Simon Jockers
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Hacking the statistics office

👉 github.com/datenguide

datenguide

datengui.de
@datenguide

Official Statistics

- Statistics published by **governments** and other **public bodies**
- Statistics about **society**, the **environment** or the **economy**
- Statistics created by **statistical offices** on a national or regional level

Examples

- **Schools**
  (students, graduates by school type)
- **Garbage removal**
  (recycling, residual waste, etc.)
- **Migration & naturalisation**
  (origin, number of years in the country)

Image credits: Crop of original painting “Anbetung der Hirten” by Giorgione (public domain)

Where does data come from?

- **Macro census** (“Volkszählung”)
- **Micro census**
- **Secondary statistics**
- Statistics based on **population registries** (“Registerzensus”)

public good

-> open data

What is it good for?

- **Reporting**: Backing your story with numbers, finding stories in data
- **Fact checking** & debunking misinformation
- **Lobbying** for social causes

Limits

- Privacy: All data is **anonymised**
- Only **aggregate-level data** gets published (how many instead of who)
- People or companies cannot be identified

Example

👉 **web.br.de/interaktiv/landtag-demografie/**

open data

-> available online,
free for you to reuse.

5 ★ Open Data

⭐ Available on the **Web**, under an **open license**

⭐ **Structured** data (Spreadsheets over PDF)

⭐ **Non-proprietary** data formats (CSV over Excel)

⭐ Use **URIs** (let people link to data)

⭐ Link to related data (discoverability, context)

(Tim Berners-Lee, https://5stardata.info)

Official statistics in Germany

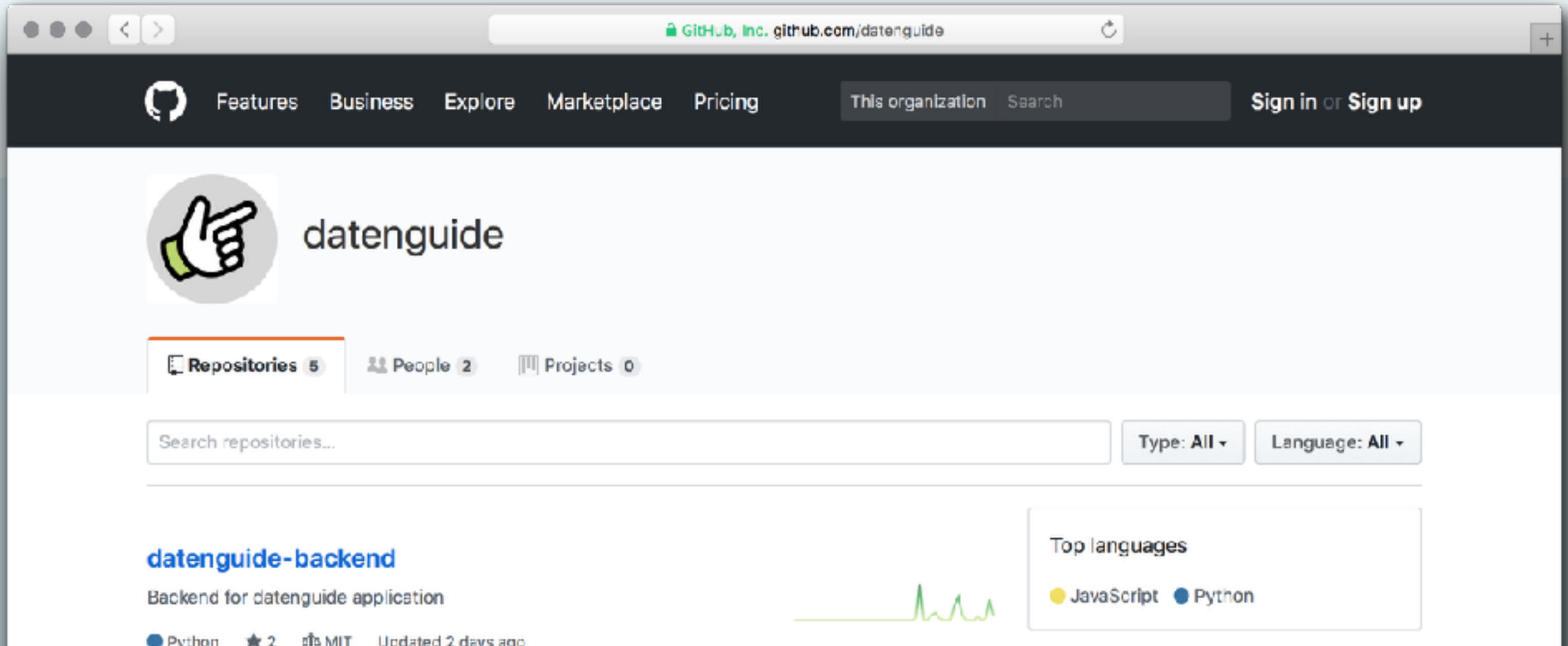
- **“Genesis”** Data Portal Software
  - **Several instances** (genesis-online.de, regionalstatistik.de)
  - Data cube with **SOAP-API**
  - Frontend provides non-machine-readable **CSV & Excel** downloads
- **Data Licence Germany** – Attribution – Version 2.0 (dl-de/by-2-0)

