

# Objective = create and use a list of GPS points.

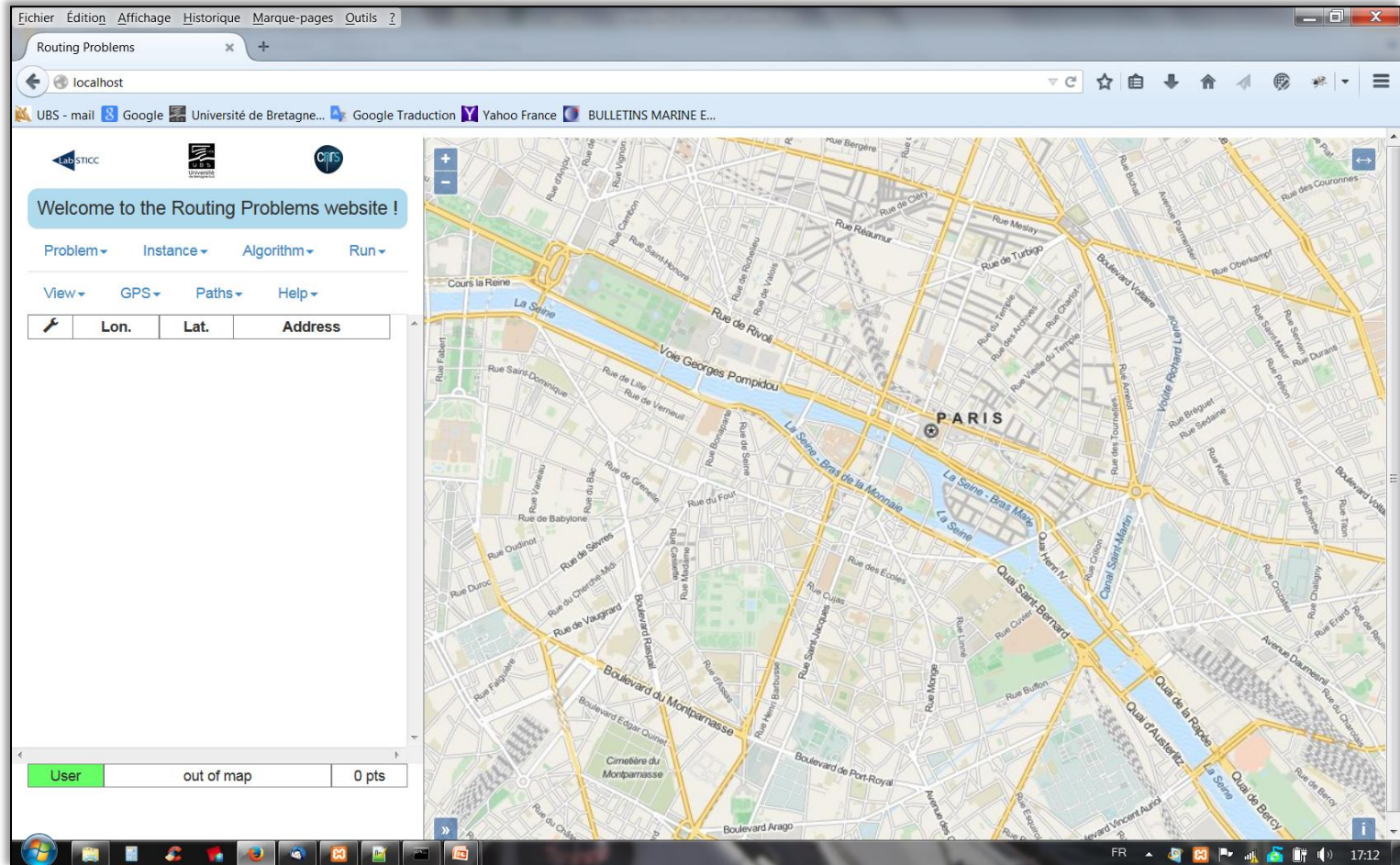
In this tutorial you will learn how to  
*create and use a list of GPS points*



We suppose you are using Firefox, Chrome or IE.  
We suppose you have a running, and well-configured,  
apache server on your PC.



# Start a browser with the URL "localhost" .



You should see exactly this.



# Online help is available.

The screenshot shows a web browser window titled "Routing Problems" at the URL "localhost". The page features a navigation menu with "Problem", "Instance", "Algorithm", and "Run" dropdowns. Below this is a "View" section with "GPS", "Paths", and "Help" dropdowns. A "Help" dropdown menu is open, listing various resources. A red arrow points from a text box to the "How to configure your browser" option in the menu.

Welcome to the Routing Problems website !

Problem ▾ Instance ▾ Algorithm ▾ Run ▾

View ▾ GPS ▾ Paths ▾ Help ▾

- Problems, Algorithms, Instances ...
- How to configure your browser
- How to use the web site
- Credentials
- Tutorials
  - Introduction
  - Compute  $Y=AX+B$
  - Reverse a list of GPS points
  - A Windows batch file as a web-service
  - Learn PHP
  - Learn JSON
  - XAMPP
- Technical docs
- Web site's javascript documentation

User out of map 0 pts

You can read online help when clicking here.

This tutorial will illustrate this.

# Create you first point.

The screenshot shows the Routing Problems website interface. The browser window title is "Routing Problems" and the address bar shows "localhost". The page has a navigation menu with "Problem", "Instance", "Algorithm", and "Run" options. Below the menu is a table with columns "Lon.", "Lat.", and "Address". A red arrow points from the "Address" column to a map of Paris, where a green pin is placed on a street. Another red arrow points from the map to the "Address" column of the table.

1/ Click anywhere on the map.

It will create a GPS point at the closest geocoded (known) location.


	Lon.	Lat.	Address
1	2.3328 E	48.8537 N	66 Rue de Rennes, Paris, 75006, Paris, Île-de-France, FR

2/ A new GPS point appears in the list.

