



USER GUIDE TO THE GEOSTREAM WEB APPLICATION

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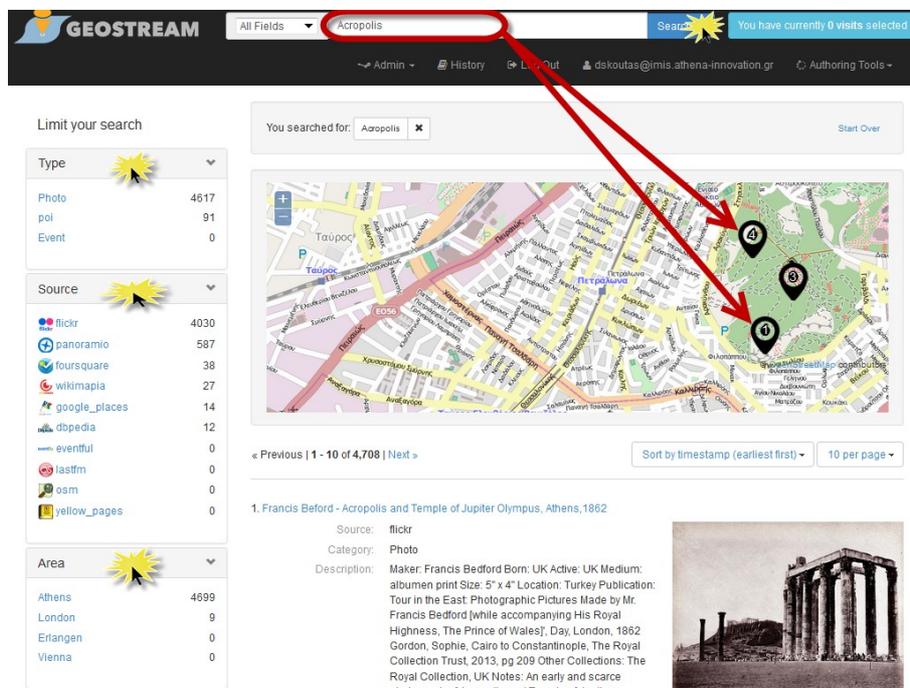
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1 User area

1.1 Search and browsing

Through the search and browsing interface the user can perform keyword search to retrieve points of interest, photos and events collected from various Web sources and stored in the Geostream database. To further filter the results, a set of facets is provided, from which the user can select to narrow down the search.

Step 1: Type a keyword, e.g. “Acropolis”, and click “search”. The results corresponding to the word “Acropolis” are retrieved and displayed in a list as well as on the map.



The screenshot shows the Geostream search interface. At the top, the search bar contains the keyword "Acropolis". Below the search bar, there are navigation links: Admin, History, Logout, and user information. The main content area is divided into two columns. The left column contains three facet panels: "Limit your search" (Type, Source, Area), "You searched for: Acropolis" (with a "Start Over" link), and a map showing the location of the Acropolis in Athens. The right column displays a list of search results, with the first result being a photo of the Acropolis and Temple of Jupiter Olympus, Athens, 1862, by Francis Bedford. The photo is shown in a small thumbnail view.

Type	Count
Photo	4617
poi	91
Event	0

Source	Count
flickr	4030
panoramio	587
foursquare	38
wikimapia	27
google_places	14
dbpedia	12
eventful	0
iasifm	0
osm	0
yellow_pages	0

Area	Count
Athens	4699
London	9
Erlangen	0
Vienna	0

1. Francis Bedford - Acropolis and Temple of Jupiter Olympus, Athens, 1862

Source: flickr
Category: Photo
Description: Maker: Francis Bedford Born: UK Active: UK Medium: albumen print Size: 5" x 4" Location: Turkey Publication: Tour in the East: Photographic Pictures Made by Mr. Francis Bedford [while accompanying His Royal Highness, The Prince of Wales], Day London, 1862 Gordon, Sophie, Cairo to Constantinople, The Royal Collection Trust, 2013, pg 209 Other Collections: The Royal Collection, UK Notes: An early and scarce photograph of Acropolis and Temple of Jupiter

Step 2: From the left panel select more filtering options for the term “Acropolis”. For example, select Type = “poi” (point of interest). Notice that the search results include now only POIs that contain the term “Acropolis”.

Limit your search

You search for: Acropolis x Type > poi x [Start Over](#)

Photo 4617
poi 91
Event 0

Source >
Area >
Keywords >
Mapped category >



« Previous | 1 - 10 of 91 | Next » [Sort by timestamp \(earliest first\)](#) [10 per page](#)

 **Hilton Athens**

Source: foursquare
Category: Hotel
Description: Situated in a prime location overlooking the ancient Acropolis and the unmistakable Athens cityscape, the Hilton Athens hotel features spacious, modern accommodation, three fabulous swimming pools and the tranquil Hiltonia Spa.
Tags: athens, xilrov, spa, hotel, hilton, gym, beauty center
City: Athens
Location: 37.976057613040204,23.750193036791202
Trip: [Add to Trip](#)

Step 3: Click on a search result, e.g. “Hilton Athens”, to display the details of this particular item.

 All Fields Search... [Search](#) You have currently 0 visits selected

Admin History Log Out dskoutas@imis.athena-innovation.gr Authoring Tools

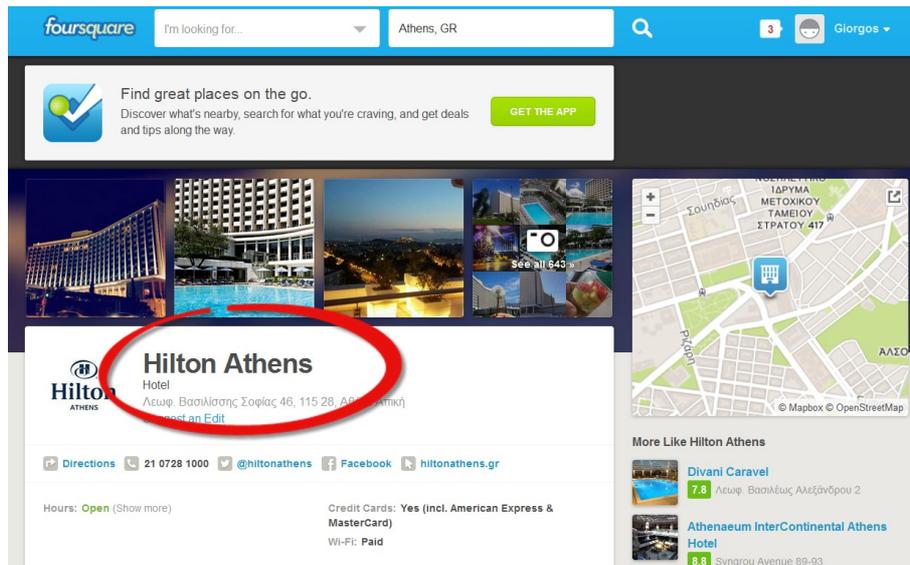
« Previous | 1 of 91 | Next » [Back to Search](#) [Start Over](#) Tools

Hilton Athens



Geostream ID: 46764
URL: <https://foursquare.com/v/hilton-athens/4dcdadd964a5209d5721e3>
Source: foursquare
Category: Hotel
Description: Situated in a prime location overlooking the ancient Acropolis and the unmistakable Athens cityscape, the Hilton Athens hotel features spacious, modern accommodation, three fabulous swimming pools and the tranquil Hiltonia Spa.
Tags: athens, xilrov, spa, hotel, hilton, gym, beauty center
City: Athens
Location: 37.976057613040204,23.750193036791202

Step 4: Click on the hyperlink to navigate to the original source (e.g. Foursquare) from which this particular item was collected.

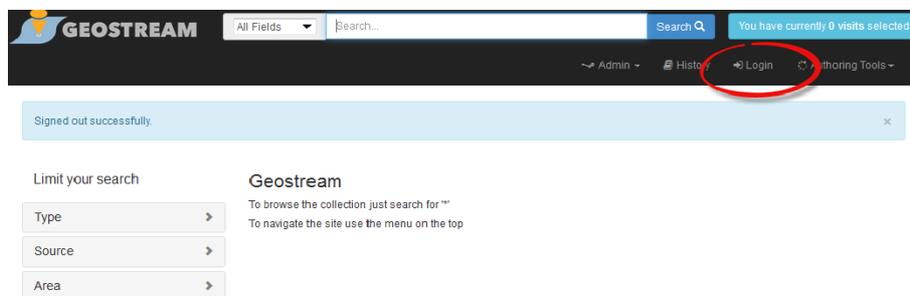


1.2 Creating trips

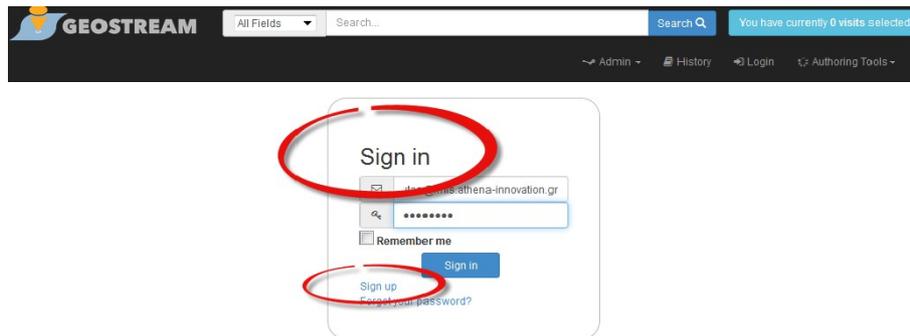
1.2.1 Login

Before creating trips, the user needs to login to his/her account (or create a new one).

