



MET CS688

WEB ANALYTICS AND MINING

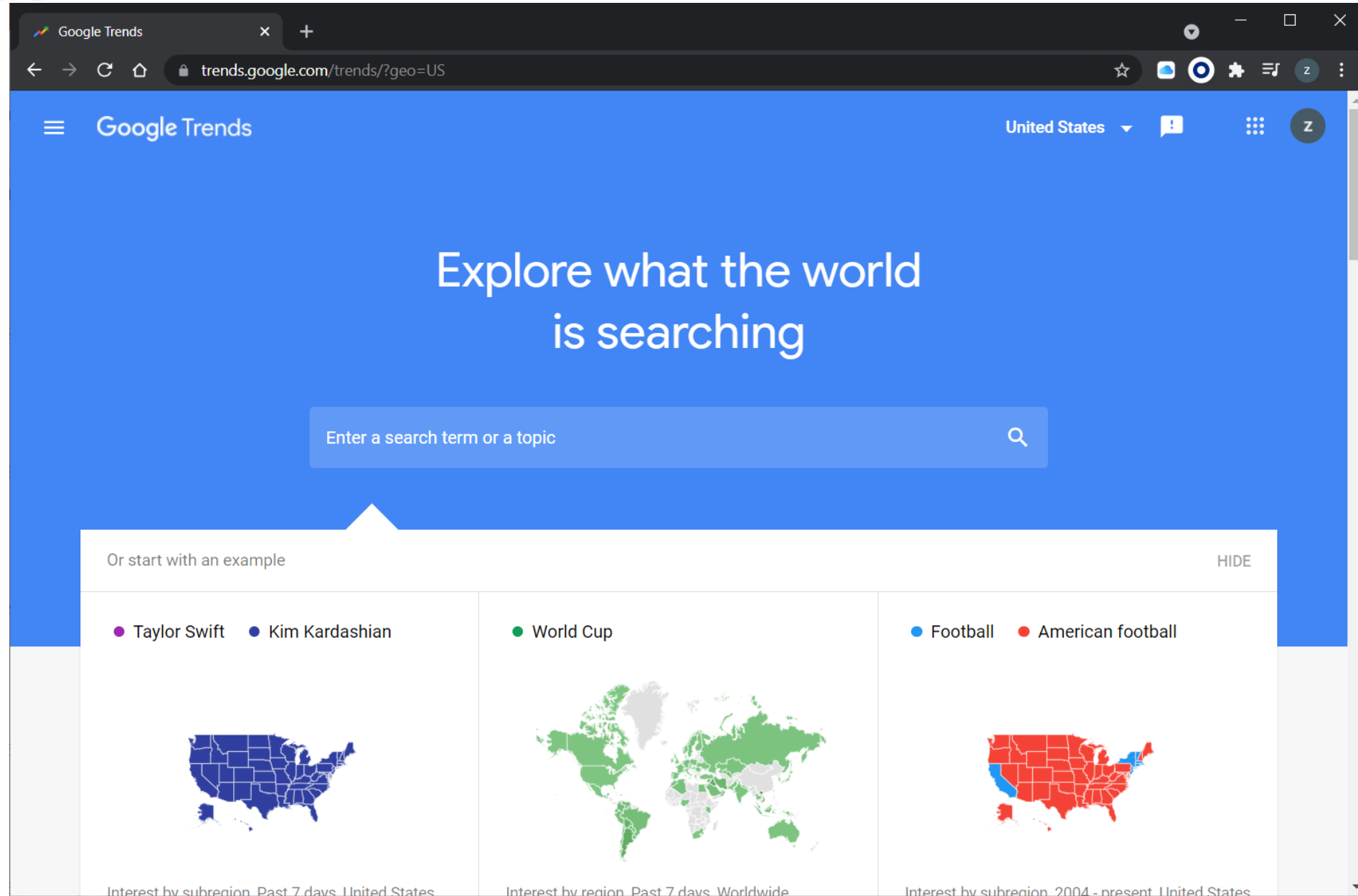
ZLATKO VASILKOSKI

GOOGLE TRENDS

Google Trends

Google Trends

(<https://www.google.com/trends/>) shows the ups-and-downs of the public's interest in a particular topic.



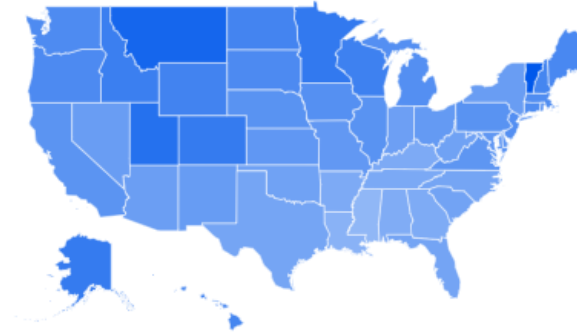
Google Trends

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(<https://www.google.com/trends/>) shows the ups-and-downs of the public's interest in a particular topic.

Latest Stories and Insights

Explore how Google data can be used to tell stories.



United States: Interest in 2022 Winter Olympics by state, past week

FEATURED

Beijing 2022 Winter Olympics

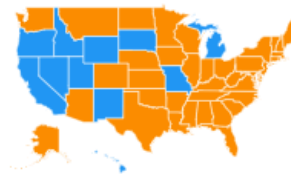
The 2022 Winter Olympics are from February 4 to February 20, 2022.

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Super Bowl LVI

Super Bowl LVI pits the Los Angeles Rams against the Cincinnati Bengals at SoFi Stadium.

● Cincinnati Bengals ● Los Angeles Rams



Interest in Super Bowl LVI teams, past day

#AmplifyBlackVoices

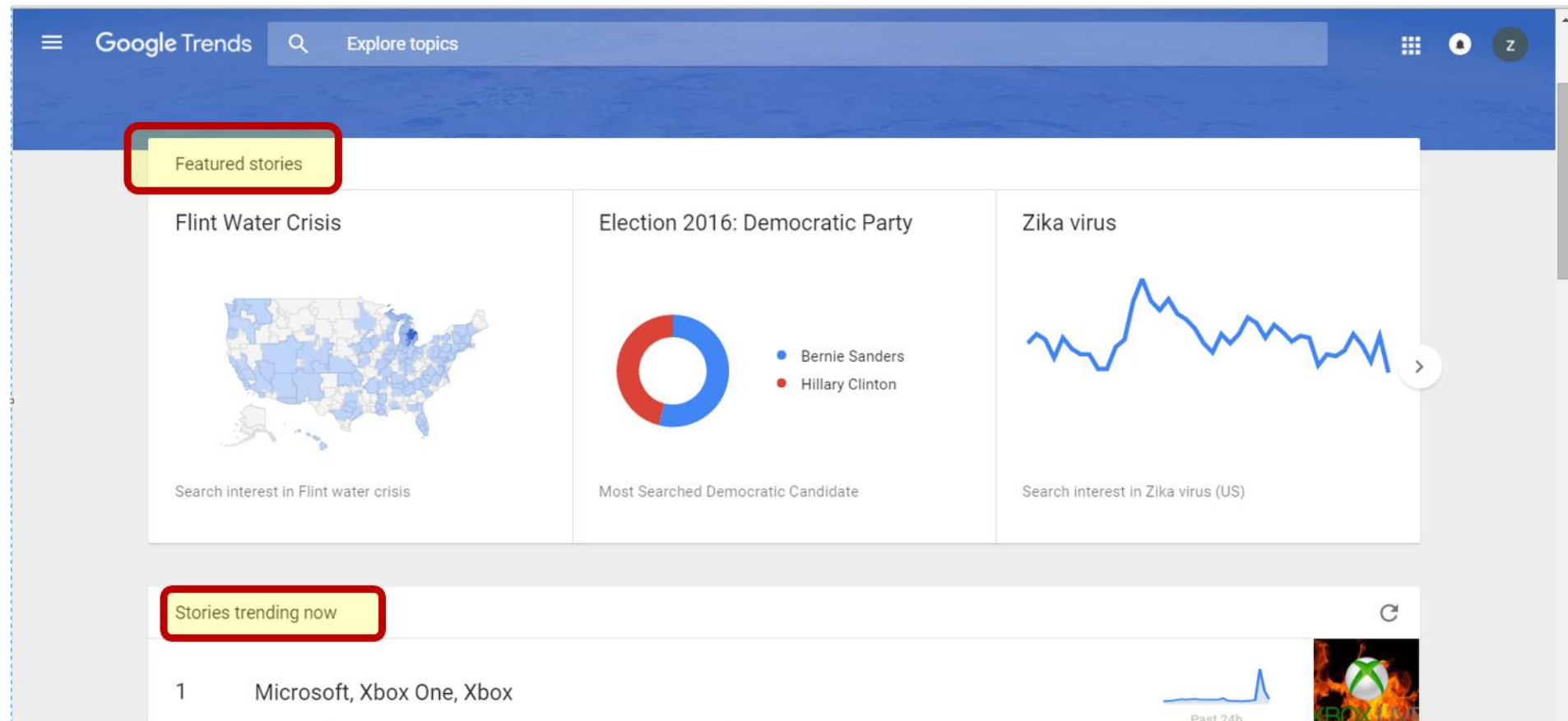
Lift every voice with Black History Month 2022

