

Test case1:

```
(proj1-venv) lh3009@project1-instance:/home/zy2496/proj1/cs6111-proj1$ python3 main.py  
AIzaSyCrJrAUdogkB9X5cqO7VbJDO5IR2de_fBM aa148555cb784f522 0.9 "cases"
```

Parameters:

Client key = AIzaSyCrJrAUdogkB9X5cqO7VbJDO5IR2de\_fBM

Engine id = aa148555cb784f522

Precision = 0.9

Query = cases

Iteration #1

Google Search Results:

=====

Result 1

[

URL: <https://www.cases.org/>

Title: CASES: Home

Description: From court and program offices in the Bronx, Brooklyn, and Manhattan, CASES provides community-based alternatives to jail and prison. These programs address...

]

Relevant (Y/N)?n

Result 2

[

URL: <https://covid.cdc.gov/covid-data-tracker/>

Title: CDC COVID Data Tracker

Description: Your Community · County View · County View Map Thumbnail ; Case, Death, & Laboratory Testing Trends by Location and Demographics · Trends in Cases and Deaths by...

]

Relevant (Y/N)?y

Result 3

[

URL: <https://www.worldometers.info/coronavirus/>

Title: COVID Live - Coronavirus Statistics - Worldometer

Description: Live statistics and coronavirus news tracking the number of confirmed cases, recovered patients, tests, and death toll due to the COVID-19 coronavirus from...

]

Relevant (Y/N)?y

Result 4

[

URL: <https://www.verizon.com/products/phone-cases/>

Title: Phone Cases for your iPhone, Samsung, and more | Verizon

Description: Shop Verizon for an extensive selection of phone cases. Protect your phone from accidents. Featuring products from OtterBox, Case-Mate, Kate Spade & more.

]

Relevant (Y/N)?n

Result 5

[  
URL: <https://www.dhs.wisconsin.gov/covid-19/cases.htm>  
Title: COVID-19: Wisconsin Cases | Wisconsin Department of Health ...  
Description: Percent of confirmed or probable cases by demographics and region; Percent of cases resulting in hospitalization within age group; Percent of cases living in...

] Relevant (Y/N)?y

Result 6

[  
URL: <https://www.nytimes.com/interactive/2021/us/covid-cases.html>  
Title: Covid in the U.S.: Latest Maps, Case and Death Counts - The New ...  
Description: Track Covid-19 in your area, and get the latest state and county data on cases, deaths, hospitalizations, tests and vaccinations.

] Relevant (Y/N)?y

Result 7

[  
URL: <https://www.vdh.virginia.gov/coronavirus/.../covid-19-in-virginia-cases/>  
Title: Cases - Coronavirus  
Description: Starting on February 1, 2022, VDH is using 2020 National Center for Health Statistics (NCHS) population estimates for COVID-19 events (cases,...

] Relevant (Y/N)?y

Result 8

[  
URL: <https://www.oyez.org/cases>  
Title: 2021-2022 Term | Oyez  
Description: US Supreme Court cases from the 2021-2022 term. ... A case in which the Court will decide whether federal courts have subject-matter jurisdiction to confirm...

] Relevant (Y/N)?n

Result 9

[  
URL: <https://www.cdc.gov/measles/cases-outbreaks.html>  
Title: Measles Cases and Outbreaks | CDC  
Description: Measles cases in 2019. From January 1 to December 31, 2019, 1,282\* individual cases of measles were confirmed in 31 states. This is the greatest number...

] Relevant (Y/N)?n

Result 10

[  
URL: <https://coronavirus.maryland.gov/>  
Title: Maryland Department of Health: Coronavirus

Description: Data for ZIP codes with 7 or fewer cases are suppressed. Hospitalization data reflect COVID-19 bed occupancy in Maryland hospitals. Testing volume data...

]

Relevant (Y/N)?y

FEEDBACK SUMMARY

Current Query : cases

Current Precision : 0.6

Still below the desired precision of 0.9

Indexing results ....