User out of map 1 pts



# What informations are associated to a GPS points ?

	Lon.	Lat.	Address
1 ▾	2.3328 E	48.8537 N	66 Rue de Rennes, Paris, 75006, Paris, Île-de-France, FR

GPS points are ordered  
from 1 to N in the list

GPS points have an address

GPS points have coordinates

# Select a GPS point, from the map.

The screenshot shows the Routing Problems website interface. The browser address bar displays 'localhost'. The page title is 'Routing Problems'. The navigation menu includes 'Problem', 'Instance', 'Algorithm', and 'Run'. Below the navigation menu, there are tabs for 'View', 'GPS', 'Paths', and 'Help'. A table displays the selected GPS point:

	Lon.	Lat.	Address
1	2.3328 E	48.8537 N	66 Rue de Rennes, Paris, 75006, Paris, Île-de-France, FR

The map shows a street view of Paris with a pink marker at the location of the selected GPS point. A red arrow points from the marker to the table entry. Another red arrow points from the table entry to the marker.

1/ Move your mouse on the marker. It turns to pink.

2/ The GPS points is highlighted in blue.

User out of map 1 pts

# Add a few more points, anywhere on the map.

The screenshot shows the Routing Problems website interface. The browser address bar shows 'localhost'. The page title is 'Routing Problems'. The main content area features a map of Paris with four green location pins. A table on the left lists the coordinates and addresses for these points. A red arrow points from the text 'The list has grown.' to the table.

Welcome to the Routing Problems website !

Problem ▾ Instance ▾ Algorithm ▾ Run ▾

View ▾ GPS ▾ Paths ▾ Help ▾

🔧	Lon.	Lat.	Address
1 ▾	2.3328 E	48.8537 N	66 Rue de Rennes, Paris, 75006, Paris, Île-de-France, FR
2 ▾	2.3422 E	48.8686 N	132 Rue Réaumur, Paris, 75002, Paris, Île-de-France, FR
3 ▾	2.3751 E	48.8606 N	86 Boulevard Voltaire, Paris, 75011, Paris, Île-de-France, FR
4 ▾	2.3504 E	48.8384 N	2 Rue de Valence, Paris, 75005, Paris, Île-de-France, FR

User out of map 4 pts

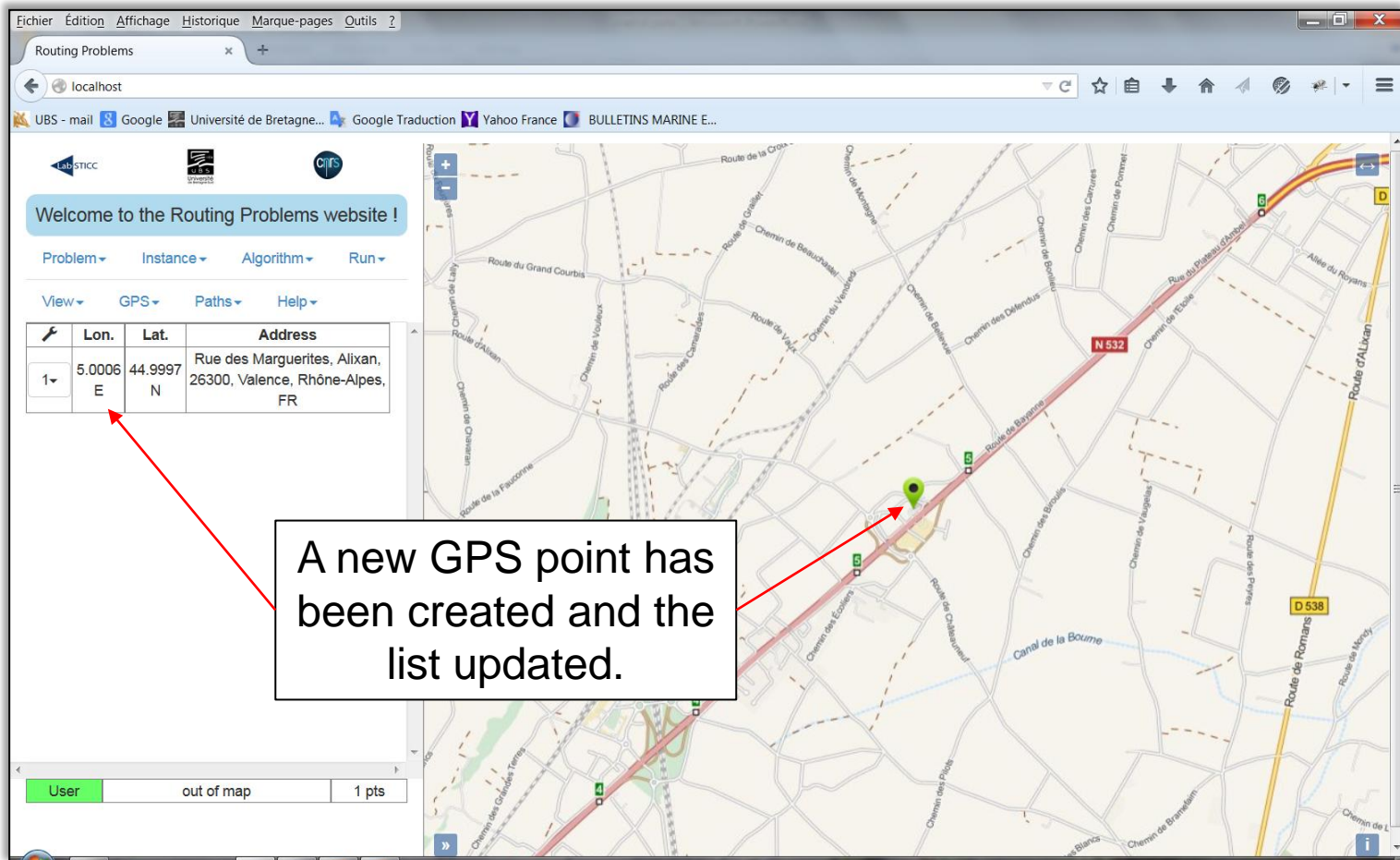
The list has grown.