● Black History Month



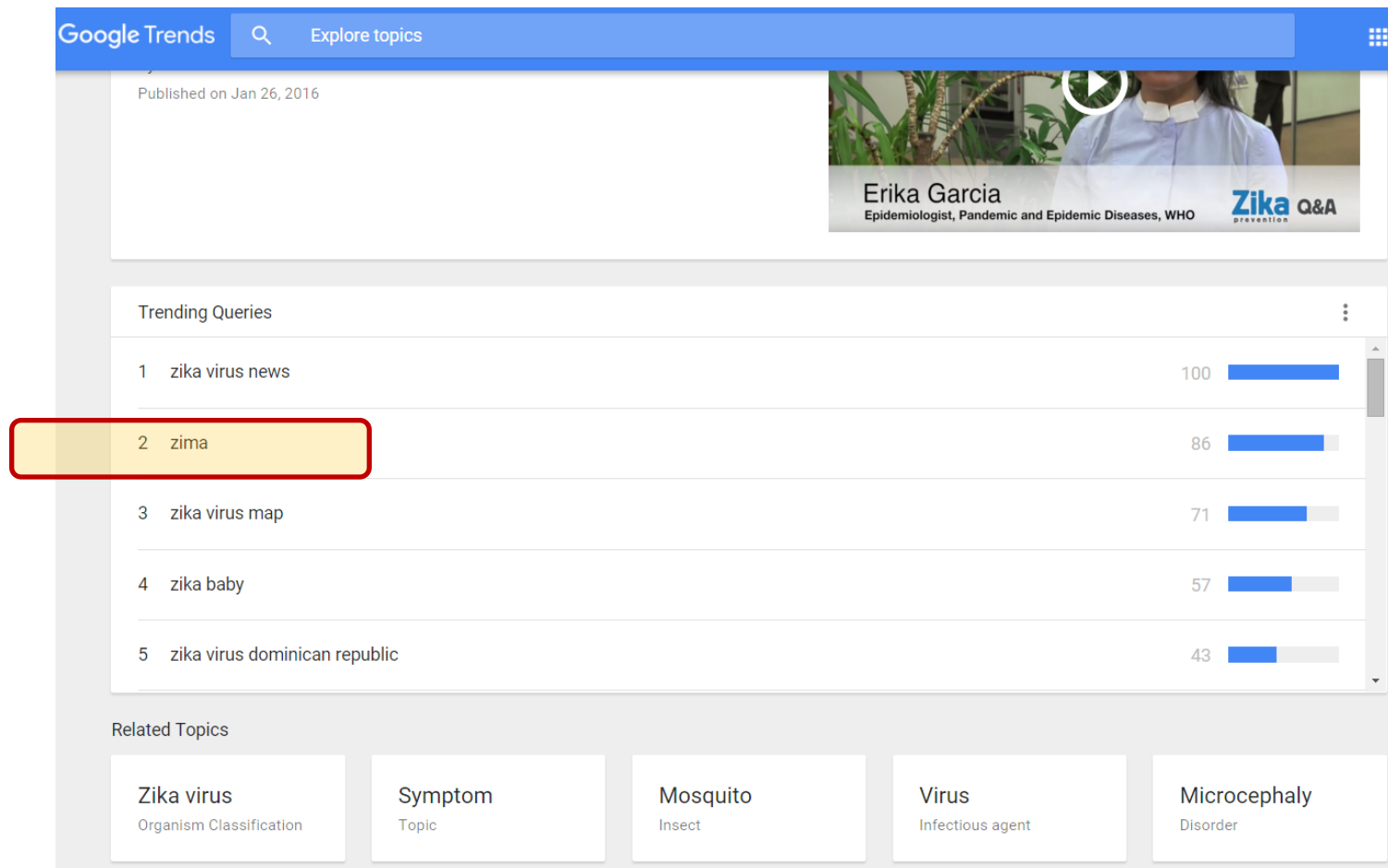
Google Trends

- This website contains featured stories that you can select from, such as the 2016 Elections or the US search interest in Zika virus, as illustrated here in the past, as well as many new trending stories at the moment.



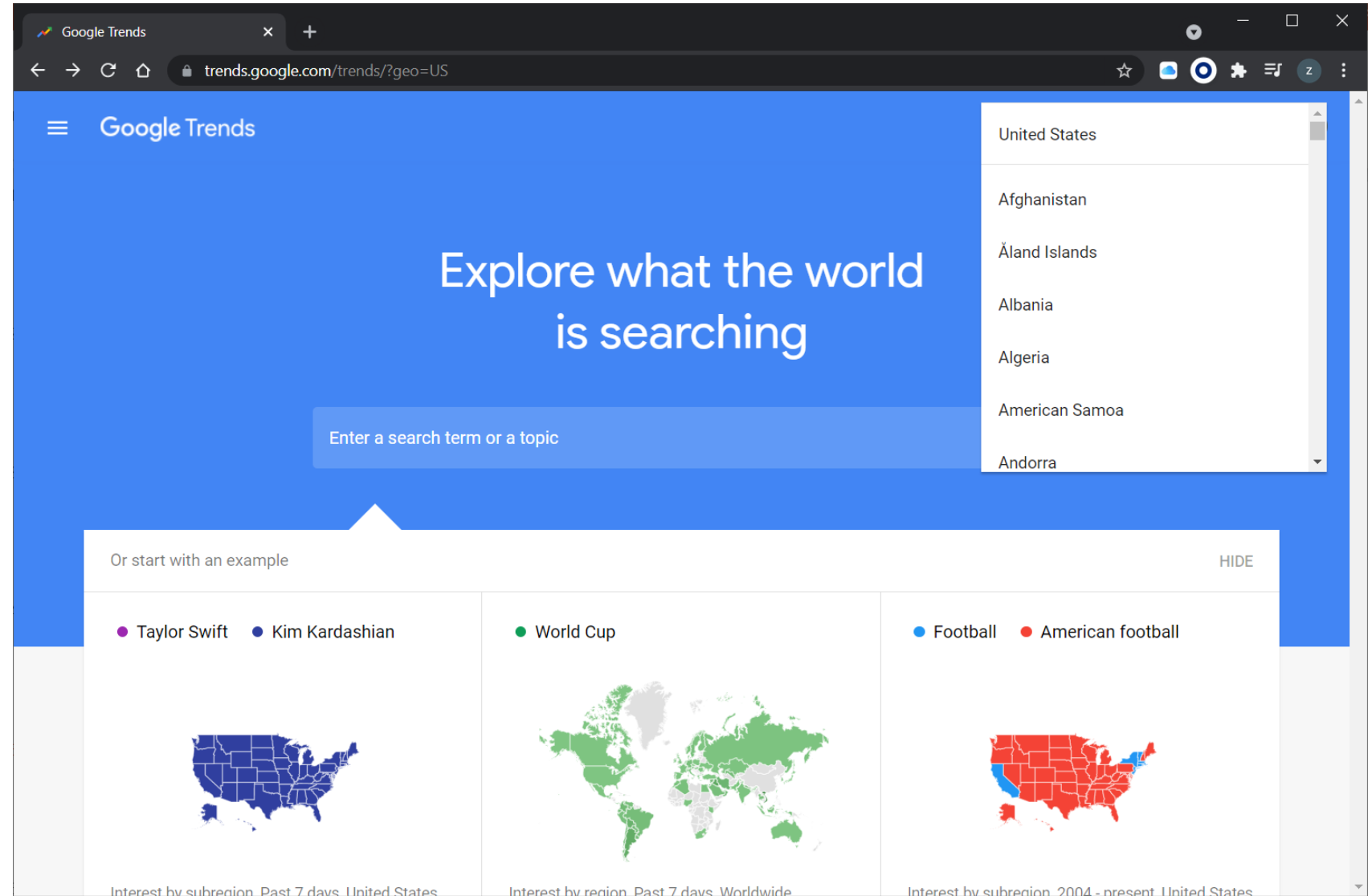
Google Trends

- The same page also includes the trending queries people used related to this particular topic. Note #2!

