



USER GUIDE TO THE GEOSTREAM WEB APPLICATION

Version 1.0, July 2014

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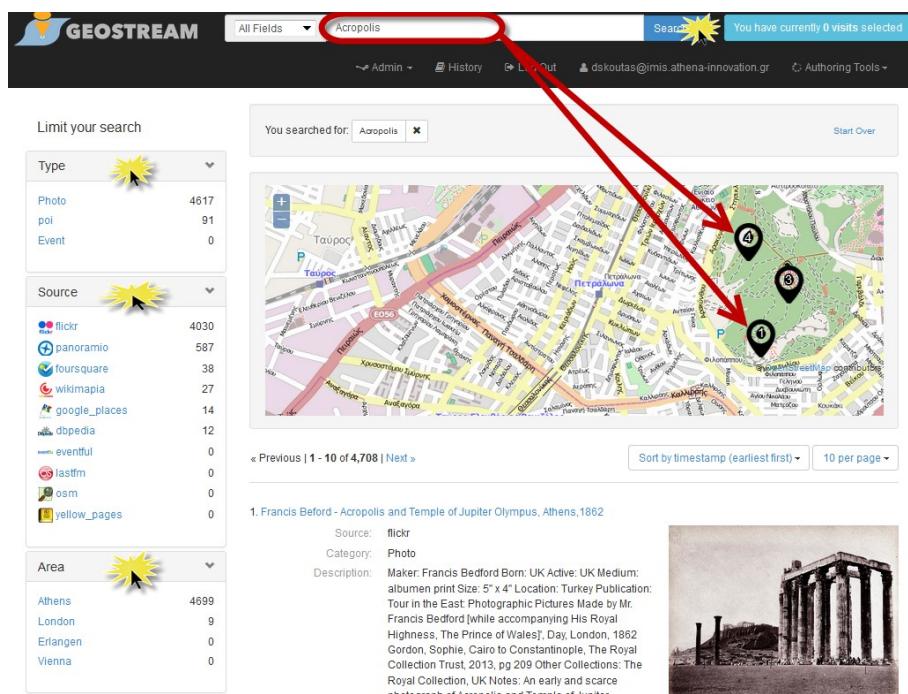
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1 User area

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, there is a search bar with "Acropolis" typed in. Below the search bar is a navigation menu with links like "Admin", "History", "Logout", "dskoutas@imis.athena-innovation.gr", and "Authoring Tools". On the left, there is a sidebar titled "Limit your search" with three dropdown menus: "Type" (set to "Photo"), "Source" (set to "flickr"), and "Area" (set to "Athens"). The "Type" menu has options: Photo (4617), poi (91), and Event (0). The "Source" menu lists various web sources with their counts: flickr (4030), panoramio (587), foursquare (38), wikimapia (27), google_places (14), dbpedia (12), eventful (0), lastfm (0), osm (0), and yellow_pages (0). The "Area" menu lists cities: Athens (4699), London (9), Erlangen (0), and Vienna (0). The main content area shows a map of Athens with several location markers labeled 1 through 4. Below the map is a list of search results. The first result is a photograph of the Acropolis by Francis Bedford, with details: 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 searched for: Acropolis Type > poi

Type

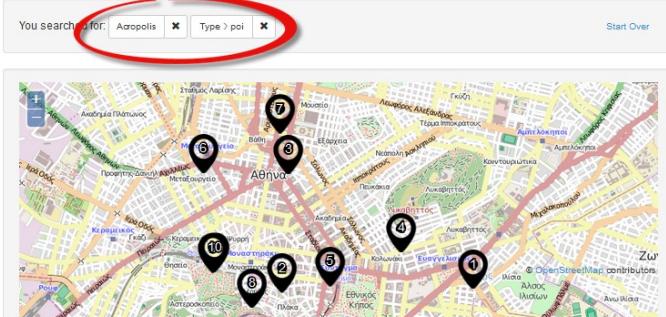
Photo	4617
poi	91
Event	0

Source

Area

Keywords

Mapped category



« Previous | 1 - 10 of 91 | Next » 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, χώροι, spa, hotel, hilton, gym, beauty center

City: Athens

Location: 37.976057613040204,23.750193036791202

Trip:

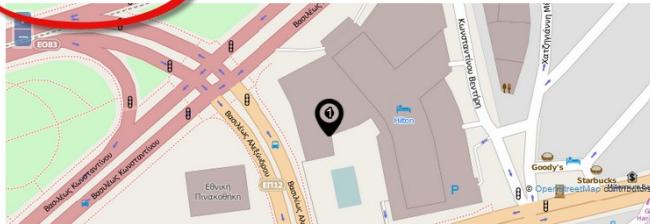
Step 3: Click on a search result, e.g. "Hilton Athens", to display the details of this particular item.

All Fields Search... You have currently 0 visits selected

Admin History dskoutas@imis.athena-innovation.gr

« Previous | 1 of 91 | Next » Back to Search Start Over Tools

Hilton Athens 



Geostream ID: 46764

URL: <https://foursquare.com/v/hiltonathens> 

Source: foursquare

Category: Hotel

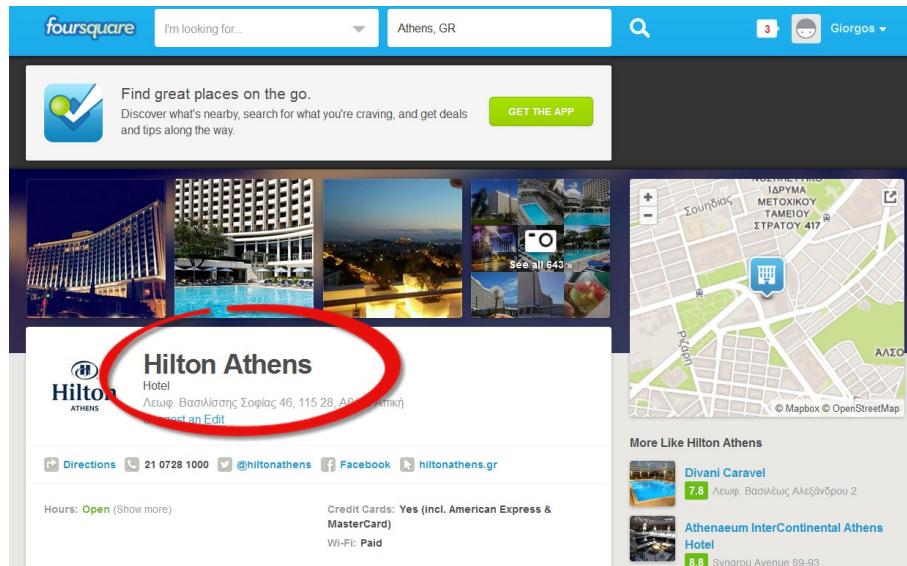
Description: Situated in a prime location overlooking the ancient Acropolis and the unmistakable Athens cityscape, the Hilton Athens hotel features spacious, modern accommodation, three fabulous swimming pools and the tranquil Hiltonia Spa.

Tags: athens, χώροι, 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.