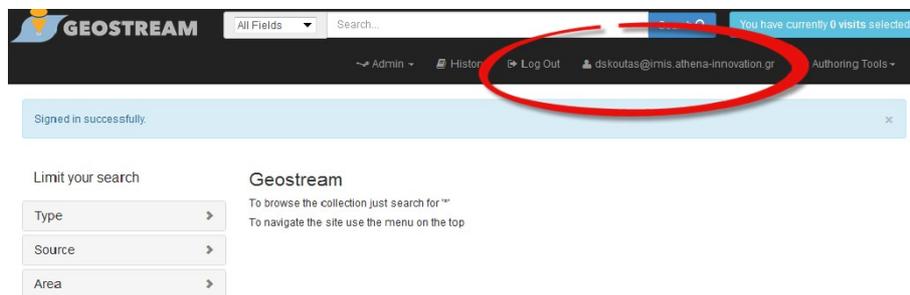
Step 1: Click Login.



Step 2: Enter username and password for existing user or choose to sign up for a new user.



Step 3: Verify that your username is visible in the main menu. A “Log out” button is also provided to end the session.



1.2.2 Creating trips from search results

The following steps describe how to create a trip from search results. As an example, the steps show how to create a trip based on locations of different kinds of music venues and then how to add or modify information of the trip and the locations visited.

Step 1: In the search and browsing interface search for “rock music” (including quotation marks). Select any of the results and click the “Add to Trip” button.

1. 48Hours + Serpico

Source: eventful
 Category: address, Bar/Night Club
 Description: 11:00 pm curfew 14+ 48Hours return to the Barfly to celebrate the release of debut full length album 'Recovery' with their first London headline appearance! Be among the first to get your hands on a hard copy of the record at this show, the day before it's official release! Coming together in the middle of 2012 after the breakdown of previous projects, 48Hours formed out of a love for writing and performing catchy rock music & having the drive and determination to be the band everyone wants to see and hear. The trio are vastly experienced having performed at Sonisphere and Hevy rock festivals and supported the likes of Madina Lake, Cancer Bats, We are the Ocean & Sick Puppies in their previous bands. Already an established touring band in their own right, 48Hours have built a solid foundation on the UK touring circuit completely off their own backs, blowing away audiences nationwide with their huge wall of sound constructed from the percussive powerhouse that is Matt Savini on drums, the solid bass lines, harmonies and production of Gary Broughton & the titanic guitar and vocal talent of frontman Adam Jerome. "London rockers 48 Hours turned the night around very quickly with their energetic set that was packed with hard hitting sing along songs and a beat that would have you head bobbing! Oh and let's not forget the dramatic jump into the crowd from the guitarist that ended the bands set in quite a rock and roll fashion!" – Live Review, Camden Barfly 06/08/13 - shoutitloudreviews.com

Timestamp: 2014-01-22T17:00:00Z
 Tags: alternative
 City: London
 Vicinity: Hammersmith and Fulham
 Location: 51.543072246541925,-0.1922204694369157
 Trip: [Add to Trip](#)

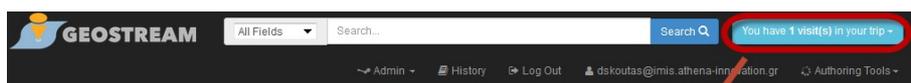


2. Flesh For Lulu + Johnny Cobra and the A Grades + The Priscillas

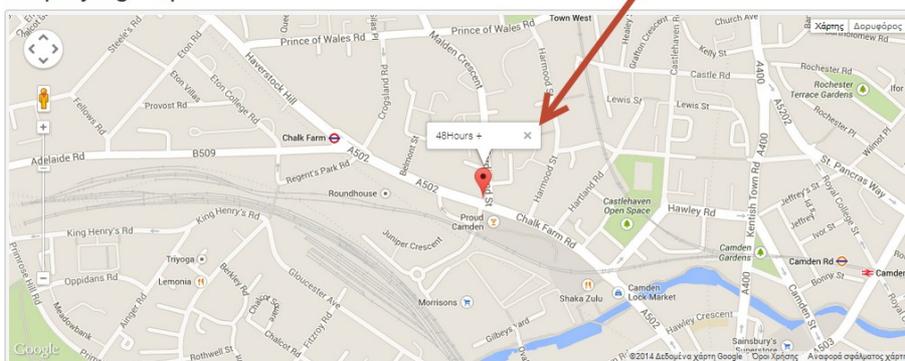
Source: eventful
 Category: address
 Description: 10:30 pm curfew Strictly Over 14s, Under 16s with adult (Photographic ID may be required to gain entry) After a massively successful show at The Borderline last month, we are delighted to welcome the guys back in the New Year for an evening of New York Dolls, Rolling Stones, gothic rock music.

Timestamp: 2014-01-18T17:00:00Z
 Tags: alternative

Step 2: A new trip is created, containing only one visit. Verify that in section "My Visits" the selected visit is displayed. Verify also that the map displays correctly the location of the visit and that the message "You have 1 visits in your trip" is shown.



Displaying Trip :



Trip Details

Title

Comment

Rating ★★★★★

Type

Time spent

Transportation

Total price(€) 0

Click "Edit" to manage your Trip

My Visits

No	Image	Title	Category	Comment	Rating	Price(€)	Arrival	Departure
1		48Hours + Serpico	address,BarNight Club		★★★★★	0		

 [Edit](#) [Back to Trips](#) [Back to Search](#)

Step 3: Repeat step 1 with the search term: “Mozart” and click “Add to trip” Vienna Mozart Concerts.

1. Midori Komachi (violin) and Ian Brown (piano) play Mozart, Walton, Brahms, Ravel

Source: eventful 

Category: address

Timestamp: 2014-10-21T16:00:00Z

Tags: concert-diary.com

City: London

Vicinity: Greater London

Location: 51.501,-0.124

Trip: [Add to Trip](#)

2. Vienna Mozart Concerts

Source: eventful 

Category: address

Description: **The Vienna Mozart Orchestra performs with internationally renowned vocalists and instrumentalists in Vienna's most extraordinary concert halls: the Vienna State Opera, Musikverein Golden Hall, Hofburg (Imperial Palace) and the Vienna Konzerthaus.** As the name Vienna Mozart Orchestra implies, the 30 musicians of this ensemble have devoted themselves to the work of Wolfgang Amadeus Mozart, the most accomplished representative of the period who, although born in Salzburg, found his home in Vienna. The Vienna Mozart Orchestra plays in magnificent historical costumes and wigs to create a special atmosphere. In keeping with the tradition of the 'musical academies', as Vienna concerts were known in Mozart's time, the audience enjoys single movements from symphonies and solo concertos, as well as operatic overtures, arias and duets from especially popular and well known works.

Timestamp: 2014-07-09T17:15:00Z

Tags: classical

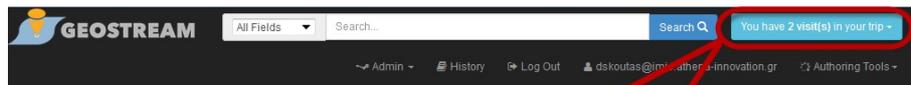
City: Vienna

Vicinity: Wien

Location: 48.2033952 16.3685573

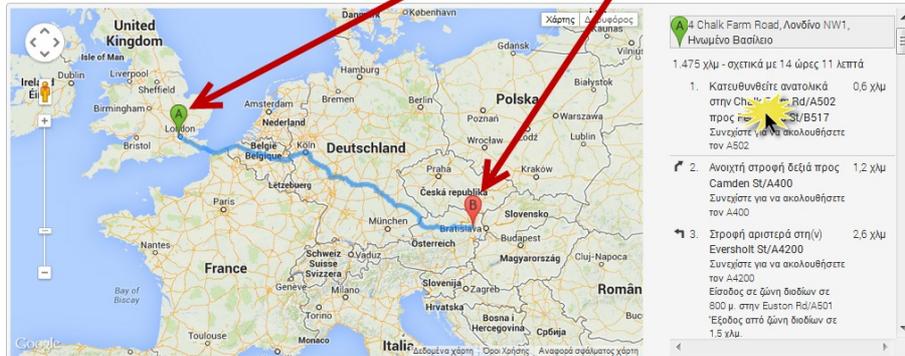
Trip: [Add to Trip](#) 

Step 4: Now that the trip contains two visits, you can see a default route connecting them. On the right of the map there is also a panel providing directions. The entries are clickable and give more detailed information, such as which turn to take, on which road, for how many kilometers. You may repeat step 1, if you wish to add more items.



Visit was successfully created.

