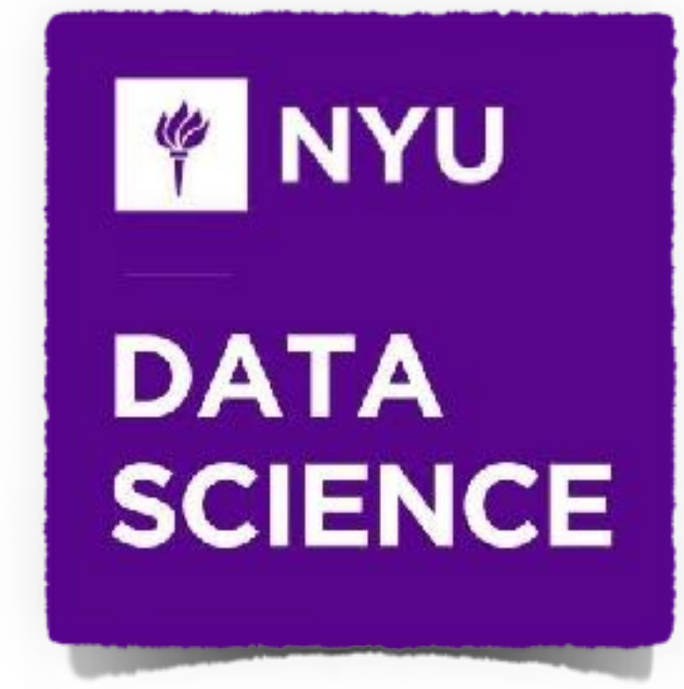
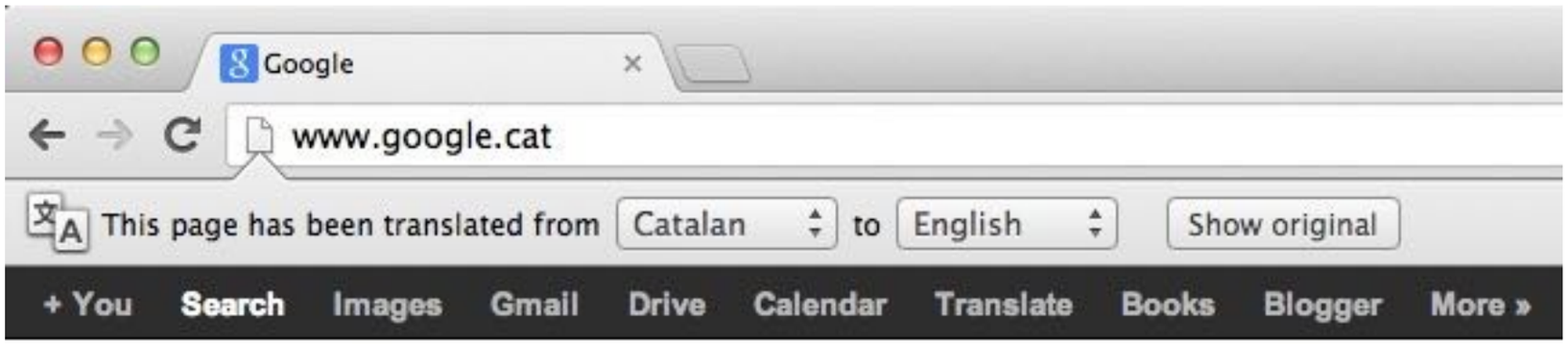
https://bmtgoncalves.github.io/TorinoCourse/

Lecture III - Collaborative Platforms

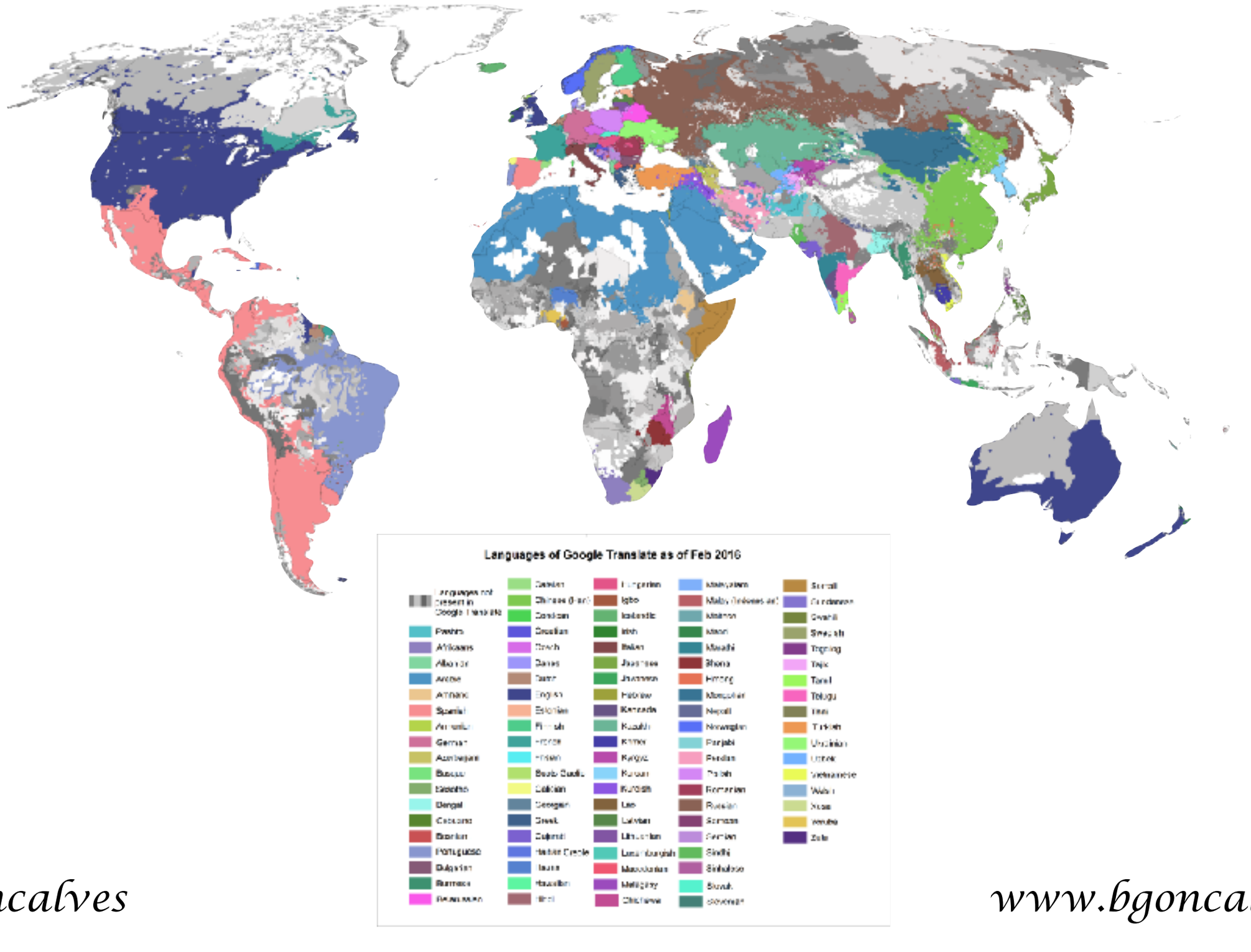
Bruno Gonçalves
www.bgoncalves.com



Chromium Compact Language Detector



Chromium Compact Language Detector



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cld

https://github.com/mikemccand/chromium-compact-language-detector

- C package with C++ and Python bindings
- Particularly messy to install, but very fast and easy to use
- cld.detect(text) returns a list of possible languages and their likelihood
- Very conservative. If it thinks that it can't give a reliable answer, it will return "Unknown"
- Version 2 is better suited to longer pieces of text and it allows for the possibility of different sections being in different languages.

```
import cld

text_it = "Wales lancia la Wikipedia delle news. Contro il fake in campo anche Google"
text_en = "Cassini Spacecraft Re-Establishes Contact After 'Dive' Between Saturn And Its Rings"

lang_it = cld.detect(text_it)
lang_en = cld.detect(text_en)

print(text_it, "is in", lang_it)
print(text_en, "is in", lang_en)
```


language_cld.py

Signal By Language

PLoS One 8, E61981 (2013)

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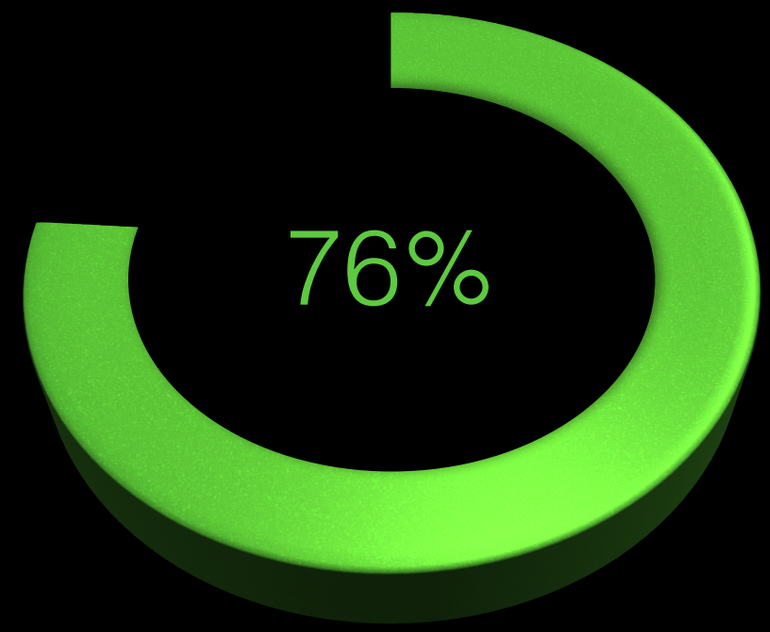
Signal By Language

PLoS One 8, E61981 (2013)

- Italian
- English
- Spanish
- Portuguese
- Other



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Signal By Language

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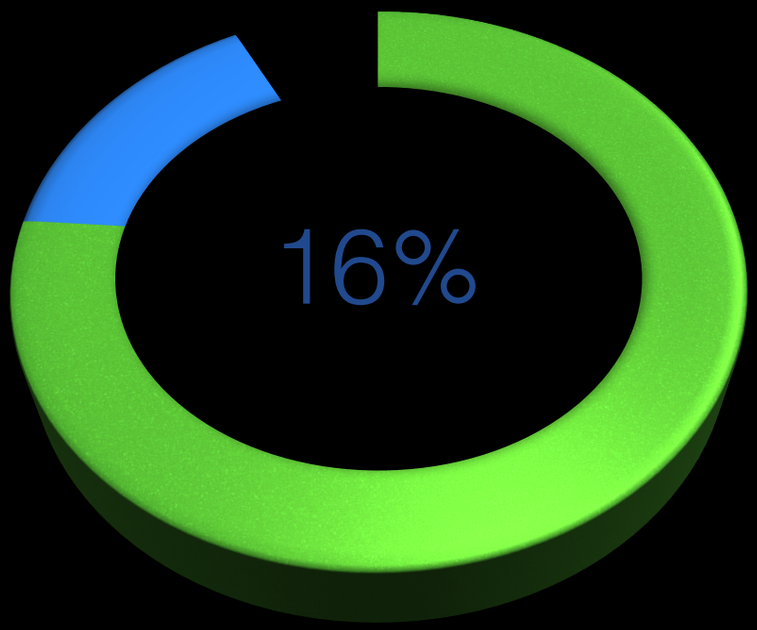

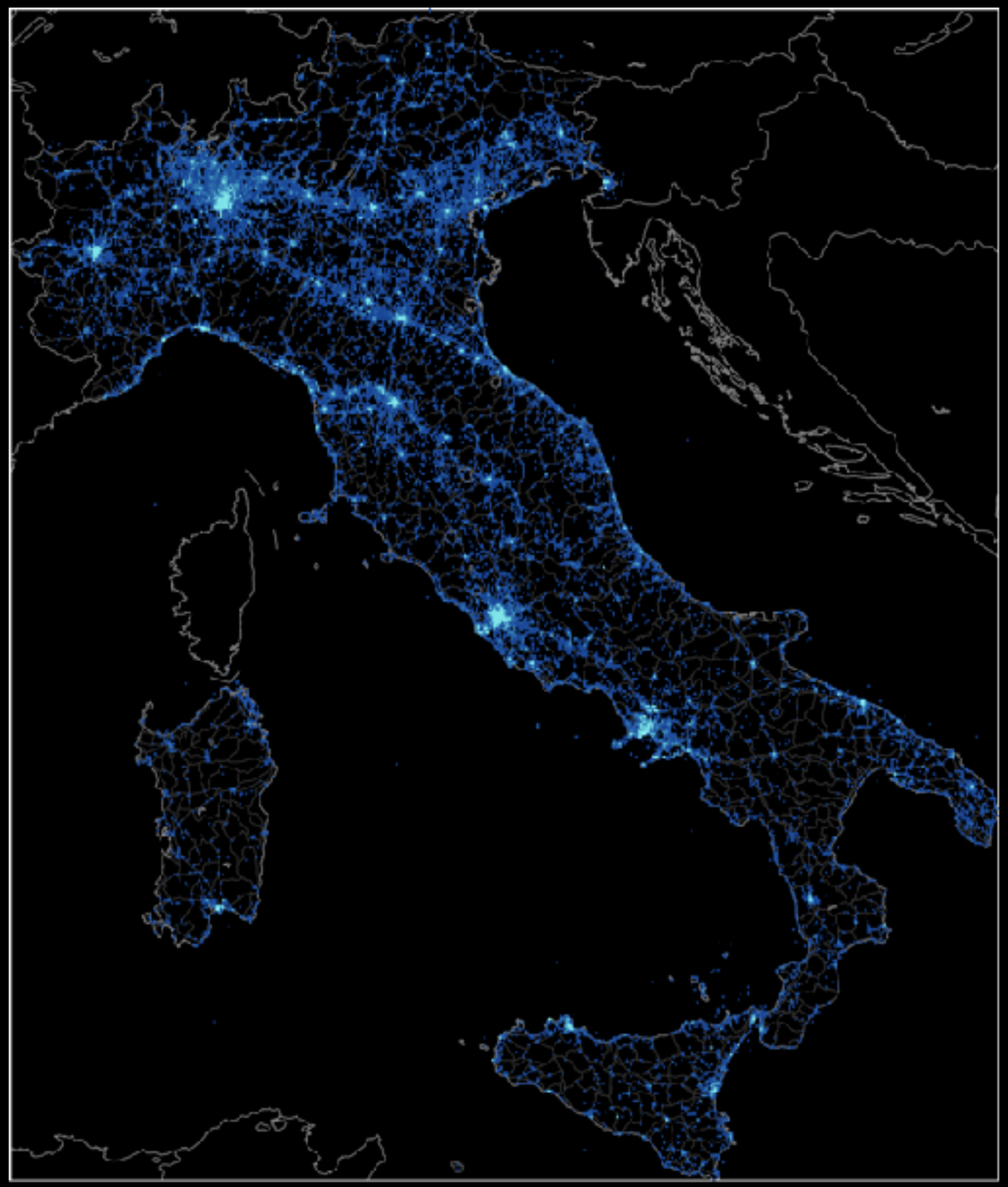

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Signal By Language

PLoS One 8, E61981 (2013)

