

Cycle Data de l'ARHN  
Atelier n°1

# Les bases de la visualisation de données (*dataviz*)

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# Plan de l'exposé initial

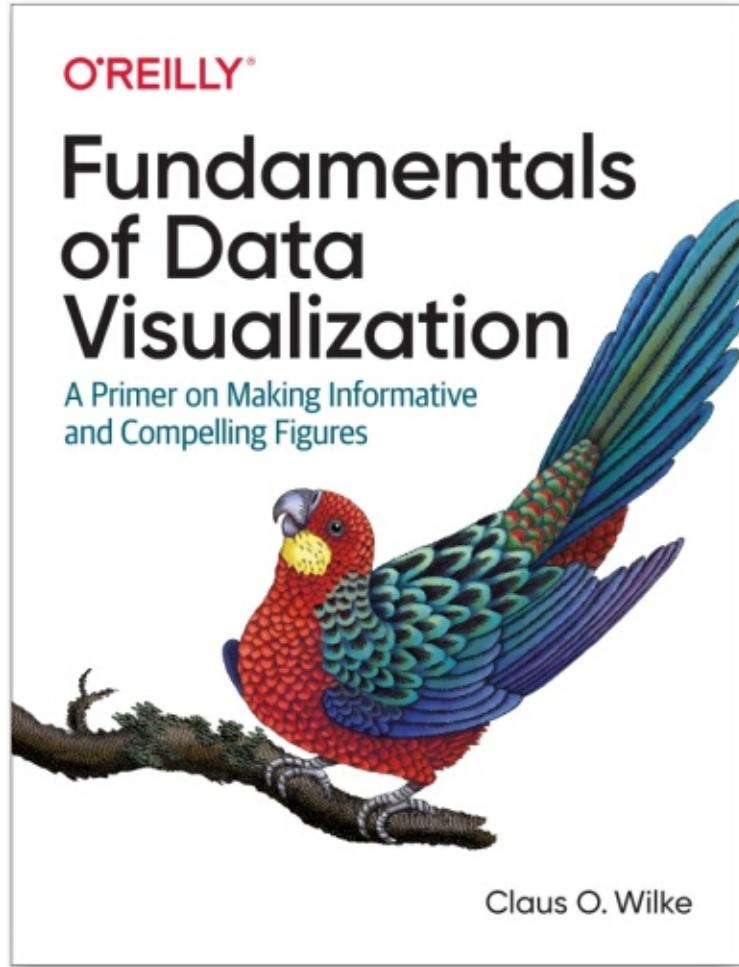
- 1) Introduction
- 2) Matériel et connaissances prérequis.
- 3) Présentation des données.
- 4) Présentation de la méthodologie.
- 5) Premier outil : *RawGraphs*
- 6) Deuxième outil : *Palladio*
- 7) Discussion/questions.

# 1 – Introduction

## *Dataviz* et SHS

- Beaucoup de sources sur l'analyse de données.
- Beaucoup d'outils disponibles.
- Tous (ou presque) sont orientés vers les données quantitatives (nombres).
- Que retenir pour les SHS ? Qu'adapter ?

# 1 – Introduction



Une ressource utile.

**ISBN: 978-1-492-03108-6**

- Non pas un manuel de code, mais un guide graphique.
- Il est une source majeure de cette formation.

# 1 – Introduction

## *Dataviz?*

- *Dataviz* = « data visualization » : visualisation de données.
- Représenter des données brutes de manière graphique, afin d'en simplifier la compréhension et/ou de les synthétiser.
- On part en général d'un tableau pour aboutir à une image.

# 1 – Introduction

## SHS et statistiques

- Faire des statistiques, c'est d'abord comparer un grand nombre de cas, chaque cas étant caractérisé par divers critères/facteurs. Quel type de cas et quels critères dépendent de ce que l'on étudie et pourquoi.
- Comment un critère peut se manifester dans certains cas dépend peut-être d'un autre facteur que l'on a aussi enregistré et c'est cela que l'on va tenter de mesurer avec les statistiques.

# 1 – Introduction

« Les statistiques sont la science de prédiction du monde, de détermination mathématique de la probabilité d'événements ou de relations.

« Pourquoi est-ce crucial à toutes les sciences empiriques ? Parce que la science est basée sur la mise à l'épreuve d'hypothèses et que le seul moyen de tester une hypothèse de manière inductive (empirique), c'est de prédire des observations. C'est fondamentalement le sujet des statistiques... bien sûr, il y a beaucoup plus, mais c'en est le cœur. »

**Dylan Glynn (Paris VIII, 2019, Traduction de notes personnelles de cours).**

# 1 – Introduction

« Dans un grand nombre de disciplines comme la biologie, la psychologie, la sociologie, l'économie ou la santé publique, on peut réaliser ce que l'on appelle des recherches quantitatives, c'est-à-dire que l'on pratique des mesures sur des individus, des animaux ou des cultures cellulaires, et on essaie de mettre en relation ces différentes variables. »

Bruno Falissard (2018)

<<https://www.fun-mooc.fr/courses/course-v1:UPSUD+42001+session12/about>>

# 1 – Introduction

Qu'est-ce qu'une variable en statistiques ?

- ≠ de la variable en informatique.
- « Symbole, terme, phénomène observable auquel on peut attribuer différentes valeurs prises dans un ensemble. »  
(<https://www.cnrtl.fr/definition/variable>)
- En général, on traduit ces variables par des colonnes dans un tableau.
- Chaque phénomène observable (variable) se manifeste différemment en fonction des cas observés : on parle pour chaque cas particulier de la valeur qu'exprime la variable. (Nous en verrons sur notre exemple.)

# 1 – Introduction

## Qualitatif vs. quantitatif

- « Une variable est **quantitative** quand ça a un sens de faire la somme ou la différence de plusieurs résultats. Par exemple, vous prenez le poids ou la taille, ça a un sens de faire une différence de poids ou de taille. Donc, on dit que ces mesures sont des mesures quantitatives. »
- « Alors à propos des variables aléatoires **qualitatives**, on ne peut pas en faire la somme et la différence. Pour rester dans le domaine médical, par exemple, le groupe sanguin (A, B, O, AB), c'est une variable aléatoire qualitative. »

Benoît Falissard (2018)

<<https://www.fun-mooc.fr/courses/course-v1:UPSUD+42001+session12/about>>

# 1 – Introduction

Pourquoi parler de variables et de valeurs ?

- Avoir en tête ce découpage permet de mieux penser ses *dataviz* car le principe de la dataviz, c'est majoritairement de :
- ...faire correspondre les différentes variables à un principe de visualisation particulier.

# 1 – Introduction

En résumé :

- « Le seul moyen de tester une hypothèse de manière inductive (empirique), c'est de prédire des observations. » (D. Glynn, 2018)
- « On pratique des mesures [...] et on essaie de mettre en relation ces différentes variables. » (B. Falissard, 2018)
- Avec les données récentes, on échantillonne les données de manière à ce qu'elles reflètent la distribution du monde réel. Avec des données historiques, nous n'avons pas le luxe de les choisir et nous savons qu'elles ne reflètent probablement pas le monde passé.

# 1 – Introduction

Données ?

- Ces définitions sont loin d'être hors sujet, mais elles doivent être adaptées pour nos données.
- Souvent, les observations ont été faites pour nous, hors de notre problématique. Les variables mesurées ne dépendent pas de nous.
- Nous ne contrôlons pas non plus les valeurs qui sont souvent imparfaites (vagues, illisibles, inexactes...)

# 1 – Introduction

Il nous reste donc :

- Les notions de variable et valeur qui sont fondamentales.
- La notion de représentativité, vers laquelle on peut tendre à défaut de l'atteindre.
- La reproductibilité de nos données (documentation, utilisation de scripts lorsque c'est possible...)

# 1 – Introduction

Ce qui nous reste, c'est :

- Notre connaissance de la discipline dans laquelle nous travaillons, et des problématiques générales inhérentes à nos données.
- Notre capacité d'analyse qui nous permet de comprendre la profondeur de nos données et leurs limites.
- Les bonnes pratiques (nous en verrons au cours du Cycle).

## 2 – Prérequis

### Matériel

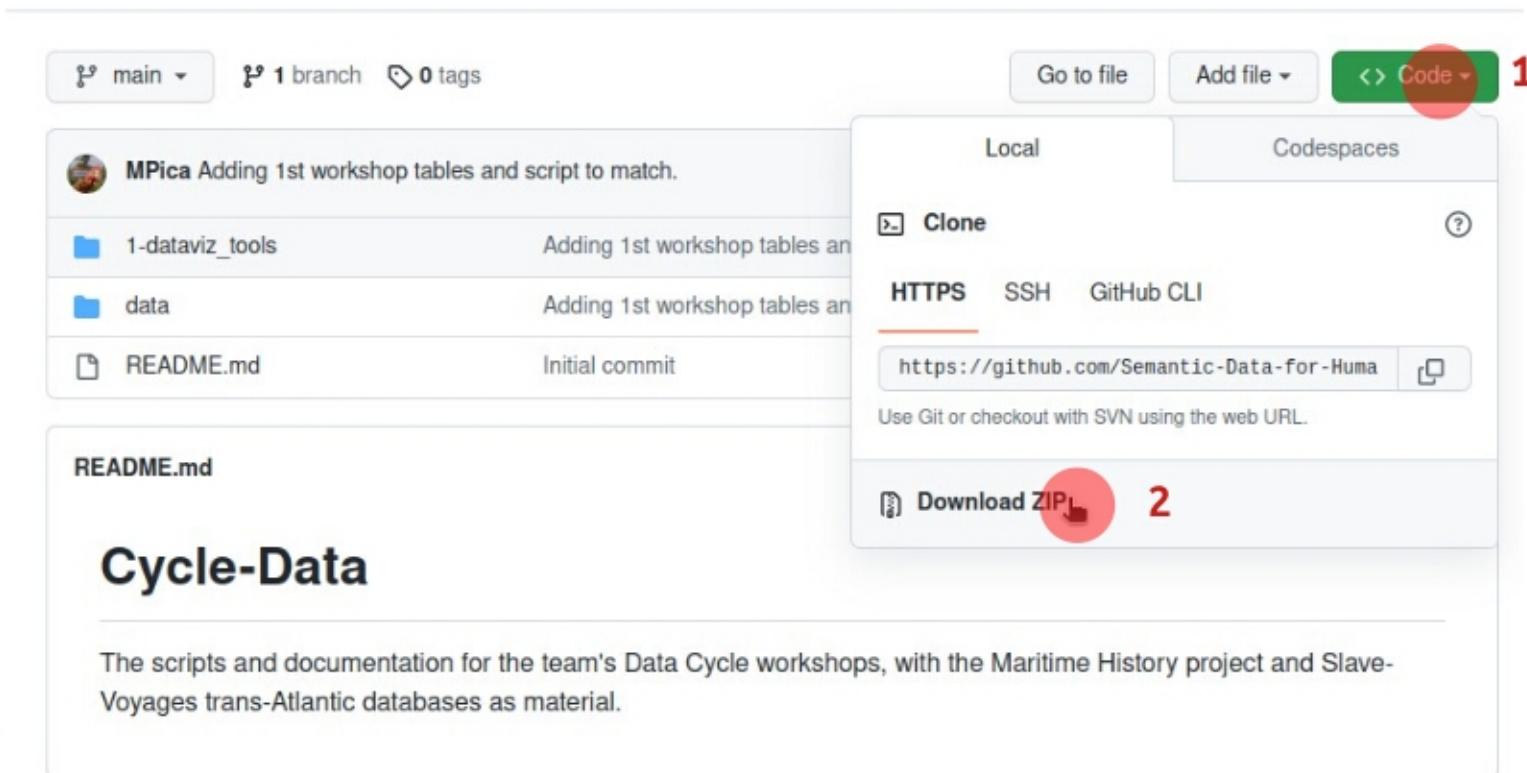
- Un ordinateur,
- Un navigateur et accès internet,
- Un *éditeur* de texte (pas de traitement de texte) : le bloc-note fait l'affaire sans problème.
- Des données :

<https://github.com/Semantic-Data-for-Humanities/Cycle-Data>

## 2 – Prérequis

<https://github.com/Semantic-Data-for-Humanities/Cycle-Data>

→ Le téléchargement n'est pas nécessaire ici, mais voici comment faire si vous le souhaitez.



## 2 – Prérequis

### Connaissances

- Mon introduction.
- La connaissance de votre champ disciplinaire.
- La connaissance au moins du domaine que concernent les données visées.

# 3 – Présentation des données



Maritime History

SPARQL Search

Search and hit enter...

Maritime History

Historical information about the Dutch East India Company, ready to explore and re-use. A pilot project.

Consisting of approximately twenty-five million pages, the UNESCO Memory of the World-listed archives of the Dutch East India Company (Verenigde Oost-Indische Compagnie, VOC) offer a unique view on interactions between European and non-European actors in Asia in the seventeenth and eighteenth centuries. Currently, however, doing research on this vast collection of handwritten documents is extremely challenging. Geovistory was used to integrate and structure various data collections related to the history of the Dutch East India Company. It allowed to quickly and easily create insightful visualizations. The semantic data produced with Geovistory is now available to search, explore and re-use.

## Involved People



Dr. Lodewijk Petram  
Project Leader Globalise



Sebastiaan Derk M.A.  
Head of Digital Data Manage...



Dr. Habil. Francesco Ber...  
Chargé de recherche, CNRS, ...



