



Introduction to GeoExplorer

Tutorial ID: IGET_WEBGIS_004



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Introduction to GeoExplorer

Objective: This tutorial will introduce you to basic graphic user interface of GeoExplorer and how to add and style the layers and also introduce editing, querying, printing and publishing maps.

Software: OpenGeo Suite 3.0

Level: Beginner

Time required: 2 hours

Prerequisites and Geospatial Skills

- Basic computer skills
- Basic Html Knowledge
- IGET_WEBGIS_002 and IGET_WEBGIS_003 should be completed

Reading

1. Introduction to the OpenGeo Suite, Chapter 4: GeoExplorer, pp. 79 – 110.
http://presentations.opengeo.org/2012_FOSSGIS/suiteintro.pdf

Tutorial Data: The tutorial data of this exercise may be downloaded from this link:

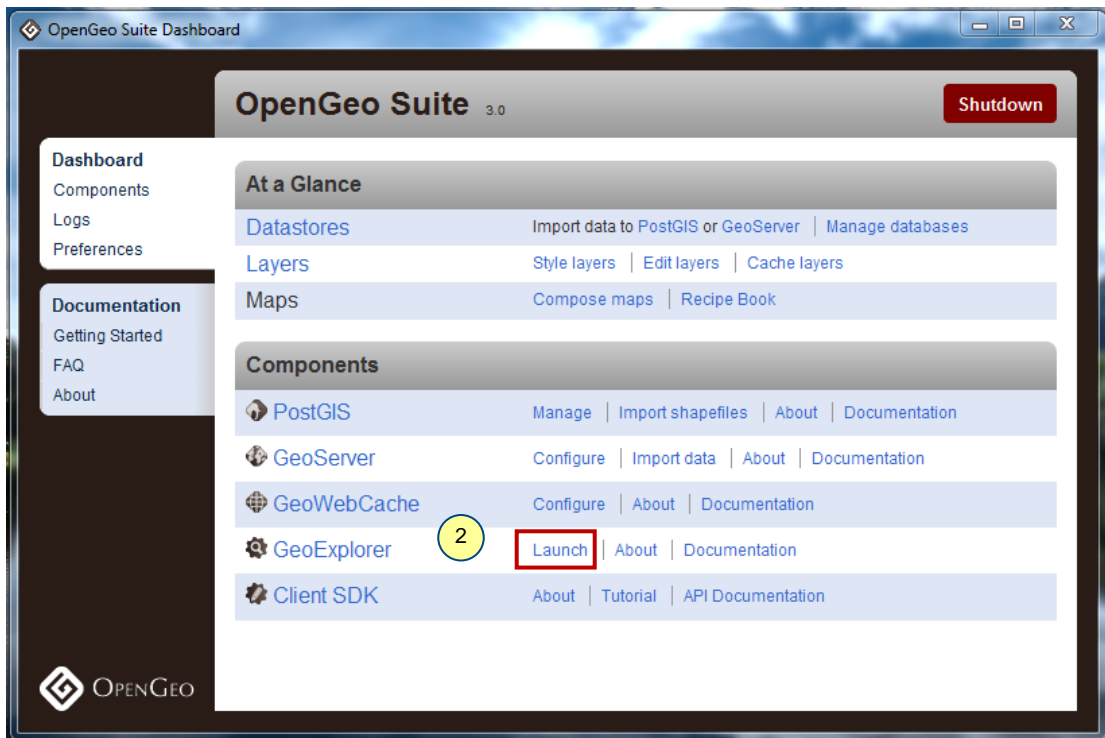
[Link](#)

Introduction

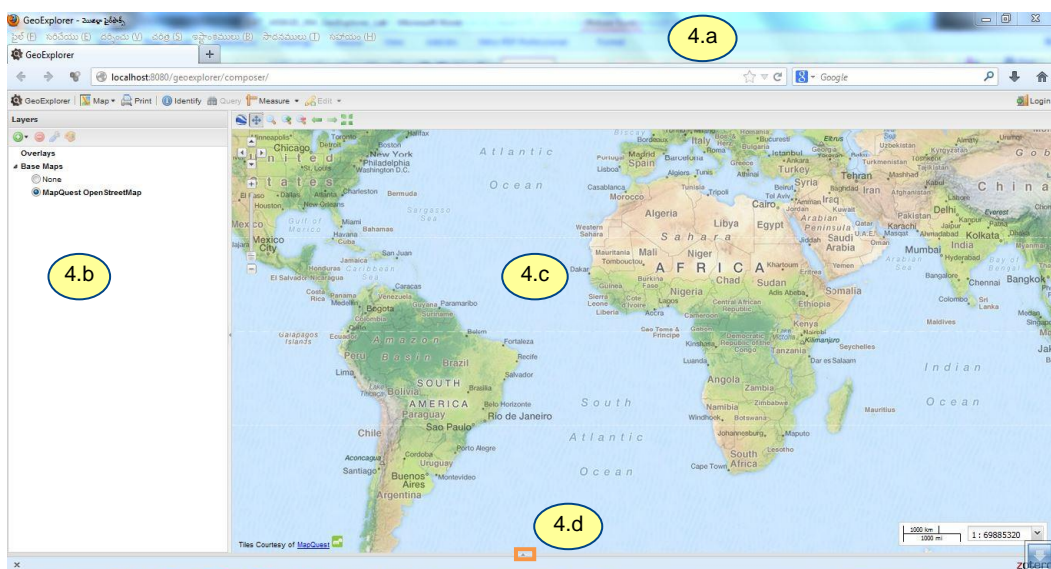
GeoExplorer is one of the components of OpenGeo suite, which offers a browser based platform to view, edit, publish and also to perform simple spatial task on the web GIS data. *GeoExplorer* can load maps from multiple sources such as *MapQuest* layers, *Open Street Map*, *Google*, *Bing* & *MapBox* layers and local *GeoServer* layer or any other *GeoServer* from remote location.