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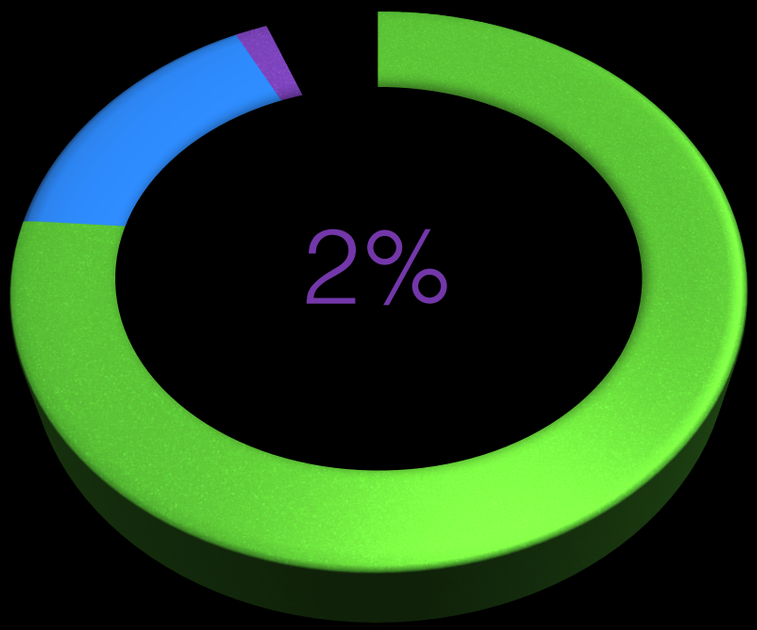

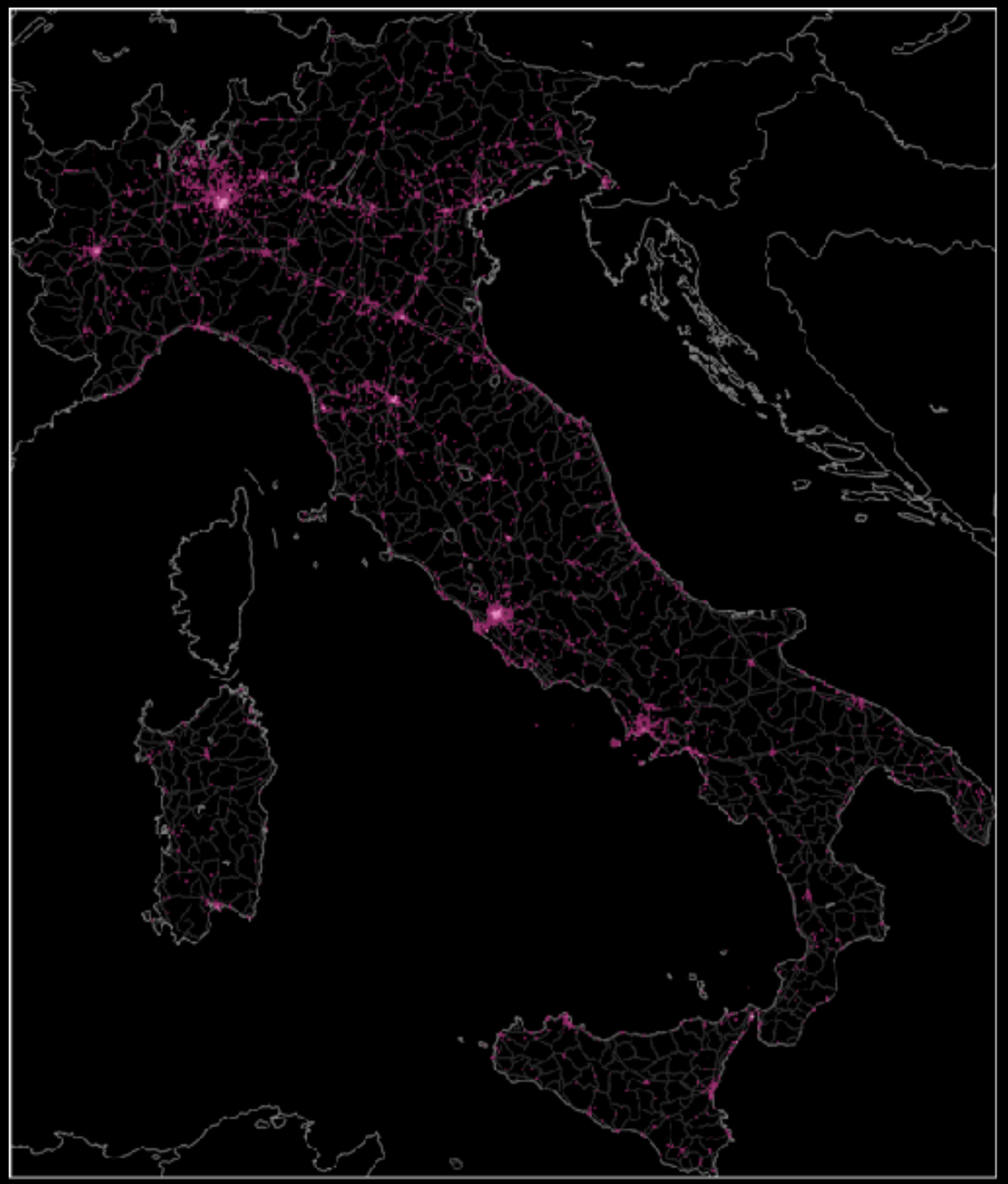

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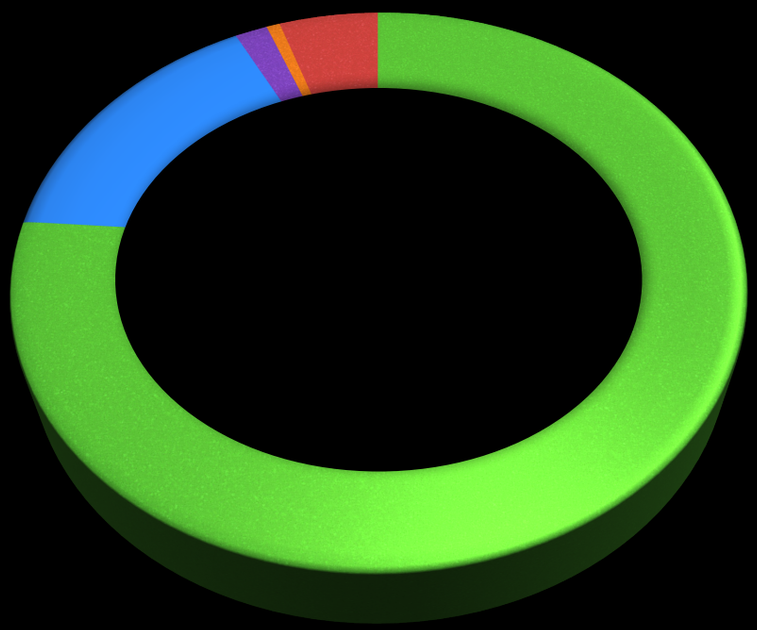
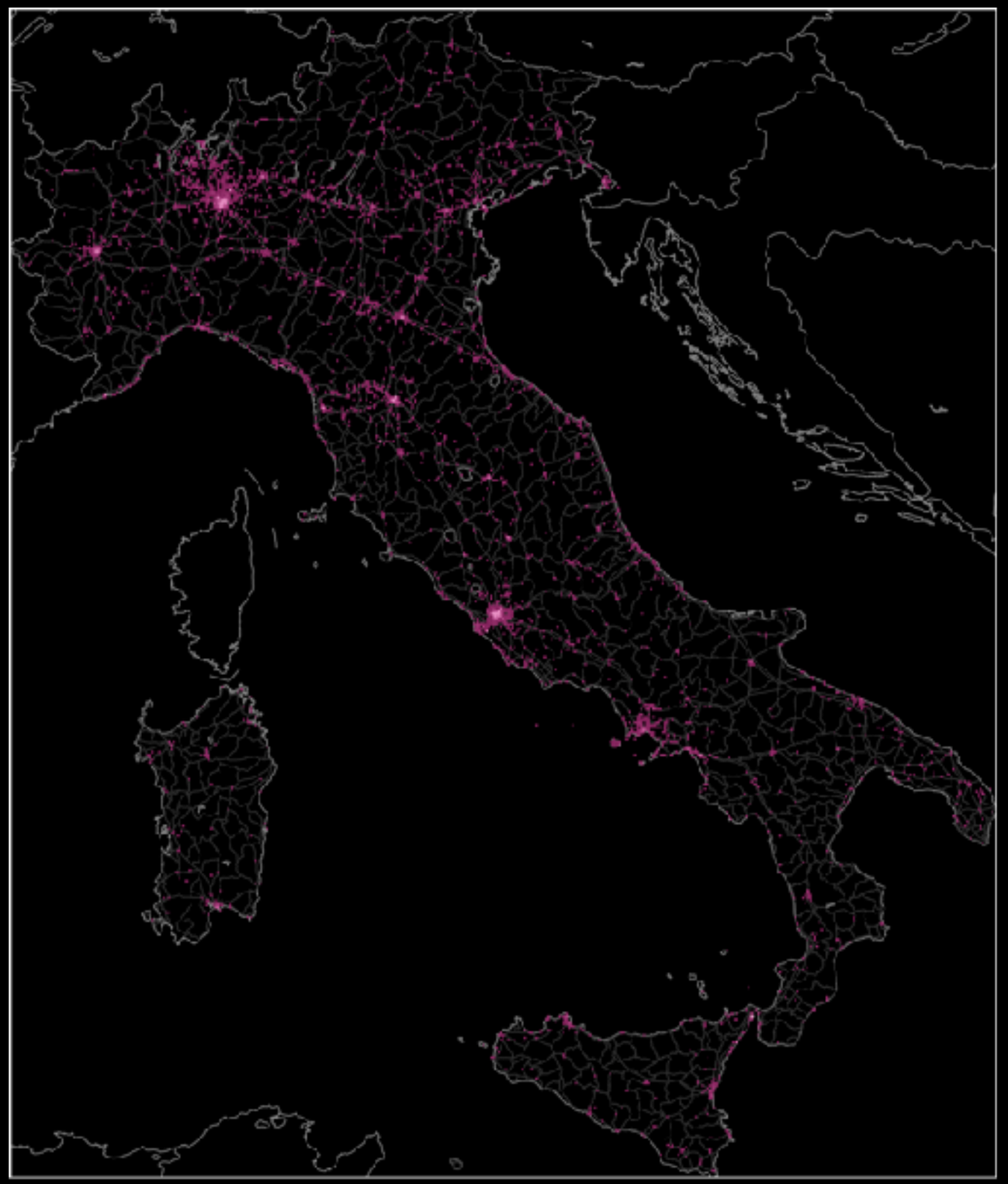
Signal By Language

PLoS One 8, E61981 (2013)

- Italian
- English
- Spanish
- Portuguese
- Other





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langid

https://github.com/saffsd/langid.py

- Entirely written in Python
- Supports 97 languages
- Has the option of retrieving the likelihood for every known language.
- .classify(text) - Returns the most likely language and it's likelihood
- .rank(text) - Returns the results for all known languages.

