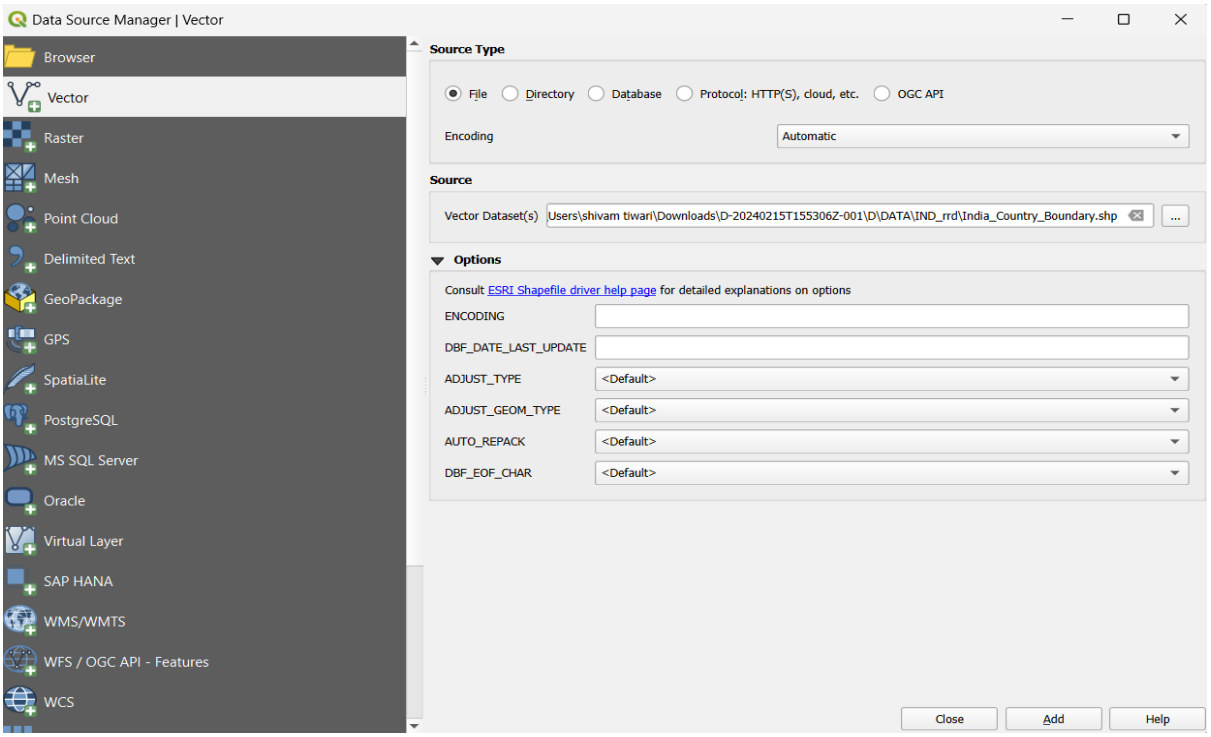


