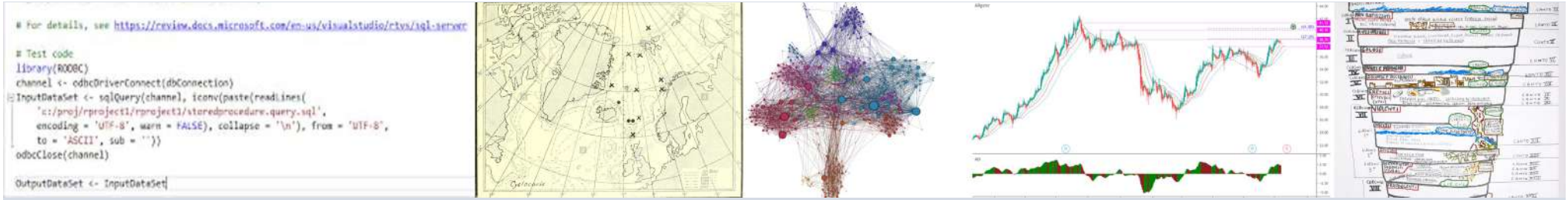


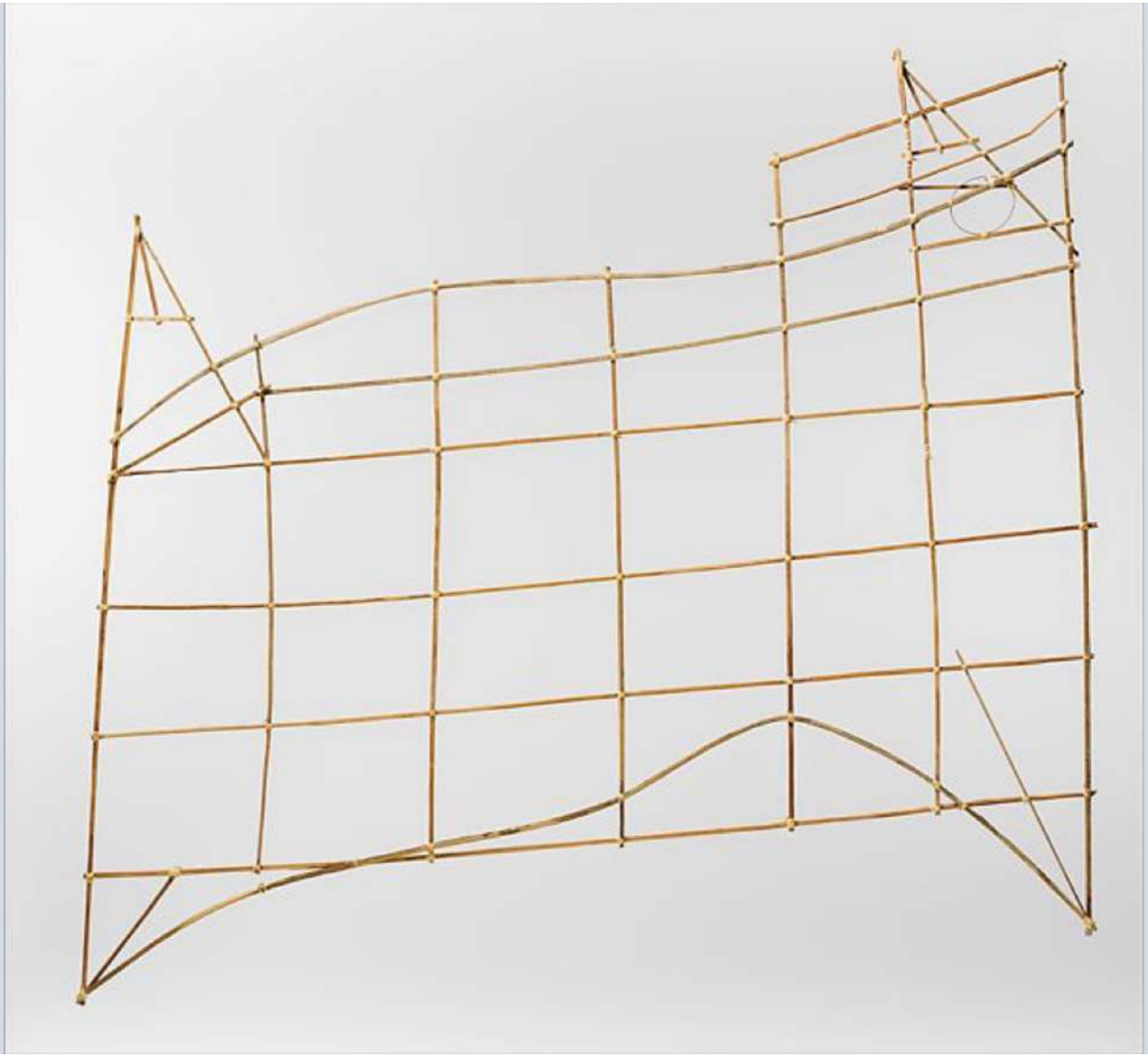
Intro to Mapping

Giovanni Pietro Vitali

giovannipietrovitali@gmail.com | giovannni.vitali@uvsq.fr

Université de Versailles Saint Quentin en Yvelines

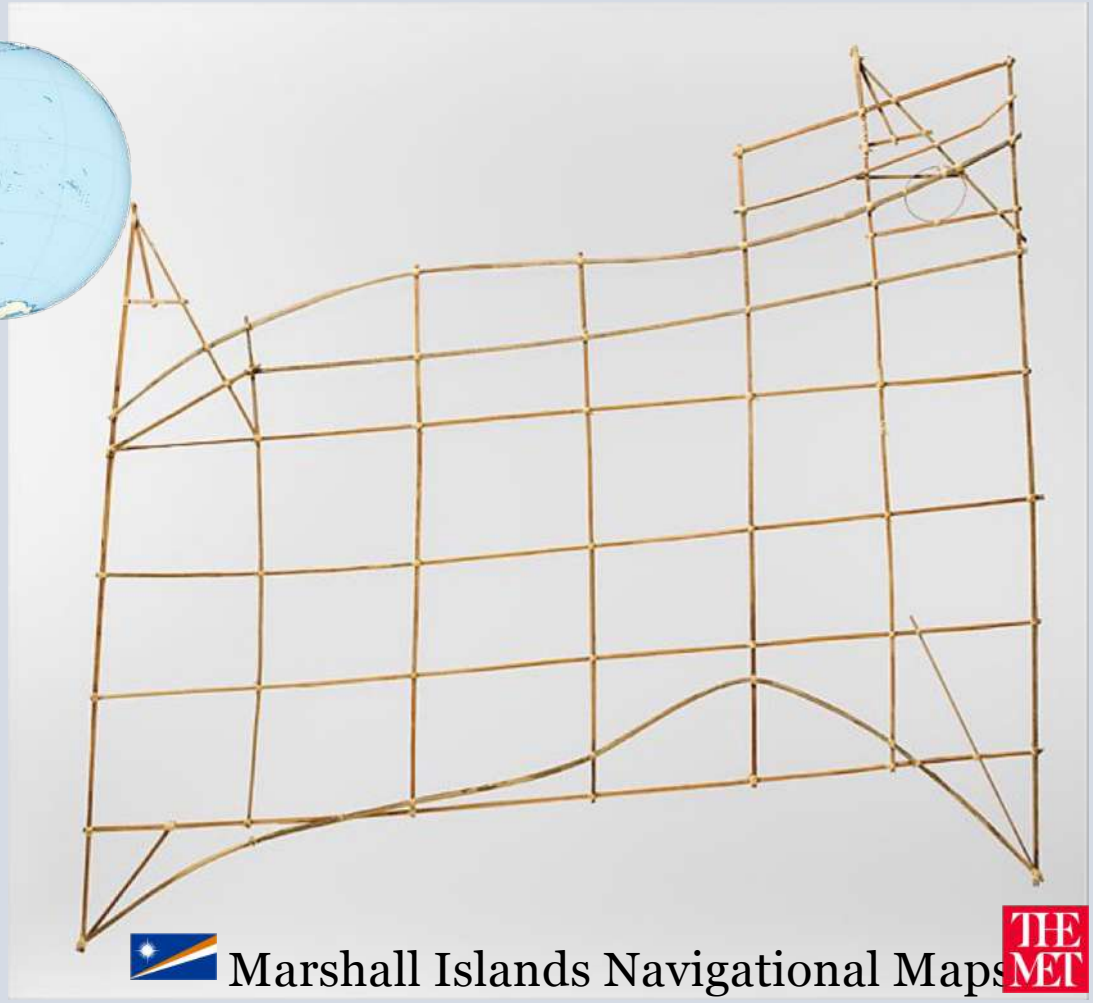
Université Paris-Saclay



???

THE MET

https://www.metmuseum.org/art/collection/search/311297



Marshall Islands Navigational Maps

Navigational Chart (*Rebbilib*)
Marshallese people, Marshall Islands, 19th–early 20th century
Coconut midrib, fiber

The Michael C. Rockefeller Memorial Collection, Gift of the Estate of Kay Sage Tanguy, 1963 (1978.412.826)

In the Marshall Islands, navigation was, and remains, a crucial skill on which the lives of the navigators and all who sailed with them depended. In the past, knowledge of the art of navigation was a closely guarded secret, handed down within certain chiefly families. To assist in recalling and imparting aspects of navigational knowledge, navigators constructed diagrams representing different portions of the archipelago. Typically made from the stick-like midribs of coconut palm fronds, these objects were memory aids, created for personal use or to instruct novices, and the exact significance of each was known only to its maker. The charts were exclusively used on land, prior to a voyage. To carry one at sea would put a navigator's skill in question.