Augmenting by covid 19

Parameters:

Client key = AIzaSyCrJrAUdogkB9X5cqO7VbJDO5IR2de\_fBM

Engine id = aa148555cb784f522

Precision = 0.9

Query = cases covid 19

Iteration #2

Google Search Results:

=====

Result 1

[

URL: <https://www.worldometers.info/coronavirus/>

Title: COVID Live - Coronavirus Statistics - Worldometer

Description: Live statistics and coronavirus news tracking the number of confirmed cases, recovered patients, tests, and death toll due to the COVID-19 coronavirus from...

]

Relevant (Y/N)?y

Result 2

[

URL: <https://covid.cdc.gov/covid-data-tracker/>

Title: CDC COVID Data Tracker

Description: COVID Data Tracker. Find maps and charts tracking cases, deaths, and trends of COVID-19 in the United States, updated daily by 8 pm ET...

]

Relevant (Y/N)?y

Result 3

[

URL: <https://coronavirus.jhu.edu/map.html>

Title: COVID-19 Map - Johns Hopkins Coronavirus Resource Center

Description: Coronavirus COVID-19 Global Cases by the Center for Systems Science and Engineering (CSSE) at Johns Hopkins University (JHU)

]

Relevant (Y/N)?y

Result 4

[

URL: <https://www.mass.gov/info-details/covid-19-response-reporting>

Title: COVID-19 Response Reporting | Mass.gov

Description: Daily and cumulative reports on Massachusetts COVID-19 cases, testing, and hospitalizations. Additional reports include nursing facility data, cases by...

]

Relevant (Y/N)?y

Result 5

[

URL: <https://www.health.state.mn.us/diseases/coronavirus/situation.html>

Title: Situation Update for COVID-19 - Minnesota Dept. of Health

Description: Case interviews are focused on people under 18 years old, hospitalizations, deaths, and people with vaccine breakthrough or...

]

Relevant (Y/N)?y

Result 6

[

URL: <https://dph.georgia.gov/covid-19-daily-status-report>

Title: COVID-19 Status Report | Georgia Department of Public Health

Description: Confirmed Cases. 1,905,790 ; Confirmed Deaths. 29,352 ; Hospitalizations. 106,955 ; ICU Admissions. 15,294 ; Antigen Positive Cases. 551,076...

]

Relevant (Y/N)?y

Result 7

[

URL: <https://coronavirus.maryland.gov/>

Title: Maryland Department of Health: Coronavirus

Description: There have been 244,892 COVID-19 cases among fully vaccinated Maryland residents. Of those cases, there were: 9,896 cases hospitalized, representing 28.01% of...

]

Relevant (Y/N)?y

Result 8

[

URL: <https://www.arcgis.com/apps/.../bda7594740fd40299423467b48e9ecf6>

Title: Coronavirus COVID-19 (2019-nCoV)

Description: COVID-19 Dashboard. by the Center for Systems Science and Engineering (CSSE) at Johns Hopkins University (JHU). Last Updated at (M/D/YYYY). Total Cases.

]

Relevant (Y/N)?y

Result 9

[

URL: <https://www.nytimes.com/interactive/2021/us/covid-cases.html>

Title: Covid in the U.S.: Latest Maps, Case and Death Counts - The New ...

Description: Track Covid-19 in your area, and get the latest state and county data on cases, deaths, hospitalizations, tests and vaccinations.

]

Relevant (Y/N)?y

Result 10

[

URL: <https://www.vdh.virginia.gov/coronavirus/see-the.../covid-19-in-virginia/>

Title: COVID-19 Data In Virginia - Coronavirus

Description: Case, hospitalization, and death data reflect Virginia residents only. ... COVID-19 Cases & Testing Dashboards ... COVID-19 Vaccine Dashboards.