Displaying Trip :



Trip Details

Title	
Comment	
Rating	☆☆☆☆☆
Type	
Time spent	
Transportation	
Total price(€)	0

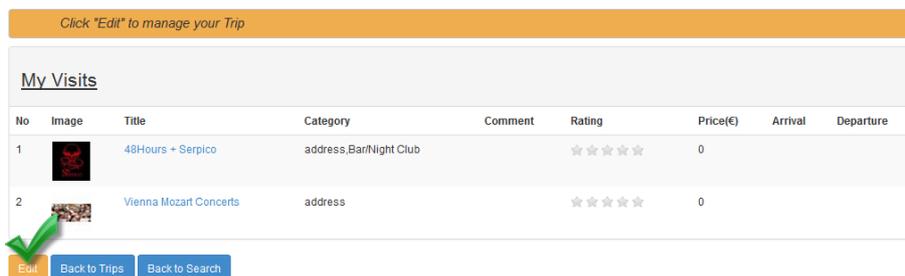
manage your Trip

My Visits

No	Image	Title	Category	Comment	Rating	Price(€)	Arrival	Departure
1		48Hours + Serpico	address.Bar/Night Club		☆☆☆☆☆	0		
2		Vienna Mozart Concerts	address		☆☆☆☆☆	0		

[Edit](#) [Back to Trips](#) [Back to Search](#)

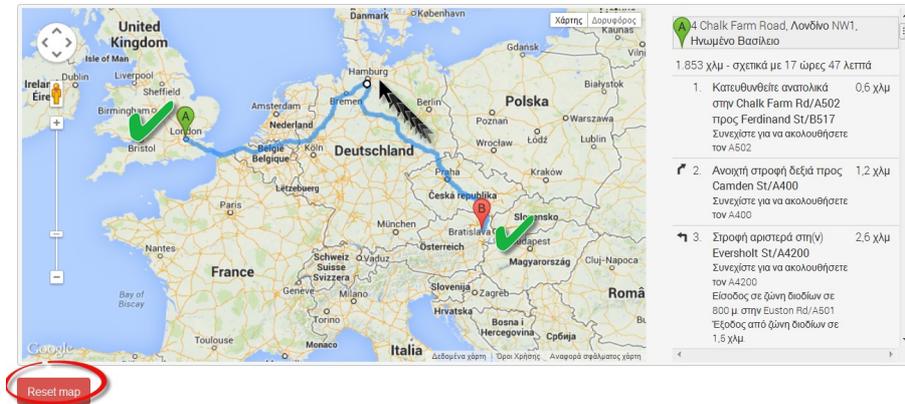
Step 5: Click the “Edit” button on the bottom of the trip details screen in order to add or modify the information of the trip.



Step 6: Once in edit mode, you can modify the trip details. You may also modify the default route of the trip, e.g. to indicate that the path should include Hamburg as an intermediate point. This is done via drag-and-drop

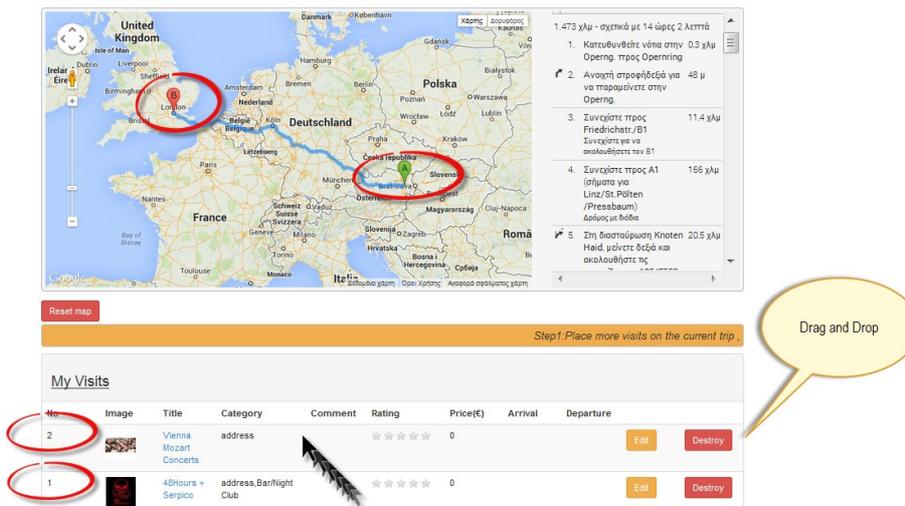
functionality directly on the path displayed on the map. A “reset map” button is provided to undo any modifications.

Editing route



Step 7: Drag the location of the second visit and verify that on the map the directions have changed. If necessary press the reset map button.

Editing route



Step 8: Update the trip details and click the submit button on the bottom of the page.

Update Trip Details

Title:

Comment:

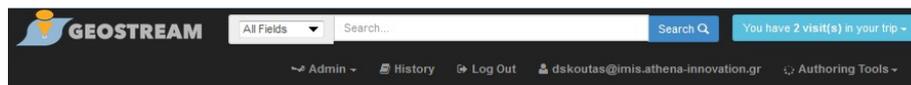
Select Trip Type(Ctrl+Click)

Night Life	Culture	Gastronomy
Site Seeing	Shopping	Walking
Bicycling	Activities	Sports
Educational	By the sea	Road Trip

Select Rating: ★★☆☆

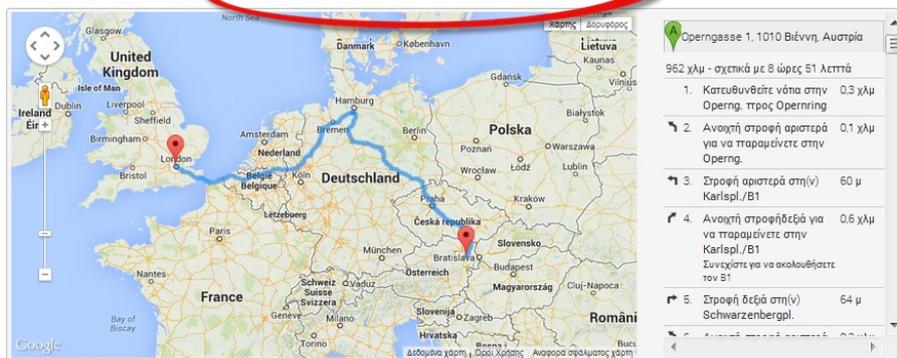
Select Transportation:

Step 9: Verify that all the details are displayed correctly in the view mode.



Trip was successfully updated.

Displaying Trip A music trip of different sounds



Trip Details

Title	A music trip of different sounds
Comment	This is a journey between London and Vienna with intermediate stop Hamburg
	
Rating	★★★★☆
Type	Night Life Culture
Time spent	
Transportation	Public Transportation
Total price(€)	0

["Edit" to manage your Trip](#)

My Visits

No	Image	Title	Category	Comment	Rating	Price(€)	Arrival	Departure
1		Vienna Mozart Concerts	address		★★★★☆	0		
2		48Hours + Serpico	address,Bar/Night Club		★★★★☆	0		

[Edit](#) [Back to Trips](#) [Back to Search](#)

Step 10: Select to view one of “My visits”.

No	Image	Title	Category	Comment	Rating	Price(€)	Arrival	Departure
1		Vienna Mozart Concerts	address		★★★★☆	0		
2		48Hours + Serpico	address,Bar/Night Club		★★★★☆	0		

[Edit](#) [Back to Trips](#) [Back to Search](#)

Step 11: View the details of Visit, and click Edit to update its details.

Visit Details



Title 48Hours + Sarpico

Photo → 

Trip Name: A music trip of different sounds

Comment:

Rating:

☆☆☆☆☆

Price(€): 0

Arrival:

Departure:

Step 12: Update the information of the visit and click the Submit button.

Comment

Normal text - Bold Italic Underline

This is just a comment.
Now we are adding bullets:

- Step 1
- Step 2

Now we add an image:



Price(€)

Rating: ☆☆☆☆☆

Arrival

Departure

Annotations:

- Yellow callout box: "Add a comment" pointing to the comment editor area.
- Yellow callout box: "Add price, rating, departure and arrival" pointing to the input fields for price, rating, arrival, and departure.
- Green checkmark icon next to the Submit button.

Step 13: View the updated visits:

Trip Details

Title A music trip of different sounds
Comment This is a journey between London and Vienna with intermediate stop Hamburg



Rating ★★★★★
Type Night Life Culture
Time spent 2 days
Transportation Public Transportation
Total price(€) 160

Visits are updated

Click "Edit" to manage your Trip

My Visits

No	Image	Title	Category	Comment	Rating	Price(€)	Arrival	Departure
1		Vienna Mozart Concerts	address	The piano is incredible... 	★★★★★	130	17/06/2014 - 16:14	18/06/2014 - 16:14
2		48Hours + Serpico	address,Bar/Night Club	This is just a comment. ...	★★★★☆	30	19/06/2014 - 19:00	19/06/2014 - 20:00

[Edit](#) [Back to Trips](#) [Back to Search](#)

Step 14: Click the “Back to Trips” button.

My Visits

No	Image	Title	Category	Comment	Rating	Price(€)	Arrival	Departure
1		Vienna Mozart Concerts	address	The piano is incredible... 	★★★★★	130	17/06/2014 - 16:14	18/06/2014 - 16:14
2		48Hours + Serpico	address,Bar/Night Club	This is just a comment. ...	★★★★☆	30	19/06/2014 - 19:00	19/06/2014 - 20:00

[Edit](#) [Back to Trips](#) [Back to Search](#)

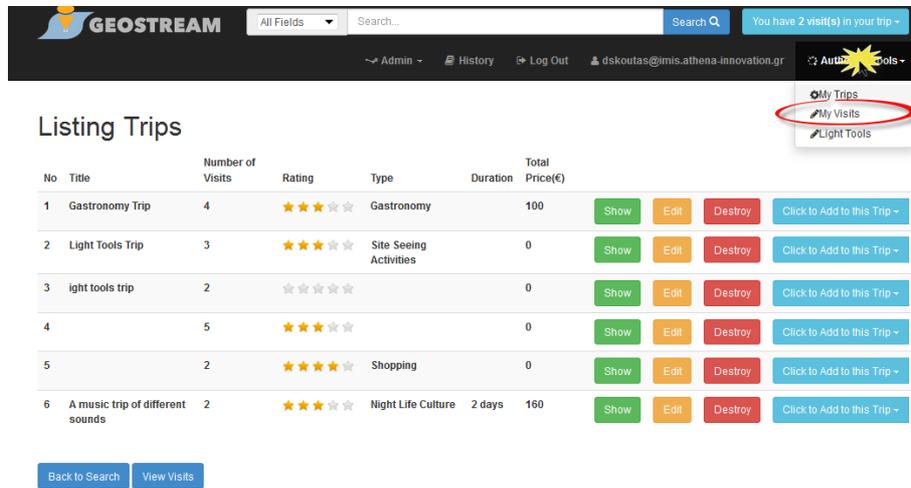
Step 15: View the list of trips you have created. You may select a trip as “current trip” in order to add any additional visits by clicking “Click to Add to this Trip”.