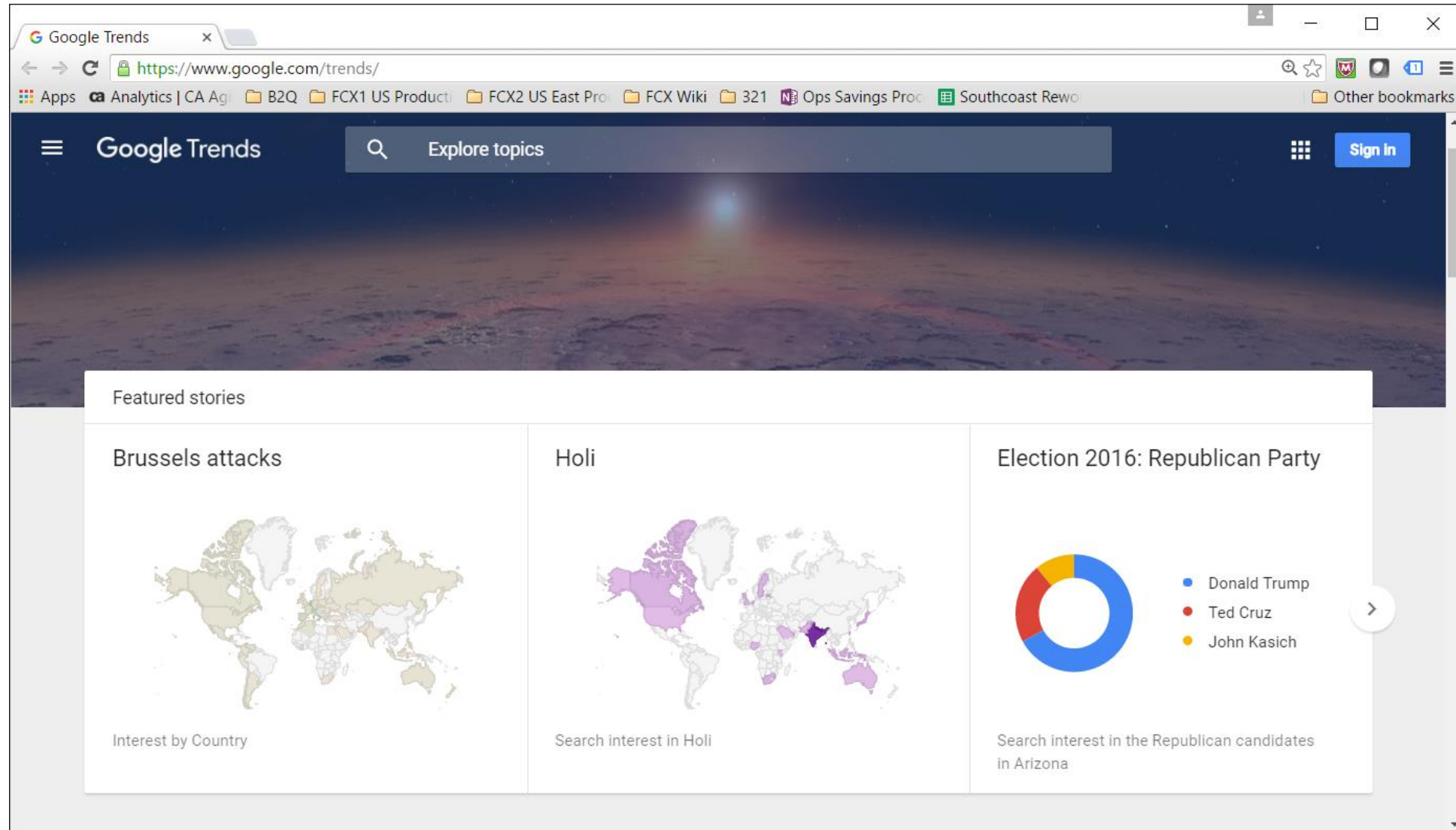


Google Trends

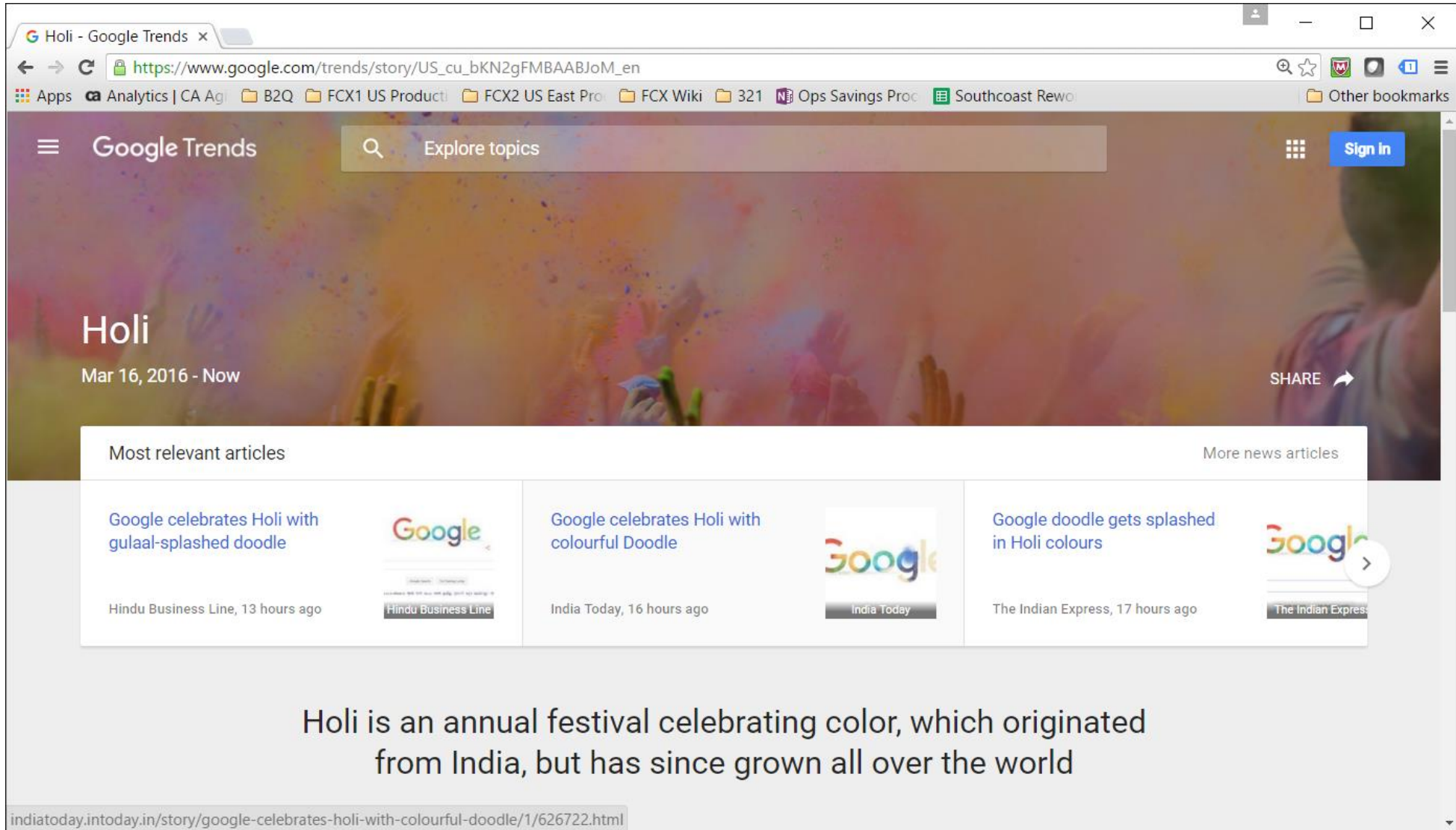
- Trends can be searched and trending keywords per category shown.



Google Trends – What is Holi?