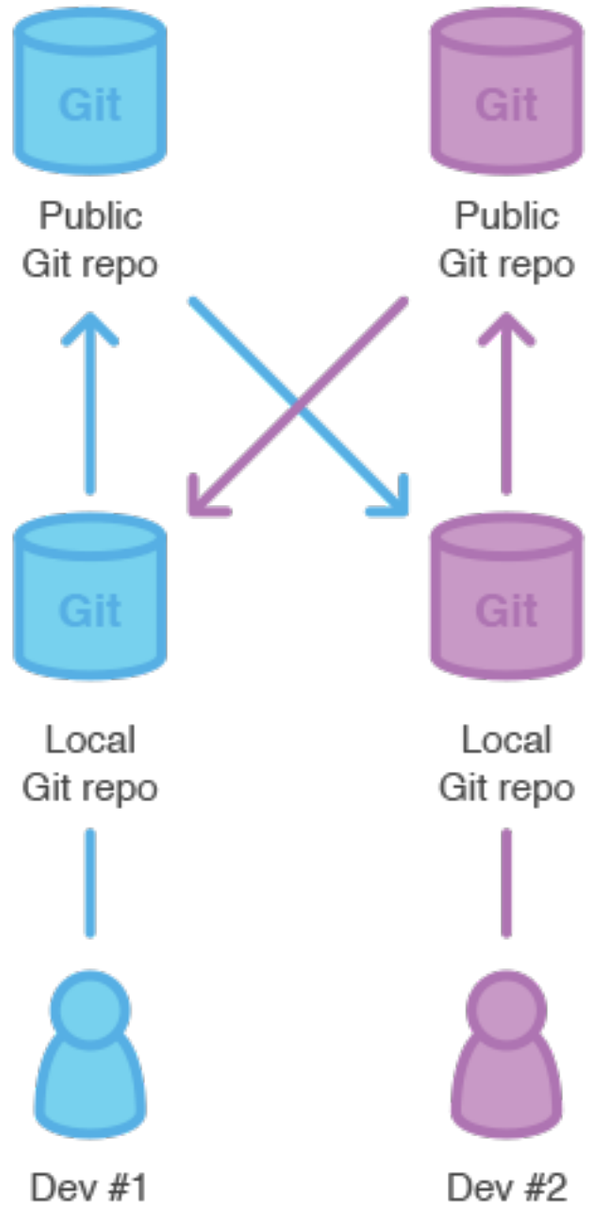
```
import langid

text_it = "Wales lancia la Wikipedia delle news. Contro il fake in campo anche Google"
text_en = "Cassini Spacecraft Re-Establishes Contact After 'Dive' Between Saturn And Its Rings"

lang_it = langid.classify(text_it)
lang_en = langid.classify(text_en)

print(text_it, "is in", lang_it)
print(text_en, "is in", lang_en)
```


language_langid.py

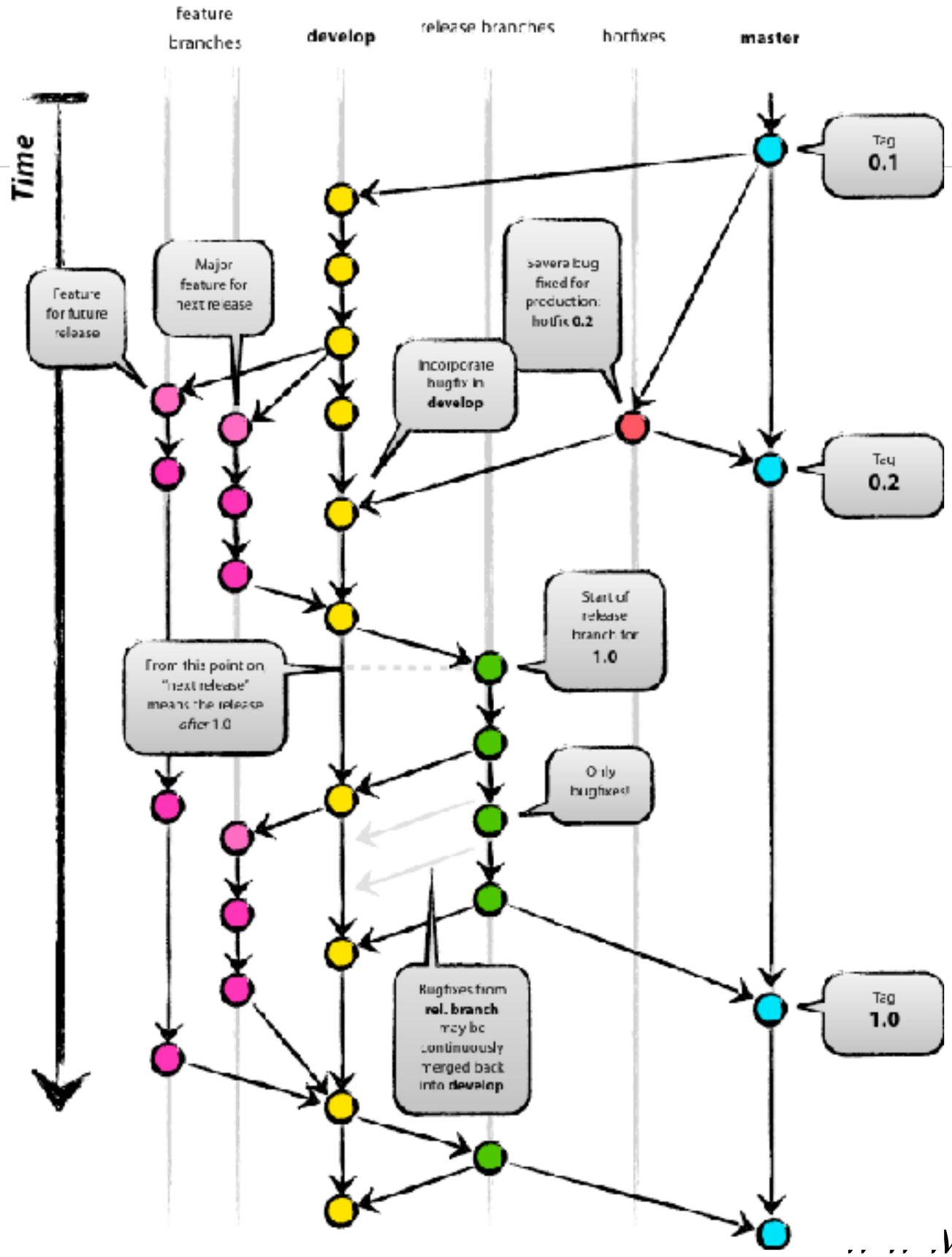
GitHub

git

- Created by Linus Torvalds in 2005
- Distributed Source Code Management System
- "the stupid content tracker"
- Extremely efficient and popular
- Self hosted in 3 days
- Built to handle linux kernel development
- Designed for remote (offline) collaboration



Git Branches



torvalds / linux

Linux kernel source tree

495,037 commits **1** branch **402** releases **4,528** contributors

branch: **master** linux / +

Merge branch 'leds-fixes-for-3.19' of git://git.kernel.org/pub/scm/li… ...

torvalds authored 21 hours ago latest commit 183c901941

Documentation	Merge git://git.kernel.org/pub/scm/linux/kernel/git/nab/target-pending	2 days ago
arch	Merge tag 'stable/for-linus-3.19-rc4-tag' of git://git.kernel.org/pub…	a day ago
block	Revert "blk-mq: Micro-optimize bt_get()"	a month ago
crypto	crypto: af_alg - fix backlog handling	23 days ago
drivers	Merge branch 'leds-fixes-for-3.19' of git://git.kernel.org/pub/scm/li…	21 hours ago
firmware	kbuild: remove obj-n and lib-n handling	3 months ago
fs	Merge branch 'sched-urgent-for-linus' of git://git.kernel.org/pub/scm…	3 days ago
include	Merge tag 'for-linus' of git://git.kernel.org/pub/scm/linux/kernel/gi…	21 hours ago
init	init: fix read-write root mount	28 days ago
ipc	Merge branch 'for-linus' of git://git.kernel.org/pub/scm/linux/kernel…	29 days ago
kernel	Merge branch 'sched-urgent-for-linus' of git://git.kernel.org/pub/scm…	3 days ago
lib	Merge tag 'for_linus-3.19-rc4' of git://git.kernel.org/pub/scm/linux/…	5 days ago
mm	mm: mmu_gather: use tlb->end != 0 only for TLB invalidation	2 days ago

Code
Pull Requests 61
Pulse
Graphs

HTTPS clone URL

https://github.com

You can clone with HTTPS or Subversion.

Download ZIP

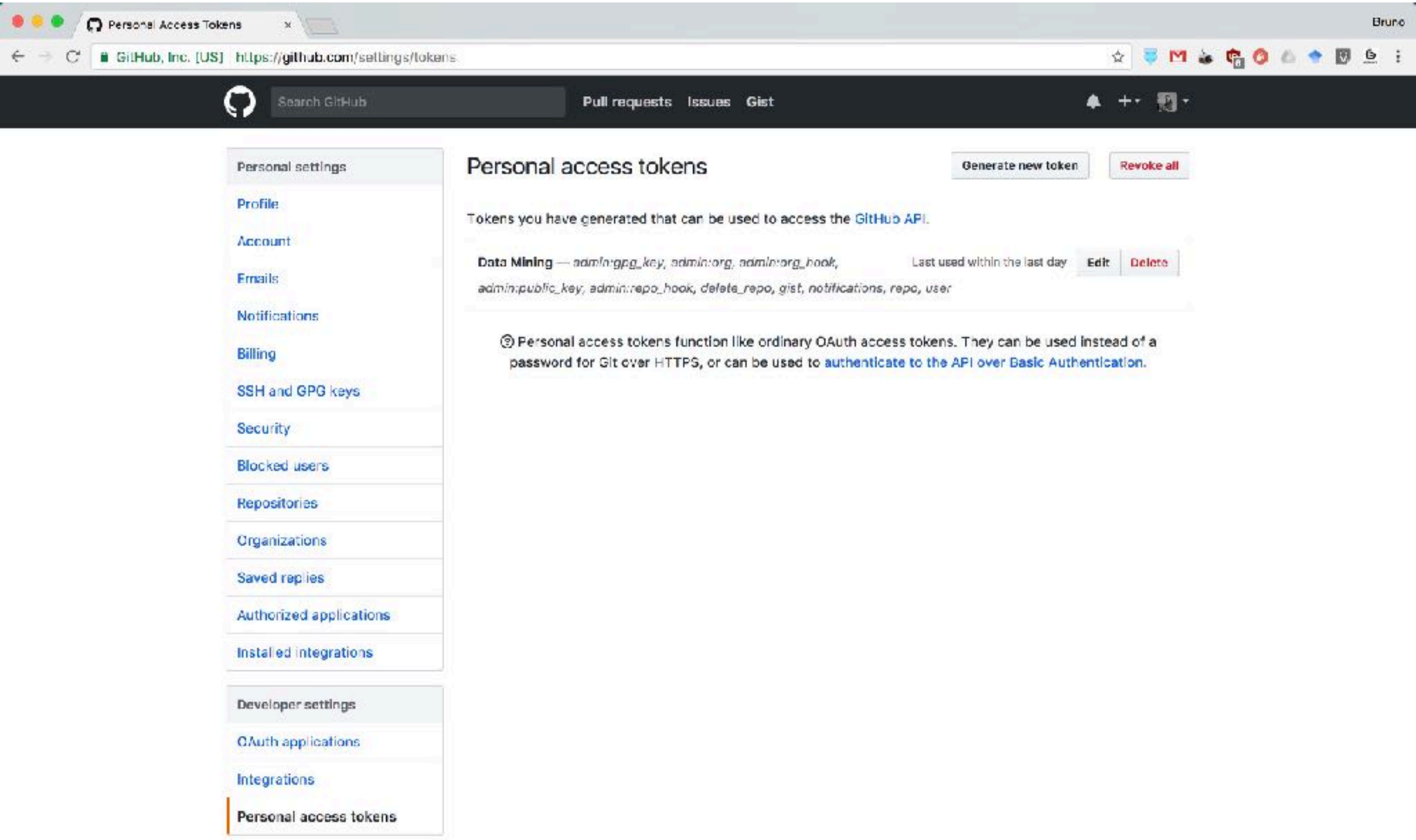
GitHub

- Most popular Git repository hosting service
- Web based
- Launched April 2008
- Adds functionality on top of Git
- “Gists” - Version controlled paste-bins
- Users create accounts and are able to comment, fork, clone, etc…

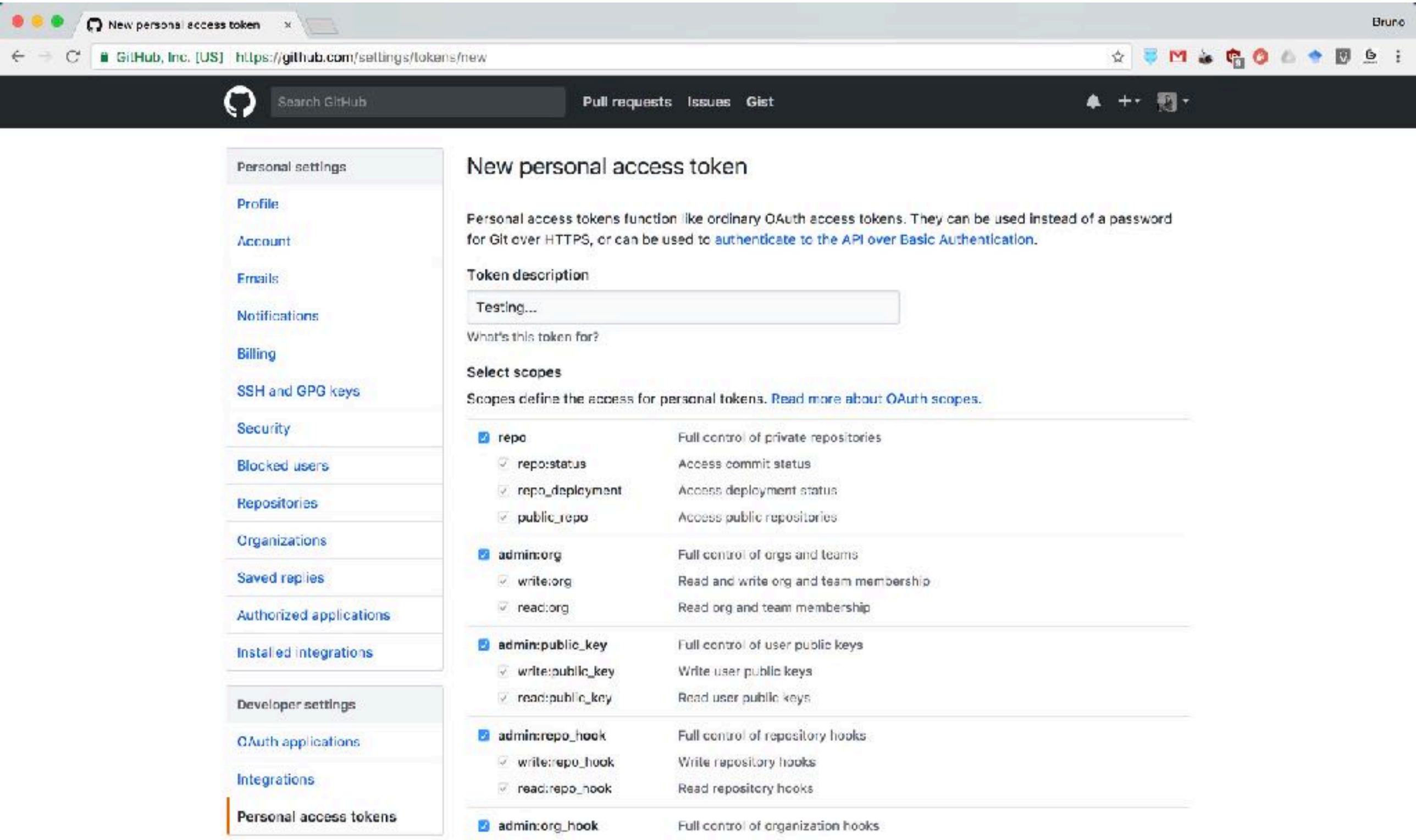
GitHub

Secure https://developer.github.com
Bruno
GitHub Developer
API
Blog
Early Access
Support
Search
Build your app on the GitHub platform
Not sure where to start? We've put together some handy guides and libraries you can use to start building.

