

BRUSSELS COMIC BOOK ROUTE

Application of the Local Heritage Quick App methodology

*Martin Alvarez
@espinr*

About this document

This document shows an step-by-step example of how the [Local Heritage Quick App methodology](#) was applied to the Comic Book Route in Brussels.

The [Local Heritage Quick App](#) project provides a **methodology** and a **set of tools** for towns to promote their most precious assets, enabling citizens and institutions to launch new projects focused on local art, culture, history, nature, or whatever is engaging in a place.

Background

- Objective:
 - > Something intuitive visitors and citizens can use
 - > Quick, simple and ready to use
 - > Multilingual
 - > Enriched by third-party data sources (Wikipedia, comic journals, etc.)
- Context
 - > What is Belgium famous for? Waffles, Chocolate, Beer, Comic books...
 - > Brussels has an open data initiative
 - > We have Quick App templates

Brussels' Comic Book Route: Since the early 90s, Brussels pays tribute to characters and authors of the Franco-Belgian comics on the walls in the city center



Process

[Step 1. clone and configure the project](#)

[Step 2. populate the database](#)

[Step 3. publish the database](#)

[Step 4. customize the app](#)

[Step 5. run \(and publish\) the app](#)

Clone the **open source** project (basic *git* skills needed)

Search or jump to... Pull requests Issues Marketplace Explore

pbesteu / poi-quick-app Public template

Unwatch 2 Fork 0 Star 0

Code Issues Pull requests Actions Projects Wiki Security Insights

main 2 branches 0 tags

Go to file Add file Code Use this template

About

Points of Interest Quick App: represent local cultural heritage assets, artworks... using this template

Readme View license 0 stars 2 watching 0 forks

Releases

No releases published Create a new release

Packages

No packages published Publish your first package

Environments 1

github-pages Active

File	Commit	Time
.github	First Commit	3 months ago
docs	Fixing broken link	3 months ago
quick-app	Updated repositories and dependencies	3 months ago
.gitignore	First commit	3 months ago
LICENSE	First Commit	3 months ago
LICENSE-CODE	First Commit	3 months ago

espinr Fixing broken link 9f2bbfa on May 23 7 commits

Local Cultural Heritage Quick App

The Local Cultural Heritage Quick App promotes cultural heritage collections in small and medium cities through open data and crowdsourcing.

It's free, open-source, and collaborative

Any city can implement its own application in a few hours. They only need one or more experts to feed the first version of the database.

Currently, we have the following proofs of concept:

Create a new repository from local-cultural-heritage

The new repository will start with the same files and folders as [espinr/local-cultural-heritage](#).

Owner * Repository name *

espinr comic-book-route ✓

Great repository names are short and memorable. Need inspiration? How about [congenial-broccoli?](#)

Description (optional)

Quick App for the Brussels Comic Book Route

Public
Anyone on the internet can see this repository. You choose who can commit.

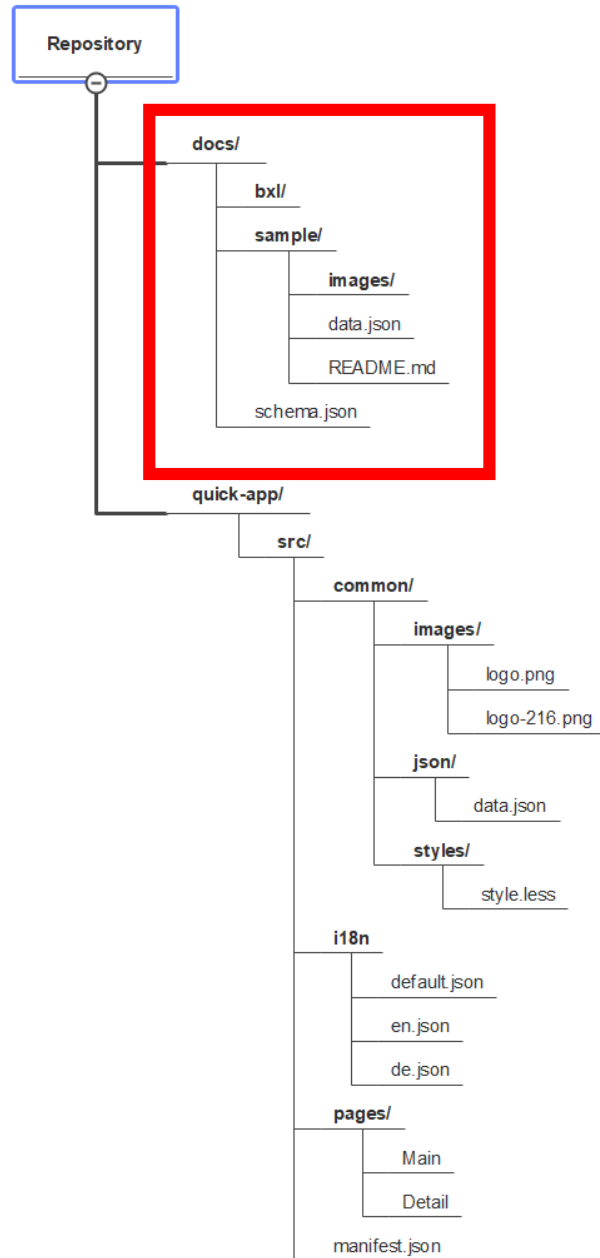
Private
You choose who can see and commit to this repository.

Include all branches
Copy all branches from espinr/local-cultural-heritage and not just main.

ⓘ You are creating a public repository in your personal account.

Create repository from template

Structure of **the code**



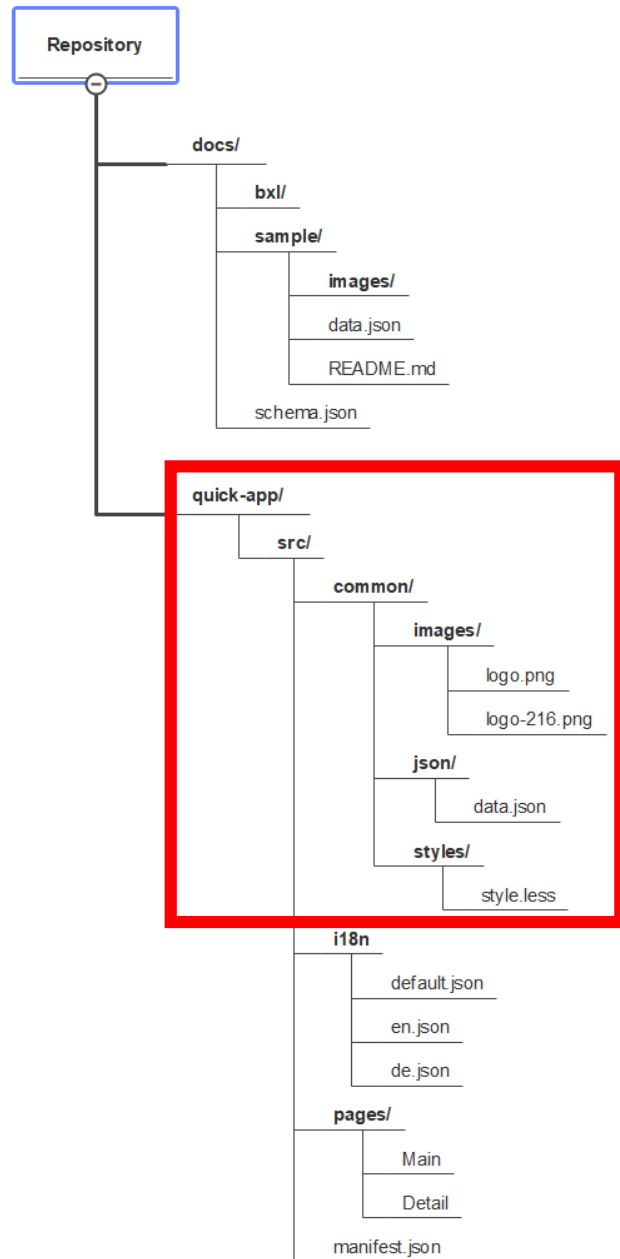
Database and images, publicly accessible
(also on the Web)

sample/ → example to rename and reuse

schema.json → JSON schema to validate the
database once it's updated.

data.json → database

Structure of **the code**

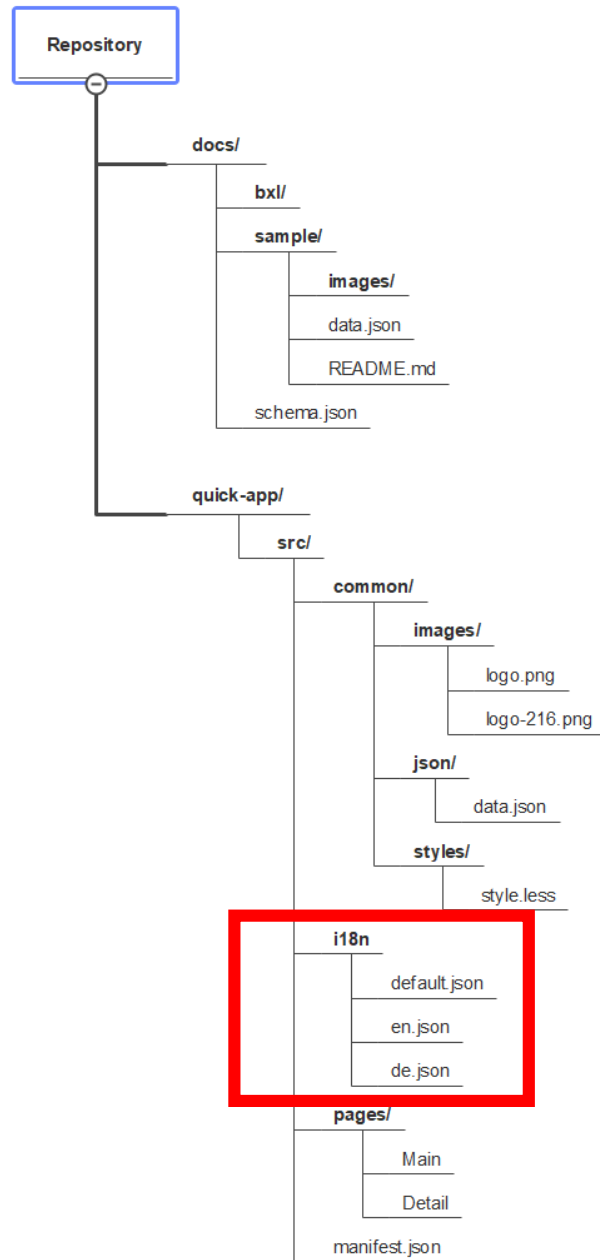


Quick App source code (need to compile before run)

common/ → media, images, resources

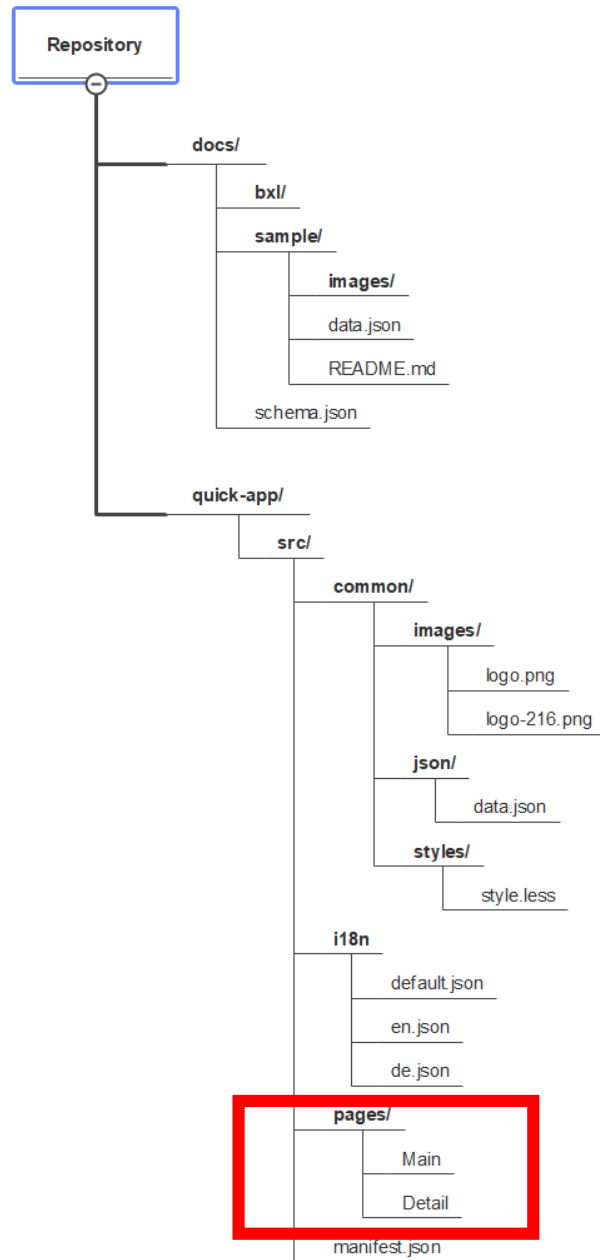
data.json → local version of the database (it will be replaced in case the app finds a more recent update on the Web).

Structure of **the code**



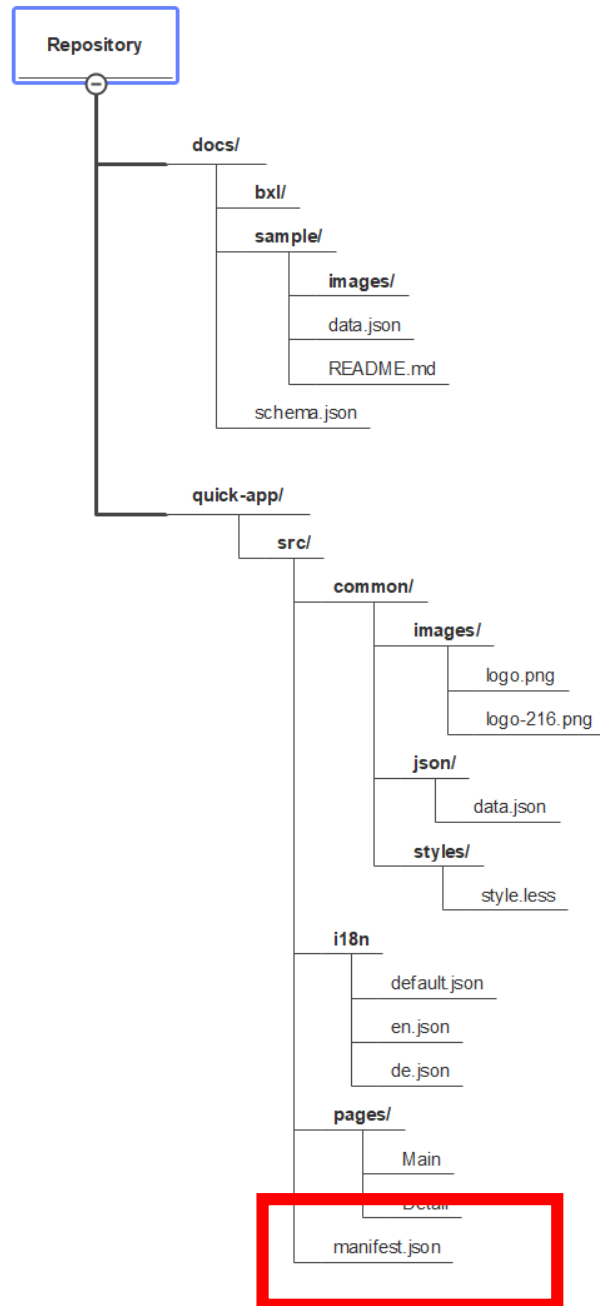
i18n/ → localization of the user interface

Structure of **the code**



pages/ → main components of the app

Structure of **the code**



manifest.json/ → app metadata and setup

Process

Step 1. clone and configure the project

Step 2. populate the database

Step 3. publish the database

Step 4. customize the app

Step 5. run (and publish) the app

Brussels Open Data provides a dataset

The screenshot shows the Brussels Open Data website interface. The top navigation bar includes 'Home', 'Explore', 'Cartograph', 'API', 'License', 'FAQ', 'News', 'Links', 'Suggestions', and 'Contact'. The main content area is titled 'Comic book route' and shows 64 records. The 'Filters' section on the left has a search bar. The 'Information' tab is active, displaying the following metadata:

- Dataset Identifier: comic-book-route
- Downloads: 1,175
- Themes: Culture, Heritage
- Keywords: culture, tourisme, comic, strip
- License: Licence Ouverte (Etalab)**
- Language: English
- Modified: December 15, 2021 1:56 PM
- Publisher: VisitBrussels
- Reference: <http://www.brussels.be/5316>
- Territory: Bruxelles
- Last processing: December 15, 2021 1:56 PM (metadata), December 15, 2021 1:56 PM (data)