Geoexplorer GUI

1. Start OpenGeo Suite Dashboard via, *Start* → *All Programs* → *OpenGeo Suite 3.0* → *OpenGeo Suite Dashboard* → Click on '*Start*' button to start the server.
2. Click on the '*Launch*' button in *GeoExplorer*.



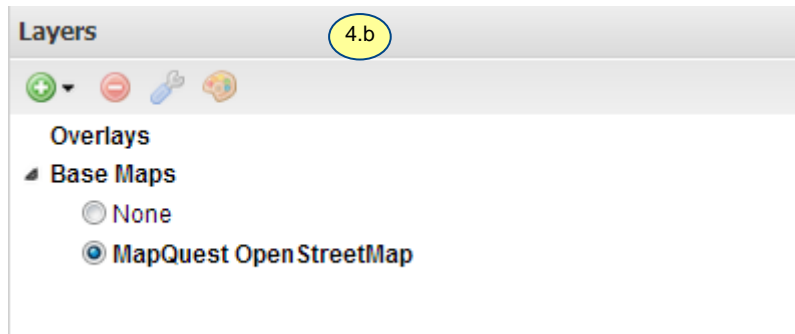
3. Now '*GeoExplorer: Welcome*' page will be opened in your default web browser.



4. The *GeoExplorer*'s Graphic User Interface (GUI) can be divided into the following sections



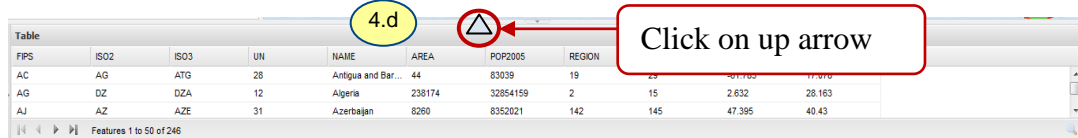
- a. **Button Bar** is located on the top of webpage. It contains tool from left to right, the first one is **GeoExplorer**. It gives basic information about GeoExplorer and the second one is **Map**, it aims to publish/export and save your custom maps and the third one **Print** is used to print the maps. We can use **Identify** tool to get information about features and **Query** can be used to fire simple queries on the data. **Measure** tool helps to measure distances and areas and where **Edit** tool can be use to edit the active layer.



- b. **Layer Panel** is organized into two sections. The first one **Overlays** organizes any layer added from the local **GeoServer** or any other remote, WMS or WFS server and **Base layers** include any layer added from a known tile-map server viz., Google, Bing, Yahoo, MapQuest, or OpenStreet Map. **Add layer** can be used to open a list of available layers. **Remove layer** button removes the currently selected layer. **Layer properties** open the layer properties dialog and **Edit Styles** opens a GUI based layer style editor which requires login credentials.




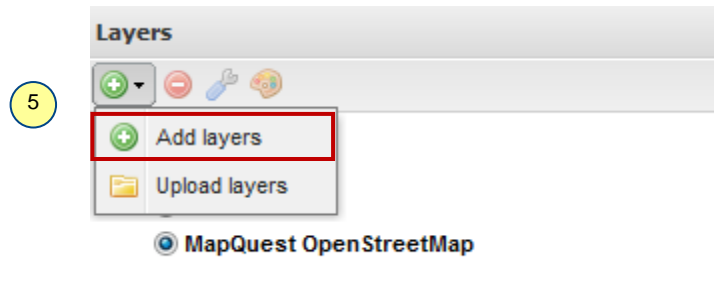
- c. **Map Panel** is located right to the **Layer Panel** here maps added to the **GeoExplorer** from multiple sources will be displayed. You can see the scale on the right bottom of the map and on top left you can see the navigation controls.



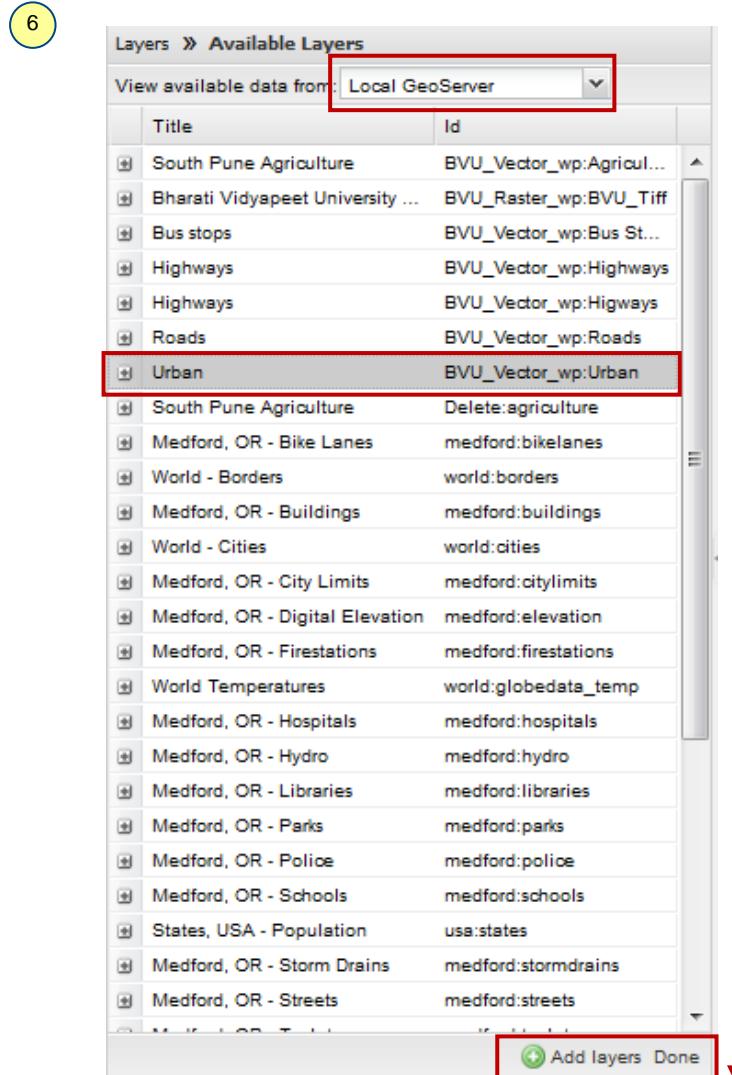
- d. **Table Panel** is shows the attribute data of layer. You have to click on the up arrow to expand (see) the table panel. It will be empty if no layer is selected.