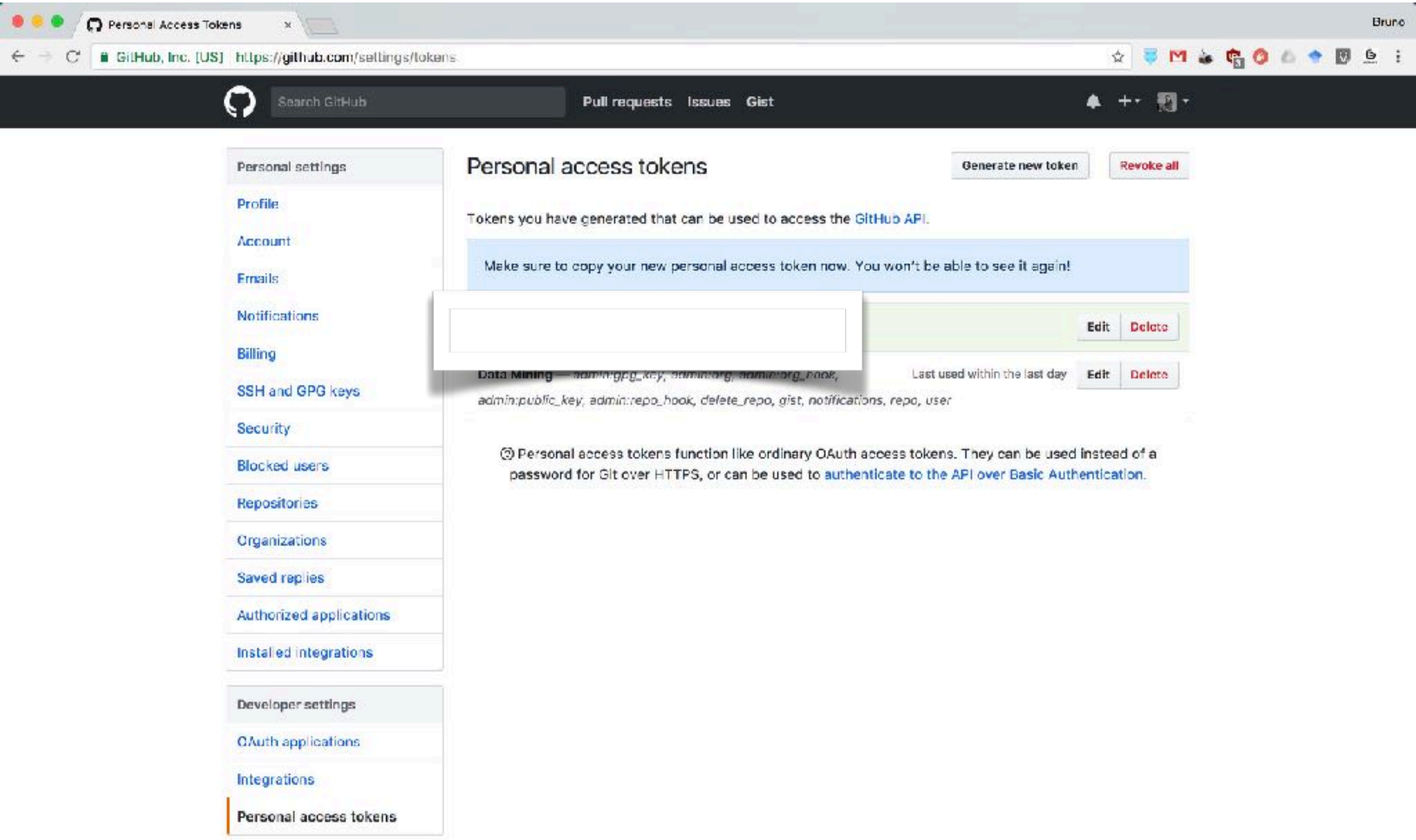
GitHub


Personal Access Tokens
Bruno
GitHub, Inc. [US] https://github.com/settings/tokens
Search GitHub
Pull requests
Issues
Gist
Personal settings
Profile
Account
Emails
Notifications
Billing
SSH and GPG keys
Security
Blocked users
Repositories
Organizations
Saved replies
Authorized applications
Installed integrations
Developer settings
OAuth applications
Integrations
Personal access tokens
Personal access tokens
Generate new token
Revoke all
Tokens you have generated that can be used to access the GitHub API.
Data Mining — admin:gpg_key, admin:org, admin:org_hook, admin:public_key, admin:repo_hook, delete_repo, gist, notifications, repo, user
Last used within the last day
Edit
Delete
Personal access tokens function like ordinary OAuth access tokens. They can be used instead of a password for Git over HTTPS, or can be used to authenticate to the API over Basic Authentication.

GitHub


New personal access token
Bruno
GitHub, Inc. [US] https://github.com/settings/tokens/new
Search GitHub
Pull requests
Issues
Gist
Personal settings
Profile
Account
Emails
Notifications
Billing
SSH and GPG keys
Security
Blocked users
Repositories
Organizations
Saved replies
Authorized applications
Installed integrations
Developer settings
OAuth applications
Integrations
Personal access tokens
New personal access token
Personal access tokens function like ordinary OAuth access tokens. They can be used instead of a password for Git over HTTPS, or can be used to authenticate to the API over Basic Authentication.
Token description
Testing...
What's this token for?
Select scopes
Scopes define the access for personal tokens. Read more about OAuth scopes.
repo
Full control of private repositories
repo:status
Access commit status
repo_deployment
Access deployment status
public_repo
Access public repositories
admin:org
Full control of orgs and teams
write:org
Read and write org and team membership
read:org
Read org and team membership
admin:public_key
Full control of user public keys
write:public_key
Write user public keys
read:public_key
Read user public keys
admin:repo_hook
Full control of repository hooks
write:repo_hook
Write repository hooks
read:repo_hook
Read repository hooks
admin:org_hook
Full control of organization hooks

GitHub


Personal Access Tokens
Bruno
GitHub, Inc. [US] https://github.com/settings/tokens
Search GitHub
Pull requests
Issues
Gist
Personal settings
Profile
Account
Emails
Notifications
Billing
SSH and GPG keys
Security
Blocked users
Repositories
Organizations
Saved replies
Authorized applications
Installed integrations
Developer settings
OAuth applications
Integrations
Personal access tokens
Personal access tokens
Generate new token
Revoke all
Tokens you have generated that can be used to access the GitHub API.
Make sure to copy your new personal access token now. You won't be able to see it again!
Edit
Delete
Data Mining — admin:gpg_key, admin:org, admin:org_hook, admin:public_key, admin::repo_hook, delete_repo, gist, notifications, repo, user
Last used within the last day
Edit
Delete
Personal access tokens function like ordinary OAuth access tokens. They can be used instead of a password for Git over HTTPS, or can be used to authenticate to the API over Basic Authentication.

API Basics

https://developer.github.com/v3/

- The github module provides all the necessary interface. We just need to provide the right client token.
- As before, best to keep the credentials in a dict and parametrize our calls with the dict key. This way we can switch between different accounts easily.
- .Github(token, per_page=100) takes a client token as argument and returns a Github object that we can use to interact with the API
- 3 basic types of objects:
  - Users
  - Repositories
  - Commits
- The python library we are using works a bit differently from the Twitter one we saw before.
- API calls return objects
- Data is stored as properties instead of dictionary fields

Authenticating with the API

https://developer.github.com/v3/

```
import github

accounts = {
    "social" : TOKEN,
}

token = accounts["social"]

client = github.Github(token, per_page=100)
```

github_auth.py

Users

https://developer.github.com/v3/users/

- .get_user(user) returns the NamedUser object corresponding to user
- NamedUser objects contain many properties with information about the user:
    - .id - User ID
    - .name - User name
    - .email - Email address (not always visible)
    - .followers / .following - Number of people follow user / are followed by user
    - .repos - Number of public repositories
- Some properties have an associated get_*() function that returns an iterator over its elements:
    - .get_followers()
    - .get_following()
    - .get_repos()

Challenge

https://developer.github.com/v3/users/

- Print the name of the first 10 followers of user:

torvalds

Challenge

https://developer.github.com/v3/users/

- Print the name of the first 10 followers of user:

torvalds

```
import github
from github_accounts import accounts

token = accounts["social"]

client = github.Github(token, per_page=100)

screen_name = "torvalds"

user = client.get_user(screen_name)

follow_count = 0

for follow in user.get_followers():
    print(follow_count, follow.name)

    follow_count += 1

    if follow_count == 10:
        break
```

github_user.py

Repos

https://developer.github.com/v3/repos/

- Multiple users can have repositories with the same name
- Must ask for a repository belonging to a specific NamedUser instance.
- .get_repo(repo) returns a Repository object with a similar structure to NamedUser objects (properties and methods)
    - .fork - Whether or not it is a fork
    - .forks - How many times it was forked (.get_forks())
    - .get_commits() - returns iterator over all Commit objects
    - .get_commit(commit_sha) - return a specific Commit object
    - .stargazers_count - How many times it was stared (.get_stargazers())

Challenge - Repos

- Get the name of the first 10 stargazers for repo

  linux

- of user

  torvalds

Challenge - Repos

- Get the name of the first 10 stargazers for repo

linux

- of user

```
import github
from github_accounts import accounts

token = accounts["social"]

client = github.Github(token,
per_page=100)

screen_name = "torvalds"
repository_name = "linux"

user = client.get_user(screen_name)
repo = user.get_repo(repository_name)

user_count = 0

for user in repo.get_stargazers():
    print(user_count, user.name)

    user_count += 1

    if user_count == 10:
        break
```

github_stargazers.py

Commits

https://developer.github.com/v3/repos/commits/

- Commit objects correspond to one of the most fundamental concepts, a change in a piece of code

- Commits belong to one branch and are logically part of a DAG with one or more parents, siblings and children

    - More than one parent indicates that this commit is a merge of multiple previous commits

- Each commit is identified by a cryptographic sha id and refers to its parents

Challenge - Commits

- Build the commit DAG of repository:

  Mining-the-Social-Web

- belonging to user:

  ptwobrussell

  - and print the total number of nodes and edges

Challenge - Commits

- Build the commit DAG of repository:

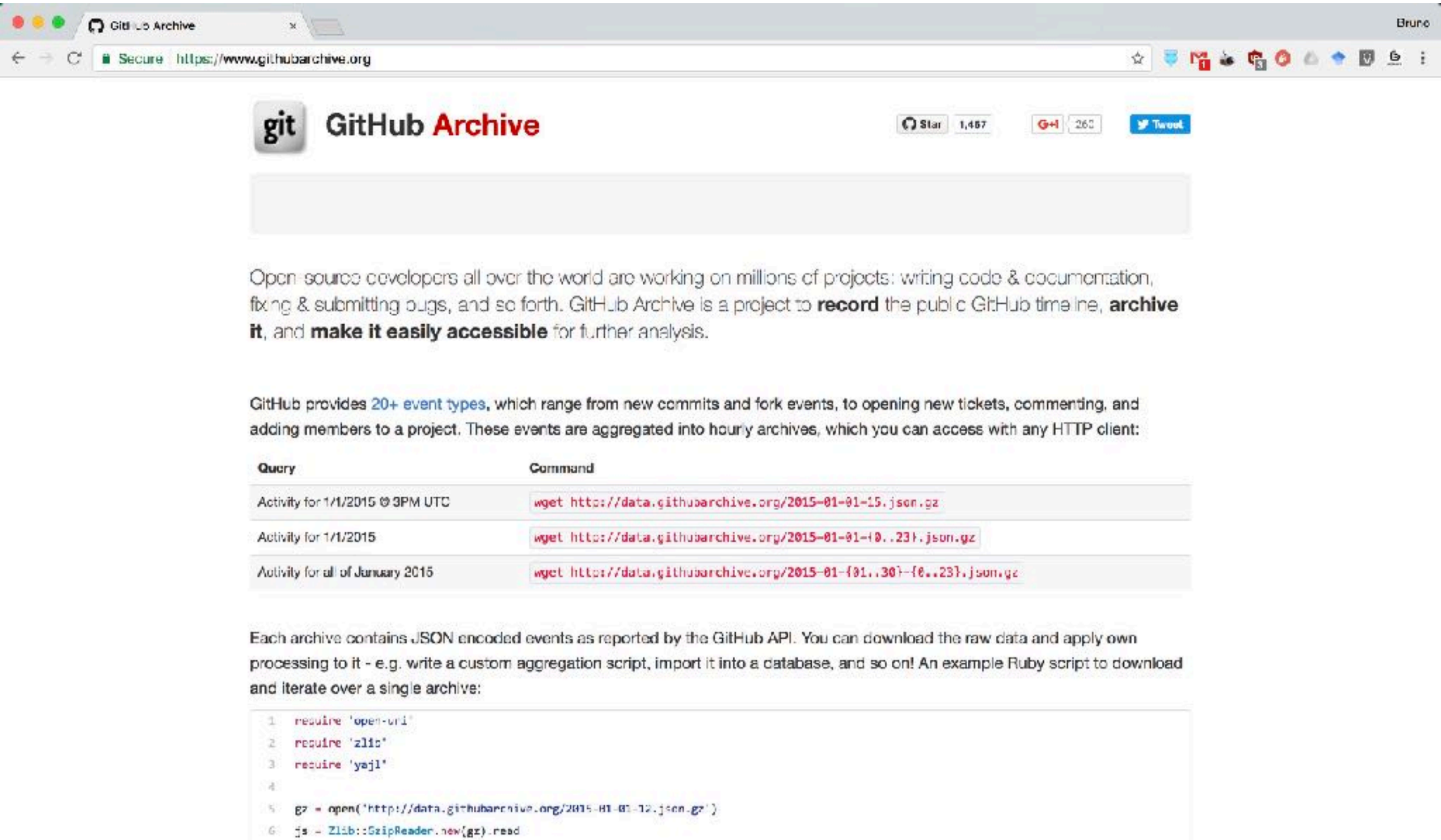
  Mining-the-Social-Web

- belonging to user:
  - and print the total

```
import github
from github_accounts import accounts
import networkx as NX

token = accounts["social"]

client = github.Github(token, per_page=100)

screen_name = "ptwobrussell"
repository_name = "Mining-the-Social-Web"

user = client.get_user(screen_name)
repo = user.get_repo(repository_name)

G = NX.DiGraph()

for commit in repo.get_commits():
    for parent in commit.parents:
        G.add_edge(parent.sha, commit.sha)

print(G.number_of_nodes(), G.number_of_edges())
```

github_commits.py

GitHub Archive



Event Types

i. CommitCommentEvent
ii. CreateEvent
iii. DeleteEvent
iv. DeploymentEvent
v. DeploymentStatusEvent
vi. DownloadEvent
vii. FollowEvent
viii. ForkEvent
ix. ForkApplyEvent
x. GistEvent
xi. GollumEvent
xii. IssueCommentEvent
xiii. IssuesEvent
xiv. MemberEvent
xv. MembershipEvent
xvi. PageBuildEvent
xvii. PublicEvent
xviii. PullRequestEvent
xix. PullRequestReviewCommentEvent
xx. PushEvent
xxi. ReleaseEvent
xxii. RepositoryEvent
xxiii. StatusEvent
xxiv. TeamAddEvent
xxv. WatchEvent