# Add a point from its GPS coordinates (1/3).

The screenshot shows a web browser window with the URL 'localhost' and the page title 'Routing Problems'. The browser's address bar contains 'localhost'. The page features a navigation menu with options: 'Problem', 'Instance', 'Algorithm', and 'Run'. Below this is a 'View' dropdown menu with sub-options: 'GPS', 'Paths', and 'Help'. A secondary menu is open under 'GPS', listing: 'Delete all GPS points', 'Add a GPS point', 'Geolocate an address', 'Open list', 'Save list', 'Save as list', and 'Delete list'. A red arrow points from a white callout box to the 'Add a GPS point' option. The callout box contains the text: 'Click on the "Add a GPS point" button.' The main content area displays a map of Paris, showing streets, the Seine river, and various landmarks. The status bar at the bottom indicates 'User', 'out of map', and '0 pts'.



# Add a point from its GPS coordinates (3/3).



The screenshot shows the Routing Problems website interface. A map displays a route with a new green GPS point added. A text box explains that the point has been created and the list updated. A table on the left shows the updated list of points.

Welcome to the Routing Problems website !

Problem ▾ Instance ▾ Algorithm ▾ Run ▾

View ▾ GPS ▾ Paths ▾ Help ▾

	Lon.	Lat.	Address
1 ▾	5.0006 E	44.9997 N	Rue des Marguerites, Alixan, 26300, Valence, Rhône-Alpes, FR

A new GPS point has been created and the list updated.

User out of map 1 pts

# Add a point from its address (1/3).

The screenshot shows a web browser window with the URL 'localhost' and several tabs. The main content area displays a map with a red route highlighted. On the left side, there is a navigation menu with the following items:

- Welcome to the Routing Problems website !
- Problem ▾ Instance ▾ Algorithm ▾ Run ▾
- View ▾ GPS ▾ Paths ▾ Help ▾
- Lo... (Location icon)
- 5.00 (Scale)
- E (Export icon)
- Address (Input field)
- Delete all GPS points
- Add a GPS point
- Geolocate an address (Highlighted with a red arrow)
- Open list
- Save list
- Save as list
- Delete list

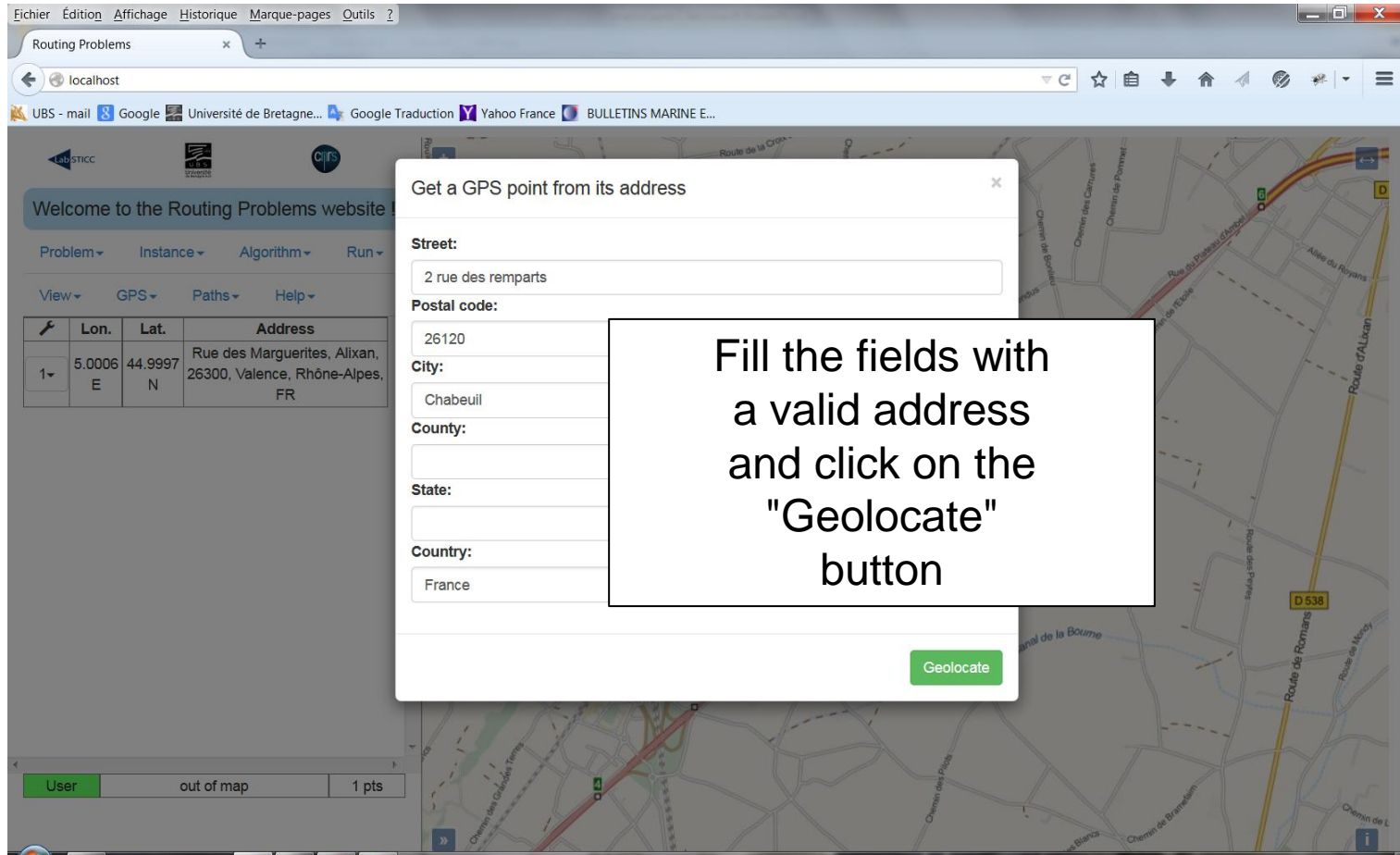
A text box with a white background and black border is overlaid on the map, containing the text: "Click on the 'Geolocate an address' button." A red arrow points from this text box to the 'Geolocate an address' button in the menu.