Adding a Layer

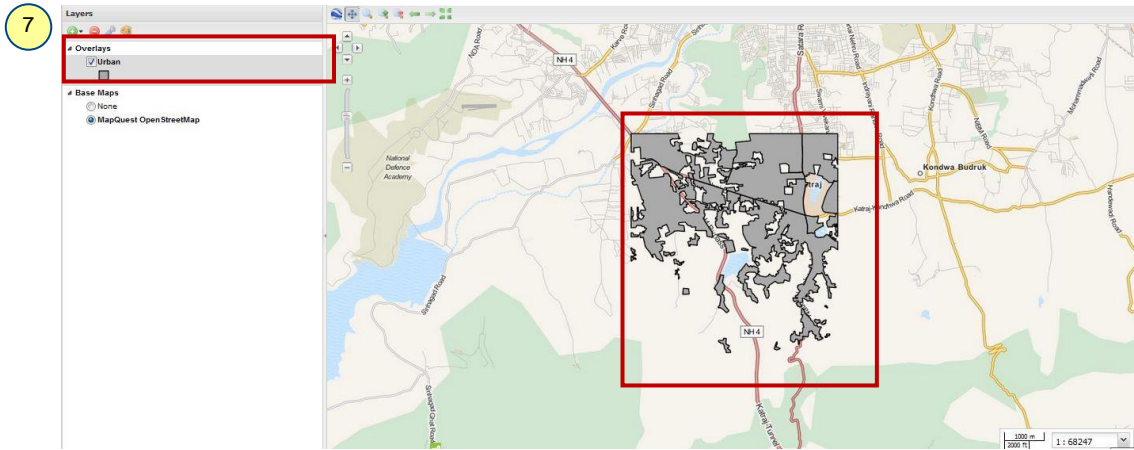
5. To add a layer click on  'Add Layer' button in Layer panel




6. Now you will be presented with a list of available layers → select '**Local GeoServer**' from the drop down menu box → select '**Urban**' layer from *BVU_Vector_wp* workspace that we created in the last tutorial *IGET_WEGGIS_003: GeoServer*. → Now click on 'Add layers' button located bottom of *Layers* panel → Click on '**Done**' to finish

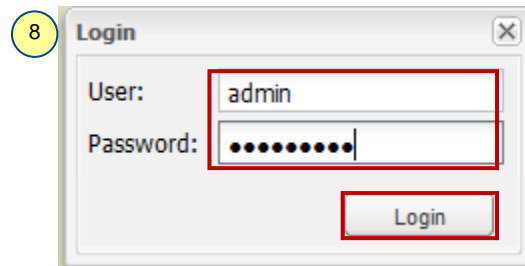


7. Now you can see 'Urban' layer listed under 'Overlays' and also add to the Map window section

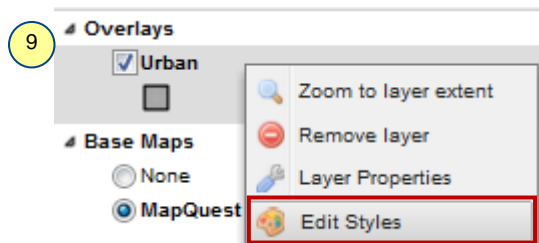


Styling layers

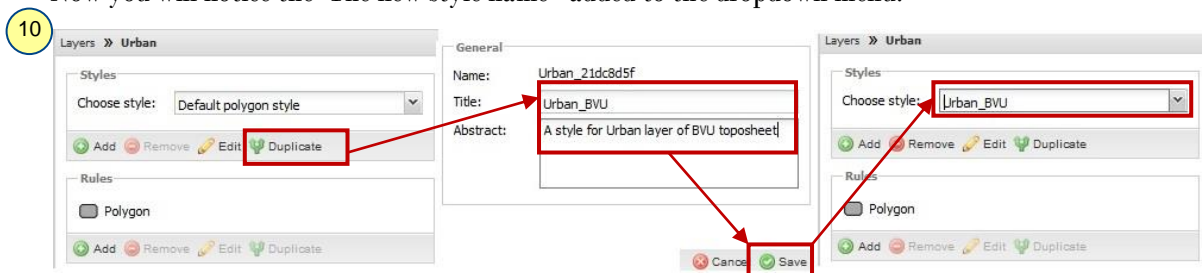
- To style the layer you must have the administrator rights. Login to *GeoExplorer* using the button ***‘Login’***  located right in the ***‘Button Bar’***. The default username and password are ***‘admin’*** and ***‘geoserver’*** respectively.