Interesting to learn what is Holi



The screenshot shows the Google Trends interface for the search term "Holi". The page features a large background image of people celebrating Holi with colorful powder. The title "Holi" is prominently displayed, along with the date range "Mar 16, 2016 - Now". A "Sign in" button is visible in the top right corner. Below the main header, there is a section titled "Most relevant articles" which lists three news items, each accompanied by a thumbnail of a Google Doodle and the source of the article.

Holi
Mar 16, 2016 - Now

Most relevant articles

Article Title	Source	Time Ago
Google celebrates Holi with gulaal-splashed doodle	Hindu Business Line	13 hours ago
Google celebrates Holi with colourful Doodle	India Today	16 hours ago
Google doodle gets splashed in Holi colours	The Indian Express	17 hours ago

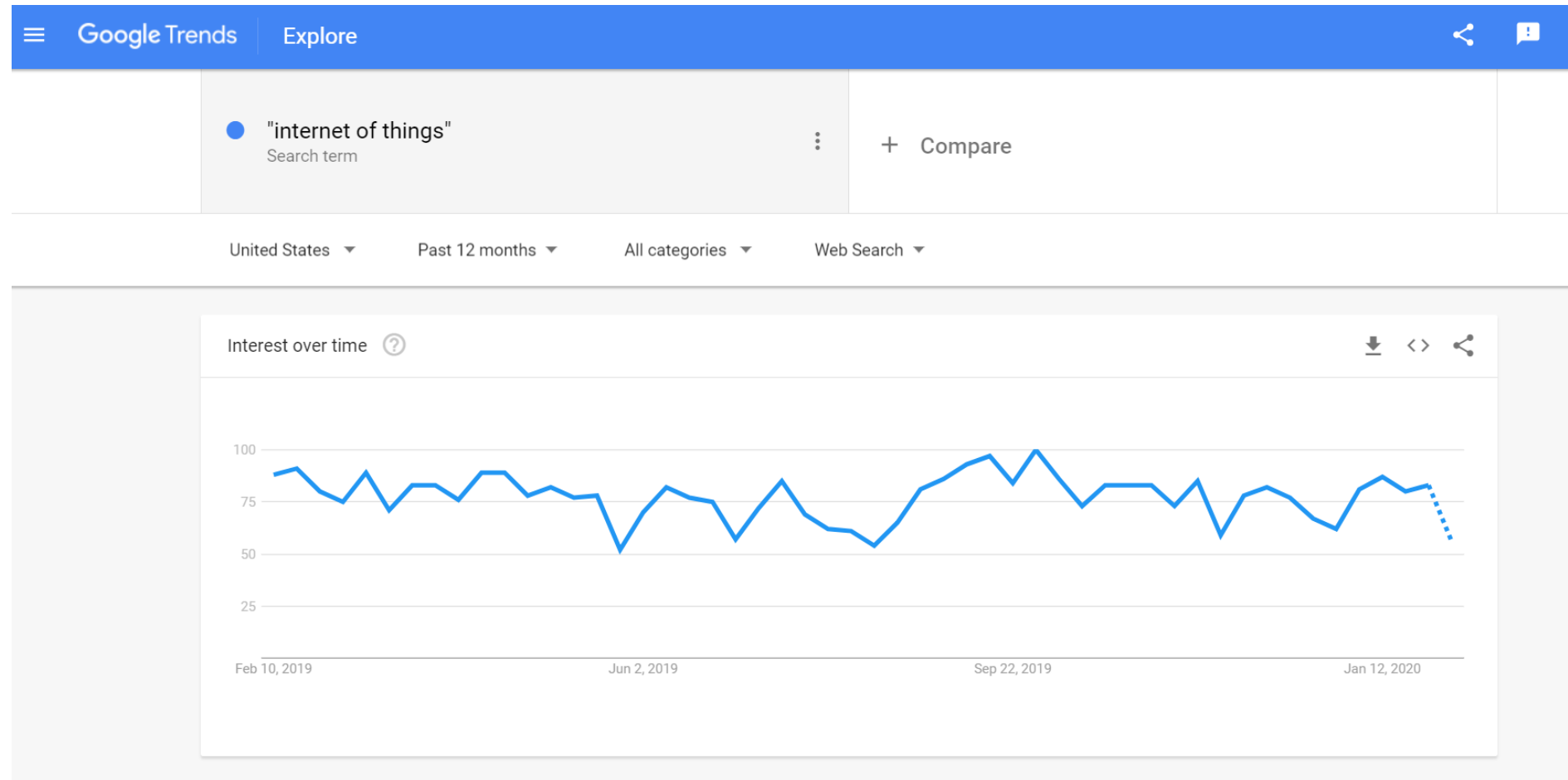
Holi is an annual festival celebrating color, which originated from India, but has since grown all over the world

indiatoday.intoday.in/story/google-celebrates-holi-with-colourful-doodle/1/626722.html

Google Trends

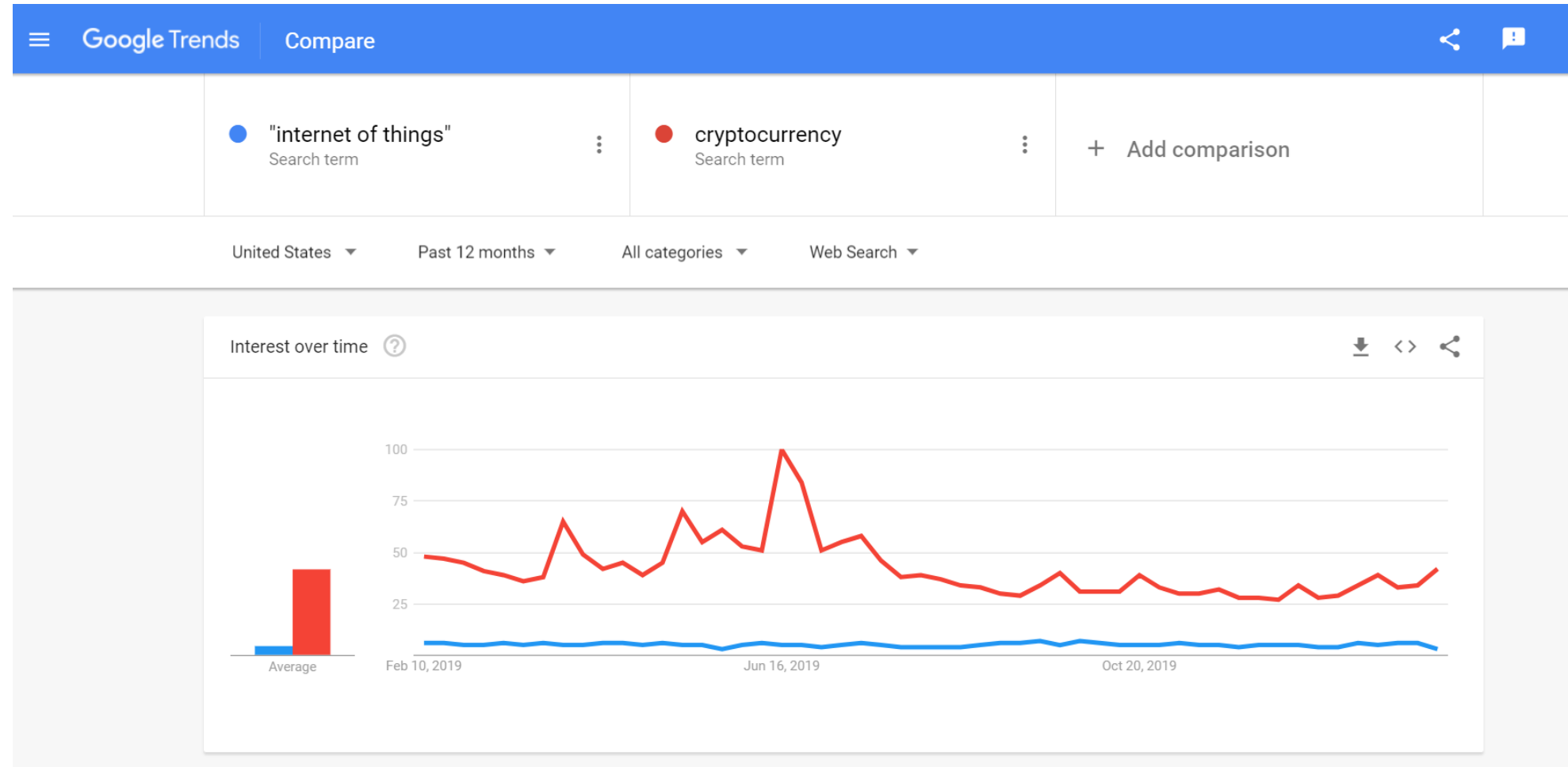
Do a worldwide Google Trends query by the search term **"internet of things"** (note the included quotes ""). The trending of this term over the last 12 months produces a chart like this one.