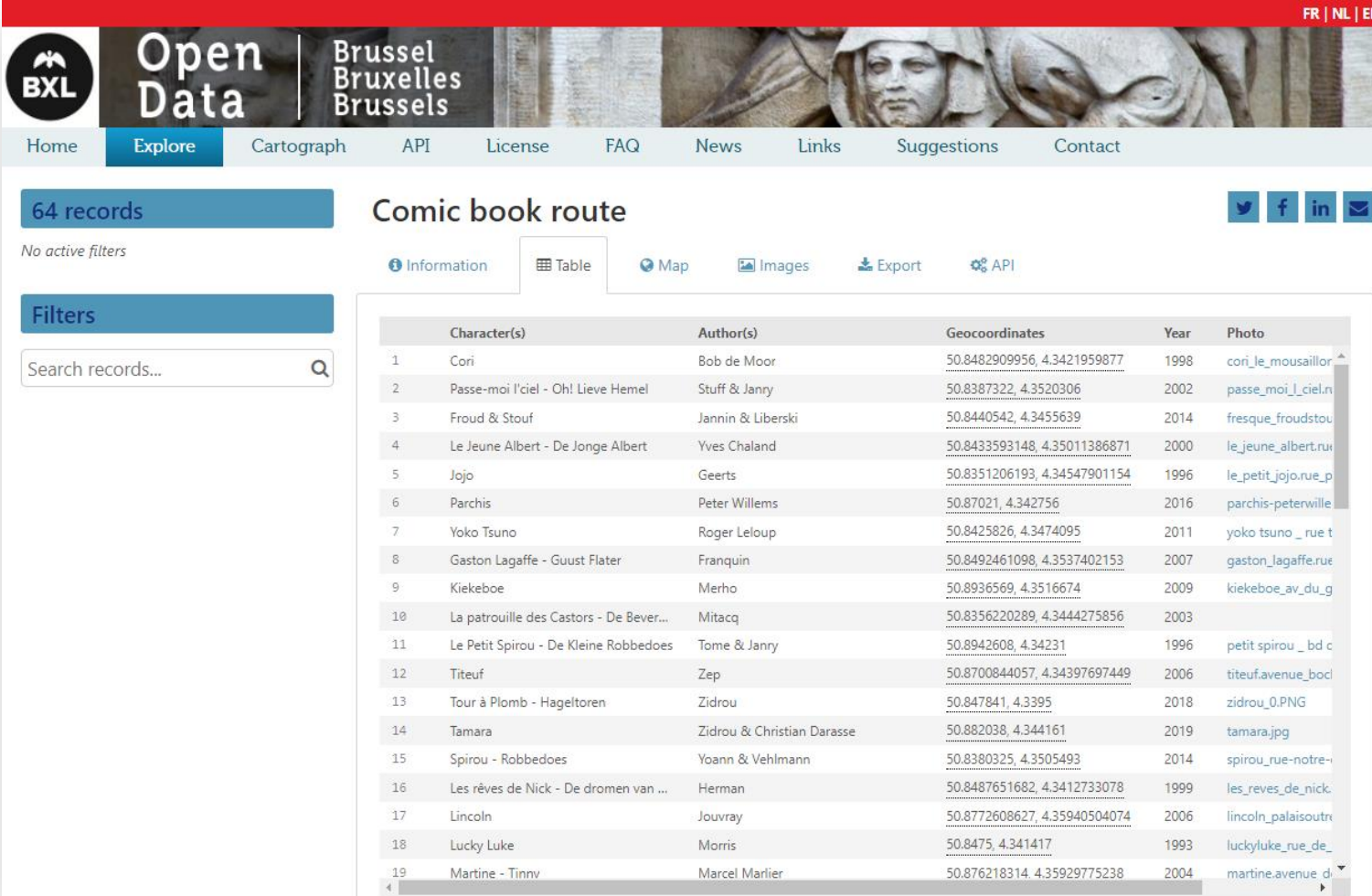
Below the metadata, the DCAT section shows:

- Created: February 24, 2012
- Issued: October 1, 2013
- Spatial: City of Brussels

The 'Dataset schema' section is partially visible at the bottom.

<https://bruxellesdata.opendatasoft.com/explore/dataset/comic-book-route/table/>

... in open **format** (CSV), by the way 😊



The screenshot shows the 'Open Data Brussels' website interface. The main content area displays a dataset titled 'Comic book route' with 64 records. The data is presented in a table with columns for Character(s), Author(s), Geocoordinates, Year, and Photo. The table lists 19 entries, including characters like Cori, Passe-moi l'ciel, Froud & Stouf, and Le Jeune Albert, along with their authors and publication years. The interface includes navigation tabs for Information, Table, Map, Images, Export, and API, and a search bar for filters.

	Character(s)	Author(s)	Geocoordinates	Year	Photo
1	Cori	Bob de Moor	50.8482909956, 4.3421959877	1998	cori_le_mousailor
2	Passe-moi l'ciel - Oh! Lieve Hemel	Stuff & Janry	50.8387322, 4.3520306	2002	passe_moi_l_ciel.n
3	Froud & Stouf	Jannin & Liberski	50.8440542, 4.3455639	2014	fresque_froudstu
4	Le Jeune Albert - De Jonge Albert	Yves Chaland	50.8433593148, 4.35011386871	2000	le_jeune_albert.ru
5	Jojo	Geerts	50.8351206193, 4.34547901154	1996	le_petit_jojo.rue_p
6	Parchis	Peter Willems	50.87021, 4.342756	2016	parchis-peterwille
7	Yoko Tsuno	Roger Leloup	50.8425826, 4.3474095	2011	yoko_tsuno_rue_t
8	Gaston Lagaffe - Guust Flater	Franquin	50.8492461098, 4.3537402153	2007	gaston_lagaffe.rue
9	Kiekeboe	Merho	50.8936569, 4.3516674	2009	kiekeboe_av_du_g
10	La patrouille des Castors - De Bever...	Mitacq	50.8356220289, 4.3444275856	2003	
11	Le Petit Spirou - De Kleine Robbedoes	Tome & Janry	50.8942608, 4.34231	1996	petit_spirou_bd_c
12	Titeuf	Zep	50.8700844057, 4.34397697449	2006	titeuf.avenue_bod
13	Tour à Plomb - Hageltoren	Zidrou	50.847841, 4.3395	2018	zidrou_0.PNG
14	Tamara	Zidrou & Christian Darasse	50.882038, 4.344161	2019	tamara.jpg
15	Spirou - Robbedoes	Yoann & Vehlmann	50.8380325, 4.3505493	2014	spirou_rue-notre-i
16	Les rêves de Nick - De dromen van ...	Herman	50.8487651682, 4.3412733078	1999	les_reves_de_nick
17	Lincoln	Jouvray	50.8772608627, 4.35940504074	2006	lincoln_palaisoutr
18	Lucky Luke	Morris	50.8475, 4.341417	1993	luckyluke_rue_de_
19	Martine - Tinnv	Marcel Marlier	50.876218314, 4.35929775238	2004	martine.avenue_d

<https://bruxellesdata.opendatasoft.com/explore/dataset/comic-book-route/table/>

We need to refine the data

OpenRefine A power tool for working with messy data.

Create Project « Start Over Configure Parsing Options Project name comic book route csv Tags Create Project »

Character(s)	Author(s)	Geocoordinates	Year	Photo
1. Billy the Cat	Colman & Desberg	50.8534930829,4.34524297714	2000	https://opendata.bruxelles.be/api/v2/catalog/datasets/comic-book-route/files/0c23baaad4ec7e0a9febe61e0633047
2. Blondin & Cirage - Blondie & Blinkie	Jijé	50.8382916052,4.34736728668	1998	https://opendata.bruxelles.be/api/v2/catalog/datasets/comic-book-route/files/e3b8b7b02b73d4559a210ed2f2732cb2
3. La Vache - De Koe	Johan de Moor	50.8528725,4.357844	1999	https://opendata.bruxelles.be/api/v2/catalog/datasets/comic-book-route/files/1863e288e9247fd3f63c93ba0c6b29a5
4. Schtroumpfs - Smurfen (Smurfs)	Peyo	50.845641,4.355886	2018	https://opendata.bruxelles.be/api/v2/catalog/datasets/comic-book-route/files/e89705bfe2b80e6e73f42c1dfda1c16c
5. Après-midi place Bockstael - 's Namiddags aan het Bockstaeplein	Elodie Shanta	50.877108,4.346971	2021	https://opendata.bruxelles.be/api/v2/catalog/datasets/comic-book-route/files/d7244fa78a65e9bc49ac482343340200
6. Benoit Brisefer - Steven Sterk	Peyo	50.8391525,4.3504241	2015	
7. Corto Maltese	Pratt	50.8605342,4.3485253	2009	https://opendata.bruxelles.be/api/v2/catalog/datasets/comic-book-route/files/21a653087012d0a110d8ea37b66a549a
8. LGBT	Ralf König	50.846751,4.349346	2015	https://opendata.bruxelles.be/api/v2/catalog/datasets/comic-book-route/files/1fb8432358b23177561a68366b4312e
9. Quick & Flupke	Herg??	50.840422,4.350264	2015	https://opendata.bruxelles.be/api/v2/catalog/datasets/comic-book-route/files/19e870c2fd99c38bc1435021617a8389
10. Le Chat - De Kat	Philippe Geluck	50.8378444279,4.34198141098	1993	https://opendata.bruxelles.be/api/v2/catalog/datasets/comic-book-route/files/55f00cb9735ad5e3ac76deb2ae863be0
11. L'Ange de Sambre - De Aartsengel	Yslaïre	50.8489412883,4.34687376022	1998	https://opendata.bruxelles.be/api/v2/catalog/datasets/comic-book-route/files/b0c9a62962686c954fab8c00b97111c
12. Solostalgie	Eva Roussel	50.8807067871,4.34292840958	2021	https://opendata.bruxelles.be/api/v2/catalog/datasets/comic-book-route/files/f172cca2444f7d0276a71cbde762877b
13. Marsupilami	Franquin	50.8907142,4.3371644	2013	https://opendata.bruxelles.be/api/v2/catalog/datasets/comic-book-route/files/19e870c2fd99c38bc1435021617a8389

Parse data as

Character encoding UTF-8 Update Preview

CSV / TSV / separator-based files

Columns are separated by

- commas (CSV)
- tabs (TSV)
- custom: ;

Trim leading & trailing whitespace from strings

Escape special characters with \

Column names (comma separated):

Ignore first 0 line(s) at beginning of file

Parse next 1 line(s) as column headers

Discard initial 0 row(s) of data

Load at most 0 row(s) of data

Use character " to enclose cells containing column separators

Attempt to parse cell text into numbers

Store blank rows

Store blank cells as nulls

Store file source

Store archive file

Adaptation to our templates

Using own scripts or Open Refine 😊

<https://openrefine.org>

High-quality dataset with 64 Points of Interest

OpenRefine Comic Book Route BXL Permalink

Facet / Filter Undo / Redo 0 / 0 64 rows Extensions: Wikidata

Refresh Reset All Remove All Show as: rows records Show: 5 10 25 50 100 500 1000 rows « first < previous 1 of 1 page next > last »

	All	Character(s)	Author(s)	Geocoordinates	Year	Photo
☆	1.	Billy the Cat	Colman & Desberg	50.8534930829,4.34524297714	2000	https://opendata.bruxelles.be/api/v2/catalog/datasets/comic-book-route/files/0c23baae44ec7e0a9febe61e0633047
☆	2.	Blondin & Cirage - Blondie & Blinkie	Jijé	50.8382916052,4.34736728668	1998	https://opendata.bruxelles.be/api/v2/catalog/datasets/comic-book-route/files/e3b8b7b02b73d4559a210ed27232cb2
☆	3.	La Vache - De Koe	Johan de Moor	50.8528725,4.357844	1999	https://opendata.bruxelles.be/api/v2/catalog/datasets/comic-book-route/files/1863e288e9247fd3f63c93ba0c6b29a5
☆	4.	Schtroumpfs - Smurfen (Smurfs)	Peyo	50.845641,4.355886	2018	https://opendata.bruxelles.be/api/v2/catalog/datasets/comic-book-route/files/e89705bfe2b80e6e73f42c1dfda1c16c
☆	5.	Après-midi place Bockstael - 's Namiddags aan het Bockstaelplein	Elodie Shanta	50.877108,4.346971	2021	https://opendata.bruxelles.be/api/v2/catalog/datasets/comic-book-route/files/d7244fa78a65e9bc49ac482343340200
☆	6.	Benoit Brisefer - Steven Sterk	Peyo	50.8391525,4.3504241	2015	
☆	7.	Corto Maltese	Pratt	50.8605342,4.3485253	2009	https://opendata.bruxelles.be/api/v2/catalog/datasets/comic-book-route/files/21a653087012d0a110d8ea37b66a549a
☆	8.	LGBT	Ralf König	50.846751,4.349346	2015	https://opendata.bruxelles.be/api/v2/catalog/datasets/comic-book-route/files/1fb8432358b23177561a68366b4312e
☆	9.	Quick & Flupke	Herg??	50.840422,4.350264	2015	https://opendata.bruxelles.be/api/v2/catalog/datasets/comic-book-route/files/19e870c2fd99c38bc1435021617a8389
☆	10.	Le Chat - De Kat	Philippe Geluck	50.8378444279,4.34198141098	1993	https://opendata.bruxelles.be/api/v2/catalog/datasets/comic-book-route/files/55f00cb9735ad5e3ac76deb2ae863be0
☆	11.	L'Ange de Sambre - De Aartsengel	Yslaire	50.8489412883,4.34687376022	1998	https://opendata.bruxelles.be/api/v2/catalog/datasets/comic-book-route/files/b0c9a62962686c954fab8c00b971f1c
☆	12.	Solastalgie	Eva Roussel	50.8807067871,4.34292840958	2021	https://opendata.bruxelles.be/api/v2/catalog/datasets/comic-book-route/files/f172cca2444f7d0276a71cbde762877b
☆	13.	Marsupilami	Franquin	50.8907142,4.3371644	2013	https://opendata.bruxelles.be/api/v2/catalog/datasets/comic-book-route/files/4d909466e3164c0ef0e0d5ae4a21a1d0
☆	14.	La Voie lactée	Mathilde Van Gheluve	50.8394619195,4.34260158861	2019	https://opendata.bruxelles.be/api/v2/catalog/datasets/comic-book-route/files/1f86cb113cd88bb60405f77a4c13fc73
☆	15.	Boule & Bill - Bollie & Billie	Roba	50.8376411641,4.3455862999	1992	https://opendata.bruxelles.be/api/v2/catalog/datasets/comic-book-route/files/4e84973dda8839c63fb15edbe02671c7
☆	16.	Le roi des mouches	Mezzo	50.87640787,4.35762405396	2007	https://opendata.bruxelles.be/api/v2/catalog/datasets/comic-book-route/files/b5cfaab92e82e4a0a93c1579632d32a
☆	17.	Blake & Mortimer	Jacobs	50.8398908,4.3513569	2005	https://opendata.bruxelles.be/api/v2/catalog/datasets/comic-book-route/files/5082678d893671de023f9157caa227fa
☆	18.	Le monde ... l'envers - De omgekeerde wereld	Atak	50.87798328811941,4.348827242299489	2021	
☆	19.	Martine - Tinny	Marcel Marlier	50.876218314,4.35929775238	2004	https://opendata.bruxelles.be/api/v2/catalog/datasets/comic-book-route/files/928f29a147e577c70480d4905254d31
☆	20.	Broussaille - Ragebol	Frank Pé	50.8467465143,4.34942722321	1999	https://opendata.bruxelles.be/api/v2/catalog/datasets/comic-book-route/files/b17daccbf026f22035464e3d0f12b51
☆	21.	Caroline Baldwin	Taymans & Wesel	50.8487380728,4.33895587921	2003	https://opendata.bruxelles.be/api/v2/catalog/datasets/comic-book-route/files/310a0910ca8fc0d6eb6845fbb1fca476

3 with no picture

All had name, and coordinates 👉

Data cleansing: split coordinate components

The image illustrates the process of splitting a coordinate column into two separate columns. A dialog box titled "Split column Geocoordinates into several columns" is shown over a data table. The dialog has two main sections: "How to Split Column" and "After Splitting".

How to Split Column:

- by separator
- Separator: regular expression
- Split into columns at most (leave blank for no limit)
- by field lengths
-
- List of integers separated by commas, e.g., 5, 7, 15

After Splitting:

- Guess cell type
- Remove this column

The original table has a column named "Geocoordinates" with values like "50.8534930829,4.34524297714". The resulting table has two columns: "Geocoordinates 1" and "Geocoordinates 2", with the original values split into these two columns. The original "Geocoordinates" column is removed.