At the bottom of the interface, there is a status bar with the following information:

- User (Green button)
- out of map
- 1 pts



# Add a point from its address (2/3).



The screenshot shows a web browser window with the URL localhost. The page title is "Routing Problems". A modal dialog box is open with the title "Get a GPS point from its address". The form contains the following fields:

- Street: 2 rue des remparts
- Postal code: 26120
- City: Chabeuil
- County: (empty)
- State: (empty)
- Country: France

A green "Geolocate" button is at the bottom of the form. A text box overlaid on the form says: "Fill the fields with a valid address and click on the 'Geolocate' button". The background shows a map with a red line indicating a route. The bottom of the browser window shows a status bar with "User", "out of map", and "1 pts".



# Add a point from its address (3/3).

The screenshot shows the Routing Problems website interface. The browser address bar displays 'localhost'. The page title is 'Routing Problems'. The main content area features a map of a region in France, with a red dot indicating a new GPS point added near Chabeuil. A table on the left lists the coordinates and addresses of the points. A red arrow points from the text box to the second row of the table.

Welcome to the Routing Problems website !

Problem ▾ Instance ▾ Algorithm ▾ Run ▾

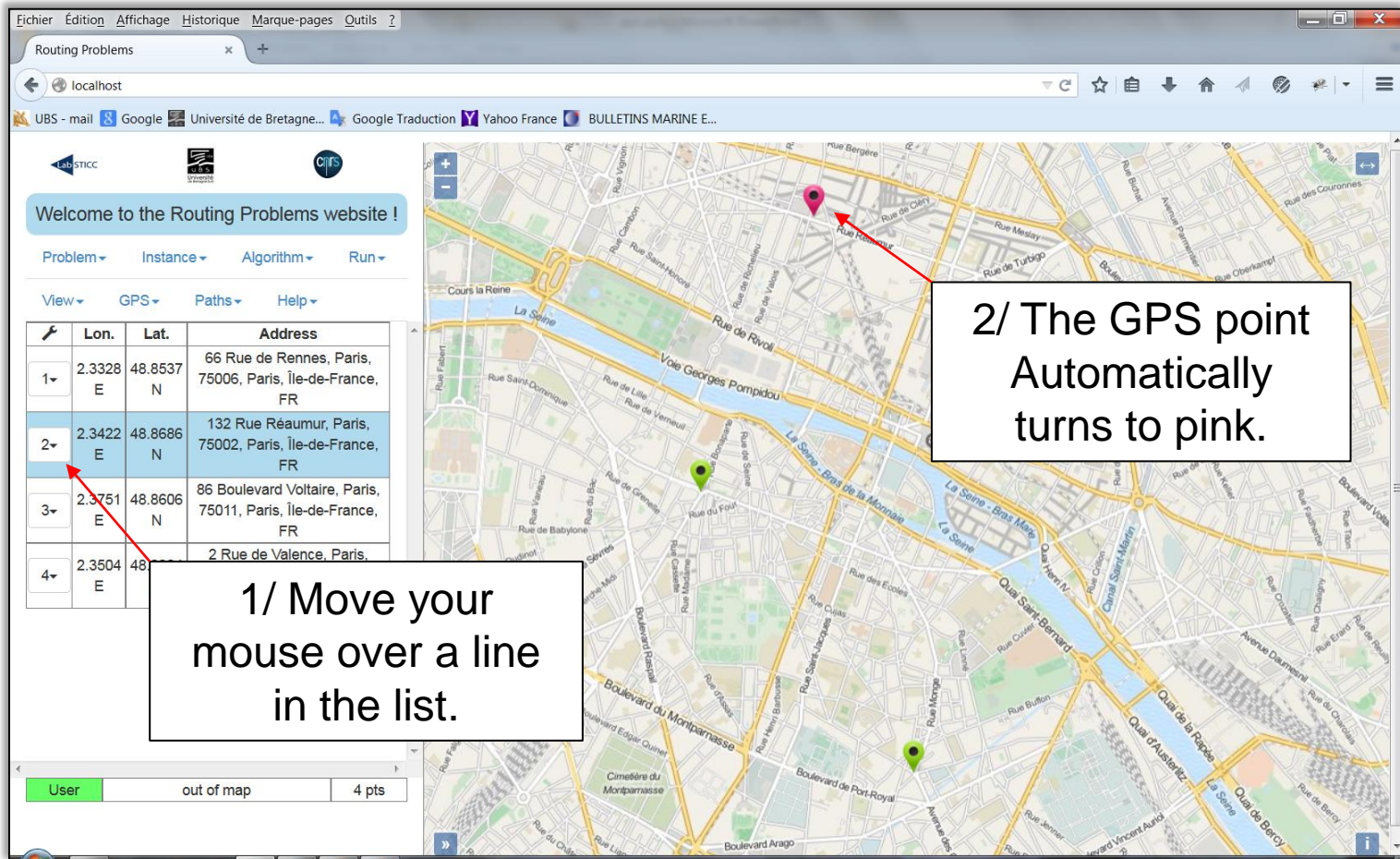
View ▾ GPS ▾ Paths ▾ Help ▾

	Lon.	Lat.	Address
1 ▾	5.0006 E	44.9997 N	Rue des Marguerites, Alixan, 26300, Valence, Rhône-Alpes, FR
2 ▾	5.0195 E	44.8991 N	Rue des Remparts, Chabeuil, 26120, Valence, Rhône-Alpes, FR

Another GPS point has been created and the list updated.

User out of map 2 pts

# Zoom back to Paris and select a GPS point, from the list.



Welcome to the Routing Problems website !

Problem ▾ Instance ▾ Algorithm ▾ Run ▾

View ▾ GPS ▾ Paths ▾ Help ▾

🔧	Lon.	Lat.	Address
1 ▾	2.3328 E	48.8537 N	66 Rue de Rennes, Paris, 75006, Paris, Île-de-France, FR
2 ▾	2.3422 E	48.8686 N	132 Rue Réaumur, Paris, 75002, Paris, Île-de-France, FR
3 ▾	2.3751 E	48.8606 N	86 Boulevard Voltaire, Paris, 75011, Paris, Île-de-France, FR
4 ▾	2.3504 E	48.8606 N	2 Rue de Valence, Paris, 75002, Paris, Île-de-France, FR

1/ Move your mouse over a line in the list.

2/ The GPS point Automatically turns to pink.

User out of map 4 pts

# Delete a GPS point, from the map.

Welcome to the Routing Problems website !

