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Truth or Dare: Investigating Claims Truthfulness with ClaimsKG

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Date

Fact-checking websites and Claims



What is ClaimsKG?

- A Knowledge Graph of Fact checked Claims.

Claim

- Statement which has been reviewed by a fact-checking organization in order to assess its truthfulness

Objective of ClaimsKG

- To generate ground truth for machine learning models
- Facilitate structured queries about their truth values, authors, dates, journalistic reviews, and other kinds of metadata

Statistics-ClaimsKG Aug 2022

Websites	URL	Total Claims	Total Entities	True Claims	False Claims	Mixture Claims	Other Claims
Global	NA	59,580	1,371,271	7,151	30,858	10,790	10,789
Politifact	https://politifact.com	21,450	354,653	2,501	8,353	6,733	3,863
Snopes	https://snopes.com	14,031	481,199	2,843	6,803	2,556	1,829
AFP Factcheck	https://factcheck.afp.com	5,058	151,208	3	4,147	97	811
AFP Factuel(FR)	https://factuel.afp.com	935	18,739	5	627	94	209
Checkyourfact	https://checkyourfact.com	3,971	16,699	233	3,691	4	43
Vishva news	https://www.vishvasnews.com	3,490	8,930	0	2,933	565	0
Fullfact	https://fullfact.org	2,928	6,870	403	729	152	1,644
Truth or Fiction	https://truthorfiction.com	2,908	21,298	853	260	14	1,781
Africacheck	https://africacheck.org	2,854	11,448	197	2,364	258	35
Fatabyyano	https://fatabyanno.net	1,379	101	46	820	4	509
Factograph	https://factograph.info	255	1,201	19	69	144	23
Eu Factcheck	https://eufactcheck.eu	297	5,699	48	48	159	42
Polygraph	https://polygraph.info	24	293,226	0	14	10	0



13 Websites



59k Claims



1M Entities



14 Languages

Updates for Latest Release – ClaimsKG Aug 2022



Claims in various languages like English, French, Russian, Urdu, Hindi, Punjabi, Assamese, Tamil, Malayalam, Gujarati, Telegu, Marathi, Odia, and Bengali



Addition of 5 **new** Websites Factograph, Fatabyanno, Vishvanews, Polygraph, EuFactcheck),
Removal of factscan.ca(due to unavailability)



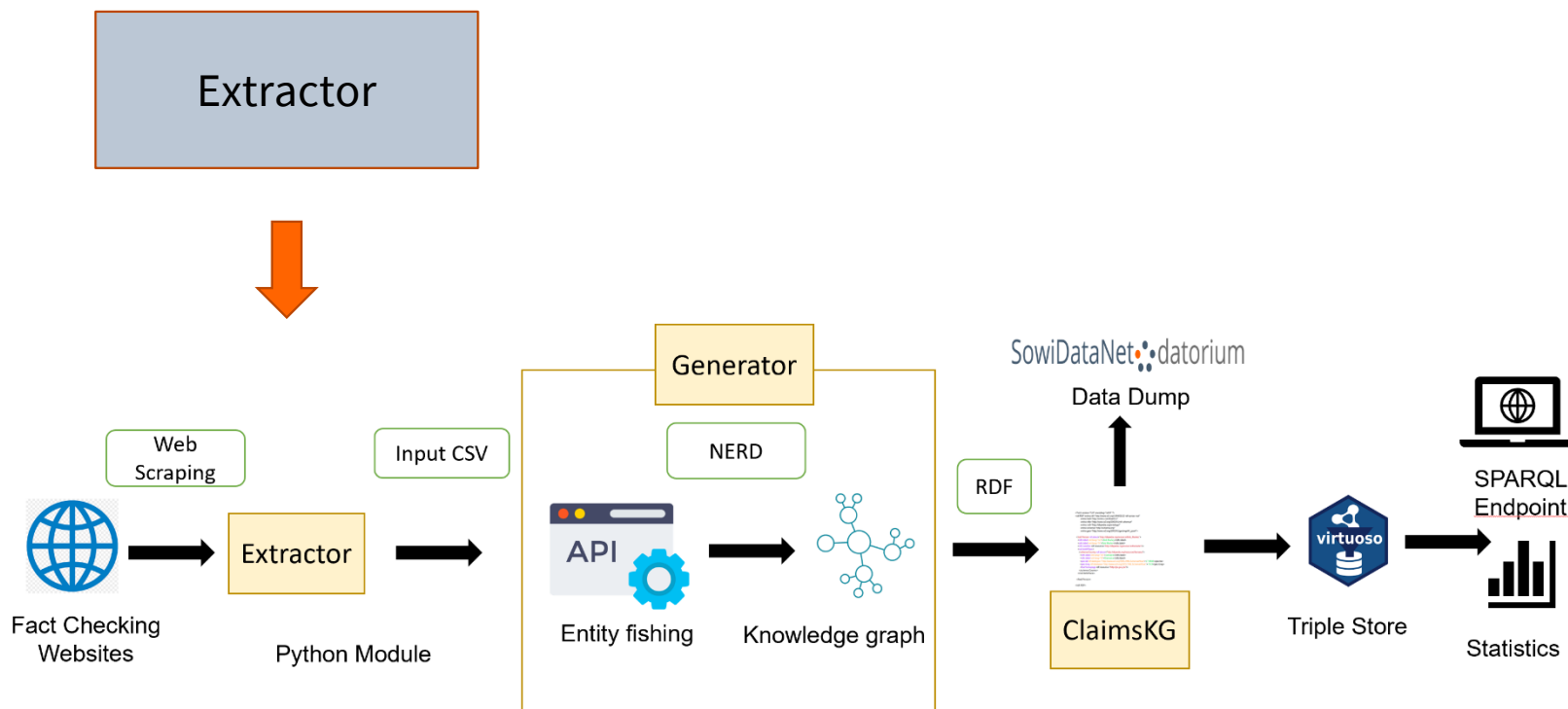
Time frame : 1996 to 2022(August)