Jonas Schneider M.A.  
Co-director & CTO KleioLab

## Institutional Partners



<https://www.geovistory.org/project/84760>

# 3 – Présentation des données

Maritime History

SPARQL Search

Search

9994 Entities

Class Filter

All classes (23)

Person Appellation i... 14303

Ship Voyage 8189

Person 7614

Appellation in a Lang... 7217

Geographical Place 5278

Presence 5269

Show all

Jan Ravensbergh  
Person

Andries Liens  
Person

Abraham Staelboom  
Person

Abraham Franke  
Person

Jan Pietersz  
Person

Jurgen Preen  
Person

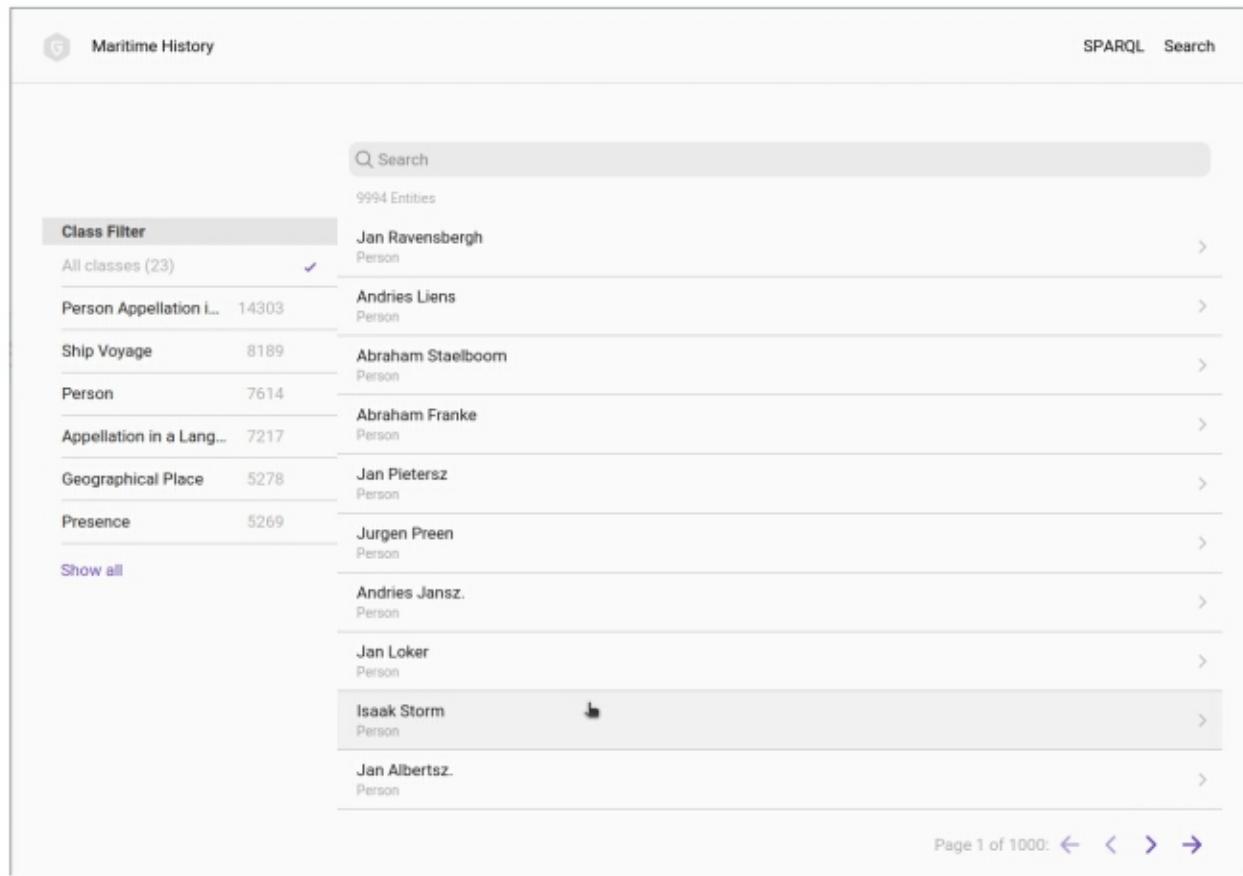
Andries Jansz.  
Person

Jan Loker  
Person

Isaak Storm  
Person

Jan Albertsz.  
Person

Page 1 of 1000: < < > >



<https://www.slavevoyages.org/>

Ship	1855
Definition	28
Annotation in Text	28
Type of manifestation p...	10
VOC Chamber	8
Expression	5
Source Content	5
Manifestation Product Ty...	4
Expression portion	4
Geographical Place Type	3
Manifestation Singleton ...	3
Expression Portion Type	3
Entity Quality Type	3
Text	3
Item Type	2
Construction	1
Construction Type	1
Show less	

# 3 – Présentation des données

The screenshot shows the homepage of the Slave Voyages website. At the top left is the logo "SLAVEVOYAGES" with a small icon of a map of Africa. Below the logo is a large title: "EXPLORE THE ORIGINS AND FORCED RELOCATIONS OF ENSLAVED AFRICANS ACROSS THE ATLANTIC WORLD". A detailed description follows: "The SlaveVoyages website is a collaborative digital initiative that compiles and makes publicly accessible records of the largest slave trades in history. Search these records to learn about the broad origins and forced relocations of more than 12 million African people who were sent across the Atlantic in slave ships, and hundreds of thousands more who were trafficked within the Americas. Explore where they were taken, the numerous rebellions that occurred, the horrific loss of life during the voyages, the identities and nationalities of the perpetrators, and much more." Below this text is a video player showing a thumbnail of Henry Louis Gates introducing Slave Voyages 2.0. The video player has a play button and the caption "Henry Louis Gates introduces Slave Voyages 2.0 and some of its people". Below the video player is a section titled "Special features" with two items: "Introductory maps" (View places and routes of the slave trade) and "3D video reconstructions" (View 3D renditions of slaving vessels). Further down are sections for "Timeline" (Examine estimated numbers of people trafficked across the Atlantic) and "Timelapse" (View the movement of slave ships across the Atlantic). At the bottom left is a "user feedback" section with icons for Facebook, Twitter, and Report issues, and a link to "scroll down to learn more". The Rice University logo is at the bottom right.

The screenshot shows a blog post from the SlaveVoyages blog. The header features the SlaveVoyages logo and the title "Echoes: The SlaveVoyages Blog - New Consortium Will Ensure Future of SlaveVoyages Database". Below the title is a sub-header "News frontpage". The main content of the post is a photograph of several logos representing the consortium members: RICE, Emory University, National Museum of African American History & Culture (Smithsonian), OMOHUNDRO INSTITUTE, Berkeley, UC IRVINE, UC SANTA CRUZ, and Washington University in St. Louis, Center for the Study of Race, Ethnicity & Equity. Below the photo is the heading "New Consortium Will Ensure Future of SlaveVoyages Database". Underneath the heading is the date "Sept. 29, 2022, 12:36 p.m." and the author's name "Voyages Team Scholars". At the bottom of the post are links for "Front Page" and "News", and social media sharing icons for WhatsApp, Facebook, Twitter, LinkedIn, and Email. The date "March, 2021" is also present. The footer of the page states: "SlaveVoyages.org, created and hosted at Emory University and a preeminent resource for the study of slavery, will be operated by a".

# 3 – Présentation des données

The screenshot shows the SLAVEVOYAGES website. The header includes the logo and the title "Trans-Atlantic Slave Trade - Understanding the Database". Below the header is a navigation menu with "Methodology" selected. The main content area is titled "Methodology" and contains a single paragraph by David Eltis (Emory University), 2018.

**Methodology**  
Introduction  
Coverage of the Slave Trade  
Nature of Sources  
Cases and Variables  
Data Variables  
Age Categories  
Dates  
Names  
Imputed Variables  
Geographic Data  
Imputed Voyage Dates  
Classification as a Trans-Atlantic Slaving Voyage  
Voyage Outcomes  
Inferring Places of Trade  
Imputing Numbers of Slaves  
Regions of Embarkation and Disembarkation  
Age and Gender Ratios  
National Carriers  
Tonnage  
Resistance and Price of Slaves  
Appendix  
Notes  
Variable List  
Sources

## Methodology

David Eltis (Emory University), 2018

### Introduction

It is difficult to believe in the first decades of the twenty-first century that just over two centuries ago, for those Europeans who thought about the issue, the shipping of enslaved Africans across the Atlantic was morally indistinguishable from shipping textiles, wheat, or even sugar. Our reconstruction of a major part of this migration experience covers an era in which there was massive technological change (steamers were among the last slave ships), as well as very dramatic shifts in perceptions of good and evil. Just as important perhaps were the relations between the Western and non-Western worlds that the trade both reflected and encapsulated. Slaves constituted the most important reason for contact between Europeans and Africans for nearly two centuries. The shipment of slaves from Africa was related to the demographic disaster consequent to the meeting of Europeans and Amerindians, which greatly reduced the numbers of Amerindian laborers and raised the demand for labor drawn from elsewhere, particularly Africa. As Europeans colonized the Americas, a steady stream of European peoples migrated to the Americas between 1492 and the early nineteenth century. But what is often overlooked is that, before 1820, perhaps three times as many enslaved Africans crossed the Atlantic as Europeans. This was the largest transoceanic migration of a people until that day, and it provided the Americas with a crucial labor force for their own economic development. The slave trade is thus a vital part of the history of some millions of Africans and their descendants who helped shape the modern Americas culturally as well as in the material sense.

The genesis and history of Voyages Database is laid out on a separate page. In this essay we wish to alert users to its structure and to its limitations as well as its strengths. The data set contains thousands of names of shipowners and ship captains, but it contains almost no names of the millions of slaves carried to the Americas. On the other hand, this web site does provide the African names of and personal information about 91,491 captives who were found on board slave vessels detained by naval cruisers attempting to suppress the

The screenshot shows the SLAVEVOYAGES website. The header includes the logo and the title "Trans-Atlantic Slave Trade - Database". Below the header is a navigation menu with "Results" selected. The main content area displays a table of 15 entries from 36,071 total, showing voyage details such as year, ID, vessel name, place of departure, and destination.

Year arrived with slaves	Voyage ID	Vessel name	Place where vessel's voyage began	Principal place where captives were purchased	Principal place where captives were landed	Linked voyages	Captives arrived at 1st port	Captain's name
1817	1	Pastora de Lima	Rio de Janeiro	Mozambique	Bahia, place unspecified		290	Dias, Manoel José
1817	2	Tíberio	Bahia, place unspecified	Mozambique	Bahia, place unspecified		223	Mata, José Maria da
1817	3	Paquete Real	Bahia, place unspecified	Cabinda	Bahia, place unspecified		350	Ferreira, José dos Santos
1817	4	Bom Caminho	Bahia place unspecified	Quilimane	Bahia, place unspecified		342	Dias, Domingos Francisco
1817	5	Benignetta	Bahia place unspecified	Cabinda	Bahia, place unspecified		516	
1817	6	Voador	Bahia, place unspecified	Mozambique	Bahia, place unspecified		515	
1817	7	Formiga	Bahia, place unspecified	Malembo	Bahia, place unspecified		204	Viana, Isidoro Antônio
1817	8	Vigilante Africano	Pernambuco, place unspecified	Luanda	Bahia, place unspecified		374	Amorim, José Gomes de
1817	9	Constante	Bahia, place unspecified	Cabinda	Bahia, place unspecified		345	Narciso, Antônio
1817	10	Comerciante	Bahia, place unspecified	Cabinda	Bahia, place unspecified		478	Braga, Isidoro Martins
1817	11	Diligente	Bahia, place unspecified	Cabinda	Bahia, place unspecified		180	
1817	12	Bonfim	Bahia, place unspecified	Cabinda	Bahia, place unspecified		542	Coelho, João Batista
1817	13	Triunfo	Bahia, place unspecified	Luanda	Bahia, place unspecified		503	
1817	14	S Lourenço	Bahia, place unspecified	Cabinda	Bahia, place unspecified		471	Vilasboas, João da Silveira Almeida, Manoel Joaquim de
1817	15	Paquete da Bahia	Bahia, place unspecified	Cabinda	Bahia, place unspecified		478	

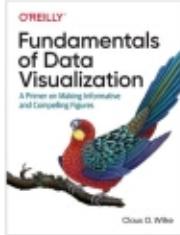
# 3 – Présentation des données

## Variables de la base trans-atlantique de *Slave Voyages*

Captain's name	Percent boys	Second place where captives were landed
Crew deaths during voyage	Percent children	Second place where captives were purchased
Crew at first landing of captives	Percent girls	Vessel name
Crew at voyage outset	Percent males	Date captive embarkation began
Date vessel departed with captives	Percent men	Source of data
Date vessel departed for homeport	Percent women	Third place where captives were landed
Display in compact mode	Sterling cash price in Jamaica	Third place where captives were purchased
Date vessel arrived with captives	Duration of captives' crossing (in days)	Tonnage
First place where captives were landed	Flag of vessel.1	Standardized tonnage
First place where captives were purchased	Captives carried from 1st port	Captives arrived at 1st port
Guns mounted	Captives carried from 2nd port	Total embarked.1
Cargo	Captives carried from 3rd port	Place constructed
Year of arrival at port of disembarkation	Captives landed at 1st port	Date vessel's voyage began
Voyage duration, homeport to disembarkation (in days)	Captives landed at 2nd port	Date vessel arrived at homeport
Place where vessel's voyage began	Captives landed at 3rd port	Voyage ID
Principal place where captives were purchased	Captives intended to be purchased at 1st place	Year constructed
Principal place where captives were landed	Outcome of voyage for owner	Voyage itinerary imputed port where began (ptdepimp) place
Total embarked	Outcome of voyage if ship captured	Voyage itinerary imputed principal place of slave purchase (mjbyptimp)
Total disembarked	Outcome of voyage for captives	Voyage itinerary imputed principal port of slave disembarkation (mjslptimp) place
Captive deaths during crossing	Particular outcome of voyage	Voyage links
Percentage of captives who died during crossing	Vessel owner	Voyage ship place where vessel constructed
Captive Background	Place where vessel's voyage ended	Voyage itinerary first place of slave purchase (placitra)
Flag of vessel	Places of call before Atlantic crossing	Voyage itinerary first place of slave landing (slaipport)
	Place registered	Voyage ship place where vessel registered
	Year registered	
	Resistance	
	Rig or type of vessel	
	Show advanced variables in search filters	

# 4 – Méthodologie

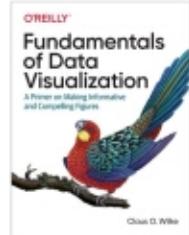
## Quelques principes de dataviz



- Un graphique doit être « clair, attrayant et convaincant ».
- « L'automatisation est votre amie. [...] Au moment où vous éditez manuellement un graphique, votre graphique final cesse d'être reproductible. [...] Si vous ajoutez beaucoup de post-production manuelle [...] vous rechignerez plus à changer ou refaire votre travail. [...] Vous pouvez vous-même oublier ce que vous avez fait exactement pour préparer un graphique donné. »
- « Soyez conscients qu'Excel est également un programme de graphique interactif et n'est pas recommandé pour préparer des graphiques (ou de l'analyse de données). »

# 4 – Méthodologie

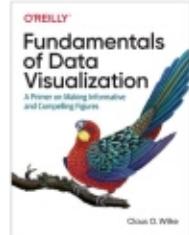
## Quelques principes de dataviz



- « Toutes les visualisations de données font correspondre des valeurs de données à des caractéristiques quantifiables du graphique de sortie. »
- « Pour faire correspondre les données à l'esthétique, nous devons spécifier quelles valeurs de données correspondent à quelle valeurs esthétiques, [...] en binômes strict, [sinon] la donnée devient ambiguë. »

# 4 – Méthodologie

## Quelques principes de dataviz



- Pour cette initiation, je n'irai pas plus loin.
- Sachez que ce livre contient un guide par type de graphique, et des conseils sur comment les utiliser.
- Si vous comprenez le système de binôme variable-caractéristique graphique, vous êtes déjà bien parti·e ! Gardez-le bien en tête, il est fondamental.

# 4 – Méthodologie

## Le biais d'analyse

- Le biais est lié à notre subjectivité. L'objectivité totale est impossible pour les humains.
- La machine, elle, est objective... mais répond exactement à nos consignes qui peuvent, elles être biaisées.
- Le biais de confirmation est un des plus connus : de par ses opinions ou sa formation, on peut chercher à confirmer ce qu'on pense savoir par les données.

# 4 – Méthodologie



- Que l'on travaille en méthode ascendante ou descendante, le biais reste un danger, ne serait-ce que dans la collection des données.
- Il faut choisir les données en fonction de son sujet de recherche, bien sûr, mais attention à ne pas les restreindre en fonction de ce qu'on s'attend à trouver...
- Attention à formuler ses questions de manière à garder la possibilité que les données disent : « non ».



# 4 – Méthodologie



- Attention également à poser les bonnes questions à la machine : « que révèlent mes données sur le trafic maritime à l'époque moderne ? » ne fonctionnera pas.
- « Quel est le nombre de navires en mer pour chaque année ? » et « Combien de navires différents chaque capitaine a-t-il été amené à commander dans sa carrière ? » sont des questions beaucoup plus pertinentes pour la machine.
- Le reste, c'est à vous de l'établir par l'analyse, en croisant les chiffres obtenus et les sources.

# 4 – Méthodologie

Vive les tableaux ?

- Les tableaux sont à la fois nécessaires et source de méfiance :
  - ↳ Leur constitution peut être biaisée.
  - ↳ Sont-ils bien conçus selon les bonnes pratiques numériques ?
  - ↳ Souvent mal documentés, conçus comme « juste un tableau » et non un outil de recherche à part entière, leurs concepteurs oublient rapidement comment ils les ont faits et ils deviennent inutilisables. Et pourtant, la crédibilité scientifique des travaux est en jeu !

# 4 – Méthodologie

Vive les tableaux ?

