



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 a 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 \rightarrow All Programs \rightarrow OpenGeo Suite 3.0 \rightarrow OpenGeo Suite Dashboard \rightarrow Click on 'Start' button to start the server.
- 2. Click on the 'Launch' button in GeoExplorer.

📀 OpenGeo Suite Dashbo	ard							
	OpenGeo Suite 3	o Shutdown						
Dashboard Components	At a Glance							
Logs	Datastores	Import data to PostGIS or GeoServer Manage databases						
Preferences	Layers	Style layers Edit layers Cache layers						
Documentation	Maps	Compose maps Recipe Book						
Getting Started FAQ	Components							
About	PostGIS	Manage Import shapefiles About Documentation						
	GeoServer	Configure Import data About Documentation						
	GeoWebCache	Configure About Documentation						
	GeoExplorer	Launch About Documentation						
	Client SDK	About Tutorial API Documentation						
🐼 OpenGeo								

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



🔹 GeoExplorer 📓 Map 🛛 🚔 Print 🚺 Identify 🏦 Query 蹪 Measure 👻 🔏 Edit 👻	(4.a	📕 Logout, admin

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.



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 South button removes the

currently selected layer. *Layer properties* open the layer properties dialog and *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.

Table			(4.d				Clic	k on 111	o arrow	
FIPS ISO2	IS03	UN	NAME	AREA	POP2005	REGION	Che	K OH uj	Juitow	
AC AG	ATG	28	Antigua and Bar	44	83039	19	23	-01.705	17.070	
AG DZ	DZA	12	Algeria	238174	32854159	2	15	2.632	28.163	
AJ AZ	AZE	31	Azerbaijan	8260	8352021	142	145	47.395	40.43	



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 Or *Add Layer*' button in Layer panel

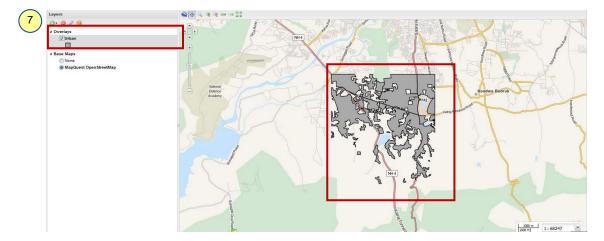
6

	Layers
5	
\bigcirc	Add layers
	🔁 Upload layers
	MapQuest OpenStreetMap

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

Vie	w available data from: Local Geo	Server 👻
	Title	Id
٠	South Pune Agriculture	BVU_Vector_wp:Agricul
٠	Bharati Vidyapeet University	BVU_Raster_wp:BVU_Tiff
٠	Bus stops	BVU_Vector_wp:Bus St
٠	Highways	BVU_Vector_wp:Highways
٠	Highways	BVU_Vector_wp:Higways
٠	Roads	BVU_Vector_wp:Roads
ŧ	Urban	BVU_Vector_wp:Urban
*	South Pune Agriculture	Delete:agriculture
٠	Medford, OR - Bike Lanes	medford:bikelanes
٠	World - Borders	world:borders
٠	Medford, OR - Buildings	medford:buildings
•	World - Cities	world:cities
•	Medford, OR - City Limits	medford:citylimits
•	Medford, OR - Digital Elevation	medford:elevation
•	Medford, OR - Firestations	medford:firestations
•	World Temperatures	world:globedata_temp
•	Medford, OR - Hospitals	medford:hospitals
•	Medford, OR - Hydro	medford:hydro
•	Medford, OR - Libraries	medford:libraries
•	Medford, OR - Parks	medford:parks
•	Medford, OR - Police	medford:police
•	Medford, OR - Schools	medford:schools
•	States, USA - Population	usa:states
•	Medford, OR - Storm Drains	medford:stormdrains
٠	Medford, OR - Streets	medford:streets