Listing Trips

No	Title	Number of Visits	Rating	Type	Duration	Total Price(€)	Actions
1	Gastronomy Trip	4	★★★★☆	Gastronomy		100	Show Edit Destroy Click to Add to this Trip -
2	Light Tools Trip	3	★★★★☆	Site Seeing Activities		0	Show Edit Destroy Click to Add to this Trip -
3	light tools trip	2	★★★★☆			0	Show Edit Destroy Click to Add to this Trip -
4		5	★★★★☆			0	Show Edit Destroy Click to Add to this Trip -
5		2	★★★★☆	Shopping		0	Show Edit Destroy Click to Add to this Trip -
6	A music trip of different sounds	2	★★★★☆	Night Life Culture	2 days	160	Show Edit Destroy Click to Add to this Trip -

[Back to Search](#) [View Visits](#)

Step 16: To display an overview of the visits included in your trips, go to “Authoring Tools → My Visits”

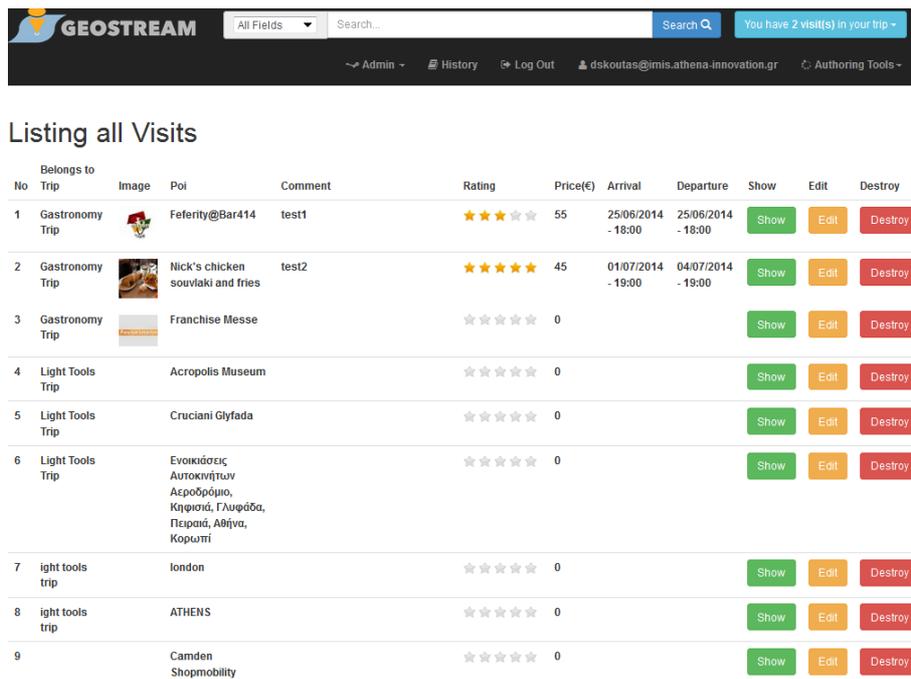


The screenshot shows the GEOSTREAM interface with the 'Listing Trips' page. The 'Authoring Tools' dropdown menu is open, and 'My Visits' is highlighted with a red circle. Below the menu, a table lists trips with columns for No, Title, Number of Visits, Rating, Type, Duration, and Total Price(€). Each row includes 'Show', 'Edit', and 'Destroy' buttons, along with a 'Click to Add to this Trip' link.

No	Title	Number of Visits	Rating	Type	Duration	Total Price(€)	Buttons
1	Gastronomy Trip	4	★★★★☆	Gastronomy		100	Show Edit Destroy Click to Add to this Trip
2	Light Tools Trip	3	★★★★☆	Site Seeing Activities		0	Show Edit Destroy Click to Add to this Trip
3	light tools trip	2	☆☆☆☆☆			0	Show Edit Destroy Click to Add to this Trip
4		5	★★★★☆			0	Show Edit Destroy Click to Add to this Trip
5		2	★★★★☆	Shopping		0	Show Edit Destroy Click to Add to this Trip
6	A music trip of different sounds	2	★★★★☆	Night Life Culture	2 days	160	Show Edit Destroy Click to Add to this Trip

Buttons at the bottom: Back to Search, View Visits

Step 17: The list of visits is presented.



The screenshot shows the GEOSTREAM interface with the 'Listing all Visits' page. The table lists individual visits with columns for No, Belongs to Trip, Image, Poi, Comment, Rating, Price(€), Arrival, Departure, Show, Edit, and Destroy.

No	Belongs to Trip	Image	Poi	Comment	Rating	Price(€)	Arrival	Departure	Show	Edit	Destroy
1	Gastronomy Trip		Ferfery@Bar414	test1	★★★★☆	55	25/06/2014 - 18:00	25/06/2014 - 18:00	Show	Edit	Destroy
2	Gastronomy Trip		Nick's chicken souvlaki and fries	test2	★★★★☆	45	01/07/2014 - 19:00	04/07/2014 - 19:00	Show	Edit	Destroy
3	Gastronomy Trip		Franchise Messe		☆☆☆☆☆	0			Show	Edit	Destroy
4	Light Tools Trip		Acropolis Museum		☆☆☆☆☆	0			Show	Edit	Destroy
5	Light Tools Trip		Cruciani Glyfada		☆☆☆☆☆	0			Show	Edit	Destroy
6	Light Tools Trip		Ενοκιάσεις Αυτοκινήτων Αεροδρόμιο, Κηφισιά, Γλυφάδα, Πειραιά, Αθήνα, Κορωπί		☆☆☆☆☆	0			Show	Edit	Destroy
7	light tools trip		london		☆☆☆☆☆	0			Show	Edit	Destroy
8	light tools trip		ATHENS		☆☆☆☆☆	0			Show	Edit	Destroy
9			Camden Shopmobility		☆☆☆☆☆	0			Show	Edit	Destroy

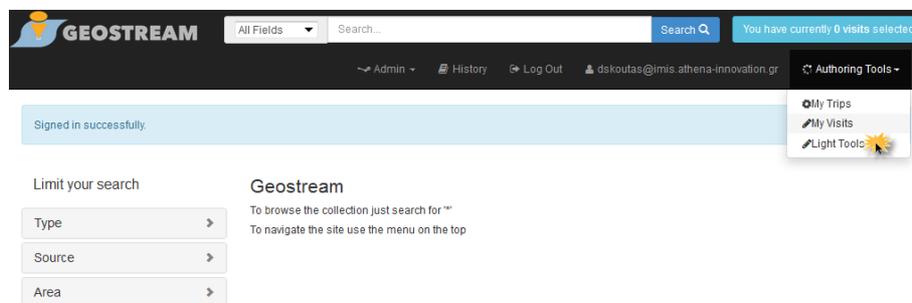
10	Camden chanel	☆☆☆☆☆	0	Show	Edit	Destroy				
11	Camden Labour	☆☆☆☆☆	0	Show	Edit	Destroy				
12	Camden Beach	☆☆☆☆☆	0	Show	Edit	Destroy				
13	Buckingham	☆☆☆☆☆	0	Show	Edit	Destroy				
14	London	☆☆☆☆☆	0	Show	Edit	Destroy				
15	CineLab Athens	☆☆☆☆☆	0	Show	Edit	Destroy				
16	Gastronomy Trip  #souviaki #store #art #athens #urban #iphone #iphonesia #iphoneonly #statigram	☆☆☆☆☆	0	Show	Edit	Destroy				
17	A music trip of different sounds 	48Hours + Serpico	This is just a comment- Now we are adding bullets- <p>Step 1</p><p>Step 2</p>How we add an image : 	☆☆☆☆☆	30	19/06/2014 - 19:00	19/06/2014 - 20:00	Show	Edit	Destroy
18	A music trip of different sounds 	Vienna Mozart Concerts	The piano is incredible... 	☆☆☆☆☆	130	17/06/2014 - 16:14	18/06/2014 - 16:14	Show	Edit	Destroy

[Back to Trips](#)

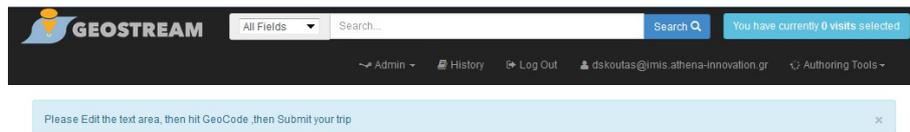
1.2.3 Creating trips from text

Another feature provided by the web application is the geocoding of locations in text documents. The following steps show how this is performed, and how the results can be used as input to create a trip and its visits, which can then be further edited and enhanced as described above.

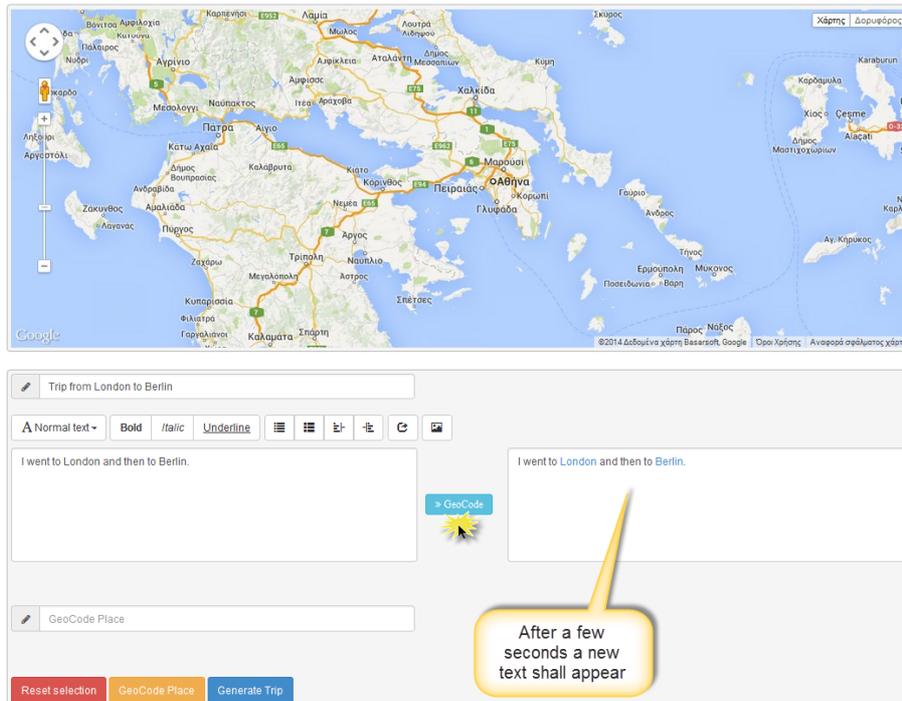
Step 1: Select “Light Tools” from the menu.



