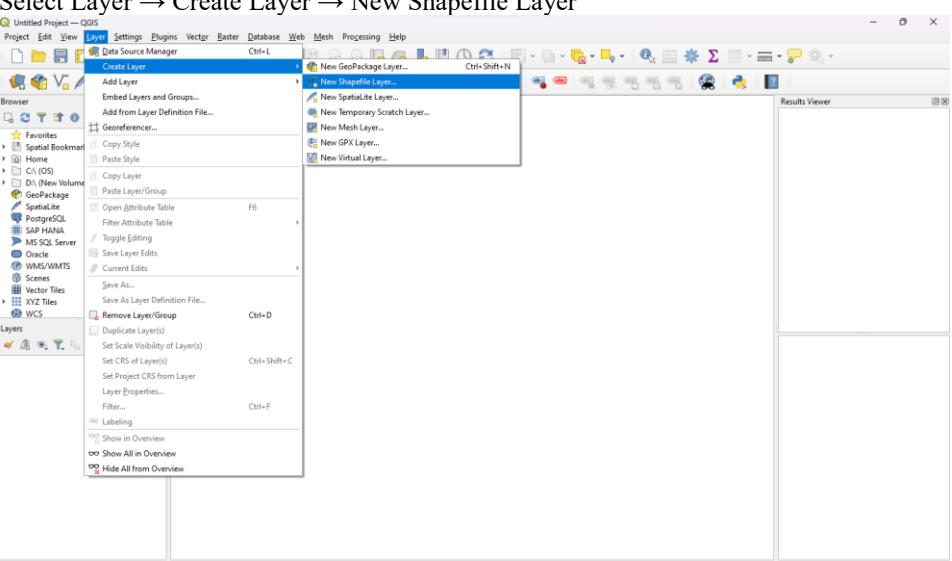
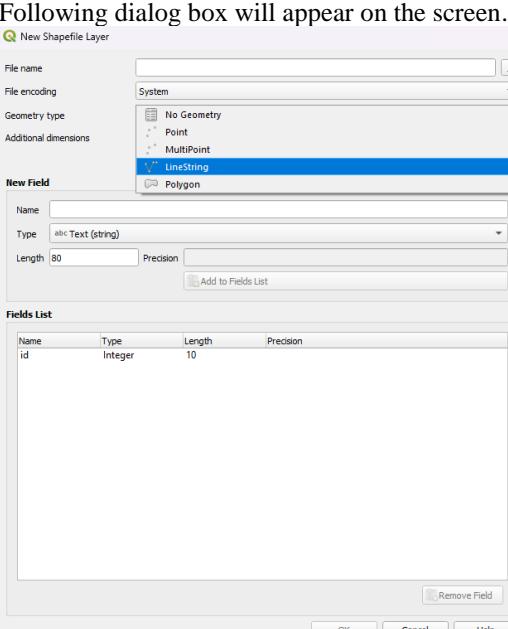


KET'S V. G. Vaze College (Autonomous), Mulund

Roll No :-A064

Name :- Nikesh Punaji Sabale

Practical – 1		Date:-19/07/2024
Aim:-	Creating and Managing Vector Data	
Steps:-	<p>Select Project → New</p> <p>Select Layer → Create Layer → New Shapefile Layer</p>  <p>Following dialog box will appear on the screen. Select Polygon option from Geometry type.</p>  <p>Fill the appropriate information in each text box. Click on Add to Field List Button.</p> <p>Click Ok.</p> <p>Follow the steps to plot Polygon Features. Select the polygon Feature from layer panel. Click Toggle Editing Button → 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</p> <p>Save the newly added polygon as follows Set style for polygon by using property window</p>	

KET'S V. G. Vaze College (Autonomous), Mulund

Roll No :-A064

Name :- Nikesh Punaji Sabale

Same way we can add one more polygon layer for ground.

Creating Line vector layer

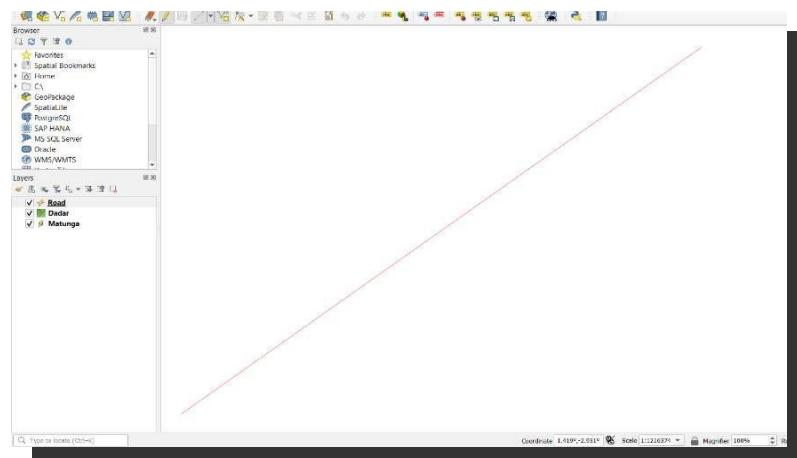
Repeat the same steps as we have done for polygon layer.

Select geometry type Line.

Road layer:

To plot road, click on Add Line Feature

Click on the map where you want to draw line.



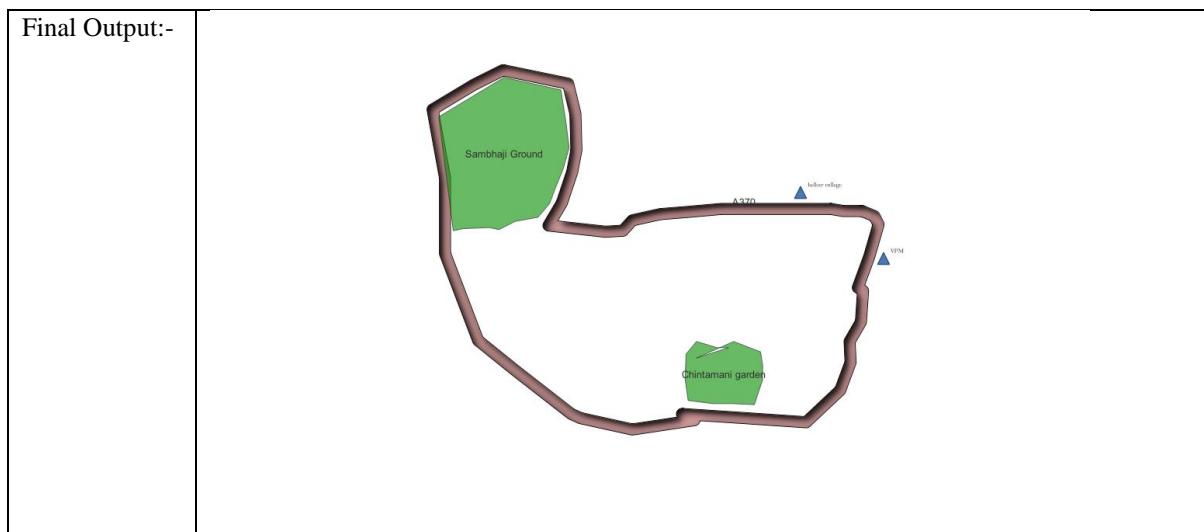
set style for Roads in the same way as we have done for polygon

Check Enable symbol levels option as soon as show the road appear as follows.

KET'S V. G. Vaze College (Autonomous), Mulund

Roll No :-A064

Name :- Nikesh Punaji Sabale

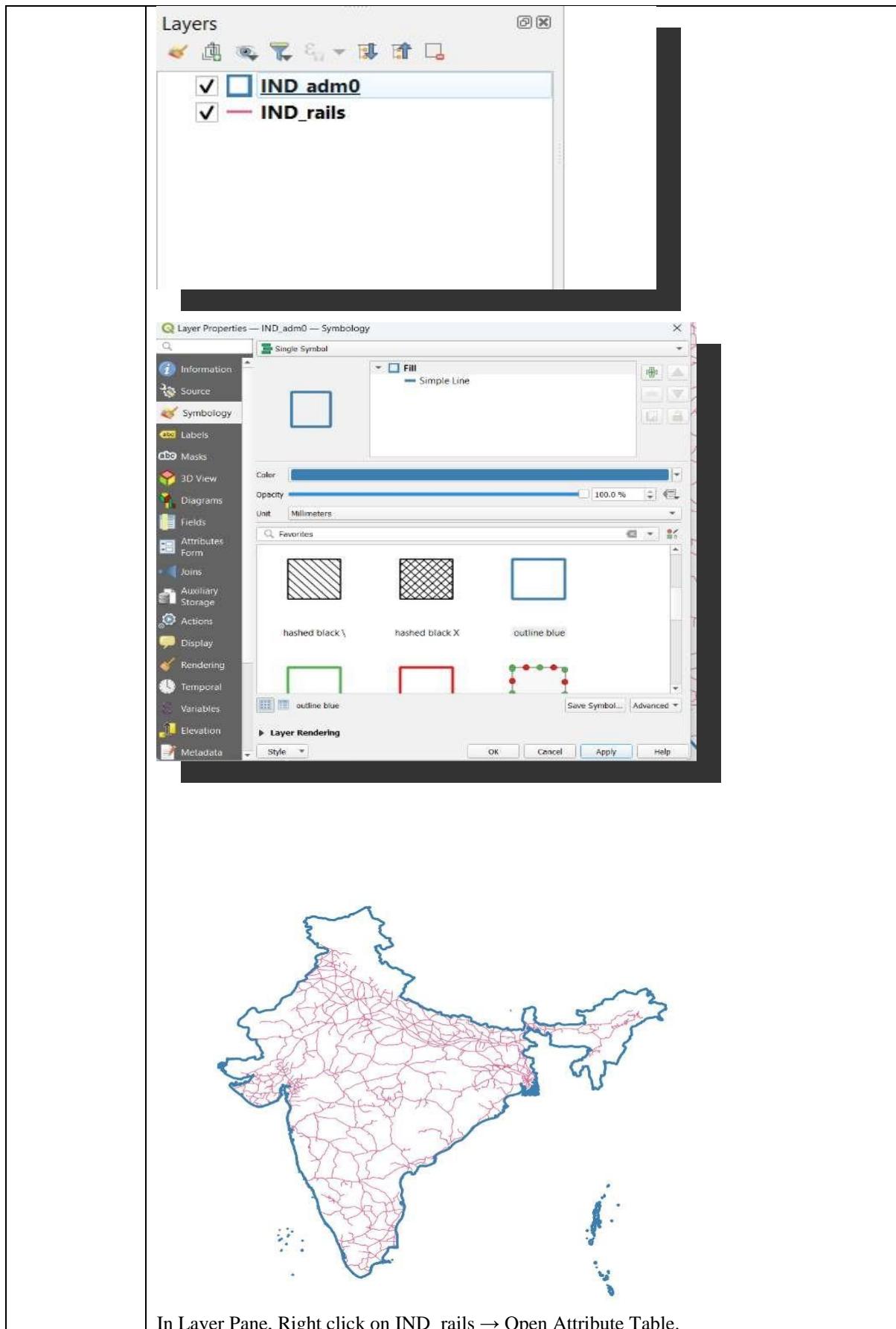


Practical(1b):-	Calculating Line, Lengths and Statistics.	Date:-
Steps:-	<p>Go to Layer → Add Layer → Add Vector Layer</p> <p>Add the following file to project</p>  <p>"\GIS_Workshop\Practicals\Practical_01\DATA\IND_rrd\IND_rails.shp" Press "ADD"</p> <p>Also add India Administrative Map "\GIS_Workshop\Practicals\Practical_01\DATA\IND_adm\IND_adm0.shp" Double Click on IND_adm0</p>	

KET'S V. G. Vaze College (Autonomous), Mulund

Roll No :-A064

Name :- Nikesh Punaji Sabale



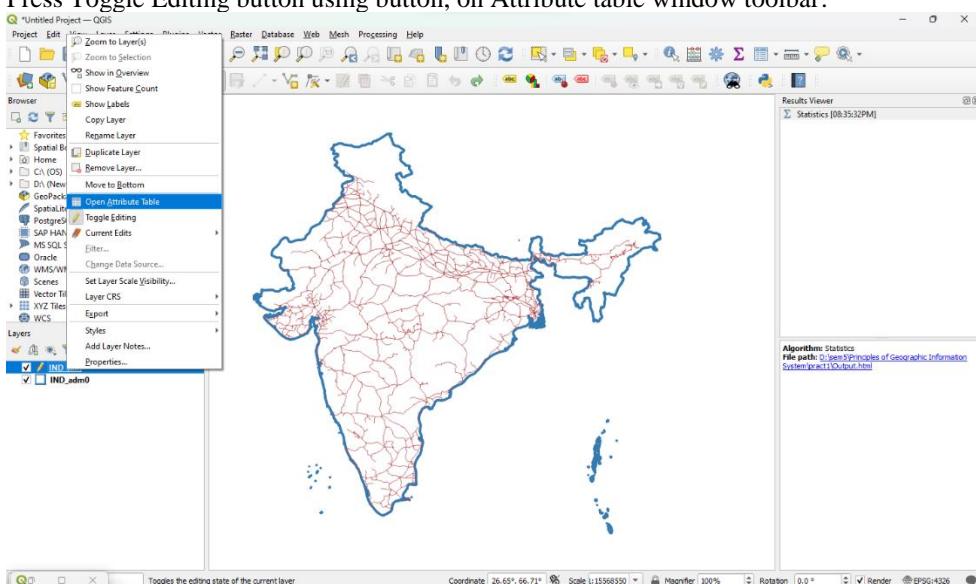
In Layer Pane, Right click on IND_rails → Open Attribute Table.

KET'S V. G. Vaze College (Autonomous), Mulund

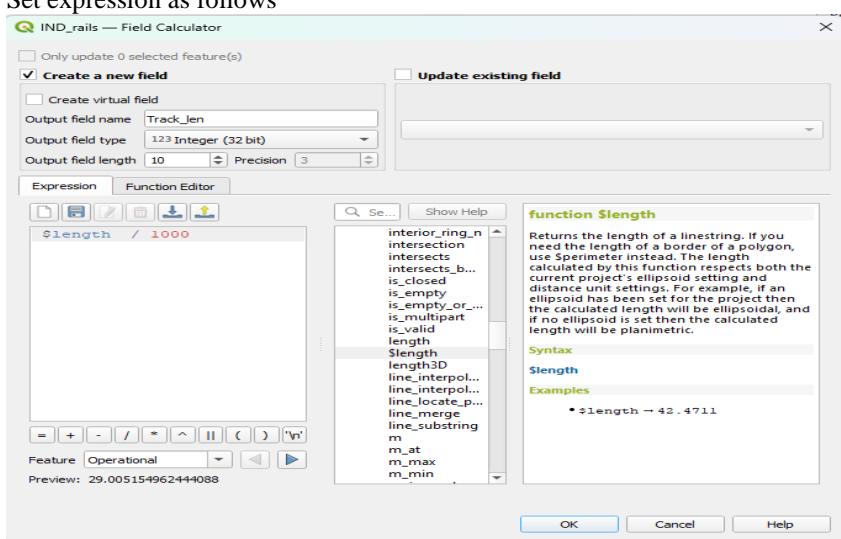
Roll No :-A064

Name :- Nikesh Punaji Sabale

Press Toggle Editing button using button, on Attribute table window toolbar.



Press Open Field Calculator using button
Set the output field as "Track_Len", field type to "Decimal Number".
From Function List search \$length or go to Geometry → Select \$length
Set expression as follows

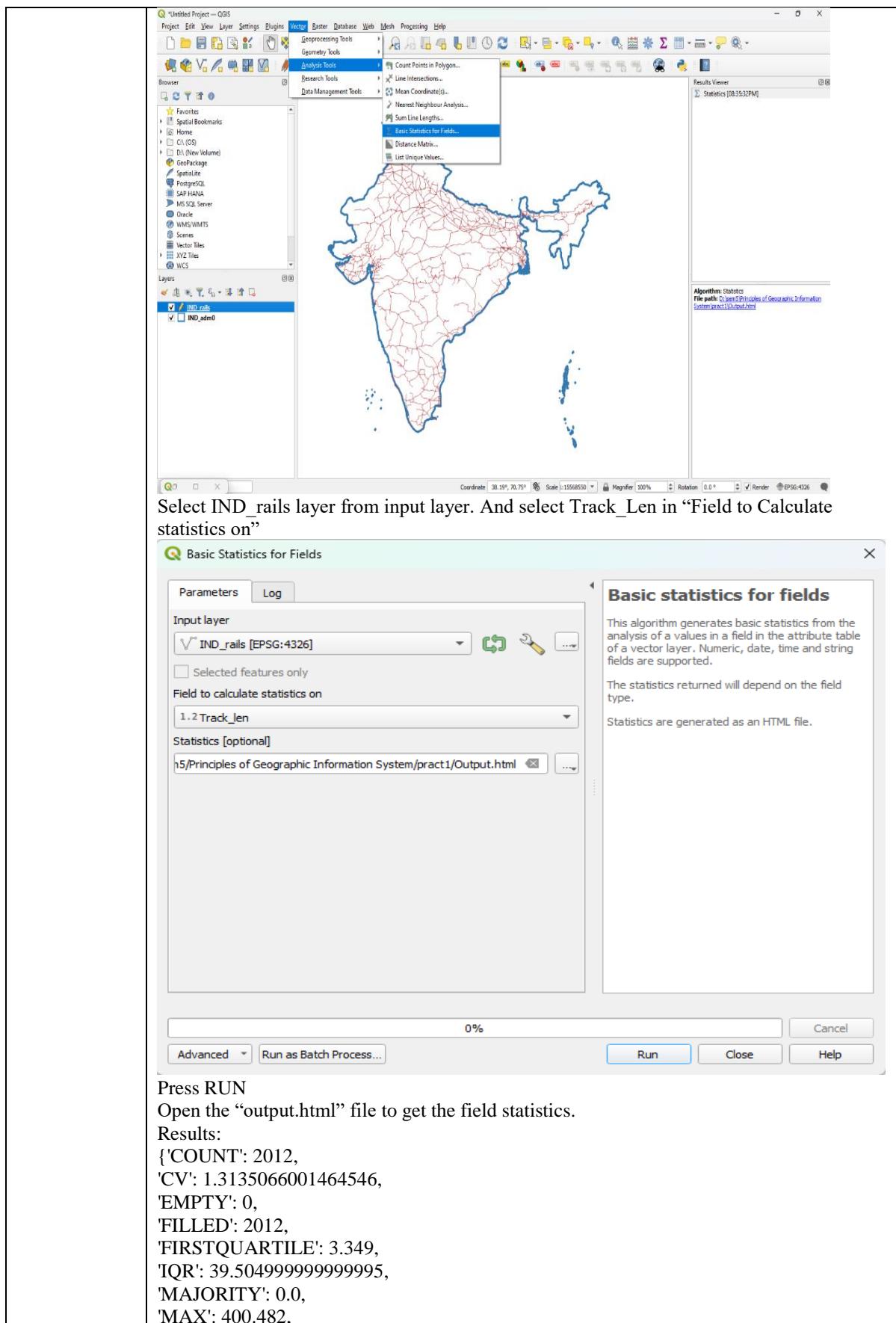


Press "OK"
Press CTRL+S or click on Save Edits option on tool bar
Close the attribute table window.
For calculating the total length of Railway tracks in India.
Select Vector→ Analysis Tools→ Basic Statistics for Fields