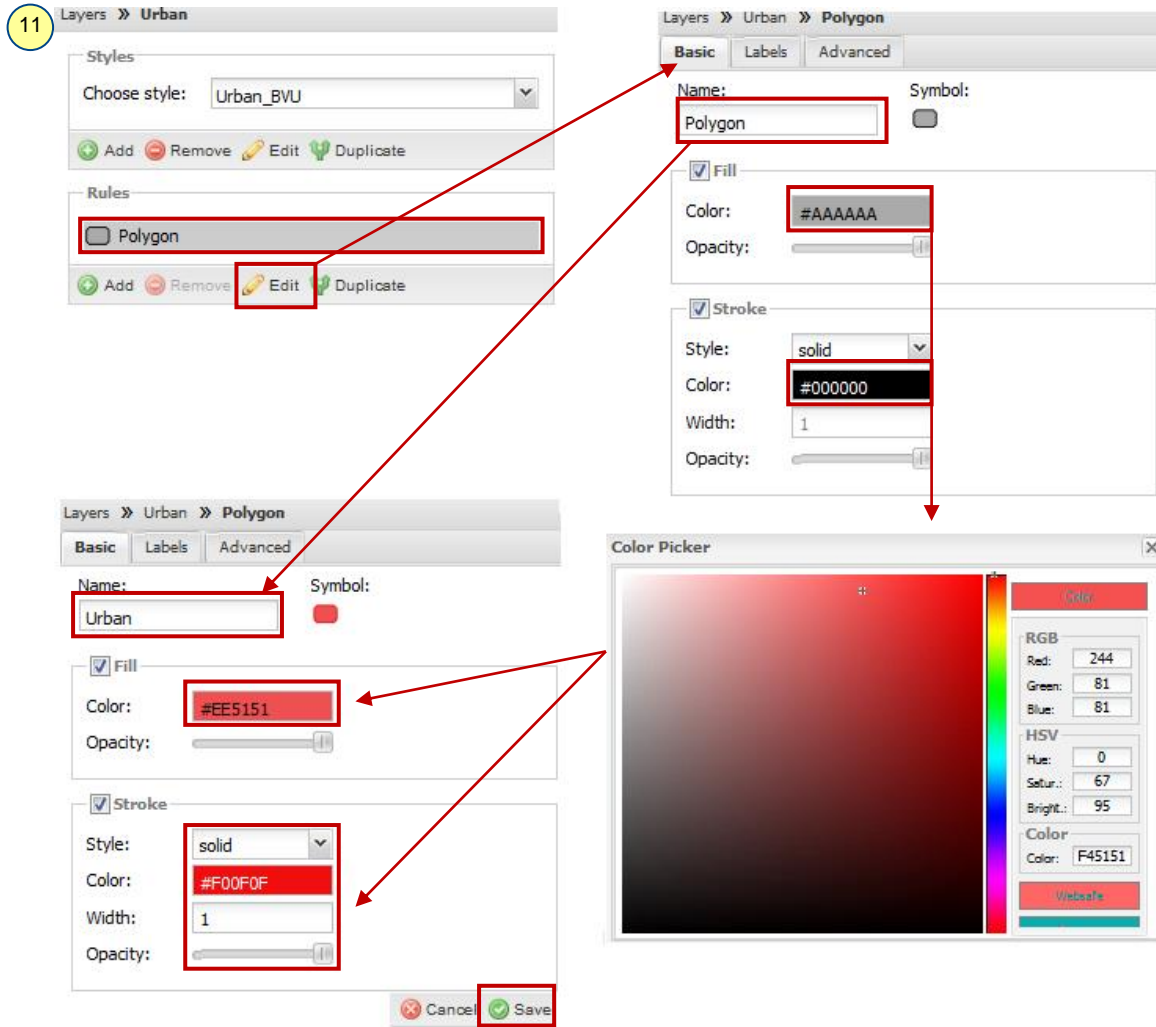
- Now right-click on the ***‘Urban’*** layer under ***‘Overlays’*** → Click on ***‘Edit Styles’***.



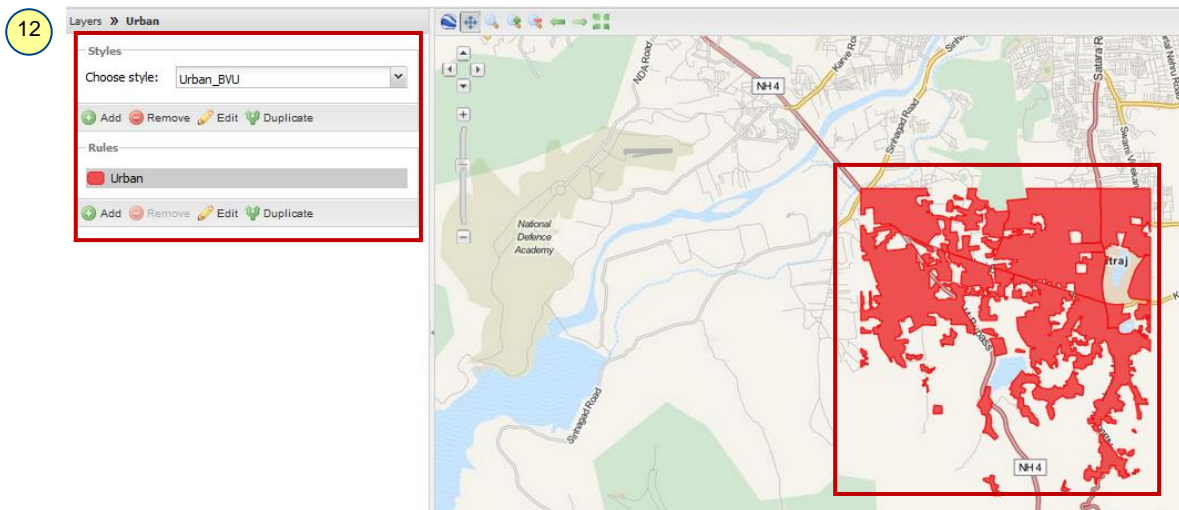
- Click on ***‘Duplicate’*** button under ***‘Styles’*** section → Enter ***‘Title’*** as ***‘Urban_BVU’*** and ***‘Abstract’*** as ***‘A style for Urban layer of BVU toposheet’*** as shown below → Click on ***‘Save’*** button on the right bottom → Now you will notice the ***‘The new style name’*** added to the dropdown menu.



- Now select **'Polygon'** under **'Rules'** → Click on **'Edit'** → Select **'Basic'** tab → Change the name as **'Urban'** → Click on **'Color box'** under **'Fill'** section → place cursor pointer on a **light red color** and **click on left mouse button** in the prompt **'Color Picker window'** → Now click on **'Color box'** under **'Strokes'** to select **'dark red color'** from the color piker and keep other options as default → Now Click on **'Save'** and close the **'Color Picker'** window to finish.