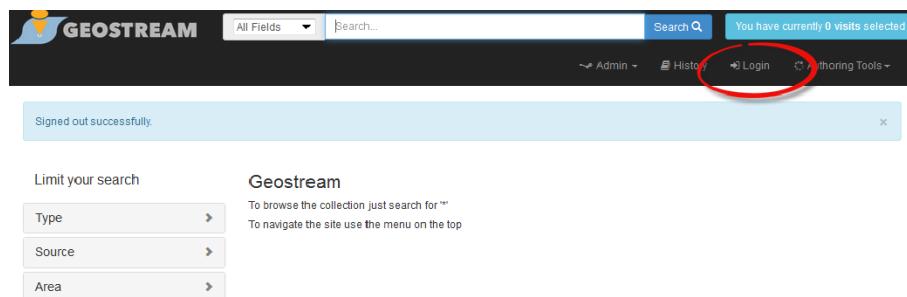


1.2 Creating trips

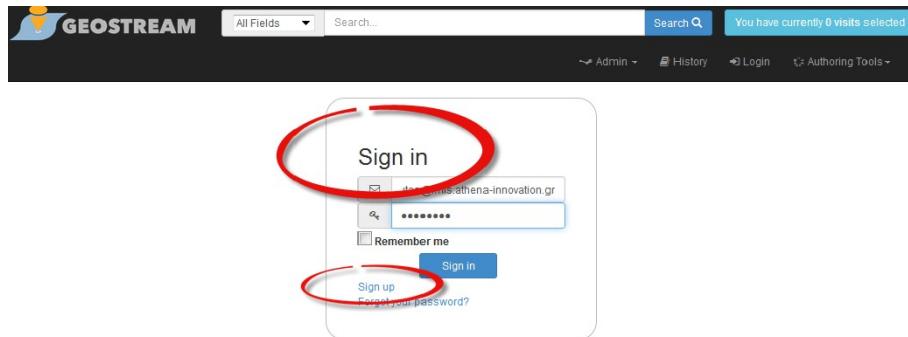
1.2.1 Login

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

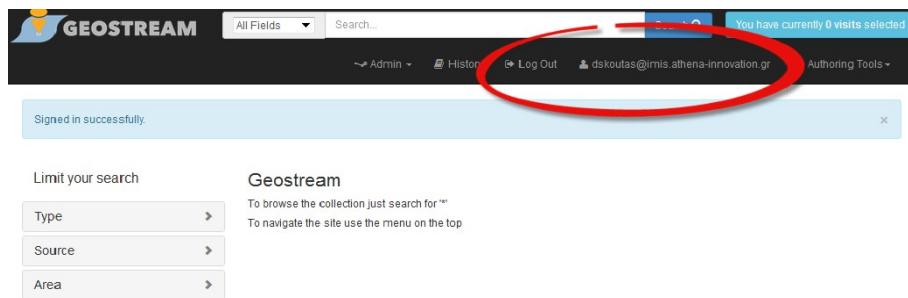
Step 1: Click Login.



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.

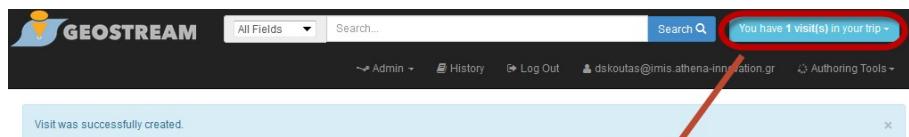
1. 48Hours + Serpico

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, Fulham
 Location: 51.543072246541925,-0.1922204694369157
 Trip: [Add to Trip](#)

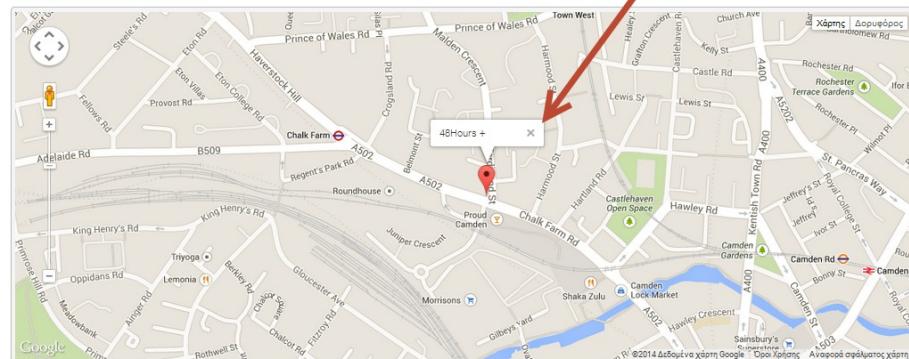
2. Flesh For Lulu + Jonny Cora and me A Grades + The Priscillas

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,Bar/Night 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

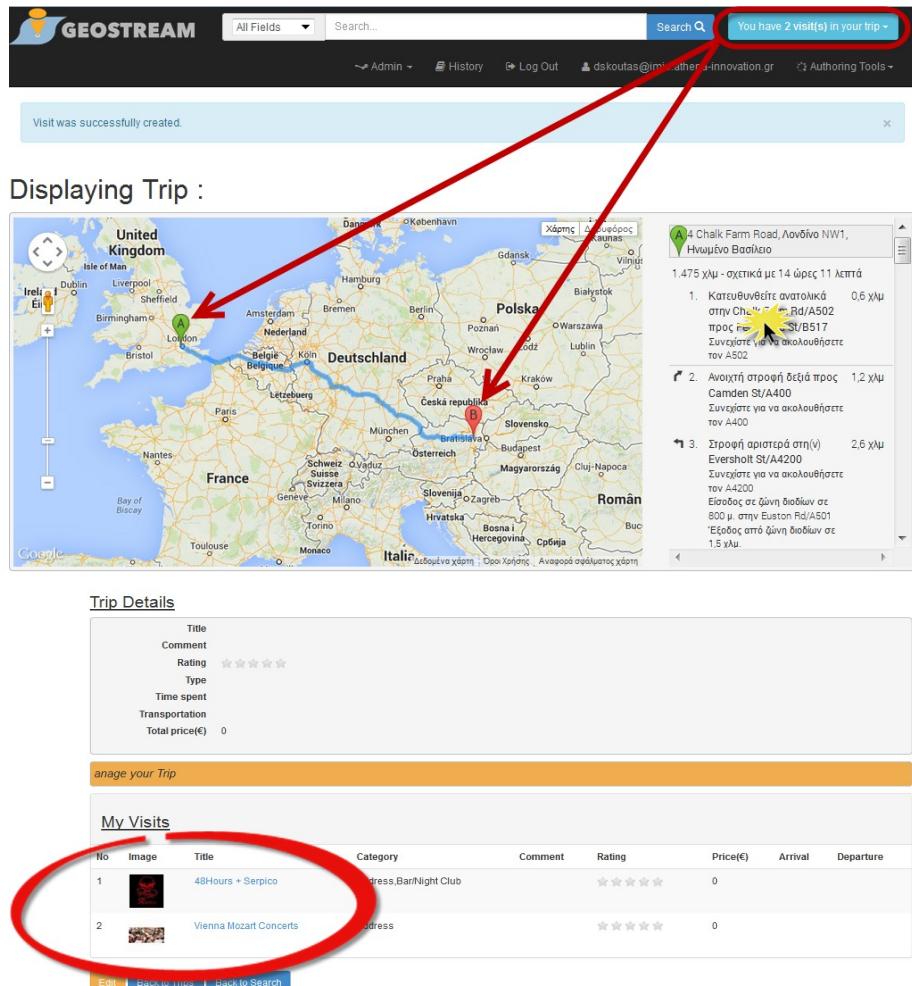
Source: eventful
Category: address
Description: The Vienna Mozart Orchestra performs with internationally renowned vocalists and instrumentalists in Vienna's most extraordinary concert halls: the Vienna State Opera, Musikverein Golden Hall, Hofburg (Imperial Palace) and the Vienna Konzerthaus. As the 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.