- Mais un tableau est généralement la base d'une visualisation : si les données ne sont pas tabulaires, on en fait un tableau pour cette étape.
- Un tableau peut être lui-même la base d'une *dataviz*, ou il peut servir de base à d'autres tableaux à partir desquels la *dataviz* sera faite.
- Plutôt que de continuellement éditer un tableau pour changer et re-changer des variables en fonction des dataviz, faites **un tableau de référence**. Ensuite, vous pourrez le garder comme source immuable et travailler sur des copies, une par visualisation si nécessaire, chaque copie modifiée utile étant conservée *et documentée* pour référence.

# 4 – Méthodologie

Vive les tableaux ?

- Si vous travaillez sur tableur, faites *un tableau par feuille* et pas plus.
- Attention, un tableur est un outil de programmation et de calcul. L'utiliser pour mettre en forme des tableaux, c'est prendre le canon pour tuer la mouche.
- L'utilisation d'un tableur pour la dataviz est déconseillée. (Cf plus haut.)

## 4 – Méthodologie

### Le format CSV.

- C'est un format très léger car ne contenant que des chaînes de caractères (un « fichier » de tableur est encodé en XML, vous pouvez le dézipper pour vous en rendre compte).
- On peut faire du CSV avec un tableur, c'est au moment de l'enregistrement que vous en ferez un CSV.
- Le format CSV ne garde aucune mise en forme (largeur des colonnes, gras/italique, police d'écriture...).

# 4 – Méthodologie

- CSV = « *Comma Separated Values* » (valeurs séparées par des colonnes).
- Ex : tableau 1-dataviz\_tools/ship\_flags.csv

	A	B
1	index	Flag of vessel
2	Great Britain	11994
3	Portugal / Brazil	11334
4	France	4203
5	U.S.A.	2276
6		2209
7	Spain / Uruguay	1928
8	Netherlands	1699
9	Denmark / Baltic	413
10	Other	16
11	Sweden	1
--		

```
1 index,Flag of vessel
2 Great Britain,11994
3 Portugal / Brazil,11334
4 France,4203
5 U.S.A.,2276
6 ,2209
7 Spain / Uruguay,1928
8 Netherlands,1699
9 Denmark / Baltic,413
10 Other,16
11 Sweden,1
```

# 4 – Méthodologie

Import de texte - [ship\_flags.csv]

**Importer**

Jeu de caractères : Unicode (UTF-8)

Langue : Par défaut - Français (France)

À partir de la ligne : 1

**Options de séparateur**

Largeur fixe  Séparé par

Tabulation  Virgule  Point-virgule  Espace  Autre

Fusionner les séparateurs  Espaces superflus Séparateur de chaîne de caractères : "

**Autres options**

Formater les champs entre guillemets comme texte  Déetecter les nombres spéciaux

Évaluer les formules

**Champs**

Type de colonne :

Standard	Standard
1 index	Flag of vessel
2 Great Britain	11994
3 Portugal / Brazil	11334
4 France	4203
5 U.S.A.	2276
6	2209
7 Spain / Uruguay	1928
8 Netherlands	1699

Aide Annuler OK

→ Fenêtre d'importation de LibreOffice Calc.

1	index,Flag of vessel
2	Great Britain,11994
3	Portugal / Brazil,11334
4	France,4203
5	U.S.A.,2276
6	,2209
7	Spain / Uruguay,1928
8	Netherlands,1699
9	Denmark / Baltic,413
10	Other,16
11	Sweden,1

# 4 – Méthodologie

	A	B	C	D
1	Flag of vessel	Date vessel departed with captives	Vessel name	Captain's name
2	Netherlands	1732-09-03T00:00:00Z	Waartwijk	Velde, Daniel ter
3	Netherlands	1706-09-09T00:00:00Z	Wakende Kraan	Hoeven, Jan van der
4	Netherlands	1706-09-09T00:00:00Z	Wakende Kraan	Wenman, Roelof
5	Netherlands		Wapen van Amsterdam	
6	Netherlands		Wapen van Amsterdam	Scheij, Pieter
7	Netherlands	1700-12-15T00:00:00Z	Wapen van Holland (a) Hollandia	Stoop, Pieter
8	Netherlands	1700-12-15T00:00:00Z	Wapen van Holland (a) Hollandia	Crans, Pieter
9	Netherlands		Wapen van Holland (a) Hollandia	Crans, Pieter

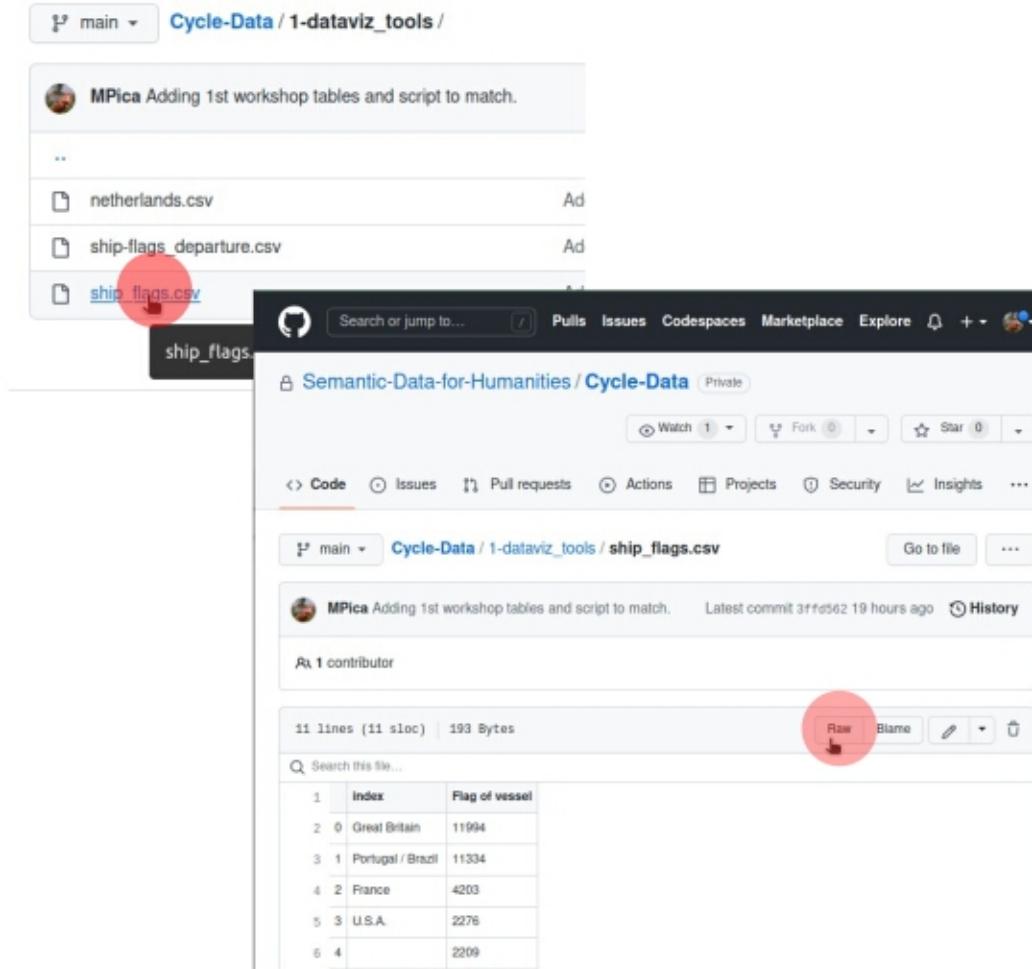
1 Flag of vessel,Date vessel departed with captives,Vessel name,Captain's name  
2 Netherlands,1732-09-03T00:00:00Z,Waartwijk,"Velde, Daniel ter"  
3 Netherlands,1706-09-09T00:00:00Z,Wakende Kraan,"Hoeven, Jan van der"  
4 Netherlands,1706-09-09T00:00:00Z,Wakende Kraan,"Wenman, Roelof"  
5 Netherlands,,Wapen van Amsterdam,  
6 Netherlands,,Wapen van Amsterdam,"Scheij, Pieter"  
7 Netherlands,1700-12-15T00:00:00Z,Wapen van Holland (a) Hollandia,"Stoop, Pieter"  
8 Netherlands,1700-12-15T00:00:00Z,Wapen van Holland (a) Hollandia,"Crans, Pieter"  
9 Netherlands,,Wapen van Holland (a) Hollandia,"Crans, Pieter"

# 4 – Méthodologie

[https://github.com/  
Semantic-Data-for-Humanities/  
Cycle-Data](https://github.com/Semantic-Data-for-Humanities/Cycle-Data)

Comment récupérer le bon lien  
d'un fichier d'aujourd'hui

1. Naviguer dans les dossiers jusqu'au fichier.
2. Cliquer sur le fichier.
3. Cliquer sur le bouton « Raw »
4. Copier l'URL.



# 5 – RawGraphs

<https://www.rawgraphs.io>

The screenshot shows the RawGraphs website. At the top, there is a navigation bar with links for About, News, Support us, Learning, Resources, and a prominent green "Use it now!" button. Below the navigation is a large banner featuring a dark background with abstract white line patterns. On the left side of the banner, the text "A free and open source tool for data visualization" is displayed. In the center-right, there is a screenshot of the RawGraphs software interface, which includes a "Customize" section with various sliders and dropdown menus, and a "Export" section with options for PDF, SVG, and PNG.

## Main Features

 <b>Open source</b> Inspired by and built on top of open source projects. RawGraphs is open to the community for contributions.	 <b>A wide range of charts</b> Almost 30 visual models to visualize quantities, hierarchies, time series and find insights in your data.	 <b>Your data is safe</b> Even though RawGraphs is a web app, the data you insert will be processed only by your web browser.	 <b>Export and go anywhere</b> Save your project, or export it as vector or raster image. Edit it within your favourite softwares.
---	--	---	--

# 5 – RawGraphs

## Team

D E N -  
S I T Y  
G N +

Calibro

IM

### DensityDesign Research Lab.

DensityDesign is a Research Lab in the Design Department of Politecnico di Milano. It focuses on the visual representation of complex social, organizational and urban phenomena to support decision making processes at any level. Our interfaces are open, inclusive, and preserve multiple interpretations of complex phenomena. DensityDesign is committed to collaborating with other researchers and organizations devoted to academic independence and rigor, open enquiry, and risk taking to enhance our understanding of the world.

[densitydesign.org](http://densitydesign.org)

### Calibro

Calibro is a multidisciplinary design studio established by Matteo Azzi and Giorgio Ubaldi in 2015 in Milan. We are interested in exploring new pathways at the intersection between design, data visualization and humanities. Our background is in communication design and for several years we worked at DensityDesign Research Lab at Politecnico di Milano where we have been part of the team who created RAW. In the past few years we have been involved in research, consulting and teaching activities for several public and private institutions.

[calib.ro](http://calib.ro)

### Inmagik

Inmagik is a studio based in Bergamo (Italy), focused on the development of web applications, mobile apps, data management systems and interactive user experiences. We love open source components, languages and frameworks and have a lot of experience in the field of data visualization.

[inmagik.com](http://inmagik.com)

<https://www.rawgraphs.io>

## Sponsors

### Platinum sponsors

FASTWEB



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### Gold sponsors



FARADAY

## How to cite RAWGraphs

If you have found RAWGraphs useful in your research, or if you want to reference it in your publication, please consider to cite the paper we presented at CHItaly 2017.

You can read the article in Green Open Access at the following link:

[RAWGraphs: A Visualisation Platform to Create Open Outputs – PDF file in Green Open Access](http://www.rawgraphs.io/paper.pdf)

Mauri, M., Elli, T., Caviglia, G., Ubaldi, G., & Azzi, M. (2017). RawGraphs: A Visualisation Platform to Create Open Outputs. In Proceedings of the 12th Biannual Conference on Italian SIGMOD Chapter (p. 28:1-28:5). New York, NY, USA: ACM. <https://doi.org/10.1145/3125571.3125585>



## 5 – *RawGraphs*

- Nous allons commencer par ce tableau : 1-dataviz\_tools/ship\_flags.csv
- Les prochaines diapositives vous en montrent le chemin depuis  
<https://github.com/Semantic-Data-for-Humanities/Cycle-Data>

	A	B
1	index	Flag of vessel
2	Great Britain	11994
3	Portugal / Brazil	11334
4	France	4203
5	U.S.A.	2276
6		2209
7	Spain / Uruguay	1928
8	Netherlands	1699
9	Denmark / Baltic	413
10	Other	16
11	Sweden	1
--		

```
1 index,Flag of vessel
2 Great Britain,11994
3 Portugal / Brazil,11334
4 France,4203
5 U.S.A.,2276
6 ,2209
7 Spain / Uruguay,1928
8 Netherlands,1699
9 Denmark / Baltic,413
10 Other,16
11 Sweden,1
```

# 5 – RawGraphs

The screenshot shows a GitHub repository page for 'Cycle-Data'. The URL in the address bar is <https://github.com/Semantic-Data-for-Humanities/Cycle-Data>. The repository is public and has 1 branch and 0 tags. The main commit by MPica adds workshop tables and a script to match. A file named '1-dataviz\_tools' is highlighted with a red circle. The README.md file describes the scripts and documentation for Data Cycle workshops, mentioning the Maritime History project and Slave-Voyages databases.

Semantic-Data-for-Humanities / Cycle-Data Public

Code Issues Pull requests Actions Projects Wiki Security Insights Settings

main · 1 branch · 0 tags Go to file Add file Code

MPica Adding 1st workshop tables and script to match. 3rrd562 yesterday 2 commits

1-dataviz\_tools Adding 1st workshop tables and script to match. yesterday

data 1-dataviz\_tools Adding 1st workshop tables and script to match. yesterday

README.md Initial commit 2 days ago

**About**

The scripts and documentation for the team's Data Cycle workshops, with the Maritime History project and Slave-Voyages trans-Atlantic databases as material.

Readme 0 stars 1 watching 1 fork

**Releases**

No releases published Create a new release

**Packages**

No packages published

[https://github.com/Semantic-Data-for-Humanities/Cycle-Data/tree/main/1-dataviz\\_tools](https://github.com/Semantic-Data-for-Humanities/Cycle-Data/tree/main/1-dataviz_tools)

# 5 – *RawGraphs*

The screenshot shows a Firefox browser window with the URL [https://github.com/Semantic-Data-for-Humanities/Cycle-Data/tree/main/1-dataviz\\_tools](https://github.com/Semantic-Data-for-Humanities/Cycle-Data/tree/main/1-dataviz_tools). The page displays a list of CSV files added by user MPica:

File	Description	Time
netherlands.csv	Adding 1st workshop tables and script to match.	yesterday
ship-flags_departure.csv	Adding 1st workshop tables and script to match.	yesterday
ship_flags.csv	Adding 1st workshop tables and script to match.	yesterday

A red circle highlights the 'ship\_flags.csv' file in the list. The file name is also highlighted in a black box at the bottom of the list.

At the bottom of the page, the URL [https://github.com/Semantic-Data-for-Humanities/Cycle-Data/blob/main/1-dataviz\\_tools\(ship\\_flags.csv](https://github.com/Semantic-Data-for-Humanities/Cycle-Data/blob/main/1-dataviz_tools(ship_flags.csv) is shown.