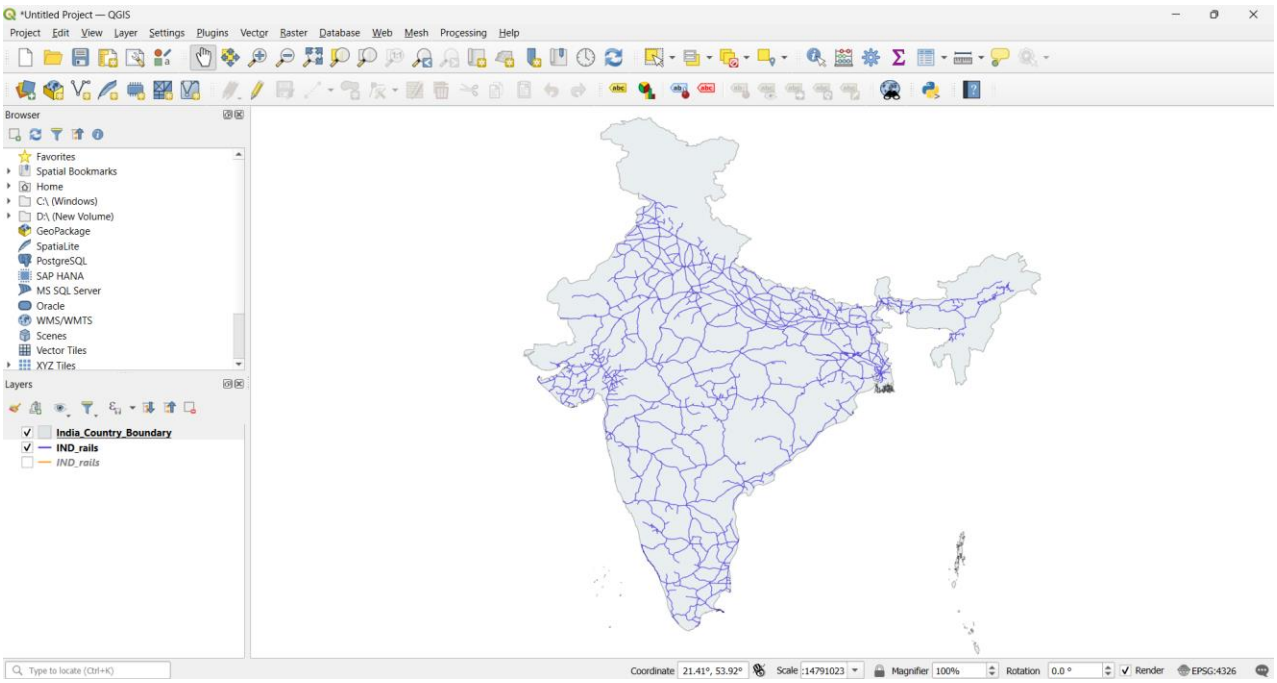


Final Output :

