Ride Along

DAR report for Car News Center Feature

Team Specs

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CNC-1 - View Vehicle News Articles

Technologies Options:

1. NewsAPI (News API – Search News and Blog Articles on the Web)
2. NEWSDATA.IO(https://newsdata.io/)
3. Google News API (https://gnews.io/docs/v4#introduction)
4. New York Times APIs (https://developer.nytimes.com/)
5. Bing News API (https://www.microsoft.com/en-us/bing/apis/bing-news-search-api)

Metrics:

Evaluation on scale from 1-5 with 5 being the best and 1 being the worst.
Weights from 1 to 1.2 with 1.2 being the most important

1. **Max number of requests per month**
    a. **Scoring guidelines**:
        i. [5]: services provide unlimited requests per month for free
        ii. [4]: services provide over 1000 requests per month for free
        iii. [3]: services provide less than 1000 request for free
        iv. [2]: services does not provide free request but charge less than 100$ for a month subscription that allowed more than 100,000 requests (0.1$ for 100 requests)
        v. [1]: services does not provide free request but charge more than 100$ for a month subscription that allowed more than 100,000 requests (0.1$ for 100 requests)
    b. **Weights: 1.0** for a foreseeable future, this feature is not one that users will repeatedly requests multiple times, hence the weight of this metrics does not affect the application as much.
2. **Average response time over 20 iterations**
    a. **Scoring guidelines:**
        i. [5]: services provide result in less than 1 second for 20 iterations
        ii. [4]: services provide result in less than 2 second for 20 iterations
        iii. [3]: services provide result in less than 3 second for 20 iterations
        iv. [2]: services provide result in less than 4 second for 20 iterations
        v. [1]: services provide result in more than 5 second for 20 iterations
    b. **Weights: 1.0** even though this metric is importance since it's affect our performance, but it's not our major concern at the moment
3. **Range of new/information resources**
    a. **Scoring guidelines:**
        i. [5]: News are most up to date with no delay, and can search news up to 5 years old
        ii. [4]: News are most up to date with no delay, and can search news less than 1 year old

iii. [3]: News are less than 12-hour delay, and can search news up to 5 years old
iv. [2]: News are less than 12-hour delay, and can search news up to 1 year old
v. [1]: News are more than 24-hour delay, and can search news less than 5 years old

b. **Weights: 1.1:** This metric is fairly important due to we want our application to provide users with the most accurate and latest news about their vehicles.

4. **Number of items per request**
   a. **<u>Scoring guidelines:</u>**
      i. [5]: Allow more than 100 items per request
      ii. [4]: Allow more than 70 items per request
      iii. [3]: Allow less than 50 items per request
      iv. [2]: Allow less than 20 items per request
      v. [1]: Allow 1 item per request
   b. **Weights: 1.0** Due to the abundance of information that will need to be extract from the API request, it is better for developers that we will request for 1 vehicle at a time, hence this metric will not be emphasize for this feature.
5. **Request per minute - How many request can we make to the API in a minute (Rate Limiting)**
   a. **<u>Scoring guidelines:</u>**
      i. [5]: More than 100 requests per minute
      ii. [4]: More than 60 but under 100 requests per minute
      iii. [3]: 60 requests per minute
      iv. [2]: Less than 60 requests per minute
      v. [1]: Less than 10 requests per minute
   b. **Weights: 1.2** this metric tremendously affects the performance of the features.

	News API	NEWSDATA .IO	Google News API	NewYork Times API	Bing News API
Max number of requests per month [Weight: 1.0]	3000 requests per month [4]	2000 requests per month [4]	1000 requests per month [3]	15000 requests per month [4]	1000 requests per month [3]

Average response time over 15 iterations [Weight: 1.0]	2.1053767253509 52 seconds [3]	Due to API only allow 2 requests per minute hence the time it takes for 20 iterations is over 10 minutes [1]	3.3034300552980 5 seconds [2]	Due to API only allow 5 requests per minute, hence the time it takes for 20 iterations is over 6 minutes [1]	2.8060523755298 52 seconds [3]
Range of new/information resources [Weight: 1.1]	Articles have 24-hour delay, can only look for articles up to 1-month old [1]	Articles have 12-hour delay, can look for articles less than 6-month old [2]	Articles have no delay, can look for articles up to 1-year old [4]	Articles have no delay, can look for articles up to 5 years old [5]	Articles have no delay, can look for articles up to 1-month old [4]
Number of items per request [Weight: 1.0]	1 item per request (with 3 additional filter options) [1]	1 item per request (with 10 additional filter options) [1]	More than 20 item allowed (also have 10 additional filter options) [2]	10 item (with multiple filter options) [2]	1 item per request (with 5 additional filter options) [1]
Request per minute - Rate Limiting	20 requests per minute	2 requests per minute (30 requests per 15 minutes)	60 requests per minute	5 requests per minute	30 requests per minute

[Weight: 1.2]	[2]	[1]	[3]	[1]	[2]
TOTAL	11.5/26.5	9.4/26.5	15/26.5	13.7/26.5	13.8/26.5

Analysis:

- **Max number of request per month**: Most of the API surprisingly provide at least around 1000 free calls per month, with the NYTimes API top out at 150000 free requests and coming second but drastically below that number is NewsAPI at 3000 free calls.
- **Average response time over 20 iterations:** We use the same black box testing methods, running a python script to make request to the API 20 times (since that is the minimum allowed for one of the options) and record the time. However, NEWSDATA and NYTimes, due to their restriction on the rate limit for free tier, the 2 APIs if subject to the same testing method will take over 1 minute to finish all 20 requests.
- **Range of new/information resources:** This metric is fairly important to this feature due to Car News being centered around giving users the latest news or any recalls information in the past about their vehicles.
- **Number of items per request:** Even though, the more items we can add per requests can reduce our application cost, but since we are expecting an abundance of information of news to be extracted, it is better for developers at the moment to focus on getting all the information for 1 vehicle at a time, this makes things easier to be extracted and displayed to user.
- **Request per minute - Rate Limiting:** We chose to emphasize this metric more due to some very restrictive rules of some APIs, hence, we want to make sure that the API of choice need to at least pass the minimum bar so as to provide a better user experience.

Conclusion

In conclusion, Google News API will be our first choice for this feature, even though in other metrics it's options are nearly identical, Google News was able to give us news articles without a delayed in its "freshness" as well we being able to look for news up to 1 year old even if it's not the best it's still a good compromise that we can take. Most importantly, their rate limiting is significantly better compared to other options which helps us in providing a better user experience. Second place will be Bing News API as our back up plan if something were to go wrong with Google as they only fall behind in the rate-limiting but still able to provide us with the most "fresh" articles.

Reference:

1. News API
    a. Pricing: (https://newsapi.org/pricing)
    b. Documentation: (https://newsapi.org/docs)

2. NEWSDATA.IO
    a. Pricing: (https://newsdata.io/pricing)
    b. Documentation: (https://newsdata.io/documentation)

3. Google News API
    a. Pricing: (https://gnews.io/#pricing)
    b. API Request Documentation:(https://gnews.io/docs/v4#search-endpoint)

4. NewYork Times API
    a. Pricing: (https://developer.nytimes.com/docs/articlesearch-product/1/overview)
    b. Rate Limit: (https://developer.nytimes.com/faq#a11)

5. Bing News API:
    a. Pricing:(https://www.microsoft.com/en-us/bing/apis/pricing)
    b. Documentation: (https://learn.microsoft.com/en-us/bing/search-apis/bing-news-search/how-to/search-for-news)