Event Structure

https://developer.github.com/v3/activity/events/types

- Events Contain information about:
  - Repository (“repo”)
  - Actor
  - Type
  - ID
  - Payload - Event specific information

CreateEvent

https://developer.github.com/v3/activity/events/types

- Triggered when a repo, branch or tag is created

- Payload includes:

    - “ref_type” - type of structure created (repository, branch, tag)

    - “description”

ForkEvent

https://developer.github.com/v3/activity/events/types

- Triggered when a repository is forked

- Payload contains information about repository that was created (“forkee”)

Challenge - ForkEvent

- From the file

http://data.githubarchive.org/2015-01-01-15.json.gz

- that you downloaded in the first class, list the “full_name” of all “forkee” and created repos

Challenge - ForkEvent

- From the file

http://data.githubarchive.org/2015-01-01-15.json.gz

- that you downloaded in the first class, list the “full_name” of all “forkee” and created repos

```
import gzip
import json

filename = "data/2015-01-01-15.json.gz"

for line in gzip.open(filename, 'r'):
    event = json.loads(line.strip().decode())

    if event["type"] == "CreateEvent":
        print("Create", event["repo"]["name"])
    elif event["type"] == "ForkEvent":
        print("Fork", event["payload"]["forkee"]["full name"])
```


github_forkee.py

PushEvent

https://developer.github.com/v3/activity/events/types

- Triggered when commits are pushed to a branch
- Payload includes:
- List of “commits” with “sha” ids, “message” and “author” information
    - ids can then be used with the regular API to obtain more information about the commit or author
- as “head” the sha reference of the head of the branch that is being pushed to

Challenge - PushEvent

- From the file

http://data.githubarchive.org/2015-01-01-15.json.gz

- list all the commit ids ("sha") that were pushed along with it parent (you can get information on the parent by querying the API)

```python
import gzip
import json
import github
from github_accounts import accounts
import sys

token = accounts["social"]

client = github.Github(token, per_page=100)

filename = "data/2015-01-01-15.json.gz"

for line in gzip.open(filename):
    event = json.loads(line.strip().decode())

    if event["type"] == "PushEvent":
        user_name, repo_name = event["repo"]["name"].split('/')

        try:
            user = client.get_user(user_name)
            repo = user.get_repo(repo_name)

            for commit in event["payload"]["commits"]:
                commit_id = commit["sha"]

                commit = repo.get_commit(commit_id)

                for parent in commit.parents:
                    print(commit_id, parent.sha)
        except Exception as e:
            print("Error processing", event["repo"]["name"], e.status, file=sys.stderr)
```


github_pushevent.py

MemberEvent

https://developer.github.com/v3/activity/events/types

- Triggered when a new member is added to a repository
- There is no event for when a developer is removed from a repository
- Payload includes basic information about member added
- Actor is the developer who is adding the new member to the team

Challenge - MemberEvent

- Build a social network based on “MemberEvent”s

Challenge - MemberEvent

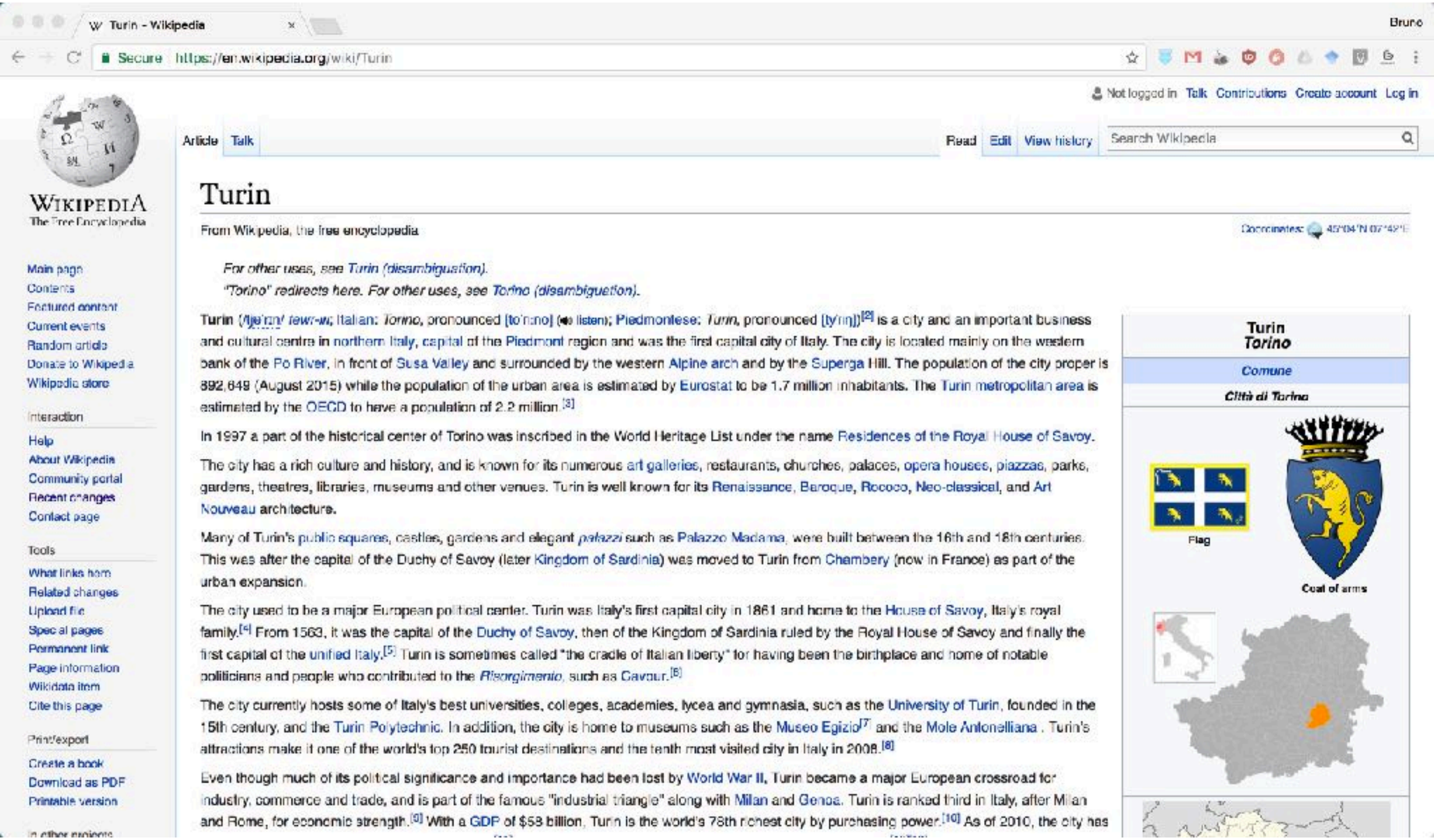
- Build a social network based on "MemberEvent"s

```python
import gzip
import json
import networkx as NX

filename = "data/2015-01-01-15.json.gz"

G = NX.DiGraph()

for line in gzip.open(filename):
    event = json.loads(line.strip().decode())

    if event["type"] == "MemberEvent":
        actor = event["actor"]["login"]
        member = event["payload"]["member"]["login"]

        G.add_edge(actor, member)

print(G.number_of_nodes(), G.number_of_edges())
```

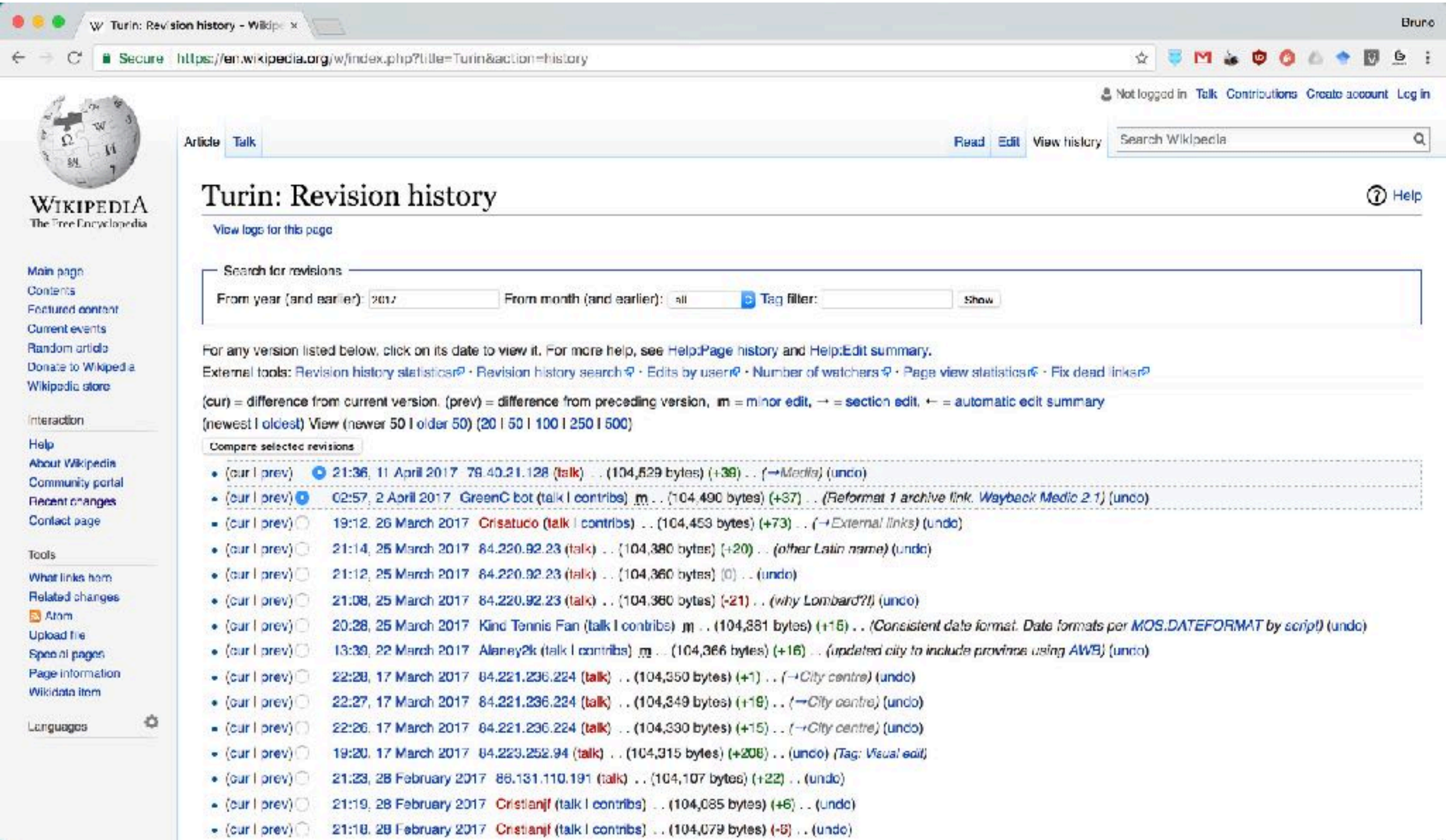

github_member.py

Wikipedia

Wikipedia


Turin - Wikipedia
Secure https://en.wikipedia.org/wiki/Turin
Not logged in Talk Contributions Create account Log in
Article Talk
Read Edit View history
Search Wikipedia
WIKIPEDIA
The Free Encyclopedia
Turin
From Wikipedia, the free encyclopedia
Coordinates: 45°04′N 07°42′E
Main page
Contents
Featured content
Current events
Random article
Donate to Wikipedia
Wikipedia store
Interaction
Help
About Wikipedia
Community portal
Recent changes
Contact page
Tools
What links here
Related changes
Upload file
Special pages
Permanent link
Page information
Wikidata item
Cite this page
Print/export
Create a book
Download as PDF
Printable version
In other projects
For other uses, see Turin (disambiguation).
"Torino" redirects here. For other uses, see Torino (disambiguation).
Turin (/tjʊəˈrɪn/ tewr-in; Italian: Torino, pronounced [toˈrino] (listen); Piedmontese: Turin, pronounced [tyˈrin])[2] is a city and an important business and cultural centre in northern Italy, capital of the Piedmont region and was the first capital city of Italy. The city is located mainly on the western bank of the Po River, in front of Susa Valley and surrounded by the western Alpine arch and by the Superga Hill. The population of the city proper is 892,649 (August 2015) while the population of the urban area is estimated by Eurostat to be 1.7 million inhabitants. The Turin metropolitan area is estimated by the OECD to have a population of 2.2 million.[3]
In 1997 a part of the historical center of Torino was inscribed in the World Heritage List under the name Residences of the Royal House of Savoy.
The city has a rich culture and history, and is known for its numerous art galleries, restaurants, churches, palaces, opera houses, piazzas, parks, gardens, theatres, libraries, museums and other venues. Turin is well known for its Renaissance, Baroque, Rococo, Neo-classical, and Art Nouveau architecture.
Many of Turin's public squares, castles, gardens and elegant palazzi such as Palazzo Madama, were built between the 16th and 18th centuries. This was after the capital of the Duchy of Savoy (later Kingdom of Sardinia) was moved to Turin from Chambery (now in France) as part of the urban expansion.
The city used to be a major European political center. Turin was Italy's first capital city in 1861 and home to the House of Savoy, Italy's royal family.[4] From 1563, it was the capital of the Duchy of Savoy, then of the Kingdom of Sardinia ruled by the Royal House of Savoy and finally the first capital of the unified Italy.[5] Turin is sometimes called "the cradle of Italian liberty" for having been the birthplace and home of notable politicians and people who contributed to the Risorgimento, such as Cavour.[6]
The city currently hosts some of Italy's best universities, colleges, academies, lycea and gymnasia, such as the University of Turin, founded in the 15th century, and the Turin Polytechnic. In addition, the city is home to museums such as the Museo Egizio[7] and the Mole Antonelliana . Turin's attractions make it one of the world's top 250 tourist destinations and the tenth most visited city in Italy in 2008.[8]
Even though much of its political significance and importance had been lost by World War II, Turin became a major European crossroad for industry, commerce and trade, and is part of the famous "industrial triangle" along with Milan and Genoa. Turin is ranked third in Italy, after Milan and Rome, for economic strength.[9] With a GDP of $53 billion, Turin is the world's 78th richest city by purchasing power.[10] As of 2010, the city has
Turin
Torino
Comune
Città di Torino
Flag
Coat of arms