KET'S V. G. Vaze College (Autonomous), Mulund

Roll No :-A064

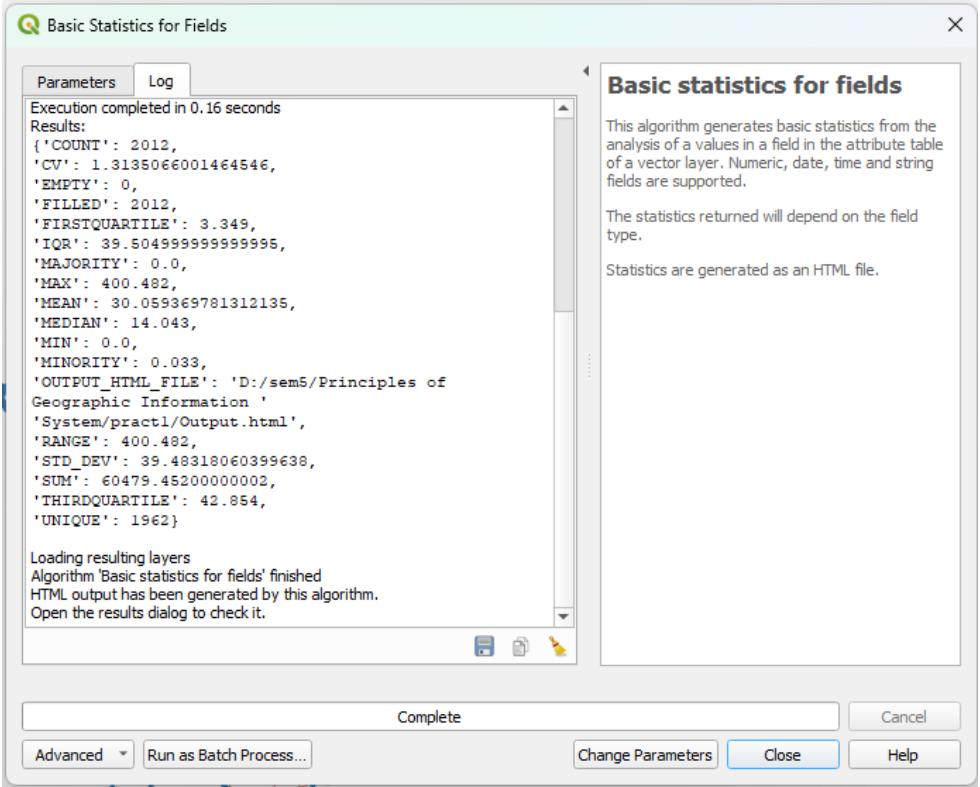
Name :- Nikesh Punaji Sabale



KET'S V. G. Vaze College (Autonomous), Mulund

Roll No :-A064

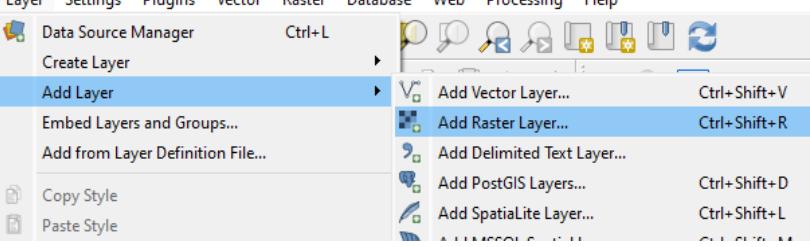
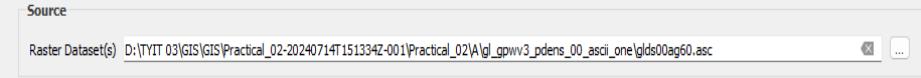
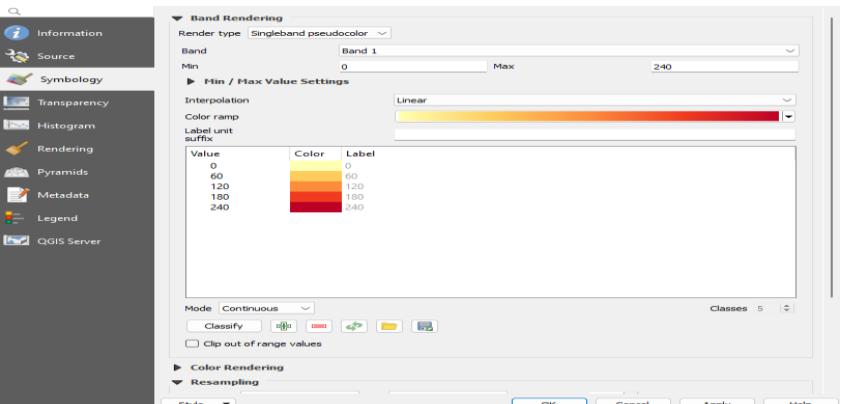
Name :- Nikesh Punaji Sabale

	'MEAN': 30.059369781312135, 'MEDIAN': 14.043, 'MIN': 0.0, 'MINORITY': 0.033, 'OUTPUT_HTML_FILE': 'D:/sem5/Principles of Geographic Information ' 'System/pract1/Output.html', 'RANGE': 400.482, 'STD_DEV': 39.48318060399638, 'SUM': 60479.45200000002, 'THIRDQUARTILE': 42.854, 'UNIQUE': 1962}
Final Output:-	 The screenshot shows the 'Basic Statistics for Fields' dialog box from QGIS. The 'Log' tab is selected, displaying the following text: Execution completed in 0.16 seconds Results: { 'COUNT': 2012, 'CV': 1.3135066001464546, 'EMPTY': 0, 'FILLED': 2012, 'FIRSTQUARTILE': 3.349, 'IQR': 39.504999999999995, 'MAJORITY': 0.0, 'MAX': 400.482, 'MEAN': 30.059369781312135, 'MEDIAN': 14.043, 'MIN': 0.0, 'MINORITY': 0.033, 'OUTPUT_HTML_FILE': 'D:/sem5/Principles of Geographic Information ' 'System/pract1/Output.html', 'RANGE': 400.482, 'STD_DEV': 39.48318060399638, 'SUM': 60479.45200000002, 'THIRDQUARTILE': 42.854, 'UNIQUE': 1962} Below the log, it says: Loading resulting layers Algorithm 'Basic statistics for fields' finished. HTML output has been generated by this algorithm. Open the results dialog to check it. At the bottom of the dialog, there are buttons for 'Complete', 'Advanced', 'Run as Batch Process...', 'Change Parameters', 'Close', and 'Help'.

KET'S V. G. Vaze College (Autonomous), Mulund

Roll No :-A064

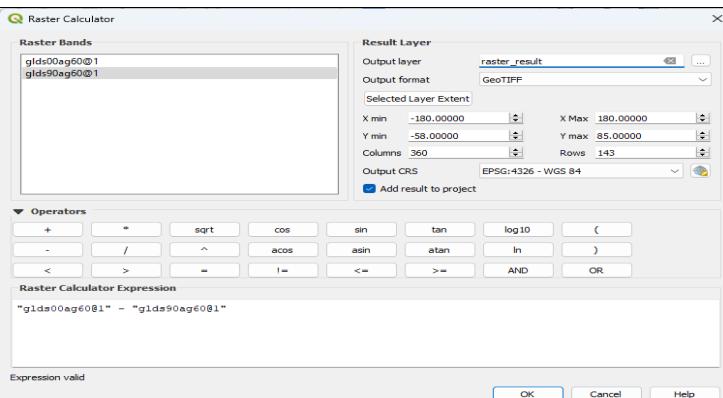
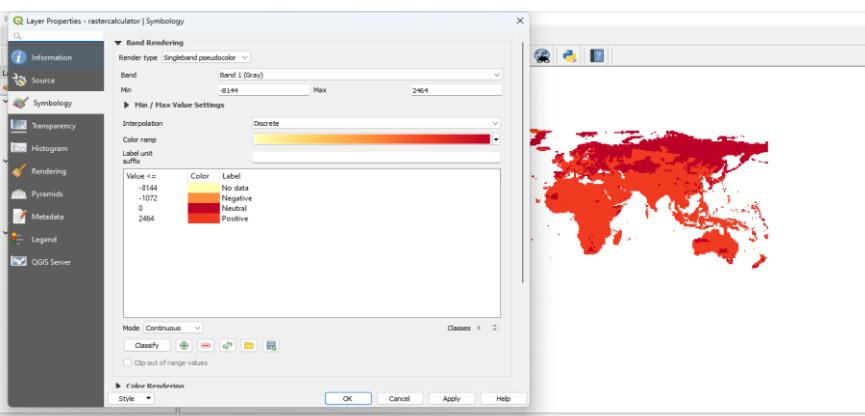
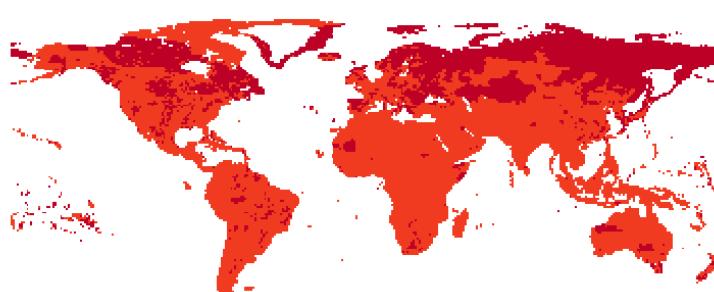
Name :- Nikesh Punaji Sabale

Practical 2		Date:-01/08/2024
Aim:	Exploring and Managing Raster data: Adding raster layers, raster styling and analysis, raster mosaicking and clipping.	
a)	Adding raster layer, raster styling and analysis.	
Procedure :	<ol style="list-style-type: none">Click layer -> Add Layer -> Add Raster Layer. Browse to the location of the raster (glds90ag60 and glds00ag60) from dataset. Add both raster. Then change the properties of the raster. Properties ->symbology -> render type = Singlebandpseudocolor, min = 0, max = 240. Press apply and ok. Repeat same for other raster. Go to raster menu and open raster calculator and add the following expression and browse the location where you want to save the result file and click ok.	

KET'S V. G. Vaze College (Autonomous), Mulund

Roll No :-A064

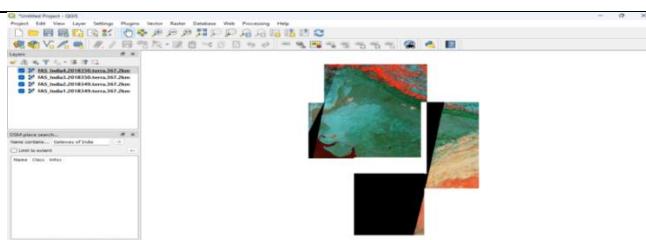
Name :- Nikesh Punaji Sabale

	 <p>The screenshot shows the QGIS Raster Calculator dialog. In the 'Raster Bands' section, two layers are selected: 'gld00ag60@1' and 'gld90ag60@1'. In the 'Operators' section, a subtraction operation ('-') is selected. The 'Raster Calculator Expression' field contains the formula: "gld00ag60@1" - "gld90ag60@1". The 'Result Layer' settings indicate an output layer named 'raster_result' in GeoTIFF format, covering the extent from X min -180.000000 to X max 180.000000, Y min -58.000000 to Y max 85.000000, with 360 columns and 143 rows, and an output CRS of EPSG:4326 - WGS 84.</p>
	<p>5. The result is added as a raster. 6. Now change the properties of the new raster Properties ->symbology -> render type = Singlebandpseudocolor, min = -20000, max = 6000, interpolation = discrete, change label of values as shown below, then click apply and ok.</p>  <p>The screenshot shows the QGIS Layer Properties dialog for a raster layer. Under the 'Symbology' tab, the 'Band Rendering' section is set to 'Singleband pseudocolor'. The 'Min' value is set to -8144 and the 'Max' value is set to 2464. The 'Interpolation' method is set to 'Discrete'. The 'Color ramp' is a gradient from yellow to red. The 'Label unit' is set to 'Value <=' and the 'Label' column shows four categories: 'No data' (yellow), 'Negative' (red), 'Neutral' (dark red), and 'Positive' (black). The 'Mode' is set to 'Continuous'.</p>
	<p>7. Output:</p>  <p>The screenshot shows a world map in QGIS with a singleband pseudocolor rendering. The map uses a color ramp where red represents negative values and black represents positive values. The map shows a global distribution of the raster data, with higher values appearing in darker shades of red and lower values in yellow.</p>
b)	<p>Raster mosaicking and clipping.</p> <p>Procedure :</p> <ol style="list-style-type: none"> 1. Go to layer -> add layer -> add raster layer. Add the following .tif images from the data set. FAS_India1.2018349.terra.367.2km.tif, FAS_India2.2018349.terra.367.2km.tif, FAS_India3.2018350.terra.367.2km.tif, FAS_India4.2018350.terra.367.2km.tif. 2. Click open then add the raster

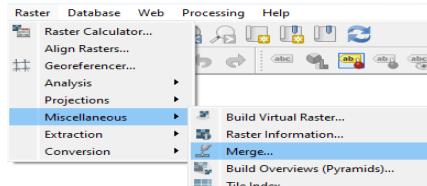
KET'S V. G. Vaze College (Autonomous), Mulund

Roll No :-A064

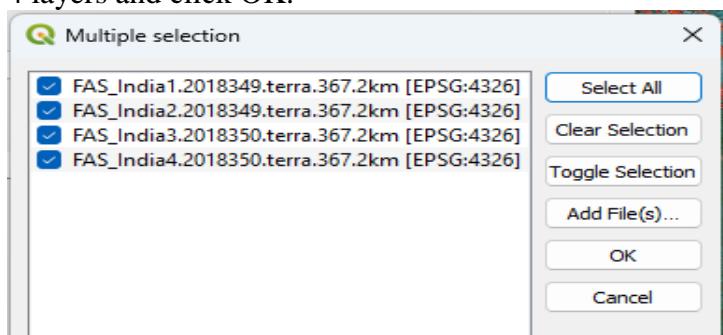
Name :- Nikesh Punaji Sabale



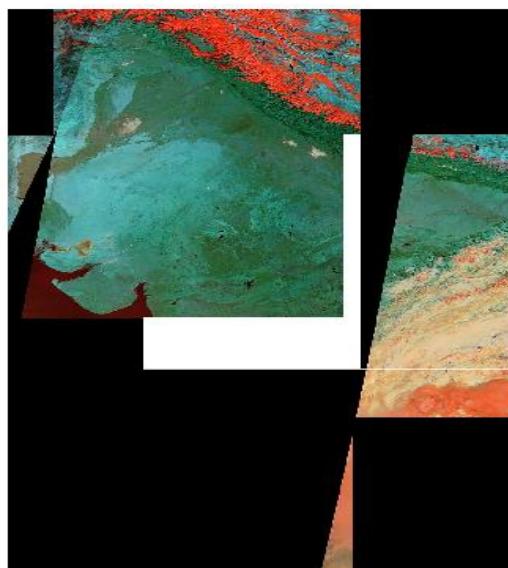
3. Go to raster -> miscellaneous -> merge.



4. In the merge window, click on 3 dots beside input layer and select all 4 layers and click OK.



5. In the merge dialog window select a file name and location to save the file and click RUN.



6. Go to layer -> add layer -> add vector layer, and add the vector layer of India.

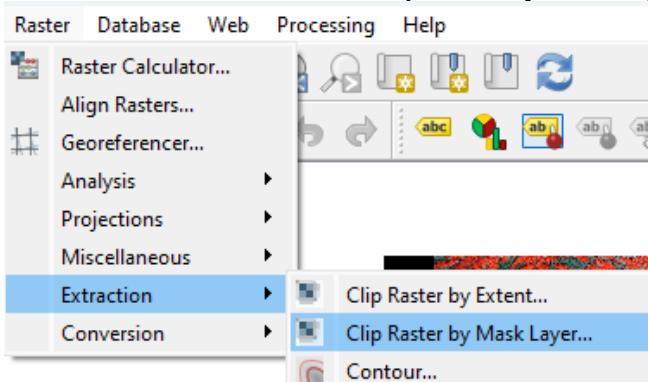
KET'S V. G. Vaze College (Autonomous), Mulund

Roll No :-A064

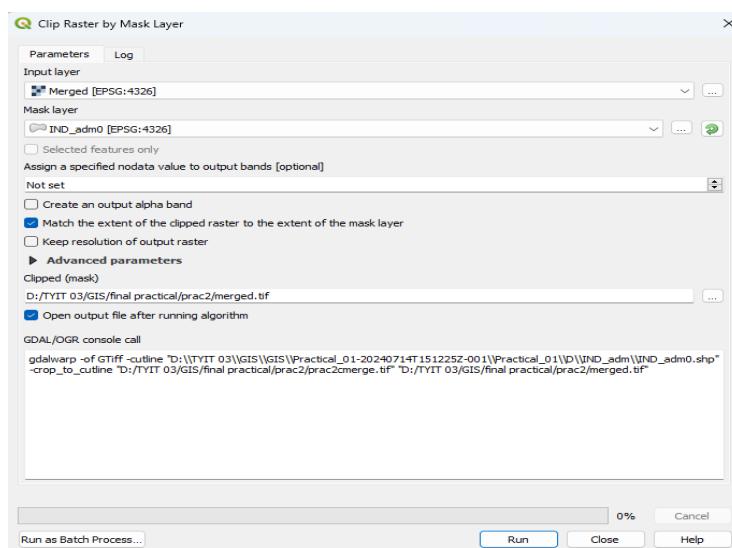
Name :- Nikesh Punaji Sabale



7. Go to properties of the vector and select any of the outlines and click OK.
8. Go to raster -> extraction -> clip raster by mask layer.



9. In clip raster by mask layer :
Select the merged layer as input layer and save the file in your location and click RUN.

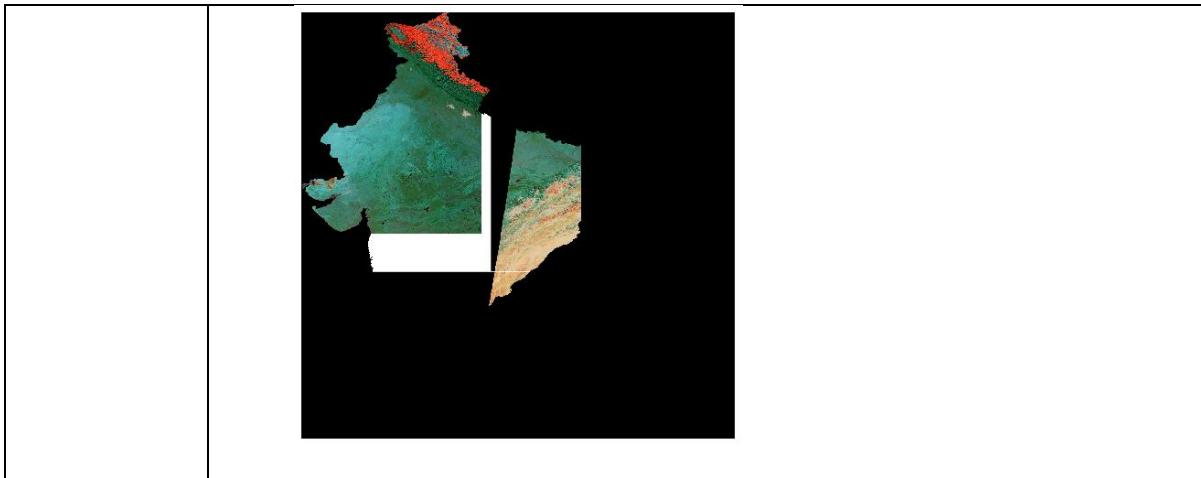


10. A new clipped raster gets added as the result. Output :

KET'S V. G. Vaze College (Autonomous), Mulund

Roll No :-A064

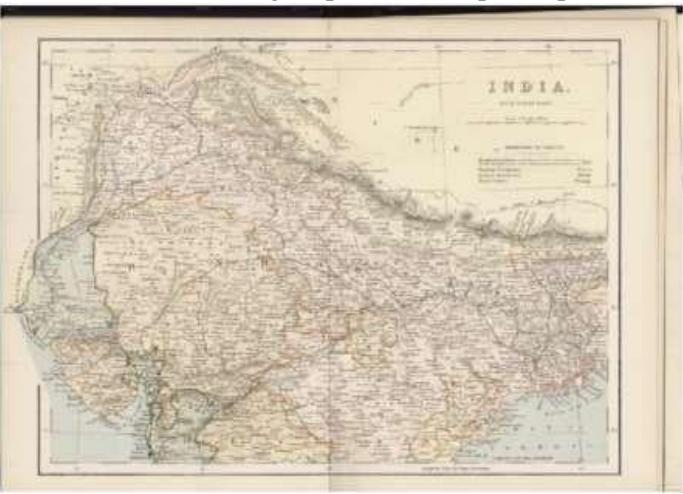
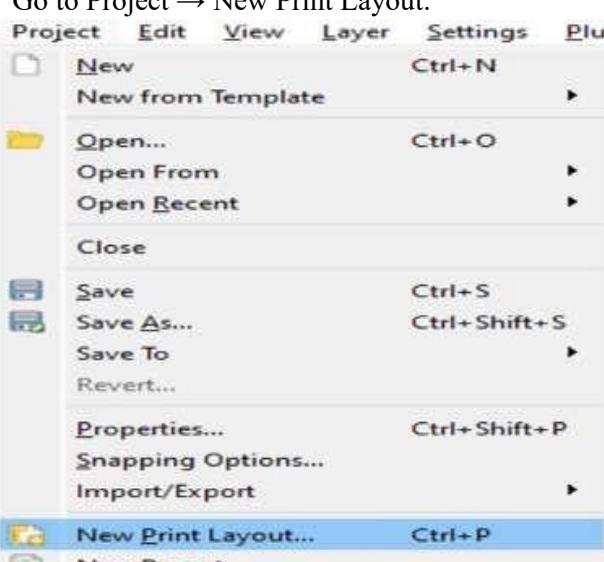
Name :- Nikesh Punaji Sabale



KET'S V. G. Vaze College (Autonomous), Mulund

Roll No :-A064

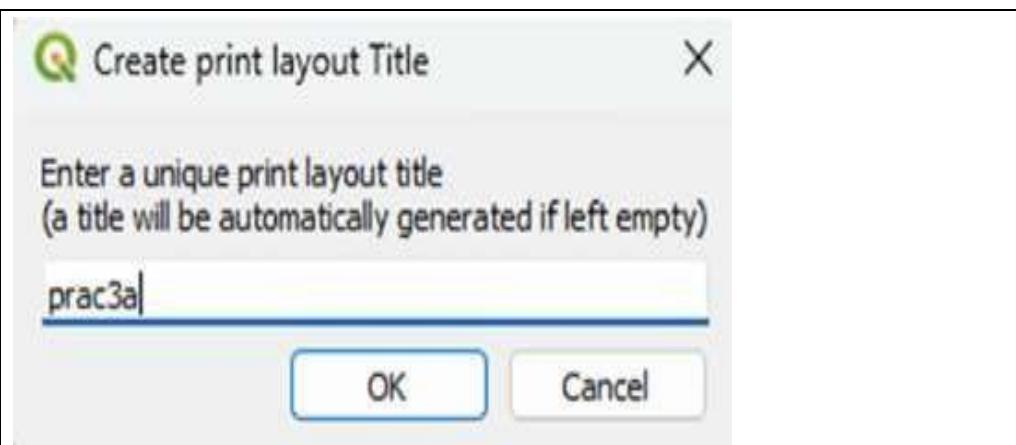
Name :- Nikesh Punaji Sabale

Practical 3		Date:-22/07/2024
Aim:	Making a map, Working with attributes, Importing spreadsheets or CSV files, Using plugins, Searching and downloading OpenStreetMap data.	
a)	Making a map, working with attributes.	
Procedure :	<ol style="list-style-type: none">Consider the following map as an example map. Go to Project → New Print Layout. Insert a suitable title and press "OK".	