	Geocoordinates	Year
rg	50.8534930829,4.34524297714	2000
	50.8382916052,4.34736728668	1999
	50.8528725,4.357844	1999
	50.845641,4.355886	2000

	Geocoordinates 1	Geocoordinates 2	Year
	50.8534930829	4.34524297714	2000
	50.8382916052	4.34736728668	1999
	50.8528725	4.357844	1999
	50.845641	4.355886	2000

Data cleansing: split several authors

5 10 25 50 100 500 1000 rd

	Author(s)	lat
	Colman & Desberg	
linkie	Jijé	
	Johan de Moor	

Split column Author(s) 1 into several columns

How to Split Column

by separator
Separator regular expression
Split into columns at most (leave blank for no limit)

by field lengths

List of integers separated by commas, e.g., 5, 7, 15

After Splitting

Guess cell type
 Remove this column

OK Cancel

	Author(s) 1	Author(s) 2	
	Colman	Desberg	
e &	Jijé		
	Johan de Moor		
	Peyo		
l. de	Flodie Shanta		

Original dataset properly formatted

OpenRefine Comic Book Route BXL Permalink

Facet / Filter Undo / Redo 9 / 9 64 rows Extensions: Wikidata

Refresh Reset All Remove All Show as: rows records Show: 5 10 25 50 100 500 1000 rows 1 of 1 page

All	name	author1	author2	latitude	longitude	year	photo
★	1. Billy the Cat	Colman	Desberg	50.8534930829	4.34524297714	2000	https://opendata.bruxelles.be/api/v2/catalog/datasets/comic-book-route/files/0c23baaad4ec7e0a9febe61e0633047
★	2. Blondin & Cirage - Blondie & Blinkie	Jijé		50.8382916052	4.34736728668	1998	https://opendata.bruxelles.be/api/v2/catalog/datasets/comic-book-route/files/e3b8b7b02b73d4559a210ed2f2732cb2
★	3. La Vache - De Koe	Johan de Moor		50.8528725	4.357844	1999	https://opendata.bruxelles.be/api/v2/catalog/datasets/comic-book-route/files/1863e288e9247fd3f63c93ba0c6b29a5
★	4. Schtroumpfs - Smurfs (Smurfs)	Peyo		50.845641	4.355886	2018	https://opendata.bruxelles.be/api/v2/catalog/datasets/comic-book-route/files/e89705bfe2b80e6e73f42c1dfda1c16c
★	5. Après-midi place Bockstael - 's Namiddags aan het Bockstaeplein	Elodie Shanta		50.877108	4.346971	2021	https://opendata.bruxelles.be/api/v2/catalog/datasets/comic-book-route/files/d7244fa78a65e9bc49ac482343340200
★	6. Benoit Brisefer - Steven Sterk	Peyo		50.8391525	4.3504241	2015	
★	7. Corto Maltese	Pratt		50.8605342	4.3485253	2009	https://opendata.bruxelles.be/api/v2/catalog/datasets/comic-book-route/files/21a653087012d0a110d8ea37b66a549a
★	8. LGBT	Ralf König		50.846751	4.349346	2015	https://opendata.bruxelles.be/api/v2/catalog/datasets/comic-book-route/files/1fbd8432358b23177561a68366b4312e
★	9. Quick & Flupke	Herg??		50.840422	4.350264	2015	https://opendata.bruxelles.be/api/v2/catalog/datasets/comic-book-route/files/19e870c2fd99c38bc1435021617a8389
★	10. Le Chat - De Kat	Philippe Geluck		50.8378444279	4.34198141098	1993	https://opendata.bruxelles.be/api/v2/catalog/datasets/comic-book-route/files/55f00cb9735ad5e3ac76deb2ae863be0
★	11. L'Ange de Sambre - De Aartsengel	Yslaïre		50.8489412883	4.34687376022	1998	https://opendata.bruxelles.be/api/v2/catalog/datasets/comic-book-route/files/b0c9a62962686c954fab8c00b971f1c
★	12. Solastalgie	Eva Roussel		50.8807067871	4.34292840958	2021	https://opendata.bruxelles.be/api/v2/catalog/datasets/comic-book-route/files/f172cca2444f7d0276a71cbde762877b
★	13. Marsupilami	Franquin		50.8907142	4.3371644	2013	https://opendata.bruxelles.be/api/v2/catalog/datasets/comic-book-route/files/4d909466e3164c0ef0e0d5ae4a21a1d0
★	14. La Voie lactée	Mathilde Van Gheluve		50.8394619195	4.34260158861	2019	https://opendata.bruxelles.be/api/v2/catalog/datasets/comic-book-route/files/1f86cb113cd88bb6040577a4c13fc73
★	15. Boule & Bill - Bollie & Billie	Roba		50.8376411641	4.3455862999	1992	https://opendata.bruxelles.be/api/v2/catalog/datasets/comic-book-route/files/4e84973dda8839c63fb15edbe02671c7
★	16. Le roi des mouches	Mezzo		50.87640787	4.35762405396	2007	https://opendata.bruxelles.be/api/v2/catalog/datasets/comic-book-route/files/b5cfaab92e82e4a0a93c1579632d32a
★	17. Blake & Mortimer	Jacobs		50.8398908	4.3513569	2005	https://opendata.bruxelles.be/api/v2/catalog/datasets/comic-book-route/files/5082678d893671de023f9157caa2277a
★	18. Le monde ... l'envers - De omgekeerde wereld	Atak		50.87798328811941	4.348827242299489	2021	
★	19. Martine - Tinny	Marcel Marlier		50.876218314	4.35929775236	2004	https://opendata.bruxelles.be/api/v2/catalog/datasets/comic-book-route/files/928f29a147e577c70480d4f905254d31
★	20. Broussaille - Ragebol	Frank Pé		50.8467465143	4.34942722321	1999	https://opendata.bruxelles.be/api/v2/catalog/datasets/comic-book-route/files/b17daccbf026ff22035464e3d0f12b51
★	21. Caroline Baldwin	Taymans	Wesel	50.8487380728	4.33895587921	2003	https://opendata.bruxelles.be/api/v2/catalog/datasets/comic-book-route/files/310a0910ca6fc0d6eb6845f8b1fca476
★	22. Le grand loup qui parle la	Dominique		50.855605	4.354617	2018	https://opendata.bruxelles.be/api/v2/catalog/datasets/comic-book-route/files/1a653087012d0a110d8ea37b66a549a

One author/column

Geo. coordinates

Minor editorial changes

Okay... but...

OpenRefine Comic Book Route BXL Permalink

Facet / Filter Undo / Redo 9 / 9 64 rows Extensions: Wikidata

Refresh Reset All Remove All Show as: rows records Show: 5 10 25 50 100 500 1000 rows 1 of 1 page

All	name	author1	author2	latitude	longitude	year	photo
★	1. Billy the Cat	Colman	Desberg	50.8534930829	4.34524297714	2000	https://opendata.bruxelles.be/api/v2/catalog/datasets/comic-book-route/files/0c23baaad4ec7e0a9febe61e0633047
★	2. Blondin & Cirage - Blondie & Blinky	Jije		50.8382916052	4.34736728668	1998	https://opendata.bruxelles.be/api/v2/catalog/datasets/comic-book-route/files/e3b8b7b02b73d4559a210ed2f2732cb2
★	3. La Vache - De Koe	Johan de Moor		50.8528725	4.357844	1999	https://opendata.bruxelles.be/api/v2/catalog/datasets/comic-book-route/files/1863e288e9247fd3f63c93ba0c6b29a5
★	4. Schtroumpfs - Smurfen (Smurfs)	Peyo		50.845641	4.355886	2018	https://opendata.bruxelles.be/api/v2/catalog/datasets/comic-book-route/files/e89705bfe2b80e6e73f42c1dfda1c16c
★	5. Après-midi place Bockstael - 's Namiddags aan het Bockstaeplein	Elodie Shanta		50.877108	4.346971	2021	https://opendata.bruxelles.be/api/v2/catalog/datasets/comic-book-route/files/d7244fa78a65e9bc49ac482343340200
★	6. Benoit Brisefer - Steven Sterk	Peyo		50.8391525	4.3504241	2015	
★	7. Corto Maltese	Pratt		50.8605342	4.3485253	2009	https://opendata.bruxelles.be/api/v2/catalog/datasets/comic-book-route/files/21a653087012d0a110d8ea37b6a549a
★	8. LGBT	Ralf König		50.846751	4.349346	2015	https://opendata.bruxelles.be/api/v2/catalog/datasets/comic-book-route/files/1fdb432358b23177561a68366b4312e
★	9. Quick & Flupke	Herg??		50.840422	4.350264	2015	https://opendata.bruxelles.be/api/v2/catalog/datasets/comic-book-route/files/19e870c2fd99c38bc1435021617a8389
★	10. Le Chat - De Kat	Philippe Geluck		50.8378444279	4.34198141098	1993	https://opendata.bruxelles.be/api/v2/catalog/datasets/comic-book-route/files/55f00cb9735ad5e3ac76deb2ae863be0
★	11. L'Ange de Sambre - De Aartsengel	Yslaïre		50.8489412883	4.34687376022	1998	https://opendata.bruxelles.be/api/v2/catalog/datasets/comic-book-route/files/b0c9a62962686c954fab8c00b971f1c
★	12. Solastalgie	Eva Roussel		50.8807067871	4.34292840958	2021	https://opendata.bruxelles.be/api/v2/catalog/datasets/comic-book-route/files/f172cca2444f7d0276a71cbde762877b
★	13. Marsupilami	Franquin		50.8907142	4.3371644	2013	https://opendata.bruxelles.be/api/v2/catalog/datasets/comic-book-route/files/4d909466e3164c0ef0e0d5ae4a21a1d0
★	14. La Voie lactée	Mathilde Van Gheluve		50.8394619195	4.34260158861	2019	https://opendata.bruxelles.be/api/v2/catalog/datasets/comic-book-route/files/1f86cb113cd88bb6040577a4c13fc73
★	15. Boule & Bill - Bollie & Billie	Roba		50.8376411641	4.3455862999	1992	https://opendata.bruxelles.be/api/v2/catalog/datasets/comic-book-route/files/4e84973dda8839c63fb15e0be02671c7
★	16. Le roi des mouches	Mezzo		50.87640787	4.35762405396	2007	https://opendata.bruxelles.be/api/v2/catalog/datasets/comic-book-route/files/b5cfaab92e82e4a0a93c1579632d32a
★	17. Blake & Mortimer	Jacobs		50.8398908	4.3513569	2005	https://opendata.bruxelles.be/api/v2/catalog/datasets/comic-book-route/files/5082678d0936710e023f9157caa2277a
★	18. Le monde ... l'envers - De omgekeerde wereld	Atak		50.87798328811941	4.348827242299489	2021	
★	19. Martine - Tinny	Marcel Marlier		50.876218314	4.35929775236	2004	https://opendata.bruxelles.be/api/v2/catalog/datasets/comic-book-route/files/928f29a147e57c70480d4905254d31
★	20. Broussaille - Ragebol	Frank Pé		50.8467465143	4.34942722321	1999	https://opendata.bruxelles.be/api/v2/catalog/datasets/comic-book-route/files/b17daccbf026ff22035464e3d0f12b51
★	21. Caroline Baldwin	Taymans	Wesel	50.8487380728	4.33895587921	2003	https://opendata.bruxelles.be/api/v2/catalog/datasets/comic-book-route/files/310a0910ca6fc0d6eb68458b1fca476
★	22. Le grand loup qui parle la	Dominique		50.855605	4.354617	2018	https://opendata.bruxelles.be/api/v2/catalog/datasets/comic-book-route/files/...

Who is *Billy the Cat*?
...and *Colman*?
...and *Desberg*?



<https://www.parcoursbd.brussels/en/fresques/billy-the-cat/>

Looking for the semantics

Reconcile column "name" [Access Service API](#)

Reconcile each cell to an entity of one of these types: Also use relevant details from other columns:

- comic book series
Q14406742
- comic book album
Q2831984
- community
Q177634
- silent film
Q226730
- media franchise
Q196600
- gag cartoon
Q3543088
- version, edition, or translation
Q3331189
- social movement
Q49773
- magazine

Reconcile against type:

Reconcile against no particular type

Auto-match candidates with high confidence

Maximum number of candidates to return

Column	Include?	As Property
author1	<input checked="" type="checkbox"/>	<input type="text"/>
author2	<input checked="" type="checkbox"/>	<input type="text"/>
latitude	<input type="checkbox"/>	<input type="text"/>
longitude	<input type="checkbox"/>	<input type="text"/>
year	<input type="checkbox"/>	<input type="text"/>
photo	<input type="checkbox"/>	<input type="text"/>

Reconciliation of
painting title to
external semantic
entities (Wikidata)

We could use official
(trusted) endpoints

30" later, we have semantics in our spreadsheet

The image shows a workflow for adding semantic data to a spreadsheet. On the left, the OpenRefine interface displays a table with 64 rows. The first row is highlighted, and a list of related items is shown in the 'name' column. The 'author1' and 'name: judgment' facets are active. A bar chart shows the distribution of 'name: best candidate's score' for the selected row. An arrow points from the Wikidata entry for 'Billy the Cat' to the corresponding row in the spreadsheet, indicating the source of the semantic data.

OpenRefine Table Data:

name	author1	author2	latitude	longitude	year	photo
Billy the Cat	Colman	Desberg	50.8534930829	4.34524297714	2000	https://opendata.bruxelles.be/api/v2/catalog/datasets/comic-book-route/files/0c23baaead4ec7e0a9febe61e0633047

Wikidata Entry: Billy the Cat (Q20198456)

French/Belgian animated series

Language	Label	Description	Also known as
English	Billy the Cat	French/Belgian animated series	
Spanish	No label defined	serie de televisión	
Catalan	No label defined	No description defined	
Dutch	No label defined	televisieserie uit Canada	

Statements:

Instance of	television series
	- 0 references

We can reconcile by a specific type

Reconcile column "name" [Access Service API](#)

Reconcile each cell to an entity of one of these types:

- comic book series
Q14406742
- comic book album
Q2831984
- community
Q177634
- silent film
Q226730
- media franchise
Q196600
- gag cartoon
Q3543088
- version, edition, or translation
Q3331189
- social movement
Q49773
- magazine

Also use relevant details from other columns:

Column	Include?	As Property
author1	<input type="checkbox"/>	<input type="text"/>
author2	<input type="checkbox"/>	<input type="text"/>
latitude	<input type="checkbox"/>	<input type="text"/>
longitude	<input type="checkbox"/>	<input type="text"/>
year	<input type="checkbox"/>	<input type="text"/>
photo	<input type="checkbox"/>	<input type="text"/>

Reconcile against type:

Reconcile against no particular type

Auto-match candidates with high confidence

Maximum number of candidates to return

We are just focused on comic books, so we'll be accurate.

Some perfect, and close matches

The screenshot shows the OpenRefine interface for a dataset titled "Comic Book Route BXL". The main table displays 59 matching rows. The first row is "Billy the Cat" by Colman and Desberg. The second row is "Blondin & Cirage - Blondie & Blinkie" by Jijé, which has several sub-rows for different titles in the series, such as "Blondin et Cirage (71)", "Blondin et Cirage en Amérique (61)", and "Blondin et Cirage au Mexique (52)".

A modal window titled "Match this Cell" is open over the "Blondin et Cirage (71)" cell. It contains a list of suggestions for matching the cell's content. The suggestions include "Blondin et Cirage (71)", "Blondin et Cirage en Amérique (61)", "Blondin et Cirage au Mexique (52)", "Les Nouvelles Aventure Blondin et Cirage (50)", "Le Nègre blanc (45)", "Blondin et Cirage contre les gangsters (44)", and "Create new item". A small image of a building is shown next to the "Blondin et Cirage (Q611537)" suggestion, which is identified as a "comic book series".

The modal window also has buttons for "Match this Cell", "Match All Identical Cells", and "Cancel".