]

Relevant (Y/N)?y

FEEDBACK SUMMARY

Current Query : cases covid 19

Current Precision : 1.0

Desired precision reached, done

Test Cae2:

(proj1-venv) **lh3009@project1-instance:/home/zy2496/proj1/cs6111-proj1\$** python3 main.py

AIzaSyCrJrAUdogkB9X5cqO7VbJDO5IR2de\_fBM aa148555cb784f522 0.9 "per se"

Parameters:

Client key = AIzaSyCrJrAUdogkB9X5cqO7VbJDO5IR2de\_fBM

Engine id = aa148555cb784f522

Precision = 0.9

Query = per se

Iteration #1

Google Search Results:

=====

Result 1

[

URL: <https://www.thomaskeller.com/perseny>

Title: Per Se | Thomas Keller Restaurant Group

Description: Per Se. Per Se Front Door. center. About. About; Restaurant · Team · Info & Directions · Gift Experiences · Reservations; Menus & Stories. Menus & Stories

]

Relevant (Y/N)?y

Result 2

[

URL: <https://www.merriam-webster.com/dictionary/perse>

Title: Perse Definition & Meaning - Merriam-Webster

Description: We generally use per se to distinguish between something in its narrow sense and some larger thing that it represents. Thus, you may have no objection to...

]

Relevant (Y/N)?n

Result 3

[

URL: [https://en.wiktionary.org/wiki/per\\_se](https://en.wiktionary.org/wiki/per_se)

Title: per se - Wiktionary

Description: In and of itself; by itself; without determination by or involvement of extraneous factors; as such quotations ∇ · (chiefly in negative polarity environments)...

]

Relevant (Y/N)?n

Result 4

[

URL: [https://en.wikipedia.org/wiki/Per\\_se](https://en.wikipedia.org/wiki/Per_se)

Title: Per se - Wikipedia

Description: per se, a Latin phrase meaning "by itself" or "in itself". Illegal per se, the legal usage in criminal and antitrust law; Negligence per se, legal use in tort...

]

Relevant (Y/N)?n

Result 5

[

URL: <https://www.exploretock.com/perse>

Title: Per Se - New York, NY | Tock

Description: Opened in 2004, Per Se is Thomas Keller's acclaimed interpretation of The French Laundry in the Deutsche Bank Center at Columbus Circle.

]

Relevant (Y/N)?y

Result 6

[

URL: <https://www.instagram.com/perseny/?hl=en>

Title: Untitled

Description: 232k Followers, 190 Following, 738 Posts - See Instagram photos and videos from Per Se (@perseny)

]

Relevant (Y/N)?y

Result 7

[

URL: <https://www.persegroup.com/>

Title: Per Se Group

Description: Providing workforce staffing solutions for oil & gas, chemical, renewable energy, engineering & construction, transmission & distribution, and ma...

]

Relevant (Y/N)?n

Result 8

[

URL: <https://www.yelp.com/biz/per-se-new-york>

Title: PER SE - 6804 Photos & 1720 Reviews - French - 10 Columbus Cir ...

Description: 1720 reviews of Per Se "This is Thomas Keller's new restaurant in New York. A must if you can get a reservation."

]

Relevant (Y/N)?y

Result 9

[

URL: <https://dictionary.cambridge.org/dictionary/english/per-se>

Title: PER SE | meaning in the Cambridge English Dictionary

Description: per se | American Dictionary ... by or of itself: It is not a pretty town per se, but it is where my family comes from, so I like it.

]

Relevant (Y/N)?n

Result 10

[

URL: [https://www.law.cornell.edu/wex/per\\_se](https://www.law.cornell.edu/wex/per_se)

Title: per se | Wex | US Law | LII / Legal Information Institute

Description: For example, in tort law, a statutory violation is negligence per se. One of the elements a person has to prove in a negligence claim is that the defendant...

]

Relevant (Y/N)?n

FEEDBACK SUMMARY

Current Query : per se

Current Precision : 0.4

Still below the desired precision of 0.9

Indexing results ....