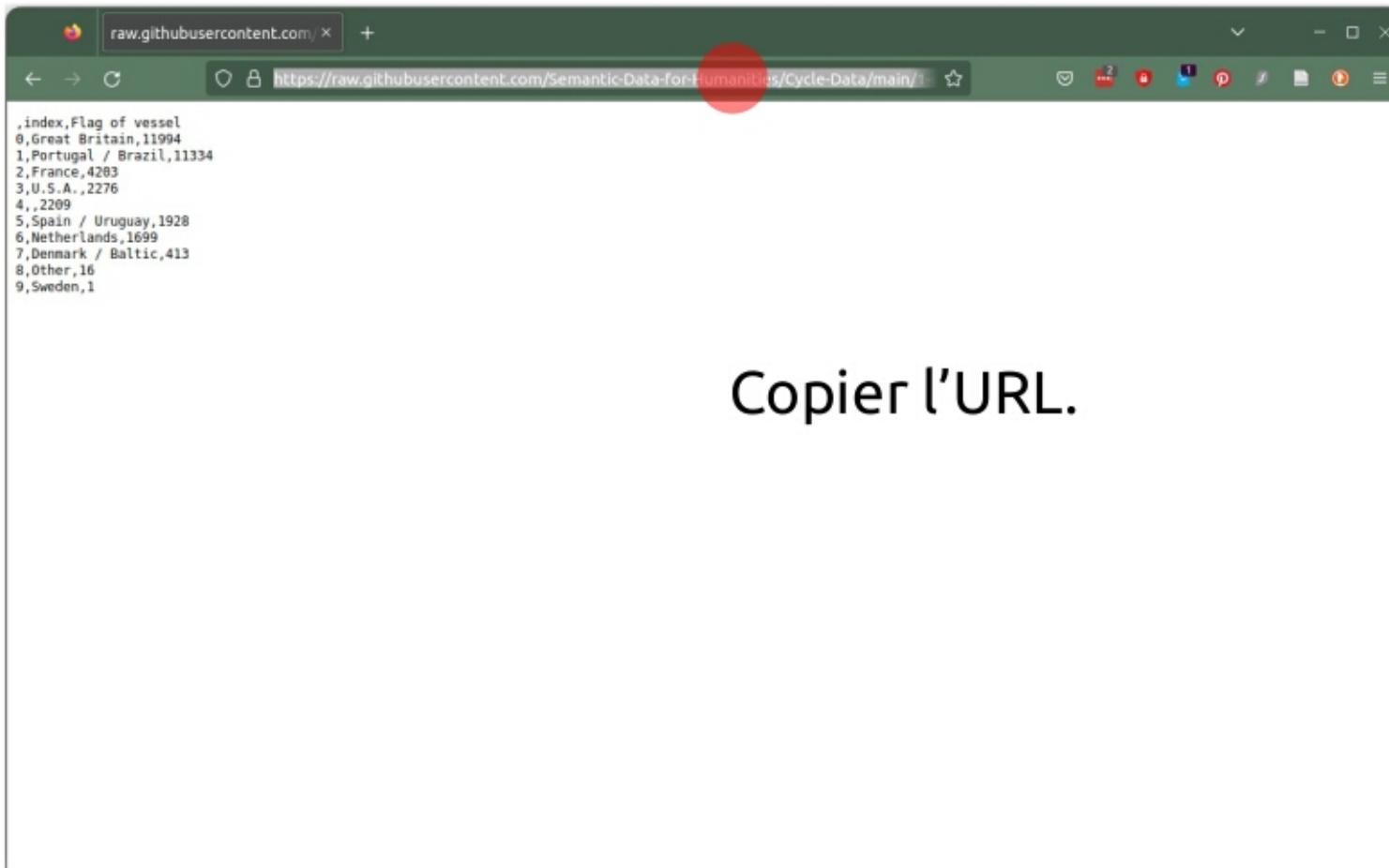
# 5 – RawGraphs

The screenshot shows a Firefox browser window with the address bar pointing to [https://github.com/Semantic-Data-for-Humanities/Cycle-Data/blob/main/1-dataviz\\_tools/ship\\_flags.csv](https://github.com/Semantic-Data-for-Humanities/Cycle-Data/blob/main/1-dataviz_tools/ship_flags.csv). The page title is "Cycle-Data/ship\_flags.csv". The GitHub interface includes a search bar, navigation links for Pull requests, Issues, Codespaces, Marketplace, and Explore, and a header with Edit Pins, Watch, Fork, and Star buttons. Below the header, there are links for Code, Issues, Pull requests, Actions, Projects, Wiki, Security, Insights, and Settings. The main content area shows a commit by MPica with the message "Adding 1st workshop tables and script to match." and a timestamp of "yesterday". It lists "1 contributor". The file statistics show "11 lines (11 sloc) | 193 Bytes". A search bar below the stats contains the placeholder "Search this file...". The file content is displayed as a table:

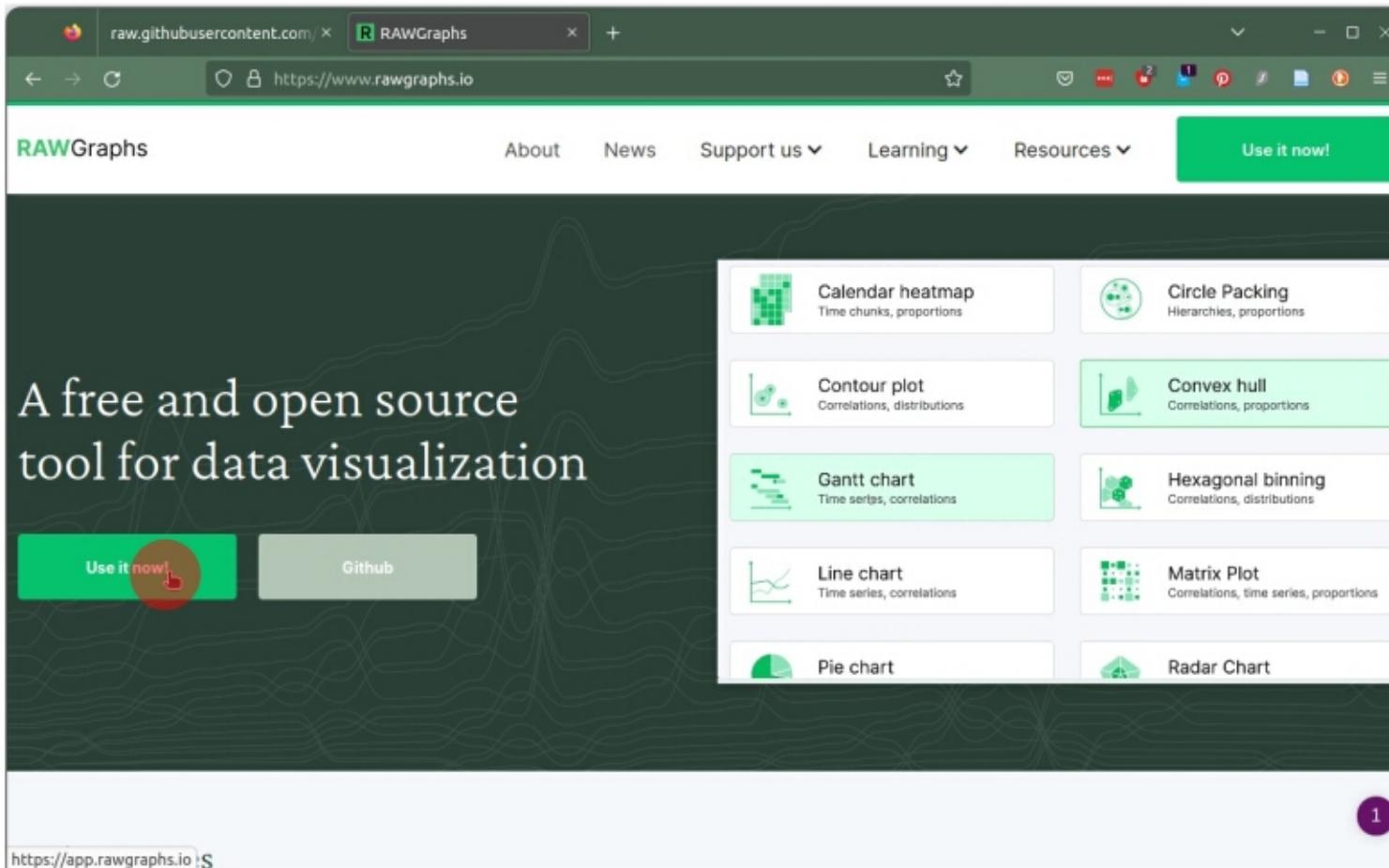
Index	Flag of vessel	Count
0	Great Britain	11994
1	Portugal / Brazil	11334
2	France	4203
3	U.S.A.	2276
4		2209
5	Spain / Uruguay	1928
6	Netherlands	1699

A red circle highlights the "Raw" button in the toolbar above the table. The bottom of the page shows the full URL [https://github.com/Semantic-Data-for-Humanities/Cycle-Data/raw/main/1-dataviz\\_tools/ship\\_flags.csv](https://github.com/Semantic-Data-for-Humanities/Cycle-Data/raw/main/1-dataviz_tools/ship_flags.csv).

# 5 – *RawGraphs*



# 5 – RawGraphs



# 5 – RawGraphs

The screenshot shows the RAWGraphs 2.0 beta interface. At the top, there are three tabs: raw.githubusercontent.com/x, RAWGraphs, and RAWGraphs 2.0 (which is active). Below the tabs is a browser header with the URL https://app.rawgraphs.io. The main content area has a title "RAWGraphs 2.0 beta". A navigation bar at the top right includes links for About, Learning, GitHub, and Report issue. The main section is titled "1. Load your data" and contains several input methods:

- Paste your data (with a text input field)
- Upload your data (with a file input field and a "Load data" button)
- Try our data samples
- SPARQL query
- From URL (with a red circle highlighting the input field)
- Open your project

Below the input fields, there is a note: "Enter a web address (URL) pointing to the data (e.g. a public Dropbox file, a public API, ...). Please, be sure the server is CORS-enabled." At the bottom of the page, there is footer information about the project, social media links (hello at rawgraphs.io, Github, Twitter), and a note about Google Analytics.

# 5 – RawGraphs

The screenshot shows a web browser window with three tabs: raw.githubusercontent.com (closed), RAWGraphs (closed), and RAWGraphs 2.0 (active). The URL https://app.rawgraphs.io is visible in the address bar. The page title is "RAWGraphs 2.0 beta". A navigation bar at the top includes links for "About", "Learning", "GitHub", and "Report issue".

The main content area is titled "1. Load your data". It features several input options:

- Paste your data (with a text input field containing "https://raw.githubusercontent.com/Semantic-Data-for-Humanities/Cycle-Data/main/1-dataviz\_tools/ship\_flags.csv")
- Upload your data (with a file input field)
- Try our data samples (with a link)
- SPARQL query (with a link)

A large green button labeled "From URL" is highlighted. Below it is another checkbox labeled "Open your project".

In the center of the page, the text "Coller l'URL." is displayed in a large, bold, black font.

The footer contains the following information:

RAWGraphs is an open source project designed and developed by [DensityDesign](#), [Calligra](#) and [Inmagik](#). © 2013-2021 [Apache License 2.0](#).

Links to social media and GitHub: hello at rawgraphs.io, Github, @rawgraphs, RAWGraphs v.1.

This website uses Google Analytics to anonymously collect browsing data. [Learn More](#) Got it!

# 5 – RawGraphs

The screenshot shows the RAWGraphs 2.0 beta interface. On the left, there is a sidebar titled "DATA PARSING OPTIONS" with settings for "Column separator" (set to "Comma"), "Thousands separator", "Decimals separator", and "Date Locale" (set to "fr"). Below this are buttons for "Refresh data from url" and "Change data". In the center, there is a table with columns labeled "#", "index", and "Flag of vessel". The table contains 10 rows of data:

#	index	Flag of vessel
1	0	Great Britain 11994
2	1	Portugal / Brazil 11334
3	2	France 4263
4	3	U.S.A. 2276
5	4	2209
6	5	Spain / Uruguay 1928
7	6	Netherlands 1699
8	7	Denmark / Baltic 413

At the bottom of the table area, a green bar states "10 rows (30 cells) have been successfully parsed, now you can choose a chart!" and includes a "Copy to clipboard" button.

Ensuite on peut descendre dans la page.

# 5 – RawGraphs

The screenshot shows the RAWGraphs 2.0 beta interface. At the top, there is a navigation bar with tabs for raw.githubusercontent.com, RAWGraphs, and RAWGraphs 2.0. The RAWGraphs 2.0 tab is active. Below the navigation bar is a browser address bar showing the URL https://app.rawgraphs.io.

The main area displays a data table with the following rows:

Stack on	Column	9	8	Other	16
		10	9	Sweden	1

Below the table are two buttons: "Reset" and "Change data". A green message bar indicates: "10 rows (30 cells) have been successfully parsed, now you can choose a chart!". To the right of this message is a "Copy to clipboard" button.

The next section, titled "2. Choose a chart", shows a preview of a Bar chart with categories a-f and values ranging from -20 to 25. The preview is labeled "Bar chart" and includes a descriptive text: "It displays a categorical dimension and related amounts. Each bar represents a category, width is proportional to the quantitative dimension."

To the right of the preview, there is a "Show All charts" dropdown menu. Below it, a grid of nine chart types is displayed:

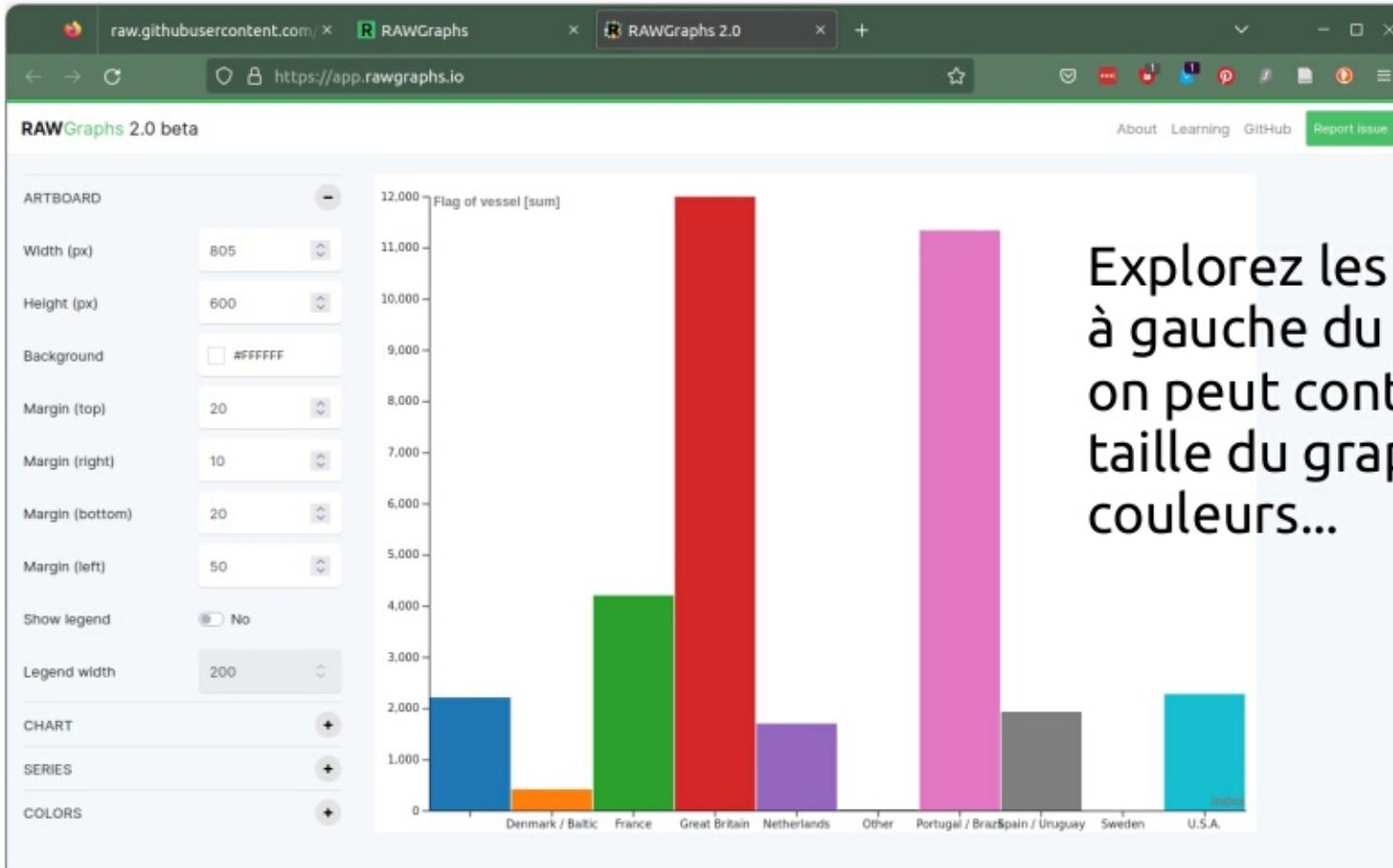
- Alluvial Diagram: Correlations, proportions
- Arc Diagram: Networks
- Bar chart: Correlations (highlighted with a red circle)
- Multi-set bar chart: Correlations, proportions
- Stacked bar chart: Correlations, proportions
- Beeswarm plot: Distributions, time series, proportions
- Box plot: Distributions
- Bubble chart: Correlations, proportions
- Bumpchart: Time series, correlations, proportions