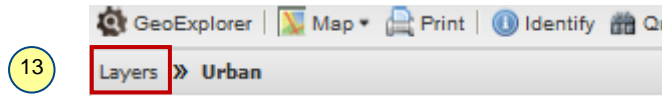


- Now you can see the **'Urban'** layer in newly added style in Map panel as shown below.

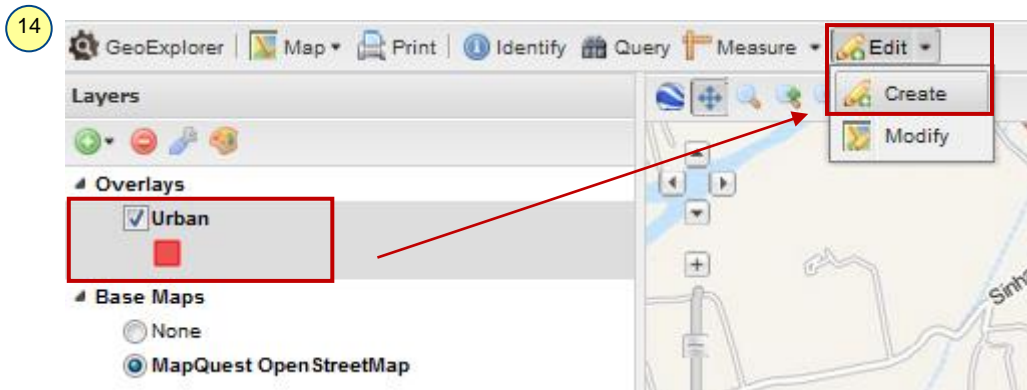



Creating and Editing Data

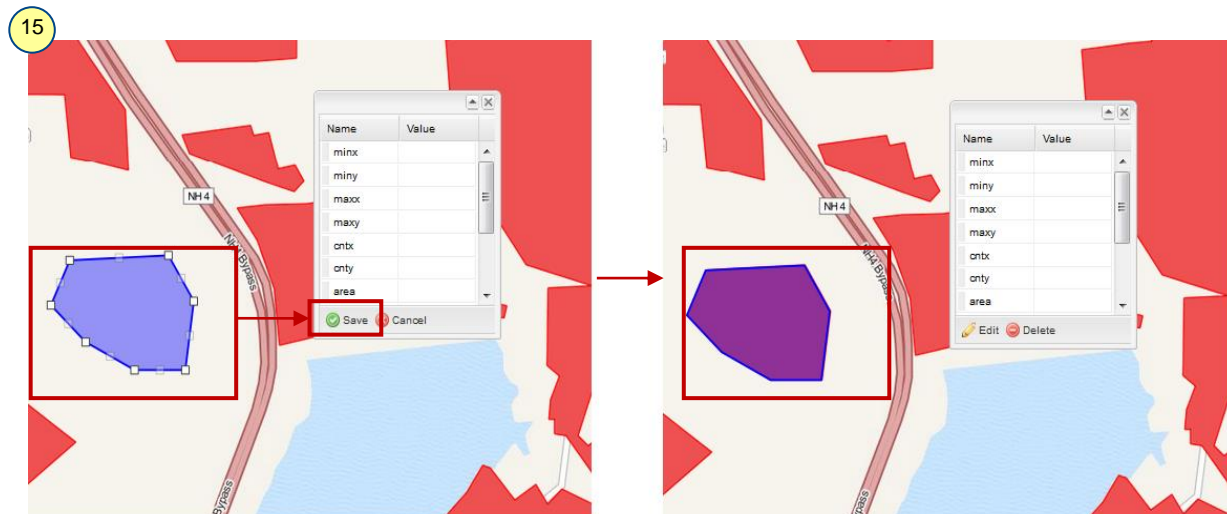
13. In this section we will learn how to create a feature followed by modifying and deletion in GeoExplorer . Click on '**Layer**' button to return to the basic view.



14. Select '**Urban**' layer under Overlays → Click '**Edit**' in button bar and select '**Create**' from dropdown menu.

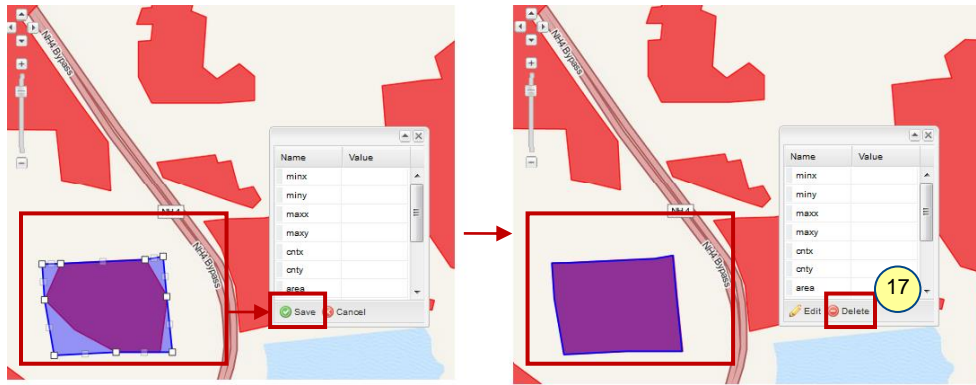


15. Now zoom to the any part of Pune by using  '**Zoom**' tool → Now digitize a polygon of any shape (Just for demo) use left mouse button to place vertices and double click to finish the digitization → Now you will be presented with a popup window leave it empty → Click on '**Save**' in the popup window. In this way we can create the features. We can use high resolution published imageries as a base layer for digitization.



16. If you want to change the shape of the digitized feature click over '**Edit**' → Drag and place the vertices on right positions (since we don't have any base image, here make it as approximate square) → Click on '**Save**' in the popup window.