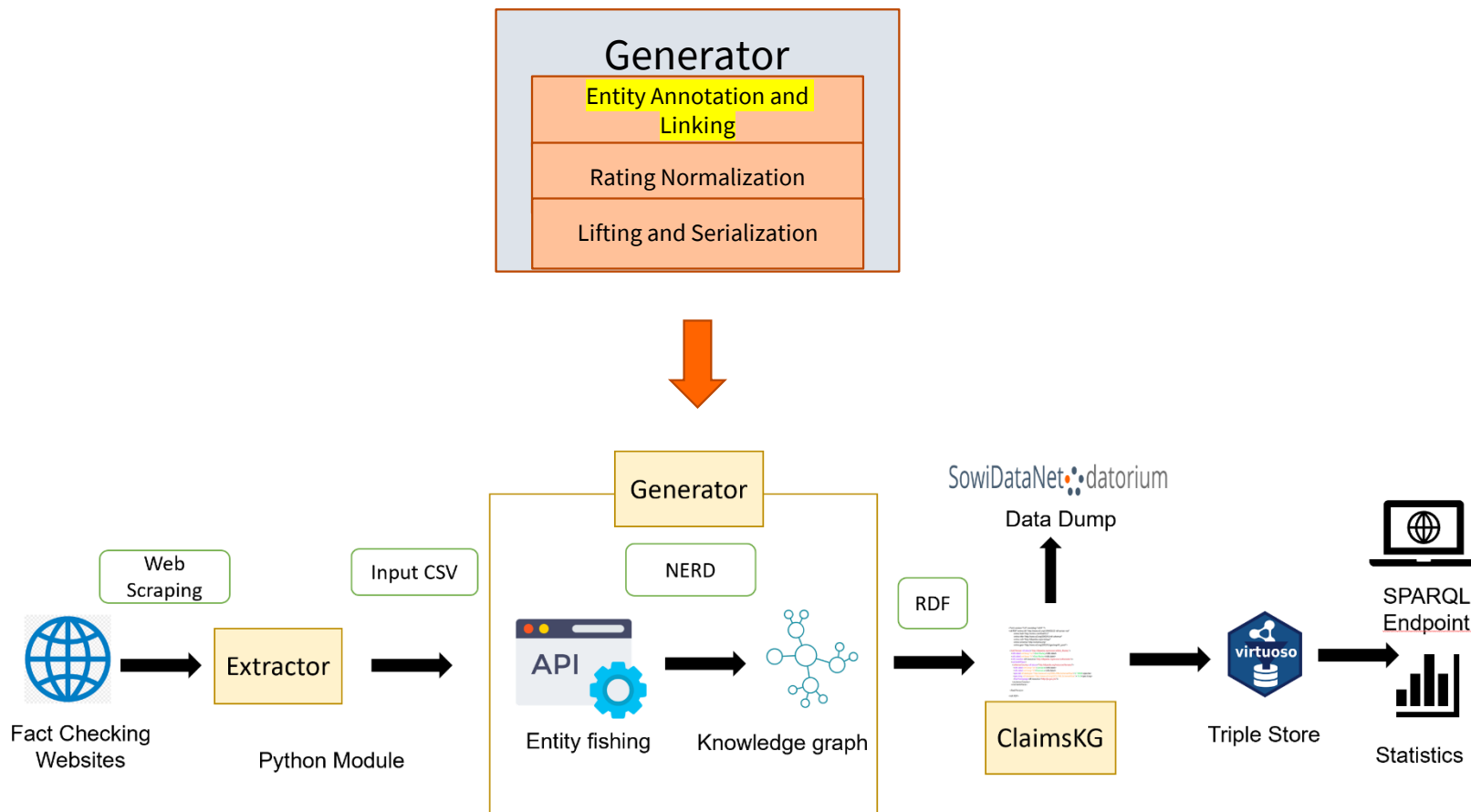
New Entity Linking tool*

*(<https://github.com/hirmeos/entity-fishing-client-python>)