Problem ▾ Instance ▾ Algorithm ▾ Run ▾

View ▾ GPS ▾ Paths ▾ Help ▾

🔧	Lon.	Lat.	Address
1 ▾	2.3328 E	48.8537 N	66 Rue de Rennes, Paris, 75006, Paris, Île-de-France, FR
2 ▾	2.3422 E	48.8686 N	132 Rue Réaumur, Paris, 75002, Paris, Île-de-France, FR
3 ▾	2.3751 E	48.8606 N	86 Boulevard Voltaire, Paris, 75011, Paris, Île-de-France, FR
4 ▾	2.3504 E	48.8384 N	2 Rue de Valence, Paris, 75005, Paris, Île-de-France, FR

User | 2.34274 E | 48.86980 N | 4 pts

1/ Move your mouse over a GPS point to select it.



# Delete a GPS point, from the map.

Welcome to the Routing Problems website !

Problem ▾ Instance ▾ Algorithm ▾ Run ▾

View ▾ GPS ▾ Paths ▾ Help ▾

🔧	Lon.	Lat.	Address
1 ▾	2.3328 E	48.8537 N	66 Rue de Rennes, Paris, 75006, Paris, Île-de-France, FR
2 ▾	2.3751 E	48.8606 N	86 Boulevard Voltaire, Paris, 75011, Paris, Île-de-France, FR
3 ▾	2.3504 E	48.8384 N	2 Rue de Valence, Paris, 75005, Paris, Île-de-France, FR

User

The marker has vanished.

The point has been removed and the list reordered.

# Delete a GPS point, from the list.

Welcome to the Routing Problems website !

Problem ▾ Instance ▾ Algorithm ▾ Run ▾

View ▾ GPS ▾ Paths ▾ Help ▾

🔧	Lon.	Lat.	Address
1 ▾	2.3328 E	48.8537 N	66 Rue de Rennes, Paris, 75006, Paris, Île-de-France, FR
2 ▾	2.3751 E	48.8606 N	86 Boulevard Voltaire, Paris, 75011, Paris, Île-de-France, FR
3 ▾	2.3504 E	48.8384 N	2 Rue de Valence, Paris, 75005, Paris, Île-de-France, FR

1/ Move your mouse over a line in the list.

User out of map 3 pts

# Delete a GPS point, from the list.

Welcome to the Routing Problems website !

Problem ▾ Instance ▾ Algorithm ▾ Run ▾

View ▾ GPS ▾ Paths ▾ Help ▾

📍	Lon.	Lat.	Address
1 ▾	2.3328 E	48.8537 N	66 Rue de Rennes, Paris, 75006, Paris, Île-de-France, FR
2 ▾	2.3751 E	48.8606 N	86 Boulevard Voltaire, Paris, 75011, Paris, Île-de-France, FR

- Toggle start point
- Toggle stop point
- Up
- Down
- Delete
- Center the map on this point
- Update address
- Reverse geolocate

User out of map 3 pts

2/ click on the number to unfold the list of possible actions over this GPS point.

# Delete a GPS point, from the list.

The screenshot shows the Routing Problems website interface. On the left, there is a navigation menu with options like 'Problem', 'Instance', 'Algorithm', 'Run', 'View', 'GPS', 'Paths', and 'Help'. Below the menu is a table of GPS points. The second point in the table is highlighted in blue. A context menu is open over this point, with the 'Delete' button highlighted in grey. A red arrow points from the 'Delete' button to a text box on the map that says '3/ click on the "Delete" button.' The map shows a street grid in Paris with several green location pins.

	Lon.	Lat.	Address
1	2.3328 E	48.8537 N	66 Rue de Rennes, Paris, 75006, Paris, Île-de-France, FR
2	2.3751 E	48.8606 N	86 Boulevard Voltaire, Paris, 75011, Paris, Île-de-France, FR

Toggle start point  
Toggle stop point  
Up  
Down  
Delete  
Center the map on this point  
Update address  
Reverse geolocate

User out of map 3 pts

3/ click on the "Delete" button.

# Delete a GPS point, from the list.

Welcome to the Routing Problems website !

Problem ▾ Instance ▾ Algorithm ▾ Run ▾

View ▾ GPS ▾ Paths ▾ Help ▾

🔧	Lon.	Lat.	Address
1 ▾	2.3328 E	48.8537 N	66 Rue de Rennes, Paris, 75006, Paris, Île-de-France, FR
2 ▾	2.3504 E	48.8384 N	2 Rue de Valence, Paris, 75005, Paris, Île-de-France, FR

The point has been removed and the list reordered.

The marker has vanished.

# Manually reorder the list.

The screenshot shows a web browser window with the URL 'localhost'. The page title is 'Routing Problems'. The interface includes a navigation menu with 'Problem', 'Instance', 'Algorithm', and 'Run' options. Below this is a table of GPS points. To the right of the table is a map of Paris with six green location pins corresponding to the points in the table. A text box is overlaid on the map, providing instructions on how to reorder the list.

	Lon.	Lat.	Address
1	2.3328 E	48.8537 N	66 Rue de Rennes, Paris, 75006, Paris, Île-de-France, FR
2	2.3504 E	48.8384 N	2 Rue de Valence, Paris, 75005, Paris, Île-de-France, FR
3	2.3342 E	48.8685 N	14 Rue Gaillon, Paris, 75002, Paris, Île-de-France, FR
4	2.3630 E	48.8670 N	Rue Béranger, Paris, 75003, Paris, Île-de-France, FR
5	2.3216 E	48.8456 N	116 Rue de Vaugirard, Paris, 75006, Paris, Île-de-France, FR
6	2.3719 E	48.8491 N	5 Avenue Daumesnil, Paris, 75012, Paris, Île-de-France, FR

1/ Add a few GPS points to produce a list of exactly six GPS points.

Now, we want to move the 4<sup>th</sup> point to the 2<sup>nd</sup> place in the list.

# Manually reorder the list.

Welcome to the Routing Problems website !