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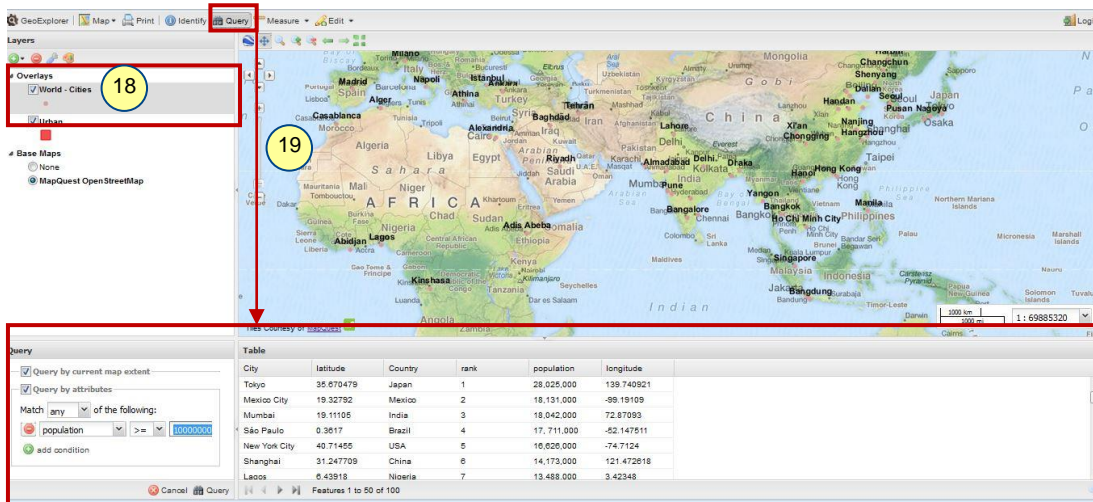


- 17. Since this is a random block digitized for demonstration purpose → click on ‘Delete’ button to delete it → Click on ‘Yes’ in popup window to confirm deletion.

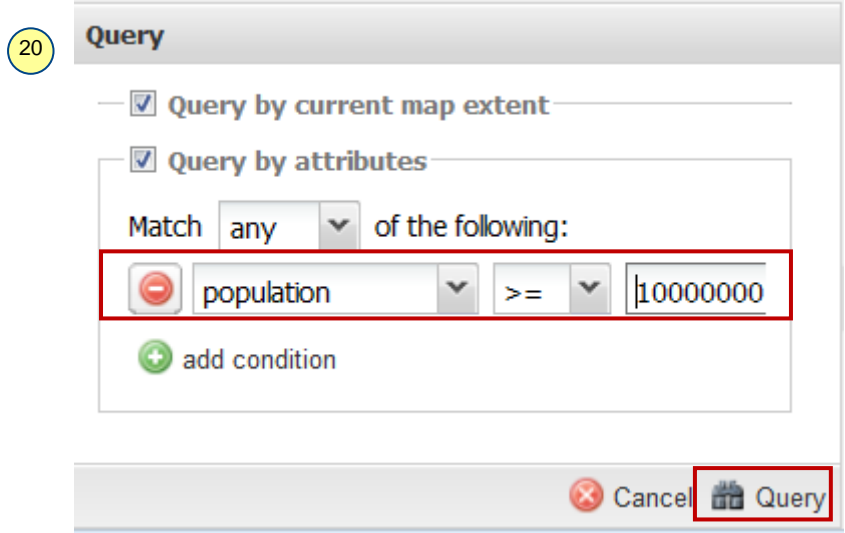
Query the layer

Finding a particular feature can be difficult especially when you don’t know where it is located. In such cases we can use ‘Query’ tool. In the section we will learn a simple query to locate the world cities having population 10 millions and above.

- 18. Add ‘World - Cities’ layer from Local GeoServer to the ‘Overlays’ (Refer Step 5-6).
- 19. Click on ‘Query’ tool. You can see a Query panel and Table panel will pop up as shown in below image.



- 20. Select ‘Population’ from the drop down menu and condition as ‘>=’ enter a value ‘1000000’. Now click on the ‘Query’ button. This query will give you the cities with population ten million and above in the current extent of map.




