**Understanding Google Trends**

**What is Google Trends?:**

Google Trends is a search analysis tool that provides data on the relative popularity of search terms (or websites). Users can input a particular term or set of terms and where there is sufficient data available, Google Trends will generate a line graph, indicating how interest has risen or fallen over a period of time, as well as a table indicating the relative popularity of the search term within specific territories ("regional interest").   
  
  
Google Trends also allows users to limit the analysis by content type, location, time range and category or [compare terms, time-ranges and locations](http://searchanalysisguide.blogspot.co.uk/2013/04/google-trends-terms-locations-time.html). Analyses parameters can be set to exclude terms or return one set of results based on the cumulative search activity of several terms.

**How Does Google Trends Work?:**

Where there is sufficient data available, Google Trends awards a score of between 0 and 100 to inputted search terms on a month-by-month / day-by-day basis and on a geographical basis. The meaning of these scores differ according to whether users are looking at "interest over time" or "regional interest".

**Interest Over Time:**

The scores awarded by Google Trends on the "interest over time" line graph express the popularity of that term over a specified time range.  
  
  
Google Trends scores are based on the absolute search volume for a term, relative to the number of searches received by Google.  
  
  
The scores have no direct quantitative meaning. For example, two different terms could achieve scores of 100 in the same month, but one received 1,000 search requests, whilst the other received 1,000,000. This is because the scores have been scaled between 0 and 100. A score of 100 always represents the highest relative search volume.

Day scores are based on absolute search volume for the term within the day relative to absolute search volume on Google on the same day.  Month / week scores are calculated on the basis of the average relative daily search volume within the month / week.

A rising line does not necessarily indicate a rise in the popularity. Instead, it may indicate that general search use has increased over the time range. A declining line does not always represents declining popularity either for the same reason. In order to gain the maximum insight from Google Trends, it is necessary to have an understanding of how internet usage might rise or fall.

The inclusion of scores based on "partial data" is an indicator of just how up-to-date Google Trends is. Read more on partial date here: [Google Trends: What Is Partial Data?](http://searchanalysisguide.blogspot.co.uk/2013/04/google-trends-what-is-partial-data.html)  
  
It seems likely that Global scores are based on an average score from each country. If this wasn't the case, terms that are popular in countries with high internet usage would constantly perform better than terms that are popular in countries with low internet usage.

**Regional Interest:**

The scores awarded by Google Trends on the "regional interest" table / map are not directly relative to one another in a quantitative way. If this was the case, countries or cities with high internet usage or big populations, such as the United States, would permanently find themselves at the top of tables, giving the misleading impression that these countries are "most interested".

Instead of awarding scores based on direct relativity, Google Trends utilises a kind of "double relativity".  The calculation of scores for particular territories is based on the following data:

(1) the popularity of a search term within a particular region, relative to the total volume of search within the region over the period specified.

(2) the relative popularity of the search term for the territory (as determined by step one above) compared to the relative popularity of the search term in other territories.

An example of how regional interest is calculated is given below:  
  
  
*If the search term "Facebook" accounted for 1% of total search requests in the United Kingdom from January 2004 to the present day, but 4% of total search requests in Ireland over the same period, Ireland's score would be 100, relative to the United Kingdom's score of 25.*  
  
  
Ireland's higher score is awarded despite the fact that 1% of total search in the United Kingdom would invariably account for a much higher actual volume of search than 4% of total search in Ireland (given the far higher internet usage / population in the UK).     
  
As well as generating a simple table, Google Trends also produces a heat map, which shows interest across the globe. The scores shown on the heat map are calculated in the same way that the scores in the table are calculated (ie step 1 and 2 above).

## Real time vs. non-real time

There are two ways to filter the Trends data: **real time** and **non-real time**. Real time is a random sample of searches from the last seven days, while non-real time is another random sample of the full Google dataset that can go back anywhere from 2004 to ~36 hours ago. The charts will show you either one or the other, but not both together, because these are two separate random samples. We take a sample of the trillions of Google searches, because it would otherwise be too large to process quickly. By sampling our data, we can look at a dataset representative of all Google searches, while finding insights that can be processed within minutes of an event happening in the real world.