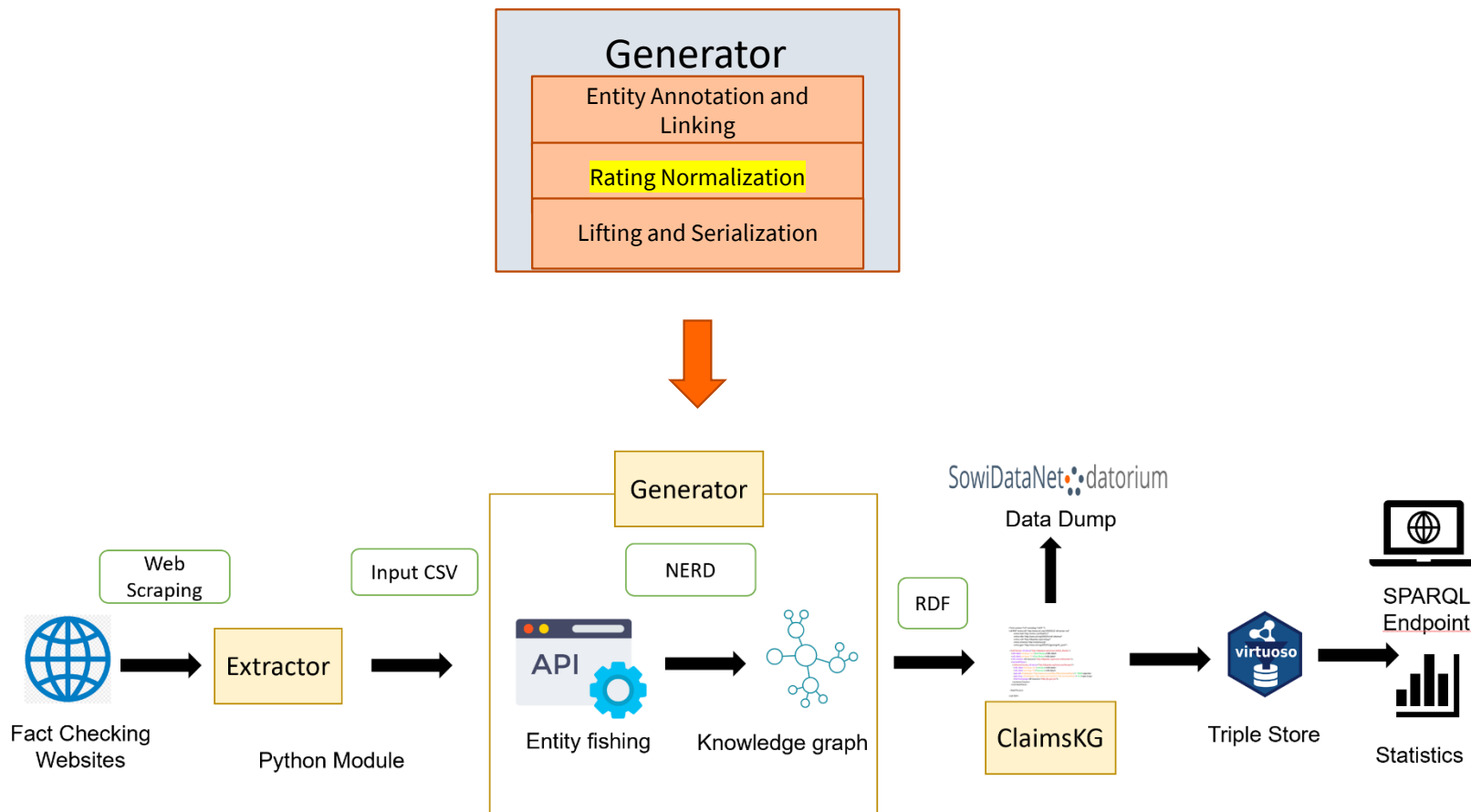
ClaimsKG-Pipeline and Modules



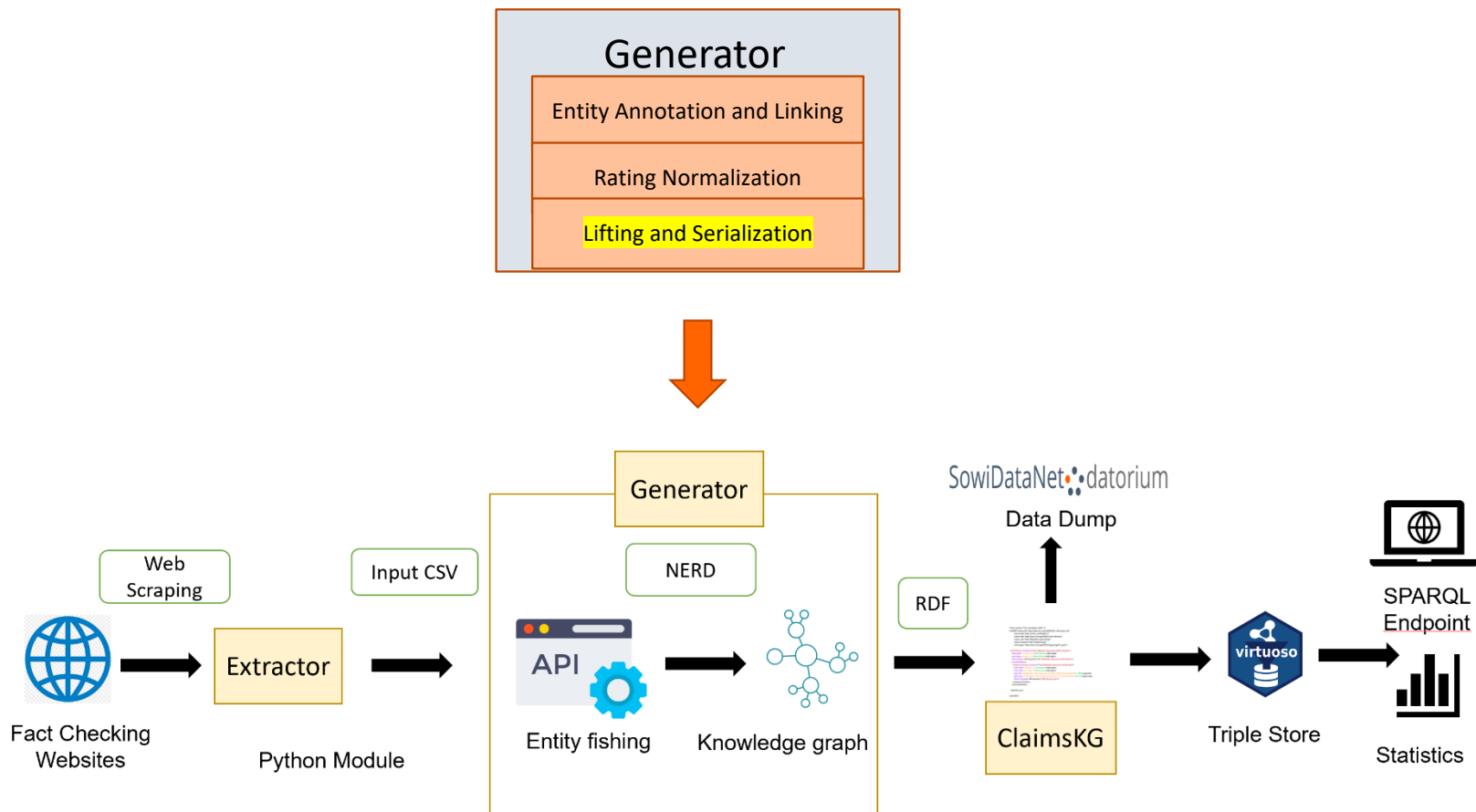
ClaimsKG-Pipeline and Modules



ClaimsKG-Pipeline and Modules



ClaimsKG-Pipeline and Modules



Final Outcome



The **Claims data model** for representing fact-checked claims and associated information

<https://data.gesis.org/claimskg/site/>



An **open-source pipeline** for crawling and extracting data from fact-checking websites

https://github.com/claimskg/claimskg-extractor/tree/latest_release,
https://github.com/claimskg/claimskg_generator/tree/latest_release



A **large-scale KG** of claims and associated metadata