Wikipedia


Turin: Revision history - Wikipe
Secure https://en.wikipedia.org/w/index.php?title=Turin&action=history
Not logged in Talk Contributions Create account Log in
Article Talk Read Edit View history Search Wikipedia
WIKIPEDIA
The Free Encyclopedia
Turin: Revision history
Help
View logs for this page
Search for revisions
From year (and earlier): 2017 From month (and earlier): all Tag filter: Show
For any version listed below, click on its date to view it. For more help, see Help:Page history and Help:Edit summary.
External tools: Revision history statistics · Revision history search · Edits by user · Number of watchers · Page view statistics · Fix dead links
(cur) = difference from current version, (prev) = difference from preceding version, m = minor edit, → = section edit, ← = automatic edit summary
(newest | oldest) View (newer 50 | older 50) (20 | 50 | 100 | 250 | 500)
Compare selected revisions
• (cur | prev) 21:36, 11 April 2017 79.40.21.128 (talk) . . (104,529 bytes) (+39) . . (→Media) (undo)
• (cur | prev) 02:57, 2 April 2017 GreenC bot (talk | contribs) m . . (104,490 bytes) (+37) . . (Reformat 1 archive link. Wayback Medic 2.1) (undo)
• (cur | prev) 19:12, 26 March 2017 Crisatuco (talk | contribs) . . (104,453 bytes) (+73) . . (→External links) (undo)
• (cur | prev) 21:14, 25 March 2017 84.220.92.23 (talk) . . (104,380 bytes) (+20) . . (other Latin name) (undo)
• (cur | prev) 21:12, 25 March 2017 84.220.92.23 (talk) . . (104,360 bytes) (0) . . (undo)
• (cur | prev) 21:08, 25 March 2017 84.220.92.23 (talk) . . (104,360 bytes) (-21) . . (why Lombard?!) (undo)
• (cur | prev) 20:28, 25 March 2017 Kind Tennis Fan (talk | contribs) m . . (104,381 bytes) (+15) . . (Consistent date format. Date formats per MOS.DATEFORMAT by script) (undo)
• (cur | prev) 13:39, 22 March 2017 Alaney2k (talk | contribs) m . . (104,366 bytes) (+16) . . (updated city to include province using AWB) (undo)
• (cur | prev) 22:28, 17 March 2017 84.221.236.224 (talk) . . (104,350 bytes) (+1) . . (→City centre) (undo)
• (cur | prev) 22:27, 17 March 2017 84.221.236.224 (talk) . . (104,349 bytes) (+19) . . (→City centre) (undo)
• (cur | prev) 22:26, 17 March 2017 84.221.236.224 (talk) . . (104,330 bytes) (+15) . . (→City centre) (undo)
• (cur | prev) 19:20, 17 March 2017 84.223.252.94 (talk) . . (104,315 bytes) (+208) . . (undo) (Tag: Visual edit)
• (cur | prev) 21:23, 28 February 2017 86.131.110.191 (talk) . . (104,107 bytes) (+22) . . (undo)
• (cur | prev) 21:19, 28 February 2017 Cristianjf (talk | contribs) . . (104,085 bytes) (+6) . . (undo)
• (cur | prev) 21:18, 28 February 2017 Cristianjf (talk | contribs) . . (104,079 bytes) (-5) . . (undo)
Main page
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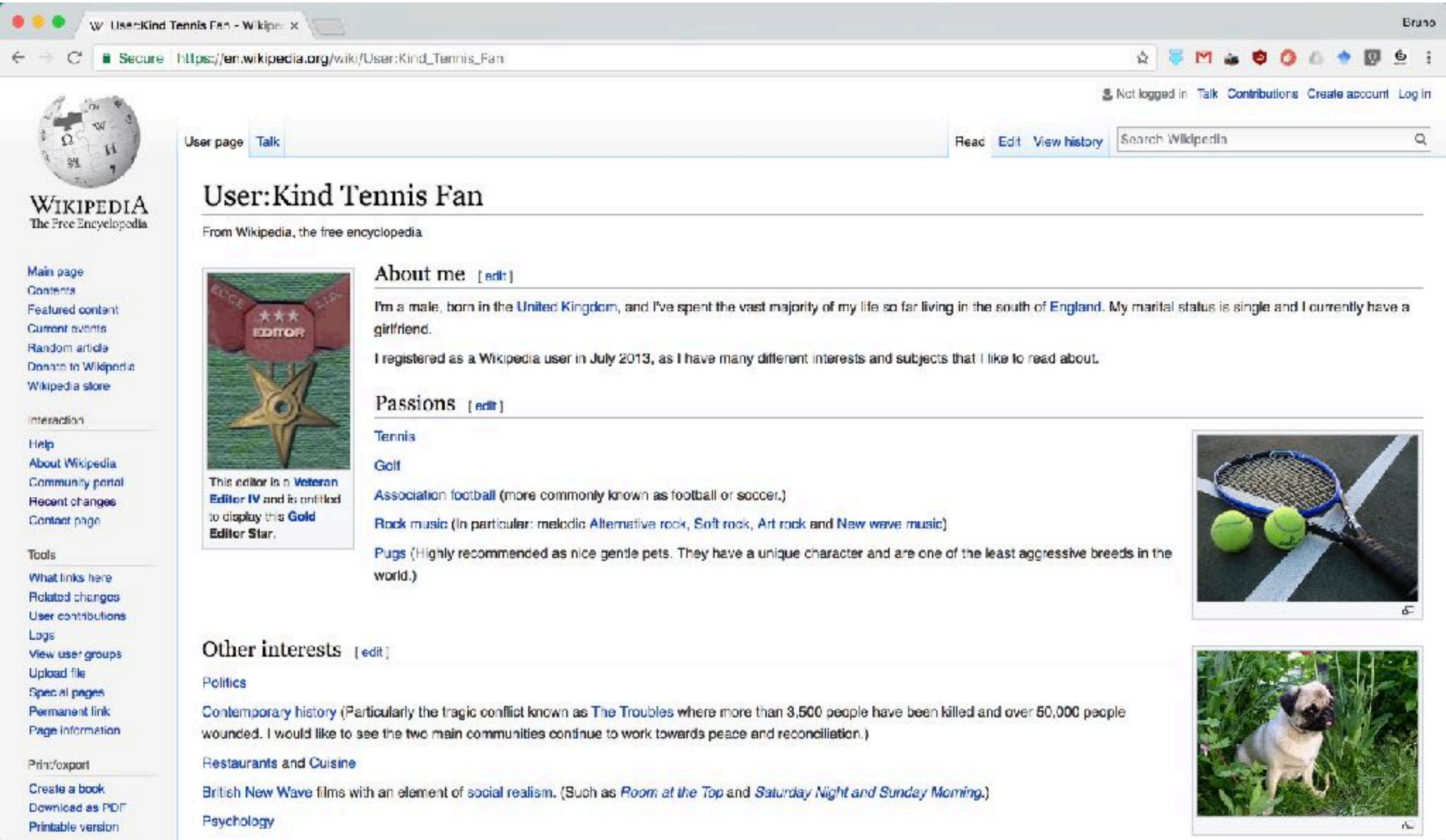
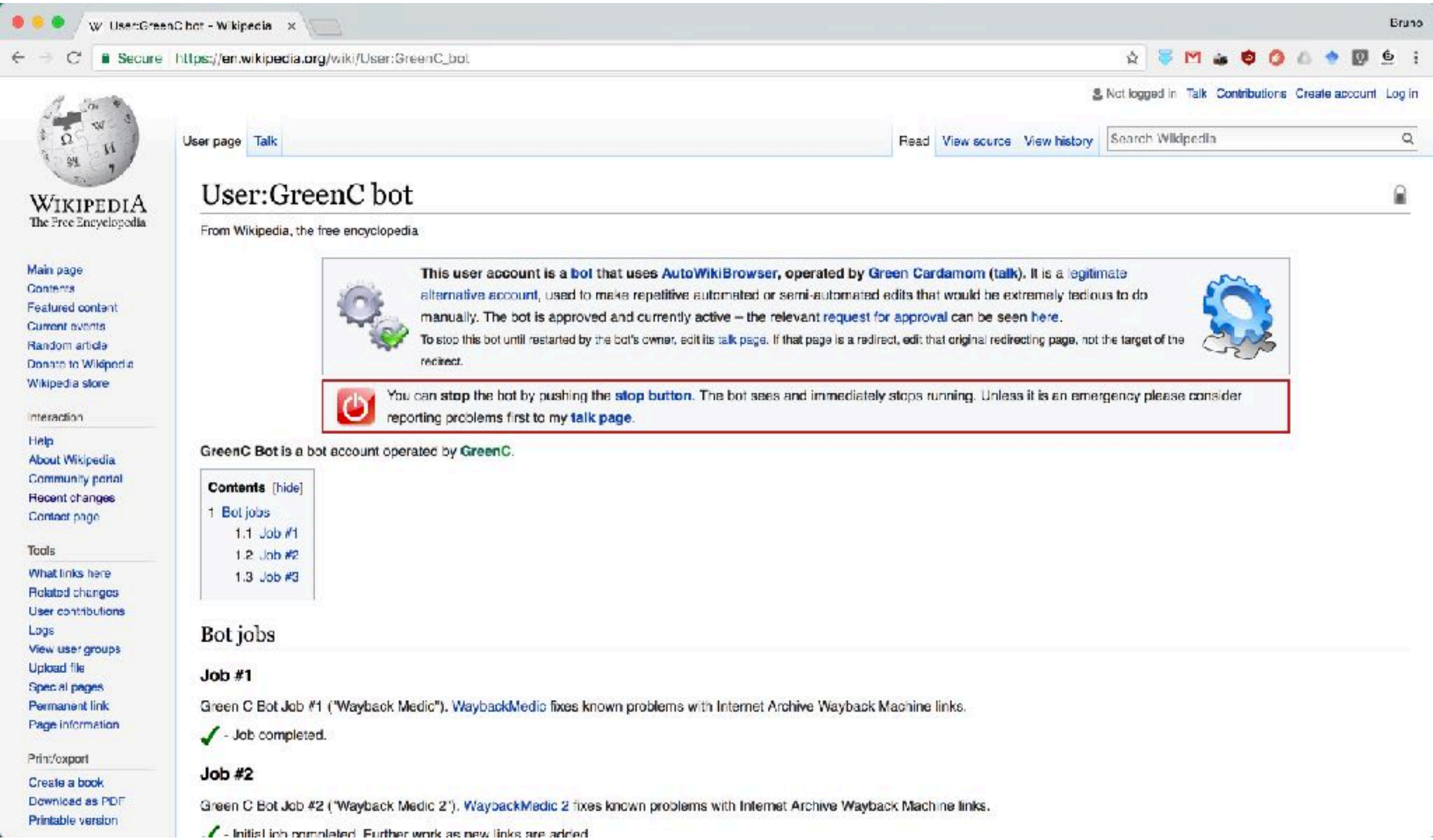
Featured content
Current events
Random article
Donate to Wikipedia
Wikipedia store
Interaction
Help
About Wikipedia
Community portal
Recent changes
Contact page
Tools
What links here
Related changes
Atom
Upload file
Special pages
Page information
Wikidata item
Languages