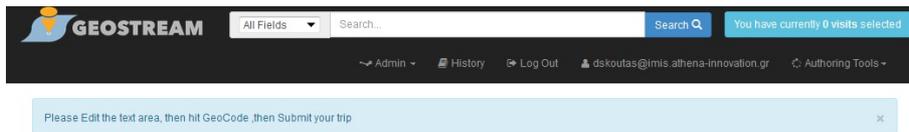
Step 2: Edit the trip title and edit the comment box with text, e.g.: “I went to London and then to Berlin.” Click the “Geocode” button. After a few seconds the same text is presented on the right box. In the new presented text, the city names “London” and “Berlin” have been hyper-linked by the geocoding module. When the geocoding module identifies a token (a word or a sequence of words) as a possible location, it hyperlinks them with relevant geodata from the back-end database.



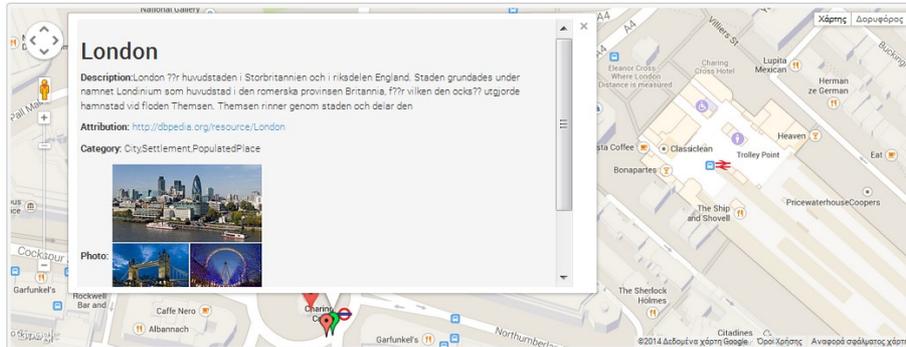
Light Authoring Tools (Version 3.0)



Step 3: Click on the “London” hyperlink and notice how the map displays locations of places containing the word “London”. Use left click to view the information of the place and right click to select the desired location among the provided alternatives (selected marker becomes green). Use “Reset selection” button to unselect the location(s).

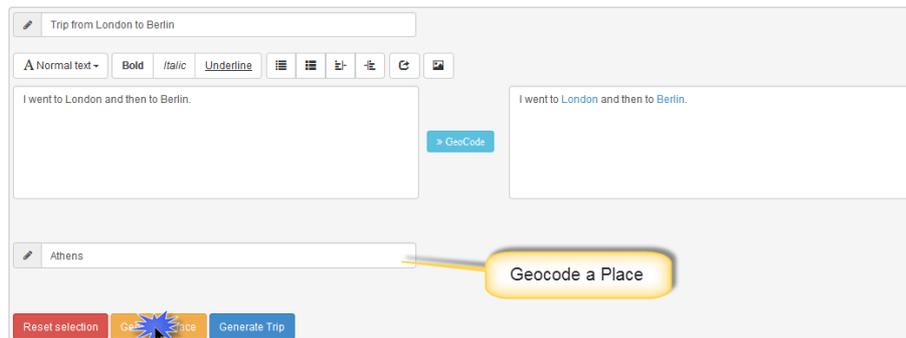


Light Authoring Tools (Version 3.0)

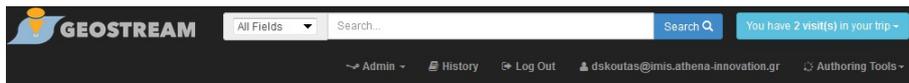


Step 4 : Repeat step 3 for hyperlink “Berlin”.

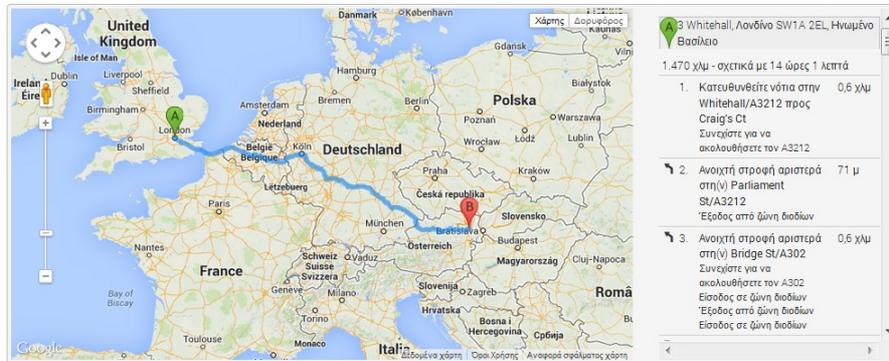
Step 5: (Optional Step) Fill the “Geocode Place” text field and click “Geocode Place” button to fine tune the selection of location(s).



Step 6: Click the “Generate Trip” button. A trip is created with the selected locations in Edit mode.



Editing route



Reset map

trip by dragging it. Step4: Add more information on each visit.

My Visits

No	Image	Title	Category	Comment	Rating	Price(€)	Arrival	Departure
1		London	City,Settlement,PopulatedPlace		☆☆☆☆☆	0		
2		Esoteric Falls Vienna	named place		☆☆☆☆☆	0		

Update Trip Details

Title
 Trip from London to Berlin

Comment
 A Normal text - **Bold** *Italic* Underline 

I went to London and then to Berlin.

Select Trip Type(Ctr+Click)

Night Life	Culture	Gastronomy
Site Seeing	Shopping	Walking
Bicycling	Activities	Sports
Educational	By the sea	Road Trip

Select Rating
 ☆☆☆☆☆

Select Transportation


Back to Trip Display Trips submit

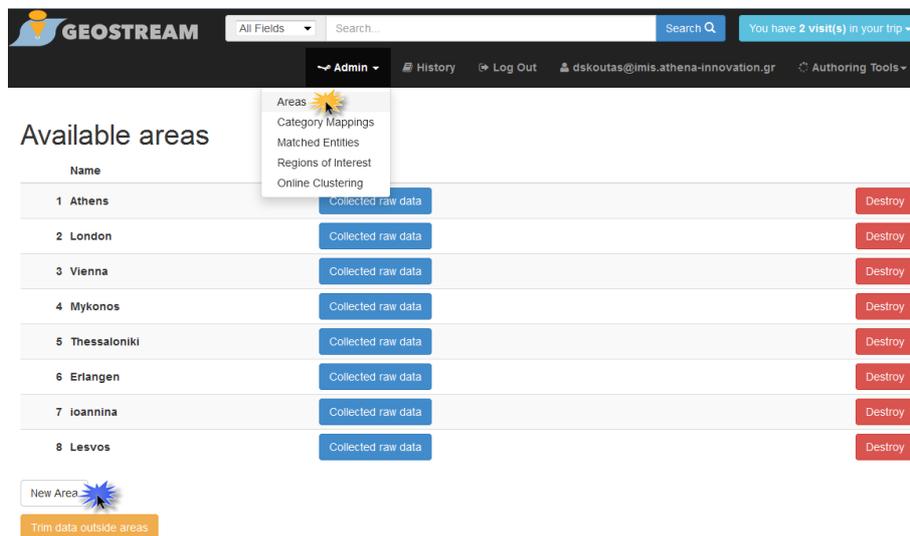
2 Admin area

For the actions presented in this section, the user must be logged in, and he/she must have administrator rights.

2.1 Creating areas for data collection

The first step for data collection is to specify the target area. This can be done visually by drawing on the map a rectangle that encloses the target area. The specific steps are presented below.

Step1: The user can create an area by the admin option “Areas”. A list of already available areas is displayed. Click “New Area” button to define a new area for data collection.