<https://doi.org/10.7802/2469>



A **Web interface** for search and exploration of the resource. <https://data.gesis.org/claimskg/explorer>

Claim

@prefix ckg: http://data.gesis.org/claimskg

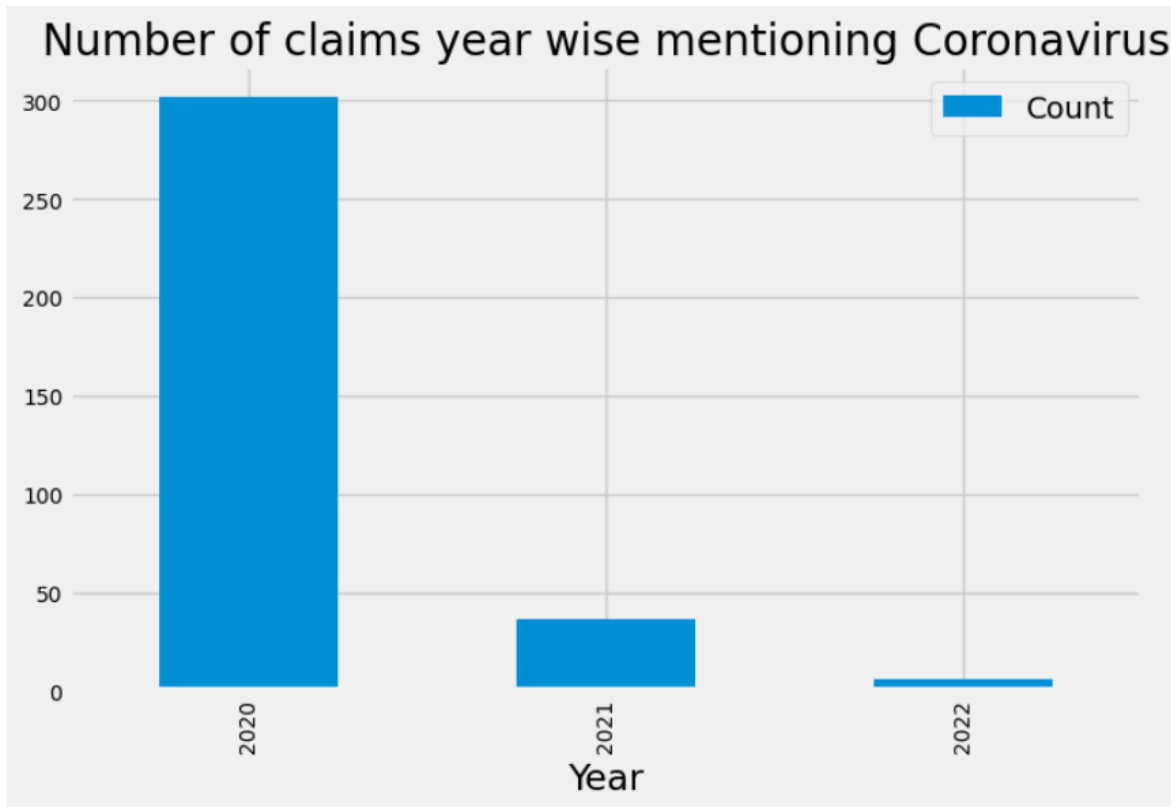
```
<ckg/creative_work/709de33f-d764-557c-9992-e31075fb3237> a schema:CreativeWork ;  
  schema:author <ckg/creative_work_author/00d0476e-0ba3-5544-88be-7c0303ce856c> ;  
  schema:datePublished "2021-03-17"^^xsd:date ;  
  schema:mentions <ckg/mention/3d755852-2309-5364-9c47-82b385f9d18a> ;  
  schema:text "Biden faked an interaction with reporters"@en .
```

```
<ckg/claim_review/0974e149-fd11-5073-affb-248850076bb6> a schema:ClaimReview ;  
  schema:author <ckg/organization/factcheck_afp> ;  
  schema:datePublished "2021-03-19"^^xsd:date ;  
  schema:headline "Biden did not fake comments to reporters on White House lawn"@en ;  
  schema:inLanguage <ckg/language/English> ;  
  schema:itemReviewed <ckg/creative_work/709de33f-d764-557c-9992-e31075fb3237> ;  
  schema:reviewBody "Joe Biden's delay in holding a news conference has spurred criticism online,... ."@en ;  
  schema:reviewRating <ckg/rating/normalized/claimskg_FALSE>, <ckg/rating/original/factcheck_afp_false_1> ;  
  schema:url <https://factcheck.afp.com/biden-did-not-fake-comments-reporters-white-house-lawn> .
```