21. The results will shown in the table

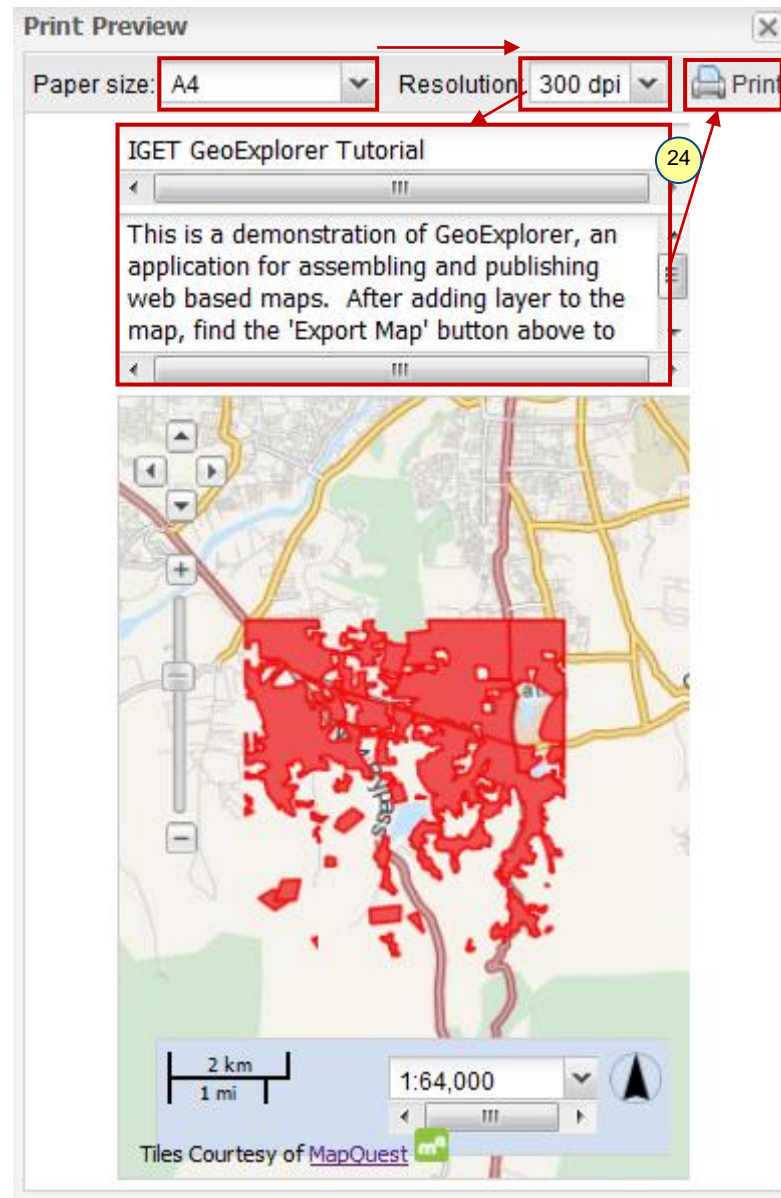
21

City	latitude	Country	rank	population	longitude
Tokyo	35.670479	Japan	1	28,025,000	139.740921
Mumbai	19.11105	India	3	18,042,000	72.87093
Shanghai	31.247709	China	6	14,173,000	121.472618
Lagos	6.43918	Nigeria	7	13,488,000	3.42348
Calcutta	22.52667	India	9	12,900,000	88.34616
Karachi	24.88978	Pakistan	13	11,774,000	67.28511
Delhi	24.6353	India	14	11,680,000	81.56905

Printing Maps

22. Right click on 'Urban' layer under *Overlays* → select '*Zoom to layer extent*'.
23. Now click on  '*Print*' button in button bar → In the popup window select the '*Paper size*' as '*A4*' and '*Resolution*' as '*300 dpi*'.
24. Name the Map as '*IGET GeoExplorer Tutorial*' and write suitable description in the text box located below to the name and click on '*Print*' to save the map.

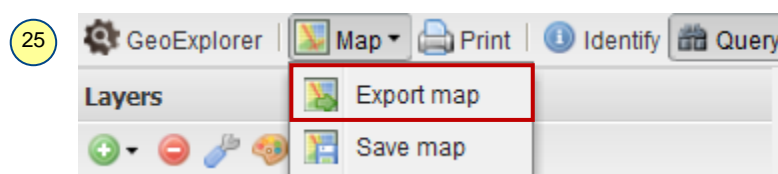
23



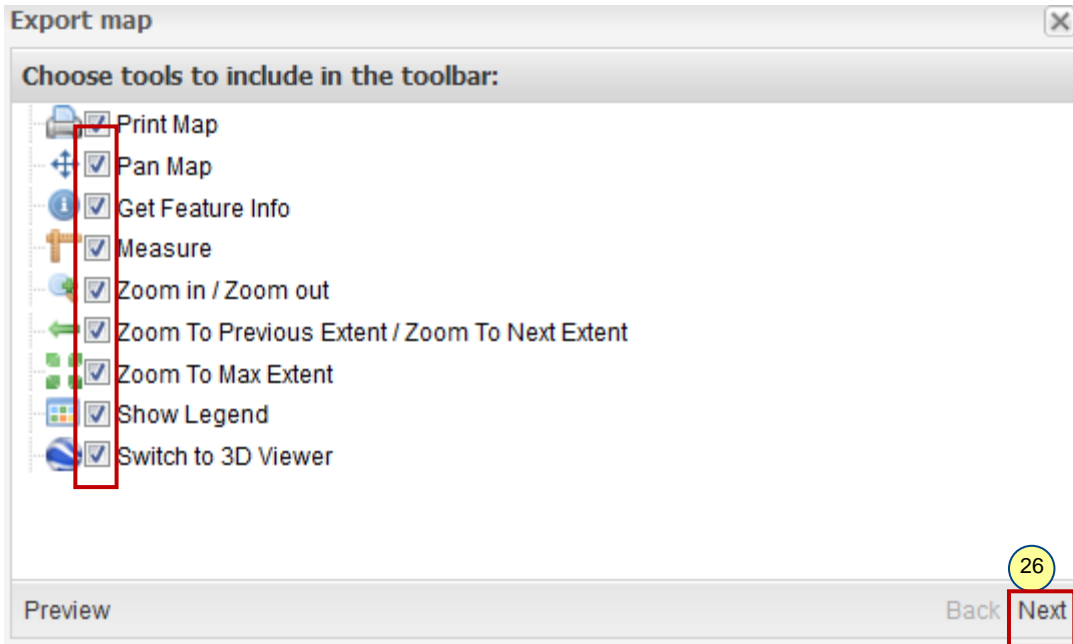
Publishing Map/ Export Map

Publishing/ Exporting map will generate an interactive web map that can be integrated with other web application without any hassle.