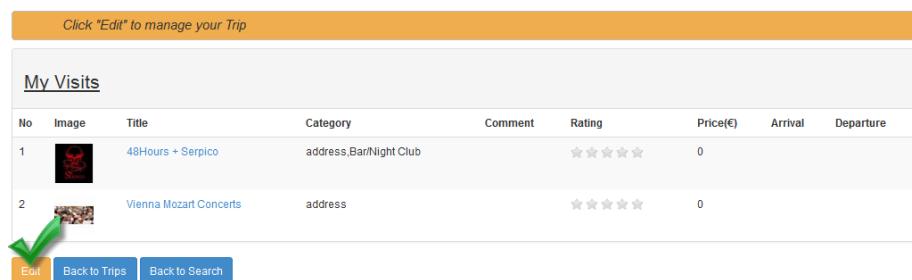
Displaying Trip :



The screenshot shows the GeoStream trip display interface. At the top, there is a search bar and a message saying "You have 2 visit(s) in your trip". Below the map, there is a "Trip Details" section and a "My Visits" table. The "My Visits" table has two entries, each with an "Edit" button at the bottom.

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

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.



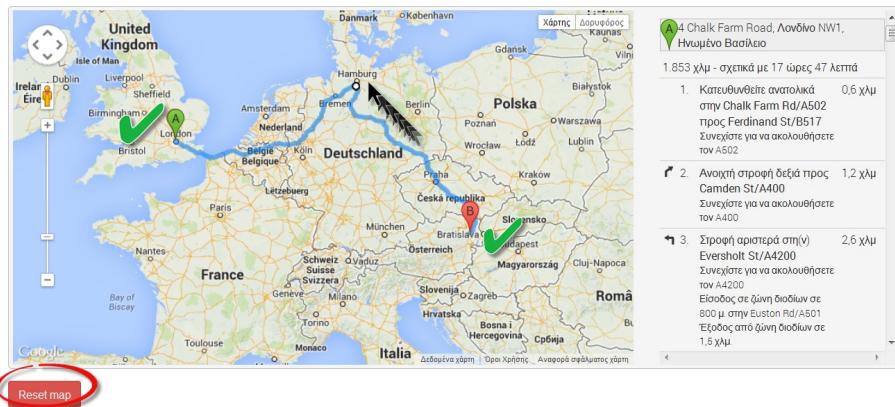
The screenshot shows the GeoStream trip edit interface. It features a header with the text "Click "Edit" to manage your Trip" and a "My Visits" table. The table contains the same two entries as the previous screenshot. The "Edit" button is highlighted with a green arrow.

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

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

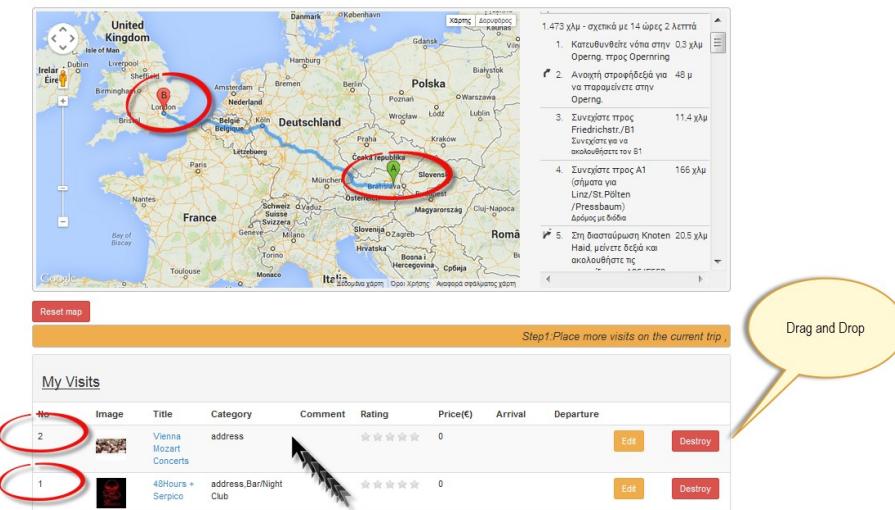
functionality directly on the path displayed on the map. A “reset map” button is provided to undo any modifications.

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.