A sample claim in Knowledge Graph from the Website Fullfact


Use-Cases


1. Requesting number of claims year wise mentioning Coronavirus




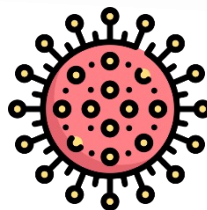
Use-Cases

2. Requesting all false claims mentioning “Coronavirus” year-wise.


"Genuine news report says Pope Francis announced coronavirus vaccine is 'required to enter heaven'" 2020-12-09 

"Germany has sent a bill to China for “coronavirus damages”." 2020-04-20 

"Flu vaccine will give you coronavirus" 2020-10-08 



"Genuine message about COVIDSafe, Australia’s coronavirus contact-tracing app" 2020-04-29 

"Quatre hommes contaminés au coronavirus se sont échappés d'un hôpital au Cameroun" 2020-03-25 

Federated Queries with External Databases

2. Requesting all claims mentioning President of the United States from the Democratic Party



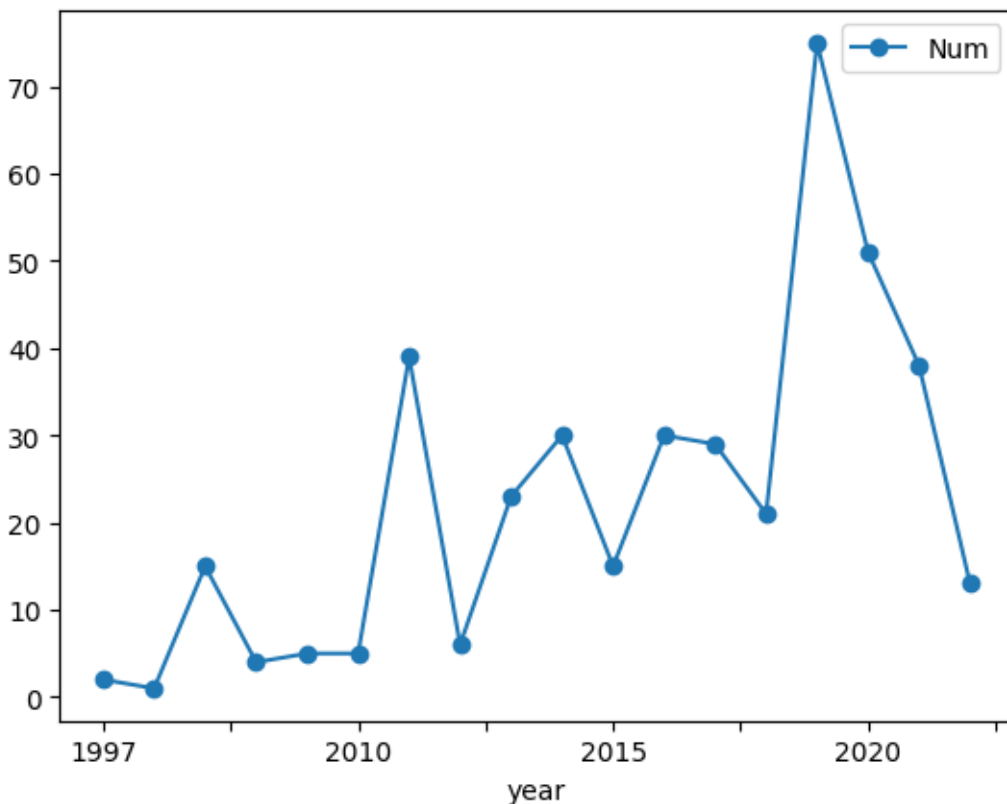
"Barack Obama began his presidency 'with an apology tour.'",
<http://www.politifact.com/factchecks/2012/aug/31/mitt-romney/mitt-romney-said-barack-obama-began-his-presidency/>
"http://dbpedia.org/resource/Barack_Obama"

"“America is dead’ — Joe Biden actually said this at his Iowa rally.”,