Problem ▾ Instance ▾ Algorithm ▾ Run ▾

View ▾ GPS ▾ Paths ▾ Help ▾

2 ▾	2.3504 E	48.8384 N	2 Rue de Valence, Paris, 75005, Paris, Île-de-France, FR
3 ▾	2.3342 E	48.8685 N	14 Rue Gaillon, Paris, 75002, Paris, Île-de-France, FR
4 ▾	2.3630 E	48.8670 N	Rue Béranger, Paris, 75003, Paris, Île-de-France, FR

Toggle start point  
Toggle stop point  
**Up**  
Down  
Delete  
Center the map on this point  
Update address  
Reverse geolocate

User out of map 6 pts

2/ click on the "Up" button.

# Manually reorder the list.

Welcome to the Routing Problems website!

Problem ▾ Instance ▾ Algorithm ▾ Run ▾

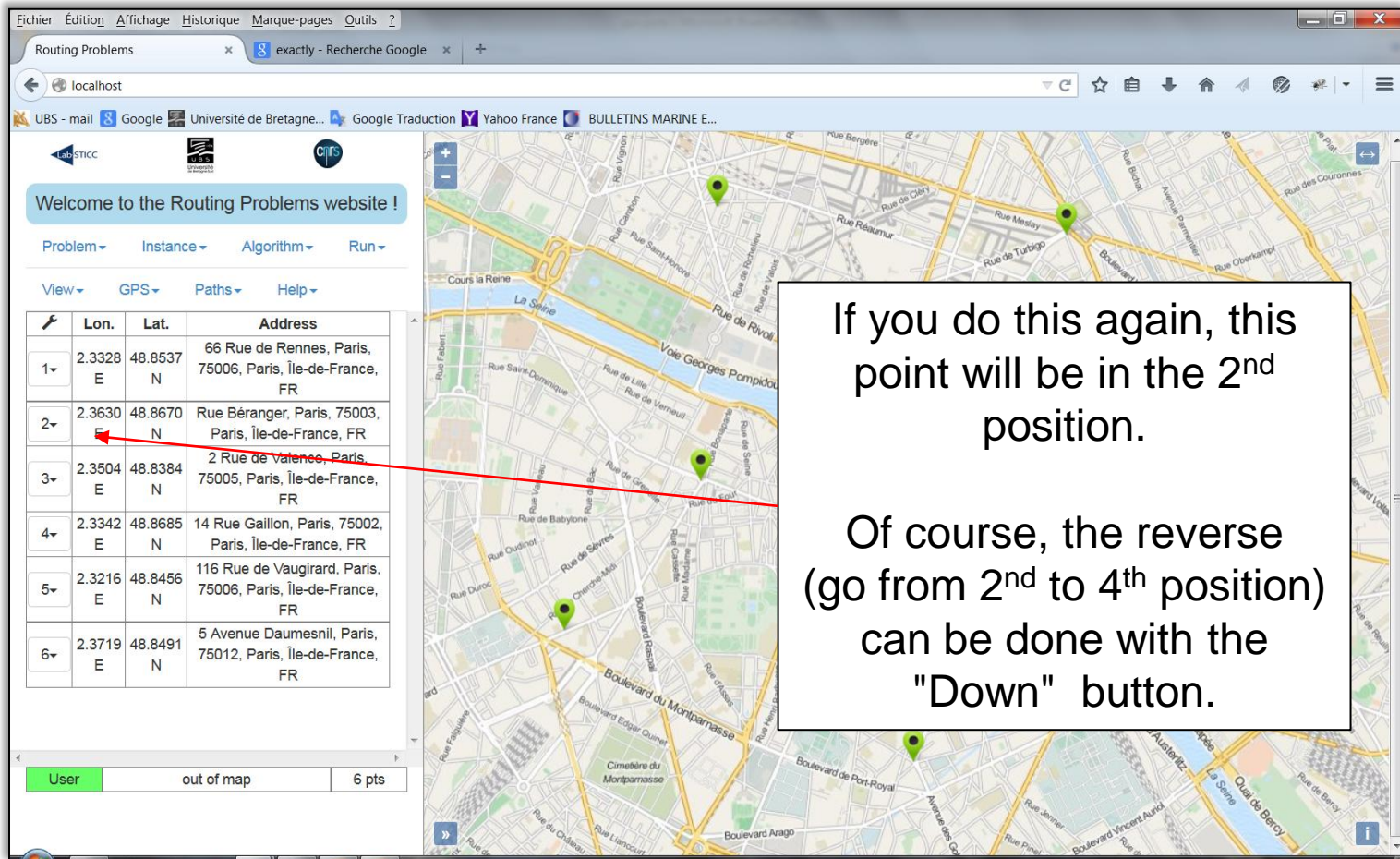
View ▾ GPS ▾ Paths ▾ Help ▾

🚩	Lon.	Lat.	Address
1 ▾	2.3328 E	48.8537 N	66 Rue de Rennes, Paris, 75006, Paris, Île-de-France, FR
2 ▾	2.3504 E	48.8384 N	2 Rue de Valence, Paris, 75005, Paris, Île-de-France, FR
3 ▾	2.3630 E	48.8670 N	Rue Béranger, Paris, 75003, Paris, Île-de-France, FR
4 ▾	2.3342 E	48.8685 N	14 Rue Gaillon, Paris, 75002, Paris, Île-de-France, FR
5 ▾	2.3216 E	48.8456 N	116 Rue de Vaugirard, Paris, 75006, Paris, Île-de-France, FR
6 ▾	2.3719 E	48.8491 N	5 Avenue Daumesnil, Paris, 75012, Paris, Île-de-France, FR

User | out of map | 6 pts

3/ Now this point is in 3<sup>rd</sup> position.

# Manually reorder the list.



Welcome to the Routing Problems website !

Problem ▾ Instance ▾ Algorithm ▾ Run ▾

View ▾ GPS ▾ Paths ▾ Help ▾

🚩	Lon.	Lat.	Address
1 ▾	2.3328 E	48.8537 N	66 Rue de Rennes, Paris, 75006, Paris, Île-de-France, FR
2 ▾	2.3630 E	48.8670 N	Rue Béranger, Paris, 75003, Paris, Île-de-France, FR
3 ▾	2.3504 E	48.8384 N	2 Rue de Valence, Paris, 75005, Paris, Île-de-France, FR
4 ▾	2.3342 E	48.8685 N	14 Rue Gaillon, Paris, 75002, Paris, Île-de-France, FR
5 ▾	2.3216 E	48.8456 N	116 Rue de Vaugirard, Paris, 75006, Paris, Île-de-France, FR
6 ▾	2.3719 E	48.8491 N	5 Avenue Daumesnil, Paris, 75012, Paris, Île-de-France, FR

User out of map 6 pts

If you do this again, this point will be in the 2<sup>nd</sup> position.