The charts indicate the positions of islands, but they primarily record features of the sea. Marshallese navigation was based largely on the detection and interpretation of the patterns of ocean swells. Much as a stone thrown into a pond produces ripples, islands alter the orientation of the waves that strike them, creating characteristic swell patterns that can be detected and used to guide a vessel to land. It is the presence and intersection of swells and other marine phenomena, such as currents, that are primarily indicated on the charts.

1186 F

1755

Nasuh bin Karagöz bin Abdullah el-Visokavi el-Bosnavî, was a 16th-century Bosniak statesman of the Ottoman Empire, polymath, mathematician, teacher, historian, geographer, cartographer, swordmaster, navigator, inventor, painter, farmer, and miniaturist.

He was brought to Istanbul after being recruited by the Ottoman scouts in Rumelia, educated, served several Ottoman sultans, and became a teacher at Enderun School.

Matrakçı Nasuh

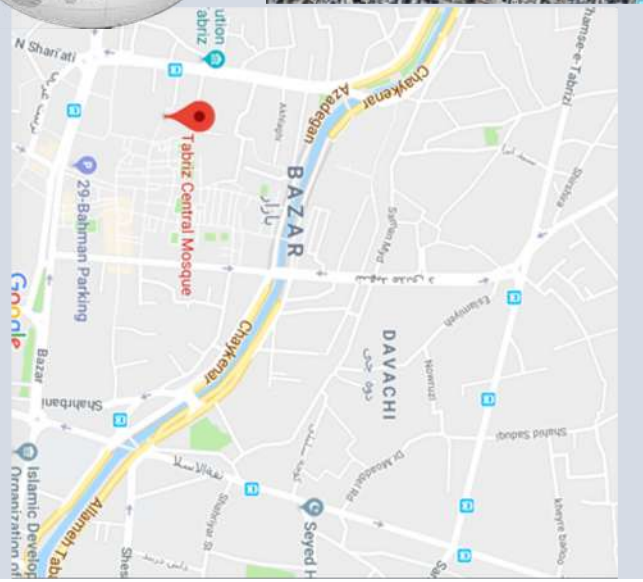
1480-1564

https://www.aa.com.tr/en/culture-and-art/rome-hosts-ottoman-miniaturist-exhibition/855551