<http://www.politifact.com/factchecks/2020/oct/31/blog-posting/no-joe-biden-didnt-say-america-dead/>
"http://dbpedia.org/resource/Joe_Biden"



"Jimmy Carter said that medical marijuana cured his cancer.“
<https://www.snopes.com/fact-check/jimmy-carters-cancer-cured-marijuana/>
"http://dbpedia.org/resource/Jimmy_Carter"

1. Requesting all claims related to “LGBTQ” community year wise



Sydney Morning Herald
<https://www.smh.com.au> › Politics › Federal

Same-sex marriage legalised in Australia as Parliament ...

7 Dec 2017 — **Australia** has become the 26th country to **legalise same-sex marriage** after the law passed on Thursday with the overwhelming backing of the ...

Australian Parliament House
<https://www.aph.gov.au> › pubs › Quick_Guides › SS...

Chronology of same-sex marriage bills introduced into the ...

On 15 November 2017 Senator Dean Smith (LIB, WA) introduced, on behalf of eight cross-party co-sponsors, a bill to amend the **Marriage Act 1961** (Cth) so as to ...

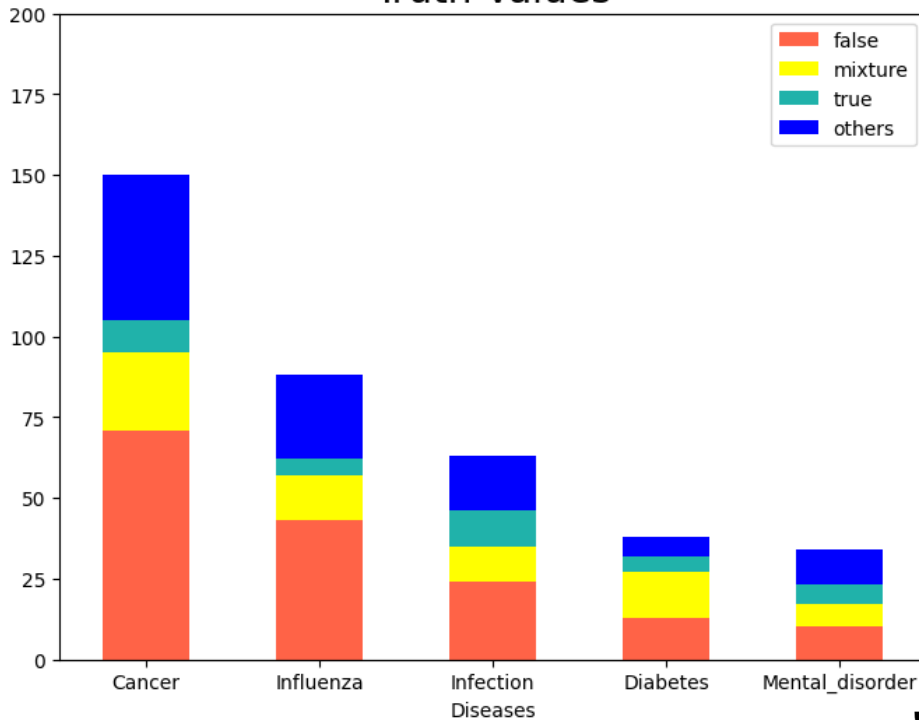
CNN.com
<https://www.cnn.com> › 2017/12/07 › asia › australia-sam...