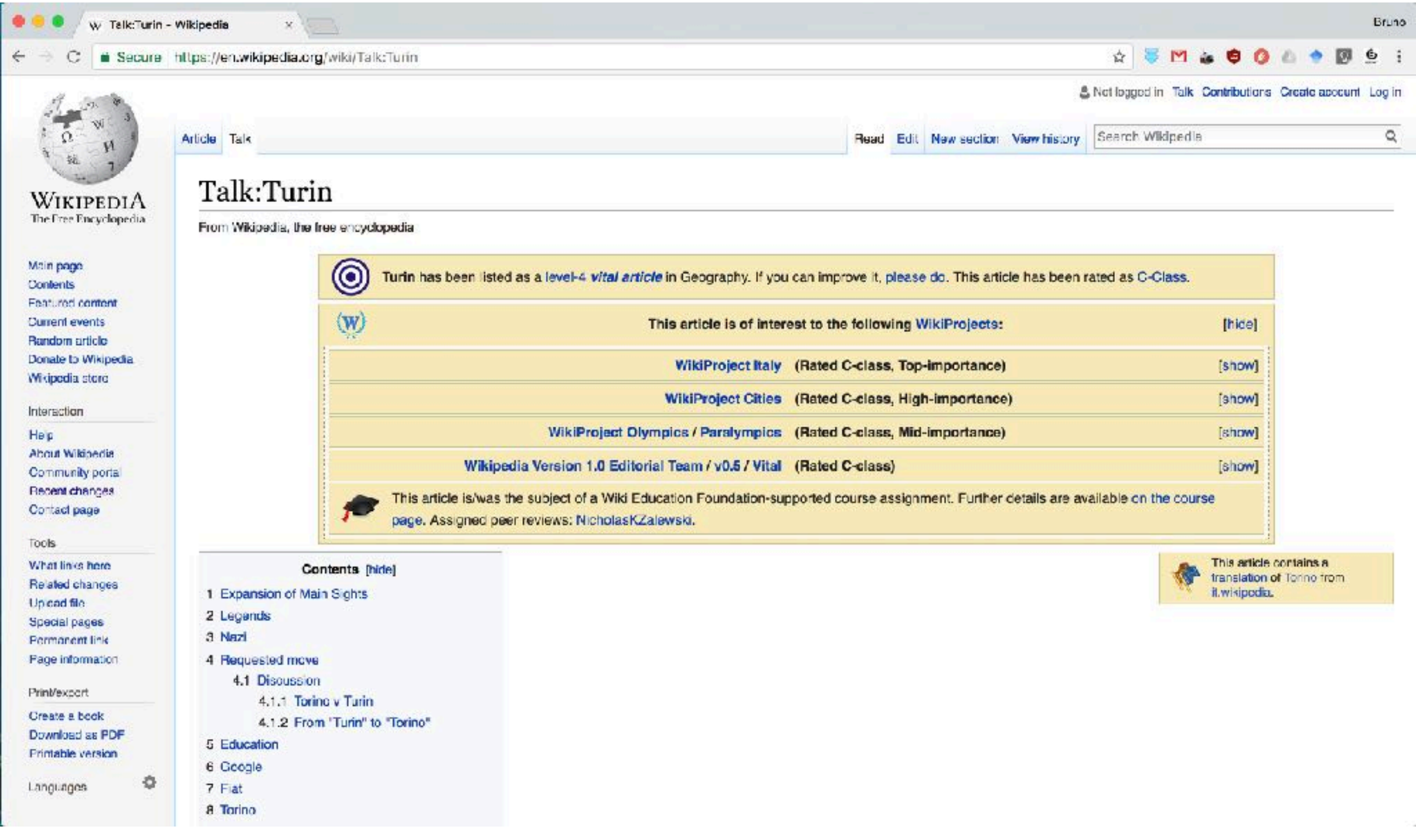
Wikipedia


User:Kind Tennis Fan - Wikipe
Bruno
Secure https://en.wikipedia.org/wiki/User:Kind_Tennis_Fan
Not logged in Talk Contributions Create account Log in
User page Talk
Read Edit View history
Search Wikipedia
WIKIPEDIA
The Free Encyclopedia
Main page
Contents
Featured content
Current events
Random article
Donate to Wikipedia
Wikipedia store
Interaction
Help
About Wikipedia
Community portal
Recent changes
Contact page
Tools
What links here
Related changes
User contributions
Logs
View user groups
Upload file
Special pages
Permanent link
Page information
Print/export
Create a book
Download as PDF
Printable version
User:Kind Tennis Fan
From Wikipedia, the free encyclopedia
EDITOR
This editor is a Veteran Editor IV and is entitled to display this Gold Editor Star.
About me [edit]
I'm a male, born in the United Kingdom, and I've spent the vast majority of my life so far living in the south of England. My marital status is single and I currently have a girlfriend.
I registered as a Wikipedia user in July 2013, as I have many different interests and subjects that I like to read about.
Passions [edit]
Tennis
Golf
Association football (more commonly known as football or soccer.)
Rock music (In particular: melodic Alternative rock, Soft rock, Art rock and New wave music)
Pugs (Highly recommended as nice gentle pets. They have a unique character and are one of the least aggressive breeds in the world.)
Other interests [edit]
Politics
Contemporary history (Particularly the tragic conflict known as The Troubles where more than 3,500 people have been killed and over 50,000 people wounded. I would like to see the two main communities continue to work towards peace and reconciliation.)
Restaurants and Cuisine
British New Wave films with an element of social realism. (Such as Room at the Top and Saturday Night and Sunday Morning.)
Psychology

Wikipedia


User:GreenC bot - Wikipedia
Bruno
Secure https://en.wikipedia.org/wiki/User:GreenC_bot
Not logged in Talk Contributions Create account Log in
User page Talk
Read View source View history
Search Wikipedia
WIKIPEDIA
The Free Encyclopedia
Main page
Contents
Featured content
Current events
Random article
Donate to Wikipedia
Wikipedia store
Interaction
Help
About Wikipedia
Community portal
Recent changes
Contact page
Tools
What links here
Related changes
User contributions
Logs
View user groups
Upload file
Special pages
Permanent link
Page information
Print/export
Create a book
Download as PDF
Printable version
User:GreenC bot
From Wikipedia, the free encyclopedia
This user account is a bot that uses AutoWikiBrowser, operated by Green Cardamom (talk). It is a legitimate alternative account, used to make repetitive automated or semi-automated edits that would be extremely tedious to do manually. The bot is approved and currently active – the relevant request for approval can be seen here.
To stop this bot until restarted by the bot's owner, edit its talk page. If that page is a redirect, edit that original redirecting page, not the target of the redirect.
You can stop the bot by pushing the stop button. The bot sees and immediately stops running. Unless it is an emergency please consider reporting problems first to my talk page.
GreenC Bot is a bot account operated by GreenC.
Contents [hide]
1 Bot jobs
1.1 Job #1
1.2 Job #2
1.3 Job #3
Bot jobs
Job #1
Green C Bot Job #1 ("Wayback Medic"). WaybackMedic fixes known problems with Internet Archive Wayback Machine links.
- Job completed.
Job #2
Green C Bot Job #2 ("Wayback Medic 2"). WaybackMedic 2 fixes known problems with Internet Archive Wayback Machine links.

Wikipedia


Talk:Turin - Wikipedia
Bruno
Secure https://en.wikipedia.org/wiki/Talk:Turin
Not logged in Talk Contributions Create account Log in
Article Talk
Read Edit New section View history
Search Wikipedia
WIKIPEDIA
The Free Encyclopedia
Main page
Contents
Featured content
Current events
Random article
Donate to Wikipedia
Wikipedia store
Interaction
Help
About Wikipedia
Community portal
Recent changes
Contact page
Tools
What links here
Related changes
Upload file
Special pages
Permanent link
Page information
Print/export
Create a book
Download as PDF
Printable version
Languages
Talk:Turin
From Wikipedia, the free encyclopedia
Turin has been listed as a level-4 vital article in Geography. If you can improve it, please do. This article has been rated as C-Class.
This article is of interest to the following WikiProjects: [hide]
WikiProject Italy (Rated C-class, Top-importance) [show]
WikiProject Cities (Rated C-class, High-importance) [show]
WikiProject Olympics / Paralympics (Rated C-class, Mid-importance) [show]
Wikipedia Version 1.0 Editorial Team / v0.5 / Vital (Rated C-class) [show]
This article is/was the subject of a Wiki Education Foundation-supported course assignment. Further details are available on the course page. Assigned peer reviews: NicholasKZalewski.
Contents [hide]
1 Expansion of Main Sights
2 Legends
3 Nazi
4 Requested move
4.1 Discussion
4.1.1 Torino v Turin
4.1.2 From "Turin" to "Torino"
5 Education
6 Google
7 Fiat
8 Torino
This article contains a translation of Torino from it.wikipedia.

Wikipedia Dumps

https://dumps.wikimedia.org

Wikimedia Downloads

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Bruno

Wikimedia Downloads

If you are reading this on Wikimedia servers, please note that we have rate limited downloaders and we are capping the number of per-ip connections to 2. This will help to ensure that everyone can access the files with reasonable download times. Clients that try to evade these limits may be blocked. Our mirror sites do not have this cap.

Data downloads

The Wikimedia Foundation is requesting help to ensure that as many copies as possible are available of all Wikimedia database dumps. Please **volunteer to host a mirror** if you have access to sufficient storage and bandwidth.

Database backup dumps

A complete copy of all Wikimedia wikis, in the form of wikitext source and metadata embedded in XML. A number of raw database tables in SQL form are also available.

These snapshots are provided at the very least monthly and usually twice a month. If you are a regular user of these dumps, please consider subscribing to xmldatadumps-l for regular updates.

Mirror Sites of the XML dumps provided above

Check the complete list.

Static HTML dumps

A copy of all pages from all Wikipedia wikis, in HTML form.

These are currently not running.

DVD distributions

Wikipedia Dumps

https://dumps.wikimedia.org

- The Wikimedia foundation makes freely available regular dumps of all Wikimedia project databases.
- In particular, for the various language editions of Wikipedia, we have:
  - *.pages-articles.xml.bz2 - Complete wiki page and revision content.
  - *.stub-meta-history.xml.gz - Wiki page revision metadata
  - *.pagelinks.sql.gz - Wiki page-to-page link records
  - *.geo_tags.sql.gz - List of pages' geographical coordinates
  - *.externallinks.sql.gz - Wiki external URL link records.
  - *.page.sql.gz - Base per-page data (id, title, old restrictions, etc).
  - *.langlinks.sql.gz - Wiki interlanguage link records

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  - *.pagelinks.sql.gz - Wiki page-to-page link records
  - *.geo_tags.sql.gz - List of pages' geographical coordinates
  - *.externallinks.sql.gz - Wiki external URL link records.
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  - *.geo_tags.sql.gz - List of pages' geographical coordinates
  - *.externallinks.sql.gz - Wiki external URL link records.
  - *.page.sql.gz - Base per-page data (id, title, old restrictions, etc).
  - *.langlinks.sql.gz - Wiki interlanguage link records

(Wikipedia Dump "Dumping")

- I've written a simple script to easily download the most recent version of specific files for many different languages.

- You can find it in the GitHub repo: **wikidump.py**

- To customize to your needs, you just need to list the files you want in the allowed_files list and the languages you're interested in allowed_wikis

- If you want to download all the files from **acewiki** required for this tutorial, you would simply set:

```
allowed_files = ["stub-meta-history.xml.gz",
                 "geo_tags.sql.gz",
                 "langlinks.sql.gz",
                 ]

allowed_wikis = ["acewiki"]
```

- But with what you learn so far you should be able to easily write your own version 

SQL files

- Standard format, well suited for loading the data directly to a relational database (MySQL, MariaDB, PostgreSQL, etc…)

- Databases are optimized for fast querying of information, but not suitable for large scale processing where you touch all or most rows.

- mysqldump_to_csv.py - convert a wikipedia dump to a CSV file.

  - Slightly modified version of https://github.com/jamesmishra/mysqldump-to-csv

  - Available in the courses GItHub repository

  - First row is column names as defined in the SQL file

langlinks

- Just a few fields:
  - 0 - **ll_from** - The page in **this** wikipedia edition
  - 1 - **ll_lang** - The language it's linking to
  - 2 - **ll_title** - The title of the page in the **target** wikipedia edition
- This is a good example of some of the problems of working with wikipedia data, or any other self organize collaboration platform
- Many of the file formats and conventions were created in an ad hoc way, to serve one very specific need and ended up becoming adopted as "standard".
  - How can we convert the language/title pairs into a unique page_id in the target wikipedia?
  - Can we be sure that two pages didn't accidentally switch titles?
  - As pages get edited, their titles change. To when (which revision) do these titles correspond to?
  - Does a link A -> B imply a link B -> A?

Challenge - langlinks

- convert the

data/acewiki-20170420-langlinks.sql.gz

- SQL file to CSV using the mysqldum2csv.py script.

Challenge - langlinks

- convert the

data/acewiki-20170420-langlinks.sql.gz

- SQL file to CSV using the mysqldum2csv.py script.

```
python mysqldump_to_csv.py data/acewiki-20170420-langlinks.sql.gz | gzip -c > data/
acewiki-20170420-langlinks.csv.gz
```

geo_tags

- Several interesting fields:
    - 0 - **gt_id** - Unique geo tag ID
    - 1 - **gt_page_id** - Corresponding Page ID
    - 2 - **gt_globe** - Not all coordinates are on Earth (Mars, Moon, Venus, Titan, etc…)
    - 4 - **gt_lat** - Latitude
    - 5 - **gt_lon** - Longitude
    - 7 - **gt_type** - city, railwaystation, landmark, airport, etc…

Challenge - geo_tags

- Convert data/enwiki-20170420-geo_tags.sql.gz to csv using mysqldump_to_csv.py

- Extract all the lat, lon pairs on planet “earth”.

Challenge - geo_tags

- Convert data/enwiki-20170420-geo_tags.sql.gz to csv using mysqldump_to_csv.py

- Extract all the lat, lon pairs on planet "earth".

```
import gzip

header = {}
line_count = 0

for line in gzip.open("data/enwiki-20170420-geo_tags.csv.gz", "rt"):
    fields = line.strip().split(',')

    if line_count == 0:
        header = dict(zip(fields, range(len(fields))))

    line_count += 1

    if(fields[header["gt_globe"]] == "earth"):
        print(fields[header["gt_lat"]], fields[header["gt_lon"]])
```


wikipedia_geo_tags.py

expat - (semi) sane XML parsing

https://docs.python.org/3/library/pyexpat.html

- C library for parsing XML with bindings in most modern programming languages
- Extremely fast
- Well suited to handle large xml files:
    - Stream oriented - Reads the file line by line
    - Non-validating - doesn't check for the validity of the XML file (expensive and prone to failure)
- In Python it lives inside the xml.parsers package

```
from xml.parsers import expat
```