Problems

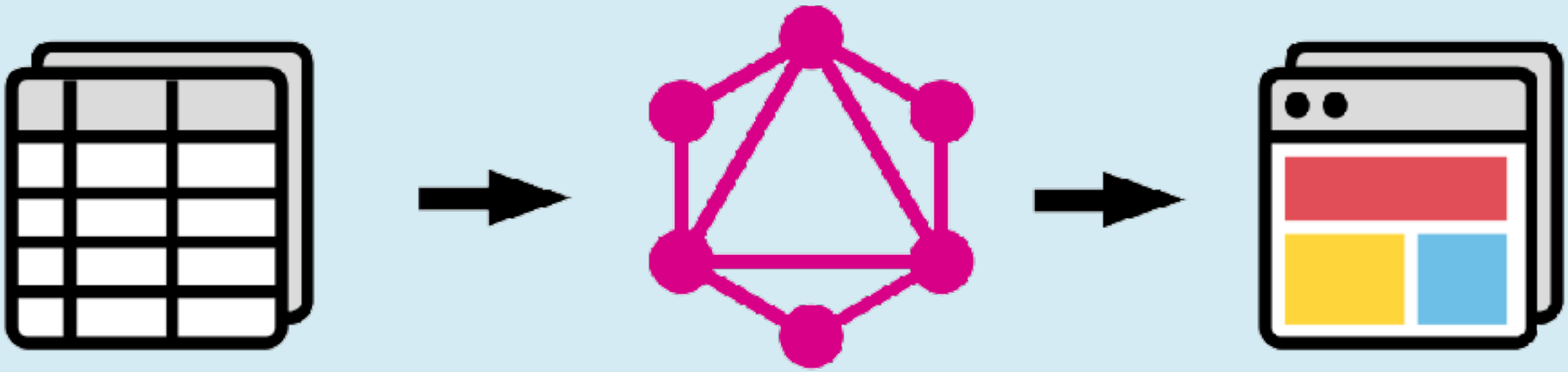
- **Crappy software**
  made for bureaucrats by bureaucrats
- **Not usable for normal people**
  such as journalists, civil society orgs
- **Data is not easily reusable**
  no open, machine-readable data formats;
  no modern APIs