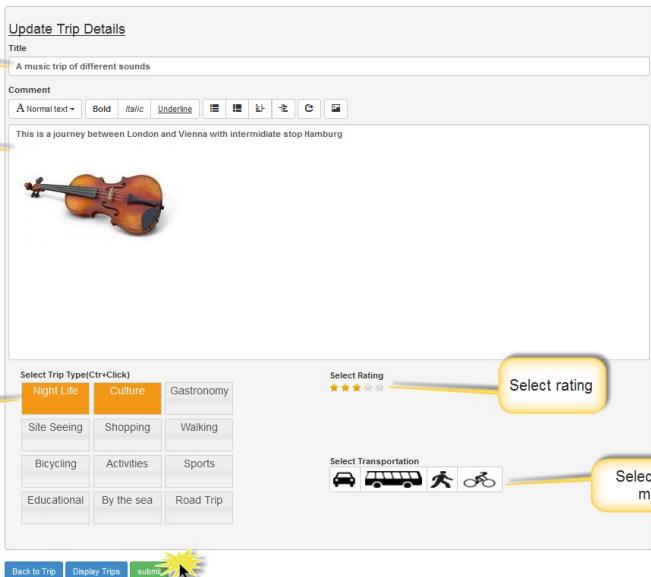
Provide a title

Add trip comments

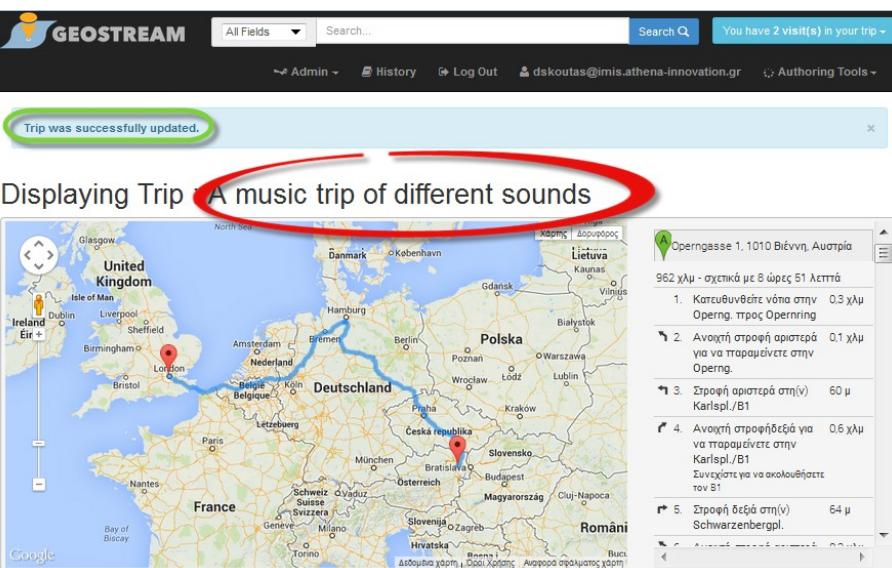
Select trip type

Select rating

Select travel mode



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**

Operngasse 1, 1010 Bénnv. Austríia

962 χλμ - σχεπικά με 8 ώρες 51 λεπτά

- Κατευθύνθηκέ νότια στην 0.3 χλμ Operng. προς Opernring
- Ανοική στροφή αριστερά 0.1 χλμ για να παραμένετε στην Operng.
- Στροφή αριστερά στη(v) 60 μ Karispl./B1
- Ανοική στροφήδεξιά για 0.6 χλμ να παραμένετε στην Karispl./B1 Συνέχιστα για να ακολουθήσετε τον δι.
- Στροφή δεξιά στη(v) 64 μ Schwarzenbergl.

Trip Details

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

"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".

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 + Serpico

Photo: 

Trip Name: A music trip of different sounds

Comment:

Rating: ★★★★☆

Price(E): 0

Arrival:

Departure:

Submit **Back to Trips** **Back to Visits** **Back to Trip**

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

Add a comment

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

- Step 1
- Step 2



Now we add an image :

Add price, rating, departure and arrival

Price(E)

Rating: ★★★★☆

Arrival

Departure

Submit 

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

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](#)

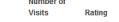
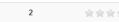
Step 14: Click the “Back to Trips” button.

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](#) [!\[\]\(4663e47d22b674361e5d09f5a9335dc4_img.jpg\) 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”.

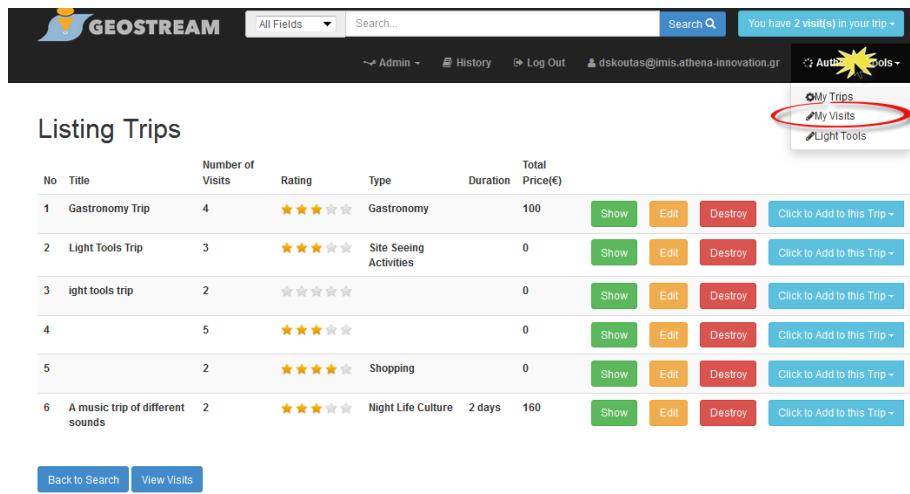
Listing Trips

No	Title	Number of Visits	Rating	Type	Duration	Total Price(€)	
1	Gastronomy Trip	4		Gastronomy	100	   	
2	Light Tools Trip	3		Site Seeing Activities	0	   	
3	Light tools trip	2			0	   	
4		5			0	   	
5		2		Shopping	0	   	
6	A music trip of different sounds	2		Night Life Culture	2 days	160	   

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

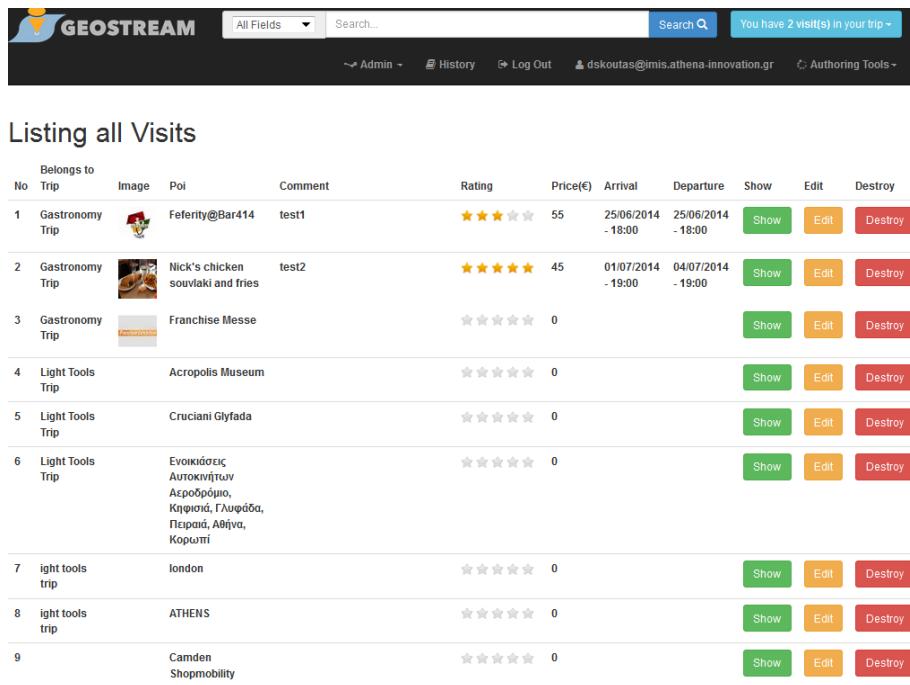
This is my trip
Click me to start over a new trip...

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



The screenshot shows the GeoStream application interface. At the top, there is a navigation bar with the GeoStream logo, search fields, and user information (Admin, History, Log Out, dskoutas@imis.athena-innovation.gr). On the right side of the header, there is a dropdown menu for 'Authoring Tools' which includes 'My Trips', 'My Visits' (which is circled in red), and 'Light Tools'. Below the header, the main content area is titled 'Listing Trips'. It displays a table with six rows of trip data, each with 'Show', 'Edit', and 'Destroy' buttons. At the bottom of this section are 'Back to Search' and 'View Visits' buttons.

Step 17: The list of visits is presented.



The screenshot shows the GeoStream application interface. At the top, there is a navigation bar with the GeoStream logo, search fields, and user information (Admin, History, Log Out, dskoutas@imis.athena-innovation.gr). On the right side of the header, there is a dropdown menu for 'Authoring Tools'. Below the header, the main content area is titled 'Listing all Visits'. It displays a table with nine rows of visit data, each with 'Show', 'Edit', and 'Destroy' buttons. The table includes columns for No, Belongs to Trip, Image, PoI, Comment, Rating, Price(€), Arrival, Departure, and three buttons (Show, Edit, Destroy).