Augmenting by new thomas

Parameters:

Client key = AIzaSyCrJrAUdogkB9X5cqO7VbJDO5IR2de\_fBM

Engine id = aa148555cb784f522

Precision = 0.9

Query = se new thomas per

Iteration #2

Google Search Results:

=====

Result 1

[

URL: <https://www.thomaskeller.com/perseny>

Title: Per Se | Thomas Keller Restaurant Group

Description: New York; Per Se; Las Vegas; Bouchon Bistro · Bouchon Bakery; Miami; The Surf Club Restaurant. Publications. Cookbooks · Finesse Magazine · MasterClass.

]

Relevant (Y/N)?y

Result 2

[

URL: <https://www.nytimes.com/2016/01/13/dining/pete-wells-per-se-review.html>

Title: At Thomas Keller's Per Se, Slips and Stumbles - The New York Times

Description: Jan 12, 2016 ... Such is Per Se's mystique that I briefly wondered if the failure to bring her a new napkin could have been intentional.

]

Relevant (Y/N)?n

Result 3

[

URL: <https://www.townandcountrymag.com/.../thomas-keller-per-se-new-york-times-review/>

Title: Thomas Keller Responds to New York Times Review of Per Se ...

Description: Sep 8, 2016 ... Can Thomas Keller Turn Around Per Se? The country's leading chef responds to that devastating New York Times review and talks about the...

]

Relevant (Y/N)?y

Result 4

[

URL: <https://www.thomaskeller.com/new-york-new-york/per-se/restaurant>

Title: Per Se entrance sign

Description: Restaurant Opened in 2004, Per Se is Thomas Keller's acclaimed New York interpretation of The French Laundry in the Deutsche Bank Center at Columbus Circle.

]

Relevant (Y/N)?y

Result 5

[

URL: <https://nymag.com/nymetro/food/reviews/restaurant/9333/>

Title: Thomas Keller's Per Se - New York Magazine Restaurant Review ...

Description: At Per Se, Thomas Keller makes his triumphant return to New York. The atmosphere may be sedate, but the food is anything but.

]

Relevant (Y/N)?y

Result 6

[

URL: <https://www.amazon.com/French-Laundry-Se-Thomas.../dp/1579658490>

Title: The French Laundry, Per Se (The Thomas Keller Library) Hardcover

Description: "Culinary demigod Thomas Keller's [new] cookbook . . . is a compendium of signature recipes from his two 3-Michelin star restaurants, an intimate look at how...

]

Relevant (Y/N)?y

Result 7

[



URL: [https://en.wikipedia.org/wiki/Per\\_Se\\_\(restaurant\)](https://en.wikipedia.org/wiki/Per_Se_(restaurant))

Title: Per Se (restaurant) - Wikipedia

Description: Per Se is a New American and French restaurant located on the fourth floor of the Time ...  
Thomas Keller opened Per Se in February 2004.

]

Relevant (Y/N)?y

Result 8

[

URL: <https://guide.michelin.com/us/en/new-york-state/new-york/.../per-se>

Title: Per Se – New York - a MICHELIN Guide Restaurant

Description: An experience at Thomas Keller's Per Se is one to be savored, treasured, recounted and remembered. Once you've been welcomed by the charming team,...

]

Relevant (Y/N)?y

Result 9

[

URL: [https://en.wikipedia.org/wiki/Thomas\\_Keller](https://en.wikipedia.org/wiki/Thomas_Keller)

Title: Thomas Keller - Wikipedia

Description: Food and dining[edit] · Yountville, CA: ad hoc, addendum, Bouchon, Bouchon Bakery, The French Laundry, La Calenda · New York: Bouchon Bakery, Per Se, TAK Room (...)

]

Relevant (Y/N)?y

Result 10

[

URL: <https://www.eater.com/.../thomas-keller-speaks-out-on-per-ses-pending-c-grade>

Title: Thomas Keller Speaks Out on Per Se's Pending 'C' Grade - Eater

Description: Mar 6, 2014 ... Per Se chef Thomas Keller is speaking out about the mistakes made at ... his three Michelin-starred, mega-expensive New York restaurant.