open source

👉 github.com/datenguide



Datenguide data pipeline

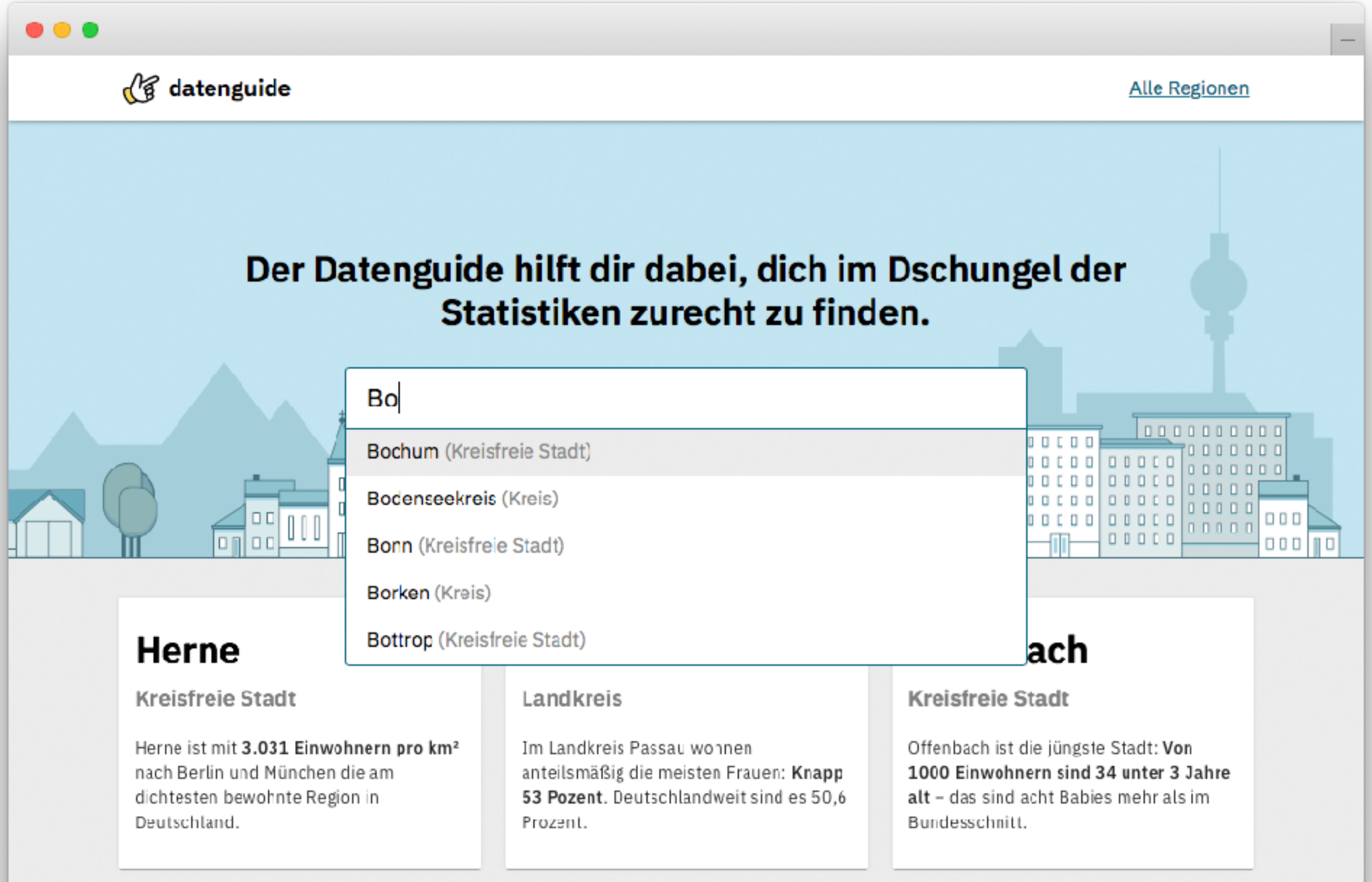


Data import **GraphQL API** **Data portal**

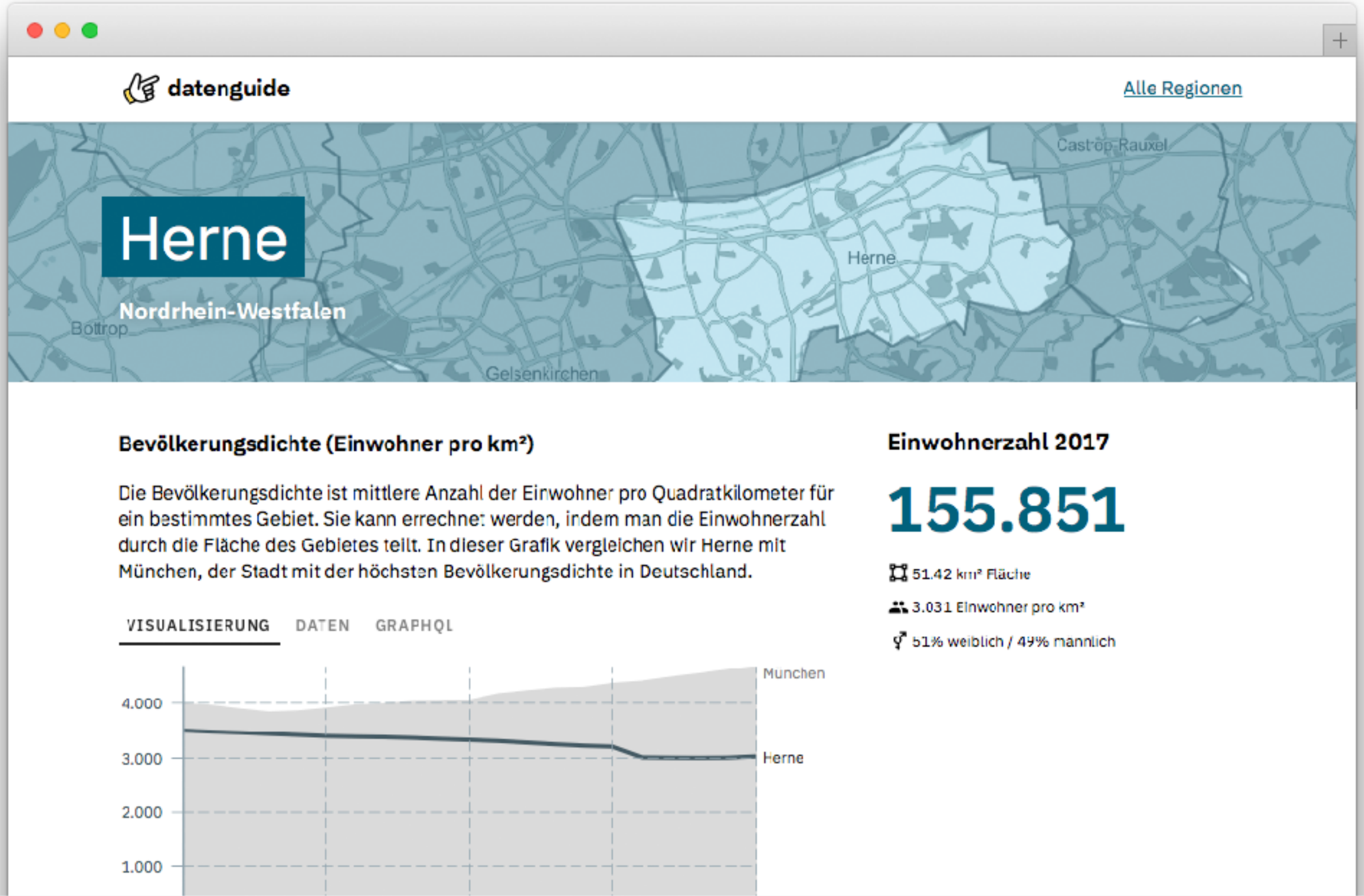
datenguide-frontend

- Generates individual pages for all **German regions** (NUTS 1-3):