Finally, 48 matches

OpenRefine Comic Book Route BXL Permalink Open... Export Help

Facet / Filter Undo / Redo 58 / 58 **48 matching rows** (64 total) Extensions: Wikidata

Refresh Reset All Remove All Show as: **rows** records Show: 5 10 25 50 100 500 1000 rows « first < previous 1 of 1 page next > last »

All	name	original-name	author1	author2	latitude	longitude	year	photo
<input type="checkbox"/>	1. Billy the Cat <small>Choose new match</small>	Billy the Cat	Colman	Desberg	50.8534930829	4.34524297714	2000	https://opendata.bruxelles.be/api/v2/catalog/datasets/comic-book-route/files/0c23baaad4ec7e0a9febe61e0633047
<input type="checkbox"/>	2. Blondin et Cirage <small>Choose new match</small>	Blondin & Cirage - Blondie & Blinkie	Jijé		50.8382916052	4.34736728668	1998	https://opendata.bruxelles.be/api/v2/catalog/datasets/comic-book-route/files/e3b8b7b02b73d4559a210ed212732cb2
<input type="checkbox"/>	3. La Vache <small>Choose new match</small>	La Vache - De Koe	Johan de Moor		50.8528725	4.357844	1999	https://opendata.bruxelles.be/api/v2/catalog/datasets/comic-book-route/files/1863e288e9247d3f63c93ba0c6b29a5
<input type="checkbox"/>	4. The Smurfs <small>Choose new match</small>	Schtroumpfs - Smurfen (Smurfs)	Peyo		50.845641	4.355886	2018	https://opendata.bruxelles.be/api/v2/catalog/datasets/comic-book-route/files/e89705bfe2b80e6e73f42c1dfda1c16c
<input type="checkbox"/>	6. Benoît Brisefer <small>Choose new match</small>	Benoit Brisefer - Steven Sterk	Peyo		50.8391525	4.3504241	2015	
<input type="checkbox"/>	7. Corto Maltese <small>Choose new match</small>	Corto Maltese	Pratt		50.8605342	4.3485253	2009	https://opendata.bruxelles.be/api/v2/catalog/datasets/comic-book-route/files/21a653087012d0a110d8ea37b66a549a
<input type="checkbox"/>	8. LGBT community <small>Choose new match</small>	LGBT	Ralf König		50.846751	4.349346	2015	https://opendata.bruxelles.be/api/v2/catalog/datasets/comic-book-route/files/11bd8432358b23177561a68366b4312e
<input type="checkbox"/>	9. Quick & Flupke <small>Choose new match</small>	Quick & Flupke	Herg??		50.840422	4.350264	2015	https://opendata.bruxelles.be/api/v2/catalog/datasets/comic-book-route/files/19e870c2fd99c38bc1435021617a8389
<input type="checkbox"/>	10. Le Chat <small>Choose new match</small>	Le Chat - De Kat	Philippe Geluck		50.8378444279	4.34198141098	1993	https://opendata.bruxelles.be/api/v2/catalog/datasets/comic-book-route/files/55f00cb9735ad5e3ac76deb2ae863be0
<input type="checkbox"/>	13. Marsupilami <small>Choose new match</small>	Marsupilami	Franquin		50.8907142	4.3371644	2013	https://opendata.bruxelles.be/api/v2/catalog/datasets/comic-book-route/files/4d909466e3164c0ef0e0d5ae4a21a1d0
<input type="checkbox"/>	15. Boule et Bill <small>Choose new match</small>	Boule & Bill - Bollie & Billie	Roba		50.8376411641	4.3455862999	1992	https://opendata.bruxelles.be/api/v2/catalog/datasets/comic-book-route/files/4e84973dda8839c63fb15edbe02671c7
<input type="checkbox"/>	17. Blake and Mortimer <small>Choose new match</small>	Blake & Mortimer	Jacobs		50.8398908	4.3513569	2005	https://opendata.bruxelles.be/api/v2/catalog/datasets/comic-book-route/files/5082678d893671de023f9157caa227fa
<input type="checkbox"/>	20. Broussaille <small>Choose new match</small>	Broussaille - Ragebol	Frank Pé		50.8467465143	4.34942722321	1999	https://opendata.bruxelles.be/api/v2/catalog/datasets/comic-book-route/files/b17daccbf026ff22035464e3d0ff12b51
<input type="checkbox"/>	21. Caroline Baldwin <small>Choose new match</small>	Caroline Baldwin	Taymans	Wesel	50.8487380728	4.33895587921	2003	https://opendata.bruxelles.be/api/v2/catalog/datasets/comic-book-route/files/310a0910ca6fc0d6eb6845f8b1fca476
<input type="checkbox"/>	24. Léonard <small>Choose new match</small>	Léonard	Turk	De Groot	50.8381135	4.3468826	2015	https://opendata.bruxelles.be/api/v2/catalog/datasets/comic-book-route/files/1a2f0b57f0bcd573ae2ef2b7616945f
<input type="checkbox"/>	25. Odilon Verjus <small>Choose new match</small>	Odilon Verjus - Govert Suurbier	Verron	Yann	50.8386439237	4.34633731842	2004	https://opendata.bruxelles.be/api/v2/catalog/datasets/comic-book-route/files/6dbba6f299b0ace70c476a0bca8518a0
<input type="checkbox"/>	26. Thorgal <small>Choose new match</small>	Thorgal	Grzegorz Rosinski	Jean Van Hamme	50.8436175268	4.34409090675	2013	https://opendata.bruxelles.be/api/v2/catalog/datasets/comic-book-route/files/761fbc33410c8ee3dccc577a7151eb9af
<input type="checkbox"/>	28. Petit Poulu <small>Choose new match</small>	Petit Poulu - Stoppeltje	Céline Fraipont	Pierre Bailly	50.8929672241	4.42356586456	2020	https://opendata.bruxelles.be/api/v2/catalog/datasets/comic-book-route/files/97af2d4543c532cb7ecde36b5f4822c
<input type="checkbox"/>	30. Le Scorpion <small>Choose new match</small>	Le Scorpion - De Schorpioen	Marini		50.8477626262	4.3621301651	2002	https://opendata.bruxelles.be/api/v2/catalog/datasets/comic-book-route/files/911d3d085d018edc2900ffc719e3b755
<input type="checkbox"/>	31. Asterix <small>Choose new match</small>	Astérix & Obélix	Goscinny	Uderzo	50.8464078054	4.34236764908	2005	https://opendata.bruxelles.be/api/v2/catalog/datasets/comic-book-route/files/8949022f8f4a09a88fe477f4003c14f4
<input type="checkbox"/>	32. Gaston <small>Choose new match</small>	Gaston Lagaffe - Guust	Franquin		50.8492461098	4.3537402153	2007	https://opendata.bruxelles.be/api/v2/catalog/datasets/comic-book-route/files/8949022f8f4a09a88fe477f4003c14f4

Facet / Filter **author1** change
46 choices Sort by: name count Cluster

- Franquin 2
- Peyo 2
- Bob de Moor 1
- Carin 1
- Céline Fraipont 1
- Colman 1
- Dany 1
- Dupa 1
- Dupuy 1
- François Walthéry 1
- Frank Pé 1
- Geerts 1

Facet by choice counts

Facet / Filter **name: judgment** change invert reset
2 choices Sort by: name count exclude

- matched 48
- new 16

We are speaking in terms of Linked Data (for almost humans)

Item Discussion Read View his

Billy the Cat (Q20198456)

French/Belgian animated series

▼ In more languages
Configure

Language	Label	Description	Also known as
English	Billy the Cat	French/Belgian animated series	
Spanish	No label defined	serie de televisión	
Catalan	No label defined	No description defined	
Dutch	No label defined	televisieserie uit Canada	

All entered languages

Statements

instance of	television series	edit
	▼ 0 references	+ add reference
		+ add value

<https://www.wikidata.org/wiki/Q863286>

```
wd:Q863286 a wikibase:Item .

<https://fr.wikipedia.org/wiki/Billy_the_Cat> a schema:Article ;
  schema:about wd:Q863286 ;
  schema:inLanguage "fr" ;
  schema:isPartOf <https://fr.wikipedia.org/> ;
  schema:name "Billy the Cat"@fr .

<https://fr.wikipedia.org/> wikibase:wikiGroup "wikipedia" .

<https://nl.wikipedia.org/wiki/Billy_the_Cat> a schema:Article ;
  schema:about wd:Q863286 ;
  schema:inLanguage "nl" ;
  schema:isPartOf <https://nl.wikipedia.org/> ;
  schema:name "Billy the Cat"@nl .

<https://nl.wikipedia.org/> wikibase:wikiGroup "wikipedia" .

<https://id.wikipedia.org/wiki/Billy_the_Cat> a schema:Article ;
  schema:about wd:Q863286 ;
  schema:inLanguage "id" ;
  schema:isPartOf <https://id.wikipedia.org/> ;
  schema:name "Billy the Cat"@id .

<https://id.wikipedia.org/> wikibase:wikiGroup "wikipedia" .

<https://de.wikipedia.org/wiki/Billy_the_Cat> a schema:Article ;
  schema:about wd:Q863286 ;
  schema:inLanguage "de" ;
  schema:isPartOf <https://de.wikipedia.org/> ;
  schema:name "Billy the Cat"@de .
```

<https://www.wikidata.org/wiki/Special:EntityData/Q863286.ttl>

Enrich the dataset with more information (thanks, KGs 😊)

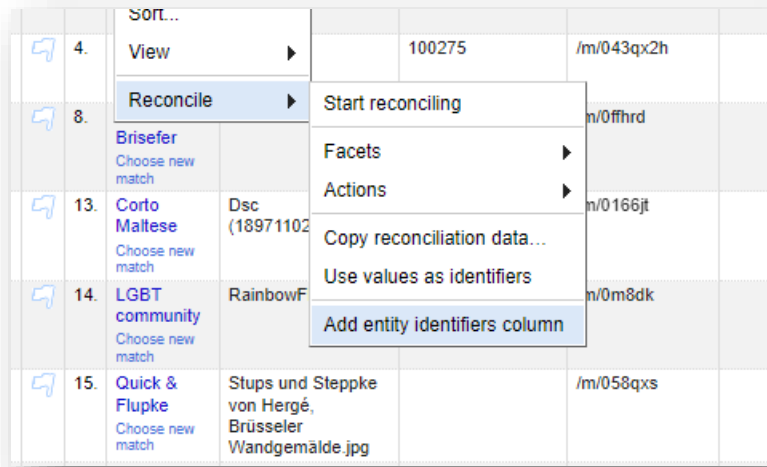
A screenshot of a data table with a context menu open over the 'name' column. The menu options include: Facet, Text filter, Edit cells, Edit column (with a sub-menu), Transpose, Sort..., View, Reconcile, Rename this column, Remove this column, Move column to beginning, Move column to end, Move column left, and Move column right. The sub-menu for 'Edit column' is also open, showing options: Split into several columns..., Join columns..., Add column based on this column..., Add column by fetching URLs..., and Add columns from reconciled values... (highlighted). The table has columns: name, original-name, author1, author2, and latitude.

	name	original-name	author1	author2	latitude
1.	Billy the Cat		Colman	Desberg	50.8534
2.	Blondin & Cirage - Blondie Blinkie		Jijé		50.8382
3.	Le Chat				50.8376
4.	La Vache				50.8376
5.	The Smurfs				50.8376
6.	Benoît Brisefer				50.8376
7.	Corto Maltese				50.8376
8.	LGBT community				50.8376
9.	Quick & Flupke				50.8376
10.	Blake and Mortimer		Jacobs		50.8376

A screenshot of a table showing 48 matching rows (81 total). The table has columns: name, image, GCD series ID, Freebase ID, French Wikidia ID, and original-name. The table is filtered to show rows where the 'name' column matches the 'original-name' column. The table is sorted by the 'name' column. The table is displayed in 'rows' view with 5 rows per page.

	name	image	GCD series ID	Freebase ID	French Wikidia ID	original-name
1.	Billy the Cat		9582	/m/079ch0	Billy_the_Cat	Billy the Cat
2.	Blondin et Cirage	Blondie en Blinkie.JPG				Blondin & Cirage - Blondie & Blinkie
3.	La Vache					La Vache - De Koe
4.	The Smurfs		100275	/m/043qx2h		Schtroumpfs - Smurfen (Smurfs)
8.	Benoît Brisefer	Steven Sterk.jpg	72680	/m/0ffhrd		Benoit Brisefer - Steven Sterk
13.	Corto Maltese	Dsc (189711025).jpeg		/m/0166jt		Corto Maltese
14.	LGBT community	RainbowFlagEdit.jpg		/m/0m8dk		LGBT
15.	Quick & Flupke	Stups und Steppke von Hergé, Brüsseler Wandgemälde.jpg		/m/058qxs		Quick & Flupke
16.	Le Chat			/m/09krc4		Le Chat - De Kat

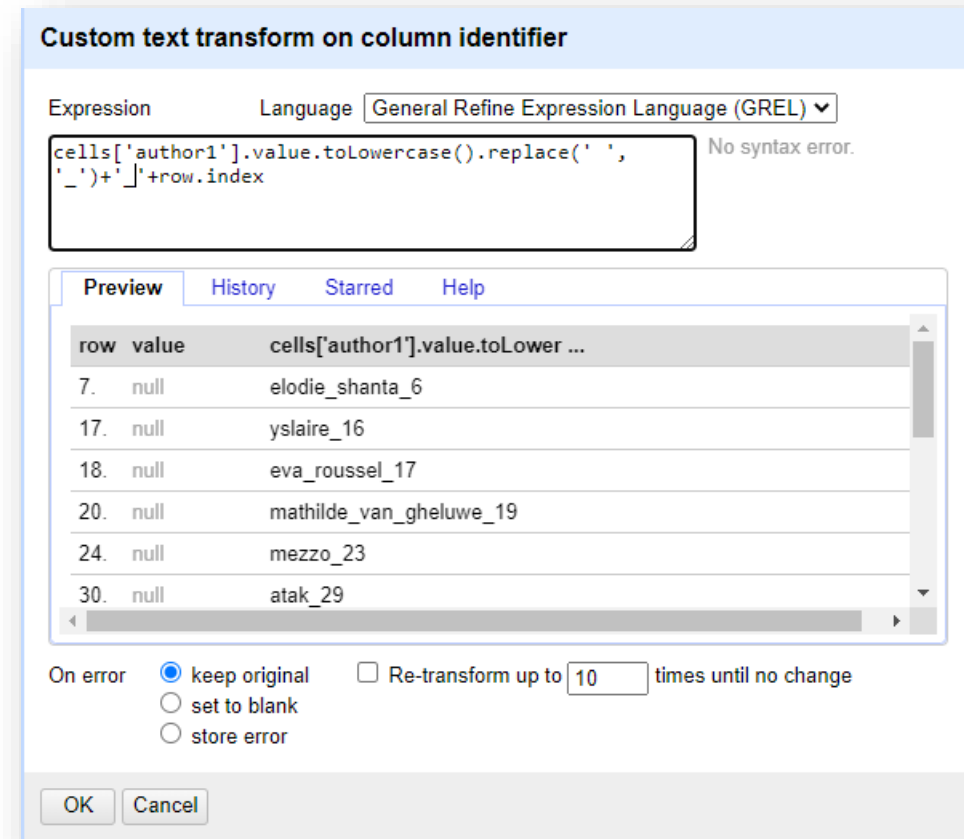
Polish the dataset: unique identifiers for each row



A screenshot of a data table with a 'Reconcile' menu open. The table has columns for row index, name, and Wikidata ID. The 'Reconcile' menu is open, showing options like 'Start reconciling', 'Facets', 'Actions', 'Copy reconciliation data...', 'Use values as identifiers', and 'Add entity identifiers column'.