# 5 – RawGraphs

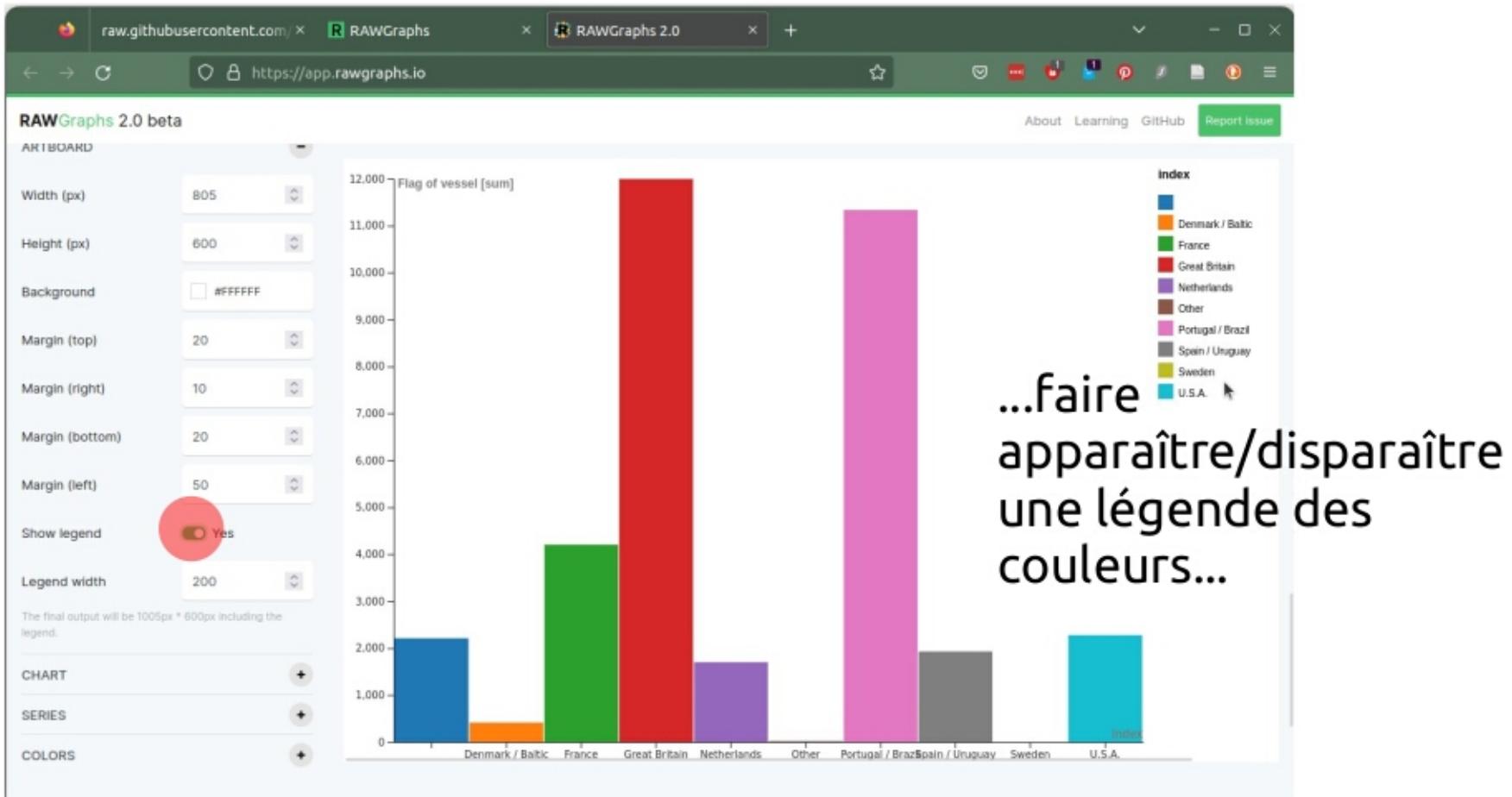
The screenshot shows the RAWGraphs 2.0 beta interface. At the top, there are several visualization options: Treemap, Violin plot, Voronoi Diagram, and Treemap (Voronoi). Below this, the '3. Mapping' section is displayed. It has two main sections: 'DIMENSIONS' and 'CHART VARIABLES'. In the 'DIMENSIONS' section, three items are listed: '#', 'Aa index', and '# Flag of vessel'. In the 'CHART VARIABLES' section, there are four boxes: 'Bars' (with 'Size' and 'Color' dropdowns), 'Index' (with 'Flag of vessel' and 'CSV (unique)' dropdowns), 'Series' (with a placeholder 'Drop dimension here'), and an empty box.

C'est ici que l'on fait correspondre les variables aux paramètres graphiques.