Do a compare search by the search term **cryptocurrency** (note no "").



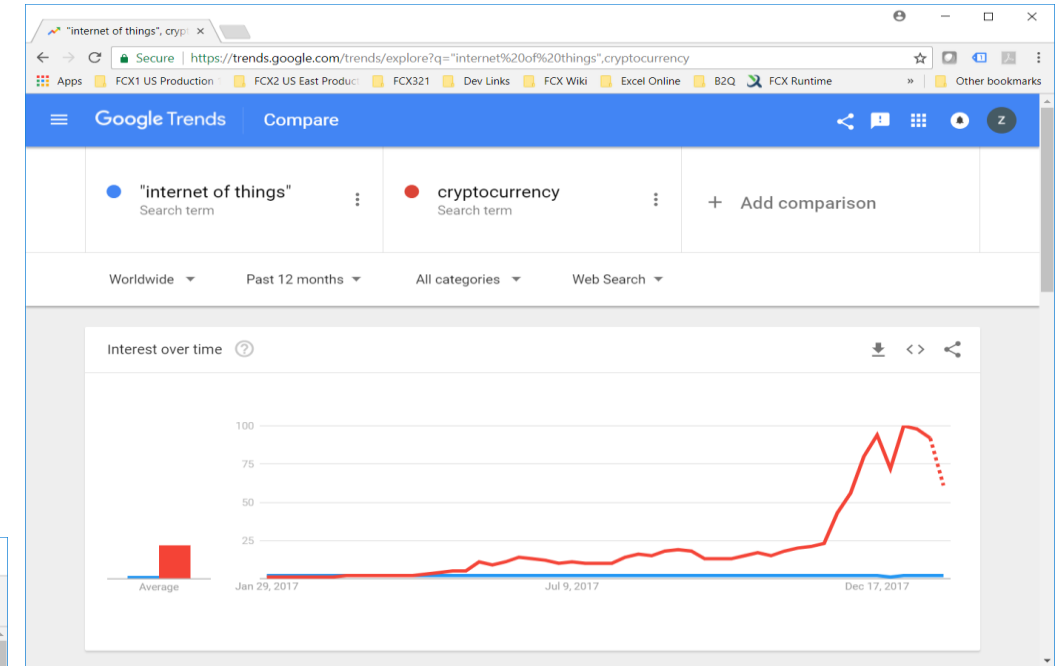
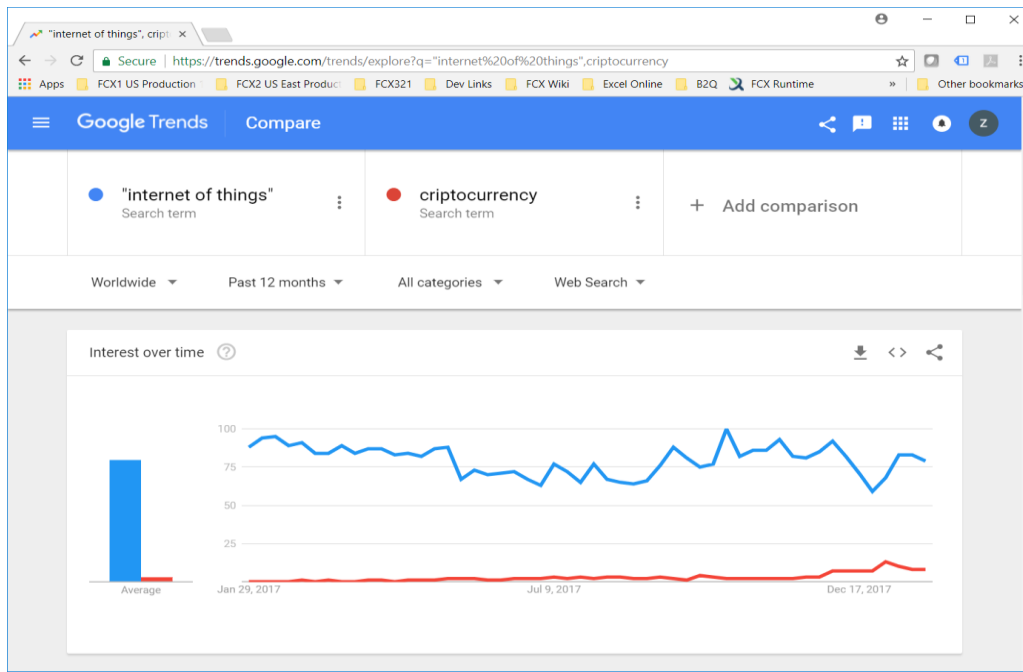
Google Trends

Do a compare search by the search term **cryptocurrency** (note no "").



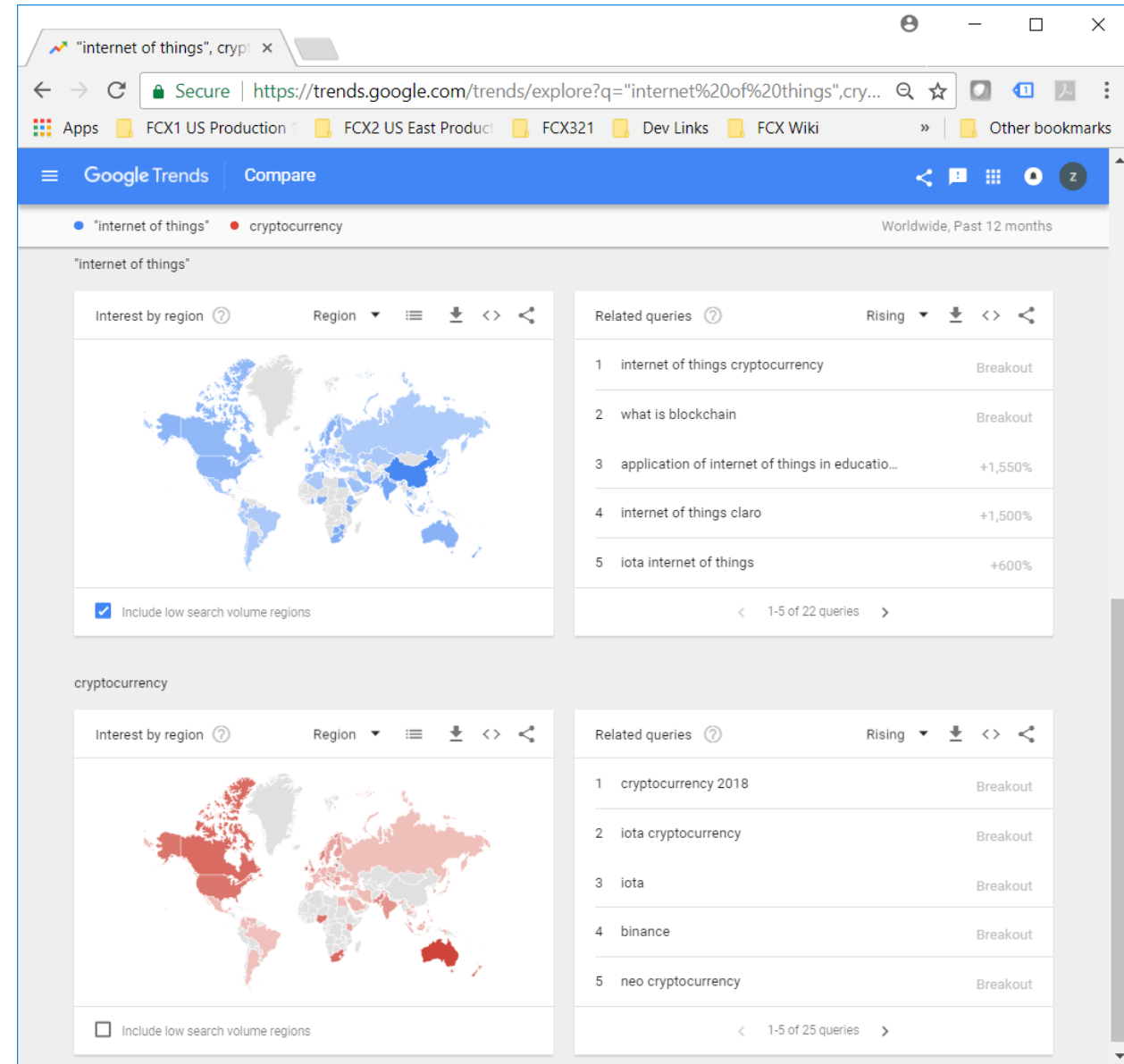
Google Trends

Do a compare search by the misspelled search term **criptocurrency** for 2017 when the interest in this topic peaked.