]

Relevant (Y/N)?y

FEEDBACK SUMMARY

Current Query : se new thomas per

Current Precision : 0.9

Desired precision reached, done

Test Case3:

(proj1-venv) **lh3009@project1-instance:/home/zy2496/proj1/cs6111-proj1\$** python3 main.py

AIzaSyCrJrAUdogkB9X5cqO7VbJDO5IR2de\_fBM aa148555cb784f522 0.9 "brin"

Parameters:

Client key = AIzaSyCrJrAUdogkB9X5cqO7VbJDO5IR2de\_fBM

Engine id = aa148555cb784f522

Precision = 0.9

Query = brin

Iteration #1

Google Search Results:

=====

Result 1

[

URL: [https://en.wikipedia.org/wiki/Sergey\\_Brin](https://en.wikipedia.org/wiki/Sergey_Brin)

Title: Sergey Brin - Wikipedia

Description: Sergey Mikhailovich Brin is an American business magnate, computer scientist, and Internet entrepreneur. Together with Larry Page, he co-founded Google.

]

Relevant (Y/N)?y

Result 2

[

URL: <https://brinandbrin.com/>

Title: Brin & Brin LLC – Law Firm

Description: The litigation, transactional and compliance lawyers at Brin & Brin have proven success in some of the toughest Texas venues. ... We have represented clients in a...

]

Relevant (Y/N)?n

Result 3

[

URL: <https://www.davidbrin.com/>

Title: worlds of David Brin

Description: David Brin is best-known for shining light — plausibly and entertainingly — on technology, society, and countless challenges confronting our rambunctious...

]

Relevant (Y/N)?n

Result 4

[

URL: <https://www.forbes.com/profile/sergey-brin/>

Title: Sergey Brin

Description: 6 Sergey Brin on the 2021 Forbes 400 - Sergey Brin stepped down as president of Alphabet, parent company of Google, in December 2019 but remains a...

]

Relevant (Y/N)?y

Result 5

[

URL: <https://www.postgresql.org/docs/13/brin-intro.html>

Title: Documentation: 13: 67.1. Introduction - PostgreSQL

Description: BRIN stands for Block Range Index. BRIN is designed for handling very large tables in which certain columns have some natural correlation with their...

]

Relevant (Y/N)?n

Result 6

[

URL: <https://en.wiktionary.org/wiki/brin>

Title: brin - Wiktionary

Description: NounEdit · One of the radiating sticks of a fan. The outermost are larger and longer, and are called panaches. · A single silkworm thread extruded from the gland,...

]

Relevant (Y/N)?n

Result 7

[

URL: <https://www.bringlass.com/>

Title: Brin Glass: Commercial Glass Company

Description: Brin Glass provides commercial glass services including wholesale distribution and fabrication of glass and architectural aluminum products, glass service...

]

Relevant (Y/N)?n

Result 8

[

URL: <https://www.postgresql.org/docs/13/brin.html>

Title: Documentation: 13: Chapter 67. BRIN Indexes - PostgreSQL

Description: BRIN Indexes. Prev · Up, Part VII. Internals, Home · Next. Chapter 67. BRIN Indexes.

Table of Contents. 67.1. Introduction · 67.1.1. Index Maintenance.

]

Relevant (Y/N)?n

Result 9

[

URL: <https://www.brinlevinson.com/>

Title: Brin Levinson

Description: The Art of Brin Levinson.

]

Relevant (Y/N)?n

Result 10

[

URL: <https://www2.math.binghamton.edu/p/people/matt/start>

Title: Matthew G. Brin [Binghamton University Department of Mathematical ...

Description: Matthew G. Brin. Professor Emeritus Ph.D., 1977, University of Wisconsin-Madison At Binghamton since 1978. Areas of Interest: Geometric topology,...

]

Relevant (Y/N)?n

FEEDBACK SUMMARY

Current Query : brin

Current Precision : 0.2

Still below the desired precision of 0.9

Indexing results ....