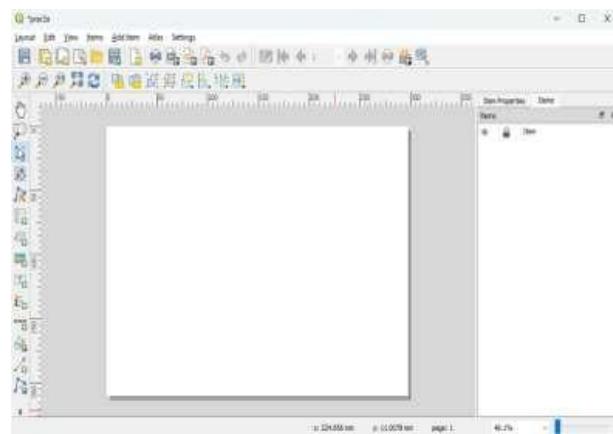
KET'S V. G. Vaze College (Autonomous), Mulund

Roll No :-A064

Name :- Nikesh Punaji Sabale



4. A new Print Layout window will open.



KET'S V. G. Vaze College (Autonomous), Mulund

Roll No :-A064

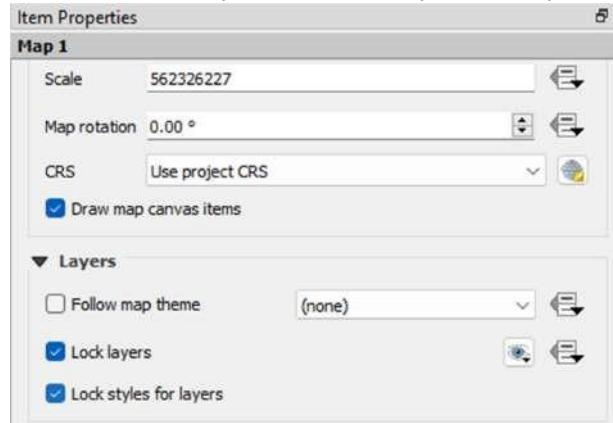
Name :- Nikesh Punaji Sabale

5. Select Add Item → Add Map.



6. After adding map go to Item Properties → Map1 → Layers.

7. Check on Lock Layers and Lock Styles for Layers.



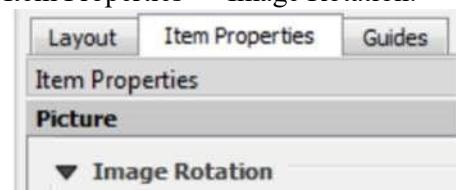
8. This will ensure that if any change in layers or change their styles, the Print Layout view will not change.

9. Go to Add Item → Add Picture → Place a picture box at appropriate location.



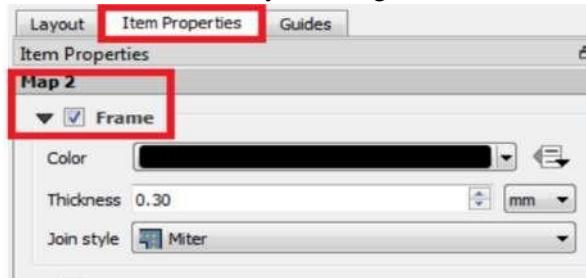
10. Also adjust Image Rotation to its appropriate value.

11. Item Properties → Image Rotation.



12. Add an inset Using Add Item → Add Picture → Select an area to be highlighted on main Map.

13. Set a frame for Inset by enabling the check box for Frame.

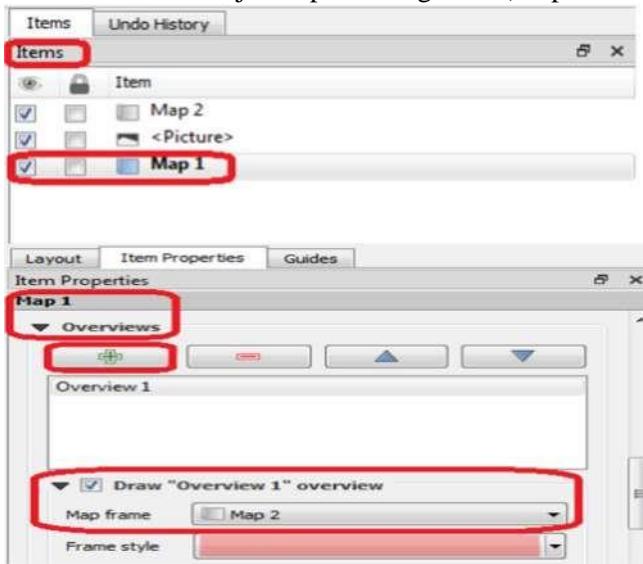


KET'S V. G. Vaze College (Autonomous), Mulund

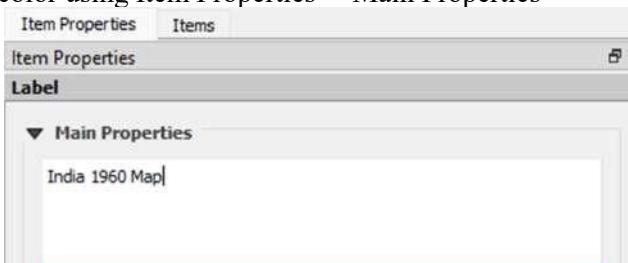
Roll No :-A064

Name :- Nikesh Punaji Sabale

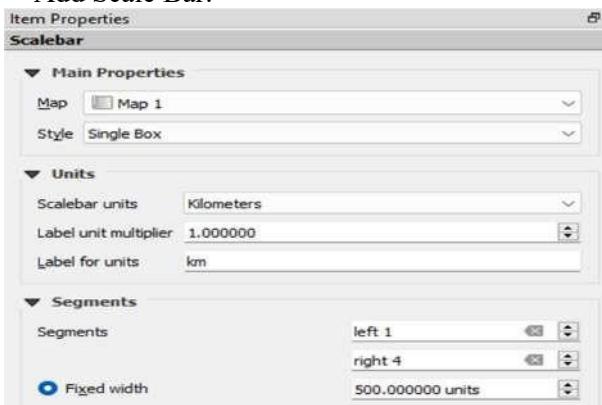
14. To highlight the area shown in Inset.
15. Select the Picture representing main Map from Items pane.
16. In Item Properties → Overviews → using icon add an overview.
17. Select the checkbox Draw Overview.
18. Name the Picture object representing inset (Map1 in our case).



19. Add Item → Add Label.
20. Change the Label text To “Mumbai Map”, Set appropriate font size and color using Item Properties→ Main Properties



21. Add Item → Add Legend→ Place the legend indicator at appropriate location.
22. Uncheck auto update and use suitable legend indicator label 23. Add Item → Add Scale Bar.

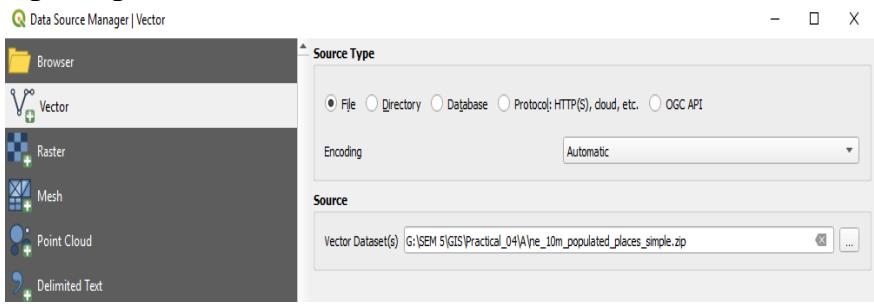
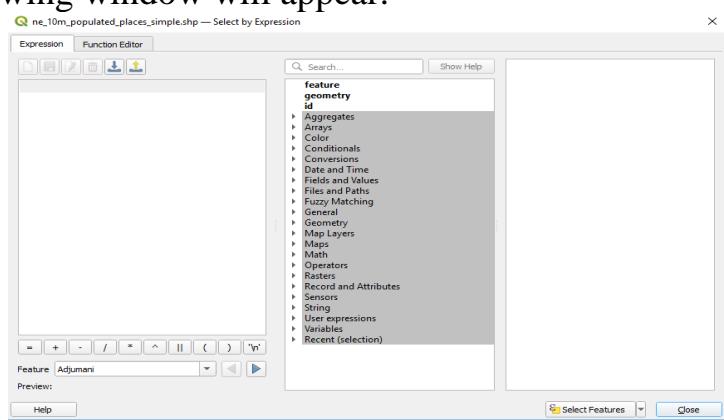


24. Add Item → Add Label → Add a Label using HTML rendering.

KET'S V. G. Vaze College (Autonomous), Mulund

Roll No :-A064

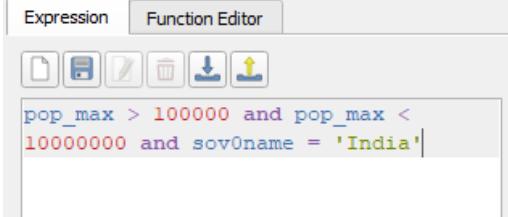
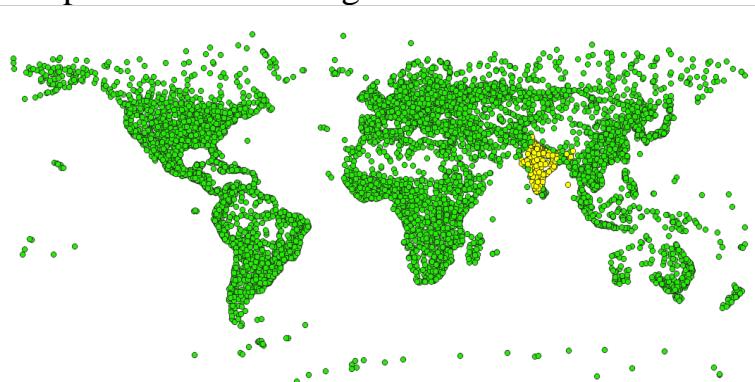
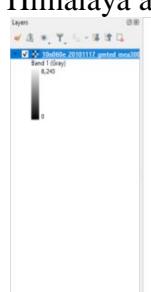
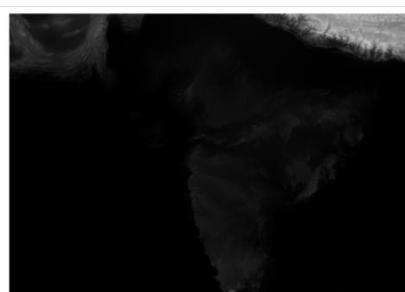
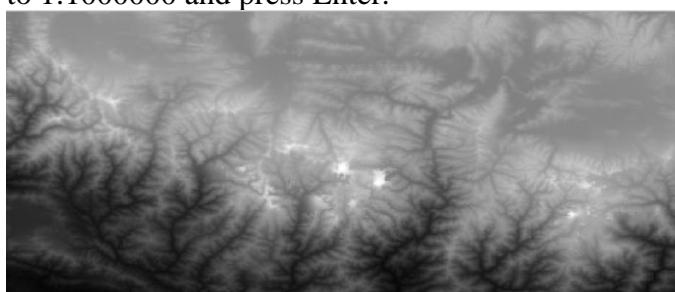
Name :- Nikesh Punaji Sabale

Practical 4		Date:-22/07/2024																																																																																																																																																																																						
Aim:	Working with attributes, terrain Data.																																																																																																																																																																																							
a)	Working with map.																																																																																																																																																																																							
Procedure:	<ol style="list-style-type: none"> Start new project. Go to Layer -> Add Layer -> Add Vector Layer. Select G:\SEM_5\GIS\Practical_04\A\ne_10m_populated_places_simple.zip.  <ol style="list-style-type: none"> Right click on layer in Layer Panel -> Open Attribute table. Explore various attributes and their values in attribute table. To find the Place with the maximum population click on pop_max. <table border="1"> <thead> <tr> <th>sov0name</th> <th>sov_a3</th> <th>adm0name</th> <th>adm0_a3</th> <th>adm1name</th> <th>iso_a2</th> <th>note</th> <th>latitude</th> <th>longitude</th> <th>changed</th> <th>namediff</th> <th>diffnote</th> <th>pop_max</th> </tr> </thead> <tbody> <tr><td>Japan</td><td>JPN</td><td>Japan</td><td>JPN</td><td>Tokyo</td><td>JP</td><td>NULL</td><td>35.6850169580</td><td>139.75140742900</td><td>0</td><td>0</td><td>NULL</td><td>35676000</td></tr> <tr><td>United States</td><td>USA</td><td>United States of...</td><td>USA</td><td>New York</td><td>US</td><td>NULL</td><td>40.74997905400</td><td>-73.98001692880</td><td>0</td><td>0</td><td>NULL</td><td>19040000</td></tr> <tr><td>Mexico</td><td>MEX</td><td>Mexico</td><td>MEX</td><td>Distrito Federal</td><td>MX</td><td>NULL</td><td>19.44044244200</td><td>-99.1309820170</td><td>0</td><td>0</td><td>NULL</td><td>19028000</td></tr> <tr><td>India</td><td>IND</td><td>India</td><td>IND</td><td>Maharashtra</td><td>IN</td><td>NULL</td><td>19.0169037570</td><td>72.85669829740</td><td>0</td><td>0</td><td>NULL</td><td>18978000</td></tr> <tr><td>Brazil</td><td>BRA</td><td>Brazil</td><td>BRA</td><td>São Paulo</td><td>BR</td><td>NULL</td><td>-23.55867956700</td><td>-46.62501998040</td><td>0</td><td>0</td><td>NULL</td><td>18845000</td></tr> <tr><td>India</td><td>IND</td><td>India</td><td>IND</td><td>Delhi</td><td>IN</td><td>NULL</td><td>28.6699928860</td><td>77.23000402720</td><td>4.0000000000</td><td>0</td><td>Changed feature</td><td>15526000</td></tr> <tr><td>China</td><td>CHN</td><td>China</td><td>CHN</td><td>Shanghai</td><td>CN</td><td>NULL</td><td>31.21645245260</td><td>121.43650467800</td><td>0</td><td>0</td><td>NULL</td><td>14987000</td></tr> <tr><td>India</td><td>IND</td><td>India</td><td>IND</td><td>West Bengal</td><td>IN</td><td>NULL</td><td>22.49496929830</td><td>88.32467565810</td><td>4.0000000000</td><td>1</td><td>Name changed</td><td>14787000</td></tr> <tr><td>Bangladesh</td><td>BGD</td><td>Bangladesh</td><td>BGD</td><td>Dhaka</td><td>BD</td><td>NULL</td><td>23.72305971170</td><td>90.40857946570</td><td>5.0000000000</td><td>0</td><td>Changed scale ...</td><td>12797394</td></tr> <tr><td>Argentina</td><td>ARG</td><td>Argentina</td><td>ARG</td><td>Ciudad de Bue...</td><td>AR</td><td>NULL</td><td>-34.60250169050</td><td>-58.39753137370</td><td>0</td><td>0</td><td>NULL</td><td>12795000</td></tr> <tr><td>United States</td><td>USA</td><td>United States of...</td><td>USA</td><td>California</td><td>US</td><td>NULL</td><td>33.98997825020</td><td>-118.17998051100</td><td>0</td><td>0</td><td>NULL</td><td>12500000</td></tr> <tr><td>Pakistan</td><td>PAK</td><td>Pakistan</td><td>PAK</td><td>Sindh</td><td>PK</td><td>NULL</td><td>24.86999228820</td><td>66.99000891000</td><td>5.0000000000</td><td>0</td><td>Changed scale ...</td><td>12130000</td></tr> <tr><td>Egypt</td><td>EGY</td><td>Egypt</td><td>EGY</td><td>Al Qahirah</td><td>EG</td><td>NULL</td><td>30.04996034650</td><td>31.24996821970</td><td>0</td><td>0</td><td>NULL</td><td>11893000</td></tr> </tbody> </table> <ol style="list-style-type: none"> On clicking the Select feature using expression  button, the following window will appear.  <ol style="list-style-type: none"> Enter the expression as pop_max > 100000 and pop_max < 10000000 and sov0name = 'India'. 		sov0name	sov_a3	adm0name	adm0_a3	adm1name	iso_a2	note	latitude	longitude	changed	namediff	diffnote	pop_max	Japan	JPN	Japan	JPN	Tokyo	JP	NULL	35.6850169580	139.75140742900	0	0	NULL	35676000	United States	USA	United States of...	USA	New York	US	NULL	40.74997905400	-73.98001692880	0	0	NULL	19040000	Mexico	MEX	Mexico	MEX	Distrito Federal	MX	NULL	19.44044244200	-99.1309820170	0	0	NULL	19028000	India	IND	India	IND	Maharashtra	IN	NULL	19.0169037570	72.85669829740	0	0	NULL	18978000	Brazil	BRA	Brazil	BRA	São Paulo	BR	NULL	-23.55867956700	-46.62501998040	0	0	NULL	18845000	India	IND	India	IND	Delhi	IN	NULL	28.6699928860	77.23000402720	4.0000000000	0	Changed feature	15526000	China	CHN	China	CHN	Shanghai	CN	NULL	31.21645245260	121.43650467800	0	0	NULL	14987000	India	IND	India	IND	West Bengal	IN	NULL	22.49496929830	88.32467565810	4.0000000000	1	Name changed	14787000	Bangladesh	BGD	Bangladesh	BGD	Dhaka	BD	NULL	23.72305971170	90.40857946570	5.0000000000	0	Changed scale ...	12797394	Argentina	ARG	Argentina	ARG	Ciudad de Bue...	AR	NULL	-34.60250169050	-58.39753137370	0	0	NULL	12795000	United States	USA	United States of...	USA	California	US	NULL	33.98997825020	-118.17998051100	0	0	NULL	12500000	Pakistan	PAK	Pakistan	PAK	Sindh	PK	NULL	24.86999228820	66.99000891000	5.0000000000	0	Changed scale ...	12130000	Egypt	EGY	Egypt	EGY	Al Qahirah	EG	NULL	30.04996034650	31.24996821970	0	0	NULL	11893000
sov0name	sov_a3	adm0name	adm0_a3	adm1name	iso_a2	note	latitude	longitude	changed	namediff	diffnote	pop_max																																																																																																																																																																												
Japan	JPN	Japan	JPN	Tokyo	JP	NULL	35.6850169580	139.75140742900	0	0	NULL	35676000																																																																																																																																																																												
United States	USA	United States of...	USA	New York	US	NULL	40.74997905400	-73.98001692880	0	0	NULL	19040000																																																																																																																																																																												
Mexico	MEX	Mexico	MEX	Distrito Federal	MX	NULL	19.44044244200	-99.1309820170	0	0	NULL	19028000																																																																																																																																																																												
India	IND	India	IND	Maharashtra	IN	NULL	19.0169037570	72.85669829740	0	0	NULL	18978000																																																																																																																																																																												
Brazil	BRA	Brazil	BRA	São Paulo	BR	NULL	-23.55867956700	-46.62501998040	0	0	NULL	18845000																																																																																																																																																																												
India	IND	India	IND	Delhi	IN	NULL	28.6699928860	77.23000402720	4.0000000000	0	Changed feature	15526000																																																																																																																																																																												
China	CHN	China	CHN	Shanghai	CN	NULL	31.21645245260	121.43650467800	0	0	NULL	14987000																																																																																																																																																																												
India	IND	India	IND	West Bengal	IN	NULL	22.49496929830	88.32467565810	4.0000000000	1	Name changed	14787000																																																																																																																																																																												
Bangladesh	BGD	Bangladesh	BGD	Dhaka	BD	NULL	23.72305971170	90.40857946570	5.0000000000	0	Changed scale ...	12797394																																																																																																																																																																												
Argentina	ARG	Argentina	ARG	Ciudad de Bue...	AR	NULL	-34.60250169050	-58.39753137370	0	0	NULL	12795000																																																																																																																																																																												
United States	USA	United States of...	USA	California	US	NULL	33.98997825020	-118.17998051100	0	0	NULL	12500000																																																																																																																																																																												
Pakistan	PAK	Pakistan	PAK	Sindh	PK	NULL	24.86999228820	66.99000891000	5.0000000000	0	Changed scale ...	12130000																																																																																																																																																																												
Egypt	EGY	Egypt	EGY	Al Qahirah	EG	NULL	30.04996034650	31.24996821970	0	0	NULL	11893000																																																																																																																																																																												

KET'S V. G. Vaze College (Autonomous), Mulund

Roll No :-A064

Name :- Nikesh Punaji Sabale

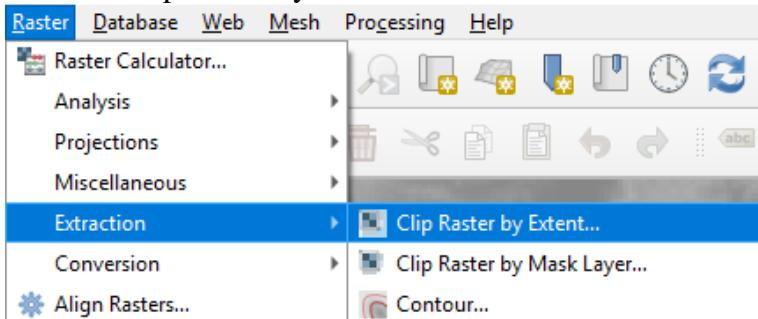
	
	<p>9. After entering the expression click the select features button at the bottom.</p> <p>10. The places matching the criteria will appear in different colour.</p> <p>11. The output of the following will be:</p> 
b)	<p>Terrain data</p> <p>Procedure:</p> <ol style="list-style-type: none">1. Go to Layer -> Add Layer -> Add Raster Layer.2. Select G:\SEM5\GIS\Practical_04\B\10n060e_20101117_gmted_mea300.tif.3. Click Add.4. The lower altitude regions are shown using the dark color and higher altitude region using light shade as seen on top region containing Himalaya and Mt. Everest.   <ol style="list-style-type: none">5. Mt. Everest is located at the coordinates 27.9881, 86.9253 and set scale to 1:1000000 and press Enter. 