Google Trends

The worldwide interest in these two terms by regions, with the related queries is shown below.

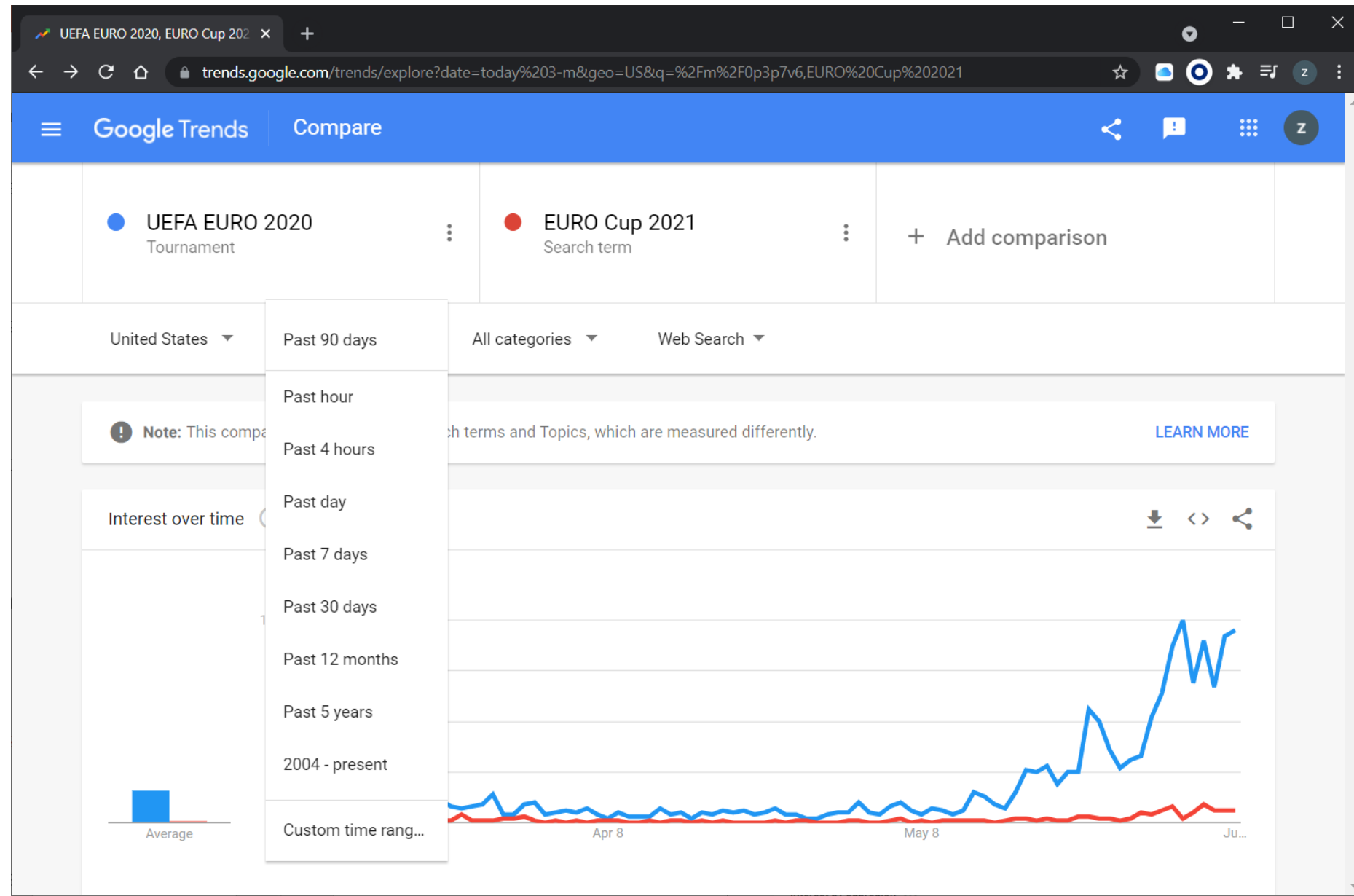


Google Trends

Do a US Google Trends query by the search term **“UEFA EURO 2020”**. The trending of this term in US, over the last 90 days (or any other time interval) produces a chart like this one.

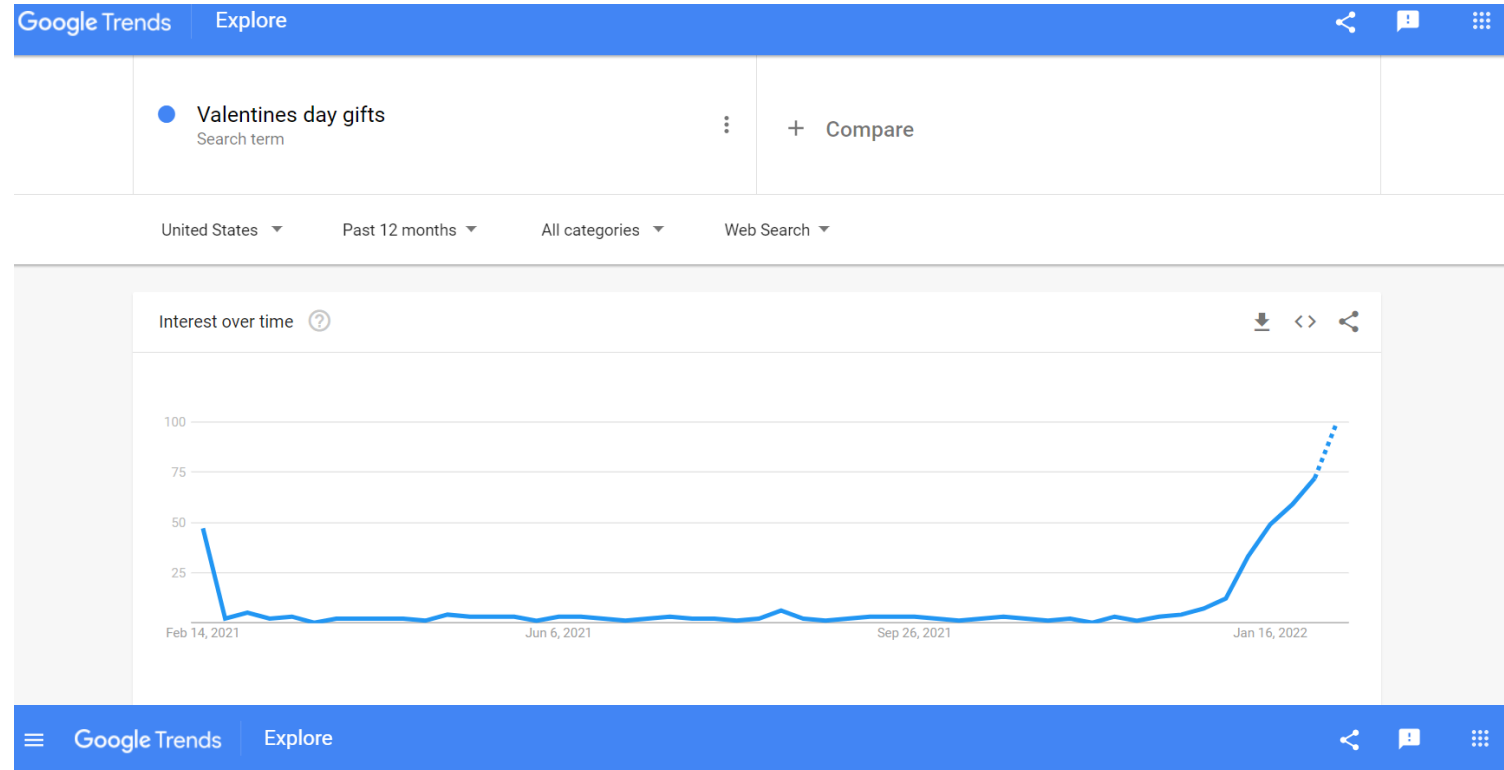
Note that because of Covid, the Euro 2020 starts on June 11, 2021.