Row	Name	Wikidata ID
4.		100275
8.	Brisefer	/m/0ffhrd
13.	Corto Maltese	/m/0166jt
14.	LGBT community	/m/0m8dk
15.	Quick & Flupke	/m/058qxs

Based on Wikidata IDs



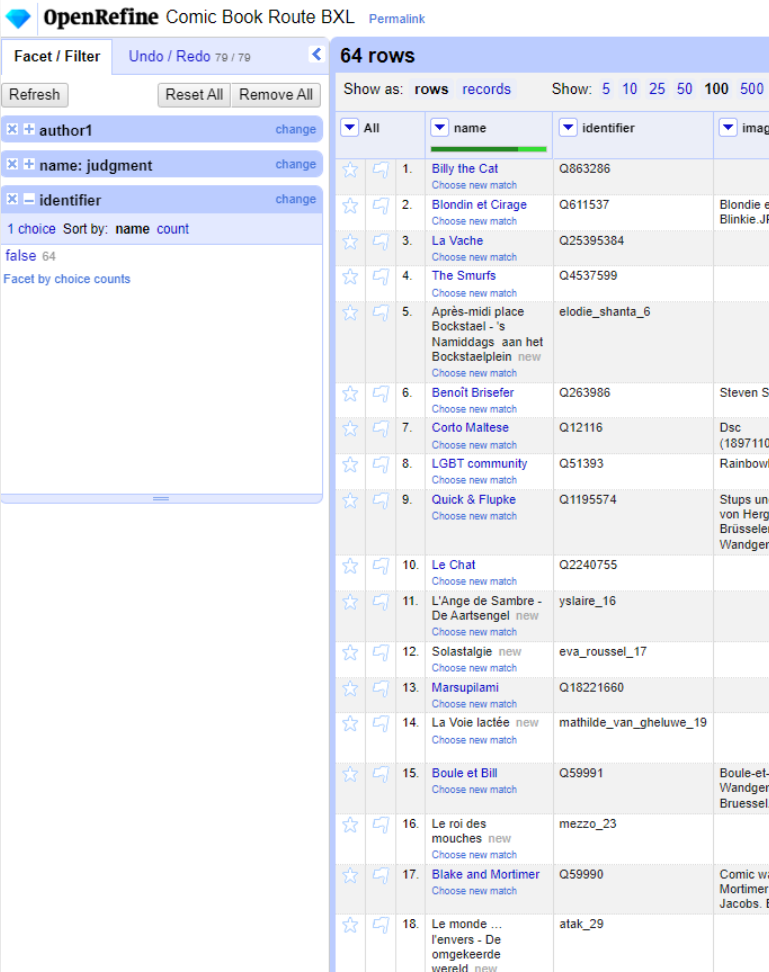
A screenshot of a 'Custom text transform on column identifier' dialog box. The 'Expression' field contains the GREL code: `cells['author1'].value.toLowerCase().replace(' ', '_')+']'+row.index`. The 'Language' is set to 'General Refine Expression Language (GREL)'. Below the expression field is a 'Preview' tab showing a table with columns 'row', 'value', and the transformed identifier. The 'On error' options are: keep original, set to blank, store error. The 'Re-transform up to' field is set to 10.

```
cells['author1'].value.toLowerCase().replace(' ', '_')+']'+row.index
```

row	value	cells['author1'].value.toLower ...
7.	null	elodie_shanta_6
17.	null	yslaire_16
18.	null	eva_roussel_17
20.	null	mathilde_van_gheluwe_19
24.	null	mezzo_23
30.	null	atak_29

For the rest we create it, based on author's name

Double check there are no duplicates



The screenshot shows the OpenRefine interface for a dataset titled "Comic Book Route BXL". The interface includes a "Facet / Filter" sidebar on the left with three active facets: "author1", "name: judgment", and "identifier". The main table displays 64 rows of data, with columns for "name", "identifier", and "image". The table is sorted by "name" and shows a list of comic book titles and their corresponding identifiers. The "name" column is highlighted in green, indicating the current sort order. The "identifier" column contains unique IDs for each row. The "image" column contains small thumbnail images or links to images for some rows.

		name	identifier	image
1.	☆	Billy the Cat <small>Choose new match</small>	Q863286	
2.	☆	Blondie et Cirage <small>Choose new match</small>	Q611537	Blondie et Blinkie.JP
3.	☆	La Vache <small>Choose new match</small>	Q25395384	
4.	☆	The Smurfs <small>Choose new match</small>	Q4537599	
5.	☆	Après-midi place Bockstael - 's Namiddags aan het Bockstaelplein <small>new</small> <small>Choose new match</small>	elodie_shanta_6	
6.	☆	Benoît Brisefer <small>Choose new match</small>	Q263986	Steven St
7.	☆	Corto Maltese <small>Choose new match</small>	Q12116	Doc (18971102
8.	☆	LGBT community <small>Choose new match</small>	Q51393	RainbowF
9.	☆	Quick & Flupke <small>Choose new match</small>	Q1195574	Stups und von Hergé Brüsseler Wandgem
10.	☆	Le Chat <small>Choose new match</small>	Q2240755	
11.	☆	L'Ange de Sambre - De Aartsengel <small>new</small> <small>Choose new match</small>	yslaire_16	
12.	☆	Solastalgie <small>new</small> <small>Choose new match</small>	eva_rousseau_17	
13.	☆	Marsupilami <small>Choose new match</small>	Q18221660	
14.	☆	La Voie lactée <small>new</small> <small>Choose new match</small>	mathilde_van_gheluwe_19	
15.	☆	Boule et Bill <small>Choose new match</small>	Q59991	Boule-et-B Wandgem Bruessel.j
16.	☆	Le roi des mouches <small>new</small> <small>Choose new match</small>	mezzo_23	
17.	☆	Blake and Mortimer <small>Choose new match</small>	Q59990	Comic wal Mortimer 2 Jacobs. B
18.	☆	Le monde ... l'envers - De omgekeerde wereld <small>new</small>	atak_29	

We use facets

Data ready to be exported to our templates

OpenRefine Comic Book Route BXL [Permalink](#) Open... Export Help

Facet / Filter Undo / Redo 79 / 79 **64 rows** Show as: rows records Show: 5 10 25 50 100 500 1000 rows « first < previous 1 of 1 page next > last » Extensions: Wikidata

Refresh Reset All Remove All

author1 change

name: judgment change

identifier change

1 choice Sort by: name count

false 64

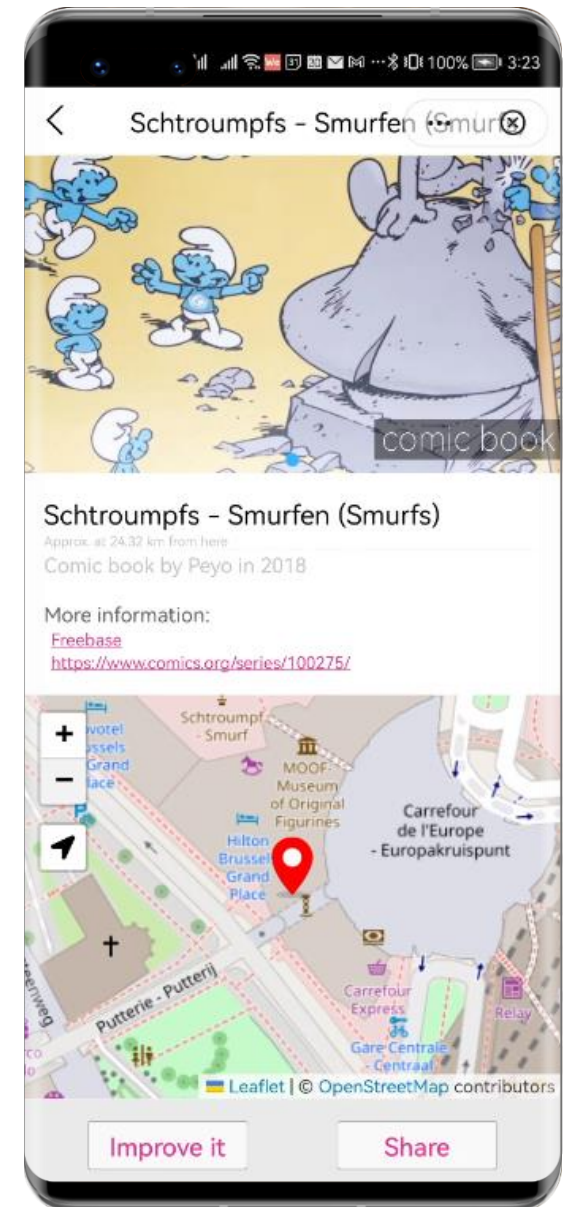
Facet by choice counts

	All	name	identifier	image	GCD series ID	Freebase ID	French Vikidia ID	original-name	author1	author2	latitude	longitude	year	photo
☆	1.	Billy the Cat <small>Choose new match</small>	Q863286		9582	/m/079ch0	Billy_the_Cat	Billy the Cat	Colman	Desberg	50.8534930829	4.34524297714	2000	https://opendatacommons.org/licenses/by/4.0/
☆	2.	Blondin et Cirage <small>Choose new match</small>	Q611537	Blondie en Blinky.JPG				Blondin & Cirage - Blondie & Blinky	Jjé		50.8382916052	4.34736728668	1998	https://opendatacommons.org/licenses/by/4.0/
☆	3.	La Vache <small>Choose new match</small>	Q25395384					La Vache - De Koe	Johan de Moor		50.8528725	4.357844	1999	https://opendatacommons.org/licenses/by/4.0/
☆	4.	The Smurfs <small>Choose new match</small>	Q4537599		100275	/m/043qx2h		Schtroumpfs - Smurfs (Smurfs)	Peyo		50.845641	4.355886	2018	https://opendatacommons.org/licenses/by/4.0/
☆	5.	Après-midi place Bockstael - 's Namiddags aan het Bockstaelplein <small>Choose new match</small>	elodie_shanta_6					Après-midi place Bockstael - 's Namiddags aan het Bockstaelplein	Elodie Shanta		50.877108	4.346971	2021	https://opendatacommons.org/licenses/by/4.0/
☆	6.	Benoît Brisefer <small>Choose new match</small>	Q263986	Steven Sterk.jpg	72680	/m/0ffhrd		Benoît Brisefer - Steven Sterk	Peyo		50.8391525	4.3504241	2015	
☆	7.	Corto Maltese <small>Choose new match</small>	Q12116	Dac (189711025).jpeg		/m/0166jt		Corto Maltese	Pratt		50.8605342	4.3485253	2009	https://opendatacommons.org/licenses/by/4.0/
☆	8.	LGBT community <small>Choose new match</small>	Q51393	RainbowFlagEdit.jpg		/m/0m8dk		LGBT	Ralf König		50.846751	4.349346	2015	https://opendatacommons.org/licenses/by/4.0/
☆	9.	Quick & Flupke <small>Choose new match</small>	Q1195574	Slups und Steppke von Hergé. Brüsseler Wandgemälde.jpg		/m/058qxs		Quick & Flupke	Hergé??		50.840422	4.350264	2015	https://opendatacommons.org/licenses/by/4.0/
☆	10.	Le Chat <small>Choose new match</small>	Q2240755			/m/09krc4		Le Chat - De Kat	Philippe Geluck		50.8378444279	4.34198141098	1993	https://opendatacommons.org/licenses/by/4.0/
☆	11.	L'Ange de Sambre - De Aartsengel <small>Choose new match</small>	yslaire_16					L'Ange de Sambre - De Aartsengel	Yslaïre		50.8489412883	4.34687376022	1998	https://opendatacommons.org/licenses/by/4.0/
☆	12.	Solastalgie <small>Choose new match</small>	eva_rousset_17					Solastalgie	Eva Rousset		50.8807067871	4.34292840958	2021	https://opendatacommons.org/licenses/by/4.0/
☆	13.	Marsupilami <small>Choose new match</small>	Q18221660					Marsupilami	Franquin		50.8907142	4.3371644	2013	https://opendatacommons.org/licenses/by/4.0/
☆	14.	La Voie lactée <small>Choose new match</small>	mathilde_van_gheluwe_19					La Voie lactée	Mathilde Van Gheluwe		50.8394619195	4.34260158861	2019	https://opendatacommons.org/licenses/by/4.0/
☆	15.	Boule et Bill <small>Choose new match</small>	Q59991	Boule-et-Bill-Wandgemaelde in Brussel.jpg	28180	/m/0dtfb_	Boule_et_Bill	Boule & Bill - Bollie & Billie	Roba		50.8376411641	4.3455862999	1992	https://opendatacommons.org/licenses/by/4.0/
☆	16.	Le roi des mouches <small>Choose new match</small>	mezzo_23					Le roi des mouches	Mezzo		50.87640787	4.35762405396	2007	https://opendatacommons.org/licenses/by/4.0/
☆	17.	Blake and Mortimer <small>Choose new match</small>	Q59990	Comic wall Blake & Mortimer 2. Edgar P. Jacobs. Brussels.jpg	47645	/m/03vj46	Blake_et_Mortimer	Blake & Mortimer	Jacobs		50.8398908	4.3513569	2005	https://opendatacommons.org/licenses/by/4.0/
☆	18.	Le monde ... l'envers - De omgekeerde wereld <small>Choose new match</small>	atak_29					Le monde ... l'envers - De omgekeerde wereld	Atak		50.87798328811941	4.348827242299489	2021	

Details of a Point of Interest (by default)

```
{
  "id" : "Q863286",
  "name" : "Billy the Cat",
  "description" : "Comic book by Colman and Desberg in 2000",
  "lat" : 50.8534930829,
  "lon" : 4.34524297714,
  "images" : [
    "https://opendata.bruxelles.be/...",
    "https://pbesteu.github.io/comics/bxl/images/001.jpg"],
  "type" : "comic book",
  "urls" : [ "https://www.comics.org/series/9582/" ],
  "freebase" : "/m/079ch0",
  "wikimedia" : "Q863286"
}
```

Anyone can [upload images to docs/](#) folder in the repository (they will be public) and link them from the data.json file.



Process

Step 1. clone and configure the project

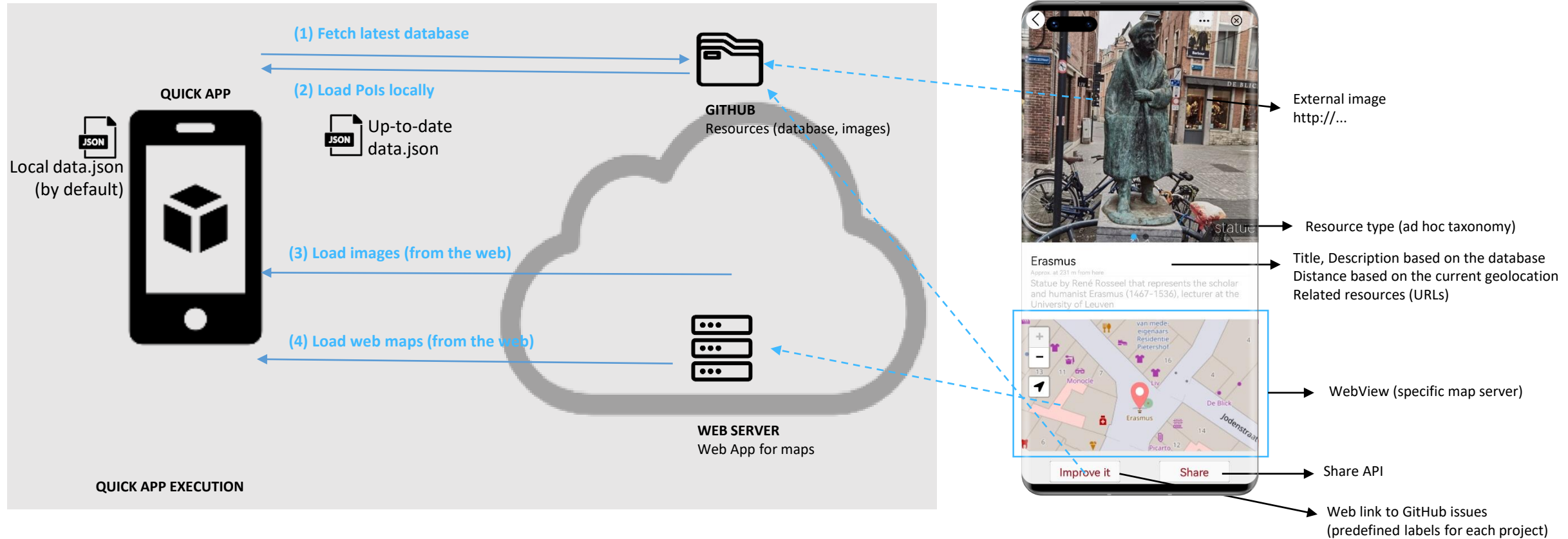
Step 2. populate the database

Step 3. publish the database

Step 4. customize the app

Step 5. run (and publish) the app

Project components and app execution



See [more details](#) about the GitHub configuration

How to update the database

The screenshot shows a GitHub repository page for 'pbesteu / comic-book-route-quick-app'. The repository is public and generated from 'pbesteu/poi-quick-app'. The commit history table shows the following entries:

Commit	Message
espnr	Reduced GIF size
..	..
images	Reduced GIF size
README.md	Reducing size of image
data.json	Better documentation and images

Below the table, the README section is visible, titled 'Brussels Comic Book Route - Quick App'. The text below the title reads: 'This project is based on the City of Brussels Open Data initiative. It uses the data from the official data'.

```
"meta": {
  "app_title": "BXL Comic Book Route",
  "version": 1,
  "updated": "2022-05-12",
  "source_url": "https://pbesteu.github.io/comic-book-route/blx/data.json",
},
"pois": [
  {
    "id" : "Q863286",
    "name" : "Billy the Cat",
    "description" : "Comic book by Colman and Desberg in 2000",
    "lat" : 50.8534930829,
```

Update the **data.json** in the repository

Increase the version number

Publication of content on GitHub pages

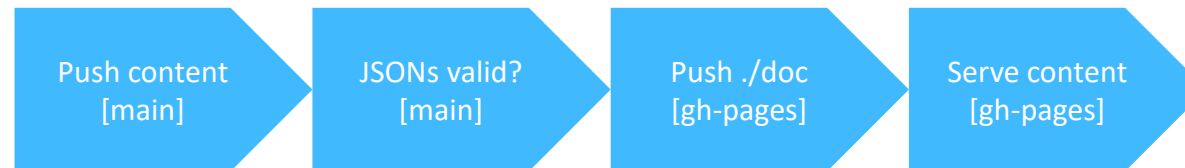
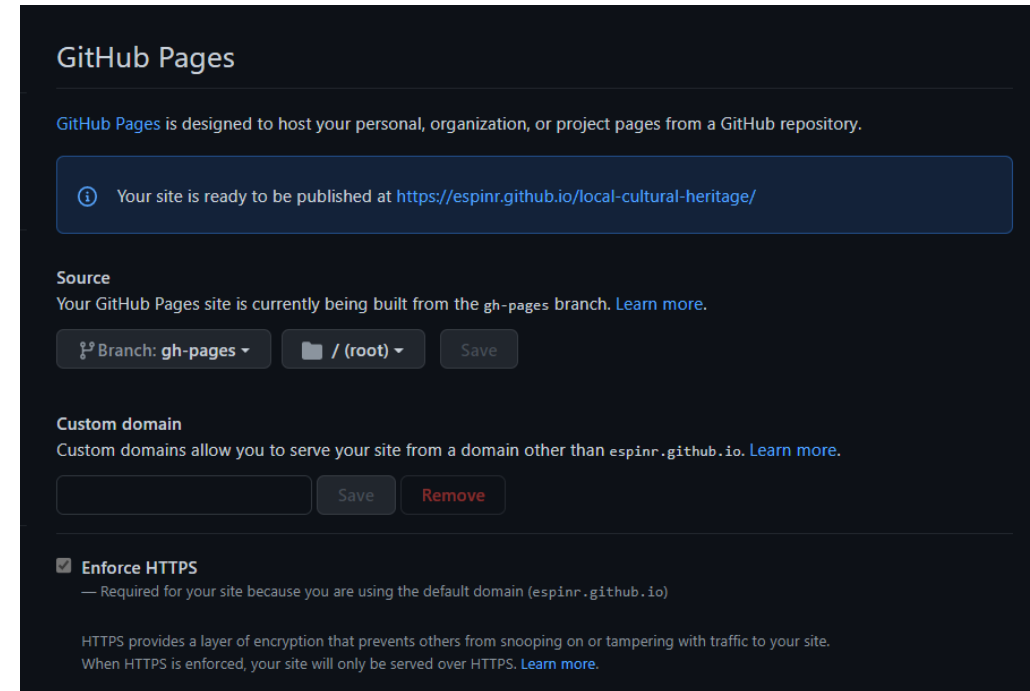
GitHub Settings > Pages

The content of the project (info, database and images) are served as HTML using GitHub pages.