KET'S V. G. Vaze College (Autonomous), Mulund

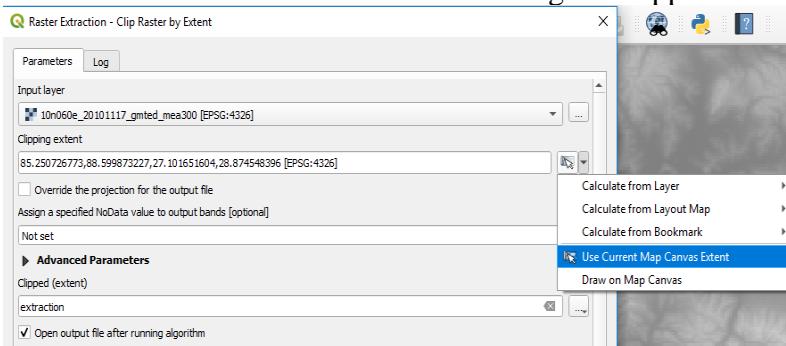
Roll No :-A064

Name :- Nikesh Punaji Sabale

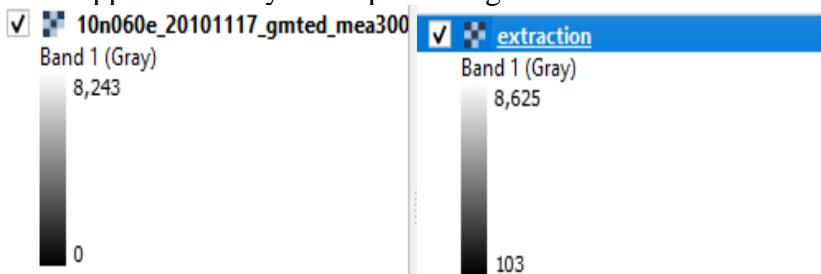
- To crop the raster layer only for the region under study, Go to Raster -> Extraction -> Clip Raster by Extent.



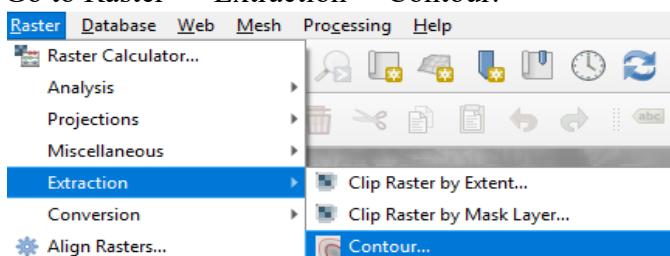
- Select the Raster layer as Input Layer, then Select the Clipping area by selecting the option Use Current Map Canvas Extent to select the visible part of the map.
- Select the location and file name for storing the clipped raster layer.



- Click on Run.
- Deselect the original layer and keep the clipped one.
- The Clipped raster layer is representing altitude from 103 Meters.



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

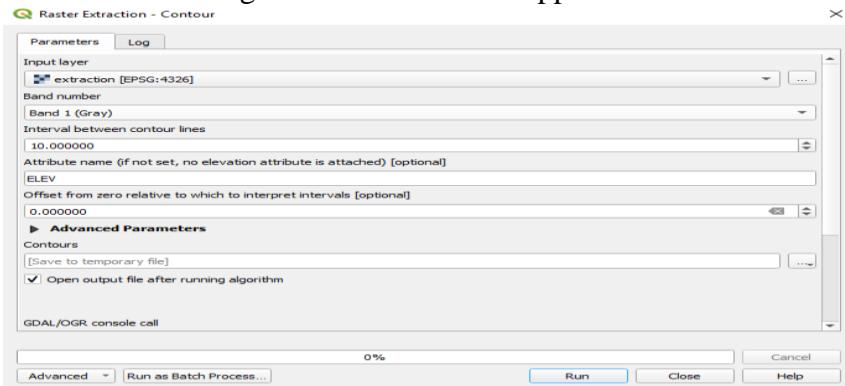


KET'S V. G. Vaze College (Autonomous), Mulund

Roll No :-A064

Name :- Nikesh Punaji Sabale

15. The Contour configuration window will appear.



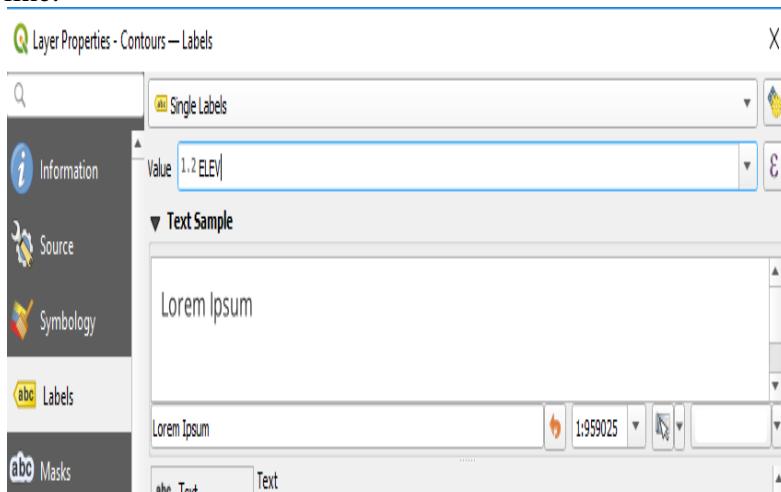
16. Select the input raster layer name. Set contour interval 10.00 meters, select the output file name & location and check the option to add output file to project after processing.

17. Press “RUN”.

18. The contour layer will appear like this.



19. Label the layer using “ELEV” field and set appropriate symbols for line.



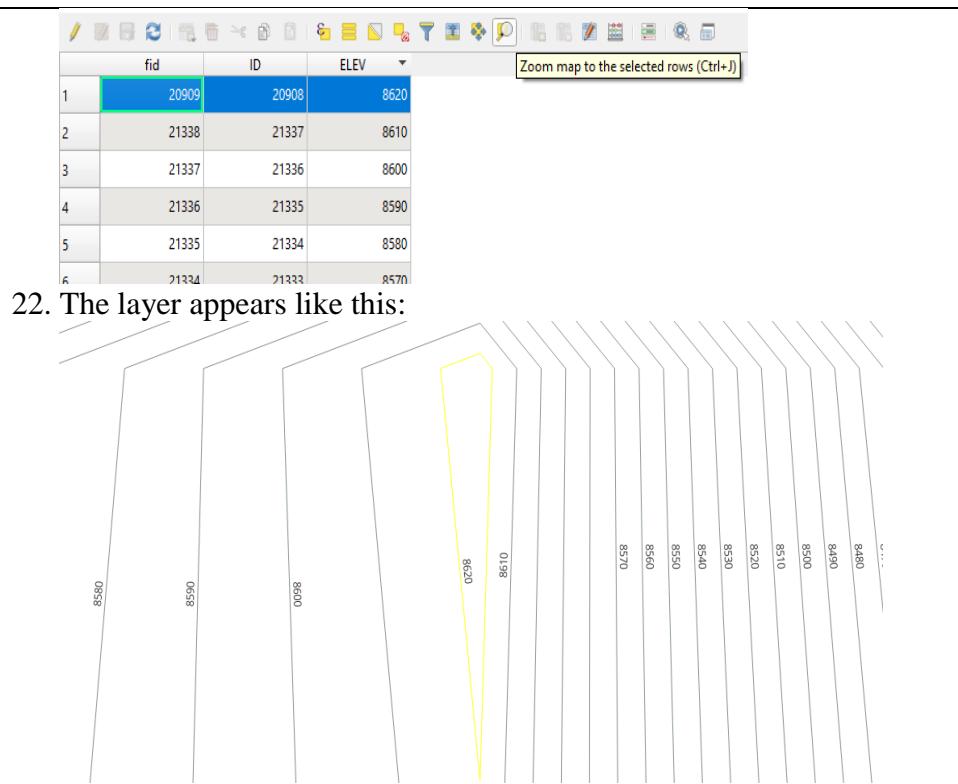
20. In the Layer panel right click on Contour Raster Layer and select “Open Attribute table”.

21. Arrange the table in descending order based on the value of “ELEV” column.

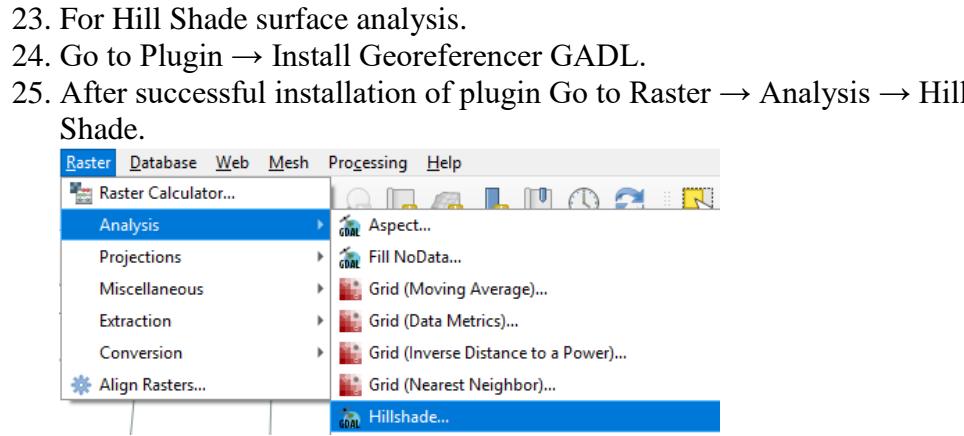
KET'S V. G. Vaze College (Autonomous), Mulund

Roll No :-A064

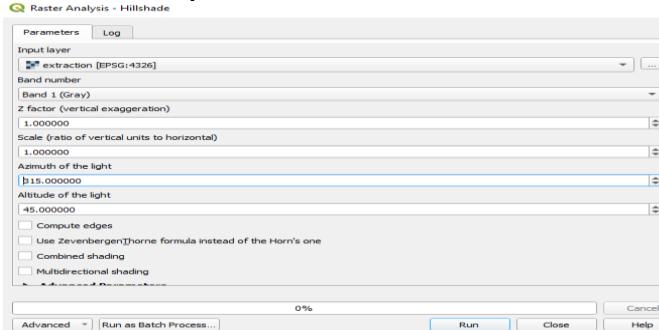
Name :- Nikesh Punaji Sabale



22. The layer appears like this:



23. For Hill Shade surface analysis.
24. Go to Plugin → Install Georeferencer GADL.
25. After successful installation of plugin Go to Raster → Analysis → Hill Shade.

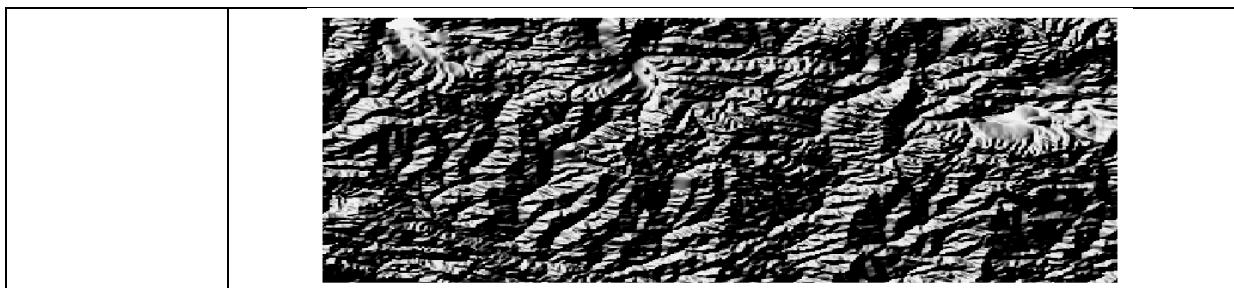


26. Select the input raster layer, select file name and location for storing Hill Shade output file.

KET'S V. G. Vaze College (Autonomous), Mulund

Roll No :-A064

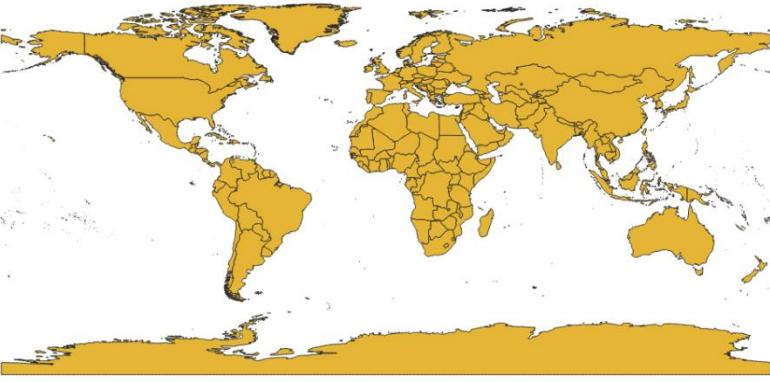
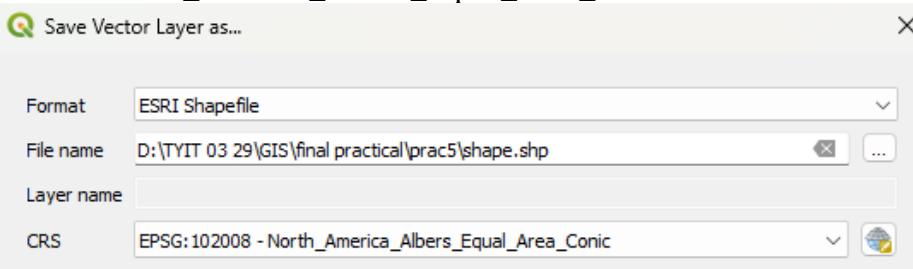
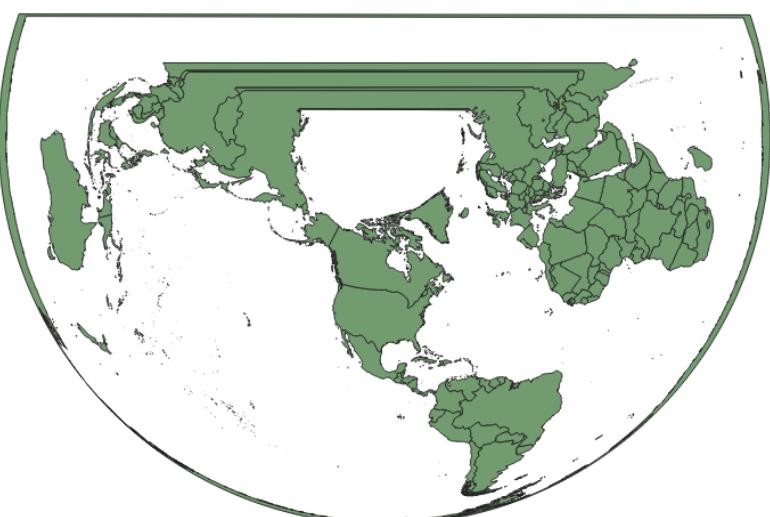
Name :- Nikesh Punaji Sabale



KET'S V. G. Vaze College (Autonomous), Mulund

Roll No :-A064

Name :- Nikesh Punaji Sabale

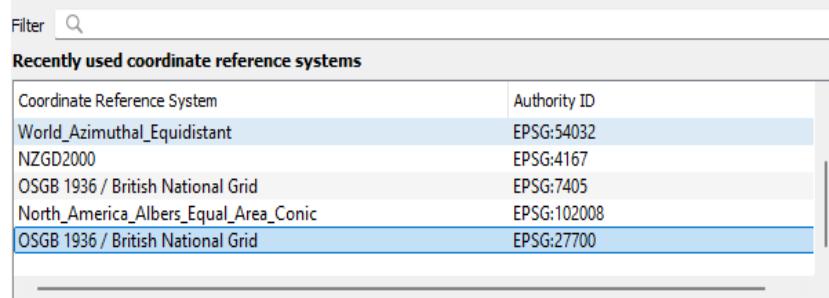
Practical 5		Date:-21/09/2024
Aim:	Working with Projections and WMS Data.	
Procedure:	<ol style="list-style-type: none">1. Start new project.2. Go to Layer -> Add Layer -> Add Vector Layer.3. Select D:\TYIT0329\GIS\GIS\Practical_0520240714T151340Z001\Practical_05\A\ne_10m_admin_0_countries\ne_10m_admin_0_countries.shp file. 4. Go to Layer -> Save as.5. Select format as ESRI Shape File6. Select folder location and file name7. Set CRS North_America_Albers_Equal_Area_Conic EPSG: 102008. 8. Press "OK".9. Deselect the original Image and keep the projected layer visible. 10. Select Layer → Add Layer → Add Raster Layer.	

KET'S V. G. Vaze College (Autonomous), Mulund

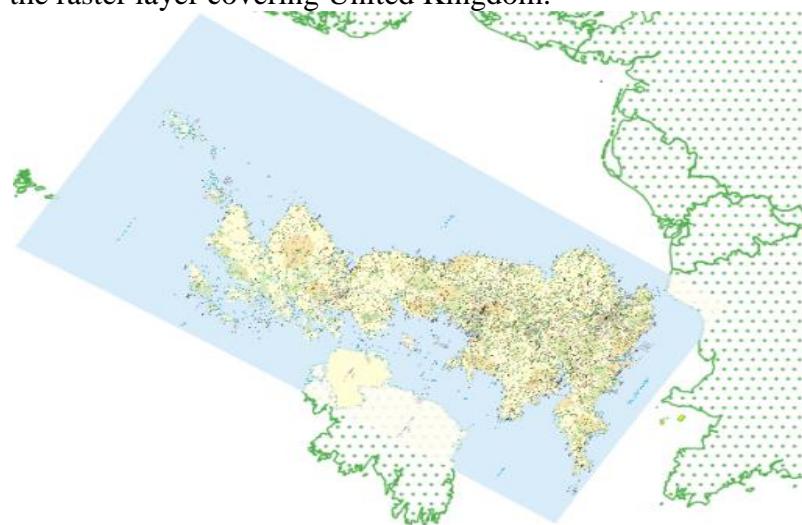
Roll No :-A064

Name :- Nikesh Punaji Sabale

11. Select MiniScale_(standard)_R17.tif from Location.
“GIS_Workshop\Practicals\Practical_05\DATA\minisc_gb\minisc_gb\data\RGB_TIF_compressed\MiniScale_(standard)_R17.tif” file.
12. The Layer appears on a different location than the location where Great Britain is shown on Map.
13. Open Layer Properties → CRS → Select British National Grid EPSG 27700.