Of course, the reverse (go from 2<sup>nd</sup> to 4<sup>th</sup> position) can be done with the "Down" button.

# Move a point on the map.

The screenshot shows a web browser window titled "Routing Problems" at the URL "localhost". The browser's address bar and tabs are visible. The page content includes a navigation menu with "Problem", "Instance", "Algorithm", and "Run" options, and a "View" menu with "GPS", "Paths", and "Help" options. A table displays the current instance details:

	Lon.	Lat.	Address
1-	2.3262 E	48.8544 N	15 Boulevard Raspail, Paris, 75014, Paris, Île-de-France, FR

The map shows a street view of Paris with a green location pin on Rue de Valenciennes. A red arrow points from a text box to this pin. The text box contains the instruction: "1/ Create a point, somewhere." The bottom status bar shows "User", "out of map", and "1 pts".



# Move a point on the map.

The screenshot shows a web browser window with the URL localhost. The page title is "Routing Problems". The browser's address bar shows "localhost". The page content includes a welcome message, navigation menus, and a table with one data row. A map of Paris is displayed on the right, with a red pin on a street. A red arrow points from a text box to the pin. The text box contains the instruction: "2/ Move the mouse over it, until it turns to pink."

Welcome to the Routing Problems website !

Problem ▾ Instance ▾ Algorithm ▾ Run ▾

View ▾ GPS ▾ Paths ▾ Help ▾

📍	Lon.	Lat.	Address
1 ▾	2.3262 E	48.8544 N	15 Boulevard Raspail, Paris, 75014, Paris, Île-de-France, FR

User | 2.32635 E | 48.85591 N | 1 pts

2/ Move the mouse over it,  
until it turns to pink.

# Move a point on the map.

The screenshot shows a web browser window titled "Routing Problems" at the URL "localhost". The page has a navigation menu with "Problem", "Instance", "Algorithm", and "Run" options. Below the menu is a table with one row of data:

	Lon.	Lat.	Address
1	2.3556 E	48.8668 N	Rue du Vertbois, Paris, 75003, Paris, Île-de-France, FR

A red arrow points from the "Address" column of the table to a red pin on a map of Paris. The map shows a red dashed line representing a route. A text box with a black border and white background contains the text "Click and drag it to another location on the map." Another text box with a black border and white background contains the text "The GPS coordinates and the address have been updated." At the bottom of the browser window, a status bar shows "User" with coordinates "2.35528 E | 48.86827 N" and "1 pts".

# See the distances matrix.

1/ Create a list of, at least, 10 points.

	Lon.	Lat.	Address
1	2.3259 E	48.8562 N	240 Boulevard Saint-Germain, Paris, 75007, Paris, Île-de-France, FR
2	2.3399 E	48.8687 N	23 Rue Vivienne, Paris, 75002, Paris, Île-de-France, FR
3	2.3607 E	48.8598 N	Rue Vieille du Temple, Paris, 75003, Paris, Île-de-France, FR
4	2.3473 E	48.8422 N	Rue Pierre Brossollette, Paris, 75005, Paris, Île-de-France, FR
5	2.3215 E	48.8454 N	103 Rue de Vaugirard, Paris, 75006, Paris, Île-de-France, FR
6	2.3756 E	48.8469 N	10 Rue Legraverend, Paris, 75012, Paris, Île-de-France, FR
			Rue du Chemin Vert, Paris, FR

User out of map 10 pts

# See the distances matrix.

Welcome to the Routing Problems website !

Problem ▾ Instance ▾ Algorithm ▾ Run ▾

View ▾ GPS ▾ Paths ▾ Help ▾

Go to a GPS point

Center the map on my current location

Map

Distances (km)

Traveling times (s)

3	E	N	75003, Paris, Île-de-France, FR
4	2.3473 E	48.8422 N	Rue Pierre Brossolette, Paris, 75005, Paris, Île-de-France, FR
5	2.3215 E	48.8454 N	103 Rue de Vaugirard, Paris, 75006, Paris, Île-de-France, FR
6	2.3756 E	48.8469 N	10 Rue Legraverend, Paris, 75012, Paris, Île-de-France, FR
7	2.3770 E	48.8500 N	Rue du Chemin Vert, Paris, 75011, Paris, Île-de-France, FR

User out of map 10 pts

2/ click on the "Distances" button.

# See the distances matrix.

Welcome to the Routing Problems website !

Problem ▾ Instance ▾ Algorithm ▾ Run ▾

View ▾ GPS ▾ Pat ▾

	Lon.	Lat.	
1	2.3259 E	48.8562 N	240 Boulevard Saint-Germain, Paris, 75007, Paris, Île-de-France, FR
2	2.3399 E	48.8687 N	23 Rue Vivienne, Paris, 75002, Paris, Île-de-France, FR
3	2.3607 E	48.8598 N	Rue Vieille du Temple, Paris, 75003, Paris, Île-de-France, FR
4	2.3473 E	48.8422 N	Rue Pierre Brossolette, Paris, 75005, Paris, Île-de-France, FR
5	2.3215 E	48.8454 N	103 Rue de Vaugirard, Paris, 75006, Paris, Île-de-France, FR
6	2.3756 E	48.8469 N	10 Rue Legraverend, Paris, 75012, Paris, Île-de-France, FR
			Rue du Chemin Vert, Paris, FR