Do a compare search by the search term **“EURO 2021”**.

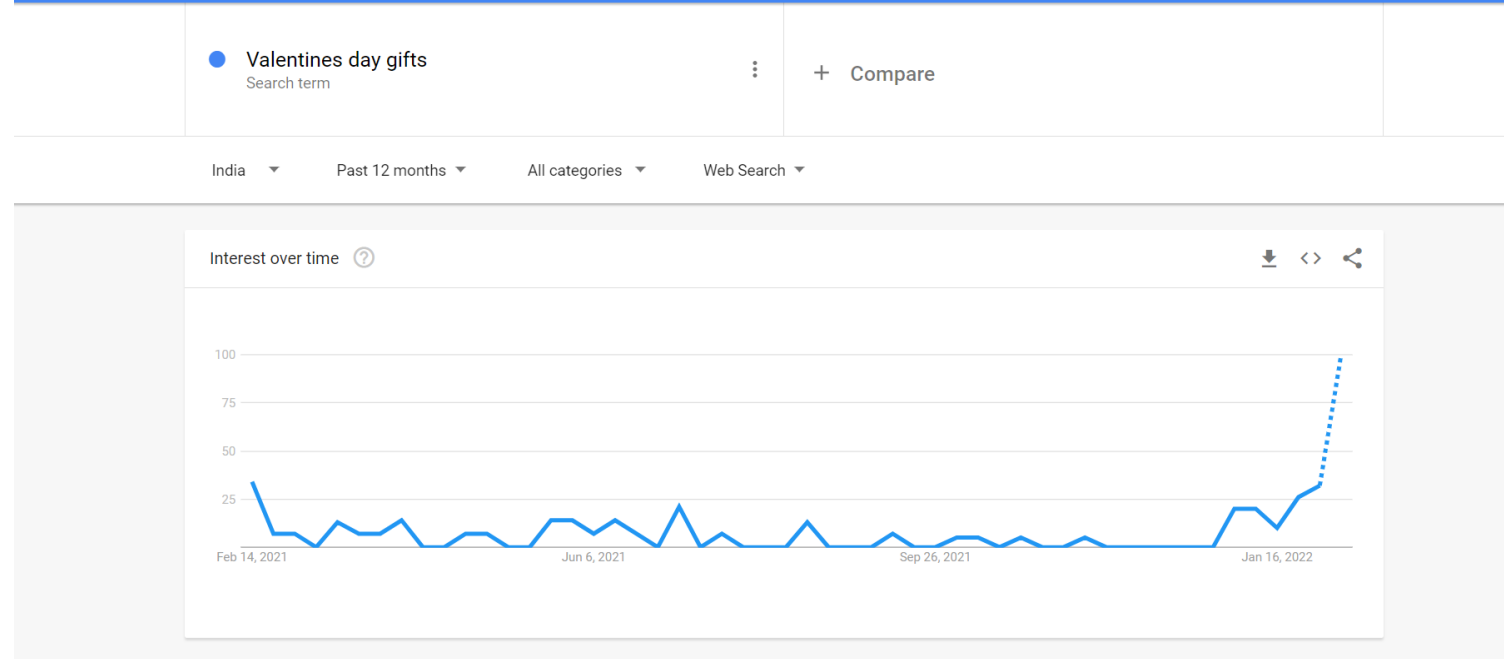


Google Trends

A **US** Google Trends query by the search term "**Valentines day gifts**". The trending of this term over the last 12 months produces a chart like this one.



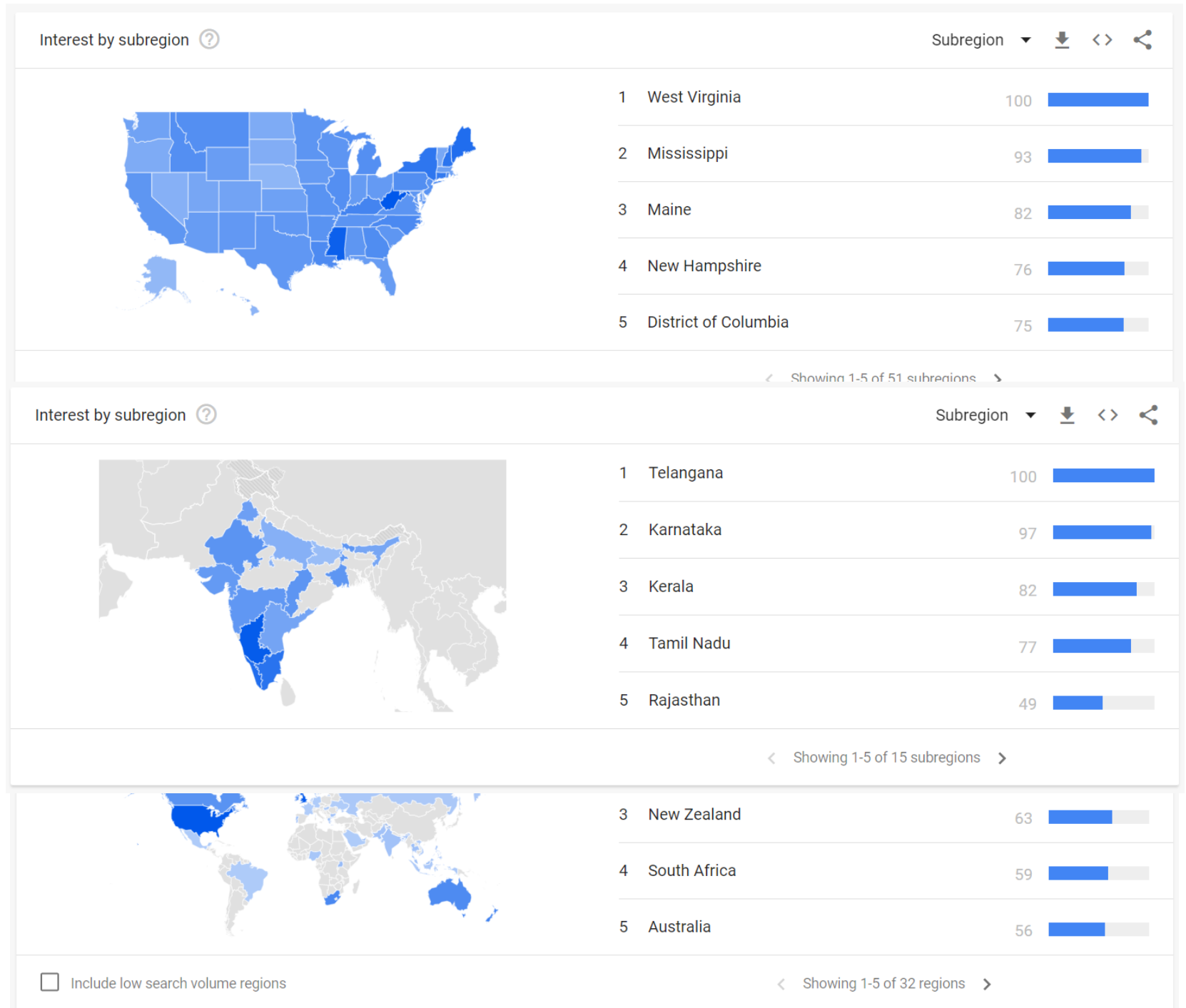
An **India** Google Trends query by the search term "**Valentines day gifts**". The trending of this term over the last 12 months produces a chart like this one.