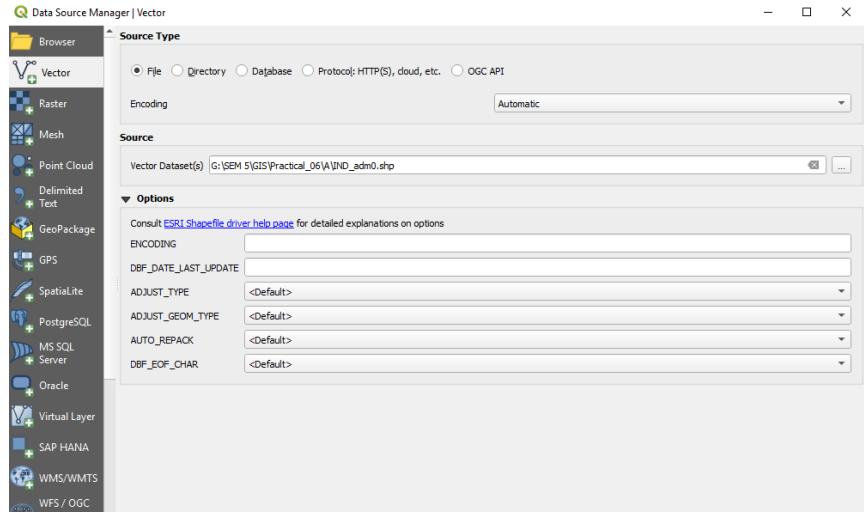
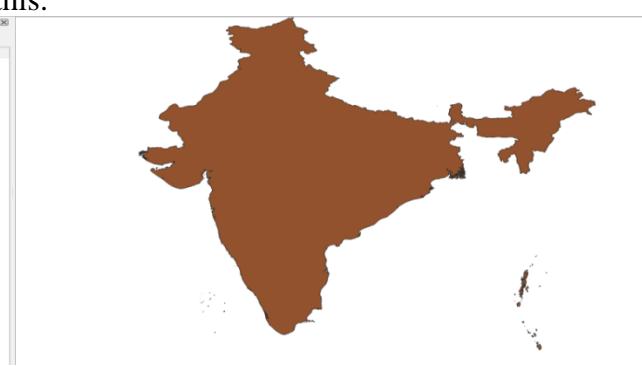
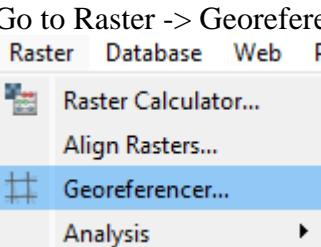
14. Processing may take some time.
15. Locate United Kingdom on Layer; the vector layer exactly coincides by the raster layer covering United Kingdom.



KET'S V. G. Vaze College (Autonomous), Mulund

Roll No :-A064

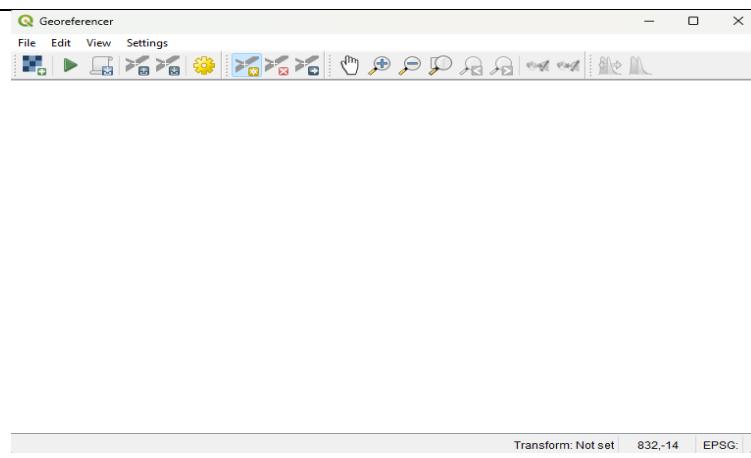
Name :- Nikesh Punaji Sabale

Practical 6		Date:-19/07/2024
Aim:	Georeferencing Topo Sheets and Scanned Maps Georeferencing.	
Procedure:	<ol style="list-style-type: none">1. Layers -> Add Layer -> Add Vector Layer.2. Select GIS\GIS PRACTICALS\Practical_06\A\IND_adm0.shp file.  <ol style="list-style-type: none">3. It will look like this:4. Go to Raster -> Georeferencer.5. A new Georeferencer window will open.	

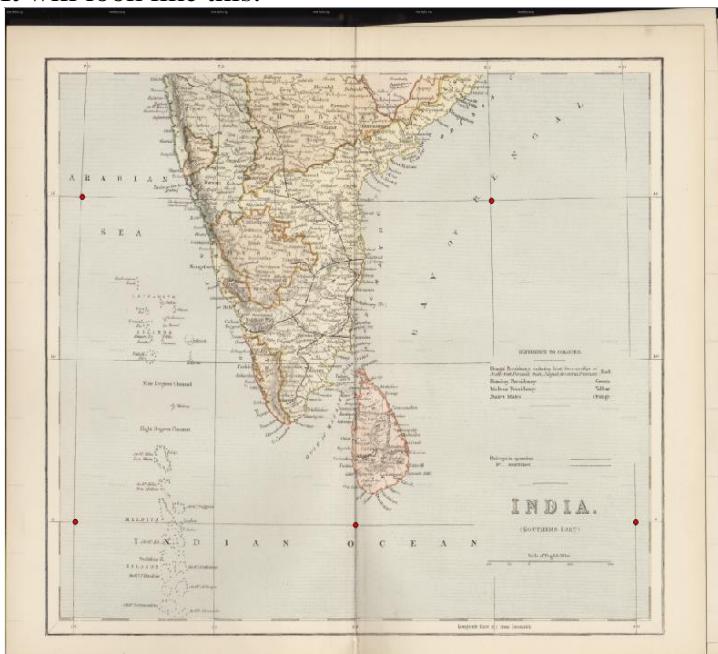
KET'S V. G. Vaze College (Autonomous), Mulund

Roll No :-A064

Name :- Nikesh Punaji Sabale



6. File → Open Raster.
7. Select file “1870_southern-india_3975_3071_600.jpg” from project data folder.
8. Add points (70:15), (70:5), (80:5), (90:5), (85:15) on the raster.
9. It will look like this:

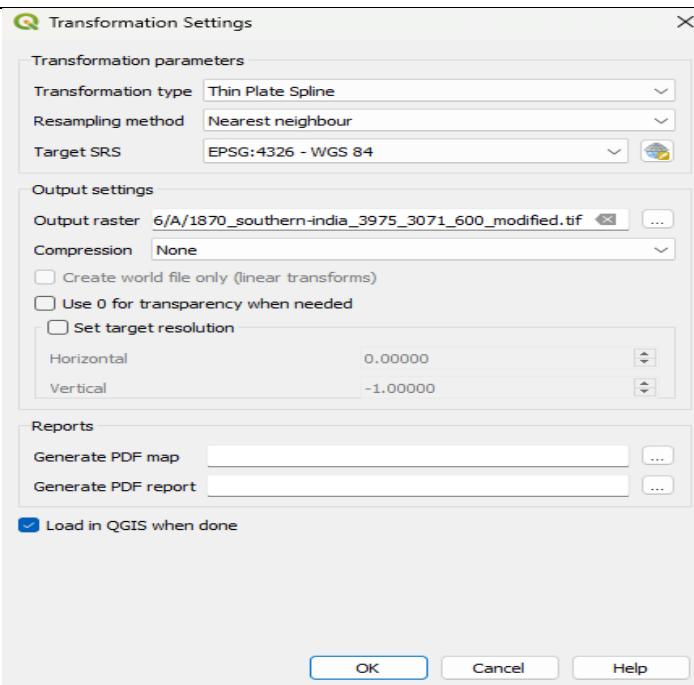


10. Then Go to Settings → Transformation Settings.
11. In the Transformation Settings:
 - Select Transformation type → Thin Plate Spline.
 - Re-sampling Method → Nearest Neighbour.
 - Target TRS → Everest 1830 datum: EPSG 4044.
 - Select Output Raster Name and Location.
 - Check the Load in QGIS When Done Option.
 - Press “OK”.

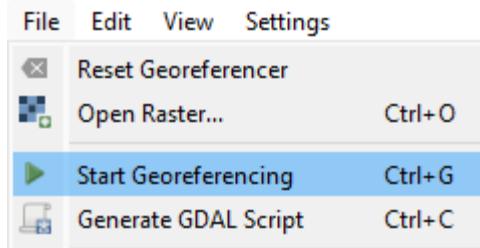
KET'S V. G. Vaze College (Autonomous), Mulund

Roll No :-A064

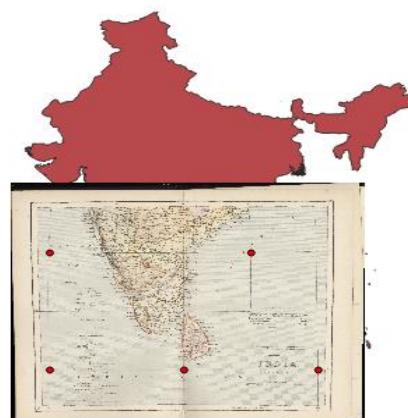
Name :- Nikesh Punaji Sabale



12. Then Go to File → Click Start Georeferencing.



13. The canvas area will now have the scanned map of Mumbai referenced with control points.

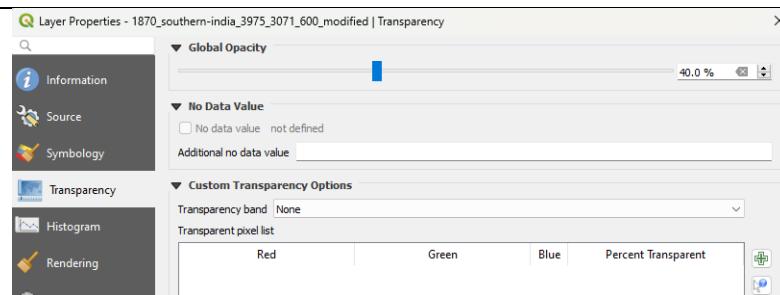


14. Select the newly added layer in Layer Panel Right click and go to property.

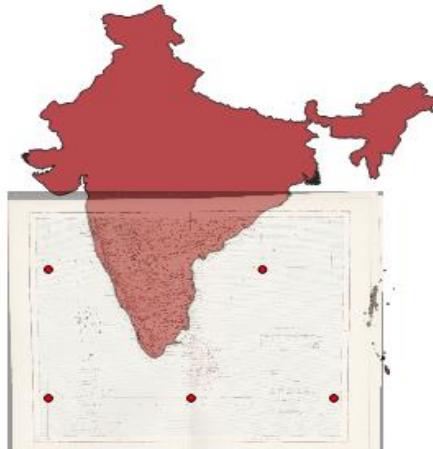
KET'S V. G. Vaze College (Autonomous), Mulund

Roll No :-A064

Name :- Nikesh Punaji Sabale



15. Final output will be like this:



b) Georeferencing Aerial Imagery

1. Install plug-in OpenStreetMap.
2. Go to Web Menu → OpenLayerPlugin → OpenStreetMap→ OpenStreetMap



3. Go to Project → Properties → Set CRS to EPSG 3857.

Coordinate Reference System	Authority ID
WGS 84 / Pseudo-Mercator	EPSG:3857
World_Azimuthal_Equidistant	EPSG:54032
NZGD2000	EPSG:4167

4. Go to View → Panels → select OSM Place search

KET'S V. G. Vaze College (Autonomous), Mulund

Roll No :-A064

Name :- Nikesh Punaji Sabale

The screenshot shows the QGIS application window. The menu bar is visible at the top, with 'View' selected. A context menu is open over a layer named 'Street'. The 'Panels' option in the 'View' menu is highlighted. On the right side of the interface, there is a vertical panel titled 'Advanced Digitizing' containing various tools like 'Browser', 'GPS Information', and 'Log Messages'. A sub-menu 'OSM place search...' is also open under the 'Advanced Digitizing' panel.

5. The Gateway of India, Mumbai is located at 18.92°N 72.83°E.
6. Search Gateway of India in OSM Search Panel.

OSM place search...

Name contains...

Limit to extent

Gateway of India, Apollo Bandar, A Ward, Zone 1, M
Gateway of India, 236, Pantbach Road, Rhiwbina Ga
Gateway of India 145, 7zwedenhurn Mariahoeve H

7. Zoom in to appropriate level.
8. The map will appear like this.

A map of Mumbai's coastline and surrounding areas. The Gateway of India monument is highlighted with a red dashed rectangle. Labels on the map include 'Mumbai City', 'A Ward', 'Apollo Bandar', and 'Gateway of India'. There are also labels in Marathi: 'गेटवे ऑफ इंडिया' and 'गेटवे ऑफ इंडिया'.

9. Go to Raster → Georeferencer.
10. A new Georeferencer window will open.
11. File → Open Raster.
12. Select file “Gateway_Imagery.tif” from project data folder.
13. Go to Edit → Add Point.
14. Select control points from map (Indicated in red color).
15. Add points in following places:

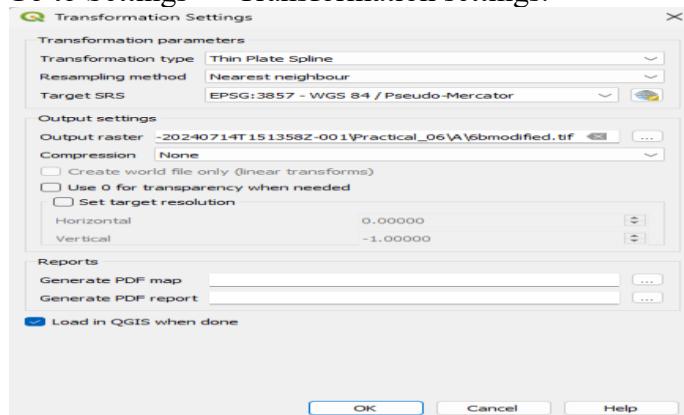
KET'S V. G. Vaze College (Autonomous), Mulund

Roll No :-A064

Name :- Nikesh Punaji Sabale



16. Go to Settings → Transformation settings.



17. Go to File → Start Georeferencing or Press the button in Georeferencing Window.

18. The progress indicator will appear.

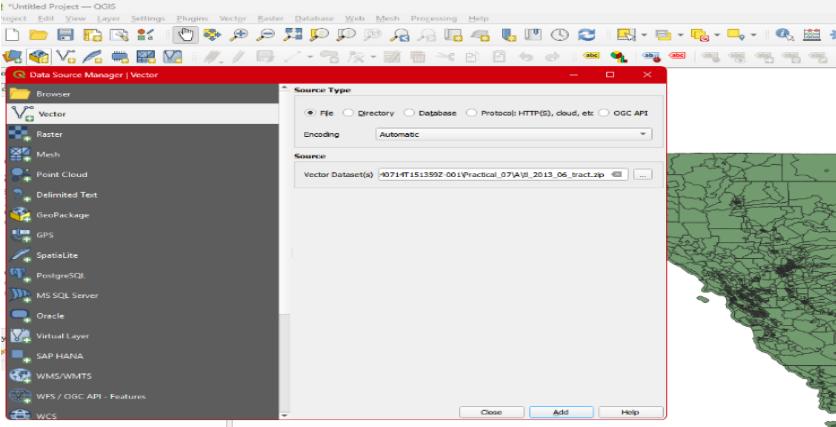
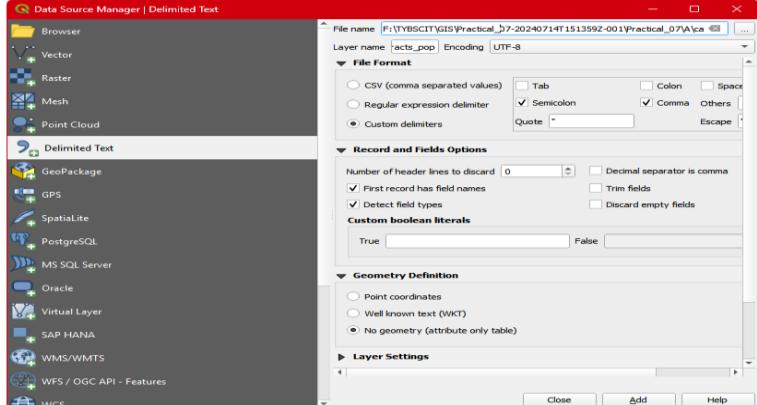
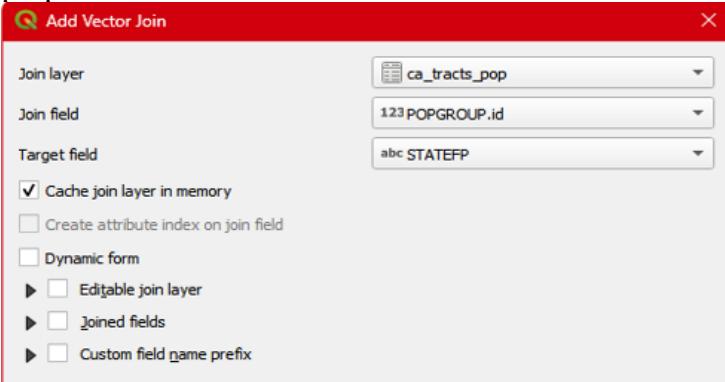
19. Observe that the aerial image of the Gateway of India is georeferenced on OSM in the map canvas.



KET'S V. G. Vaze College (Autonomous), Mulund

Roll No :-A064

Name :- Nikesh Punaji Sabale

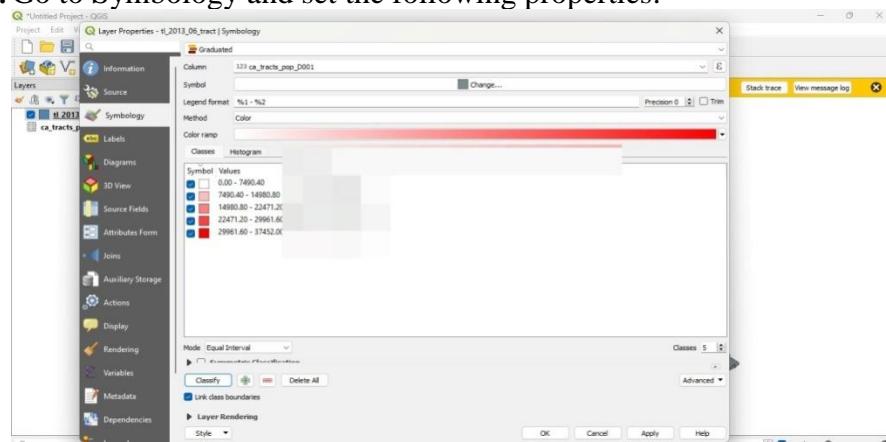
Practical 7		Date: 05/09/2024
Aim:	Managing Data Tables and Spatial data Sets	
a)	Table joins	
Procedure:	<p>1. Start a new project.</p> <p>2. Go to Layer -> Add Layer -> Add new Vector Layer.</p> <p>3. Select “D: \GisPracticals\Practical_07\A\Data\tl_2013_06_tract.zip”.</p>  <p>4. Again Go to Layer → Add Layer → Add Delimited Text Layer.</p> <p>5. Add D:\GISPracticals\Practical_07\A\Data\ca_tracts_pop.csv”.</p>  <p>6. In the layer panel, Right click on “tl_2013_06_tract”, layer and select Properties.</p> <p>7. Select the option in Properties, and click on button to add new table join.</p> <p>8. In the Add Vector Join window  set the following properties and click OK.</p> 	

KET'S V. G. Vaze College (Autonomous), Mulund

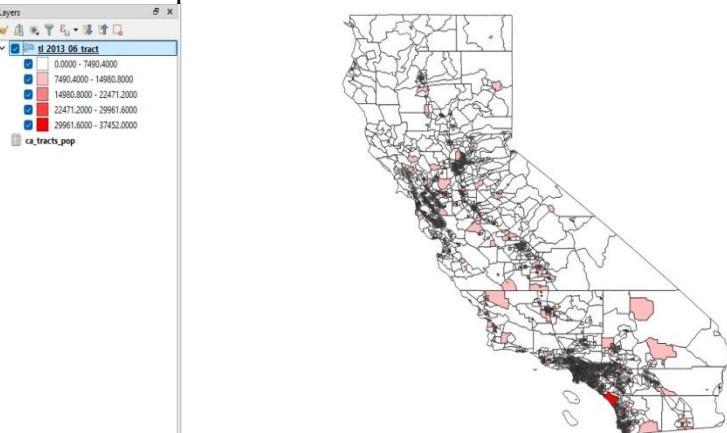
Roll No :-A064

Name :- Nikesh Punaji Sabale

9. After performing join, for more clear output, select “tl_2013_06_tact” from Layer Panel, right click and select properties.
10. Go to Symbology and set the following properties:



11. The Final Output Will be:



b) Spatial Joins

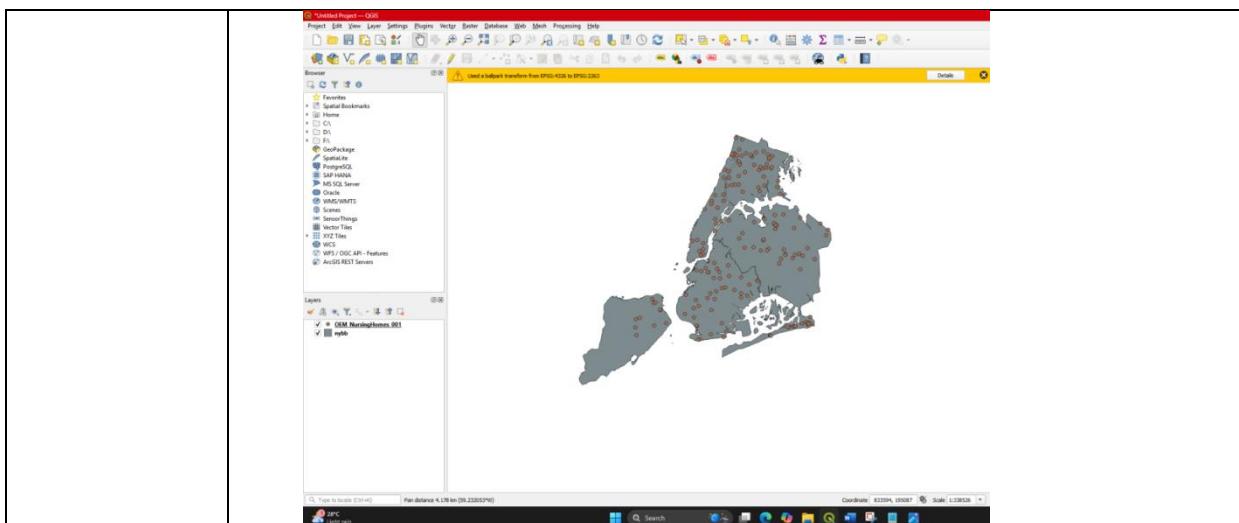
Procedure:

1. Go to Layer → Add Layer → Add Vector Layer.
2. Select
3. “E:\GISPractical\Practicals\Practical_07\B\Data\nybb_12c\nybb_13c_a\nybb.shp” and “E:\005CGISPractical\Practicals\Practical_07\B\Data\OEM_NursingHomes_001\OEM_NursingHomes_001.shp”, from data folder.