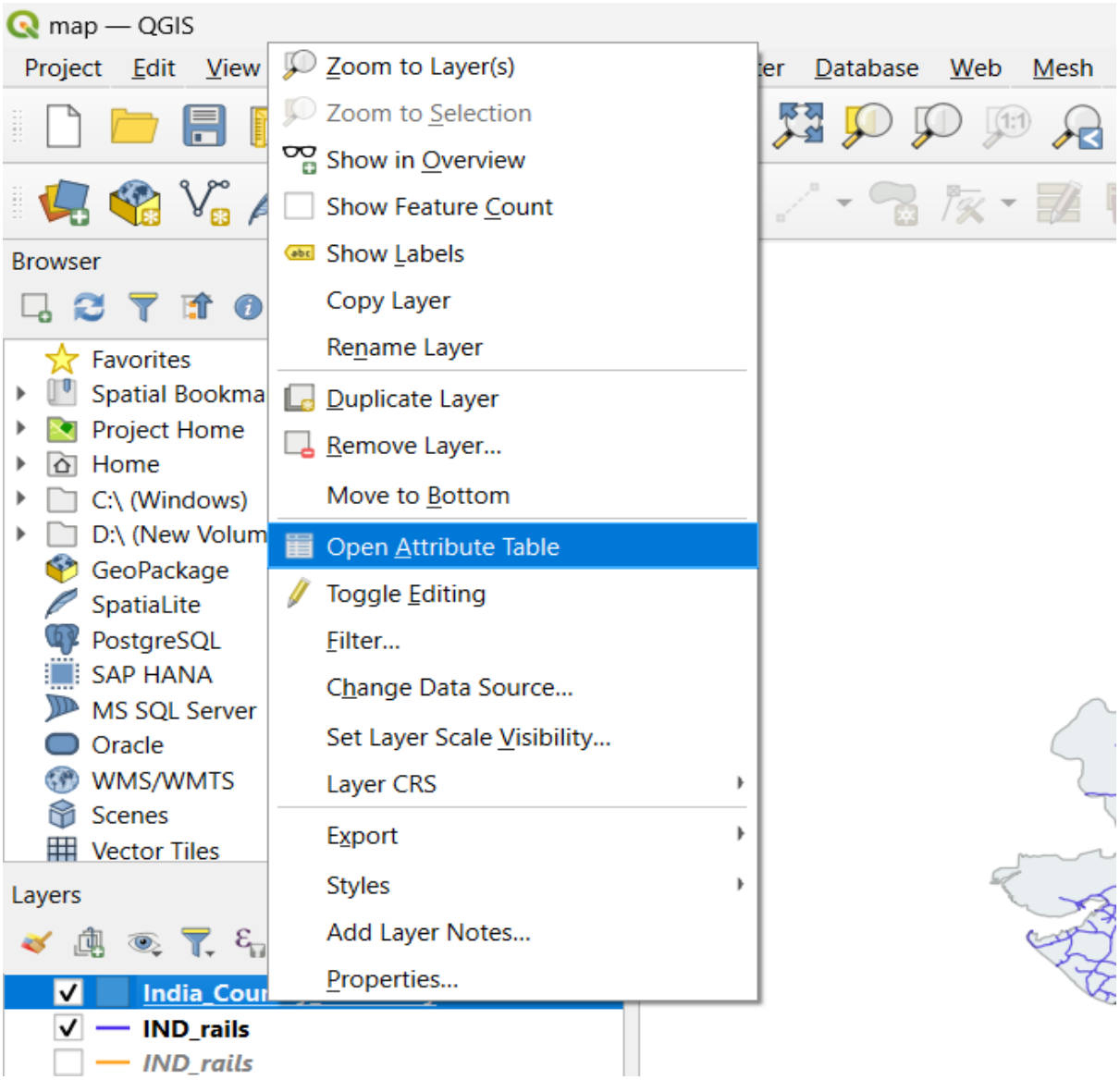
Calculating line lengths and statistics

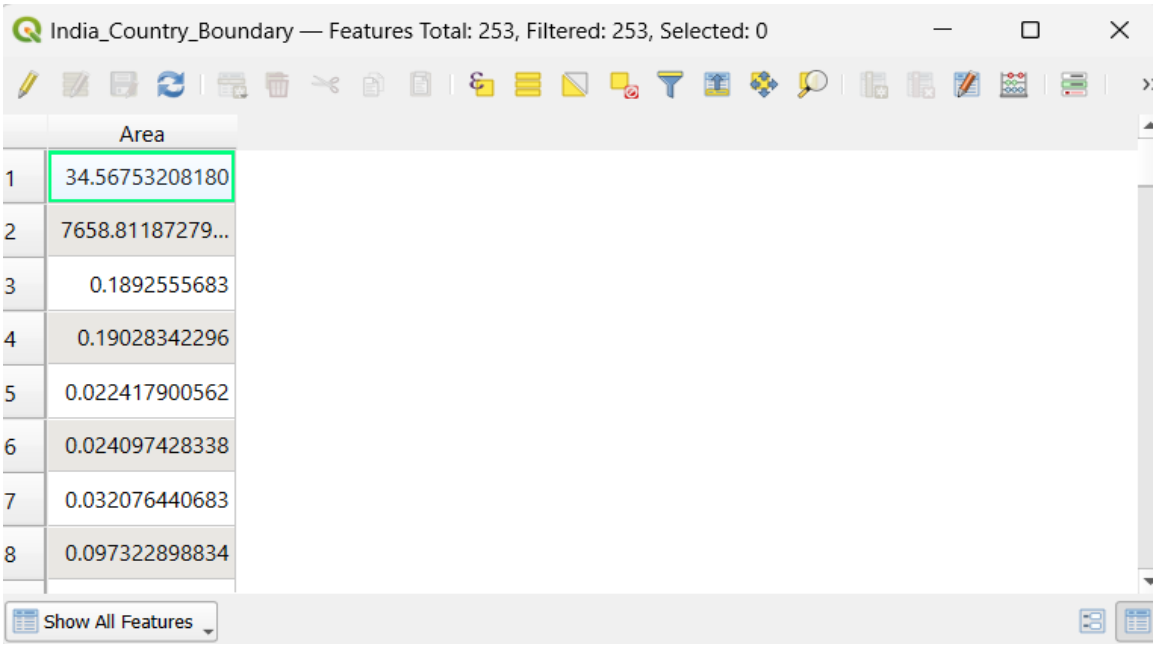


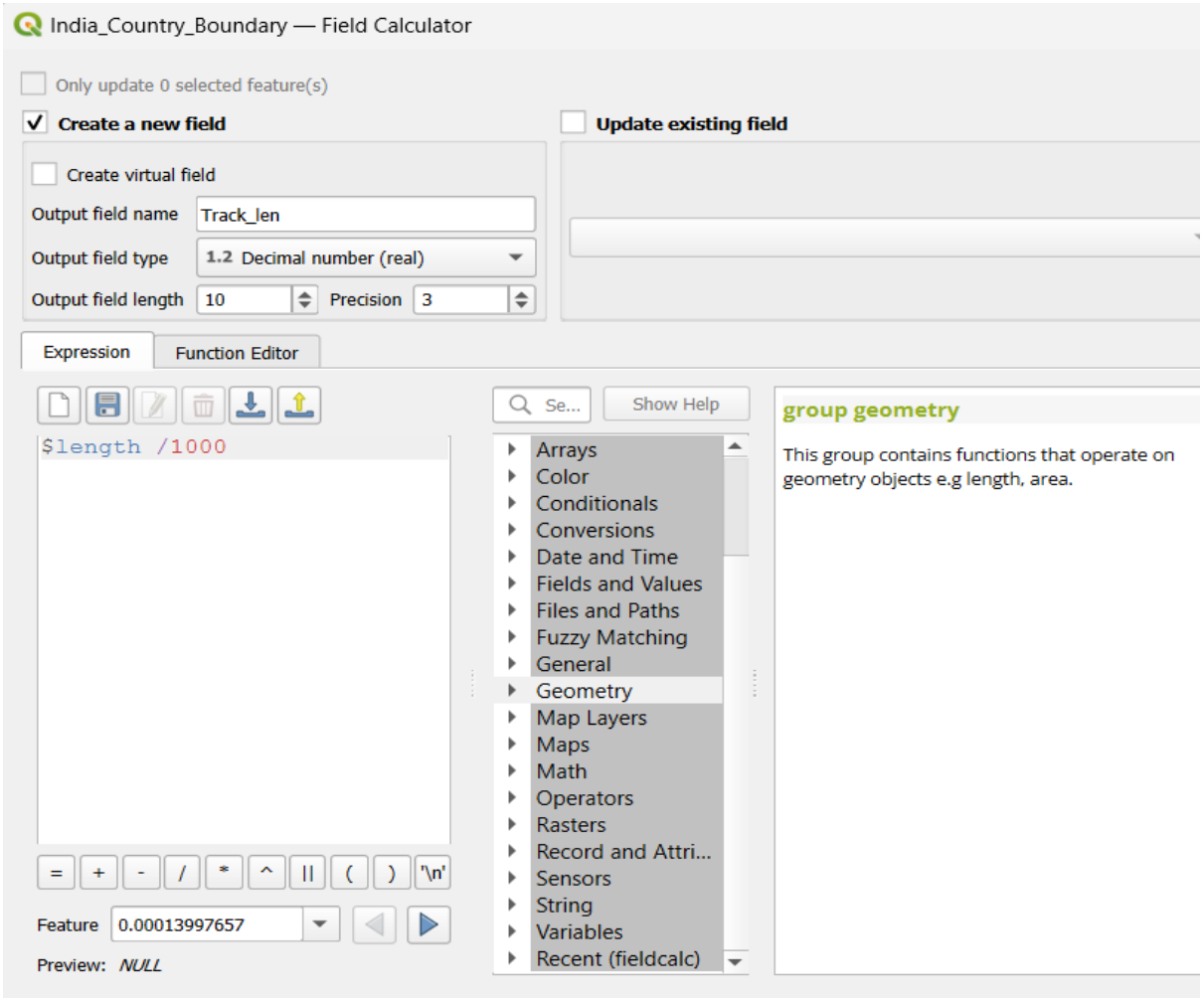




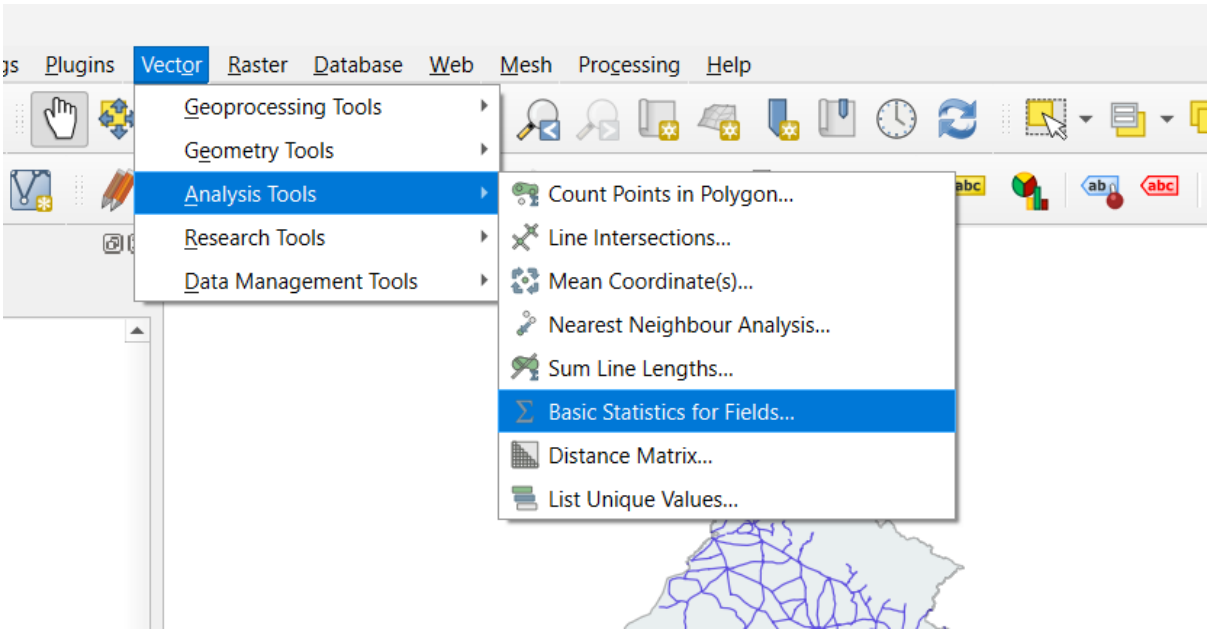
Open the **Attribute Table** window of the IND rails Layer


map — QGIS
Project
Edit
View
Database
Web
Mesh
Zoom to Layer(s)
Zoom to Selection
Show in Overview
Show Feature Count
Show Labels
Copy Layer
Rename Layer
Duplicate Layer
Remove Layer...
Move to Bottom
Open Attribute Table
Toggle Editing
Filter...
Change Data Source...
Set Layer Scale Visibility...
Layer CRS
Export
Styles
Add Layer Notes...
Properties...
Browser
Favorites
Project Home
Home
GeoPackage
SpatiaLite
PostgreSQL
SAP HANA
MS SQL Server
Oracle
WMS/WMTS
Scenes
Vector Tiles
Layers
IND_rails
IND_rails