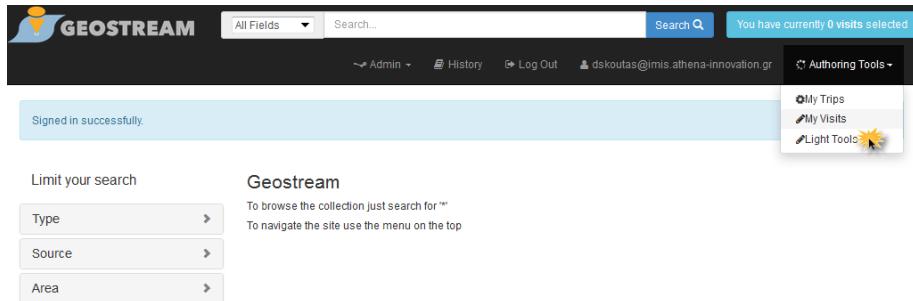
10	Camden chanel	★★★★★ 0	Show	Edit	Destroy	
11	Camden Labour	★★★★★ 0	Show	Edit	Destroy	
12	Camden Beach	★★★★★ 0	Show	Edit	Destroy	
13	Buckingham	★★★★★ 0	Show	Edit	Destroy	
14	London	★★★★★ 0	Show	Edit	Destroy	
15	Cinelab Athens	★★★★★ 0	Show	Edit	Destroy	
16	Gastronomy Trip	#souvlaki #store #art #athens #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: Step 1Step 2Now 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

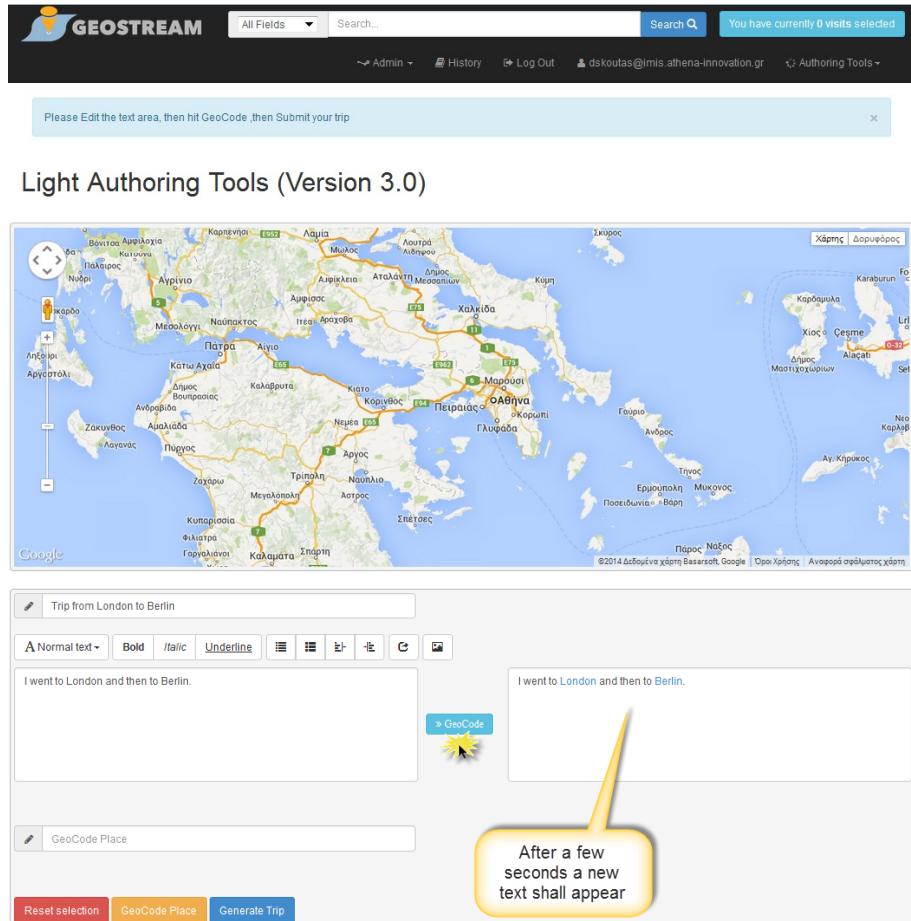
Another feature provided by the web application is the geocoding of locations in text documents. The following steps show how this is performed, and how the results can be used as input to create a trip and its visits, which can then be further edited and enhanced as described above.

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



The screenshot shows the GeoStream web application interface. At the top, there is a navigation bar with the GeoStream logo, search fields, and user information (signed in successfully). Below the navigation bar, there is a sidebar titled "Authoring Tools" with options for "My Trips", "My Visits", and "Light Tools". The "Light Tools" option is highlighted with a yellow star icon. The main content area has sections for "Limit your search" (Type, Source, Area) and "Geostream" (a search field and instructions). A message at the bottom right says "Signed in successfully."

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.



Please Edit the text area, then hit GeoCode, then Submit your trip

Light Authoring Tools (Version 3.0)

Trip from London to Berlin

I went to London and then to Berlin.

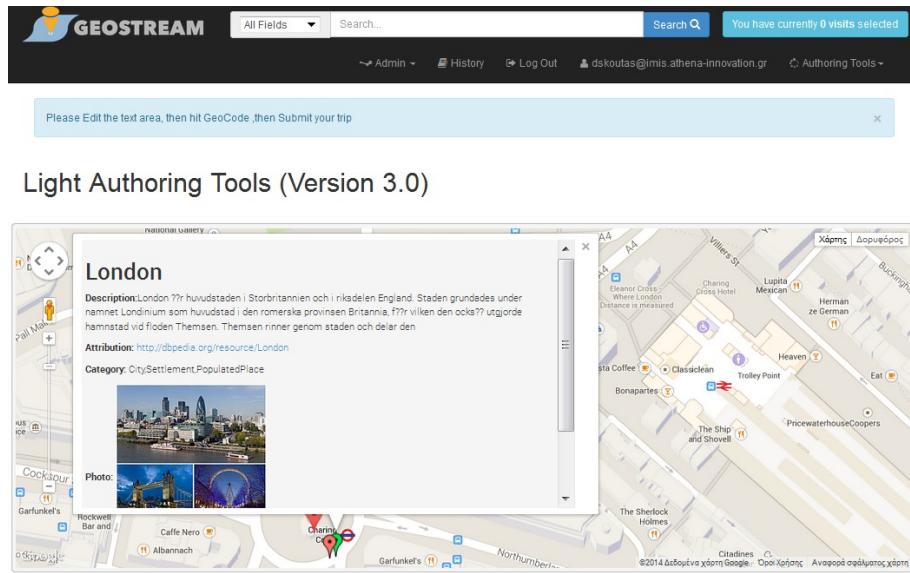
>> GeoCode

After a few seconds a new text shall appear

GeoCode Place

Reset selection GeoCode Place Generate Trip

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).



