# Web-interface to identify SEO success factors

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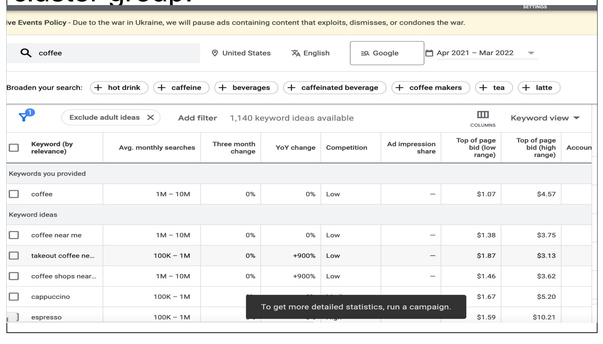
## Introduction

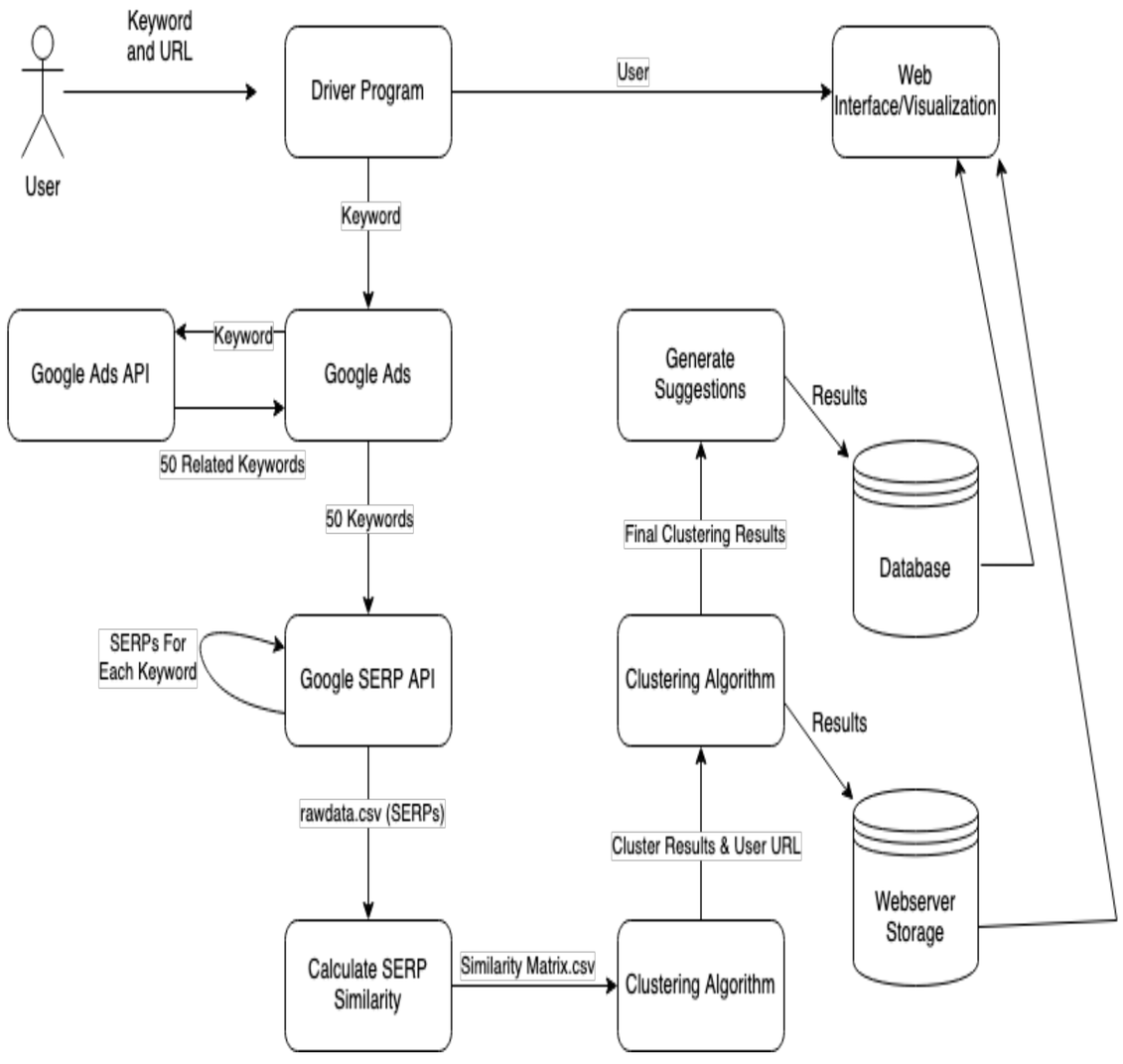
Small and medium-sized enterprises (SMEs) are all in competition with one another. In this modern age, a digital presence is not only sufficient, but also necessary, to succeed. The majority of an enterprises' digital exposure will come through search engine results pages (SERPs) generated by searches through Google, Bing, and other engines. Many of these enterprises do not take advantage of search engine optimizations (SEOs) that are required to appear at the top of Google's SERPs.

## Proposed Solution

Our solution is a two-part project that uses Python code on the backend and a webpage as a frontend to display our results. Our program will be able to analyze keywords and SERP similarities between keyword, clustering webpages into groups and providing feedback for a given SME website. The feedback provided will guide the end-user in how to boost their SEOs by suggesting keyword and metadata alterations for the given website. The program will also provide feedback for a selected cluster group, further guiding the user on how to place their website into that cluster group.




## Data/User Flow Diagram




## Algorithm

Our algorithm is based on a hierarchical clustering algorithm. This algorithm first puts each data point into its own cluster. Then, each input element is paired with every other input element and their distance is then calculated. This repeats until the criteria for termination is met, which in our case is the n-number of desired clusters taken as user input.

```
def cluster:
    var dataSet
    var numOfElements = sizeof(dataSet)
    var desiredClusters
    for elem in dataSet:
      make a cluster
    for each cluster:
      calc distance with other clusters
      group smallest distance into its own
      cluster
      numOfElements--
      repeat until numOfElements =
      desiredClusters
```

## Results

The results of our project is a fully-developed program that behaves as intended. We can give the program a URL and a keyword and it will produce results and SEO suggestions