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

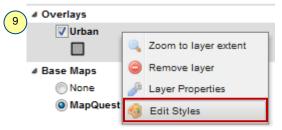


Styling layers

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

8	Login	×
	User:	admin
	Password:	•••••
		Login

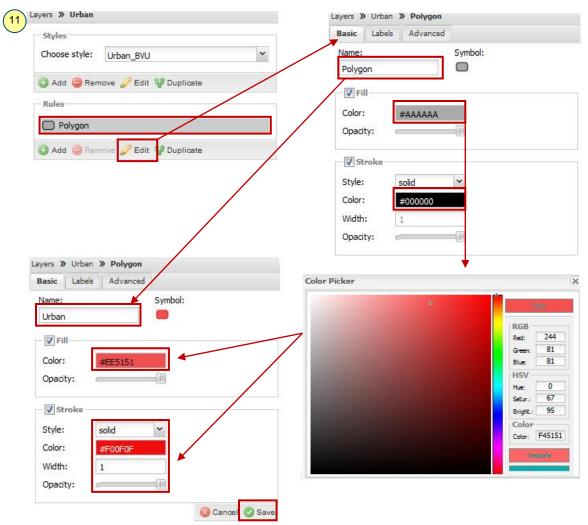
9. Now right-click on the 'Urban' layer under 'Overlays' → Click on 'Edit Styles'.



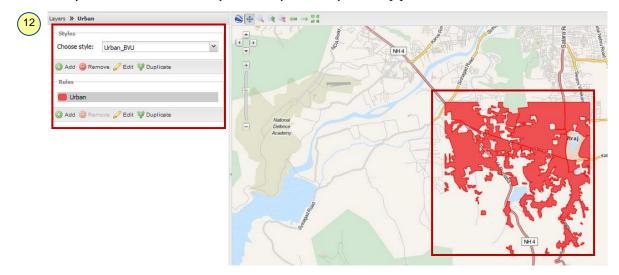
10. Click on 'Duplicate' button under 'Styles' section → Enter 'Title' as 'Urban_BVU' and 'Abstract' as 'A style for Urban layer of BVU toposheet' as shown below → Click on 'Save' button on the right bottom → Now you will notice the 'The new style name ' added to the dropdown menu.

Layers » Urban	General	Layers » Urban
- Styles	Name: Urban_21dc8d5f	Styles
Choose style: Default polygon style	Vrban_BVU	Choose style: Urban_BVU
🔕 Add 🤤 Remove 🥜 Edit 🖞 Duplicate	Abstract: A style for Urban layer of BVU toposheet	🔘 Add 💋 Remove 🥜 Edit 🦞 Duplicate
Rules		Rules
Polygon		Polygon
🙆 Add 🥥 Remove 🥜 Edit 🦞 Duplicate	· · · · · · · · · · · · · · · · · · ·	🔘 Add 🥥 Remove 🥜 Edit 🖞 Duplicate

11. 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.



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



Creating and Editing Data

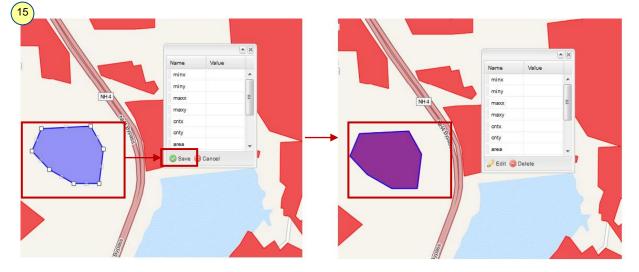
 In this section we will learn how to create a feature followed by modifying and deletion in GeoExplorer. Click on 'Layer' button to return to the basic view.

			🖳 Print	🕕 Identify	間 Qu
13	Layers	» Urban			

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

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)• 😑 🎤 🤫	Modify
Overlays	
	
	± ~
Base Maps	

15. Now zoom to the any part of Pune by using \square 'Zoom' tool \rightarrow Now digitize a polygon of any shape (Just for demo) use left mouse button to place vertices and double click to finish the digitization \rightarrow Now you will be presented with a popup window leave it empty \rightarrow 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
(5ave' in the popup window.



17. Since this is a random block digitized for demonstration purpose \rightarrow click on '*Delete*' button to delete it \rightarrow 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).