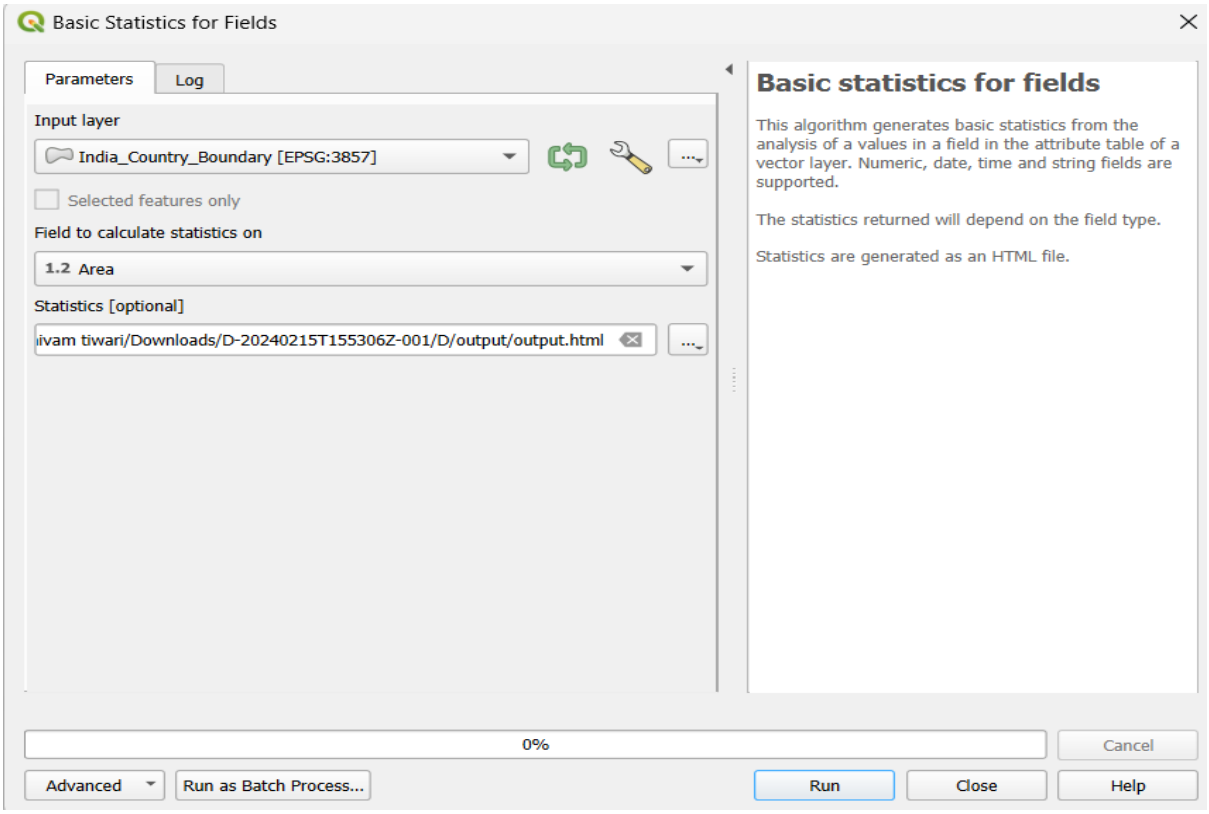

India_Country_Boundary — Features Total: 253, Filtered: 253, Selected: 0
Area
1 34.56753208180
2 7658.81187279...
3 0.1892555683
4 0.19028342296
5 0.022417900562
6 0.024097428338
7 0.032076440683
8 0.097322898834
Show All Features

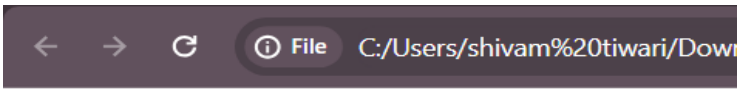


After the above step
Go to Vector > Analysis Tools > Basic Statistics for Field..



After selecting that this below window will appear here add the field to calculate statistics as **Track_Len** which we created previously
Also, add an html file to save the output of the operations
And click on run





Analyzed field: Track_Len

Count: 2012

Unique values: 2012

NULL (missing) values: 1

Minimum value: 0.169

Maximum value: 400481.51

Range: 400481.341

Sum: 60479451.65599998

Mean value: 30059.369610337963

Median value: 14042.935000000001

Standard deviation: 39483.18675850334

Coefficient of Variation: 1.3135068123625704

Minority (rarest occurring value): 0.169

Majority (most frequently occurring value): 0.169

First quartile: 3348.7125

Third quartile: 42853.691

Interquartile Range (IQR): 39504.9785