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).

Trip from London to Berlin

I went to London and then to Berlin.

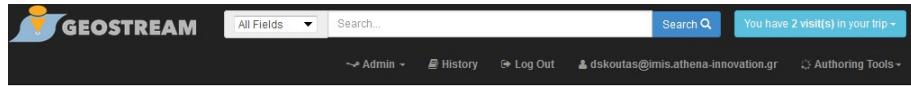
> GeoCode

Athens

Geocode a Place

Reset selection  Generate Place Generate Trip

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



All Fields Search... Search

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

Editing route



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			<input type="button" value="Edit"/> <input type="button" value="Destroy"/>
2		Esoteric Fairs Vienna	named place		★★★★★	0			<input type="button" value="Edit"/> <input type="button" value="Destroy"/>

Update Trip Details

Title

Trip from London to Berlin

Comment

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



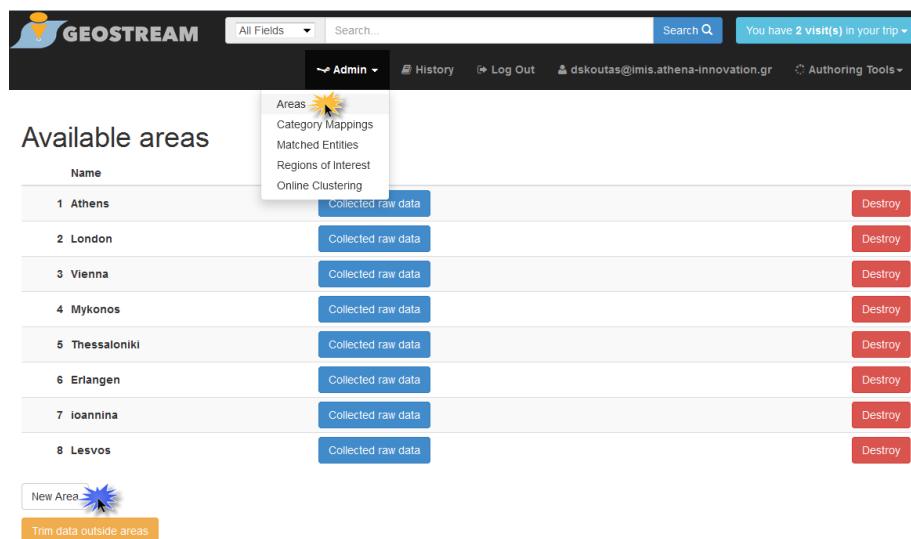
2 Admin area

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 links for 'All Fields', 'Search...', 'History', 'Log Out', 'dskoutas@imis.athena-innovation.gr', and 'Authoring Tools'. Below the navigation bar, a dropdown menu is open under the 'Admin' link, showing options: 'Areas' (which is highlighted), 'Category Mappings', 'Matched Entities', 'Regions of Interest', and 'Online Clustering'. The main content area is titled 'Available areas' and lists eight locations with their names and status: 'Athens', 'London', 'Vienna', 'Mykonos', 'Thessaloniki', 'Erlangen', 'Ioannina', and 'Lesvos'. Each location entry has a blue button labeled 'Collected raw data' and a red 'Destroy' button. At the bottom left, there is a 'New Area' button with a sun icon and a 'Trim data outside areas' button.

Name	Status	Action
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

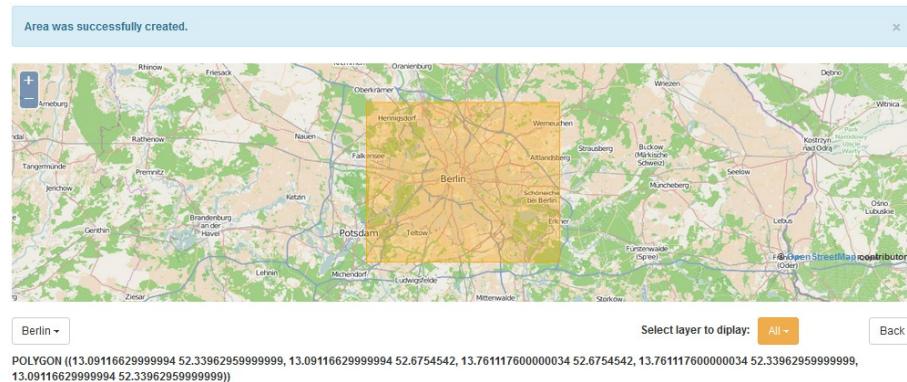
Step 2: Specify the name of a location, for example “Berlin” in the field “Go to” and notice how the map zooms to Berlin. You can also set the “Name” and “Country” fields to characterize the area. Finally, click “Create Area”.

Add a new area

Map showing the Berlin area with a black polygon drawn around it. Below the map is a search bar with "Berlin" and several input fields:

- Go to**: A search bar containing "Berlin".
- Name***: An input field.
- Country**: An input field.
- Gmaps bbox**: A text input field containing "((52.33962959999999, 13.09116629999994), (52.6754542, 13.761117600000034))".
- Create Area**: A button.

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.