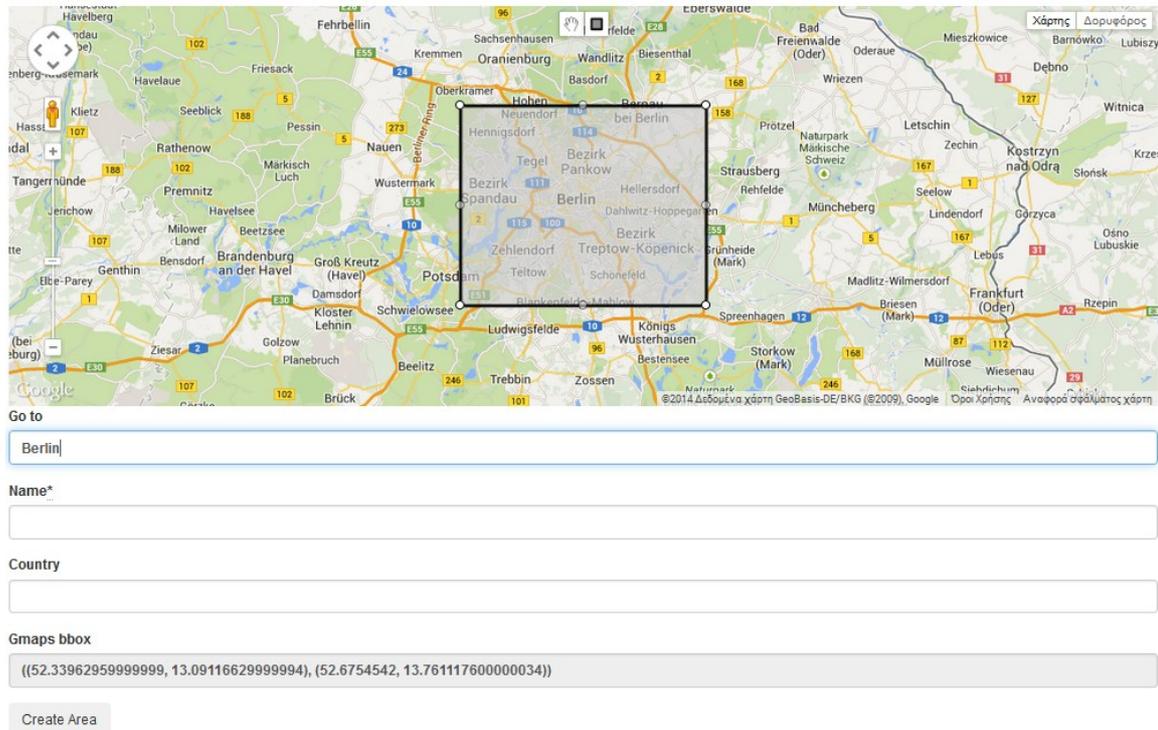
The screenshot shows the GEOSTREAM Admin interface. At the top, there is a navigation bar with the GEOSTREAM logo, a search bar, and user information. Below the navigation bar, a dropdown menu is open, showing options: Areas, Category Mappings, Matched Entities, Regions of Interest, and Online Clustering. The main content area displays a table titled "Available areas" with the following data:

Name	Collected raw data	Destroy
1 Athens	Collected raw data	Destroy
2 London	Collected raw data	Destroy
3 Vienna	Collected raw data	Destroy
4 Mykonos	Collected raw data	Destroy
5 Thessaloniki	Collected raw data	Destroy
6 Erlangen	Collected raw data	Destroy
7 Ioannina	Collected raw data	Destroy
8 Lesvos	Collected raw data	Destroy

Below the table, there is a "New Area" button and a "Trim data outside areas" button.

Step 2: Specify the name of a location, for example “Berlin” in the field “Go to” and notice how the map zooms to Berlin. You can also set the “Name” and “Country” fields to characterize the area. Finally, click “Create Area”.

Add a new area



Go to

Name*

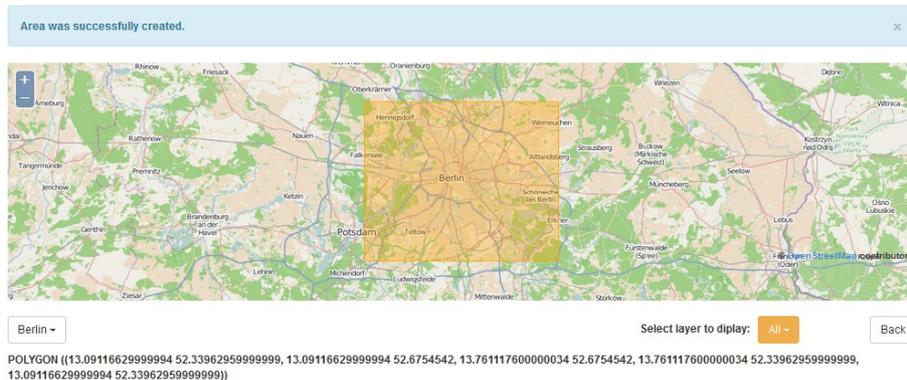
Country

Gmaps bbox

Create Area

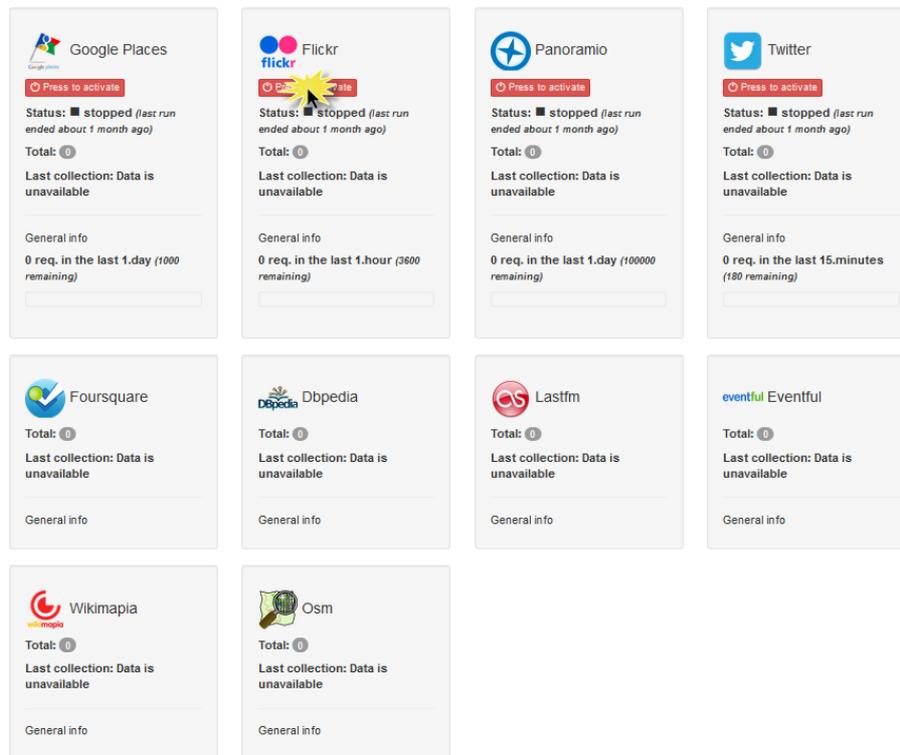
Step 3: Once an area has been created, an admin panel is displayed, where you can view information about the area, and you can start, monitor and manage the data collection process for the supported sources.

Area was successfully created. ✕



Select layer to display:

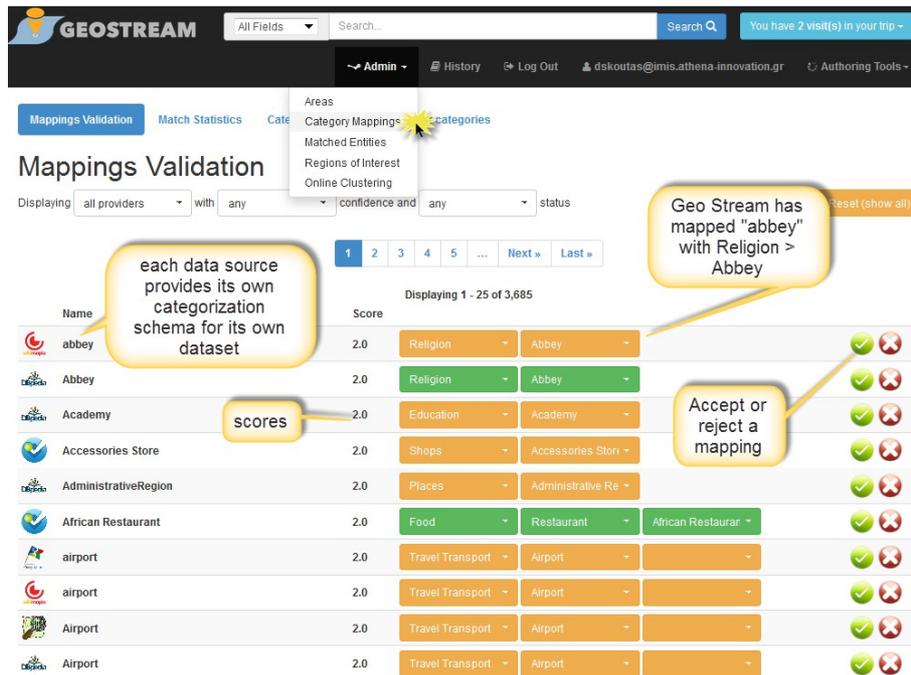
POLYGON (((13.091166299999994 52.339629599999999, 13.091166299999994 52.6754542, 13.761117600000034 52.6754542, 13.761117600000034 52.339629599999999, 13.091166299999994 52.339629599999999)))



2.2 Consolidating the categories of collected data

Geostream collects data from multiple sources, each one using its own classification or taxonomy to categorize entities. To integrate the collected data, a category mapping process is performed on the back-end, mapping source categories to a common categorization defined in Geostream. The following steps explain how to view, validate and modify the automatically computed results via the Web interface.

Step1: Click on “Category Mappings” from the main menu and browse the mappings between several categories. Check that when the score indicator is 2.0 the mapping of Geostream resolves in a high probability match while the low score -1 is for unmatched categories. Use the Next / Previous buttons to navigate through the results.