KET'S V. G. Vaze College (Autonomous), Mulund

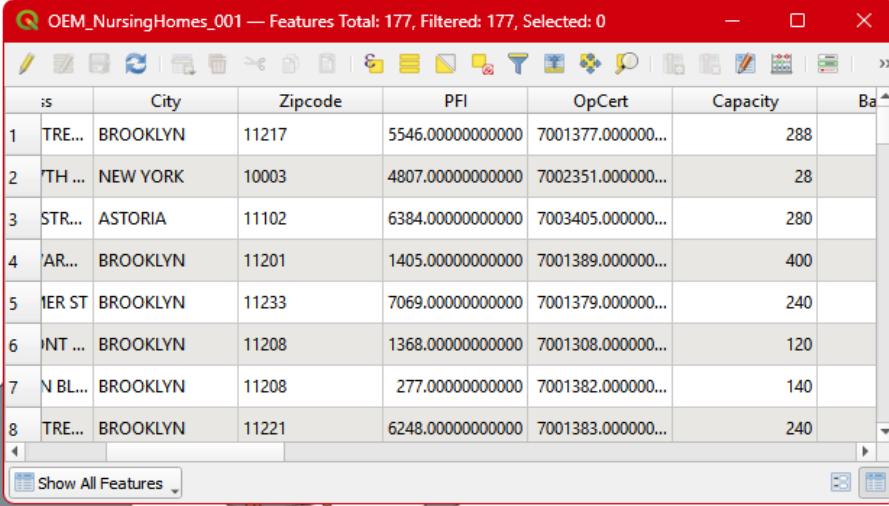
Roll No :-A064

Name :- Nikesh Punaji Sabale



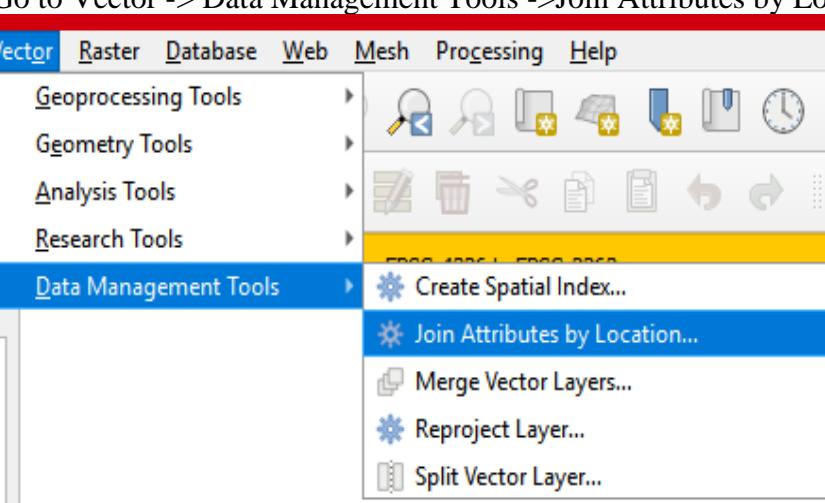
4. Go to attribute table and observe the data.

5. The Below Is the Table before performing Join



ID	City	Zipcode	PFI	OpCert	Capacity	Balance
1	TRENTON	BROOKLYN	11217	5546.000000000000	7001377.000000...	288
2	THOMAS	NEW YORK	10003	4807.000000000000	7002351.000000...	28
3	STRAND	ASTORIA	11102	6384.000000000000	7003405.000000...	280
4	MARSHALL	BROOKLYN	11201	1405.000000000000	7001389.000000...	400
5	WILLIAM ST	BROOKLYN	11233	7069.000000000000	7001379.000000...	240
6	INT'L	BROOKLYN	11208	1368.000000000000	7001308.000000...	120
7	UNIVERSITY	BROOKLYN	11208	277.000000000000	7001382.000000...	140
8	TRENTON	BROOKLYN	11221	6248.000000000000	7001383.000000...	240

6. Go to Vector -> Data Management Tools ->Join Attributes by Location.

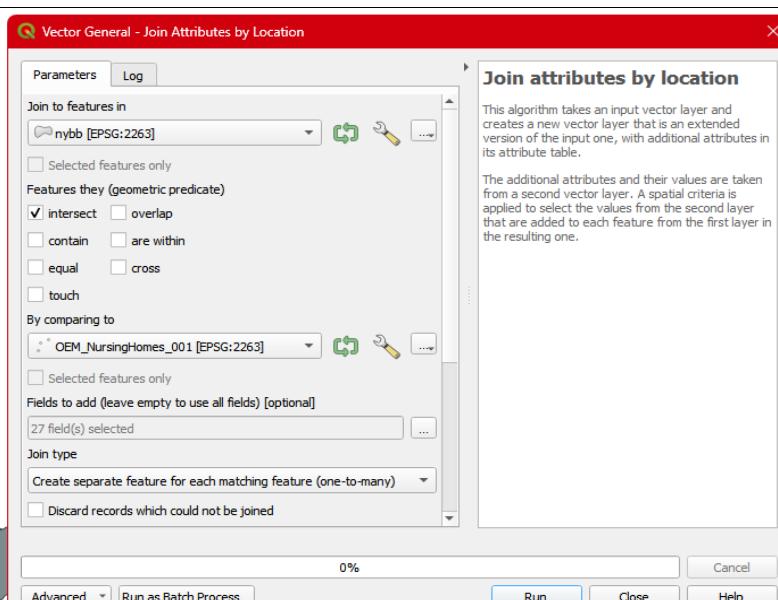


KET'S V. G. Vaze College (Autonomous), Mulund

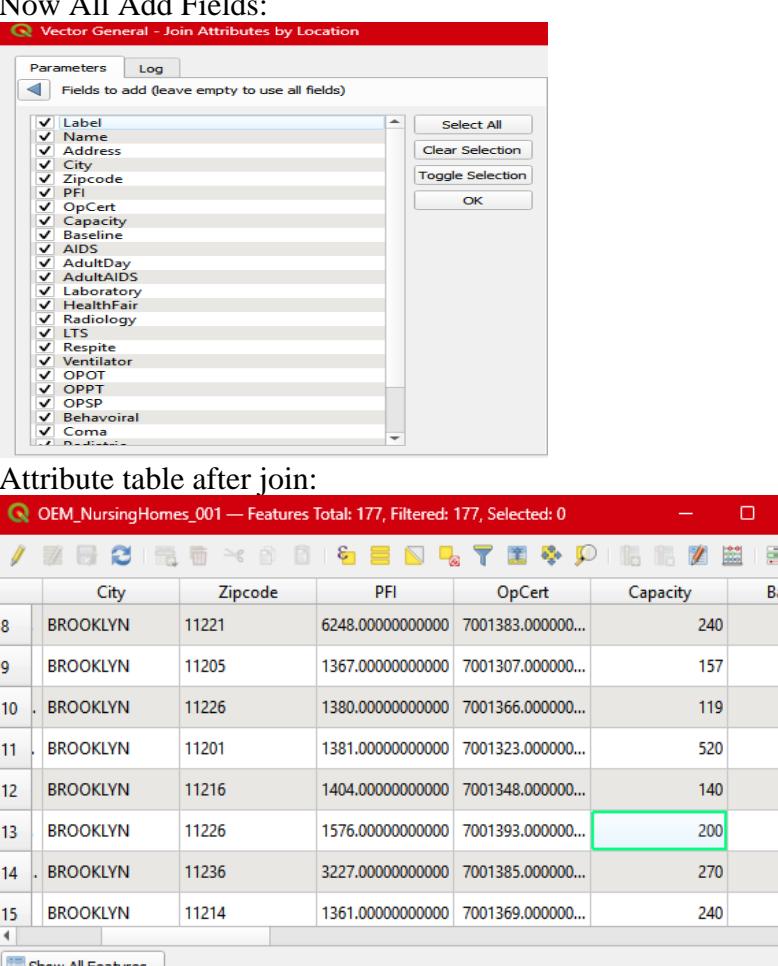
Roll No :-A064

Name :- Nikesh Punaji Sabale

7. Now All Add Fields:



8. Attribute table after join:



	City	Zipcode	PFI	OpCert	Capacity	Baseline
8	BROOKLYN	11221	6248.000000000000	7001383.000000...	240	
9	BROOKLYN	11205	1367.000000000000	7001307.000000...	157	
10	BROOKLYN	11226	1380.000000000000	7001366.000000...	119	
11	BROOKLYN	11201	1381.000000000000	7001323.000000...	520	
12	BROOKLYN	11216	1404.000000000000	7001348.000000...	140	
13	BROOKLYN	11226	1576.000000000000	7001393.000000...	200	
14	BROOKLYN	11236	3227.000000000000	7001385.000000...	270	
15	BROOKLYN	11214	1361.000000000000	7001369.000000...	240	

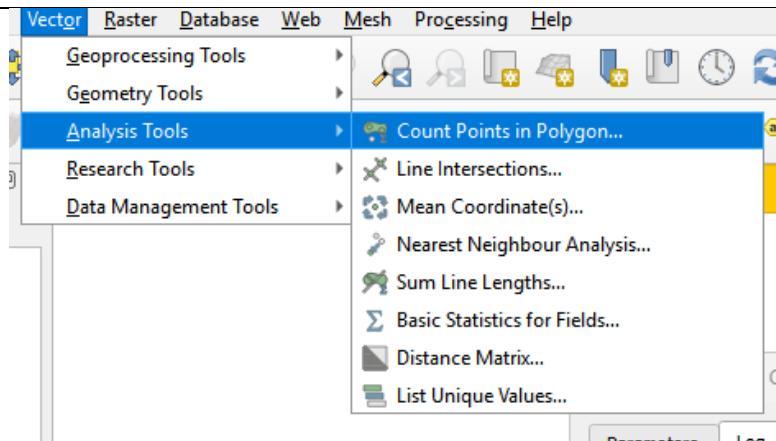
9. Use the Identify Feature  Button to select a region to view join data on map Layer.

KET'S V. G. Vaze College (Autonomous), Mulund

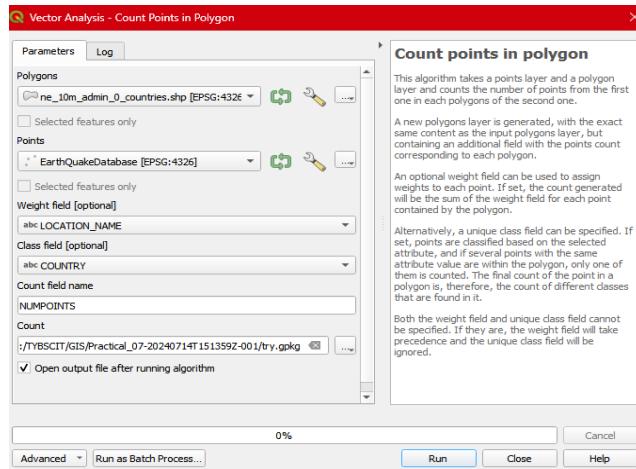
Roll No :-A064

Name :- Nikesh Punaji Sabale

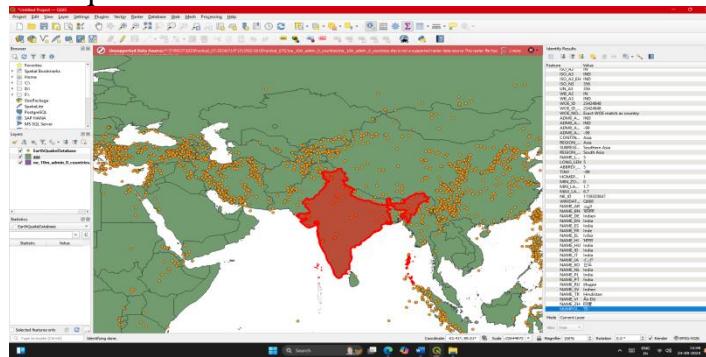
	<table border="1"> <thead> <tr> <th>Feature</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td>Brooklyn</td> <td>Brooklyn</td> </tr> <tr> <td>(Derived)</td> <td></td> </tr> <tr> <td>Borough</td> <td>Brooklyn</td> </tr> <tr> <td>BroCode</td> <td>3</td> </tr> <tr> <td>BoroughName</td> <td>Brooklyn</td> </tr> <tr> <td>Shape_LandArea</td> <td>74297.83940199999</td> </tr> <tr> <td>Shape_LandID</td> <td>10378437540000001907</td> </tr> </tbody> </table> <table border="1"> <thead> <tr> <th>Feature</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td>OEM_NursingHomes_001 [2]</td> <td></td> </tr> <tr> <td>Name</td> <td>FAIRVIEW NURSING CARE CENTER</td> </tr> <tr> <td>(Derived)</td> <td></td> </tr> <tr> <td>Label</td> <td>FAIRVIEW</td> </tr> <tr> <td>Name</td> <td>FAIRVIEW NURSING CARE CENTER</td> </tr> <tr> <td>Address</td> <td>65-70 GRAND CENTRAL PARKWAY</td> </tr> <tr> <td>City</td> <td>FOREST HILLS</td> </tr> <tr> <td>Zipcode</td> <td>11375</td> </tr> <tr> <td>PF</td> <td>1676.000000000000</td> </tr> <tr> <td>Cert</td> <td>1773.000000000000</td> </tr> <tr> <td>Capacity</td> <td>200</td> </tr> <tr> <td>Baseline</td> <td>1</td> </tr> <tr> <td>ABD</td> <td>0</td> </tr> <tr> <td>AdultDay</td> <td>0</td> </tr> <tr> <td>AdultAIDS</td> <td>0</td> </tr> <tr> <td>Alzheimer</td> <td>0</td> </tr> <tr> <td>HealthFair</td> <td>0</td> </tr> <tr> <td>Radiology</td> <td>1</td> </tr> <tr> <td>ICU</td> <td>1</td> </tr> <tr> <td>Respite</td> <td>0</td> </tr> <tr> <td>Ventilator</td> <td>0</td> </tr> <tr> <td>CPAP</td> <td>0</td> </tr> <tr> <td>OPPT</td> <td>0</td> </tr> <tr> <td>OPS</td> <td>0</td> </tr> <tr> <td>Respiratory</td> <td>0</td> </tr> <tr> <td>Coma</td> <td>0</td> </tr> <tr> <td>Pediatric</td> <td>0</td> </tr> <tr> <td>Brain</td> <td>0</td> </tr> <tr> <td>Ownership</td> <td>Proprietary Corporation</td> </tr> <tr> <td>Borough</td> <td>4</td> </tr> <tr> <td>Name</td> <td>FOREST VIEW CENTER FOR REHAB AND NURSING</td> </tr> </tbody> </table>	Feature	Value	Brooklyn	Brooklyn	(Derived)		Borough	Brooklyn	BroCode	3	BoroughName	Brooklyn	Shape_LandArea	74297.83940199999	Shape_LandID	10378437540000001907	Feature	Value	OEM_NursingHomes_001 [2]		Name	FAIRVIEW NURSING CARE CENTER	(Derived)		Label	FAIRVIEW	Name	FAIRVIEW NURSING CARE CENTER	Address	65-70 GRAND CENTRAL PARKWAY	City	FOREST HILLS	Zipcode	11375	PF	1676.000000000000	Cert	1773.000000000000	Capacity	200	Baseline	1	ABD	0	AdultDay	0	AdultAIDS	0	Alzheimer	0	HealthFair	0	Radiology	1	ICU	1	Respite	0	Ventilator	0	CPAP	0	OPPT	0	OPS	0	Respiratory	0	Coma	0	Pediatric	0	Brain	0	Ownership	Proprietary Corporation	Borough	4	Name	FOREST VIEW CENTER FOR REHAB AND NURSING
Feature	Value																																																																																
Brooklyn	Brooklyn																																																																																
(Derived)																																																																																	
Borough	Brooklyn																																																																																
BroCode	3																																																																																
BoroughName	Brooklyn																																																																																
Shape_LandArea	74297.83940199999																																																																																
Shape_LandID	10378437540000001907																																																																																
Feature	Value																																																																																
OEM_NursingHomes_001 [2]																																																																																	
Name	FAIRVIEW NURSING CARE CENTER																																																																																
(Derived)																																																																																	
Label	FAIRVIEW																																																																																
Name	FAIRVIEW NURSING CARE CENTER																																																																																
Address	65-70 GRAND CENTRAL PARKWAY																																																																																
City	FOREST HILLS																																																																																
Zipcode	11375																																																																																
PF	1676.000000000000																																																																																
Cert	1773.000000000000																																																																																
Capacity	200																																																																																
Baseline	1																																																																																
ABD	0																																																																																
AdultDay	0																																																																																
AdultAIDS	0																																																																																
Alzheimer	0																																																																																
HealthFair	0																																																																																
Radiology	1																																																																																
ICU	1																																																																																
Respite	0																																																																																
Ventilator	0																																																																																
CPAP	0																																																																																
OPPT	0																																																																																
OPS	0																																																																																
Respiratory	0																																																																																
Coma	0																																																																																
Pediatric	0																																																																																
Brain	0																																																																																
Ownership	Proprietary Corporation																																																																																
Borough	4																																																																																
Name	FOREST VIEW CENTER FOR REHAB AND NURSING																																																																																
c)	Points in Polygon Analysis.																																																																																
Procedure:	<ol style="list-style-type: none"> 1. Go to Layer -> Add Layer -> Add Delimited Text Layer. 2. Select “EarthQuakeDatabase.txt”. 3. Go to Layer → Add Layer → Add Delimited Text Layer. 4. Select “E:\GISPRacticals\Practicals\Practical_07\C\Data\ne_10m_admin_0_countries.zip”. <table border="1"> <thead> <tr> <th>I_D</th> <th>FLAG_TSUNAMI</th> <th>YEAR</th> <th>MON</th> </tr> </thead> <tbody> <tr> <td>123 Integer (32 bit)</td> <td>abc Text (string)</td> <td>123 Integer (32 bit)</td> <td>123 Integer (32 bit)</td> </tr> <tr> <td>1</td> <td></td> <td>-2150</td> <td></td> </tr> <tr> <td>3</td> <td></td> <td>-2000</td> <td></td> </tr> </tbody> </table>	I_D	FLAG_TSUNAMI	YEAR	MON	123 Integer (32 bit)	abc Text (string)	123 Integer (32 bit)	123 Integer (32 bit)	1		-2150		3		-2000																																																																	
I_D	FLAG_TSUNAMI	YEAR	MON																																																																														
123 Integer (32 bit)	abc Text (string)	123 Integer (32 bit)	123 Integer (32 bit)																																																																														
1		-2150																																																																															
3		-2000																																																																															
	<ol style="list-style-type: none"> 5. Now go to: 																																																																																



- ## 6. And Do this:



7. Use the select Feature  button to check country wise counting of Earthquakes.



8. Also a new column is added to attribute table “NumPoints” indicating number of earth quake points in each country.

KET'S V. G. Vaze College (Autonomous), Mulund

Roll No :-A064

Name :- Nikesh Punaji Sabale

d)	<p>Performing Spatial Queries.</p> <p>Procedure:</p> <ol style="list-style-type: none"> 1. Go to Layer → Add Layer → Add Vector Layer. 2. Load “E:\GISPracs\Practicals\Practical_07\Datasets\ne_10m_populated_places_simple\ne_10m_populated_places_simple.shp”. <ol style="list-style-type: none"> 3. And “I:\GISPracs\Practicals\Practical_07\Datasets\ne_10m_rivers_lake_centerlines\ne_10m_rivers_lake_centerlines.shp” from project data folder. <ol style="list-style-type: none"> 4. The added layers will look like: <ol style="list-style-type: none"> 5. Open project Properties → Set CRS “World_Azimuthal_Equidistant EPSG 54032”. 6. The map will be re-projected as:

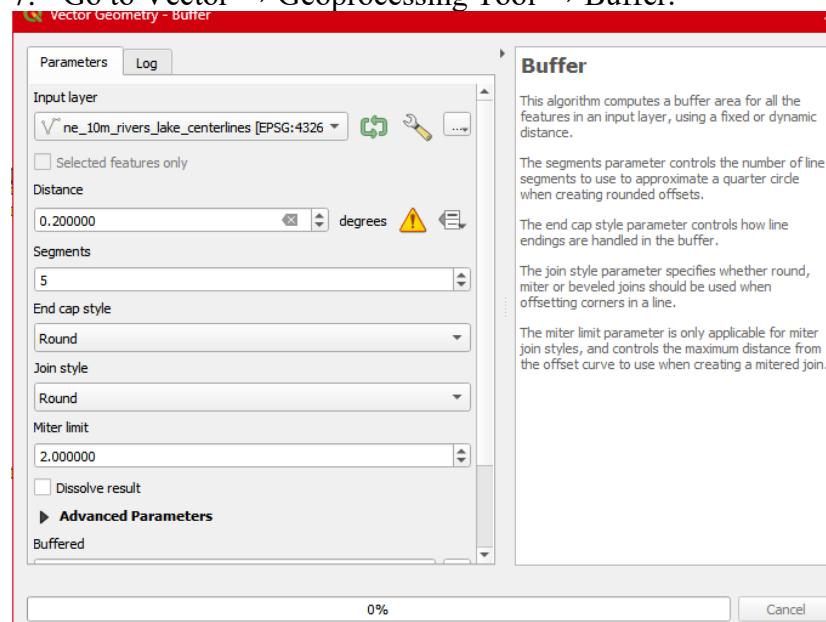
KET'S V. G. Vaze College (Autonomous), Mulund

Roll No :-A064

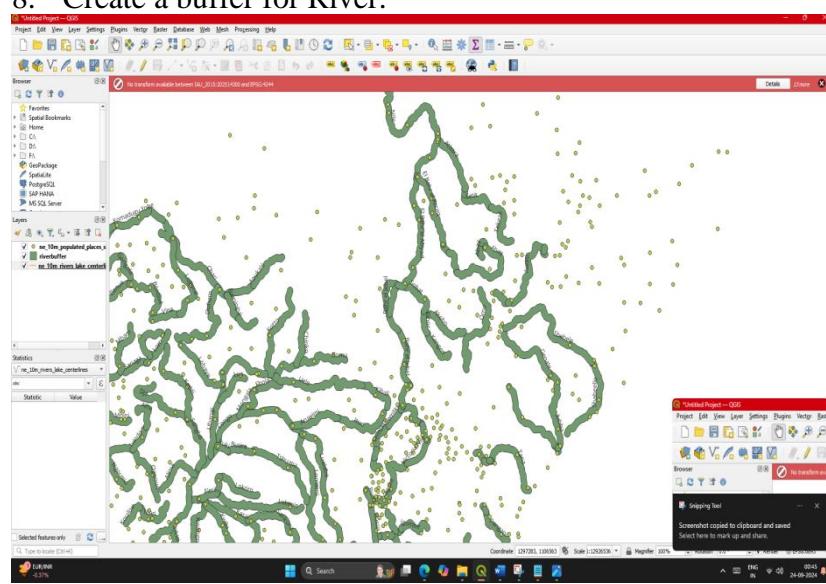
Name :- Nikesh Punaji Sabale



7. Go to Vector → Geoprocessing Tool → Buffer.



8. Create a buffer for River.

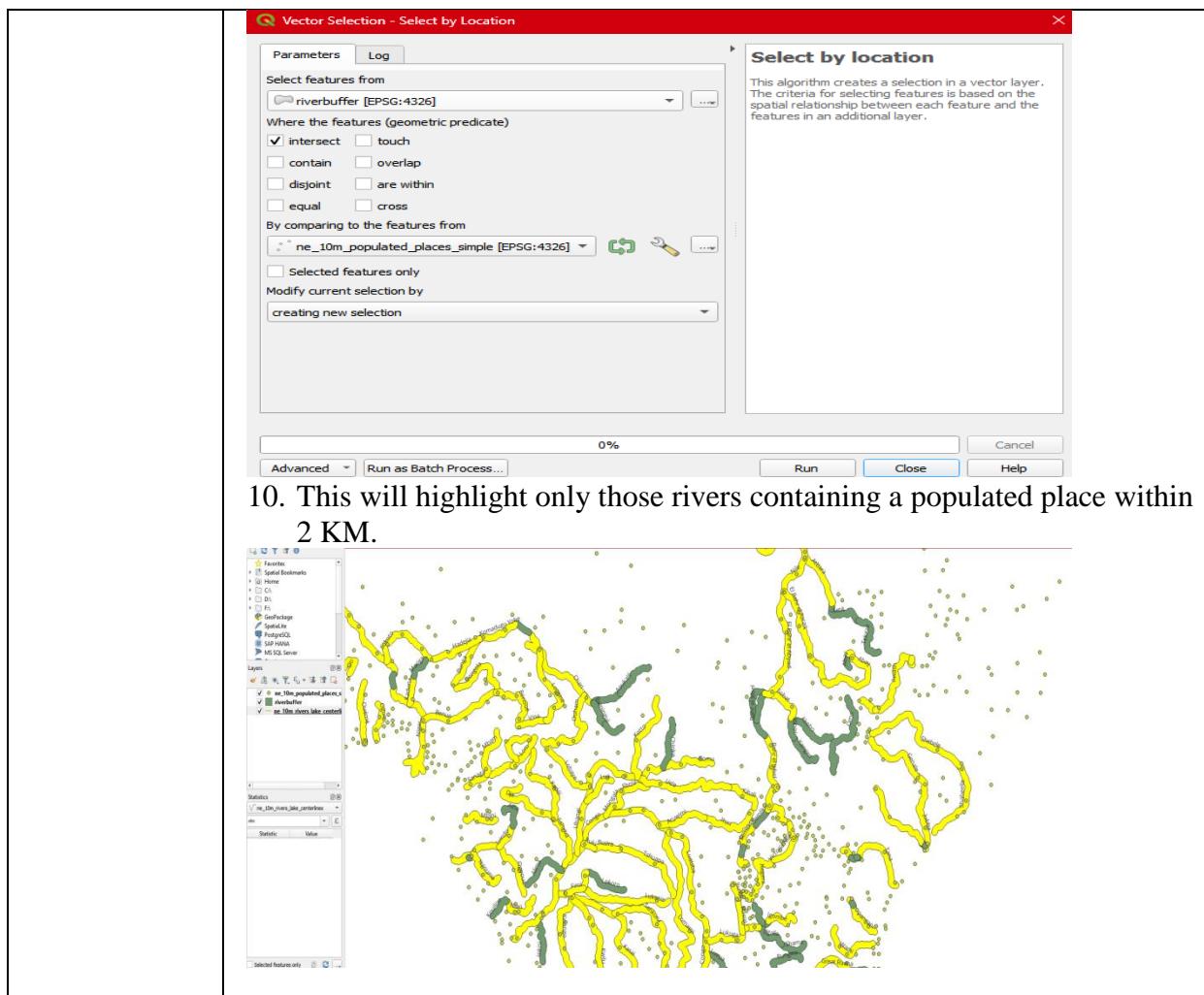


9. Go to Vector → Research Tool → Select By Location.

KET'S V. G. Vaze College (Autonomous), Mulund

Roll No :-A064

Name :- Nikesh Punaji Sabale



10. This will highlight only those rivers containing a populated place within 2 KM.

KET'S V. G. Vaze College (Autonomous), Mulund

Roll No :-A064

Name :- Nikesh Punaji Sabale

Practical 10

Date:-21/09/2024

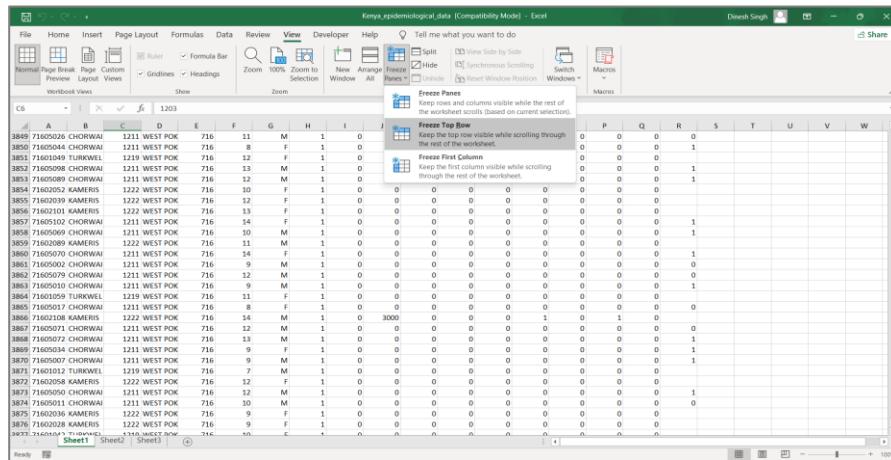
a)

Validating Map Data

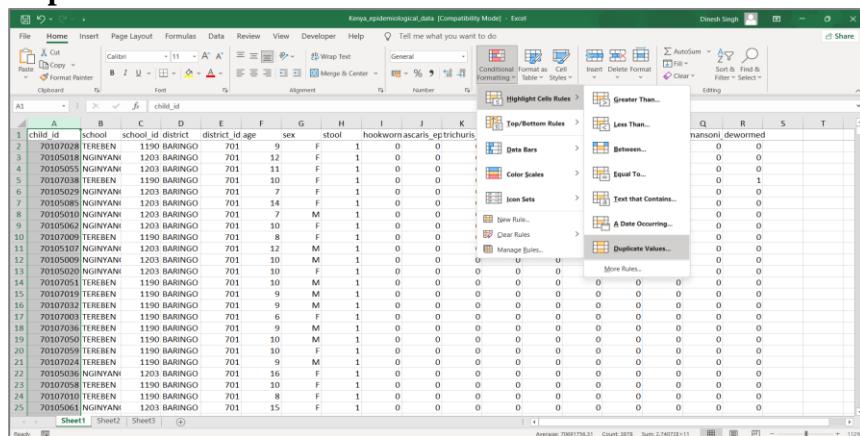
1. Performing Structural Data Checks:

A. Format of the Database:

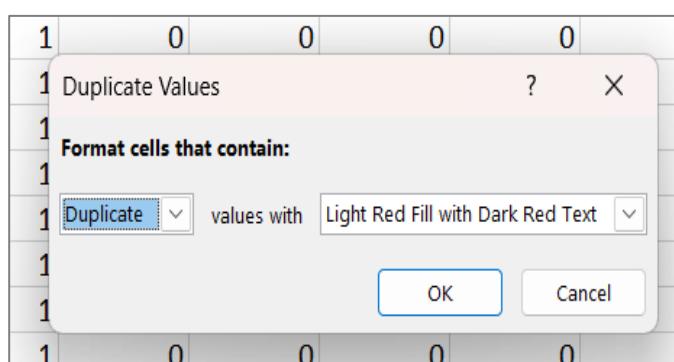
1. Open *Kenya_epidemiological_data.xls* in excel.
2. Go to *View Tab*, Click *Freeze Panes* and Choose *Freeze Top Row*



3. Select the entire “child_id” column(first column), Under Home Tab, click on **Conditional formatting >Highlight Cell Rules> Select Duplicate values**



4. Now select the first combo box and select **Duplicate** and select **Light red fill with Dark red text** in the next combo box as shown in figure



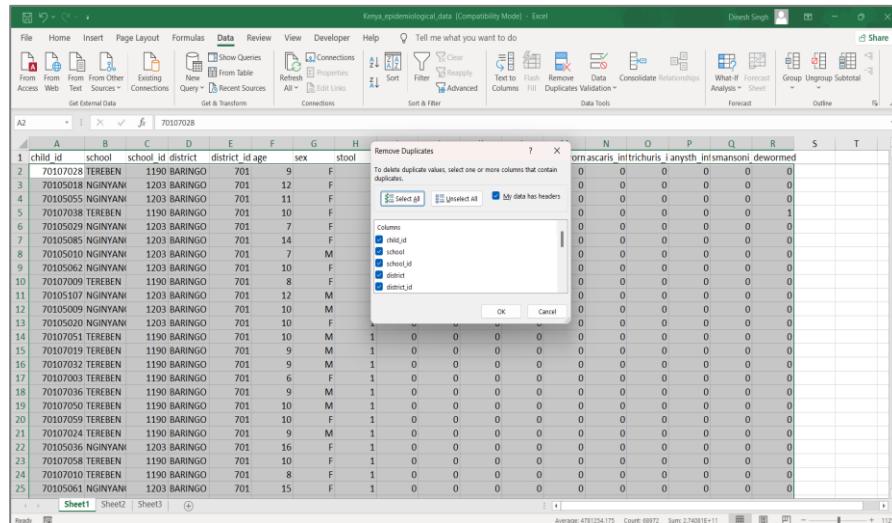
KET'S V. G. Vaze College (Autonomous), Mulund

Roll No :-A064

Name :- Nikesh Punaji Sabale

B. Removing Duplicates:

- Select all the columns of existing worksheet Now go to Data Tab and select Remove Duplicates.



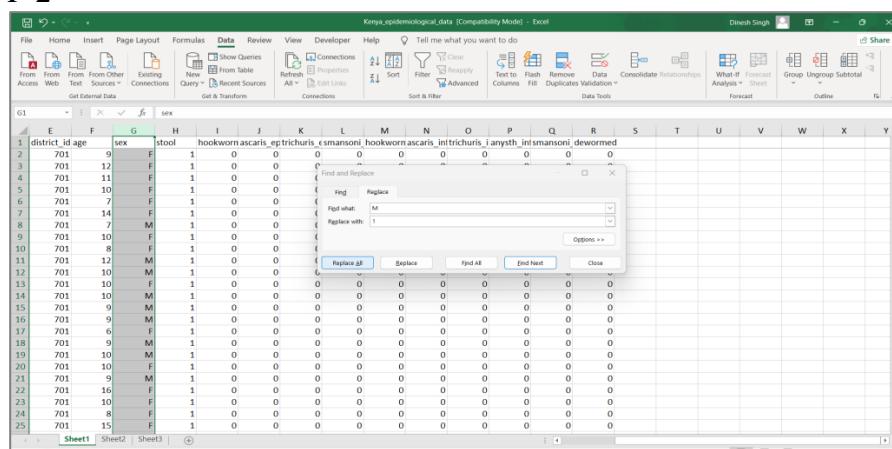
The screenshot shows a Microsoft Excel spreadsheet titled "Kenya.epidemiological_data". The "Data" tab is selected. A "Remove Duplicates" dialog box is open, covering the top portion of the sheet. The dialog box has "Select all" and "Unselect all" buttons, a "My data has headers" checkbox (which is checked), and "OK" and "Cancel" buttons. The main spreadsheet area shows data from rows 1 to 25 across columns A through R. The first few rows contain headers like "child_id", "school_id", "district_id", etc., followed by data entries. The "OK" button in the dialog box is highlighted.

C. Coding of the Variables:

- In the current worksheet, select the sex column.
- Now type Ctrl + F and use Replace Function and Replace as follows

M-1

F-2



The screenshot shows a Microsoft Excel spreadsheet with the "Find and Replace" dialog box open. The "Replace" tab is active. In the "Find what" field, the letter "M" is typed. In the "Replace with" field, the number "1" is typed. There are other buttons in the dialog box: "Replace All", "Replace", "Find All", "End Next", and "Close". The background spreadsheet has columns labeled E through Y and rows 1 through 25. The "sex" column (column E) contains values "M" and "F". The "Replace" button in the dialog box is highlighted.

KET'S V. G. Vaze College (Autonomous), Mulund

Roll No :-A064

Name :- Nikesh Punaji Sabale

district_id	age	sex	stool	hookworm	ascaris	eptrichuris	csmansoni	hookworm	ascaris	int <trichuris< th=""> <th>lanysth</th> <th>intmansoni</th> <th>de wormed</th> </trichuris<>	lanysth	intmansoni	de wormed
701	9	F		1	0	0	0	0	0	0	0	0	0
701	12	F		1	0	0	0	0	0	0	0	0	0
701	11	F		1	0	0	0	0	0	0	0	0	0
701	10	F		1	0	0	0	0	0	0	0	0	0
701	7	F		1	0	0	0	0	0	0	0	0	0
701	14	F		1	0	0	0	0	0	0	0	0	0
701	7	S		1	0	0	0	0	0	0	0	0	0
701	10	F		1	0	0	0	0	0	0	0	0	0
701	8	F		1	0	0	0	0	0	0	0	0	0
701	12	S		1	0	0	0	0	0	0	0	0	0
701	10	S		1	0	0	0	0	0	0	0	0	0
701	10	F		1	0	0	0	0	0	0	0	0	0
701	9	F		1	0	0	0	0	0	0	0	0	0
701	10	F		1	0	0	0	0	0	0	0	0	0
701	6	F		1	0	0	0	0	0	0	0	0	0
701	9	S		1	0	0	0	0	0	0	0	0	0
701	10	F		1	0	0	0	0	0	0	0	0	0
701	8	F		1	0	0	0	0	0	0	0	0	0
701	10	F		1	0	0	0	0	0	0	0	0	0
701	9	S		1	0	0	0	0	0	0	0	0	0
701	10	F		1	0	0	0	0	0	0	0	0	0
701	8	F		1	0	0	0	0	0	0	0	0	0
701	15	F		1	0	0	0	0	0	0	0	0	0

2. Verifying the plausibility of data:

A. Coding of variables:

- Select the age column in the existing worksheet.
- Now go to Insert tab and select Scatter.

You will set chart as shown below

B. Using a filter to detect outliers

- First go to the Home Tab > Sort and Filter > Filter.
- Click and apply the filter to all the columns of the worksheet.
- Now click on age filter and click on Number Filter > Greater Than option and type the value 20 in greater than field.

KET'S V. G. Vaze College (Autonomous), Mulund

Roll No :-A064

Name :- Nikesh Punaji Sabale

child_id	school	district	age	sex	stool	hookw.	ascaris	trichuri	smanso	hookw.	ascaris	trichuri	anysth.	smanso	deworm
2	70107028 TEREBEN		2	1	0	0	0	0	0	0	0	0	0	0	0
3	70105018 NGINYAN		2	1	0	0	0	0	0	0	0	0	0	0	0
4	70105055 NGINYAN		2	1	0	0	0	0	0	0	0	0	0	0	0
5	70107038 TEREBEN		2	1	0	0	0	0	0	0	0	0	0	0	1
6	70105061 NGINYAN		2	1	0	0	0	0	0	0	0	0	0	0	0
7	70105085 NGINYAN		2	1	0	0	0	0	0	0	0	0	0	0	0
8	70105010 NGINYAN		1	1	0	0	0	0	0	0	0	0	0	0	0
9	70105062 NGINYAN		1	1	0	0	0	0	0	0	0	0	0	0	0
10	70107009 TEREBEN		1	1	0	0	0	0	0	0	0	0	0	0	0
11	70105107 NGINYAN		1	1	0	0	0	0	0	0	0	0	0	0	0
12	70105009 NGINYAN		1	1	0	0	0	0	0	0	0	0	0	0	0
13	70105020 NGINYAN		1	1	0	0	0	0	0	0	0	0	0	0	0
14	70107051 TEREBEN		1	1	0	0	0	0	0	0	0	0	0	0	0
15	70107019 TEREBEN		1	1	0	0	0	0	0	0	0	0	0	0	0
16	70107032 TEREBEN		1	1	0	0	0	0	0	0	0	0	0	0	0
17	70107036 TEREBEN		1	1	0	0	0	0	0	0	0	0	0	0	0
18	70107036 TEREBEN		1	1	0	0	0	0	0	0	0	0	0	0	0
19	70107050 TEREBEN		1	1	0	0	0	0	0	0	0	0	0	0	0
20	70107059 TEREBEN		1	1	0	0	0	0	0	0	0	0	0	0	0
21	70107024 TEREBEN		1	1	0	0	0	0	0	0	0	0	0	0	0
22	70105036 NGINYAN		1	1	0	0	0	0	0	0	0	0	0	0	0
23	70107058 TEREBEN	1190 BARINGO	701	10	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
25	70105061 NGINYAN	1203 BARINGO	701	15	2	1	0	0	0	0	0	0	0	0	0

child_id	school	district	age	sex	stool	hookw.	ascaris	trichuri	smanso	hookw.	ascaris	trichuri	anysth.	smanso	deworm
2	70107028 TEREBEN	1190 BARINGO	701	10	1	0	0	0	0	0	0	0	0	0	0
3	70105018 NGINYAN	1203 BARINGO	701	10	1	0	0	0	0	0	0	0	0	0	0
4	70105055 NGINYAN	1203 BARINGO	701	10	1	0	0	0	0	0	0	0	0	0	0
5	70107038 TEREBEN	1190 BARINGO	701	10	1	0	0	0	0	0	0	0	0	0	0
6	70105029 NGINYAN	1203 BARINGO	701	10	1	0	0	0	0	0	0	0	0	0	0
7	70105085 NGINYAN	1203 BARINGO	701	10	1	0	0	0	0	0	0	0	0	0	0
8	70105010 NGINYAN	1203 BARINGO	701	10	1	0	0	0	0	0	0	0	0	0	0
9	70105062 NGINYAN	1203 BARINGO	701	10	1	0	0	0	0	0	0	0	0	0	0
10	70107009 TEREBEN	1190 BARINGO	701	10	1	0	0	0	0	0	0	0	0	0	0
11	70105107 NGINYAN	1203 BARINGO	701	10	1	0	0	0	0	0	0	0	0	0	0
12	70105009 NGINYAN	1203 BARINGO	701	10	1	0	0	0	0	0	0	0	0	0	0
13	70105020 NGINYAN	1203 BARINGO	701	10	2	1	0	0	0	0	0	0	0	0	0
14	70107051 TEREBEN	1190 BARINGO	701	10	1	0	0	0	0	0	0	0	0	0	0
15	70107019 TEREBEN	1190 BARINGO	701	9	1	0	0	0	0	0	0	0	0	0	0
16	70107032 TEREBEN	1190 BARINGO	701	9	1	0	0	0	0	0	0	0	0	0	0
17	70107003 TEREBEN	1190 BARINGO	701	9	2	1	0	0	0	0	0	0	0	0	0
18	70107036 TEREBEN	1190 BARINGO	701	9	1	0	0	0	0	0	0	0	0	0	0
19	70107050 TEREBEN	1190 BARINGO	701	10	1	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
21	70107024 TEREBEN	1190 BARINGO	701	9	1	0	0	0	0	0	0	0	0	0	0
22	70105036 NGINYAN	1203 BARINGO	701	16	2	1	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
24	70107010 TEREBEN	1190 BARINGO	701	8	2	1	0	0	0	0	0	0	0	0	0
25	70105061 NGINYAN	1203 BARINGO	701	15	2	1	0	0	0	0	0	0	0	0	0

child_id	school	district	age	sex	stool	hookw.	ascaris	trichuri	smanso	hookw.	ascaris	trichuri	anysth.	smanso	deworm
141	70105079 NGINYAN	1203 BARINGO	701	82	2	1	0	0	0	0	0	0	0	0	0
202	7023004 SONOKWI	1124 BOMET	702	88	2	1	0	0	0	0	0	0	0	0	0
3878															
3880															
3881															
3882															
3883															
3884															
3885															
3886															
3887															
3888															
3889															
3890															
3891															
3892															
3893															
3894															

3. Logical Data Checks:

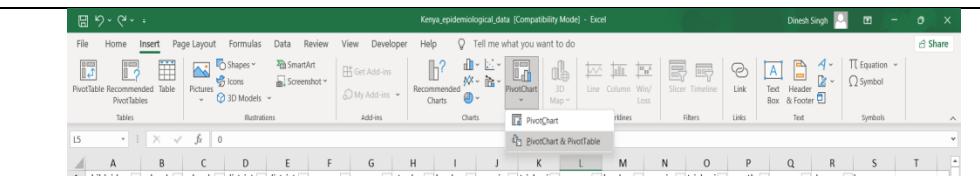
A. Cross Tabulations

- Open the existing worksheet. Now go to Insert Tab and select Pivot table function.