Google Trends

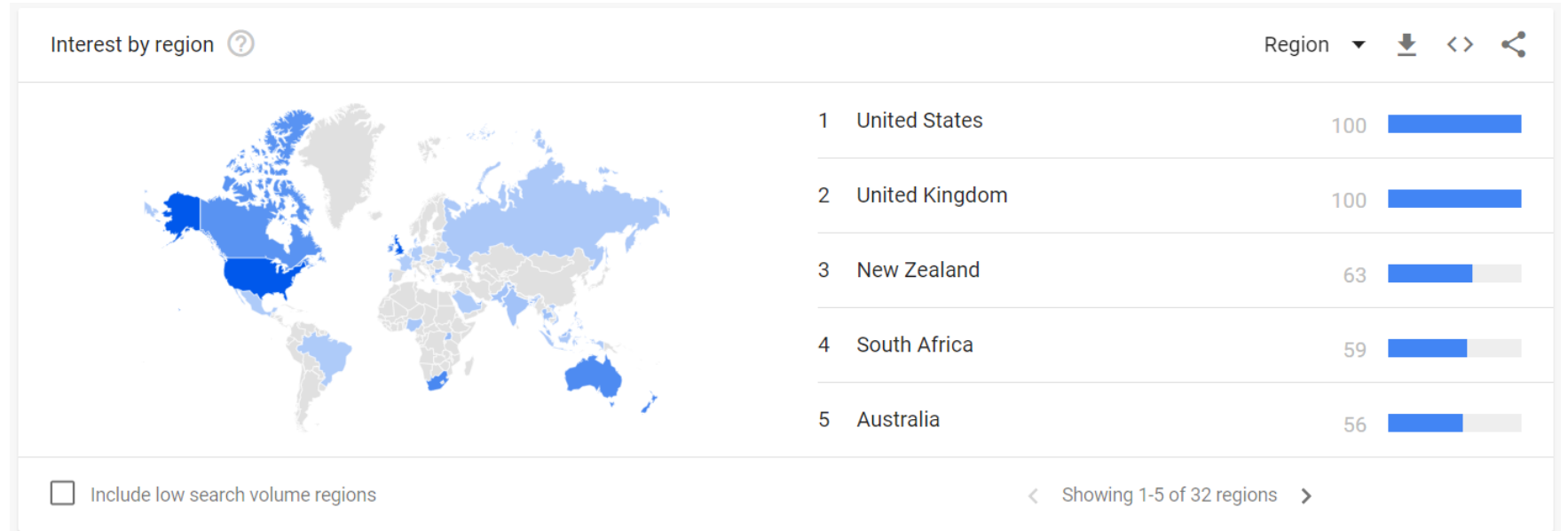
A **US** Google Trends query by the search term "**Valentines day gifts**". The trending of this term over the last 12 months produces a chart like this one.

An **India** Google Trends query by the search term "**Valentines day gifts**". The trending of this term over the last 12 months produces a chart like this one.



Google Trends

A **Worldwide** Google Trends query by the search term "Valentines day gifts". The trending of this term over the last 12 months produces a chart like this one.



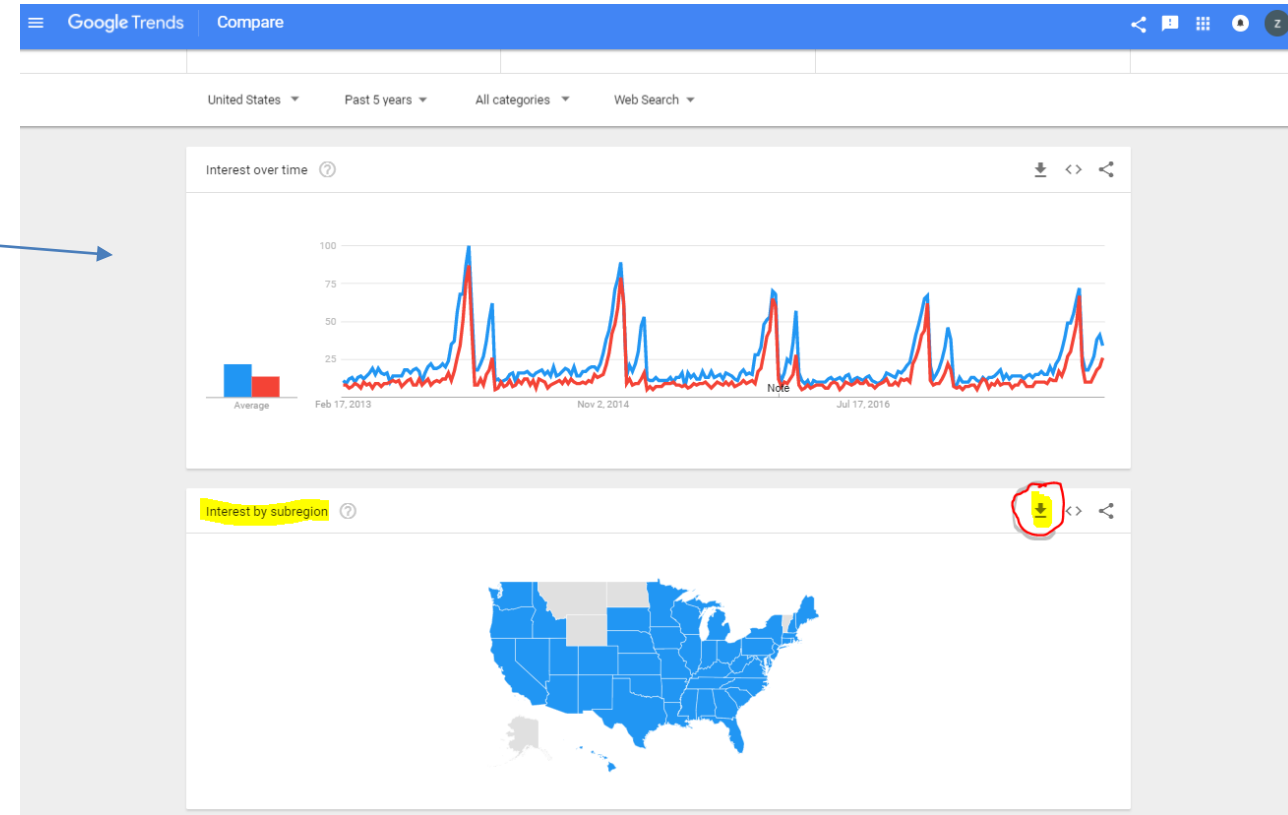
Lab project: Google Trends

Task: Use Google Trends data in the attached "geoMap.csv" file and create R code to explore the following tasks:

- Compare US interest in “gift for boyfriend”(GB) vs. “gift for girlfriend”(GG) over a period of 5 years.
 - Q1: Which are the states where GG is smaller than 1? Find those and replace them with zero.
 - Q2: For How Many States $GB > GG$?
 - Q3: Find any states where $GG+10 > GB$
 - Q4: What is the % of states for which $GG+10 > GB$?
 - Q5: What is the ratio GG/GB for the state of New Hampshire?
 - Q6: Create a Bar Plot of GG & GB values for each state.
- Create R Project called “Your Last Name”
 - Create a folder called “Data” in it.
 - Download from Blackboard the “geoMap.csv” and place it in the folder “Data”.
 - Create a R script file in which you will use the code for this analysis.
- Submit your result.
 - The R project folder with your code in it.

R Lab project with Google Trends

- The data was extracted from Google Trends some time ago and you don't need to extract it.
- Explore the CSV data and note that you need to skip the first 2 lines.
 - Use the R package “readr” to read the CSV file.
 - Rename the columns as "Region", "GB" and "GG".
 - Convert "GB" and "GG" data to numeric.
 - Replace NA with zero.
 - Answer the questions
- Submit your assignment.
 - Zip your project (**zip format only!**) folder with your code in it.



R Lab project with Google Trends

- Here is an example of the code that you can use for this assignment.

```
1 # Google Trends
2 rm(list=ls()); cat("\014") # clear all
3
4 GT.Data <- read.csv(paste0('Data/', 'geoMap.csv'),
5                     stringsAsFactors = FALSE,
6                     skip = 2, blank.lines.skip = TRUE, header=T) #
7 colnames(GT.Data) <- c("Region", "GB", "GG")
8
9 GT.Data[1:5,]
10
11 # Convert to numeric values
12 zGB <- as.numeric(GT.Data$GB) # gift for boyfriend
13 zGG <- as.numeric(GT.Data$GG) # gift for girlfriend
14
15 # Place back to dataframe
16 GT.Data$GB <- zGB
17 GT.Data$GG <- zGG
18
19
20 # ==== Q & A ====
21 # Q1: Which are the states where GG is smaller than 1? Find those and replace them with zero.
22 # Find NA and replace with zero
23 ix1 <- which(is.na(GT.Data$GB))
24 GT.Data$GB[ix1] <- 0
25 ix2 <- which(is.na(GT.Data$GG))
26 GT.Data[ix2,]
27 GT.Data$GG[ix2] <- 0
28
```