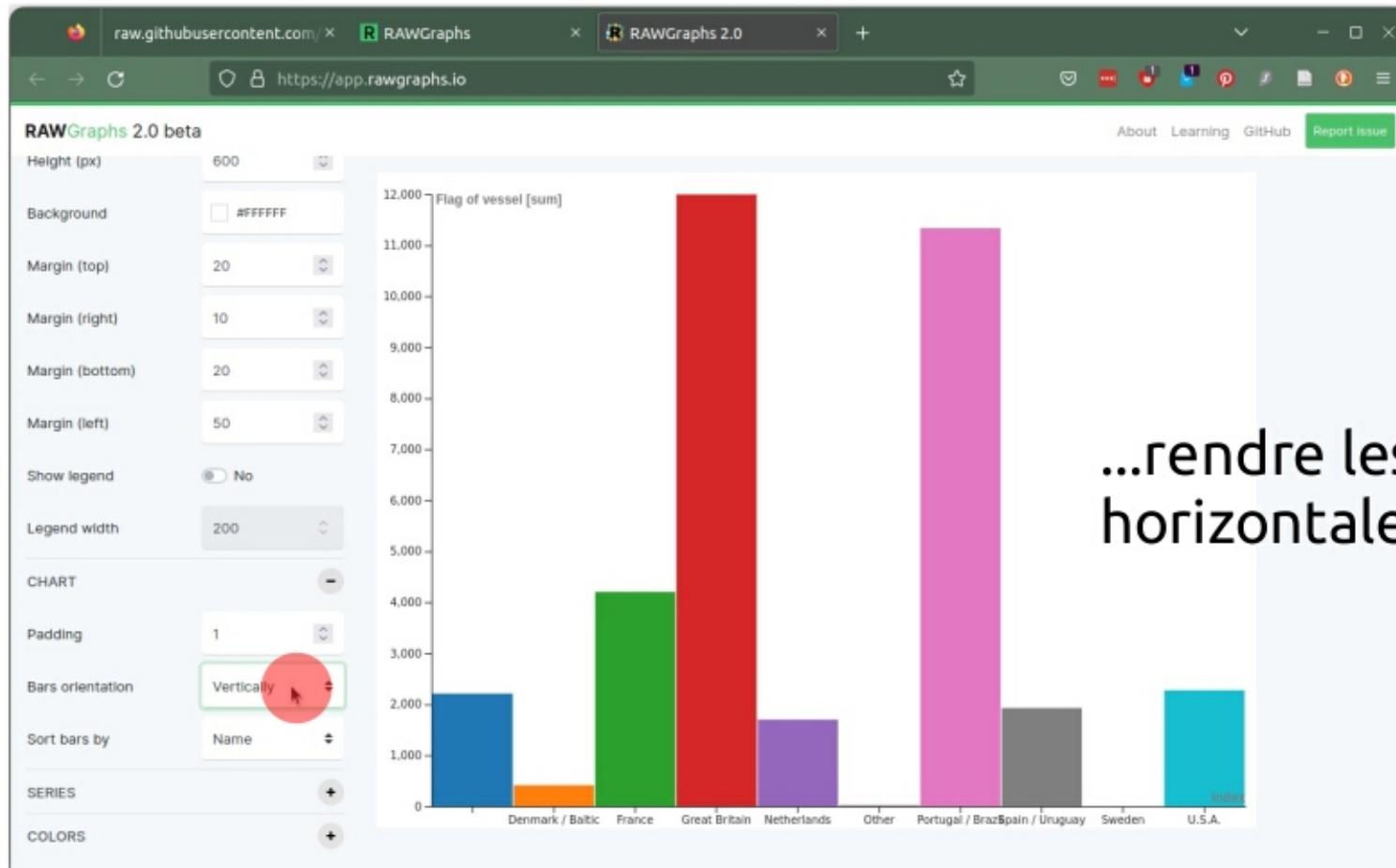
# 5 – RawGraphs



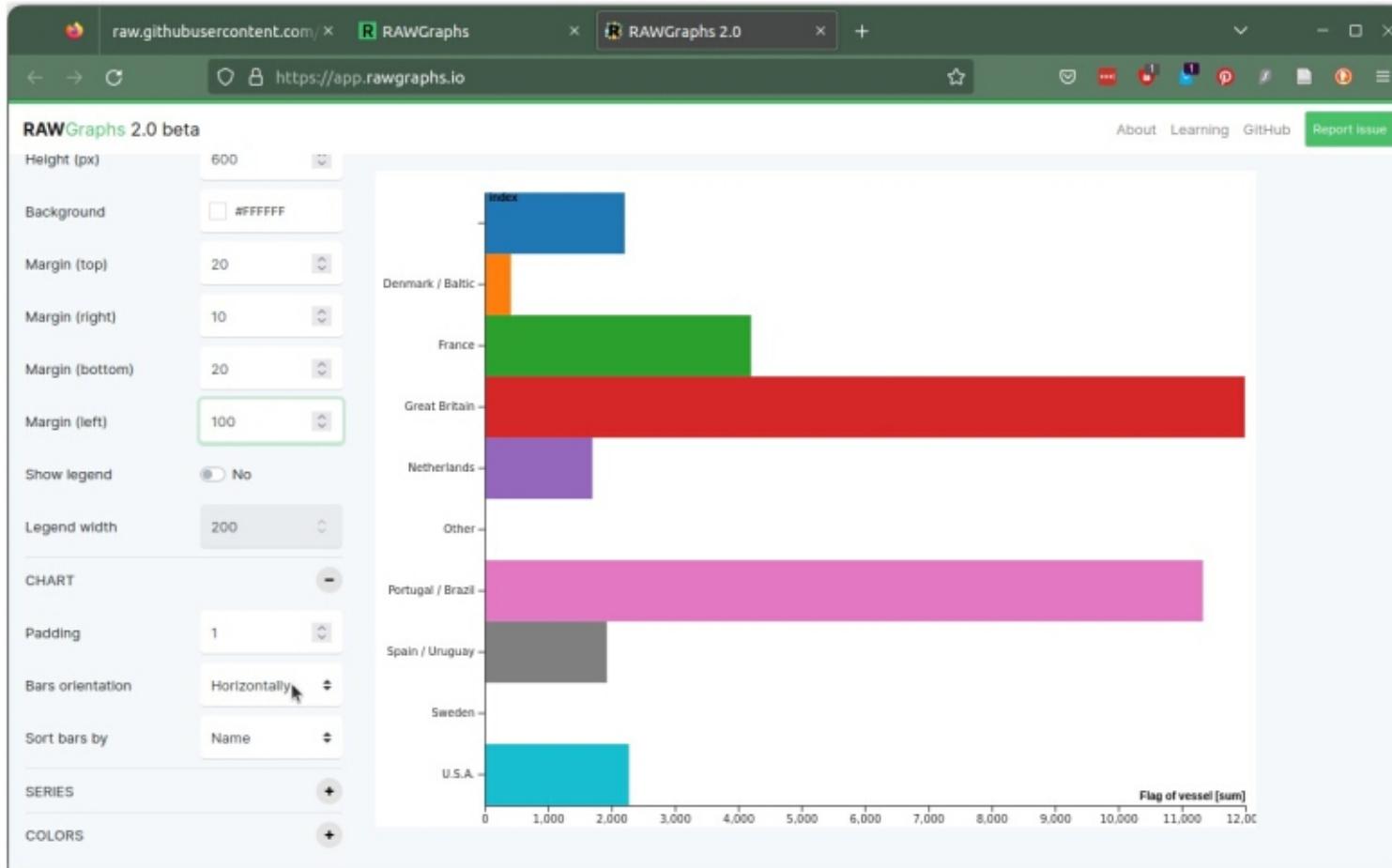
# 5 – RawGraphs



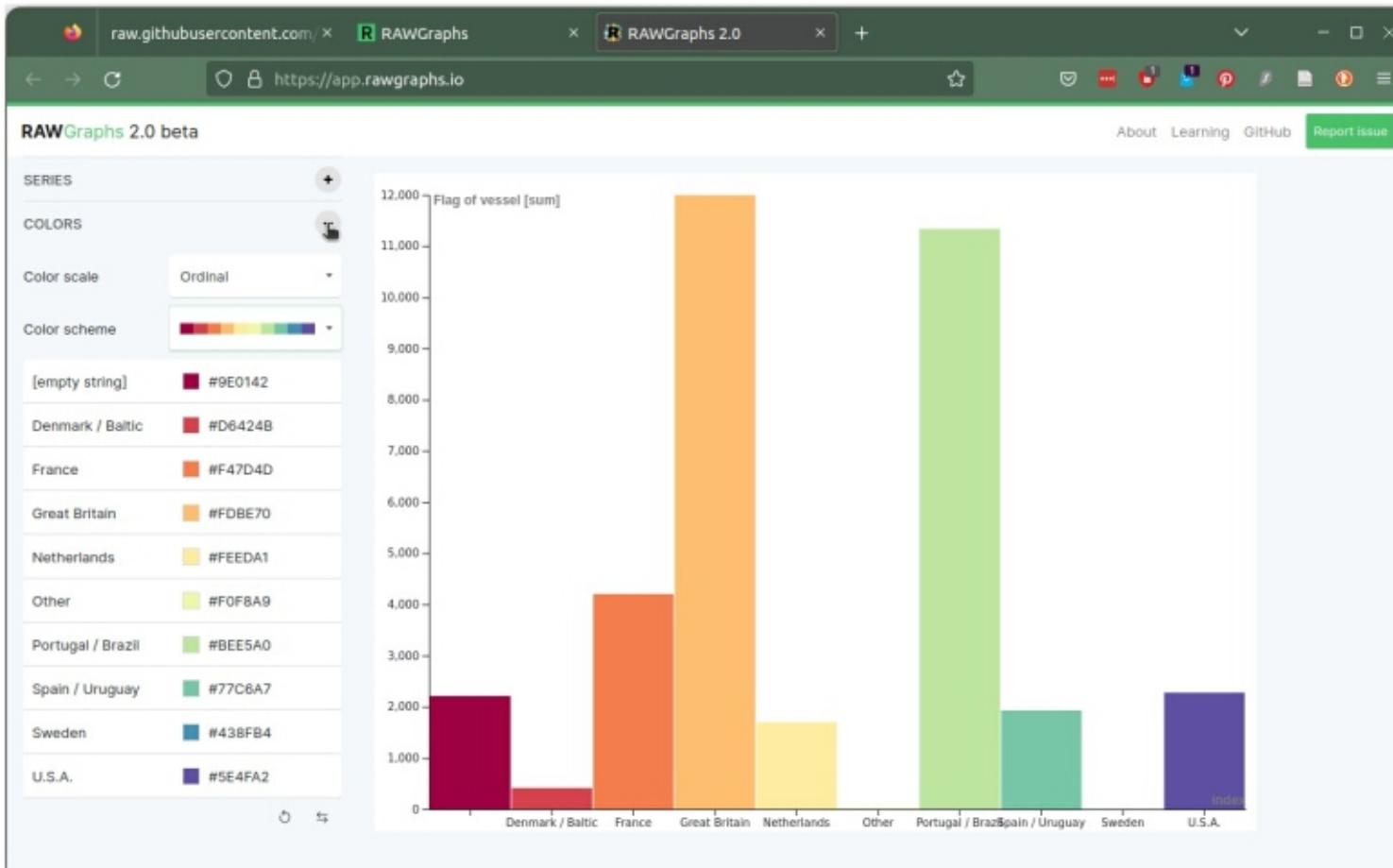
# 5 – RawGraphs



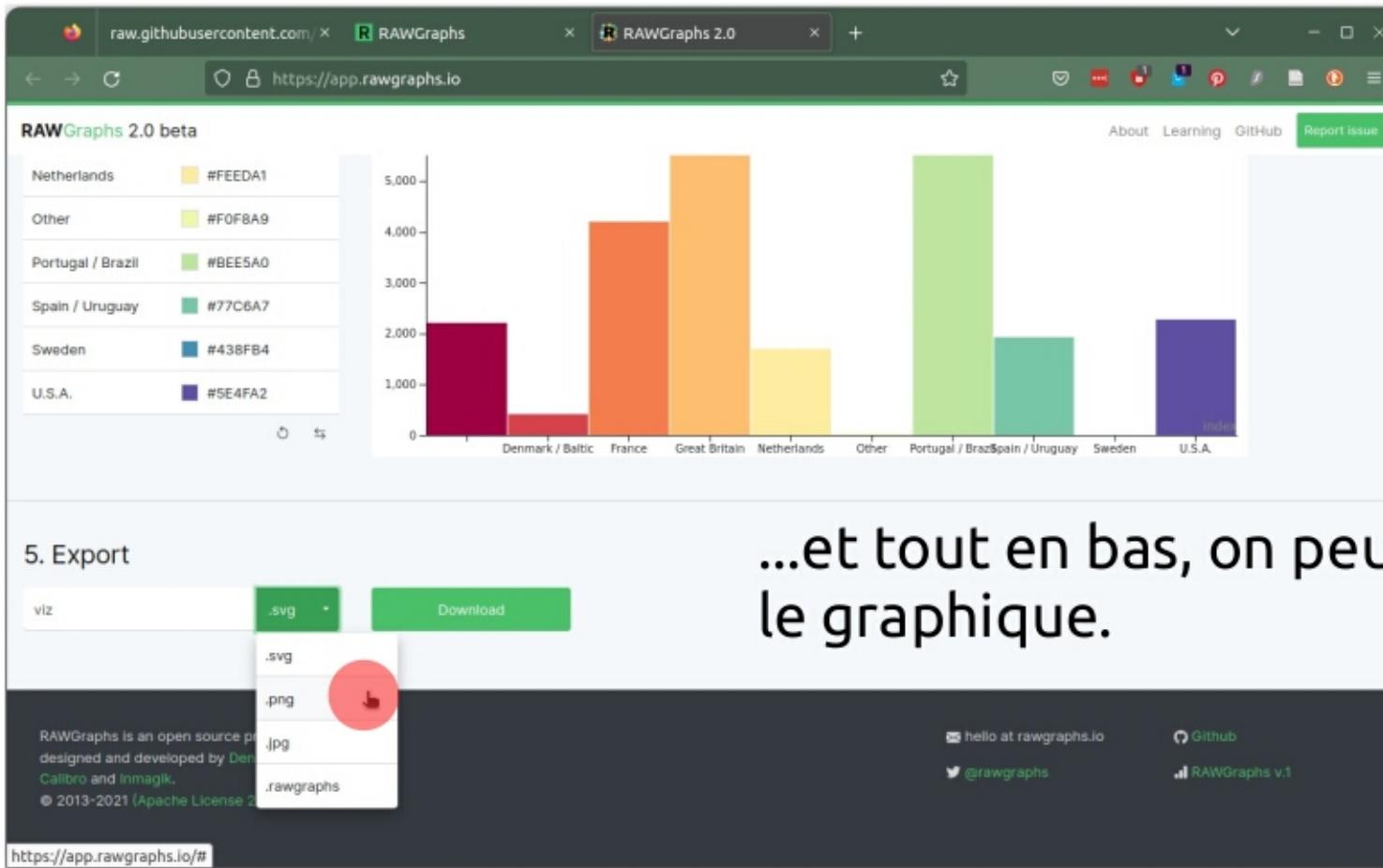
# 5 – RawGraphs



# 5 – RawGraphs



# 5 – RawGraphs



# 6 – Palladio

<https://hdlab.stanford.edu/palladio/>



Palladio. Visualize complex historical data with ease.

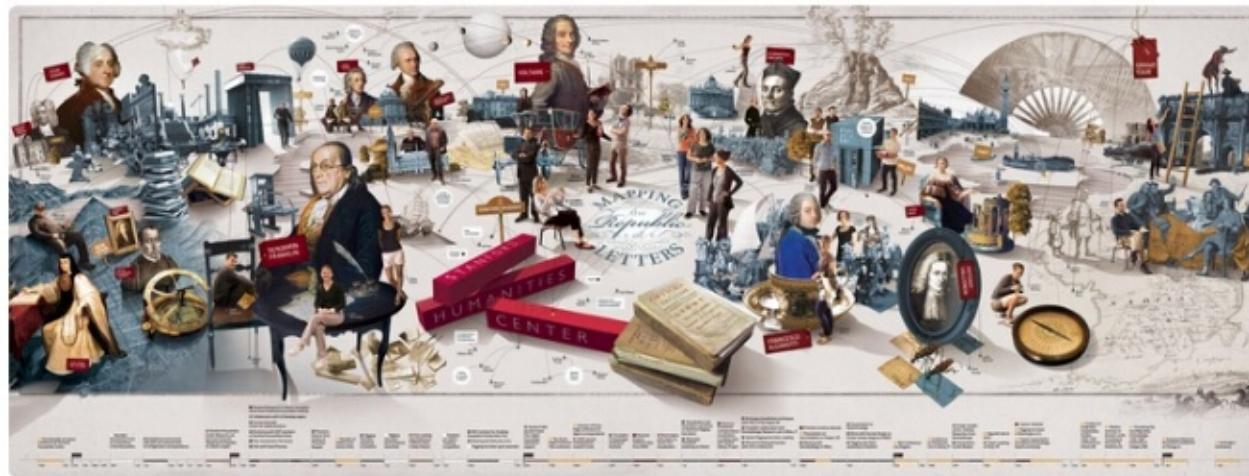
Start »

# 6 – Palladio

<https://hdlab.stanford.edu/palladio/>

## About

Palladio is a product of the NEH Implementation grant (July 2013-June 2016), Networks in History: Data-driven tools for analyzing relationships across time. Our goal was to understand how to design graphical interfaces based on humanistic inquiry. We oriented the project around the development of a general-purpose suite of visualization and analytical tools based on the prototypes created for the [Mapping the Republic of Letters](#) project, which examines the scholarly communities and networks of knowledge during the period 1500-1800.



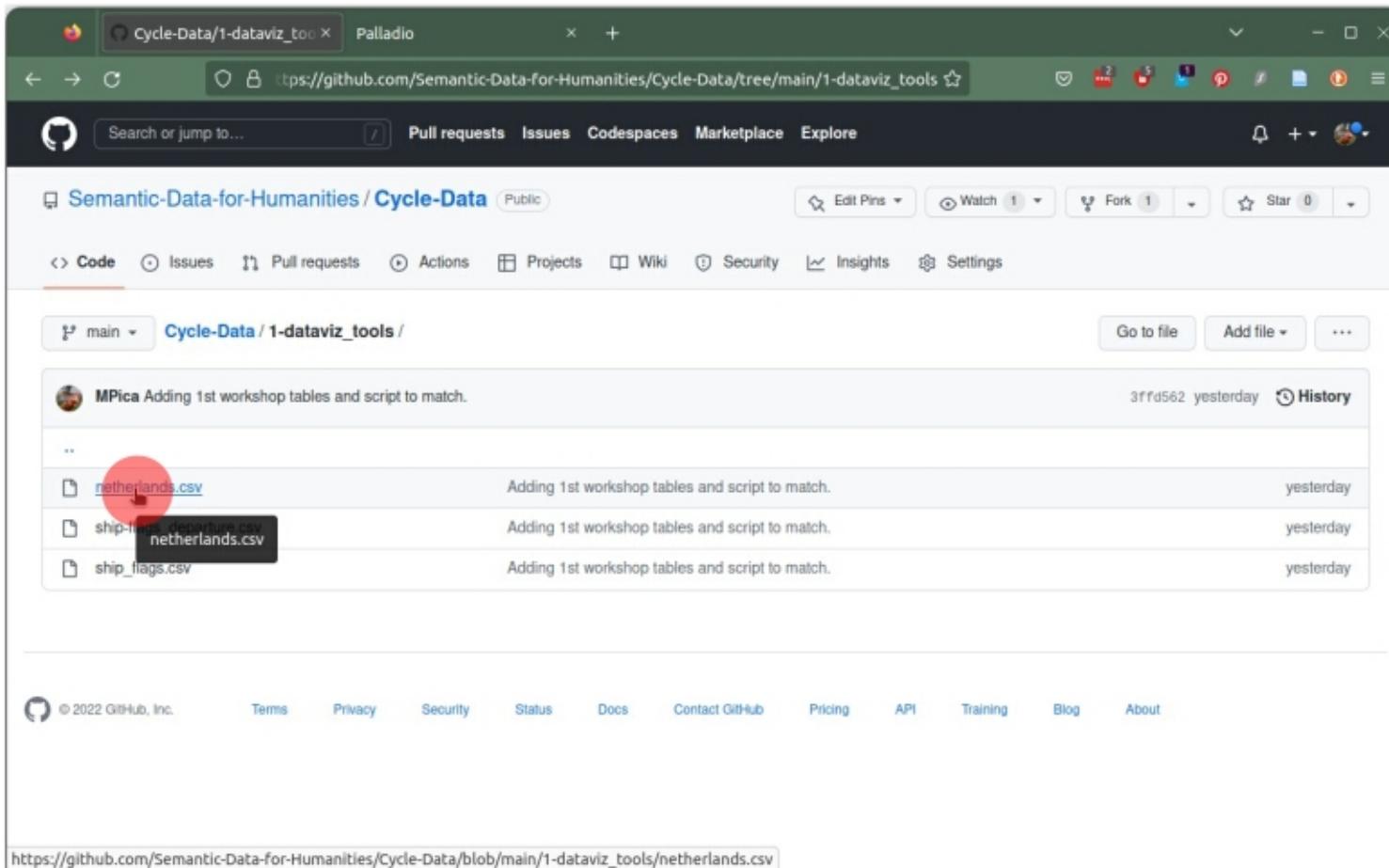
# 6 – Palladio

Avec Palladio, nous allons utiliser ce second tableau selon le même principe : copier l'URL de la page « Raw ».

	A	B	C	D
1	Flag of vessel	Date vessel departed with captives	Vessel name	Captain's name
2	Netherlands	1732-09-03T00:00:00Z	Waartwijk	Velde, Daniel ter
3	Netherlands	1706-09-09T00:00:00Z	Wakende Kraan	Hoeven, Jan van der
4	Netherlands	1706-09-09T00:00:00Z	Wakende Kraan	Wenman, Roelof
5	Netherlands		Wapen van Amsterdam	
6	Netherlands		Wapen van Amsterdam	Scheij, Pieter
7	Netherlands	1700-12-15T00:00:00Z	Wapen van Holland (a) Hollandia	Stoop, Pieter
8	Netherlands	1700-12-15T00:00:00Z	Wapen van Holland (a) Hollandia	Crans, Pieter
9	Netherlands		Wapen van Holland (a) Hollandia	Crans, Pieter

- ```
1 Flag of vessel,Date vessel departed with captives,Vessel name,Captain's name
2 Netherlands,1732-09-03T00:00:00Z,Waartwijk,"Velde, Daniel ter"
3 Netherlands,1706-09-09T00:00:00Z,Wakende Kraan,"Hoeven, Jan van der"
4 Netherlands,1706-09-09T00:00:00Z,Wakende Kraan,"Wenman, Roelof"
5 Netherlands,,Wapen van Amsterdam,
6 Netherlands,,Wapen van Amsterdam,"Scheij, Pieter"
7 Netherlands,1700-12-15T00:00:00Z,Wapen van Holland (a) Hollandia,"Stoop, Pieter"
8 Netherlands,1700-12-15T00:00:00Z,Wapen van Holland (a) Hollandia,"Crans, Pieter"
9 Netherlands,,Wapen van Holland (a) Hollandia,"Crans, Pieter"
```