There is a custom action to publish the `./doc` directory of the main repository into the `gh-pages` branch

GitHub is configured to serve the content of the root directory of the `gh-pages` (the last valid copy of the content in the repository).

If the latest version of the database JSON is not valid, the deployment is halted.



Validation of JSON files (continuous integration actions)

After every update, the new JSON files are validated against a JSON Schema

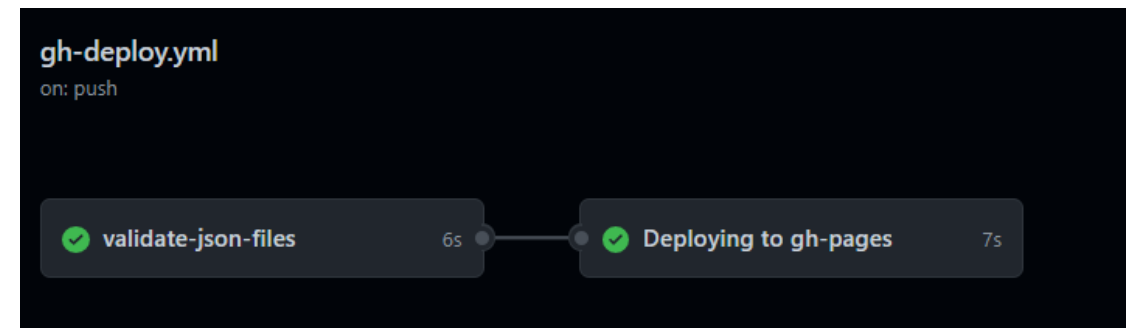
This prevents mistakes and corrupt databases causing failures in the app.

```
name: Validate JSON data and config files
on: [push]
jobs:
  validate-json-files:
    runs-on: ubuntu-latest
    steps:
      - uses: actions/checkout@v3
      - uses: vanekj/validate-json-action@v1.0.0
        with:
          schema: docs/schema.json
          pattern: docs/**/*.*.json
```

Wrong JSONs (deployment halted)



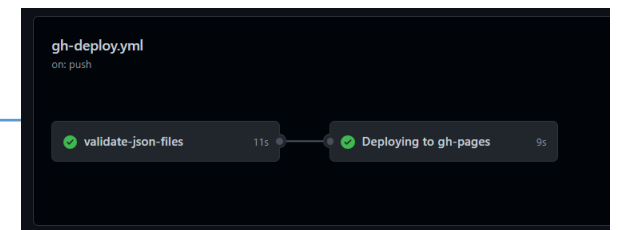
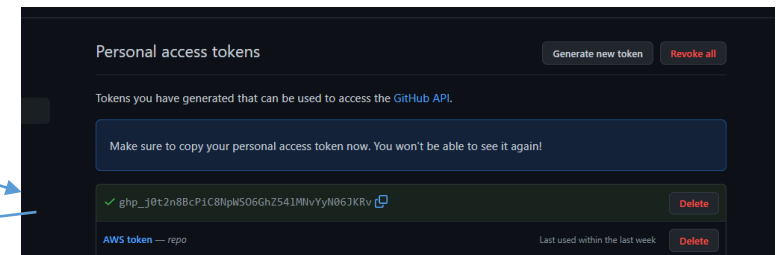
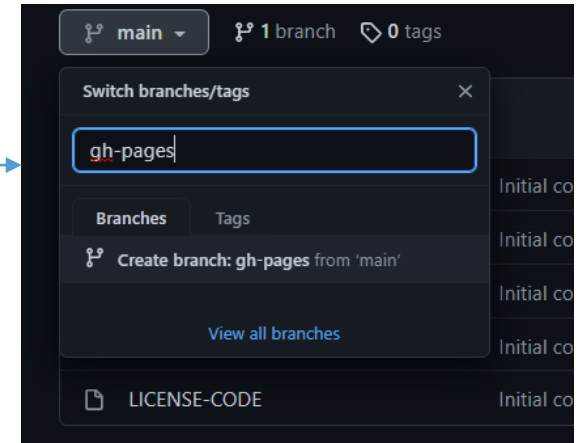
Valid JSONs



Activate GitHub Pages

If you cloned the project, you also have access to all the CI actions and configure these steps:

1. Create a `gh-pages` branch that will be used to publish the content.
2. Create a personal token
 - a) (Profile > Settings > Developer Settings > Personal access tokens)
 - b) Generate new token > Add a name + [no expiration] + check “repo” in the scope > Generate token
 - c) Copy the token generated in the clipboard
3. Create a secret with your token
 - a) Project’s Settings > (Security) Secrets > Actions
 - b) New repository secret with
 - Name: `ACCESS_TOKEN`
 - Value: the token (in your clipboard)
4. You can verify that the CI Action works properly (Project’s Actions) → re-run the jobs with failure (after that, they must be in green)
5. In project’s Settings > Pages you can see the public URL of your site with the template of the documentation.



Process

[Step 1. clone and configure the project](#)

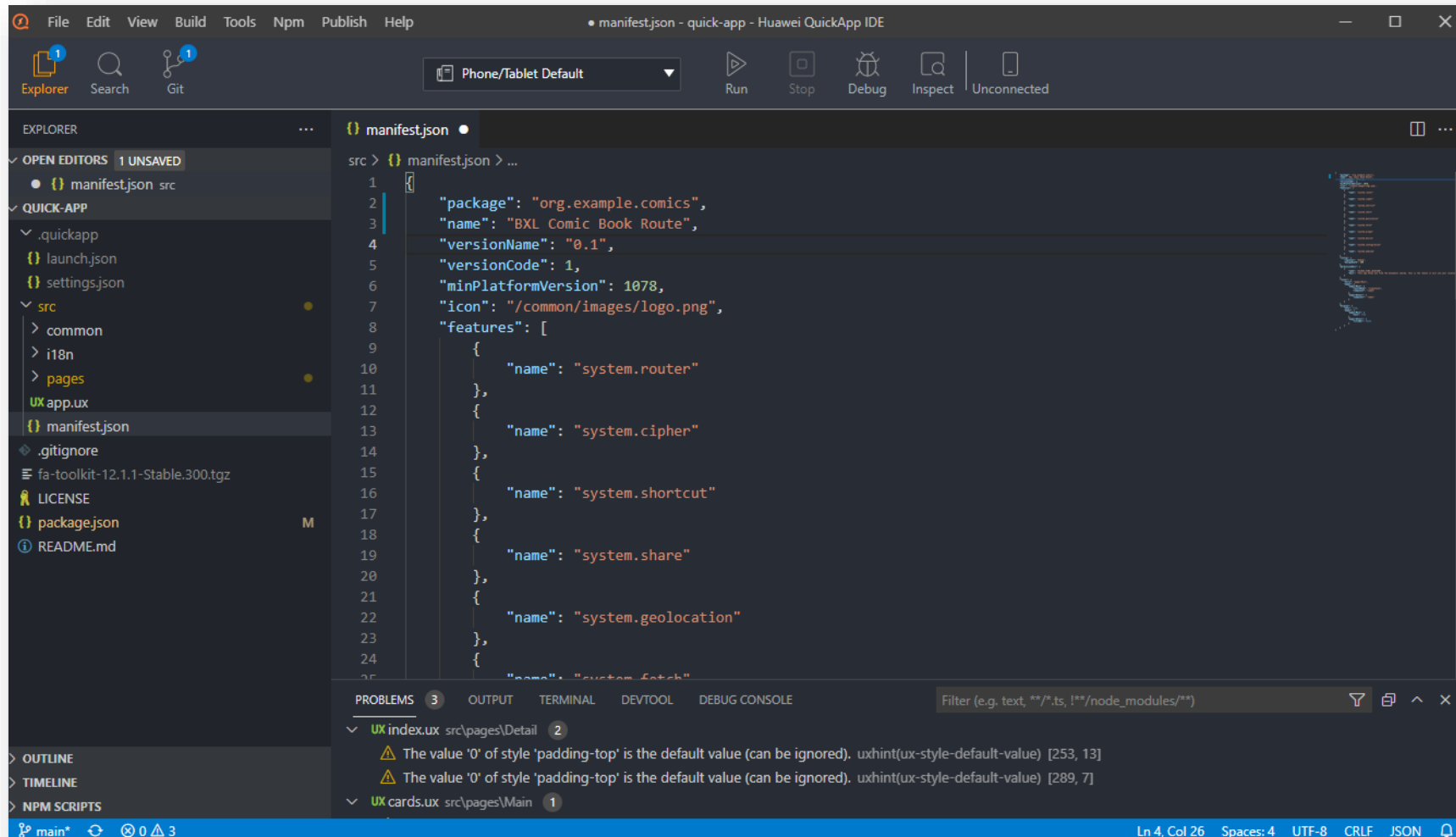
[Step 2. populate the database](#)

[Step 3. publish the database](#)

[Step 4. customize the app](#)

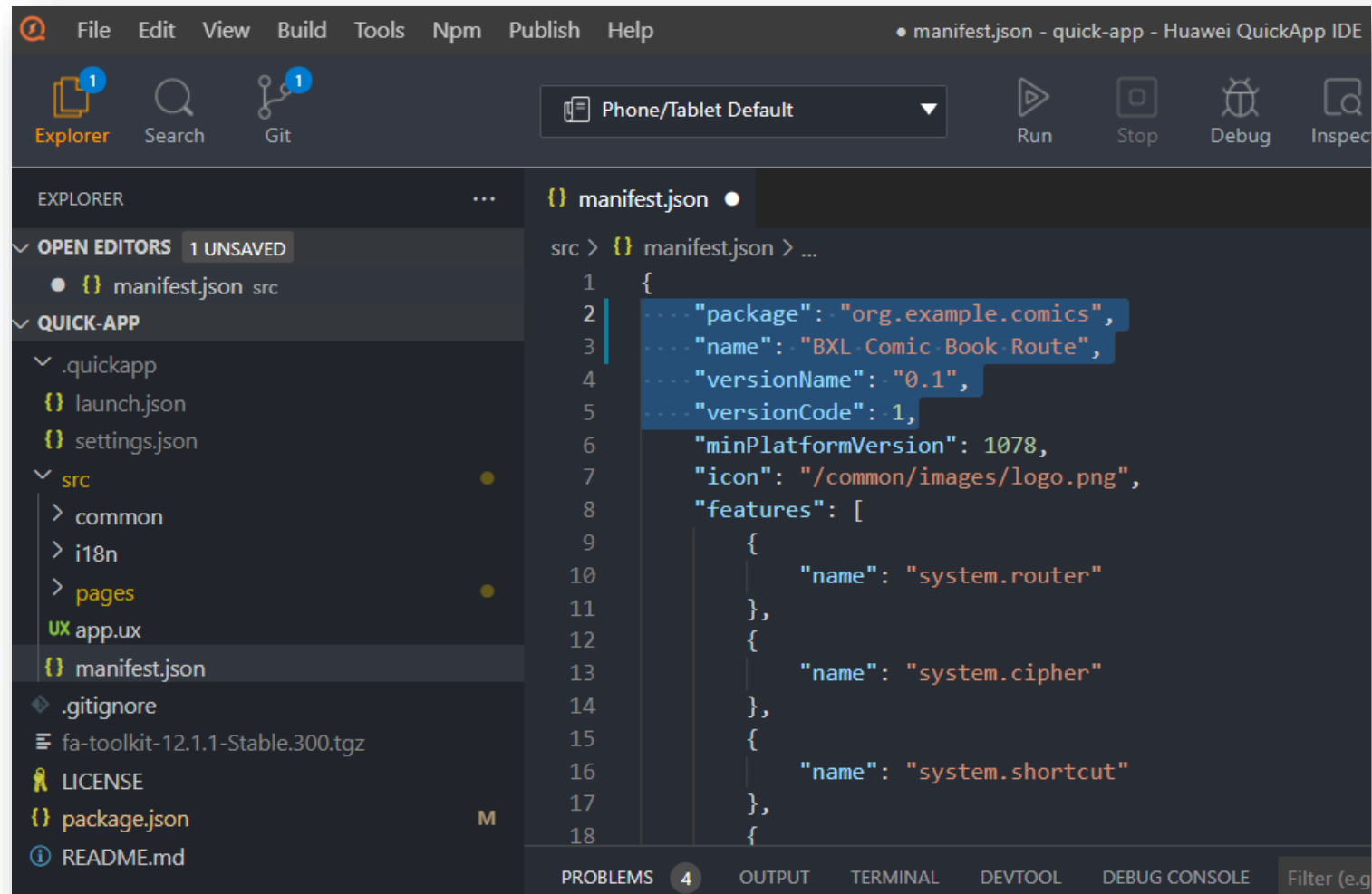
[Step 5. run \(and publish\) the app](#)

Open the code in the Quick App IDE



<https://developer.huawei.com/consumer/en/quickApp-ide>

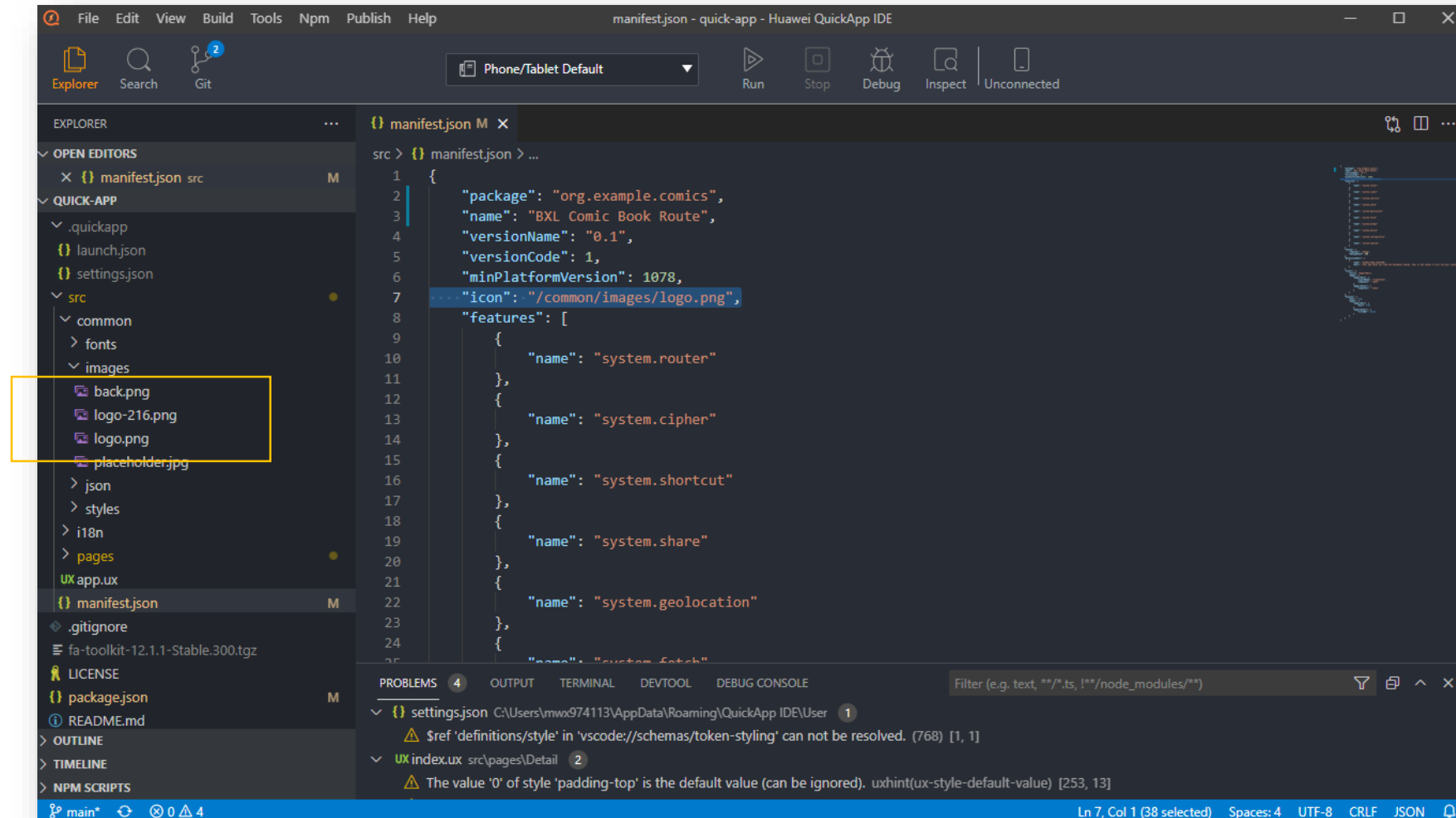
manifest.json with the name and version of your app