Mappings Validation

Displaying all providers with any confidence and any status

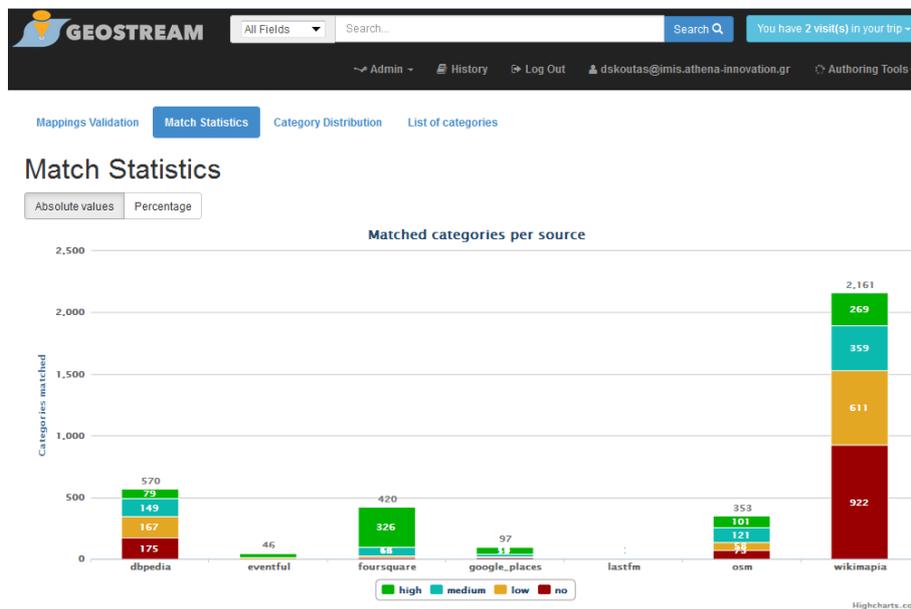
Displaying 1 - 25 of 3,685

Name	Score	Category 1	Category 2	Category 3	Accept	Reject
abbey	2.0	Religion	Abbey		✓	✗
Abbey	2.0	Religion	Abbey		✓	✗
Academy	2.0	Education	Academy		✓	✗
Accessories Store	2.0	Shops	Accessories Store		✓	✗
AdministrativeRegion	2.0	Places	Administrative Re		✓	✗
African Restaurant	2.0	Food	Restaurant	African Restaurar	✓	✗
airport	2.0	Travel Transport	Airport		✓	✗
airport	2.0	Travel Transport	Airport		✓	✗
Airport	2.0	Travel Transport	Airport		✓	✗
Airport	2.0	Travel Transport	Airport		✓	✗

Callouts:

- each data source provides its own categorization schema for its own dataset
- SCORES
- Geo Stream has mapped "abbey" with Religion > Abbey
- Accept or reject a mapping

Step2: Click on Match Statistics to display statistics columns on how high is the confidence that the categories per provider have been matched with Geostream categories.

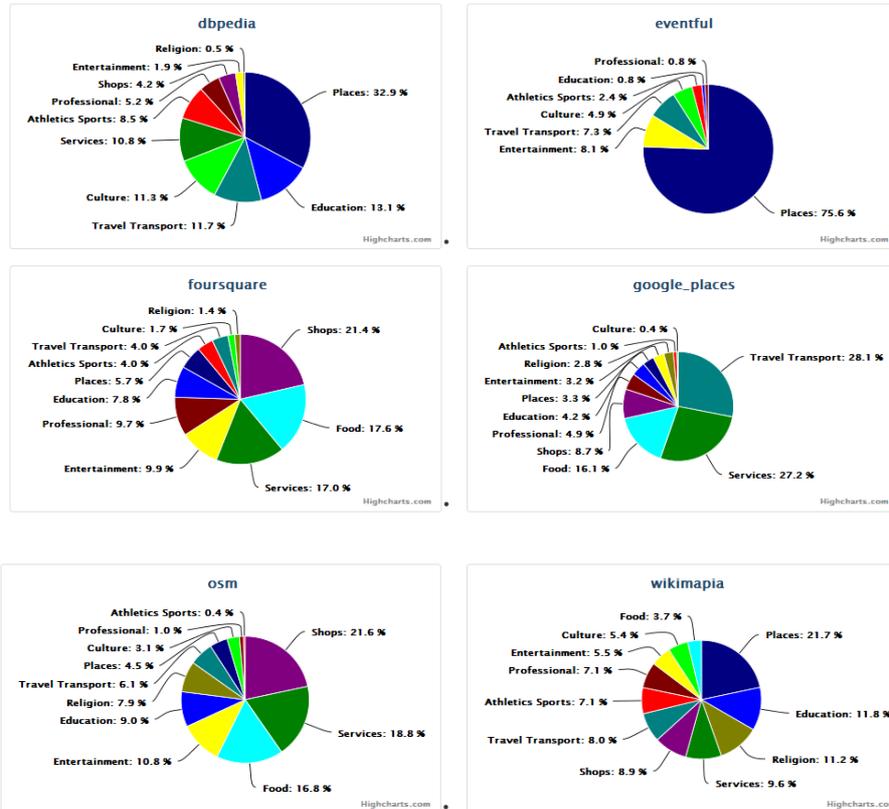


Step 3: Click on "Category Distribution" and view, for each provider, how many entities correspond to each of the top-level categories.

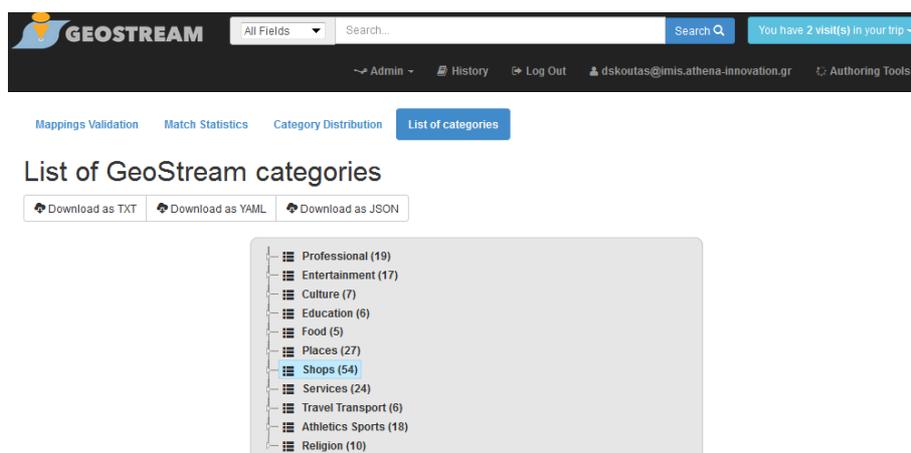
[Mappings Validation](#)
[Match Statistics](#)
[Category Distribution](#)
[List of categories](#)

Category Distribution

[Athens](#)
[Berlin](#)
[Erlangen](#)
[ioannina](#)
[Lesvos](#)
[London](#)
[Mykonos](#)
[Thessaloniki](#)
[Vienna](#)
[Refresh](#)



Step 4: Click on “List of categories” in order to browse the Geostream categorization schema, which can also be exported in various formats.



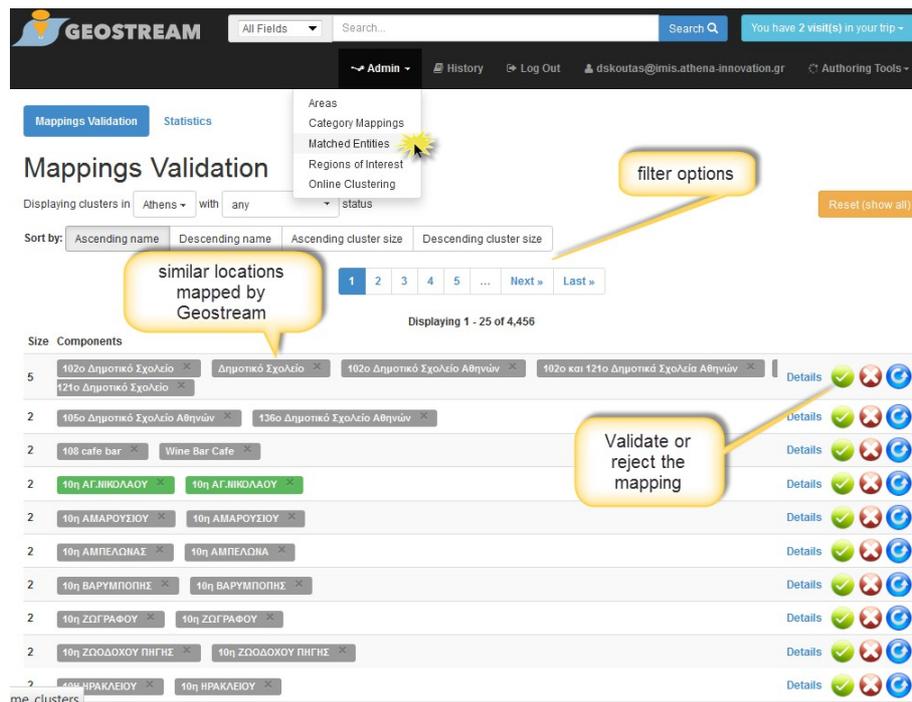
[Download as TXT](#)
[Download as YAML](#)
[Download as JSON](#)

- Professional (19)
- Entertainment (17)
- Culture (7)
- Education (6)
- Food (5)
- Places (27)
- Shops (54)
- Services (24)
- Travel Transport (6)
- Athletics Sports (18)
- Religion (10)

2.3 Validating entity matching results

Often, the same entity can be found in multiple sources. This results in duplicates in the Geostream database. Geostream employs a module that automatically identifies potential duplicates. The following steps explain how to view and validate the results via the Web interface.