# 6 – Palladio

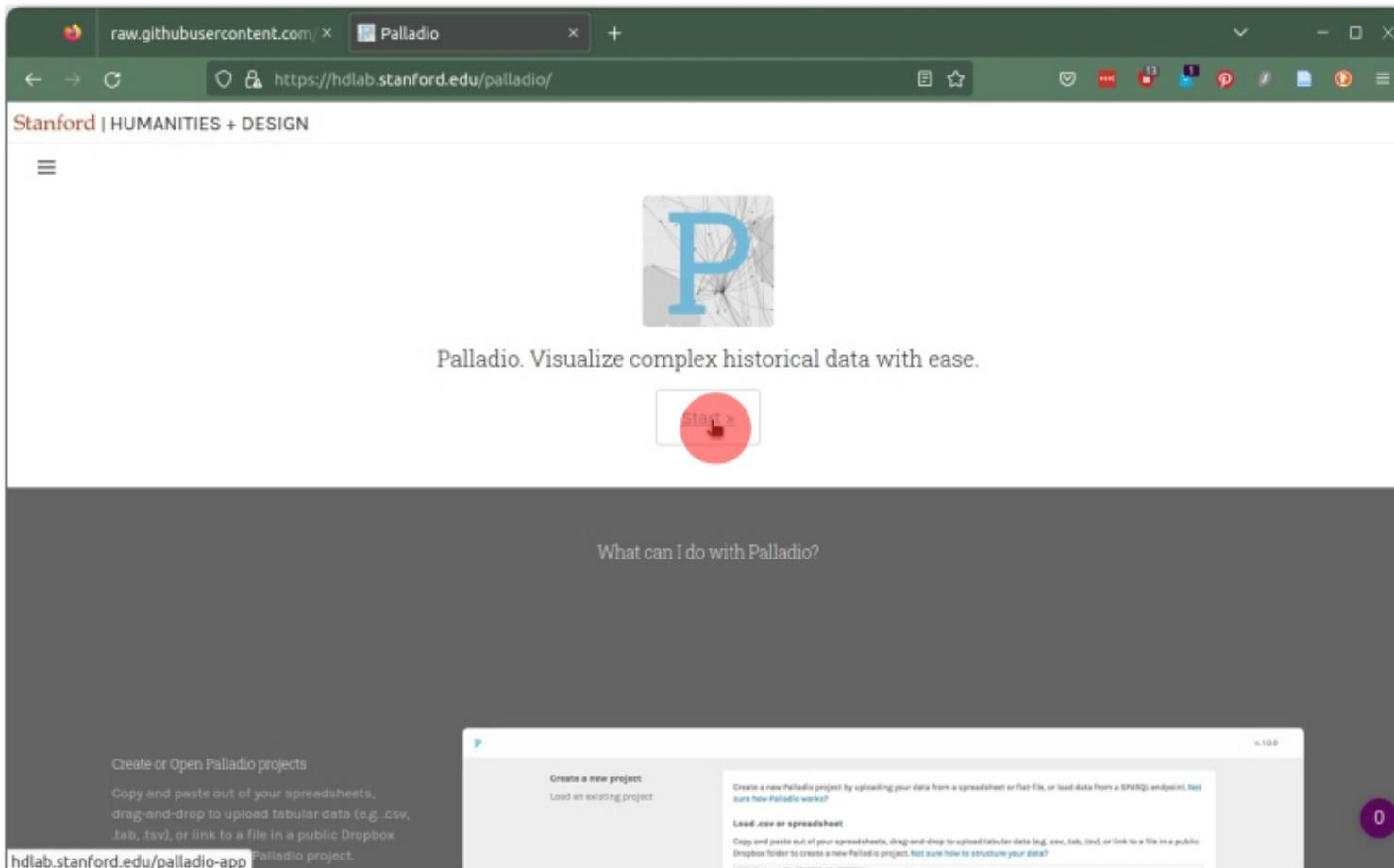


The screenshot shows a Firefox browser window with the title bar "Cycle-Data/1-dataviz\_tools" and "Palladio". The address bar contains the URL [https://github.com/Semantic-Data-for-Humanities/Cycle-Data/tree/main/1-dataviz\\_tools](https://github.com/Semantic-Data-for-Humanities/Cycle-Data/tree/main/1-dataviz_tools). The GitHub interface shows the "Code" tab selected. A commit from user MPica is visible, adding workshop tables and scripts. The commit list includes four files: "netherlands.csv", "ship-flags\_departure.csv", and "ship\_flags.csv", all added yesterday. The file "netherlands.csv" is highlighted with a red circle.

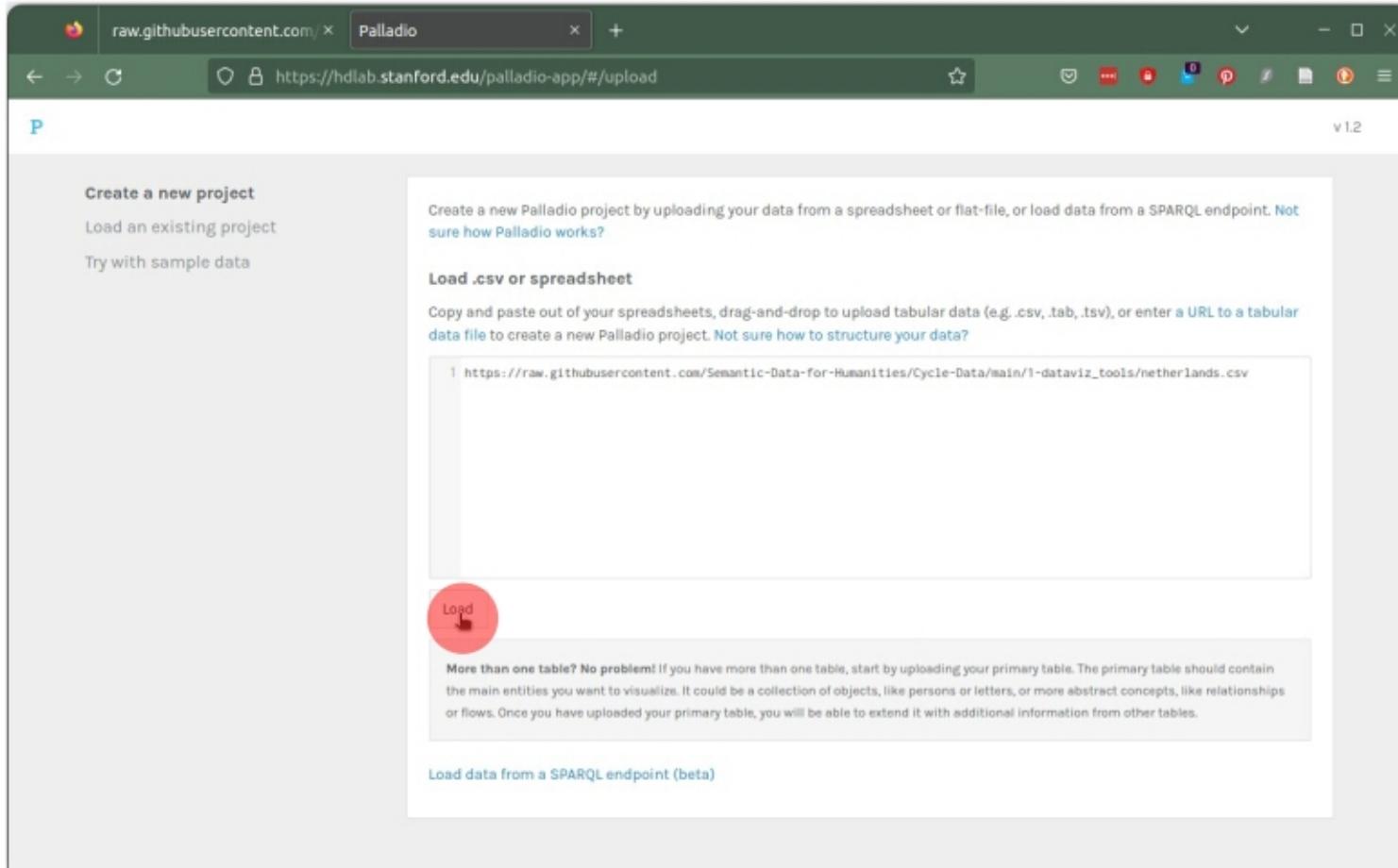
| File                     | Description                                     | Time      |
|--------------------------|-------------------------------------------------|-----------|
| netherlands.csv          | Adding 1st workshop tables and script to match. | yesterday |
| ship-flags_departure.csv | Adding 1st workshop tables and script to match. | yesterday |
| ship_flags.csv           | Adding 1st workshop tables and script to match. | yesterday |

At the bottom of the browser window, the URL [https://github.com/Semantic-Data-for-Humanities/Cycle-Data/blob/main/1-dataviz\\_tools/netherlands.csv](https://github.com/Semantic-Data-for-Humanities/Cycle-Data/blob/main/1-dataviz_tools/netherlands.csv) is shown in the address bar.

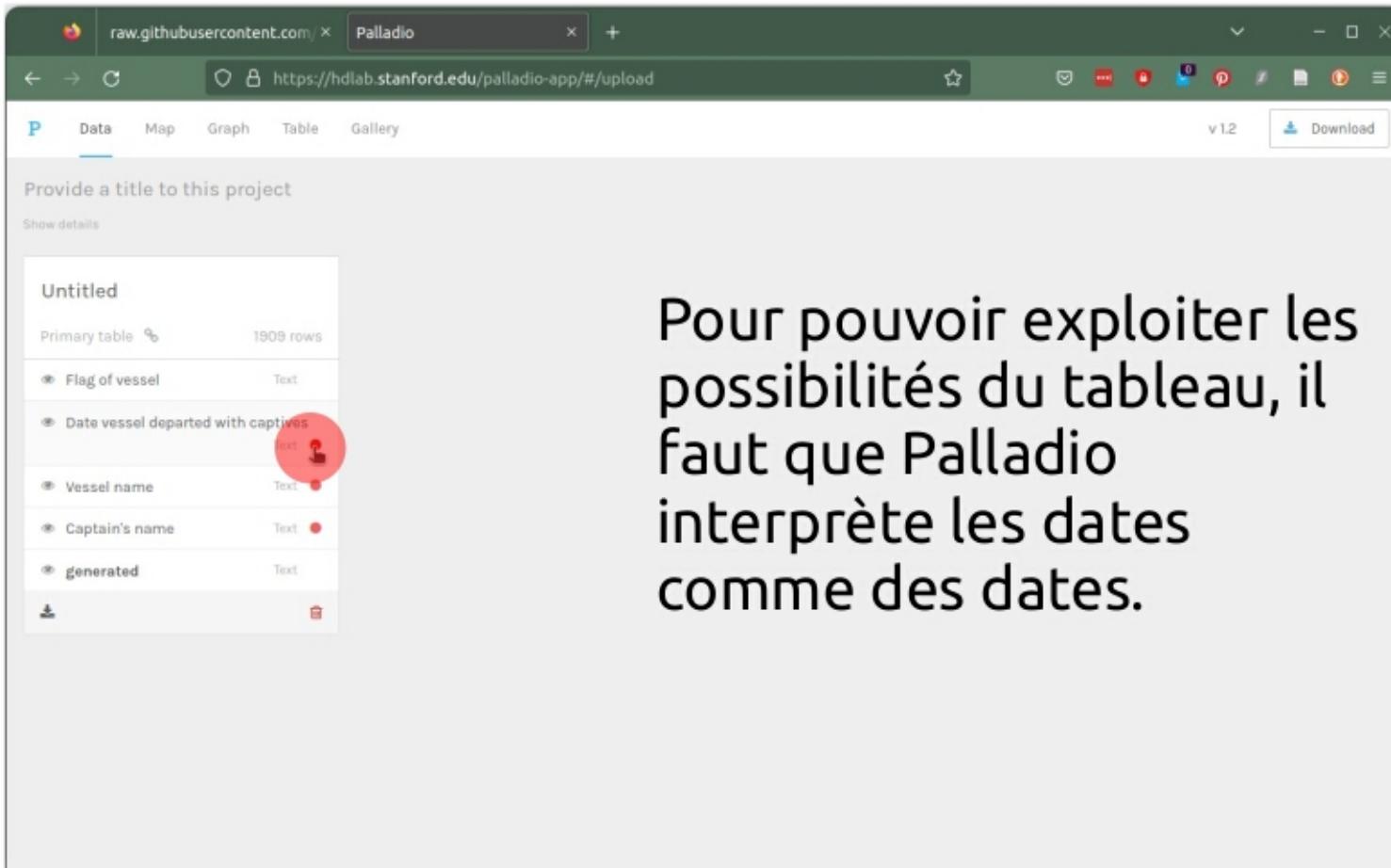
# 6 – *Palladio*



# 6 – Palladio



# 6 – Palladio



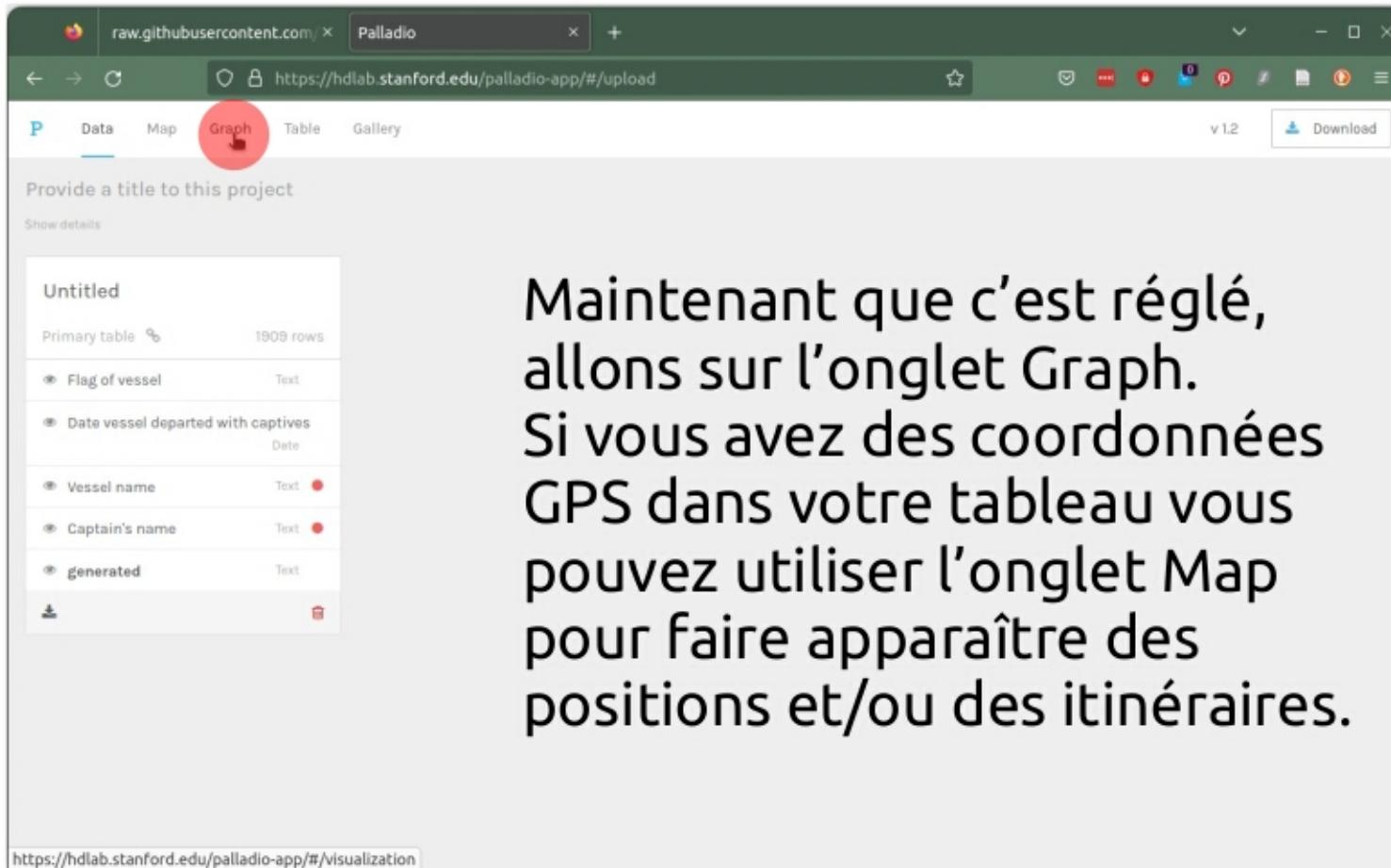
The screenshot shows the Palladio application interface. At the top, there's a navigation bar with tabs for Data, Map, Graph, Table, and Gallery. The Data tab is selected. Below the tabs, a title input field says "Provide a title to this project" with "Untitled" as the current title. A "Show details" link is visible. The main area displays a table titled "Primary table" with 1909 rows. The table has columns for "Flag of vessel" (Text), "Date vessel departed with captives" (Text), "Vessel name" (Text), "Captain's name" (Text), and "generated" (Text). The "Date vessel departed with captives" column contains several entries, one of which is circled in red. To the right of the table, a large text block reads:

Pour pouvoir exploiter les possibilités du tableau, il faut que Palladio interprète les dates comme des dates.