From(left) To(top)	2.3259 E 48.8562 N	2.3399 E 48.8687 N	2.3607 E 48.8598 N	2.3473 E 48.8422 N	2.3215 E 48.8454 N	2.3756 E 48.8469 N	2.3772 E 48.8598 N	2.3589 E 48.8457 N	2.3458 E 48.8584 N	2.3390 E 48.8515 N
2.3259 E 48.8562 N	0	2.731	4.488	2.787	1.902	4.43	5.782	3.02	2.499	1.279
2.3399 E 48.8687 N	3.815	0	2.288	4.351	5.674	4.824	3.582	4.585	2.682	2.861
2.3607 E 48.8598 N	4.705	2.93	0	3.07	4.948	2.51	2.235	3.009	1.401	2.256
2.3473 E 48.8422 N	4.277	4.269	3.987	0	2.779	3.939	4.755	1.338	2.74	1.834
2.3215 E 48.8454 N	5.4	4.237	5.198	3.019	0	5.14	6.492	3.73	3.209	1.989
2.3756 E 48.8469 N	4.04	4.729	2.389	3.835	5.359	0	2.32	3.361	3.199	3.724
2.3772 E 48.8598 N	6.2	4.0	4.715	6.239	1.747	0	4.242	2.898	3.752	
2.3589 E 48.8457 N	4.0	3.012	4.536	1.796	3.45	0	2.5	2.13		
2.3458 E 48.8584 N	3.693	1.918	2.605	2.28	4.158	3.231	3.899	2.513	0	1.466
2.3390 E 48.8515 N	2.557	3.112	3.571	1.87	2.014	3.513	4.865	2.103	1.581	0

Point 1

Point 2

Point 3

User out of map 10 pts

3/ You can see the distances (km) between the ordered points of the list.

*This matrix may not be symmetric.*  
This is due to the one-way roads (which are not symmetric paths).



# See the map again.

Welcome to the Routing Problems website !

Problem ▾ Instance ▾ Algorithm ▾ Run ▾

View ▾ GPS ▾ Paths ▾ Help ▾

Go to a GPS point

Center the map on my current location

**Map**

Distances (km)

Traveling times (s)

From(left)	2.3259 E	2.3399 E	2.3607 E	2.3473 E	2.3215 E	2.3756 E	2.3772 E	2.3589 E	2.3458 E	2.3390 E
To(top)	48.8562 N	48.8687 N	48.8598 N	48.8422 N	48.8454 N	48.8469 N	48.8598 N	48.8457 N	48.8584 N	48.8515 N
2.3259 E 48.8562 N	0	2.731	4.488	2.787	1.902	4.43	5.782	3.02	2.499	1.279
2.3399 E 48.8687 N	3.815	0	2.288	4.351	5.674	4.824	3.582	4.585	2.682	2.861
2.3607 E 48.8598 N	4.705	2.104	0	4.277	4.277	4.277	4.277	4.277	4.277	2.256
2.3473 E 48.8422 N	4.277	4.277	4.277	0	4.277	4.277	4.277	4.277	4.277	1.834
2.3215 E 48.8454 N	3.054	4.277	4.277	4.277	0	4.277	4.277	4.277	4.277	1.989
2.3756 E 48.8469 N	6.504	4.729	2.389	3.835	5.359	0	2.32	3.361	3.199	3.724
2.3772 E 48.8598 N	6.204	3.584	1.435	4.715	6.239	1.747	0	4.242	2.898	3.752
2.3589 E 48.8457 N	4.037	4.029	2.681	3.012	4.536	1.796	3.45	0	2.5	2.13
2.3458 E 48.8584 N	3.693	1.918	2.605	2.28	4.158	3.231	3.899	2.513	0	1.466
2.3390 E 48.8515 N	2.557	3.112	3.571	1.87	2.014	3.513	4.865	2.103	1.581	0

4/ To come back to the map click on the "Map" button

User out of map 10 pts

# See the traveling times matrix.

Welcome to the Routing Problems website!

Problem ▾ Instance ▾ Algorithm ▾ Run ▾

View ▾ GPS ▾ Paths ▾ Help ▾

Go to a GPS point

Center the map on my current location

Map

Distances (km)

Traveling times (s)

3	E	N	75003, Paris, Île-de-France, FR
4	2.3473	48.8422	Rue Pierre Brossolette, Paris, 75005, Paris, Île-de-France, FR
5	2.3215	48.8454	103 Rue de Vaugirard, Paris, 75006, Paris, Île-de-France, FR
6	2.3756	48.8469	10 Rue Legraverend, Paris, 75012, Paris, Île-de-France, FR
7	2.3770	48.8500	Rue du Chemin Vert, Paris, 75011, Paris, Île-de-France, FR

User out of map 10 pts

1/ click on the "Traveling Times" button.

# See the traveling times matrix.

Welcome to the Routing Problems website !

Problem ▾ Instance ▾ Algorithm ▾ Run ▾

View ▾ GPS ▾ Pat

	From(left) To(top)	2.3259 E 48.8562 N	2.3399 E 48.8687 N	2.3607 E 48.8598 N	2.3473 E 48.8422 N	2.3215 E 48.8454 N	2.3756 E 48.8469 N	2.3772 E 48.8598 N	2.3589 E 48.8457 N	2.3458 E 48.8584 N	2.3390 E 48.8515 N
1	2.3259 E 48.8562 N	0	318	438	299	186	406	514	321	225	129
2	2.3399 E 48.8687 N	377	0	279	472	537	539	354	495	265	374
3	2.3607 E 48.8598 N	432	351	0	370	468	350	301	395	163	306
4	2.3473 E 48.8422 N	399	441	468	0	279	383	518	210	279	235
5	2.3215 E 48.8454 N	16	452	505	299	0	479	586	394	297	201
6	2.3756 E 48.8469 N	88	457	298	406	498	0	284	386	297	396
7	2.3772 E 48.8598 N	51	34	513	605	246	0	493	291	434	
8	2.3589 E 48.8457 N	34	306	399	189	380	0	226	247		
9	2.3458 E 48.8584 N	317	237	317	285	387	307	398	300	0	127
10	2.3390 E 48.8515 N	276	319	368	230	242	336	449	244	159	0

Point 1

Point 2

Point 3

User out of map 10 pts

3/ You can see the traveling times (s) between the ordered points of the list.

*This matrix may not be symmetric.*  
This is due to the one-way roads (which are not symmetric paths).

# Conclusion

Congratulations !

You are able to create  
and use a list of GPS points.

Now you should learn how to manage  
several lists of GPS points.