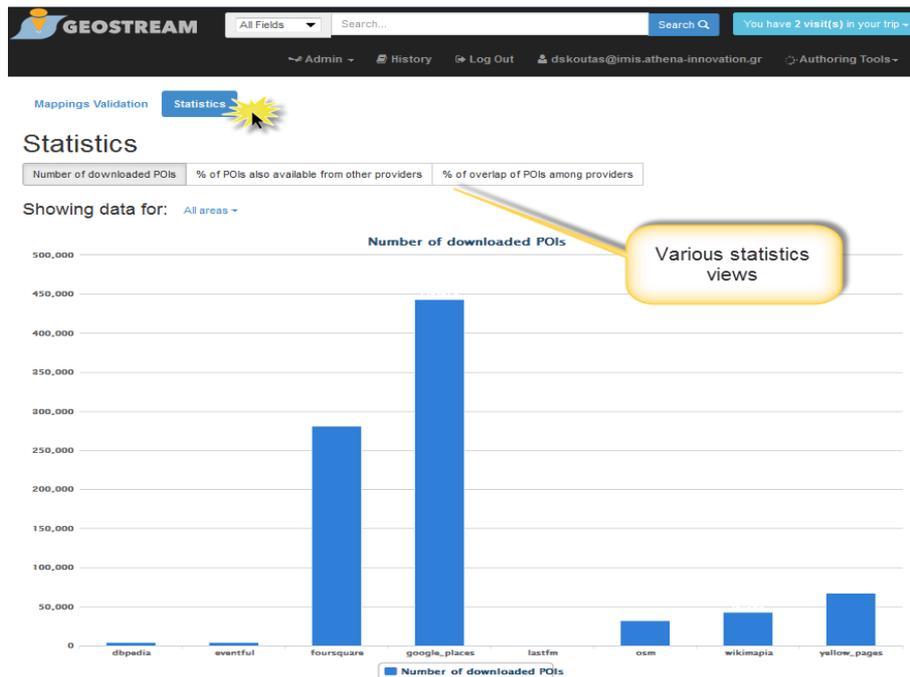
Step1: Click “Matched Entities” and view in the “components” section the list of entities identified as potential duplicates.



The screenshot shows the 'Mappings Validation' section of the Geostream web interface. At the top, there is a search bar and a navigation menu. The 'Matched Entities' option is highlighted in the menu. Below the menu, there are filter options for displaying clusters in Athens and sorting by name or cluster size. A table lists various components with their names and status icons (green checkmark, red X, blue refresh). Callouts highlight 'filter options', 'similar locations mapped by Geostream', and 'Validate or reject the mapping'.

Size	Components	Details	Status
5	102ο Δημοτικό Σχολείο, Δημοτικό Σχολείο, 102ο Δημοτικό Σχολείο Αθηνών, 102ο και 121ο Δημοτικά Σχολεία Αθηνών, 121ο Δημοτικό Σχολείο	Details	✓ ✗ ↺
2	105ο Δημοτικό Σχολείο Αθηνών, 136ο Δημοτικό Σχολείο Αθηνών	Details	✓ ✗ ↺
2	108 cafe bar, Wine Bar Cafe	Details	✓ ✗ ↺
2	10η ΑΓ.ΝΙΚΟΛΑΟΥ, 10η ΑΓ.ΝΙΚΟΛΑΟΥ	Details	✓ ✗ ↺
2	10η ΑΜΑΡΟΥΣΙΟΥ, 10η ΑΜΑΡΟΥΣΙΟΥ	Details	✓ ✗ ↺
2	10η ΑΜΠΕΛΩΝΙΑΣ, 10η ΑΜΠΕΛΩΝΙΑ	Details	✓ ✗ ↺
2	10η ΒΑΡΥΜΠΟΠΗΣ, 10η ΒΑΡΥΜΠΟΠΗΣ	Details	✓ ✗ ↺
2	10η ΖΩΓΡΑΦΟΥ, 10η ΖΩΓΡΑΦΟΥ	Details	✓ ✗ ↺
2	10η ΖΩΟΔΟΧΟΥ ΠΗΓΗΣ, 10η ΖΩΟΔΟΧΟΥ ΠΗΓΗΣ	Details	✓ ✗ ↺
2	10η ΗΡΑΚΛΕΙΟΥ, 10η ΗΡΑΚΛΕΙΟΥ	Details	✓ ✗ ↺

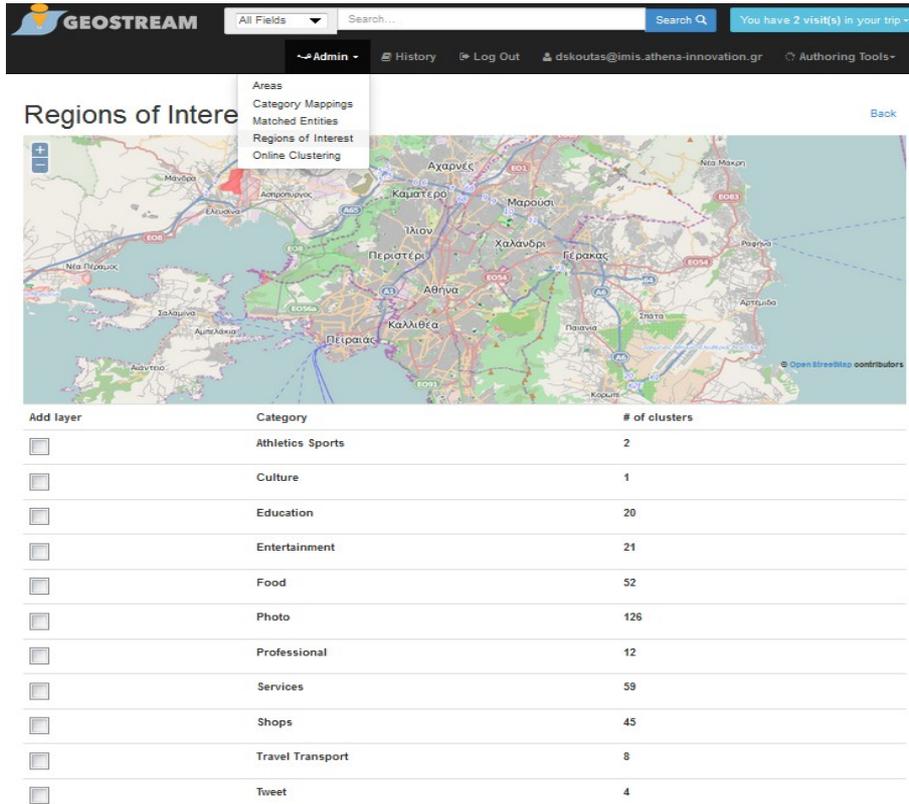
Step 2: Click the “Statistics” button to browse through statistic graphics regarding (i) number of downloaded data per provider, (ii) percentage of POIs also available from other providers (iii) percentage of overlap of POIs among providers.



2.4 Displaying extracted Regions of Interest

Geostream employs a module that performs density-based clustering of the collected data to identify 'regions of interest'. The results can be displayed on the map, as explained by the following steps. This is aimed for identifying, for example, 'hot spots' in a city, or more generally areas having high concentration of certain types of POIs.

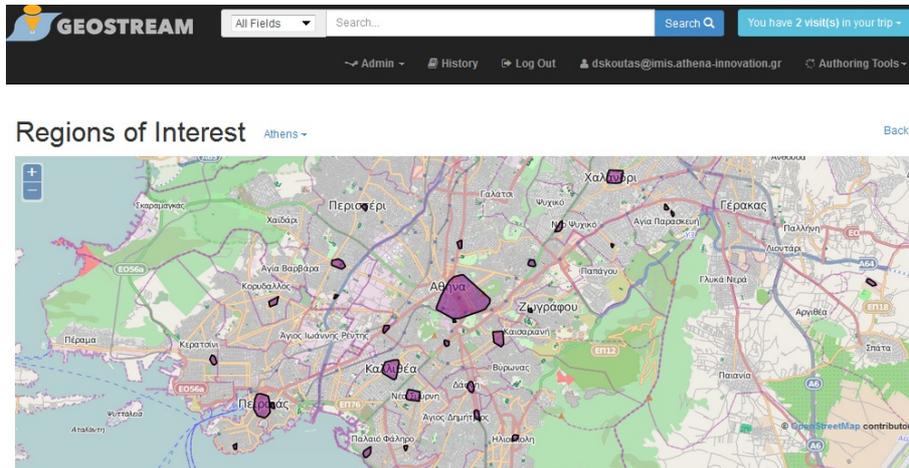
Step1: Click "Regions of Interest" from the main menu.



The screenshot shows the GEOSTREAM web application interface. At the top, there is a search bar and navigation links. The main content area is titled "Regions of Interest" and displays a map of Athens with various clusters highlighted. Below the map is a table with the following data:

Add layer	Category	# of clusters
<input type="checkbox"/>	Athletics Sports	2
<input type="checkbox"/>	Culture	1
<input type="checkbox"/>	Education	20
<input type="checkbox"/>	Entertainment	21
<input type="checkbox"/>	Food	52
<input type="checkbox"/>	Photo	126
<input type="checkbox"/>	Professional	12
<input type="checkbox"/>	Services	59
<input type="checkbox"/>	Shops	45
<input type="checkbox"/>	Travel Transport	8
<input type="checkbox"/>	Tweet	4

Step 2: Select a category, e.g. “Shops”, and notice how the map zooms to display clusters that correspond to shopping areas.



The screenshot shows the GEOSTREAM web application interface with the map zoomed in on the 'Shops' category. The map displays a detailed view of the Athens area, with various clusters highlighted in purple. The table below the map shows the following data:

Add layer	Category	# of clusters
<input type="checkbox"/>	Athletics Sports	2
<input type="checkbox"/>	Culture	1
<input type="checkbox"/>	Education	20
<input type="checkbox"/>	Entertainment	21
<input type="checkbox"/>	Food	52
<input checked="" type="checkbox"/>	Photo	126
<input type="checkbox"/>	Professional	12
<input type="checkbox"/>	Services	59
<input type="checkbox"/>	Shops	45
<input type="checkbox"/>	Travel Transport	8
<input type="checkbox"/>	Tweet	4

Step 3: Repeat the process for other categories.