🕃 GeoExplorer 💹 Map 🔹 🚔 Print 🕕 Identify 📸 🤇	Query Measure	• 🔏 Edit •										Log
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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 '10000000'. Now click on the 'Query' button. This query will gives you the cities with population ten million and above in the current extent of map.

Query
Query by current map extent
Query by attributes
Match any 💙 of the following:
population >= * 10000000
add condition
🙆 Cancel 🏙 Q

21. The results will shown in the table

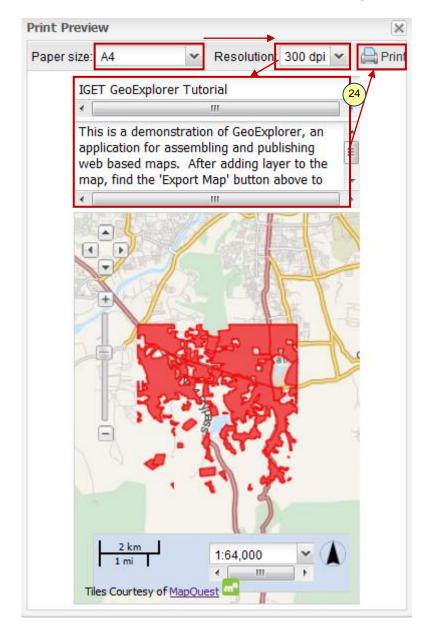
(21)	Table											
	City	latitude	Country	rank	population	longitude						
	Tokyo	35.670479	Japan	1	28,025,000	139.740921						
	Mumbai	19.11105	India	3	18,042,000	72.87093						
	Shanghai	31.247709	China	6	14,173,000	121.472618						
	Lagos	6.43918	Nigeria	7	13,488,000	3.42348						
	Calcutta	22.52667	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 \rightarrow select 'Zoom to layer extent'.
- 23. Now click on \bigcirc 'Print' button in button bar \rightarrow 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.



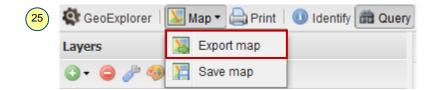




Publishing Map/ Export Map

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 preceed further.



Export map	×					
Choose tools to include in the toolbar:						
Print Map						
Pan Map						
·						
Measure						
Zoom in / Zoom out						
Zoom To Previous Extent / Zoom To Next Extent						
Zoom To Max Extent						
Show Legend						
Switch to 3D Viewer						
20	3					
Preview Back N	ext					

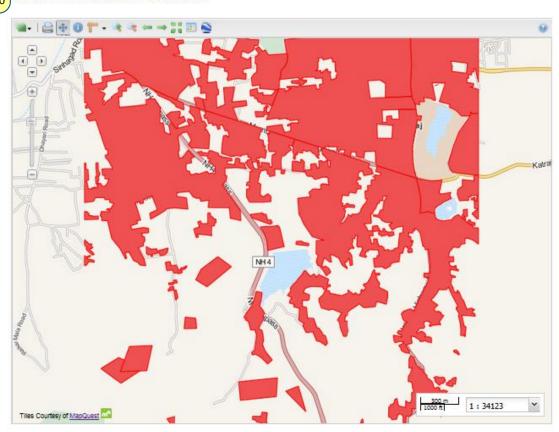
27. Select the desired map size from dropdown list of 'Map size' as you select the map size you can see the corresponding changes in the height and width of the map in the textbox below. Here we will select the 'Premium' size. Now copy the code in the text box

Map Size	Premium 🍸 H	leight 600	Width 800		
	ready to be pub our website:	lished to the v	veb! Simply cop	y the following H	ITML to embe
	/le="border: no er/viewer/#map			0" src="http://l	ocalhost:8080
, geoexpion		ogr - spinam	<u>ur</u>		

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	DOCTY</th <th>PE HTML></th>	PE HTML>					
Ŭ	<html></html>	<head></head>					
		Delete this message and paste the copied code here insted.					
		<h5>for more information visit www.iget.gov.in </h5>					

- 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.



30 IGET Tutorials for WebGIS

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