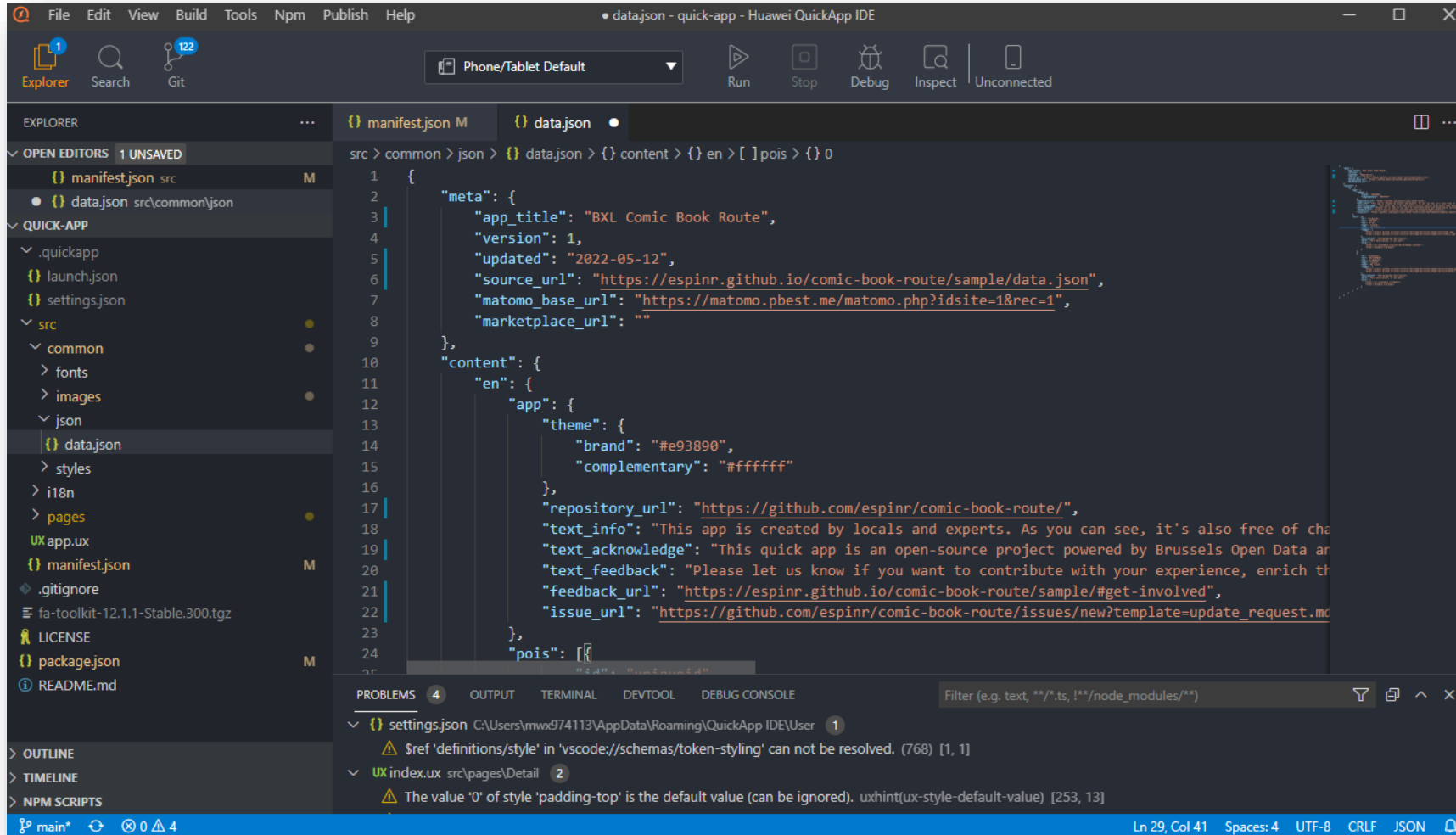
The screenshot shows an IDE interface with a dark theme. The Explorer panel on the left displays a project structure for 'QUICK-APP'. The 'src' directory is expanded, showing sub-directories 'common', 'i18n', and 'pages', along with files 'app.ux', 'manifest.json', '.gitignore', 'fa-toolkit-12.1.1-Stable.300.tgz', 'LICENSE', 'package.json', and 'README.md'. The 'manifest.json' file is selected and open in the editor. The code in the editor is as follows:

```
src > {} manifest.json > ...
1  {
2  ... "package": "org.example.comics",
3  ... "name": "BXL-Comic-Book-Route",
4  ... "versionName": "0.1",
5  ... "versionCode": 1,
6  "minPlatformVersion": 1078,
7  "icon": "/common/images/logo.png",
8  "features": [
9      {
10         "name": "system.router"
11     },
12     {
13         "name": "system.cipher"
14     },
15     {
16         "name": "system.shortcut"
17     },
18     {
```


Rewrite the app logo and the icon (also *placeholder.jpg*)



Customize the app with your descriptions and URLs



The screenshot shows the Huawei QuickApp IDE interface. The Explorer panel on the left displays the project structure, including the 'src' directory and the 'data.json' file. The main editor area shows the content of 'data.json', which is a JSON object with the following structure:

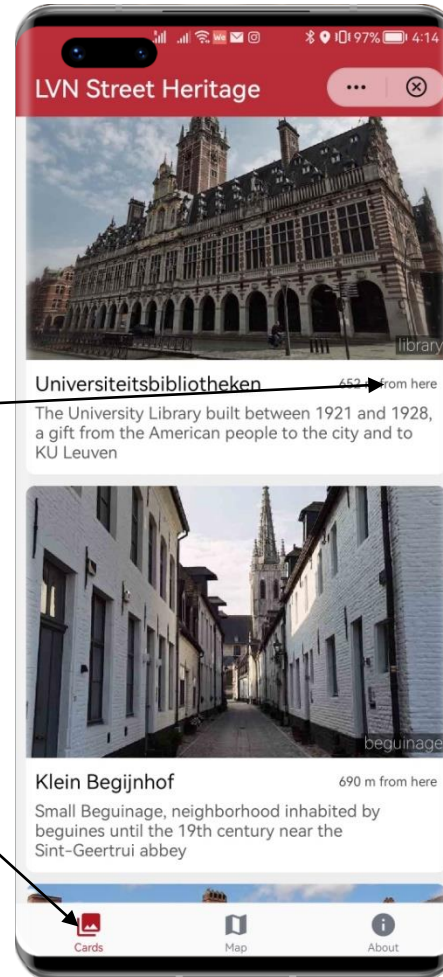
```
src > common > json > {} data.json > {} content > {} en > [ ] pois > {} 0
1 {
2   "meta": {
3     "app_title": "BXL Comic Book Route",
4     "version": 1,
5     "updated": "2022-05-12",
6     "source_url": "https://espinr.github.io/comic-book-route/sample/data.json",
7     "matomo_base_url": "https://matomo.pbtest.me/matomo.php?idsite=1&rec=1",
8     "marketplace_url": ""
9   },
10  "content": {
11    "en": {
12      "app": {
13        "theme": {
14          "brand": "#e93890",
15          "complementary": "#ffffff"
16        },
17        "repository_url": "https://github.com/espinr/comic-book-route/",
18        "text_info": "This app is created by locals and experts. As you can see, it's also free of charge.",
19        "text_acknowledge": "This quick app is an open-source project powered by Brussels Open Data and the City of Brussels.",
20        "text_feedback": "Please let us know if you want to contribute with your experience, enrich the app and help us improve it.",
21        "feedback_url": "https://espinr.github.io/comic-book-route/sample/#get-involved",
22        "issue_url": "https://github.com/espinr/comic-book-route/issues/new?template=update_request.md"
23      }
24    },
25    "pois": [
26      {
27        "name": "Comic Book Route",
28        "description": "Comic Book Route",
29        "url": "https://github.com/espinr/comic-book-route/",
30        "image": "https://github.com/espinr/comic-book-route/blob/main/src/pages/Detail/ComicBookRouteImage.png",
31        "type": "Comic Book Route"
32      }
33    ]
34  }
35 }
```

The IDE interface includes a menu bar (File, Edit, View, Build, Tools, Npm, Publish, Help), a toolbar with icons for Explorer, Search, Git, Run, Stop, Debug, Inspect, and Unconnected, and a status bar at the bottom showing the current file path (Ln 29, Col 41), spaces (4), encoding (UTF-8), line endings (CRLF), and file type (JSON).

Internationalization: adapted to user's locale

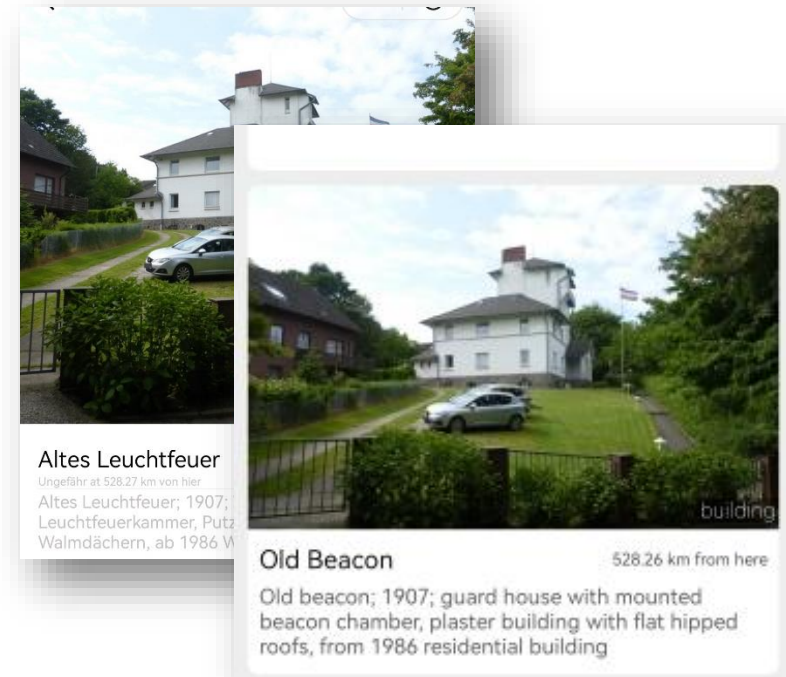
USER INTERFACE

User interface (UI) in different languages.
The community may help translate the UI (10' per language)



CONTENT (Pols database)