Australia legalizes same-sex marriage

7 Dec 2017 — **Australia's parliament** voted to **legalize same-sex marriage** Thursday after years of political jockeying and fierce public debate.

1. Veracity labels of all claims mentioning diseases

Truth Values



FALSE

Sunscreen causes cancer

Owning a chihuahua can help cure a person of asthma. **FALSE**

"Rubbing hydrogen peroxide on the body "once, preferably twice a day" treats cancer. **FALSE**

Malaria kills 756,000 under five Nigerian children each year **FALSE**

"Dandelion root extracts can cure can forms of cancer" **FALSE**

Paracetamol painkillers like Panadol cause addiction **FALSE**

Future Goals

Strengthen the NERD
tool

Monitoring sparql
endpoint

Scrape data at
regular intervals

Add sources with
diverse languages

Analyze similar
claims

As a corpus for
research

Links to ClaimsKG data and tools

- ClaimsKG Website <https://data.gesis.org/claimskg/site/>
- Dataset Download <https://doi.org/10.7802/2469>
- Previous Versions <https://zenodo.org/record/3518960>
- SPARQL Endpoint <https://data.gesis.org/claimskg/sparql>
- Claims Ontology <https://data.gesis.org/claimskg/site/#model>
- Source Code <https://github.com/claimskg>
- ClaimsKGExplorer- <https://data.gesis.org/claimskg/explorer>

Publications

- Tchechmedjiev, A., Fafalios, P., Boland, K., Gasquet, M., Zloch, M., Zapilko, B., Dietze, S., Todorov, K., ClaimsKG: A Live Knowledge Graph of Fact-Checked Claims, *18th International Semantic Web Conference (ISWC19)*, Auckland, New Zealand, October 2019.
- Gasquet, M., Brechtel, D., Zloch, M., Tchechmedjiev, A., Boland, K., Fafalios, P., Dietze, S., Todorov, K., Exploring Fact-checked Claims and their Descriptive Statistics, *ISWC Satellites 2019*: 289-292.
- Boland, K., Fafalios, P., Tchechmedjiev, A., Todorov, K., Dietze, S., Modeling and Contextualizing Claims, in Proceedings of the *2nd International Workshop on Contextualised Knowledge Graphs*, collocated with *18th International Semantic Web Conference (ISWC2019)*, Auckland, 27 October, 2019.

Fragen?

A photograph of a man with a beard and a cigarette in his mouth, wearing a dark shirt, sitting on a bench. He is holding a piece of cardboard with handwritten text. The text on the sign reads: "ADVICE - \$.50", "GOOD ADVICE - \$2.00", and "Bad jokes for free". The man is wearing a tan jacket and pants. The background is a blurred outdoor setting.

ADVICE - \$.50
GOOD ADVICE - \$2.00
Bad jokes for free

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Thank You!

If you would like to know more please contact:
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Entity fishing Performance*

	Priors	entity-fishing	Wikifier	DoSeR	AIDA	Spotlight	Babelfy	WAT	(Ganea & Hofmann, 2017)
ACE2004	83.1	83.5	83.4	90.7	81.5	71.3	56.1	80.0	88.5
AIDA-CONLL-testb	66.1	76.5	77.7	78.4	77.4	59.3	59.2	84.3	92.2
AQUAINT	80.3	89.1	86.2	84.2	53.2	71.3	65.2	76.8	88.5
MSNBC	71.1	86.7	85.1	91.1	78.2	51.1	60.7	77.7	93.7

F score for entity-fishing tool for multiple datasets

* <https://github.com/kermitt2/entity-fishing>