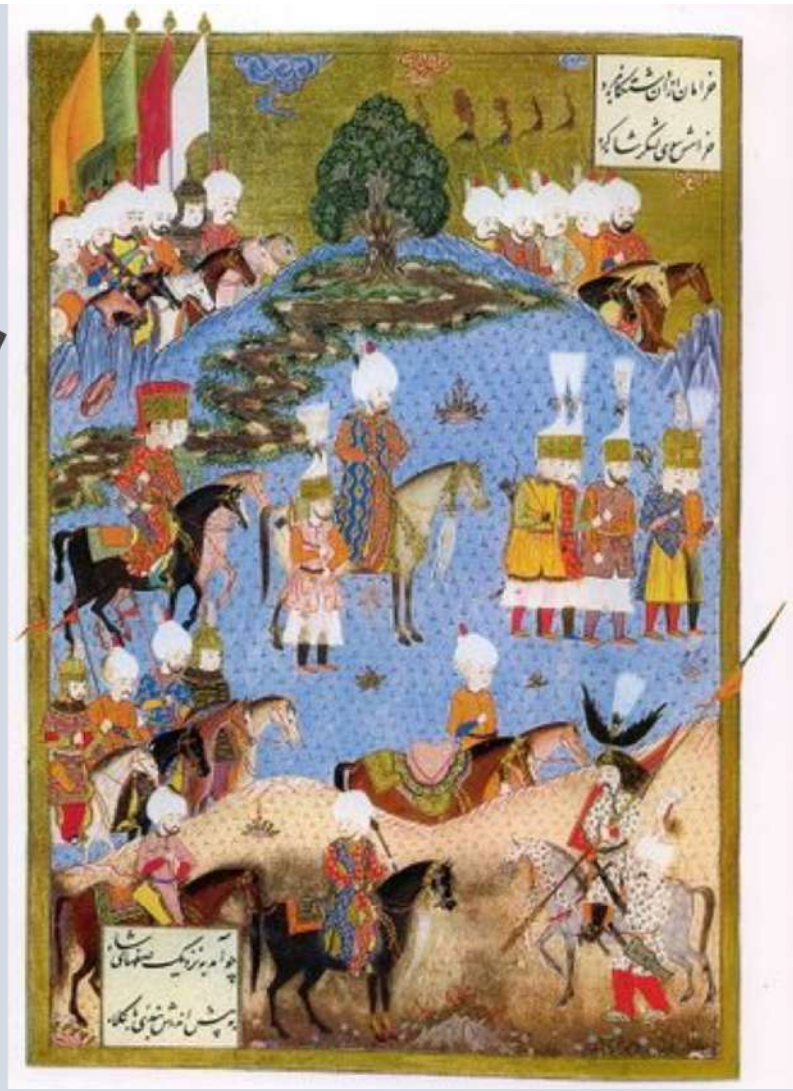
ISTANBUL - TURKEY

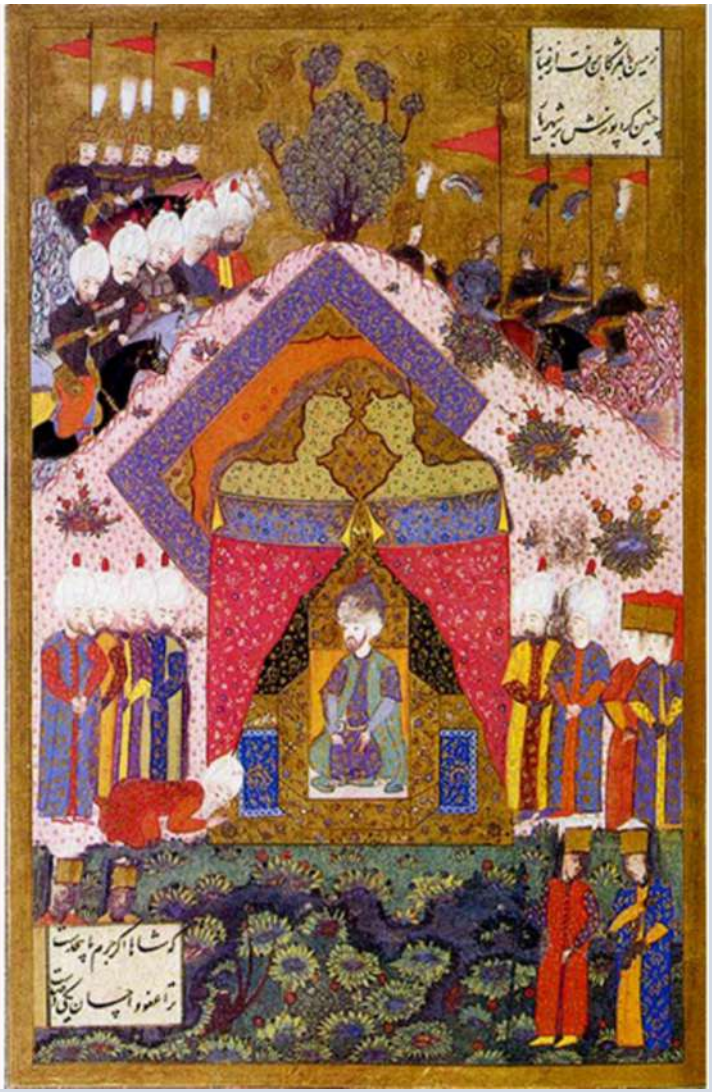
SOLTANIYEH - IRAN

TABRIZ - IRANIAN AZERBAÏDJAN

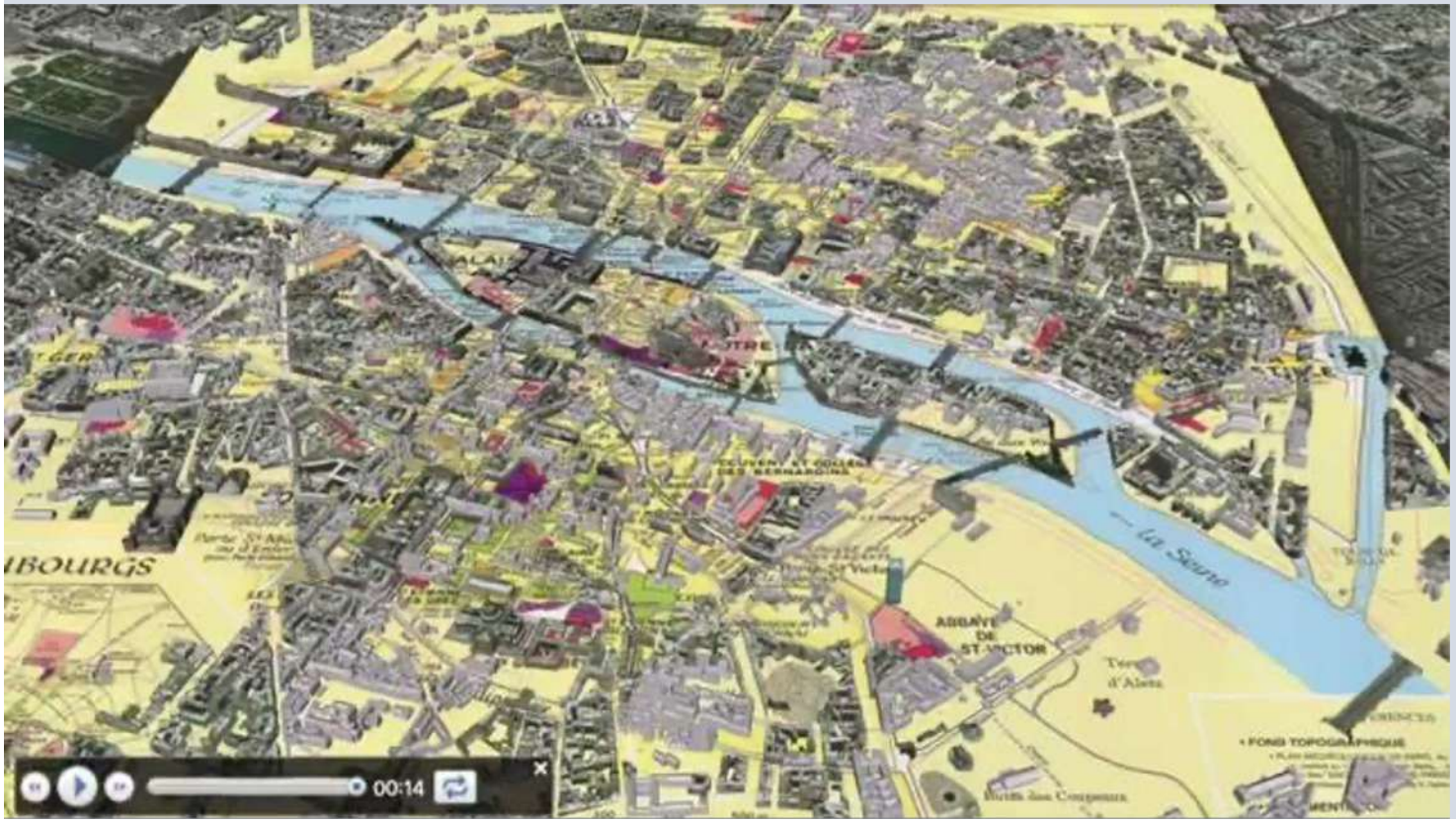


WHAT IS A MAP?

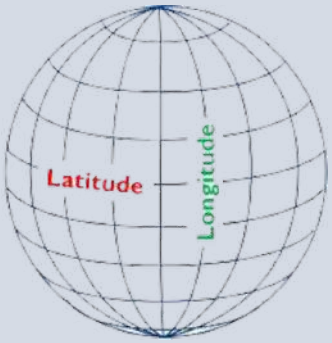




WHAT CAN WE DO WITH A DIGITAL MAP?



WHAT CAN YOU DO WITH A DIGITAL MAP?

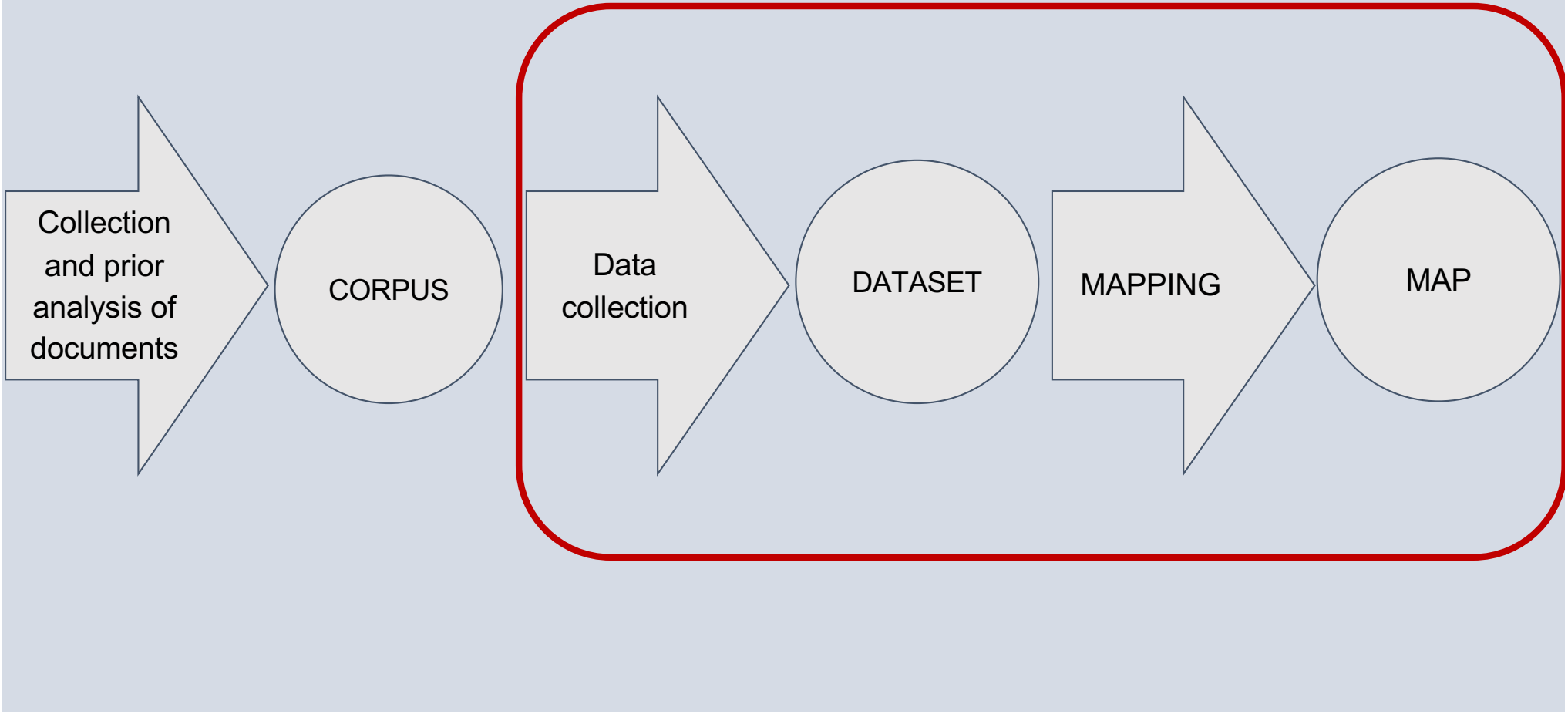


Representing geographical information

Through coordinates

For managing complex contents.

What should a digital cartographer do?



Softwares

- QGIS
- Google Earth
- Excel / OpenOffice
- ArcGIS

Programming languages

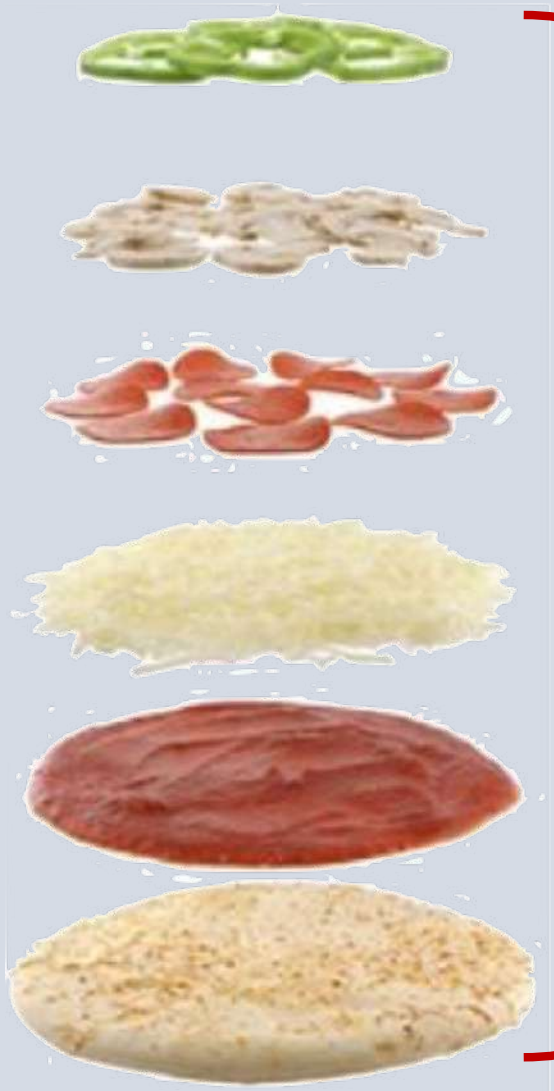
- Java Script
- JSON JavaScript Object Notation
- GEOJSON
- R
- SQL