  - 16 Federal states
  - ~ 400 Districts (Landkreise) and cities
- **Visualises and explains** the data
- Provides **machine-readable CSV**

datengui.de (frontend)



datengui.de (frontend)



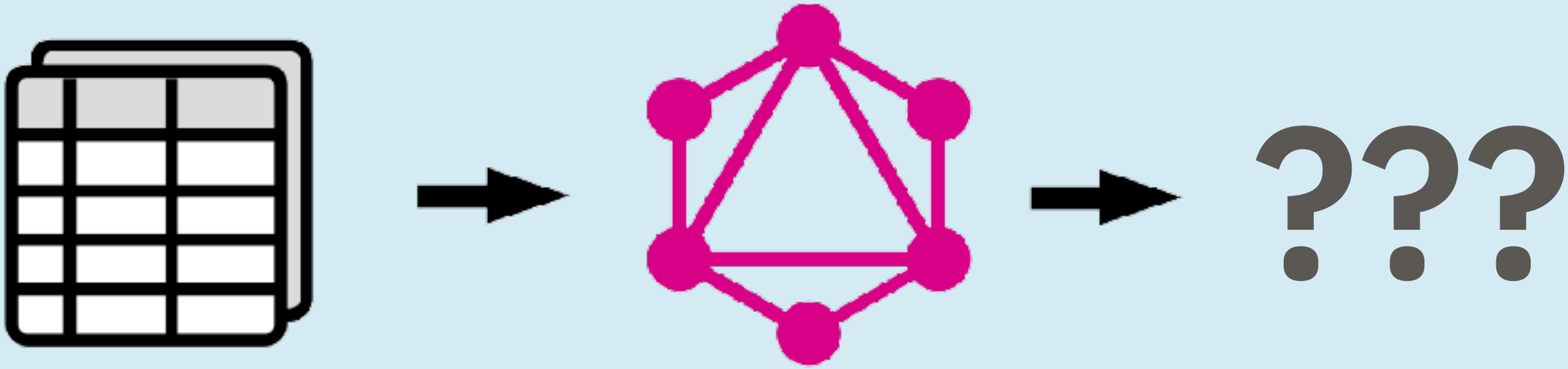
datenguide-frontend

“**JAM-Stack**” (with **Gatsby & React**):

