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Pathway: Sprint 1
Challenge: Server and Database Commands

Endpoints

An API endpoint allows for 2 systems to exchange information. They are an application to establish connections so data can come and go, but they are not a physical endpoint. They are used to communicate information to and from a network, they allow users to send, receive or manipulate information.

Authentication methods

An API key is a unique string of characters that is used to identify and authenticate an app or a user to access the services of an API. Its main function is to control access, trace usage and prevent abusing the API, it acts as a secret identifier to verify permissions and ensure safe communication between different systems.

Query parameters

Search query
- q: Parameter defines the query you want to search.

Advance google scholar parameters
- cites: Parameter defines unique ID for an article to trigger Cited By searches.
- as_ylo: Parameter defines the year from which you want the results to be included.
- as_yhi: Parameter defines the year until which you want the results to be included.
- scisbd: Parameter defines articles added in the last year, sorted by date.
- cluster: Parameter defines unique ID for an article to trigger All Versions searches.

Localization
- hl: Parameter defines the language to use for the Google Scholar search.
- lr: Parameter defines one or multiple languages to limit the search to.

Pagination
- start: Parameter defines the result offset.
- num: Parameter defines the maximum number of results to return, ranging from 1 to 20, with a default of 10.

Search Type
- as_sdt: Parameter can be used either as a search type or a filter.

Advanced Filters
- safe: Parameter defines the level of filtering for adult content.
- filter: Parameter defines if the filters for 'Similar Results' and 'Omitted Results' are on or off.
- as_vis: Parameter defines whether you would like to include citations or not.
- as_rr: Parameter defines whether you would like to show only review articles or not.

Serpapi Parameters

- engine: Set parameter to google_scholar to use the Google Scholar API engine.
- no_cache: Parameter will force SerpApi to fetch the Google Scholar results even if a cached version is already present.
- async: Parameter defines the way you want to submit your search to SerpApi.
- zero_trace: Enterprise only. Enable this mode to skip storing search parameters, search files, and search metadata on our servers.
- api_key: Parameter defines the SerpApi private key to use.
- output: Parameter defines the final output you want.
- json_restrictor: Parameter defines the fields you want to restrict in the outputs for smaller, faster responses. See JSON Restrictor for more details.

Response formats

JSON results

JSON output includes structured data for organic results. A search status is accessible through search_metadata.status. It flows this way: Processing -> Success || Error. If a search has failed, "Error" will contain an error message. search_metadata.id is the search ID inside SerpApi.

HTML results

HTML output is useful to debug JSON results or support features not supported yet by SerpApi. HTML output gives you the raw HTML results from Google.

Usage limits

Free plan

250 searches per month

Developer

5,000 searches per month

Production

15,000 searches per month

Big Data

30,000 searches per month

Code examples

Java

```java
Map<String, String> parameter = new HashMap<>();

parameter.put("engine", "google_scholar");

parameter.put("q", "biology");

parameter.put("api_key", "secret_api_key");
```

```java
GoogleSearch search = new GoogleSearch(parameter);
try
{
    JsonObject results = search.getJson();
    var organic_results = results.get("organic_results");
}
catch (SerpApiSearchException ex)
{
    System.out.println("Exception:");
    System.out.println(ex.toString());
}
```