Applications

- Openrefine
- GeoNames
- Leaflet maps
- Mapbox
- Google Drive
- Khartis

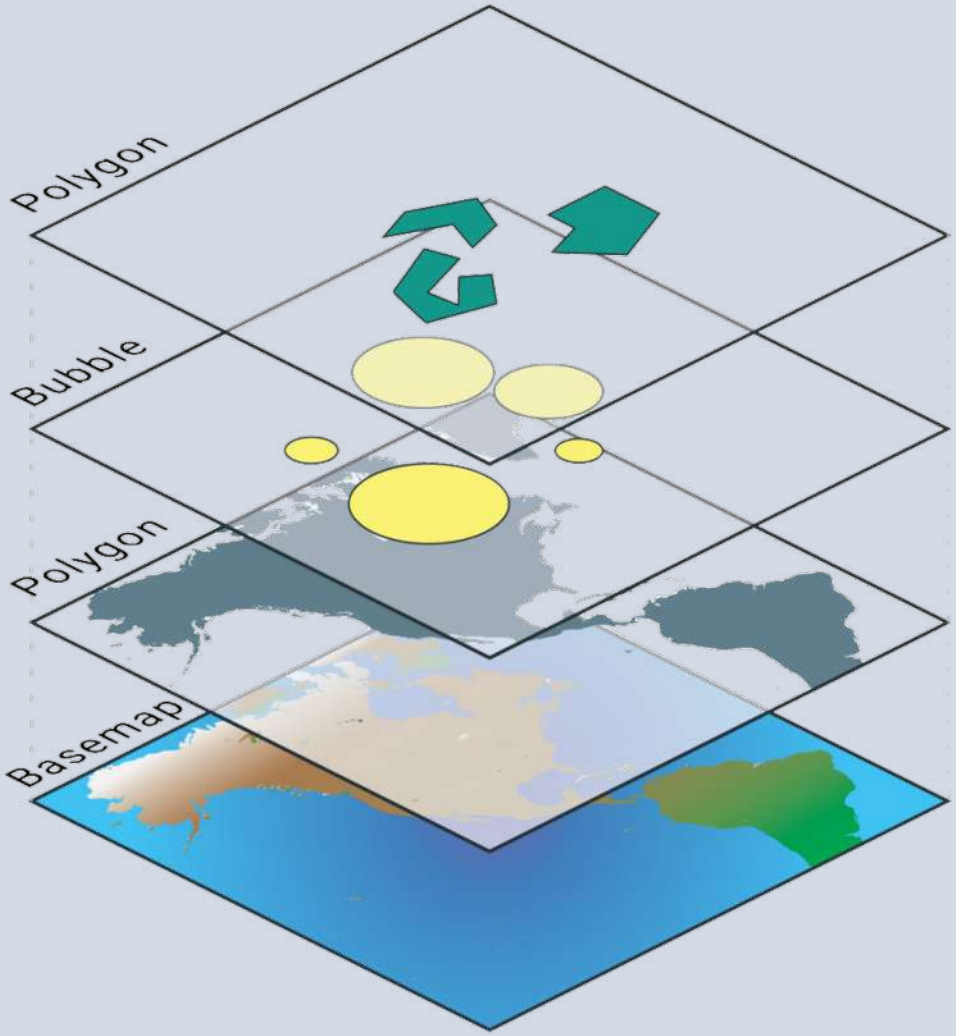
Online Applications

- StoryMapJs
- Map Warper
- Palladio (Standford)
- Recogito
- CartoDB
- ArcGis
- Umap
- GeoJson

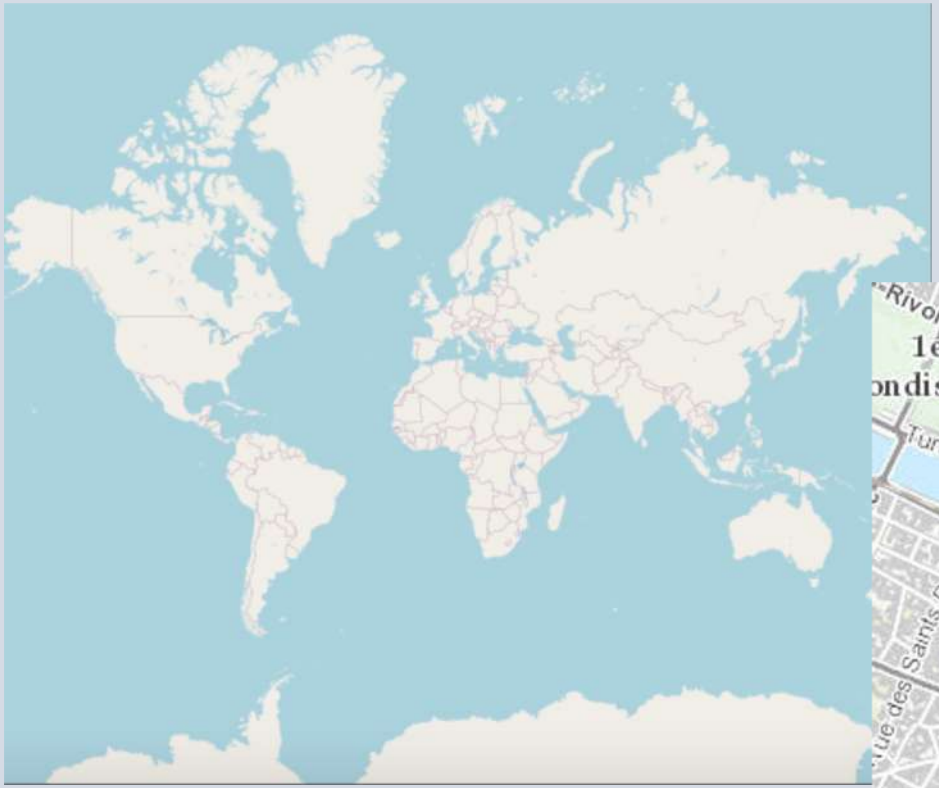


THE LAYER

A key concept in GIS
(Geographic Information System)



Layers



BASEMAP

http://leaflet-extras.github.io/leaflet-providers/preview/index.html

- Points

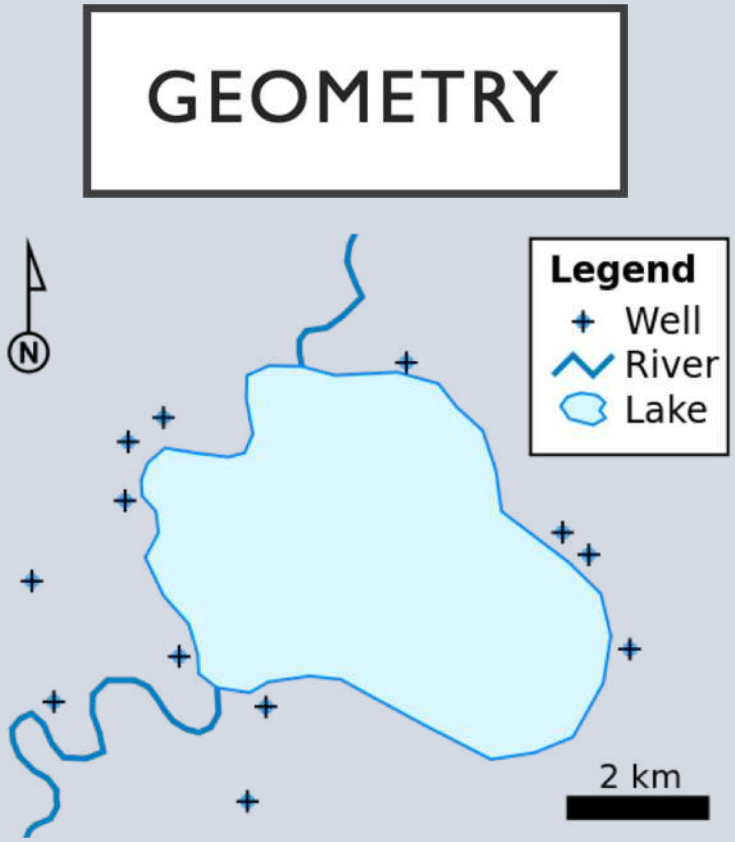
Zero-dimensional points are used for geographical features that can best be expressed by a single point reference.

- Lines or polylines

One-dimensional lines or polylines are used for linear features such as rivers, roads, railroads, trails, and topographic lines.

- Polygons

Two-dimensional polygons are used for geographical features that cover a particular area of the earth's surface.



- **AutoCAD DXF** – contour elevation plots in AutoCAD DXF format (by Autodesk)
- **Cartesian coordinate system** (XYZ) – simple point cloud
- **Digital line graph** (DLG) – a USGS format for vector data
- **Esri TIN** - proprietary binary format for triangulated irregular network data usedby Esri
- **Geography Markup Language** (GML) – XML based open standard (by OpenGIS) for GIS data exchange
- **GeoJSON** – a lightweight format based on JSON, used by many open source GIS packages
- **GeoMedia** – Intergraph's Microsoft Access based format for spatial vector storage
- **ISFC** – Intergraph's MicroStation based CAD solution attaching vector elements to a relational Microsoft Access database
- **Keyhole Markup Language** (KML) – XML based open standard (by OpenGIS) for GIS data exchange
- **MapInfo TAB format** – MapInfo's vector data format using TAB, DAT, ID and MAP files
- **Measure Map Pro format** – XML data format to store GIS data
- **National Transfer Format** (NTF) – National Transfer Format (mostly used by the UK Ordnance Survey)
- **Spatialite** – is a spatial extension to SQLite, providing vector geodatabasefunctionality. It is similar to PostGIS, Oracle Spatial, and SQL Server with spatialextensions
- **Shapefile** – a popular vector data GIS format, developed by Esri
- **Simple Features** – Open Geospatial Consortium specification for vector data
- **SOSI** – a spatial data format used for all public exchange of spatial data in Norway
- **Spatial Data File** – Autodesk's high-performance geodatabase format, native to MapGuide
- **TIGER** – Topologically Integrated Geographic Encoding and Referencing
- **Vector Product Format** (VPF) – National Geospatial-Intelligence Agency (NGA)'sformat of vectored data for large geographic databases