- **JavaScript** for dynamic functionality
- Built upon reusable **APIs**, accessed over HTTPS with JavaScript
- Static **markup**, prebuilt at deploy time

👉 **github.com/datenguide/datenguide-frontend**

Datenguide API



Data import **GraphQL API** **Your use case**

👉 **https://api.genesapi.org/ (alpha!)**

datenguide-backend

- **Python**, **Flask**, and **Elastic Search**
- **Imports official statistics** data from “Genesis” instances, building upon **github.com/pudo/regenesis**
- Focus on data from **regionalstatistik.de**
- Provides a **GraphQL API**

👉 **github.com/datenguide/datenguide-backend**

API demo

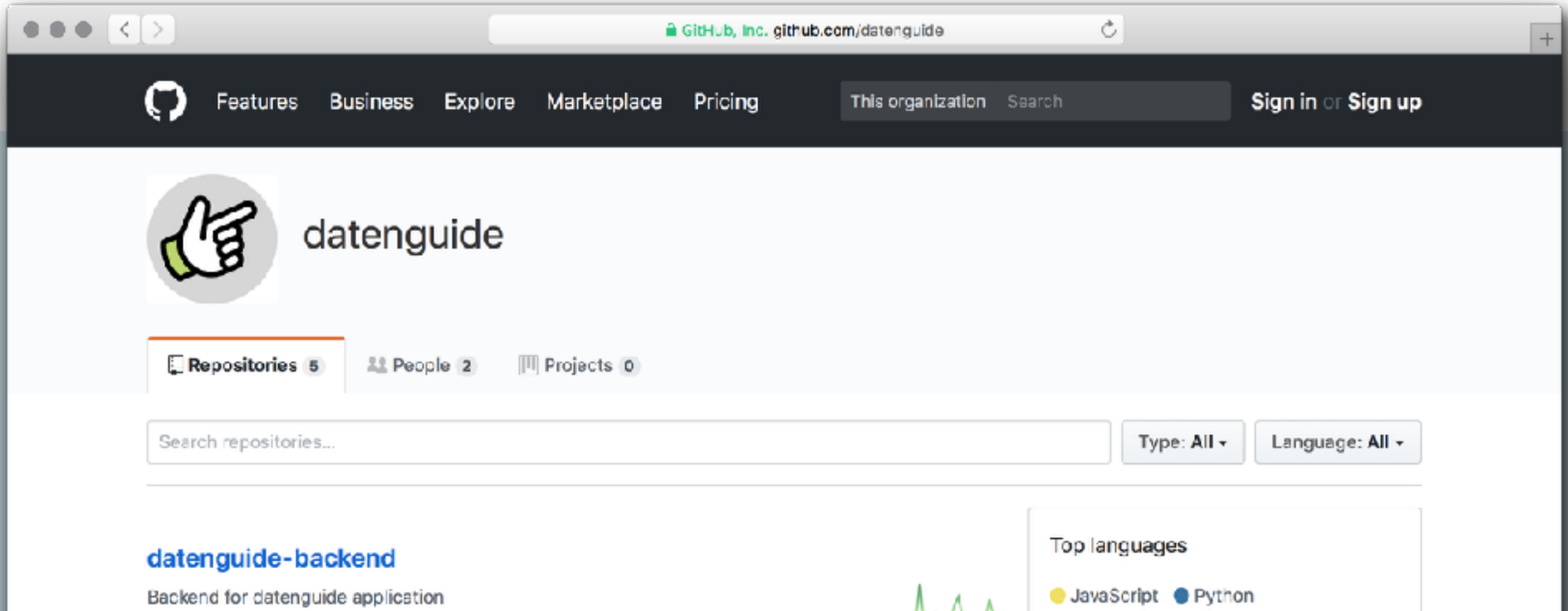
```
query {
  regions(nuts: 3, parent: "10") {
    name
    WAHLSR(year: "2017") {
      value
    }
  }
}
```

👉 **https://api.genesapi.org/ (alpha!)**

Funded by:

MIZ Medieninnovationszentrum Babelsberg

Bundesministerium für Bildung und Forschung

Prototype Fund

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