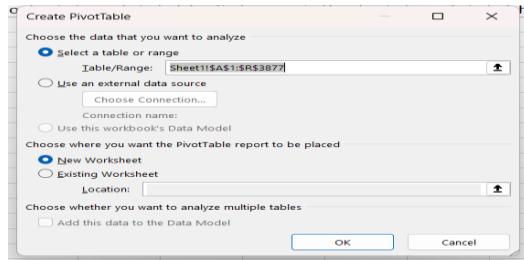
KET'S V. G. Vaze College (Autonomous), Mulund

Roll No :-A064

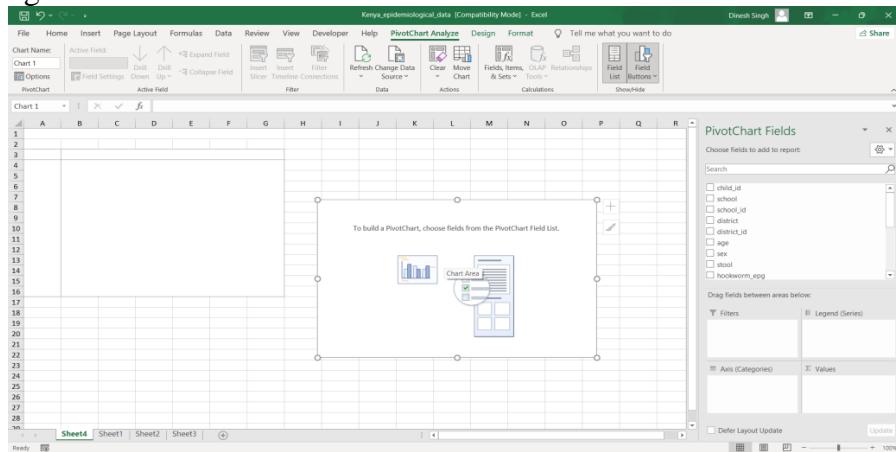
Name :- Nikesh Punaji Sabale



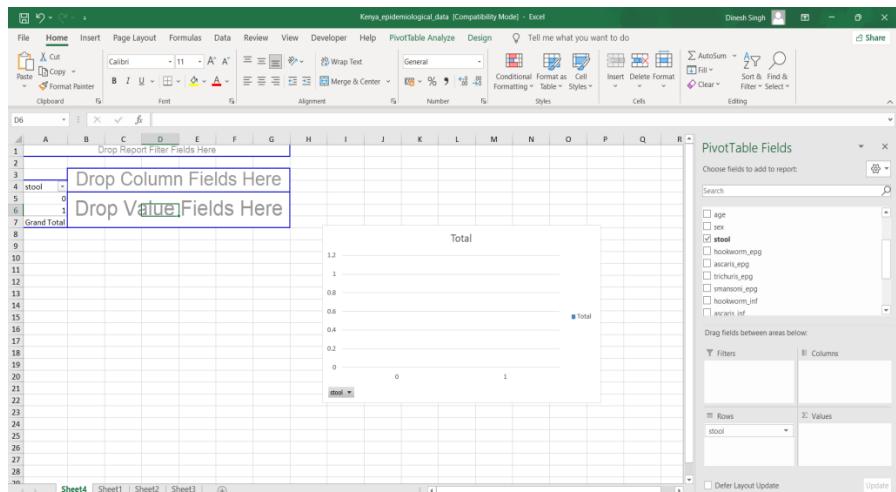
ii. Select New Worksheet and click OK



- An empty table is inserted in a new sheet and a window will open on the right hand side named PIVOT TABLE FIELD LIST.



iii. From the PivotTable Field List, drag the “stool” item and drop it into the “Row Label” field as show above.

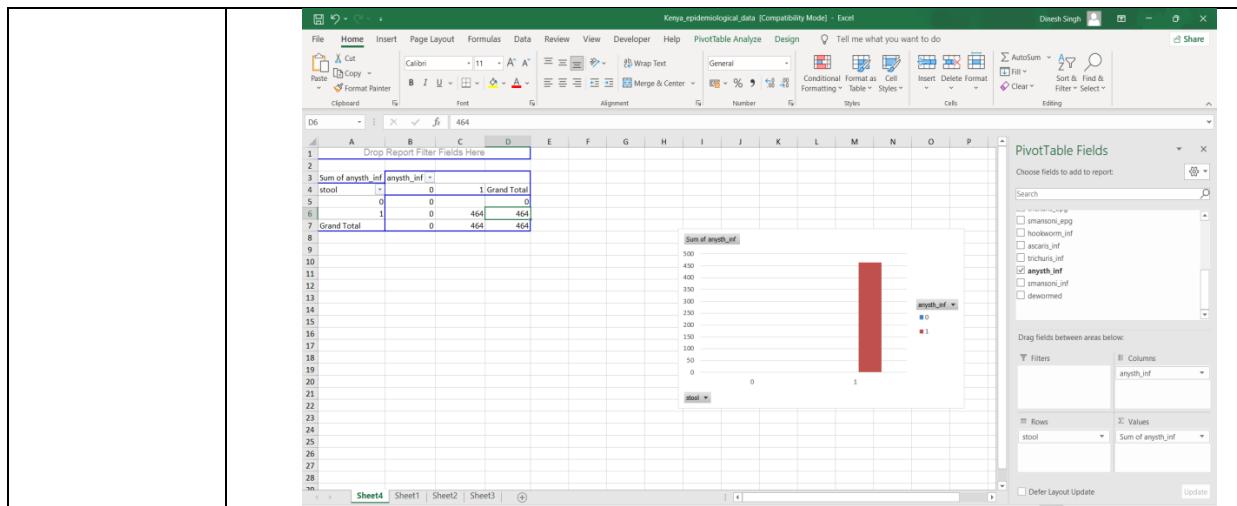


iv. Similarly, Click on *anysth_inf* and draw it into the “Column labels” and “Σ Values” field.

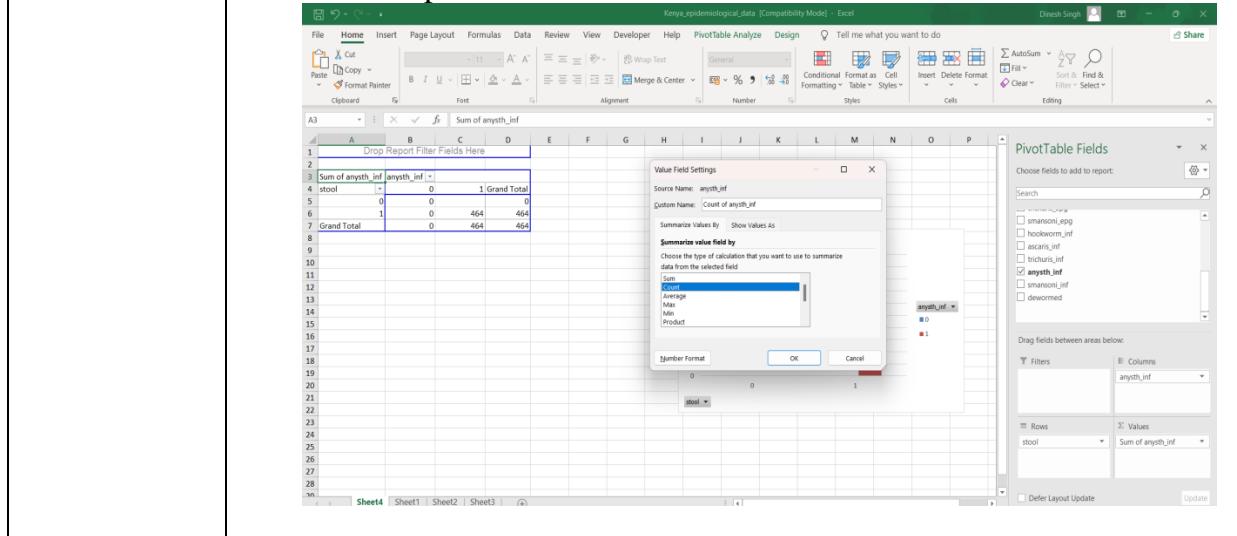
KET'S V. G. Vaze College (Autonomous), Mulund

Roll No :-A064

Name :- Nikesh Punaji Sabale



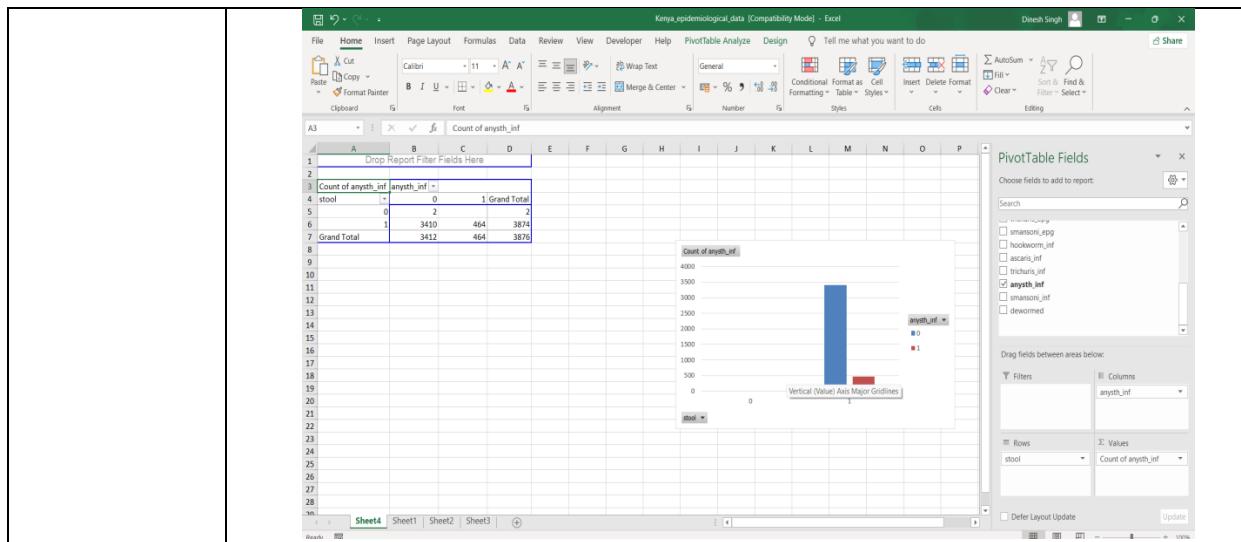
- To include the count of observations in the table you might need to change the value field settings to count.
- v. Click on the combo box Sum of stools and Click on Value Field Settings.
- vi. Change the value in Summarize value filed by to Count and click OK. Table is updated with count values as shown below



KET'S V. G. Vaze College (Autonomous), Mulund

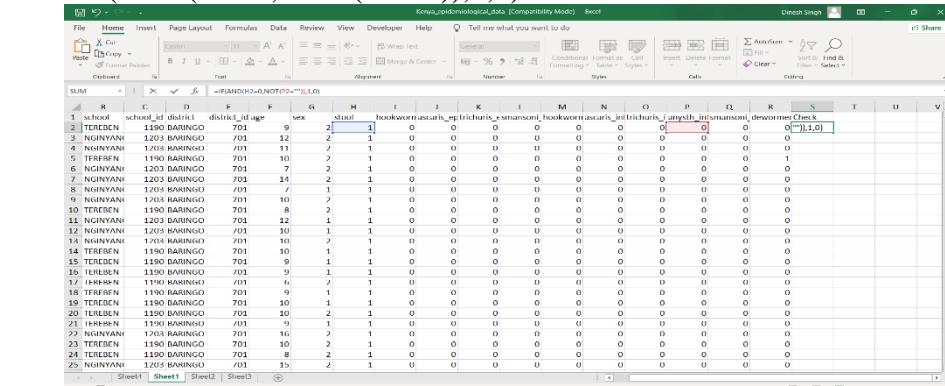
Roll No :-A064

Name :- Nikesh Punaji Sabale

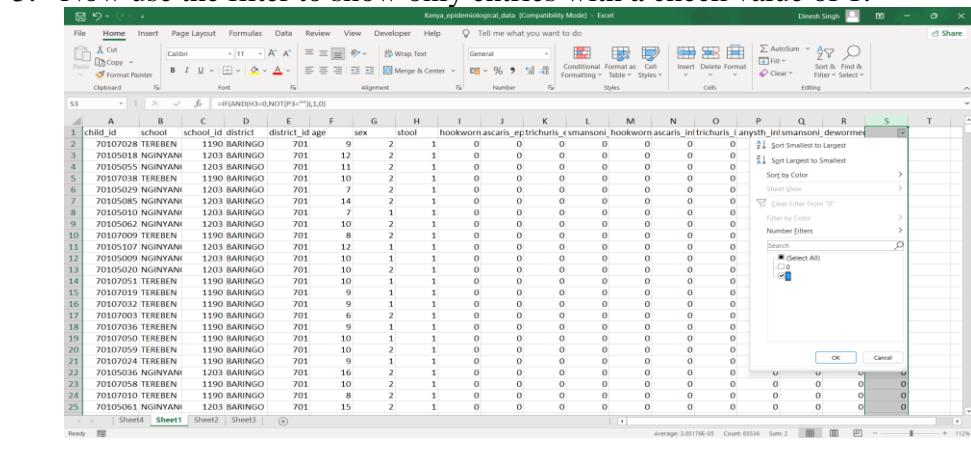


B. Formulas:

1. Open the existing worksheet
2. Create a new column with the variable called check
3. Type the following formula in S2 column of worksheet
 $=IF(AND(H2=0, NOT(P2="")), 1, 0)$



4. Copy the formula to all other cells (ensure that the formula is copied to all rows in your dataset).
5. Now use the filter to show only entries with a check value of 1.



KET'S V. G. Vaze College (Autonomous), Mulund

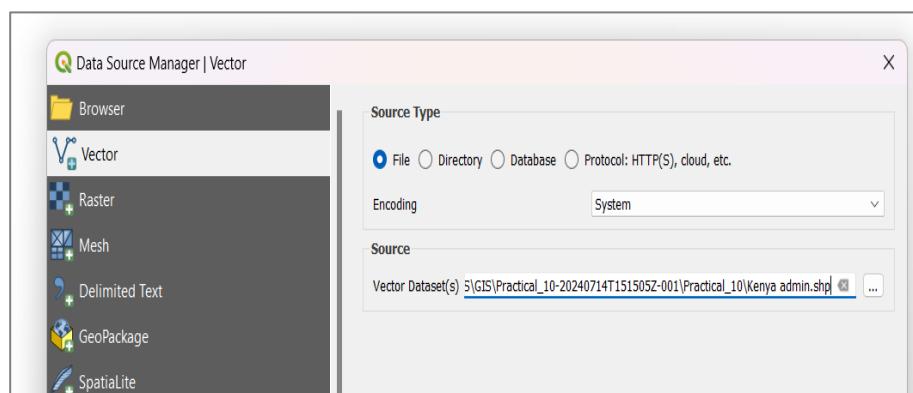
Roll No :-A064

Name :- Nikesh Punaji Sabale

child_id	school	school_id	district	district_id	age	sex	stool	hookworm	ascaris	eptichuris	smansoni	hookworm	ascaris	eptichuris	i	anysth	int	smansoni	dewormed
30	70107045 TEREBENI	1190 BARINGO	701	11	2	0	0	0	0	0	0	0	0	0	0	0	0	1	1
1340	61110005 KARUNGA	1150 KISUMU	611	7	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0

4. Verifying the Co-ordinates of Mapping Data:

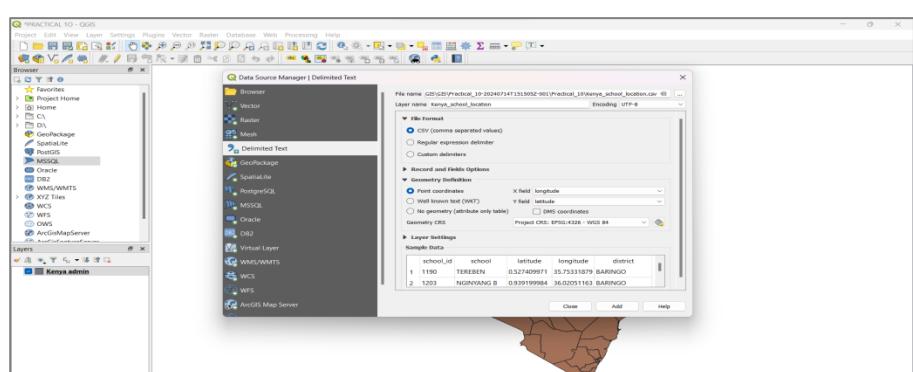
1. Create a New Project in QGIS
2. Navigate to **Add Vector Layer** and add file: **Kenya_admin.shp**



3. Similarly, navigate to **Add Delimited Text Layer** and add file: **Kenya_school_location.csv**.



- In the **Geometry Definition** section, there is a field called **Geometry CRS**, in that we have to select **WGS84** as coordinate system.



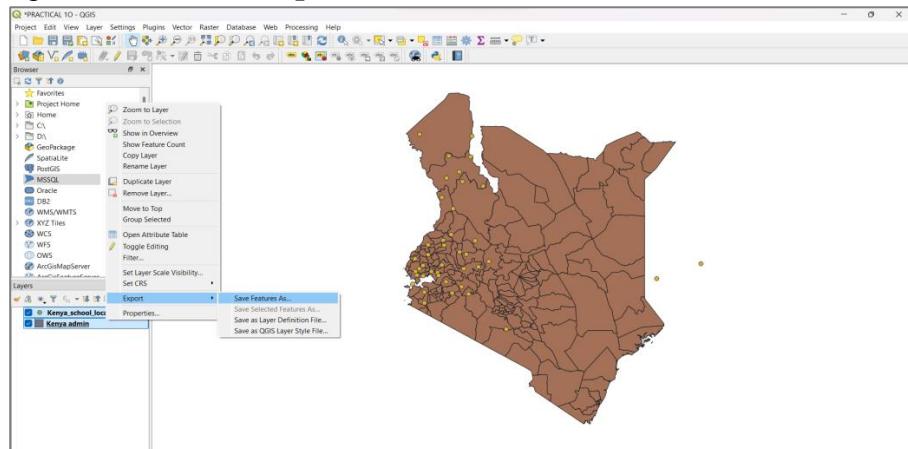
- As you can see 2 points are not on the map.

KET'S V. G. Vaze College (Autonomous), Mulund

Roll No :-A064

Name :- Nikesh Punaji Sabale

- To examine this, we need to save these layers as a Shapefile, to do that:
4. Select both the layers **Kenya_school_location** and **Kenya admin**, then right click on them **Export >Save Features As...**



5. In the menu that comes up, set **Format** as **ESRI Shapefile** and **inFile Name** select **Kenya_schools.shp**
After this is done you can uncheck the **Kenya_school_location** in the **layers section**.