- The .ParserCreate() method returns a new xmlparser instance

expat - (semi) sane XML parsing

https://docs.python.org/3/library/pyexpat.html

- Defines event handlers that get called whenever it encounters something "interesting"
- The default behavior is to do nothing (very efficient!) but you can override the ones that you are interested in.
- In particular:
    - .StartElementHandler(name, attrs) - every time it encounters a <name …>
    - .EndElementHandler(name) - whenever it encounter a </name>
    - .CharacterDataHandler(data) - any textual data in between the opening and closing of a tag:
        - <name>data</name>
        - If the amount of data between these two tags is too large, it sometimes results in multiple char_data events. You should always concatenate the results as you get it
- After you overwrite the relevant methods, you can process the file by providing a file handle to .ParserFile(fp)

expat - (semi) sane XML parsing

https://docs.python.org/3/library/pyexpat.html

```python
import sys
from xml.parsers import expat

buffer = ""
level = 0

def start_element(name, attrs):
    global buffer, level
    print("\t"* level, "Opening:", name, "with attributes:", attrs)
    buffer = ""
    level += 1

def end_element(name):
    global buffer, level
    level -= 1
    print("\t"* level, "Closing:", name, "with data:", buffer)
    buffer = ""

def char_data(data):
    global buffer
    buffer += data

if __name__ == "__main__":
    p = expat.ParserCreate()
    p.StartElementHandler = start_element
    p.EndElementHandler = end_element
    p.CharacterDataHandler = char_data

    try:
        p.ParseFile(open(sys.argv[1], 'rb'))
    except Exception as e:
        print(e, file=sys.stderr)
```

expat_demo.py

```
<mediawiki xmlns="http://www.mediawiki.org/xml/export-0.10/" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://www.mediawiki.org/xml/export-0.10/ http://www.mediawiki.org/xml/export-0.10.xsd"
version="0.10" xml:lang="en">
  <siteinfo>
    <sitename>Wikipedia</sitename>
    <dbname>enwiki</dbname>
    <base>https://en.wikipedia.org/wiki/Main_Page</base>
    <generator>MediaWiki 1.29.0-wmf.20</generator>
    <case>first-letter</case>
    <namespaces>
      <namespace key="-2" case="first-letter">Media</namespace>
      <namespace key="-1" case="first-letter">Special</namespace>
      <namespace key="0" case="first-letter" />
      <namespace key="1" case="first-letter">Talk</namespace>
      <namespace key="2" case="first-letter">User</namespace>
      <namespace key="3" case="first-letter">User talk</namespace>
      <namespace key="4" case="first-letter">Wikipedia</namespace>
      <namespace key="5" case="first-letter">Wikipedia talk</namespace>
      <namespace key="6" case="first-letter">File</namespace>
      <namespace key="7" case="first-letter">File talk</namespace>
      <namespace key="8" case="first-letter">MediaWiki</namespace>
      <namespace key="9" case="first-letter">MediaWiki talk</namespace>
      <namespace key="10" case="first-letter">Template</namespace>
      <namespace key="11" case="first-letter">Template talk</namespace>
      <namespace key="12" case="first-letter">Help</namespace>
      <namespace key="13" case="first-letter">Help talk</namespace>
      <namespace key="14" case="first-letter">Category</namespace>
      <namespace key="15" case="first-letter">Category talk</namespace>
      <namespace key="100" case="first-letter">Portal</namespace>
      <namespace key="101" case="first-letter">Portal talk</namespace>
      <namespace key="108" case="first-letter">Book</namespace>
      <namespace key="109" case="first-letter">Book talk</namespace>
      <namespace key="118" case="first-letter">Draft</namespace>
      <namespace key="119" case="first-letter">Draft talk</namespace>
      <namespace key="446" case="first-letter">Education Program</namespace>
      <namespace key="447" case="first-letter">Education Program talk</namespace>
      <namespace key="710" case="first-letter">TimedText</namespace>
      <namespace key="711" case="first-letter">TimedText talk</namespace>
      <namespace key="828" case="first-letter">Module</namespace>
      <namespace key="829" case="first-letter">Module talk</namespace>
      <namespace key="2300" case="first-letter">Gadget</namespace>
      <namespace key="2301" case="first-letter">Gadget talk</namespace>
      <namespace key="2302" case="case-sensitive">Gadget definition</namespace>
      <namespace key="2303" case="case-sensitive">Gadget definition talk</namespace>
    </namespaces>
  </siteinfo>
```

```
<mediawiki xmlns="http://www.mediawiki.org/xml/export-0.10/" xmlns:xsi="http://
www.w3.org/2001/XMLSchema-instance" xsi:schemaLocation="http://www.mediawiki.org/xml/
export-0.10/ http://www.mediawiki.org/xml/export-0.10.xsd" version="0.10" xml:lang="en">
  <siteinfo>
    <sitename>Wikipedia</sitename>
    <dbname>enwiki</dbname>
    <base>https://en.wikipedia.org/wiki/Main_Page</base>
    <generator>MediaWiki 1.29.0-wmf.20</generator>
    <case>first-letter</case>
    <namespaces>
      <namespace key="-2" case="first-letter">Media</namespace>
      <namespace key="-1" case="first-letter">Special</namespace>
      <namespace key="0" case="first-letter" />
      <namespace key="1" case="first-letter">Talk</namespace>
      <namespace key="2" case="first-letter">User</namespace>
      <namespace key="3" case="first-letter">User talk</namespace>
      <namespace key="4" case="first-letter">Wikipedia</namespace>
      <namespace key="5" case="first-letter">Wikipedia talk</namespace>
      <namespace key="6" case="first-letter">File</namespace>
      <namespace key="7" case="first-letter">File talk</namespace>
      <namespace key="8" case="first-letter">MediaWiki</namespace>
      <namespace key="9" case="first-letter">MediaWiki talk</namespace>
      <namespace key="10" case="first-letter">Template</namespace>
      <namespace key="11" case="first-letter">Template talk</namespace>
      <namespace key="12" case="first-letter">Help</namespace>
      <namespace key="13" case="first-letter">Help talk</namespace>
      <namespace key="14" case="first-letter">Category</namespace>
      <namespace key="15" case="first-letter">Category talk</namespace>
      <namespace key="100" case="first-letter">Portal</namespace>
      <namespace key="101" case="first-letter">Portal talk</namespace>
      <namespace key="108" case="first-letter">Book</namespace>
      <namespace key="109" case="first-letter">Book talk</namespace>
      <namespace key="118" case="first-letter">Draft</namespace>
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      <namespace key="446" case="first-letter">Education Program</namespace>
      <namespace key="447" case="first-letter">Education Program talk</namespa
      <namespace key="710" case="first-letter">TimedText</namespace>
      <namespace key="711" case="first-letter">TimedText talk</namespace>
      <namespace key="828" case="first-letter">Module</namespace>
      <namespace key="829" case="first-letter">Module talk</namespace>
      <namespace key="2300" case="first-letter">Gadget</namespace>
      <namespace key="2301" case="first-letter">Gadget talk</namespace>
      <namespace key="2302" case="case-sensitive">Gadget definition</namespace>
      <namespace key="2303" case="case-sensitive">Gadget definition talk</namespace>
    </namespaces>
  </siteinfo>
```

Wikipedia data structure

Namespaces

Subject namespaces		Talk namespaces	
0	(Main/Article)	Talk	1
2	User	User talk	3
4	Wikipedia	Wikipedia talk	5
6	File	File talk	7
8	MediaWiki	MediaWiki talk	9
10	Template	Template talk	11
12	Help	Help talk	13
14	Category	Category talk	15
100	Portal	Portal talk	101
108	Book	Book talk	109
118	Draft	Draft talk	119
446	Education Program	Education Program talk	447
710	TimedText	TimedText talk	711
828	Module	Module talk	829
2300	Gadget	Gadget talk	2301
2302	Gadget definition	Gadget definition talk	2303

Virtual namespaces

-1	Special
-2	Media

Revision file format

```
<page>
  <title>Ôn Keuë</title>
  <ns>0</ns>
  <id>1</id>
  <revision>
    <id>1028</id>
    <timestamp>2008-04-13T07:53:23Z</timestamp>
    <contributor>
      <ip>125.162.38.87</ip>
    </contributor>
    <comment>New page: Jinoë droën neuh ka neutamong lam Wikipèdia  Acèh. Wikipèdia  Acèh
nyoë mantöng geu'ujoë, geukalön peuë ék na soë peudawôk peuë h'an. Meunyoë le nyang pakoë,
Wikipèdi...</comment>
    <model>wikitext</model>
    <format>text/x-wiki</format>
    <text id="815" bytes="3106" />
    <sha1>43iy7hfjh19xt1683z27ii0ie35z9am</sha1>
  </revision>
  <revision>
    <id>1029</id>
    <parentid>1028</parentid>
    <timestamp>2008-04-13T08:01:10Z</timestamp>
    <contributor>
      <username>Si Gam Acèh</username>
      <id>0</id>
    </contributor>
    <comment>Removing all content from page</comment>
    <model>wikitext</model>
    <format>text/x-wiki</format>
    <text id="816" bytes="0" />
    <sha1>phoiac9h4m842xq45sp7s6u21eteeq1</sha1>
  </revision>
</page>
```

data/page.xml

Challenge - expat

- Extract the article revision information onto a csv file with the format:

page_id, revision_id, timestamp, title

In the file:

data/acewiki-20170420-stub-meta-history.xml.gz

```
<page>
  <title>Ôn Keuë</title>
  <ns>0</ns>
  <id>1</id>
  <revision>
    <id>1028</id>
    <timestamp>2008-04-13T07:53:23Z</timestamp>
    <contributor>
      <ip>125.162.38.87</ip>
    </contributor>
    <comment>New page: Jinoë droën neuh ka neutamong
lam Wikipèdia  Acèh. Wikipèdia  Acèh nyoë mantöng
geu'ujoë, geukalön peuë ék na soë peudawôk peuë h'an
Meunyoë le nyang pakoë, Wikipèdi...</comment>
    <model>wikitext</model>
    <format>text/x-wiki</format>
    <text id="815" bytes="3106" />
    <sha1>43iy7hfjh19xt1683z27ii0ie35z9am</sha1>
  </revision>
  <revision>
    <id>1029</id>
    <parentid>1028</parentid>
    <timestamp>2008-04-13T08:01:10Z</timestamp>
    <contributor>
      <username>Si Gam Acèh</username>
      <id>0</id>
    </contributor>
    <comment>Removing all content from page</comment
    <model>wikitext</model>
    <format>text/x-wiki</format>
    <text id="816" bytes="0" />
    <sha1>phoiac9h4m842xq45sp7s6u21eteeq1</sha1>
  </revision>
</page>
```

data/page.xml

Challenge - expat

- Extract the article revision information onto a csv file with the format:

page_id, revision_id, timestamp, title

In the file:

data/acewiki-20170420-stub-meta-history.xml.gz

There are 3 <id> tags. You have to keep track of which one you're in!

```
<page>
  <title>Ôn Keuë</title>
  <ns>0</ns>
  <id>1</id>
  <revision>
    <id>1028</id>
    <timestamp>2008-04-13T07:53:23Z</timestamp>
    <contributor>
      <ip>125.162.38.87</ip>
    </contributor>
    <comment>New page: Jinoë droën neuh ka neutamong
lam Wikipèdia  Acèh. Wikipèdia  Acèh nyoë mantöng
geu'ujoë, geukalön peuë ék na soë peudawôk peuë h'an
Meunyoë le nyang pakoë, Wikipèdi...</comment>
    <model>wikitext</model>
    <format>text/x-wiki</format>
    <text id="815" bytes="3106" />
    <sha1>43iy7hfjh19xt1683z27ii0ie35z9am</sha1>
  </revision>
  <revision>
    <id>1029</id>
    <parentid>1028</parentid>
    <timestamp>2008-04-13T08:01:10Z</timestamp>
    <contributor>
      <username>Si Gam Acèh</username>
      <id>0</id>
    </contributor>
    <comment>Removing all content from page</comment
    <model>wikitext</model>
    <format>text/x-wiki</format>
    <text id="816" bytes="0" />
    <sha1>phoiac9h4m842xq45sp7s6u21eteeq1</sha1>
  </revision>
</page>
```

data/page.xml

Challenge - expat

```
import sys
import gzip
from xml.parsers import expat

isContributor = False
isArticle = False
isPage = False
isData = False
buffer = u""
page_id = None
timestamp = None
revision_id = None

fields = set(["timestamp", "page", "id", "ns", "revision", "contributor"])

def start_element(name, attrs):
    global buffer, isData, isPage, isContributor

    if name in fields:
        buffer = ""

        if name == "page":
            isPage = True
        elif name == "revision":
            isPage = False
        elif name == "contributor":
            isContributor = True
        else:
            isData = True
```

wikipedia_revisions.py

Challenge - expat

```
def end_element(name):
    global buffer, isData, isPage, isArticle, isContributor, timestamp, page_id, revision_id

    if name in fields:
        if name == "ns":
            if int(buffer) == 0:
                isArticle = True
            else:
                isArticle = False
        elif name == "timestamp":
            timestamp = buffer
        elif name == "id":
            if isPage:
                page_id = buffer
                isPage = False
            elif not isContributor:
                revision_id = buffer
        elif name == "revision":
            if isArticle:
                print(",".join([page_id, revision_id, timestamp]))
        elif name == "page":
            isArticle = False
        elif name == "contributor":
            isContributor = False

    buffer = ""
    isData = False
```


wikipedia_revisions.py

Challenge - expat

```
def char_data(data):
    global isData, buffer

    if isData:
        buffer += data

if __name__ == "__main__":
    p = expat.ParserCreate()

    p.StartElementHandler = start_element
    p.EndElementHandler = end_element
    p.CharacterDataHandler = char_data

    print(",".join(["page_id", "revision_id", "timestamp", "title"]))

    try:
        p.ParseFile(gzip.open(sys.argv[1]))
    except Exception as e:
        print(e, file=sys.stderr)
```


wikipedia_revisions.py

Challenge - Matching titles

- As we saw before, matching titles and page_id is not easy. The only place where the two field appear together is in the revisions files. Fortunately, we already know how to process those.

- Even more fortunately, the Wikimedia foundation also makes available the stub-meta-current.xml.gz that have a similar format to the stub-meta-history.xml.gz files but include only the current revision of each page.

- This challenge has two parts:

    - Convert data/abwiki-20170420-stub-meta-current.xml.gz to CSV

    - Use your newly generated data/abwiki-20170420-stub-meta-current.csv.gz to match the titles in data/acewiki-20170420-langlinks.csv.gz to the page_id in for the abwiki wikipedia edition.

```python
import gzip

header = {}
line_count = 0

ll_from = {}
for line in gzip.open("data/acewiki-20170420-langlinks.csv.gz", "rt"):
    fields = line.strip().split(',')

    if line_count == 0:
        header = dict(zip(fields, range(len(fields))))

    line_count += 1

    if fields[header["ll_lang"]] == "ab":
        key = fields[header["ll_title"]]

        ll_from[key] = fields[header["ll_from"]]

header = {}
line_count = 0

for line in gzip.open("data/abwiki-20170420-stub-meta-current.csv.gz", "rt"):
    fields = line.strip().split(',')

    if line_count == 0:
        header = dict(zip(fields, range(len(fields))))

    line_count += 1

    title = fields[header["title"]]

    if title in ll_from:
        print("ace", ll_from[title], "ab", fields[header["page_id"]])
```

wikipedia_langlinks.py