Esri TIN - proprietary binary format for triangulated irregular network data usedby Esri

Geography Markup Language (GML) – XML based open standard (by OpenGIS) for GIS data exchange

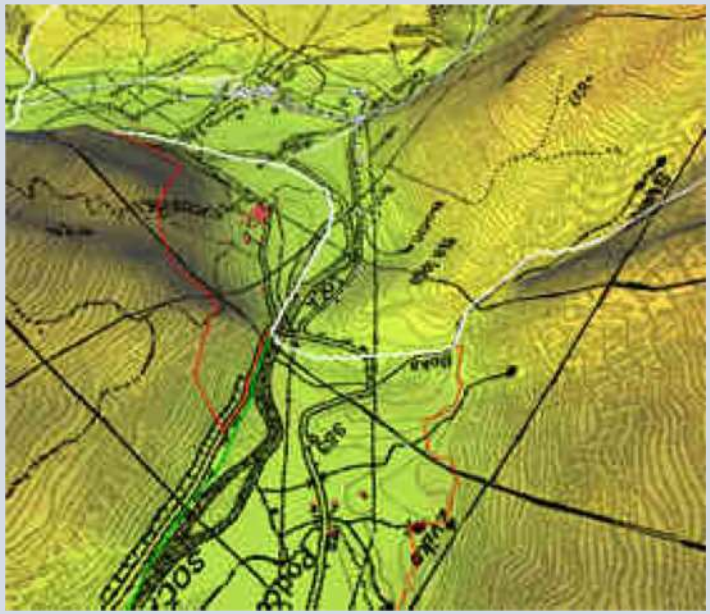
GeoJSON – a lightweight format based on JSON, used by many open source GIS packages

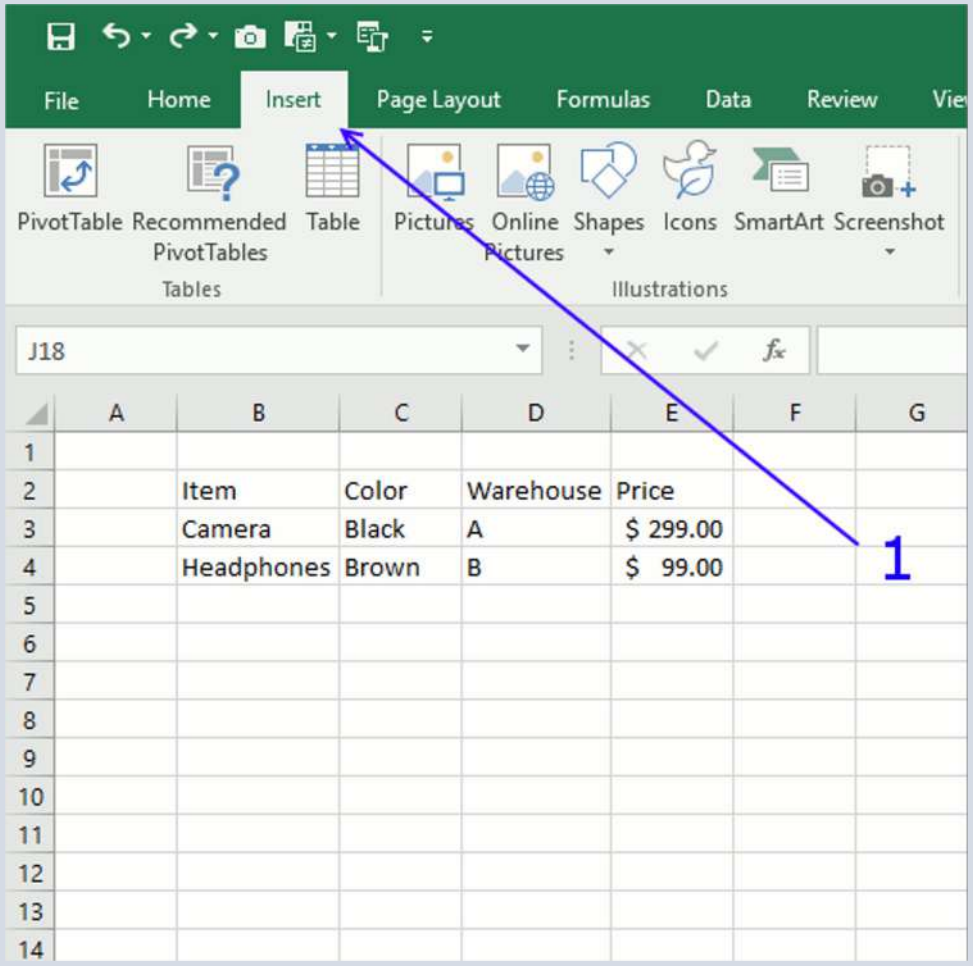
Keyhole Markup Language (KML) – XML based open standard (by OpenGIS) for GIS data exchange

Shapefile – a popular vector data GIS format, developed by Esri

- **Esri grid** – proprietary binary and metadataless ASCII raster formats used by Esri
- **GeoTIFF** – TIFF variant enriched with GIS relevant metadata
- IMG – ERDAS IMAGINE image file format
- **JPEG2000** – Open-source raster format. A compressed format, allows both lossyand lossless compression.
- **MrSID** – Multi-Resolution Seamless Image Database (by Lizardtech). A compressed wavelet format, allows both lossy and lossless compression.
- **GeoTIFF** – TIFF variant enriched with GIS relevant metadata

RASTER





TABLES

- Microsoft Excel
- OpenOffice spreadsheet
- OpenRefine
- Plan texts softwares

DATASET EXAMPLES

	A	B	C	D	E	F	G	H
1	Toponimo	geonames	AdminName	Population	Lat	Long	Il partigianc	Column 13
2	Alba	{"totalResul	Piedmont	24923	44.6999	8.0347	54	405
3	Alessandria	{"totalResul	Piedmont	64178	44.90924	8.61007	2	2
4	Asti	{"totalResul	Piedmont	61254	44.90162	8.20751	15	101
5	Avene	{"totalResultsCount":0,"geonames":[]}					4	6
6	Barbaresco	{"totalResul	Piedmont	677	44.72324	8.08194	2	6

1	Musique	Paroles	Chansonnier	Chason	Lieu	Recourrenc	Extract	Album	Date	Lat	Long
2	Georges Cl	Georges Cl	Georges Charle	Corne d'Au	Allemagne	2	Parce que (	La Mauvais	1954-01-01	52,51487	13,39174
3	Georges Cl	Georges Cl	Georges Charle	L'Ancêtre	Beaujolais	1	Saumur, Er	Misogynie à	1969-01-01	46,11763	4,721087
4	Georges Cl	Georges Cl	Georges Charle	L'Ancêtre	Bercy	1	On avait ap	Misogynie à	1969-01-01	48,83873	2,378491
5	Georges Cl	Georges Cl	Georges Charle	L'Ancêtre	Bicêtre	1	Quand nou	Misogynie à	1969-01-01	48,81058	2,352169
6	Georges Cl	Georges Cl	Georges Charle	De place er	Brantôme	1	On s'appell	Le Pornogr	1958-01-01	45,36684	0,650483
7	Georges Cl	Georges Cl	Georges Charle	Corne d'Au	Corne d'Au	10	Il avait nom	La Mauvais	1954-01-01	45,44037	4,390324
8	Georges Cl	Georges Cl	Georges Charle	Supplique p	Espagne	1	Tantôt vena	Supplique p	1966-01-01	40,41853	-3,700148

CSV FORMAT

adjusters.csv

```
1 ID,Firstname,pyLabel,HourlyRate,PhoneNumber
2 1,John,Smith,25.00,678-999-0001
3 2,Ted,Turner,175.25,+1-676-676-6666
4 3,Frederick,Jones,50.00,111 222 3333
5 4,Alice,Miller,75,561-999-8888
```