# 6 – Palladio

The screenshot shows a web browser window for the Palladio app at <https://hdlab.stanford.edu/palladio-app/#/upload>. The title bar says "Palladio". The main interface has tabs for Data, Map, Graph, Table, and Gallery, with "Data" selected. On the left, there's a sidebar titled "Untitled" with a "Primary table" section containing "Flag of vessel", "Date vessel departed", "Vessel name", "Captain's name", and "generated". A red circle highlights the "Data type" dropdown set to "Date". The central area is titled "Edit dimension" with a sub-section "Provide a title to this dimension". The "Title" field contains "Date vessel departed with captives". The "Data type" dropdown is highlighted with a red circle. Below it, a note says "All the values match this type.". The "Unique values" section has a search bar and a "Sort by Value" dropdown. A list of dates is shown, with the first few being: 1638-01-27T00:00:00Z, 1639-04-02T00:00:00Z, 1639-12-16T00:00:00Z, 1641-05-30T00:00:00Z, 1641-12-10T00:00:00Z, 1642-01-24T00:00:00Z. A note says "If the dimension contains multiple values, insert the delimiter string above". The "Multiple values" field is empty. At the bottom, there's an "Extension" section with a "Choose a table" dropdown and a "Add a new table" button. A note says "You can provide additional information about this dimension with data from another table." A "Done" button is at the bottom right.

# 6 – Palladio



raw.githubusercontent.com × Palladio +

← → C https://hdlab.stanford.edu/palladio-app/#/upload ☆ 📲 🌐 ⚡ 🔒 🎯 🖼 🗃 📁 🕵️ 🛡️

P Data Map Graph Table Gallery v 1.2 Download

Provide a title to this project

Show details

Untitled

Primary table 1909 rows

|                                    |      |
|------------------------------------|------|
| Flag of vessel                     | Text |
| Date vessel departed with captives | Date |
| Vessel name                        | Text |
| Captain's name                     | Text |
| generated                          | Text |

Maintenant que c'est réglé,  
allons sur l'onglet Graph.  
Si vous avez des coordonnées  
GPS dans votre tableau vous  
pouvez utiliser l'onglet Map  
pour faire apparaître des  
positions et/ou des itinéraires.

<https://hdlab.stanford.edu/palladio-app/#/visualization>

6 – Palladio

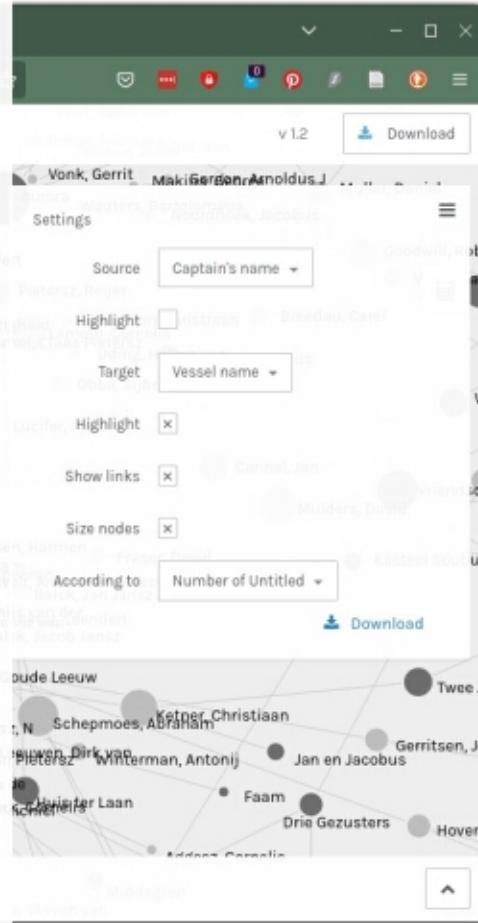
- Développez le menu de droite et renseignez les deux variables à relier : « Captain's name » et « Vessel name ».

- Il va ensuite prendre un peu de temps à calculer. Pas de panique s'il se fige quelques secondes/minutes (selon la capacité de votre ordinateur).

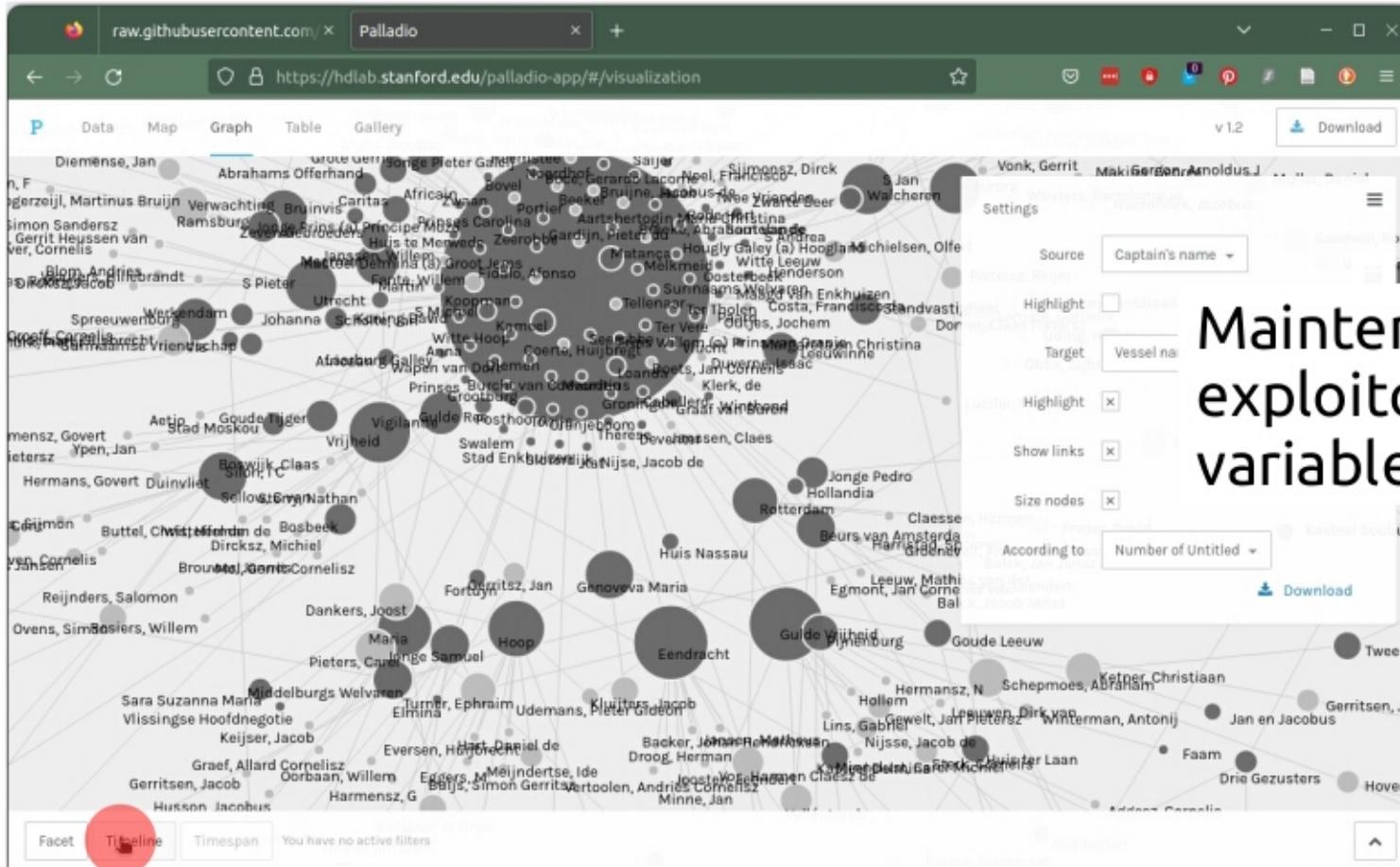
- Cocher l'une des deux cases « highlight » permet de différencier les deux variables.

- Et « size nodes » permet de visualiser la quantité d'entrées pour chaque.

- Le bouton « Download » permet de télécharger le réseau visible sur votre écran. Vous pouvez réarranger les points pour le rendre plus lisible en cliquant et tirant sur les points.

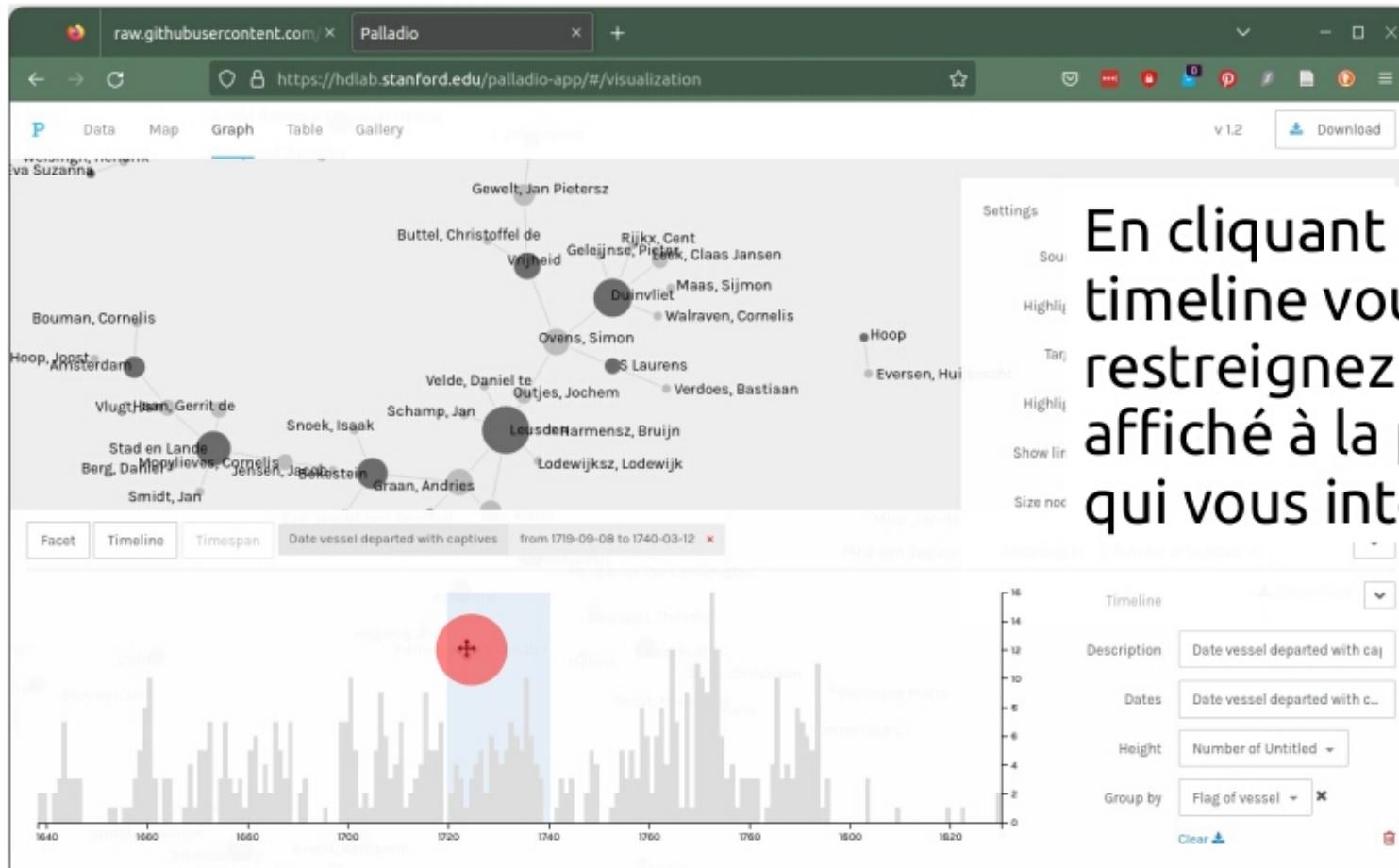


6 – Palladio



Maintenant,  
exploitons la  
variable de dates.

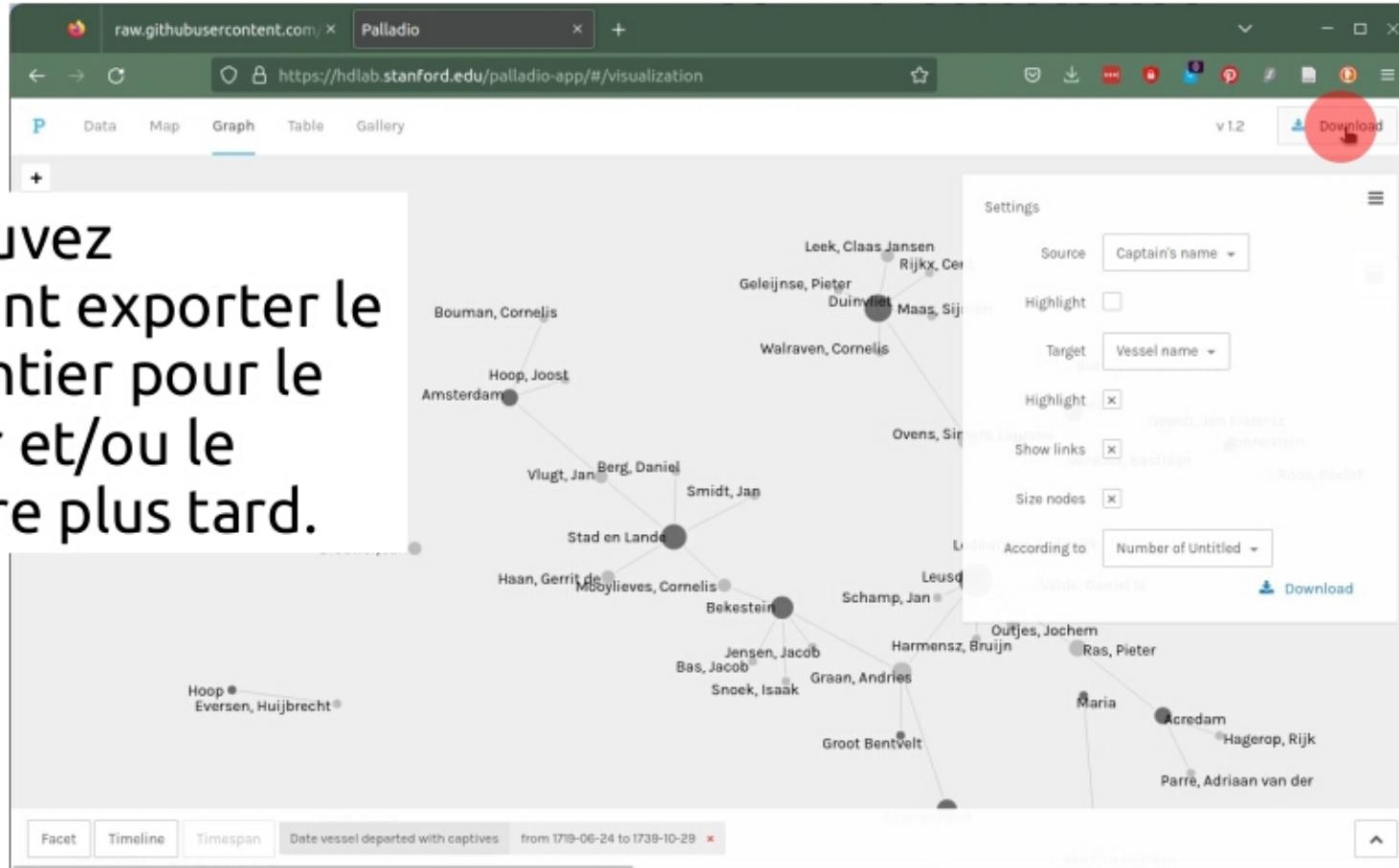
# 6 – Palladio



En cliquant sur la timeline vous restreignez le réseau affiché à la période qui vous intéresse.

# 6 – Palladio

Vous pouvez également exporter le projet entier pour le partager et/ou le reprendre plus tard.



# 7 – Discussion/questions

Merci pour votre attention !