Content can be in different languages
For instance: German and English below



See [more details](#) about the setup

Process

Step 1. clone and configure the project

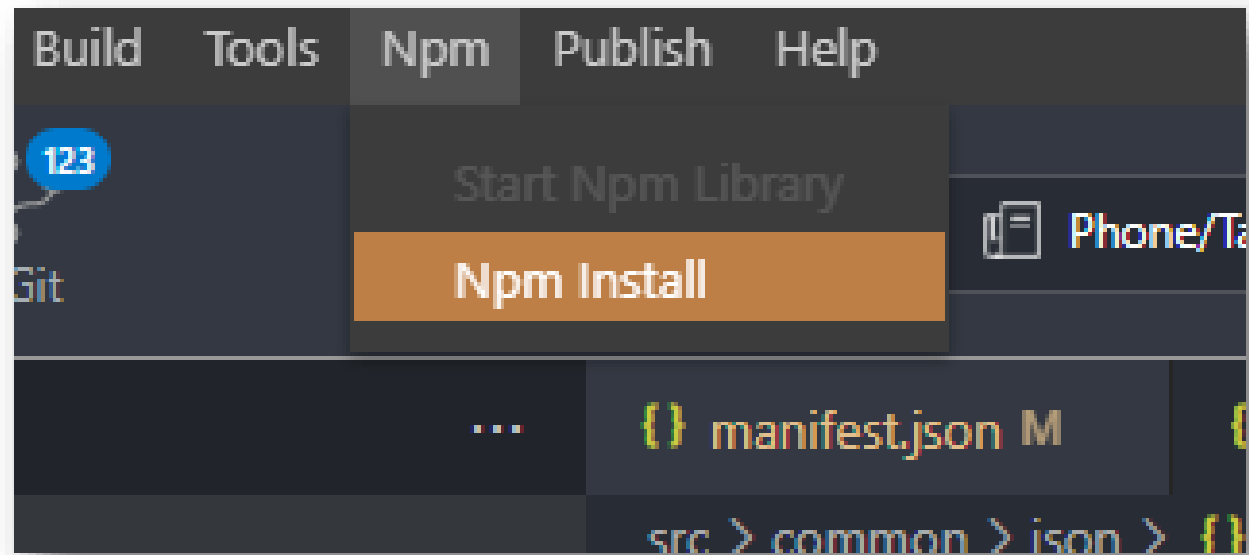
Step 2. populate the database

Step 3. publish the database

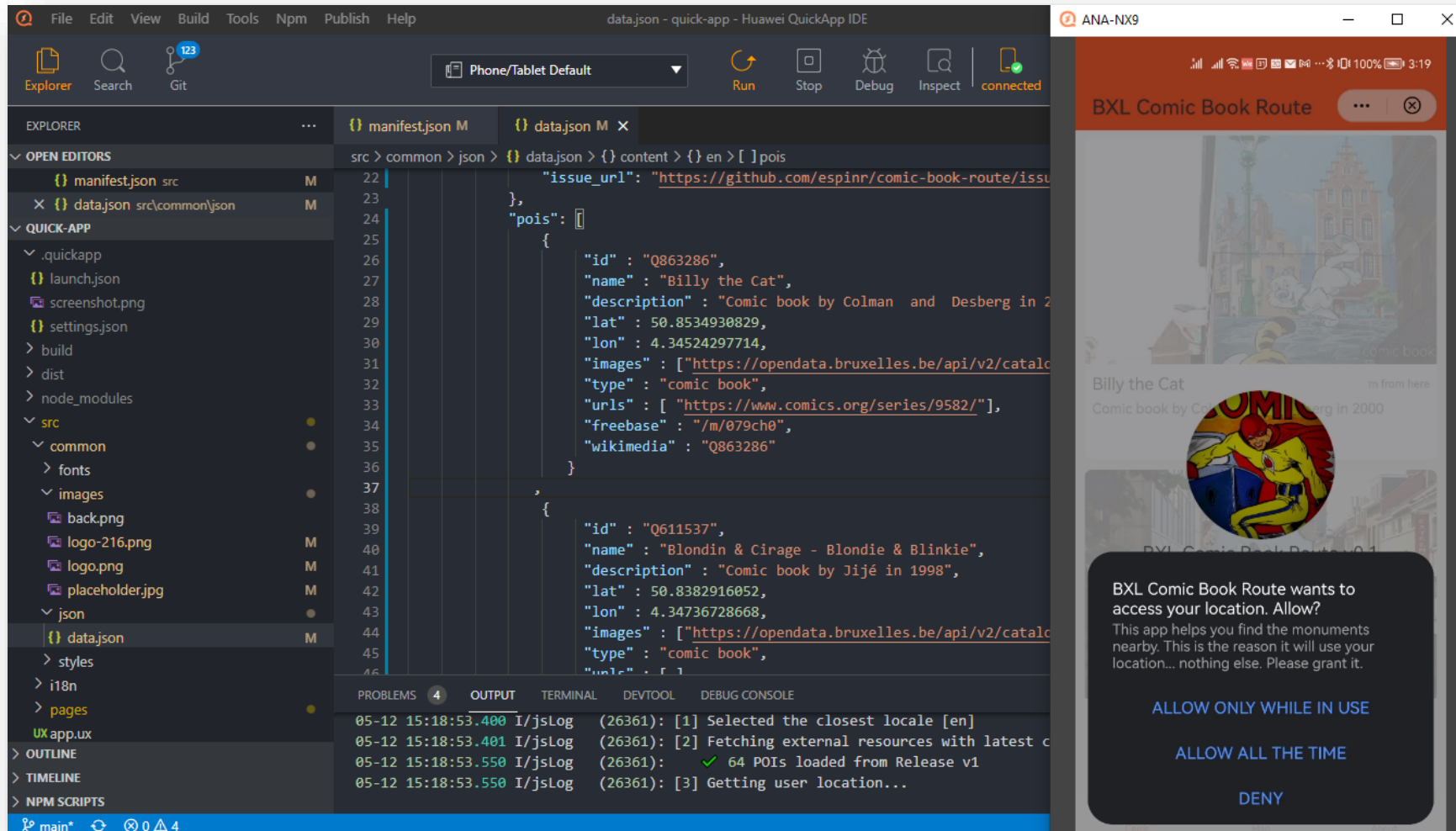
Step 4. customize the app

Step 5. run (and publish) the app

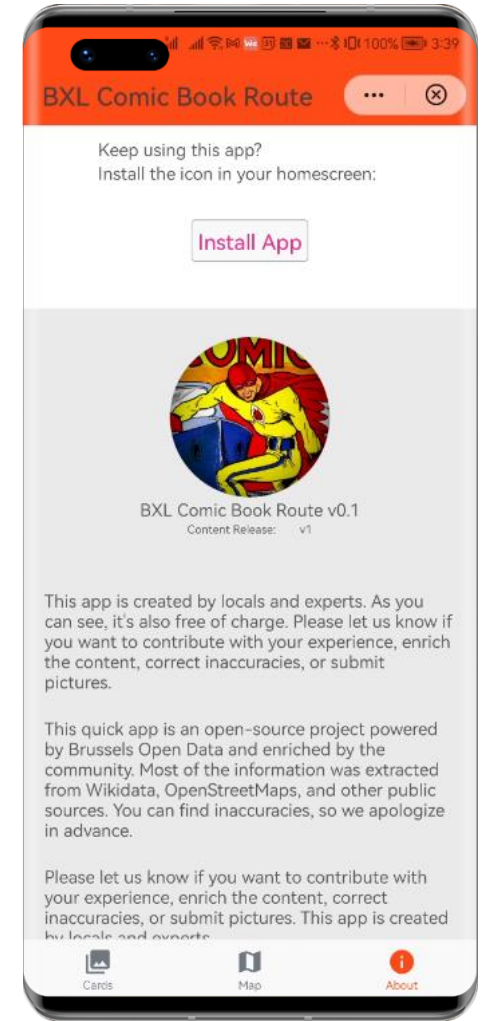
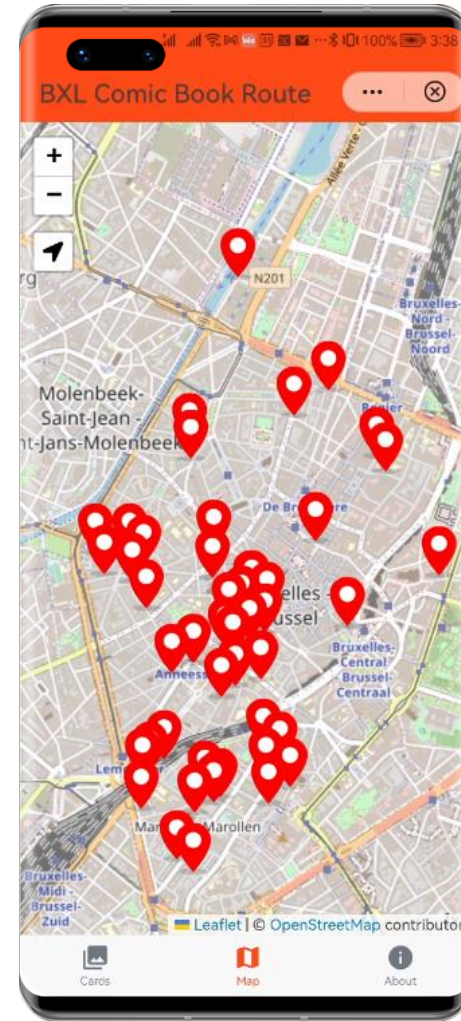
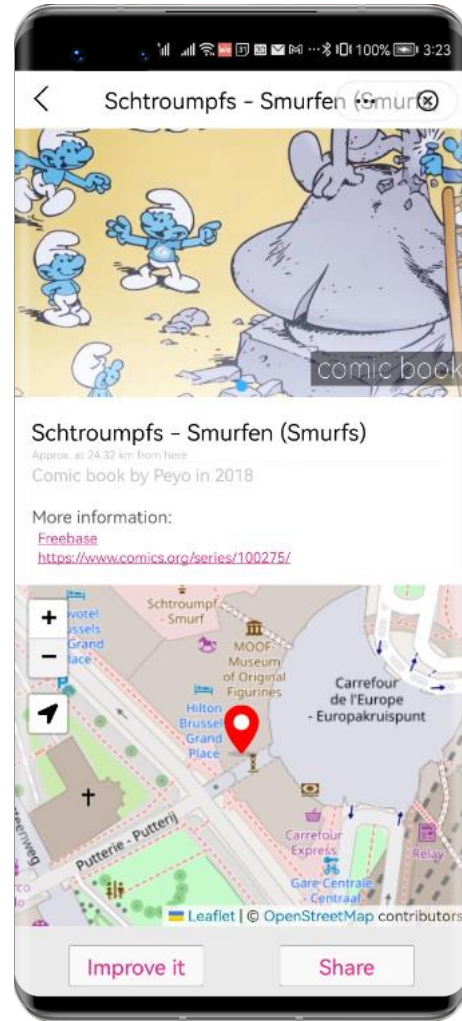
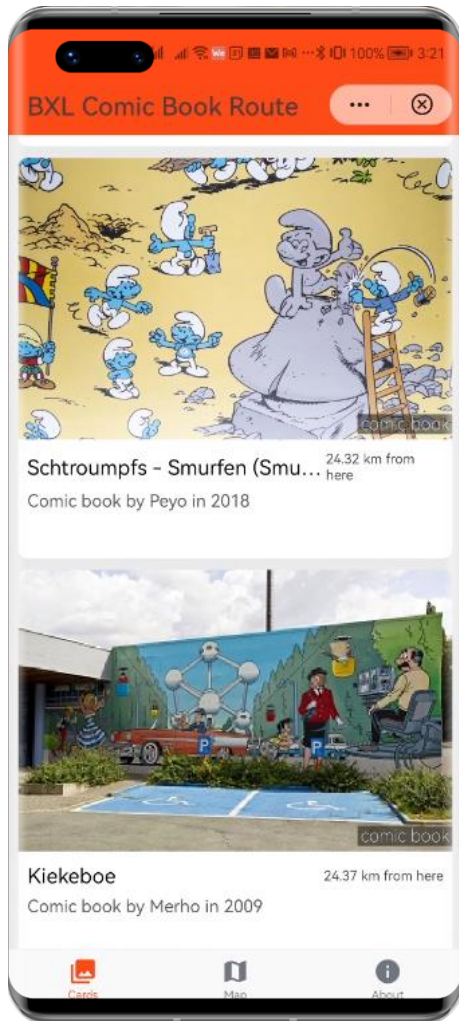
Install the dependencies

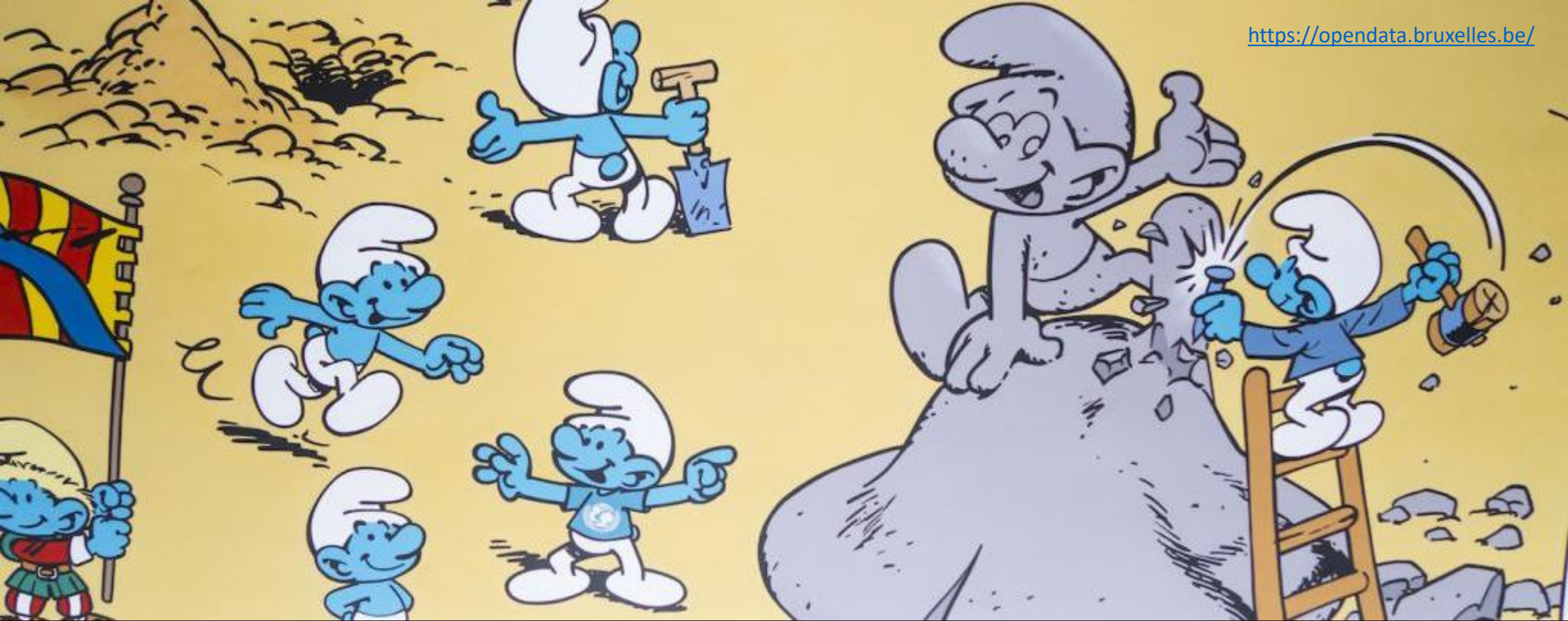


Connect your device and run the first test



Quick App ready in less than one hour





A big thanks to Brussels Open Data

See the quick app: <https://appgallery.huawei.com/app/C106421983>

Reuse the project: <https://github.com/pbesteu/comic-book-route-quick-app>

Martin Alvarez
@espinr

Process

[Step 1. clone and configure the project](#)

[Step 2. populate the database](#)

[Step 3. publish the database](#)

[Step 4. customize the app](#)

[Step 5. run \(and publish\) the app](#)

[maintenance] [How to add new items \(Pols\)](#)

How to add a new image?

1. Follow the recommendations (ratio aspect and size) for a homogenous look and feel
2. Rename the images in a meaningful way (using the identifier of the PoI)

Example: Chinese Astrolabe



astrolabe.jpg



astrolabe_2.jpg



astrolabe_3.jpg



astrolabe_4.jpg

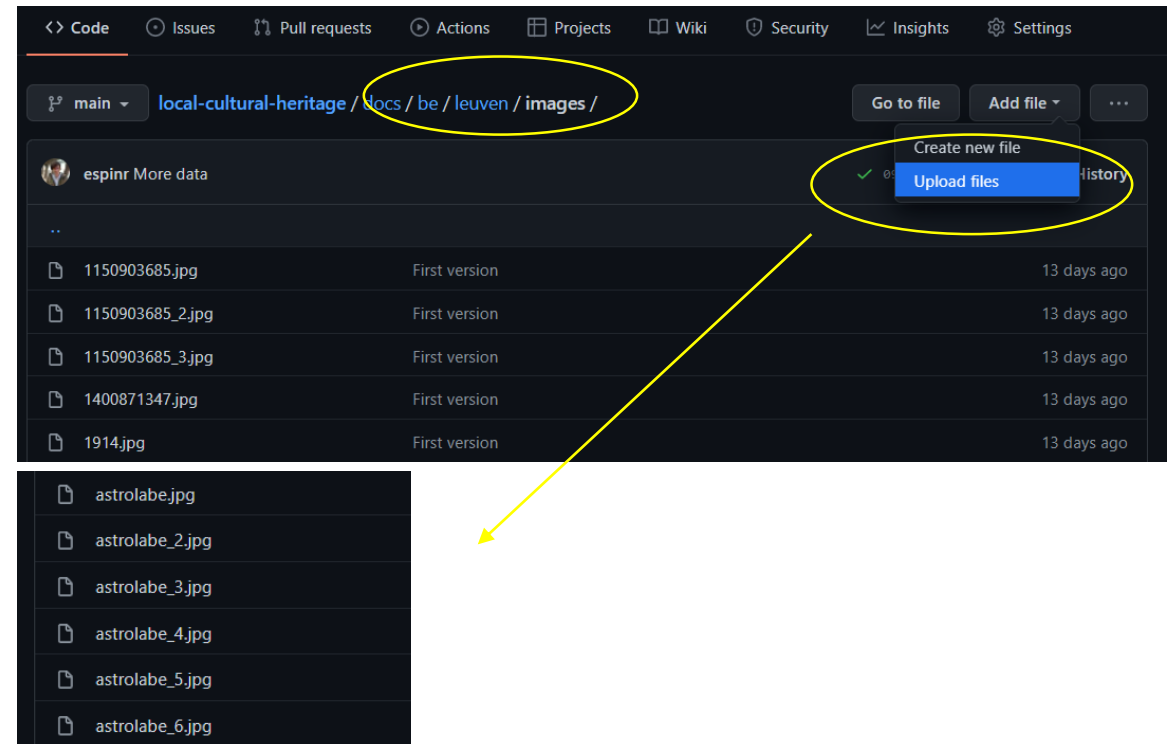


astrolabe_5.jpg



astrolabe_6.jpg

3. Upload them to the `./images/` folder of your repository



Now these images are available at:

<https://espinr.github.io/local-cultural-heritage/be/leuven/images/astrolabe.jpg>

https://espinr.github.io/local-cultural-heritage/be/leuven/images/astrolabe_2.jpg ...

And can be used in the description of the Pols

How to add a new Pol in the database

(1) Identify the coordinates (latitude, longitude)

- > Probably your smartphone geolocates the image, just check the information of the picture
- > Or, use a map tool to collect the coordinates



(2) Describe the point of interest in the **data.json** file in the repository. Just add a new object at the end with these attributes:

```
{  
  "id": "astrolabe",  
  "name": "Kangxi Hemelglobe",  
  "description": "Functional Chinese Astrolabe engraved with 1.888 stars and celestial bodies",  
  "more": "This bronze globe weighs 3.850 kg and is 2.76 metres high. The celestial bodies inclu",  
  "lat": "50.87525674044207",  
  "lon": "4.700880771666212",  
  "type": "astrolabe",  
  "images": [  
    "https://espinr.github.io/local-cultural-heritage/be/leuven/images/astrolabe.jpg",  
    "https://espinr.github.io/local-cultural-heritage/be/leuven/images/astrolabe_2.jpg",  
    "https://espinr.github.io/local-cultural-heritage/be/leuven/images/astrolabe_3.jpg",  
    "https://espinr.github.io/local-cultural-heritage/be/leuven/images/astrolabe_4.jpg",  
    "https://espinr.github.io/local-cultural-heritage/be/leuven/images/astrolabe_5.jpg",  
    "https://espinr.github.io/local-cultural-heritage/be/leuven/images/astrolabe_6.jpg"  
  ],  
  "urls": [  
    "http://2020group1.onlinepublishing.ulyssis.be/kangxi-hemelglobe-atrechtcollege"  
  ]  
}
```

At the top of the document, change the version

In a few seconds, the Pol is accessible on the quick app

- Publishers don't need to create another quick app release and upload it to AppGallery
 - > Just modify the database, upload pictures
- This process should be moderated by one of two experts for supervision, curation, and approval of the changes (configuration in GitHub).