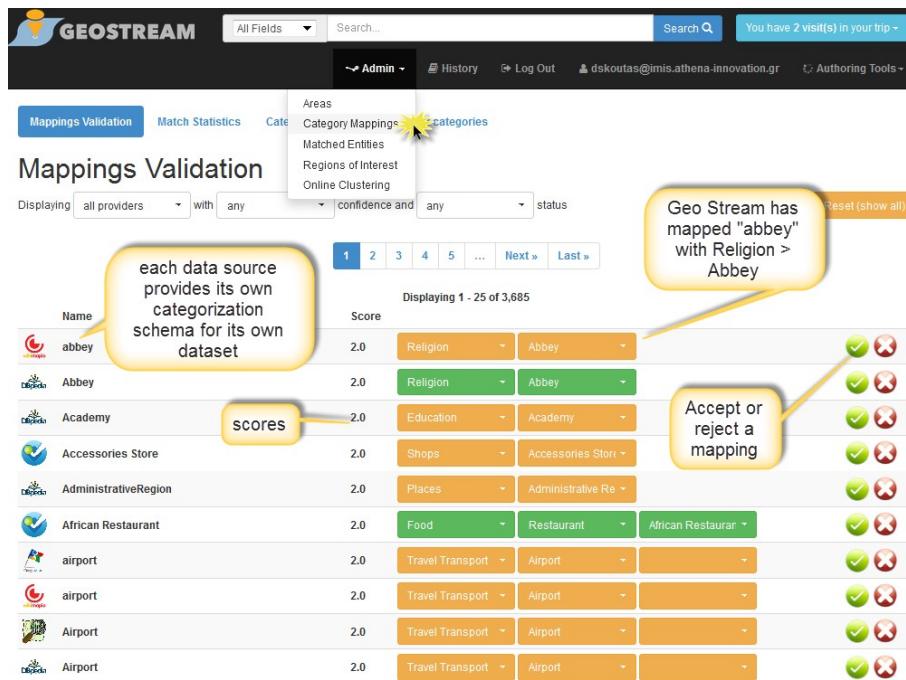


 Google Places Press to activate Status: ■ stopped (last run ended about 1 month ago) Total: 0 Last collection: Data is unavailable General info 0 req. in the last 1.day (1000 remaining)	 Flickr Press to activate Status: ■ stopped (last run ended about 1 month ago) Total: 0 Last collection: Data is unavailable General info 0 req. in the last 1.hour (3600 remaining)	 Panoramio Press to activate Status: ■ stopped (last run ended about 1 month ago) Total: 0 Last collection: Data is unavailable General info 0 req. in the last 1.day (100000 remaining)	 Twitter Press to activate Status: ■ stopped (last run ended about 1 month ago) Total: 0 Last collection: Data is unavailable General info 0 req. in the last 15.minutes (180 remaining)
 Foursquare Total: 0 Last collection: Data is unavailable General info	 Dbpedia Total: 0 Last collection: Data is unavailable General info	 Lastfm Total: 0 Last collection: Data is unavailable General info	 Eventful Total: 0 Last collection: Data is unavailable General info
 Wikimapia Total: 0 Last collection: Data is unavailable General info	 Osm Total: 0 Last collection: Data is unavailable General info		

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.



each data source provides its own categorization schema for its own dataset

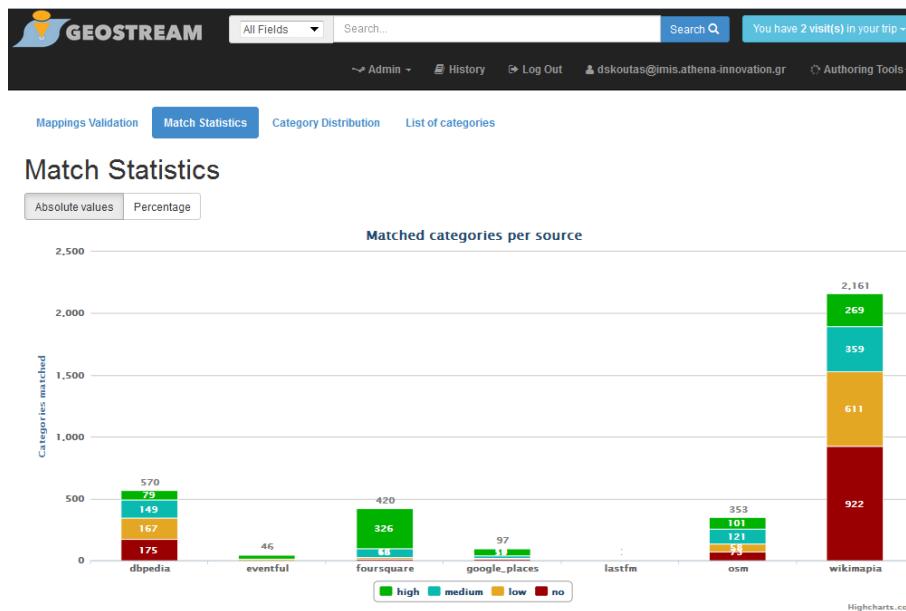
scores

Accept or reject a mapping

Geo Stream has mapped "abbey" with Religion > Abbey

Name	Score	Category	Provider	Action
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	✓
airport	2.0	Travel Transport	Airport	✓
airport	2.0	Travel Transport	Airport	✓
Airport	2.0	Travel Transport	Airport	✓
Airport	2.0	Travel Transport	Airport	✓

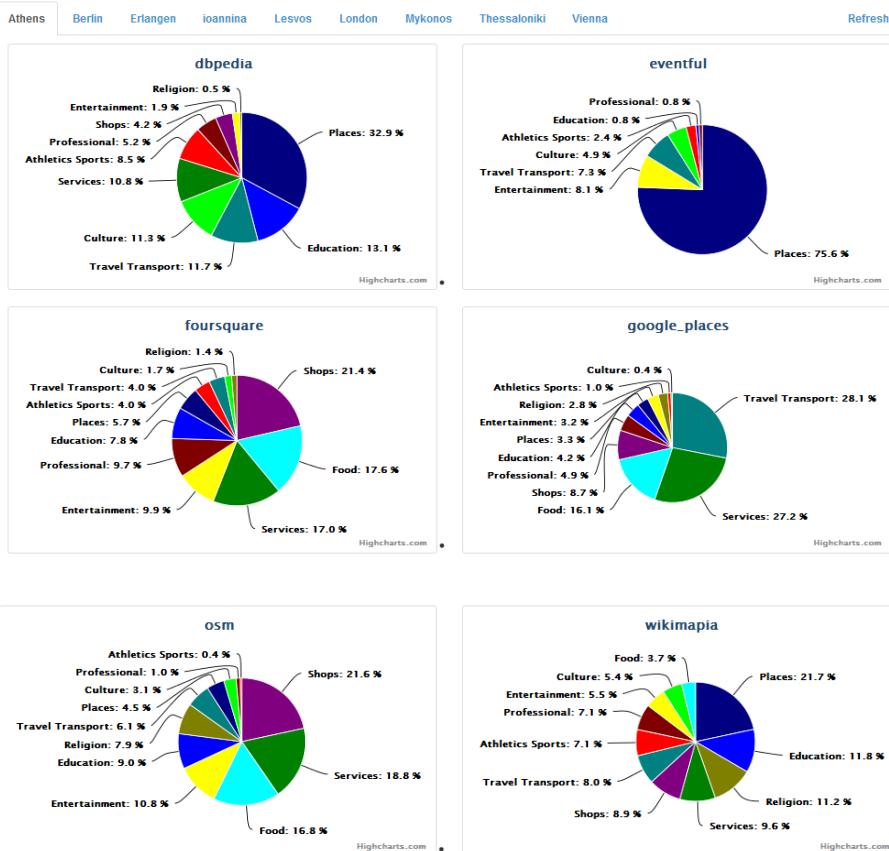
Step2: Click on Match Statistics to display statistics columns on how high is the confidence that the categories per provider have been matched with Geostream categories.



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



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

GEOSTREAM
All Fields
Search...
Search 
You have 2 visit(s) in your trip <

Mappings Validation Match Statistics Category Distribution **List of categories**