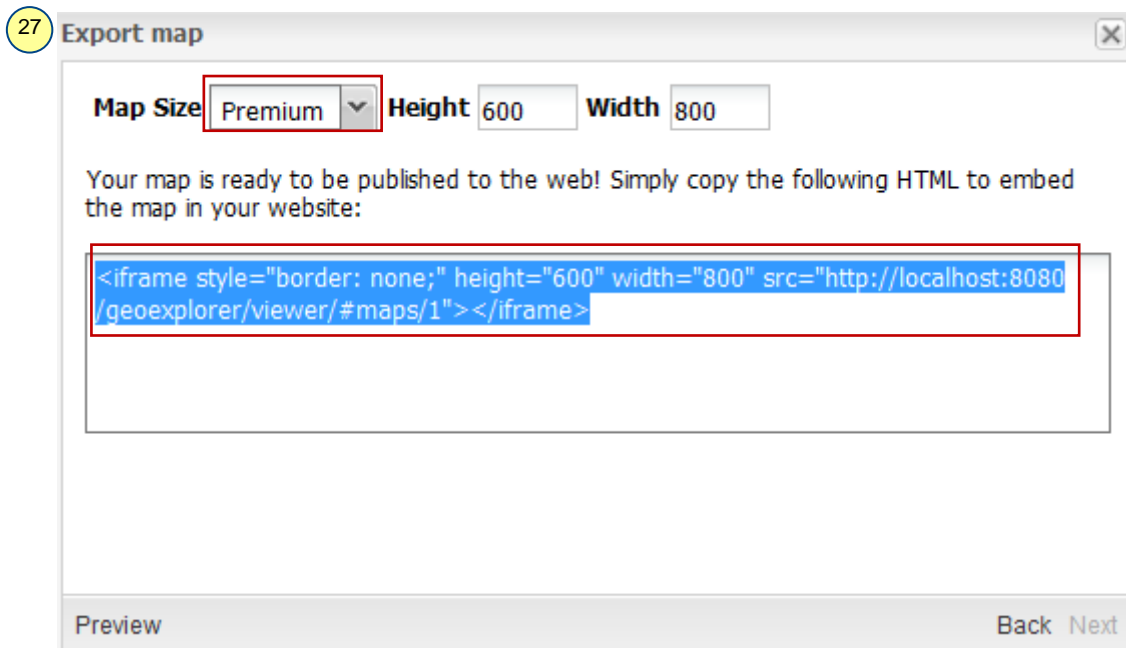
25. If you are not login to the GeoServer, login as *admin* before proceeding further. Now Click on '**Map**' button and click on '**Export Map**' from the dropdown menu in the button bar.



26. In the '**Export Map**' popup window '**check**' the tools you want to include in the map then click on '**Next**' to proceed further.



27. Select the desired map size from dropdown list of 'Map size' as you select the map size you can see the corresponding changes in the height and width of the map in the textbox below. Here we will select the 'Premium' size. Now copy the code in the text box



28. Open the html file 'map_publish_bvu' supplied to you with tutorial data in notepad by right-click on the map_publish_bvu → open with → notepad. Now 'Paste' the code at the location as shown in image below

28

```

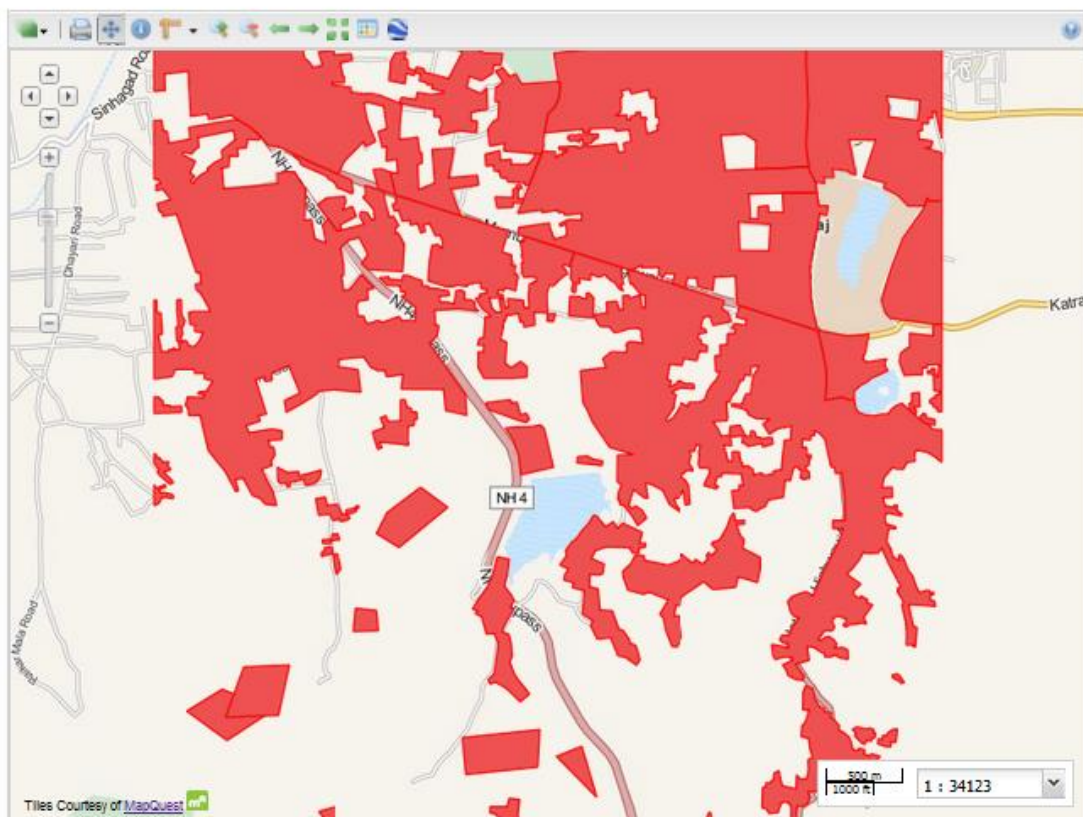
<!DOCTYPE HTML>
<html>
  <head>
    <title>
      IGET_WEBGIS_MAP_PUBLISH_DEMO
    </title>
  </head>
  <body>
    <h2> IGET Tutorials for webGIS</h2>
    Delete this message and paste the copied code here insted.
    <h5>for more information visit www.iget.gov.in </h5>
  </body>
</html>

```

29. Now 'Save' the file and 'Close' notepad.

30. Now double click on the 'map_publish_bvu.html'. It will publish the map in your default web browser.

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