GOLDEN LISTS

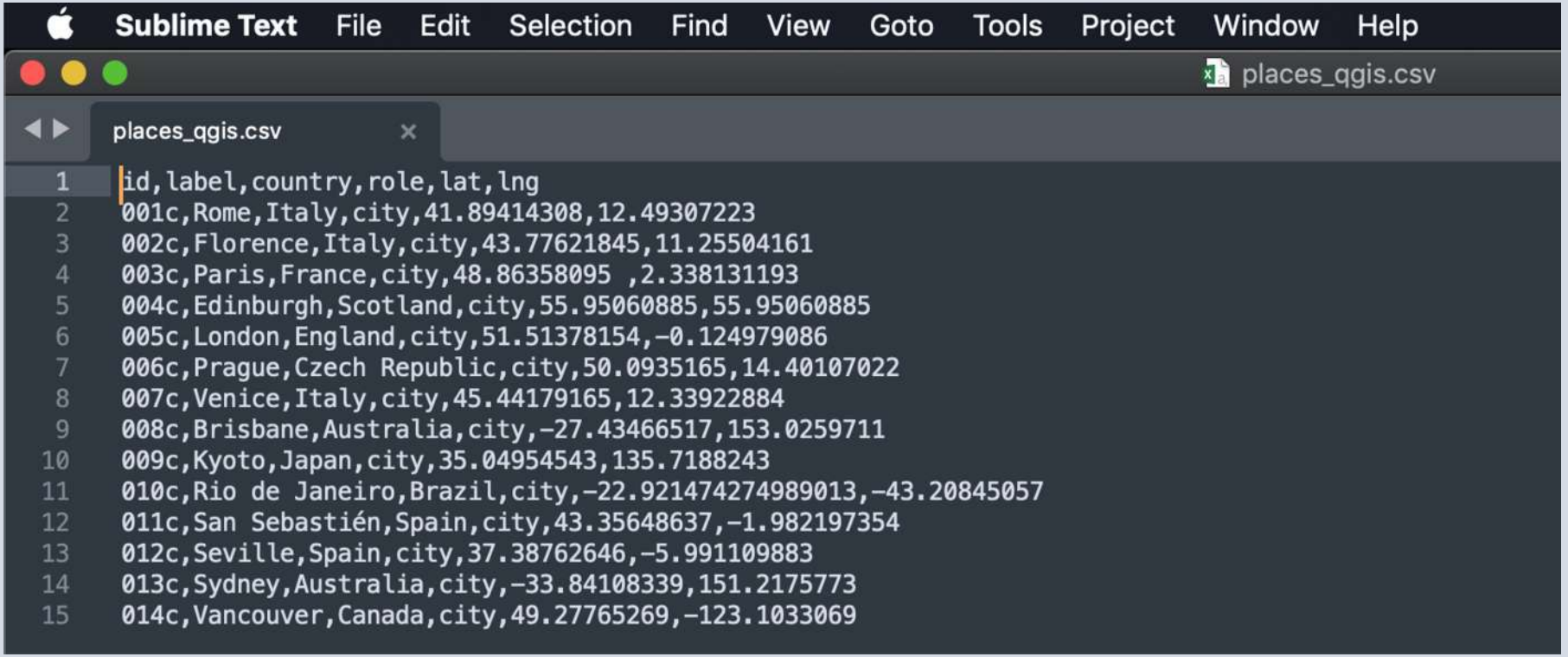
File Edit View Insert Format Data Tools Add-ons Help Last edit was made 2 hours ago by Zach Napolitano

fx First Name

	First Name	Last Name	Email	Company	Job Title	Lists	Tags
2	Buckaroo	Banzai	buckaroo@oneclipboard.com	Wonka Industries	VP of Misc. Stuff	Table 1, VIP	Tech
3	Snake	Plissken	snake@oneclipboard.com	Wonka Industries	Director of First Impressions	Table 2	Sports
4	Eve	Harrington	eve.harrington@oneclipboard.com	Wonka Industries	Arts and Crafts Designer	Table 3	Finance
5	Sidney	Mussburger	sidney@oneclipboard.com	Stark Industries	Director, Ethical Hacking	table 1	Government, Nuclear
6	Charles	Kane	charles.kane@oneclipboard.com	Stark Industries	Master of Disaster	table 2	Education
7	Donnie	Darko	donnie.darko@oneclipboard.com	Stark Industries	Crayon Evangelist	Table 1	Engineering
8	Santanico	Pandemonium	santanico@oneclipboard.com	Stark Industries	Creator of opportunities	Table 2	Automotive
9	Broomhilda	von Shaft	broomhilda@oneclipboard.com	Stark Industries	Ambassador of buzz	Table 3	AI
10	Barton	Fink	barton.fink@oneclipboard.com	Gekko & Co	Chief Cheerleader	table 1, VIP	Legal
11	CC	Baxter	cc.baxter@oneclipboard.com	Gekko & Co	Chief Amazement Officer	table 2	Healthcare
12	Cosmo	Brown	cosmo.brown@oneclipboard.com	Gekko & Co	Chief robot whisperer	Table 1	Tech
13	Lili	Von Shtupp	vonshtupp@oneclipboard.com	Gekko & Co	Director of bean-counting	Table 2	Sports
14	Vincent	Vega	vince.vega@oneclipboard.com	Gekko & Co	Software ninjaneer	Table 3	Finance
15	Sy	Snootles	sy@oneclipboard.com	Wayne Enterprises	Digital overlord	table 1, VIP	Government
16	Lancaster	Dodd	lancaster@oneclipboard.com	Wayne Enterprises	Wizard of light bulb moments	table 2	Education
17	Verbal	Kint	verbal@oneclipboard.com	Wayne Enterprises	Social Media Trailblazer	Table 1	Engineering
18	Vincent	Majestyk	vince.majestyk@oneclipboard.com	Wayne Enterprises	World Changer	Table 2	Automotive
19	Max	Dembo	max.dembo@oneclipboard.com	Cyberdyne Systems	VP of Misc. Stuff	Table 3	AI
20	Archer	Maggot	archer@oneclipboard.com	Cyberdyne Systems	Director of First Impressions	table 1	Legal
21	Lee	Christmas	lee.xmas@oneclipboard.com	Cyberdyne Systems	Arts and Crafts Designer	table 2	Healthcare
22	Elle	Driver	elle.driver@oneclipboard.com	Cyberdyne Systems	Director, Ethical Hacking	Table 1, VIP	Tech
23	Phillip	Vandamm	phil.vandamm@oneclipboard.com	Duff Beer	Master of Disaster	Table 2	Sports
24	Cole	Trickle	cole.trickle@oneclipboard.com	Sterling Cooper	Crayon Evangelist	Table 3	Finance

Basic List | Copy of Basic List | Standard | Copy of Standard | GOLDEN | Copy of GOLDEN | UMG | VIEWING PARTY | AMEX

CSV – A comma-separated values (CSV) file is a delimited text file that uses a comma to separate values. Each line of the file is a data record. Each record consists of one or more fields, separated by



GeoJSON – a lightweight format based on JSON, used by many open source GIS packages

Sublime Text File Edit Selection Find View Goto Tools Project Window Help 100% Sun 16

places_qgis.geojson.txt

places_qgis.geojson.txt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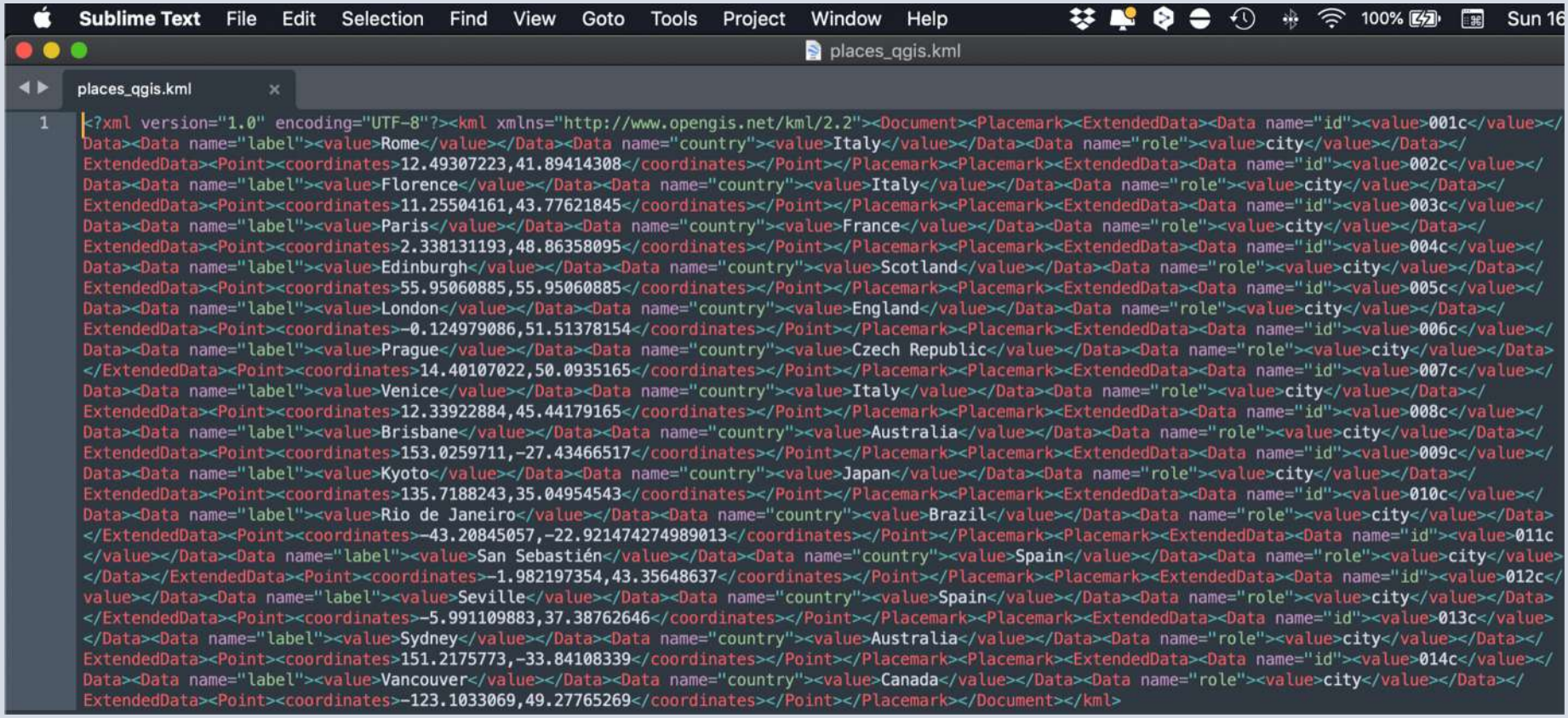
Keyhole Markup Language (KML) – XML based open standard (by OpenGIS) for GIS data exchange



Shapefile – a popular vector data GIS format, developed by Esri

Name	Date Modified	Size	Kind
places_qgis.cpg	Today at 14:36	5 bytes	Document
places_qgis.csv	Today at 14:29	765 bytes	Comm...et (.csv)
places_qgis.dbf	Today at 14:36	15 KB	OpenO...cument
places_qgis.prj	Today at 14:36	145 bytes	Document
places_qgis.shp	Today at 14:36	492 bytes	ESRI S...cument
places_qgis.shx	Today at 14:36	212 bytes	Document

Online mapping services often provide links that are too long to be passed on.