List of GeoStream categories

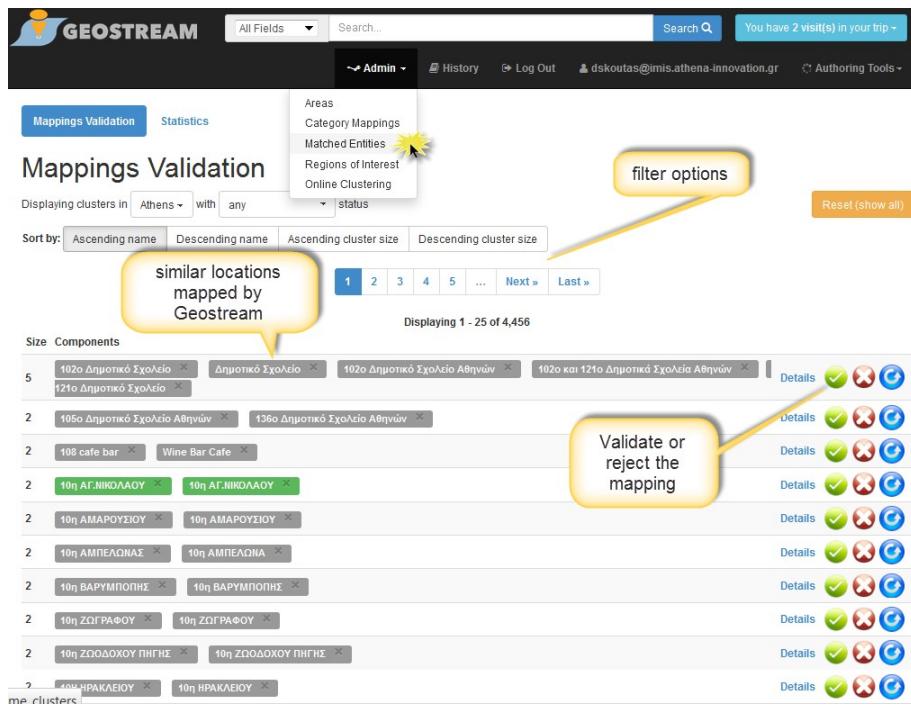
[!\[\]\(90113b7f3cedcff6e76ca64a2c44d57f_img.jpg\) Download as TXT](#) [!\[\]\(327facb5626bc8853dfed6f039b19c9f_img.jpg\) Download as YAML](#) [!\[\]\(8dd7d22312dbbf79049bdd0998b12e52_img.jpg\) Download as JSON](#)

- 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.

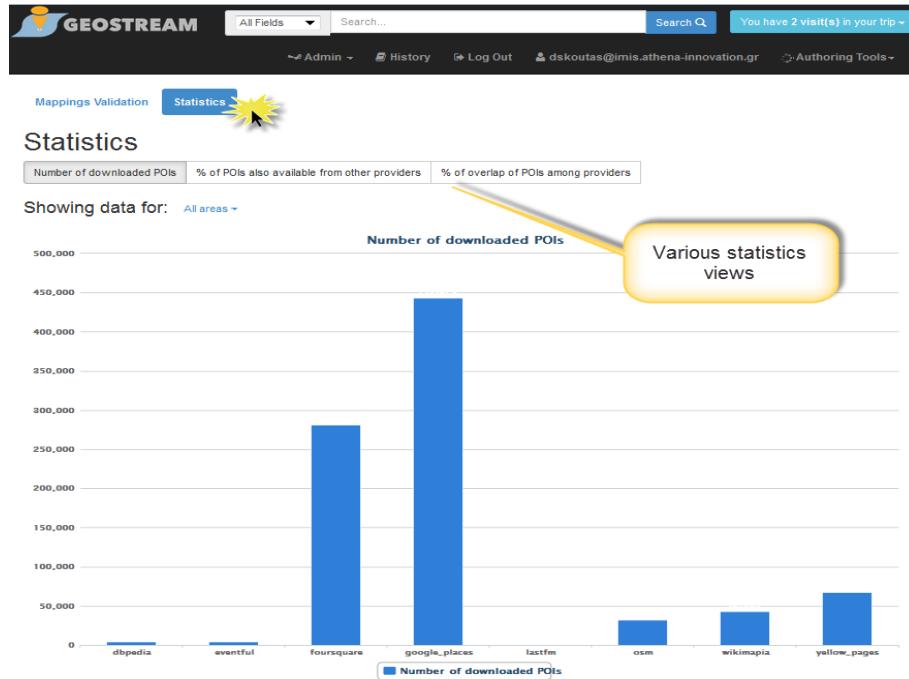
Step1: Click “Matched Entities” and view in the “components” section the list of entities identified as potential duplicates.



The screenshot shows the 'Mappings Validation' interface. In the top navigation bar, the 'Matched Entities' option is highlighted with a yellow starburst. A yellow callout labeled 'filter options' points to the filter dropdown menu. Another yellow callout labeled 'similar locations mapped by Geostream' points to the list of components. A third yellow callout labeled 'Validate or reject the mapping' points to the icons (checkmark, crossed-out, and circular arrow) next to each component entry.

Size	Components	Actions
5	102ο Δημοτικό Σχολείο, Δημοτικό Σχολείο, 102ο Δημοτικό Σχολείο, 102ο Δημοτικό Σχολείο Αθηνών, 102ο και 121ο Δημοτικά Σχολεία Αθηνών	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 ΑΜΠΕΛΩΝΑΣ, 10η ΑΜΠΕΛΩΝΑ	Details
2	10η ΒΑΡΥΜΠΟΠΗΣ, 10η ΒΑΡΥΜΠΟΠΗΣ	Details
2	10η ΖΩΓΡΑΦΟΥ, 10η ΖΩΓΡΑΦΟΥ	Details
2	10η ΖΩΔΟΧΟΥ ΠΗΓΗΣ, 10η ΖΩΔΟΧΟΥ 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.

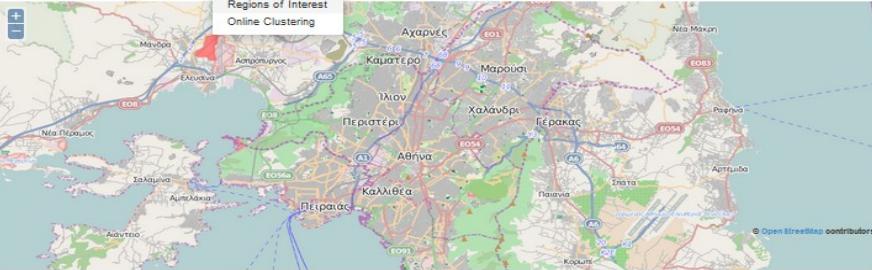
Regions of Interest

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All Fields Search... Search Q You have 2 visit(s) in your trip ~

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

Areas Category Mappings Matched Entities Regions of Interest Online Clustering



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

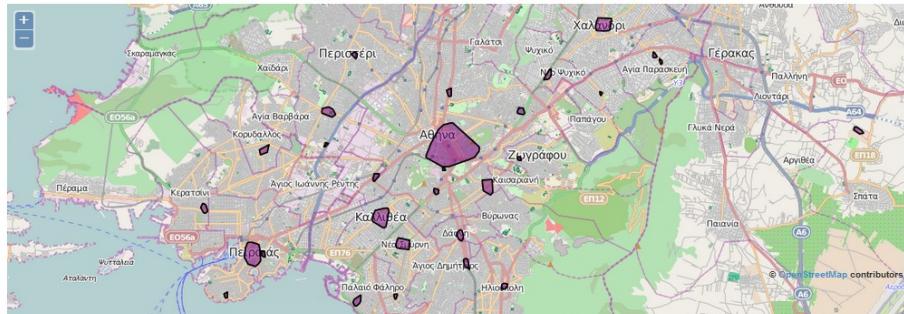
Step 2: Select a category, e.g. “Shops”, and notice how the map zooms to display clusters that correspond to shopping areas.

Regions of Interest Athens

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All Fields Search... Search Q You have 2 visit(s) in your trip ~

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



Step 3: Repeat the process for other categories.