Augmenting by sergey google

Parameters:

Client key = AIzaSyCrJrAUdogkB9X5cqO7VbJDO5IR2de\_fBM

Engine id = aa148555cb784f522

Precision = 0.9

Query = brin sergey google

Iteration #2

Google Search Results:

=====

Result 1

[

URL: [https://en.wikipedia.org/wiki/Sergey\\_Brin](https://en.wikipedia.org/wiki/Sergey_Brin)

Title: Sergey Brin - Wikipedia

Description: Sergey Mikhailovich Brin is an American business magnate, computer scientist, and Internet entrepreneur. Together with Larry Page, he co-founded Google.

]

Relevant (Y/N)?y

Result 2

[

URL: <https://www.forbes.com/profile/sergey-brin/>

Title: Sergey Brin

Description: REAL TIME NET WORTH · Sergey Brin stepped down as president of Alphabet, parent company of Google, in December 2019 but remains a controller shareholder and a...

]

Relevant (Y/N)?y

Result 3

[

URL: <https://www.theverge.com/.../google-alphabet-larry-page-sergey-brin-sundar-pichai-co-founders-ceo-timeline>

Title: Google co-founders Larry Page and Sergey Brin: a timeline of their ...

Description: Dec 4, 2019 ... Larry Page and Sergey Brin founded Google in 1996 on the back of an algorithm, turned it into one of the most valuable companies in the...

]

Relevant (Y/N)?y

Result 4

[

URL: <https://www.biography.com/business-figure/sergey-brin>

Title: Sergey Brin - Education, Google & Wife - Biography

Description: Aug 11, 2015 ... Sergey Brin is a computer scientist who created Google with Larry Page, the two becoming billionaires as Google developed into the world's...

]

Relevant (Y/N)?y

Result 5

[

URL: <https://www.britannica.com/biography/Sergey-Brin>

Title: Sergey Brin | Biography, Google, & Facts | Britannica

Description: Sergey Brin, American computer scientist and entrepreneur who created, along with Larry Page, the online search engine Google, one of the most successful...

]

Relevant (Y/N)?y

Result 6

[

URL: <https://www.theguardian.com/.../google-sergey-brin-synthetic-beef-hamburger>

Title: Google's Sergey Brin bankrolled world's first synthetic beef ...

Description: Aug 5, 2013 ... The billionaire co-founder of Google, Sergey Brin, said he invested €250000 in the technology for animal welfare reasons.

]

Relevant (Y/N)?y

Result 7

[

URL: <https://www.vanityfair.com/style/.../sergey-brin-amanda-rosenberg-affair>

Title: Sergey Brin and Amanda Rosenberg: Inside the Google Co ...

Description: Mar 12, 2014 ... The story behind Google co-founder Sergey Brin's liaison with Google Glass marketing manager Amanda Rosenberg—and his split from his wife,...

]

Relevant (Y/N)?y

Result 8

[

URL: <https://www.nbcnews.com/.../googles-sergey-brin-explains-why-he-paid-330-000-lab-6c10853442>

Title: Google's Sergey Brin explains why he paid \$330,000 for lab burger

Description: Aug 5, 2013 ... Google's Sergey Brin explains why he paid \$330,000 for lab burger. When scientists brought out a hamburger created in a laboratory for its...

]

Relevant (Y/N)?y

Result 9

[

URL: <https://www.wired.com/.../google-cofounder-sergey-brin-warns-of-ais-dark-side/>

Title: Google Cofounder Sergey Brin Warns of AI's Dark Side | WIRED

Description: Apr 27, 2018 ... Google Cofounder Sergey Brin Warns of AI's Dark Side ... Google cofounder calls advances in artificial intelligence "the most significant..."

]

Relevant (Y/N)?y

Result 10

[

URL: <https://www.bbc.com/news/business-55914177>

Title: Sergey Brin: Google co-founder sets up family firm in Singapore ...

Description: Feb 3, 2021 ... Google co-founder Sergey Brin is setting up a family office in Singapore to help manage his wealth. · Mr Brin is the world's ninth-richest person...

]

Relevant (Y/N)?y

FEEDBACK SUMMARY

Current Query : brin sergey google

Current Precision : 1.0

Desired precision reached, done