SHARE THE LINKS!

Using an app to shorten links is good practice.

Bitly
https://bitly.com/

The most complete

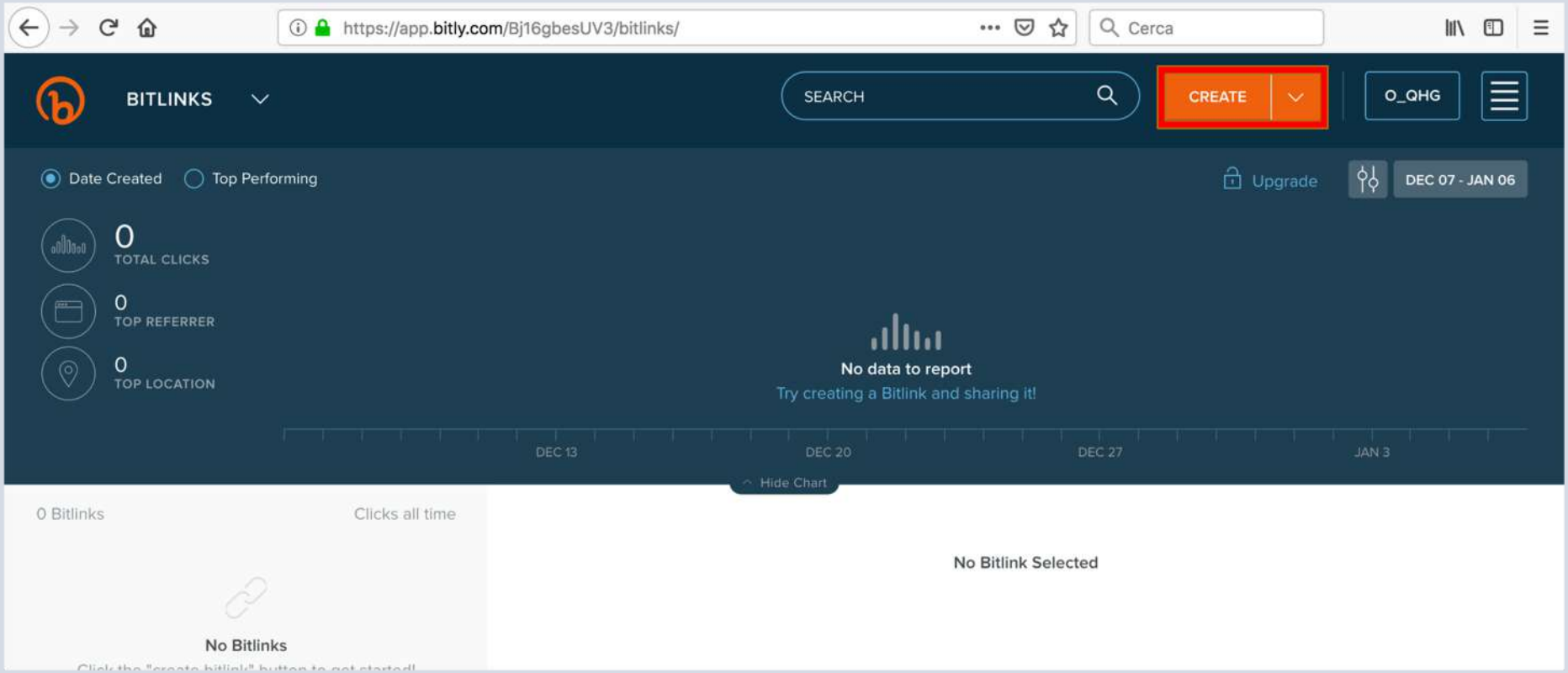
Tiny URL
https://linkbun.ch/

The best known

Linkbunch
https://linkbun.ch/

All links in one

BITLY


https://app.bitly.com/Bj16gbesUV3/bitlinks/
Cerca
BITLINKS
SEARCH
CREATE
O_QHG
Date Created
Top Performing
Upgrade
DEC 07 - JAN 06
0
TOTAL CLICKS
0
TOP REFERRER
0
TOP LOCATION
No data to report
Try creating a Bitlink and sharing it!
DEC 13
DEC 20
DEC 27
JAN 3
Hide Chart
0 Bitlinks
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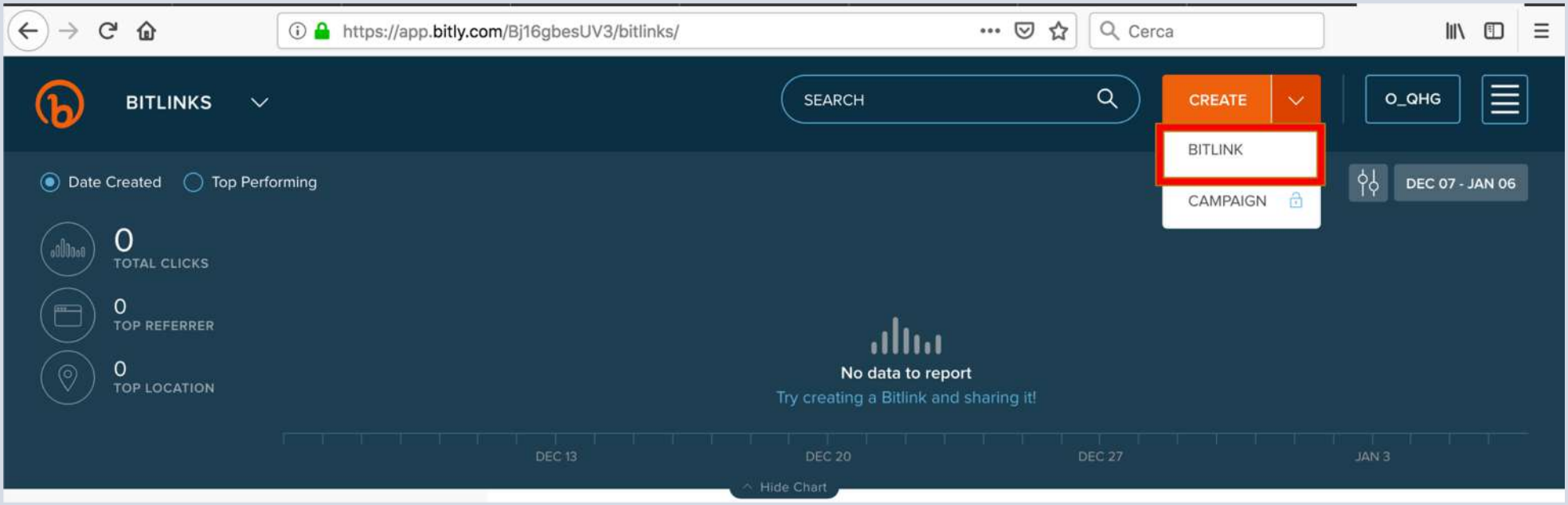
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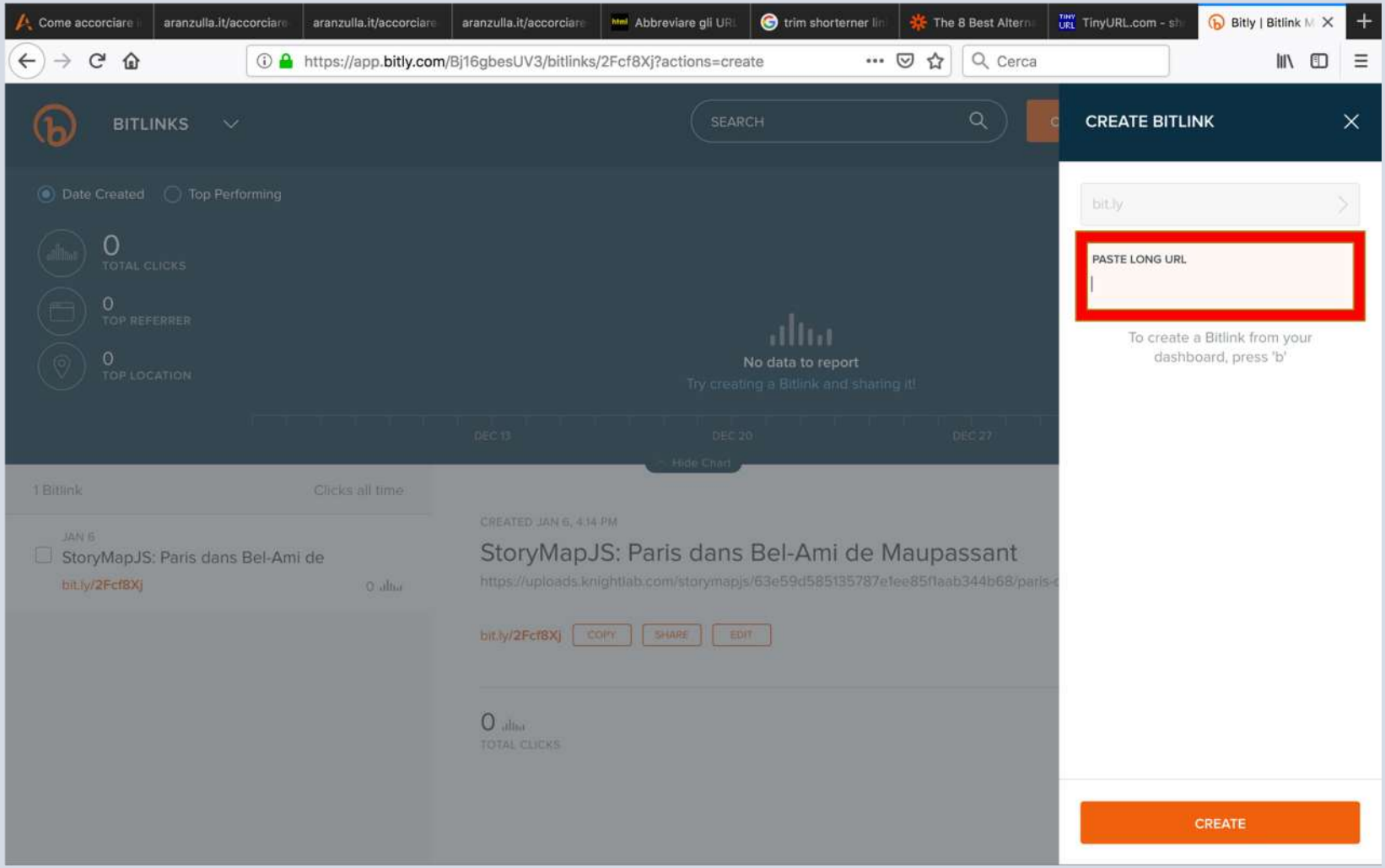
Cerca
BITLINKS
SEARCH
CREATE
O_QHG
BITLINK
CAMPAIGN
Date Created
Top Performing
DEC 07 - JAN 06
0
TOTAL CLICKS
0
TOP REFERRER
0
TOP LOCATION
No data to report
Try creating a Bitlink and sharing it!
DEC 13
DEC 20
DEC 27
JAN 3
Hide Chart


Come accorciare
aranzulla.it/accorciare
aranzulla.it/accorciare
aranzulla.it/accorciare
Abbreviare gli URL
trim shortener
The 8 Best Alterna
TinyURL.com - sh
Bitly | Bitlink M
https://app.bitly.com/Bj16gbesUV3/bitlinks/2Fcf8Xj?actions=create
Cerca
BITLINKS
SEARCH
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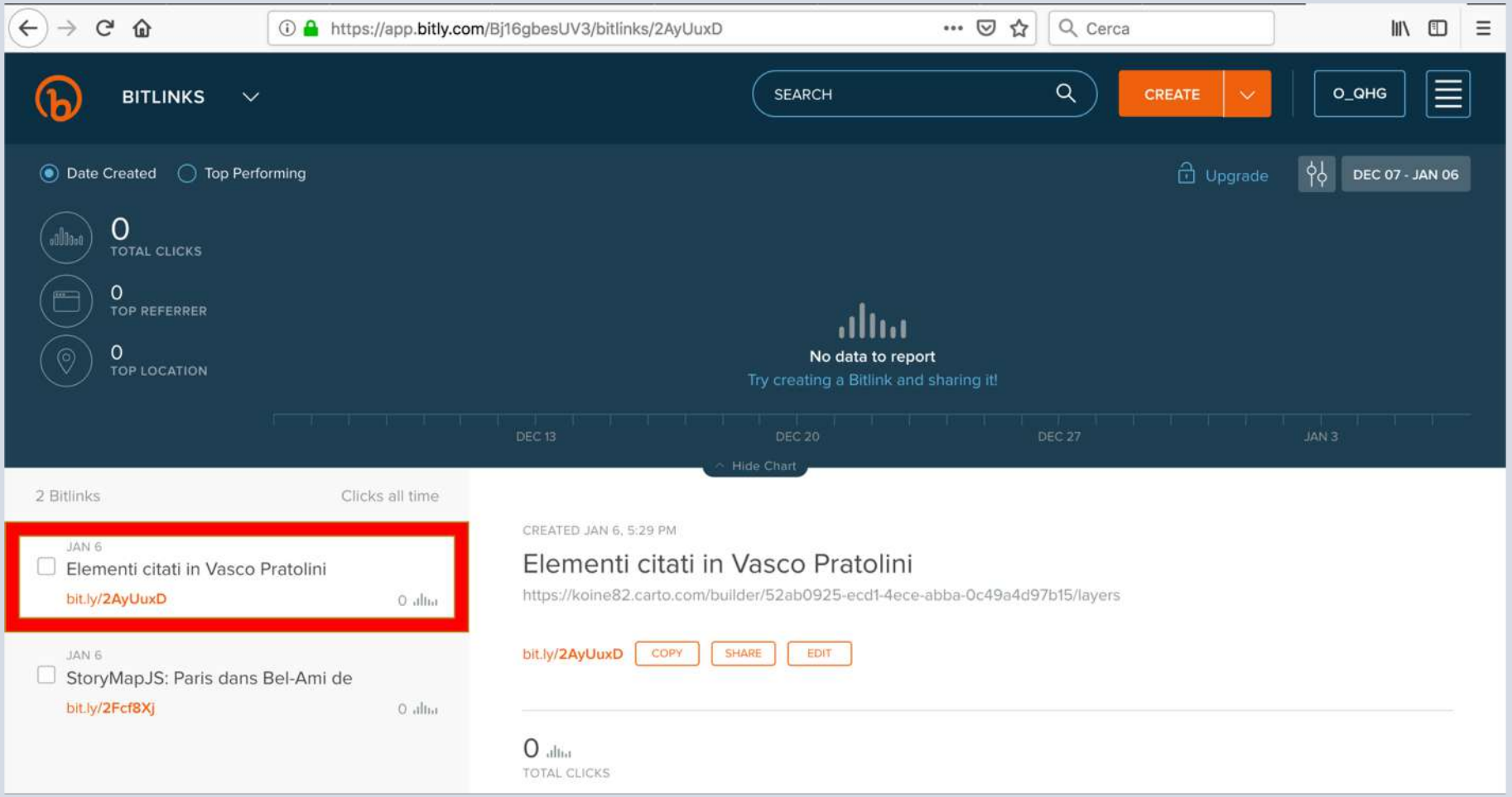
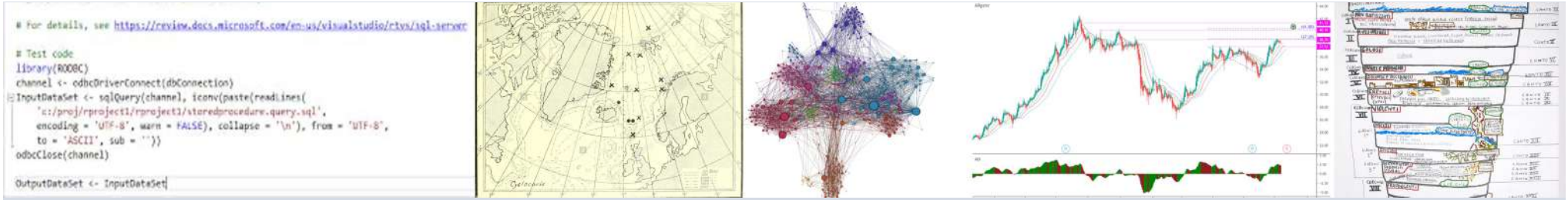
0
TOTAL CLICKS
0
TOP REFERRER
0
TOP LOCATION
No data to report
Try creating a Bitlink and sharing it!
DEC 13
DEC 20
DEC 27
Hide Chart
1 Bitlink
Clicks all time
JAN 6
StoryMapJS: Paris dans Bel-Ami de
bit.ly/2Fcf8Xj
0
CREATED JAN 6, 4:14 PM
StoryMapJS: Paris dans Bel-Ami de Maupassant
bit.ly/2Fcf8Xj
COPY
SHARE
EDIT
0
TOTAL CLICKS
CREATE BITLINK
bit.ly
PASTE LONG URL
To create a Bitlink from your dashboard, press 'b'
CREATE


https://app.bitly.com/Bj16gbesUV3/bitlinks/2AyUuxD
Cerca
BITLINKS
SEARCH
CREATE
O_QHG
Date Created
Top Performing
Upgrade
DEC 07 - JAN 06
0
TOTAL CLICKS
0
TOP REFERRER
0
TOP LOCATION
No data to report
Try creating a Bitlink and sharing it!
DEC 13
DEC 20
DEC 27
JAN 3
Hide Chart
2 Bitlinks
Clicks all time
JAN 6
Elementi citati in Vasco Pratolini
bit.ly/2AyUuxD
0
JAN 6
StoryMapJS: Paris dans Bel-Ami de
bit.ly/2Fcf8Xj
0
CREATED JAN 6, 5:29 PM
Elementi citati in Vasco Pratolini
https://koine82.carto.com/builder/52ab0925-ecd1-4ece-abba-0c49a4d97b15/layers
bit.ly/2AyUuxD
COPY
SHARE
EDIT
0
TOTAL CLICKS



Intro to Mapping _end

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