



MET CS688 C1

WEB ANALYTICS AND MINING

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GOOGLE TRENDS

Google Trends

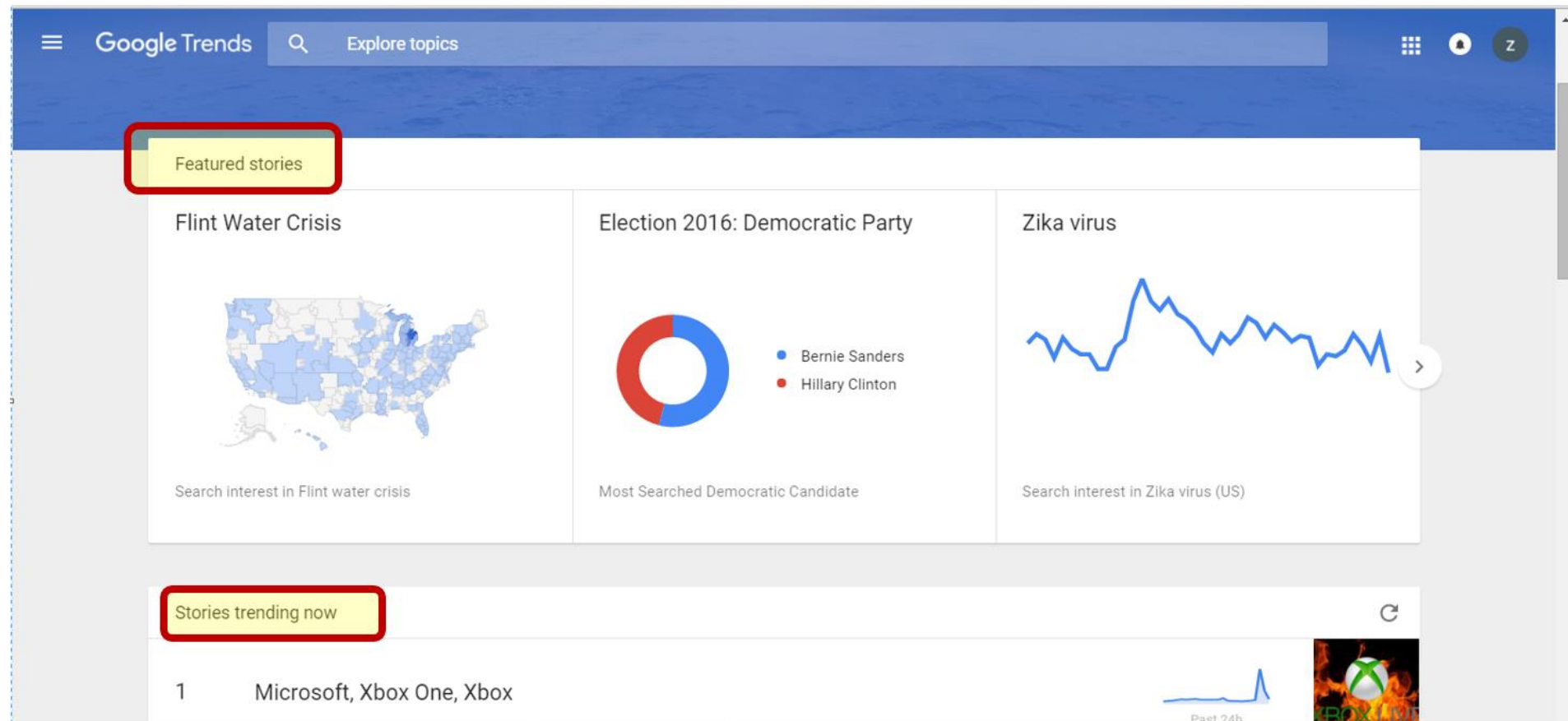
Google Trends

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

The screenshot displays the Google Trends homepage with a blue header. The main heading reads "Explore what the world is searching". Below it is a search bar with the placeholder text "Enter a search term or a topic". A white box titled "Or start with an example" contains three example maps: 1) "Taylor Swift" and "Kim Kardashian" showing interest by subregion in the US (past 7 days); 2) "FIFA World Cup" showing interest by region worldwide (past 7 days); 3) "Football" and "American football" showing interest by subregion in the US (2004-present). Below the examples is a "Latest Stories and Insights" section with articles on the "World Cup" and "Tony Awards". A dark green announcement box in the bottom right corner states: "We are excited to announce a fresh new redesign of Google Trends! We have added new features and simplified our navigation to make it easier to explore data based stories. GOT IT".

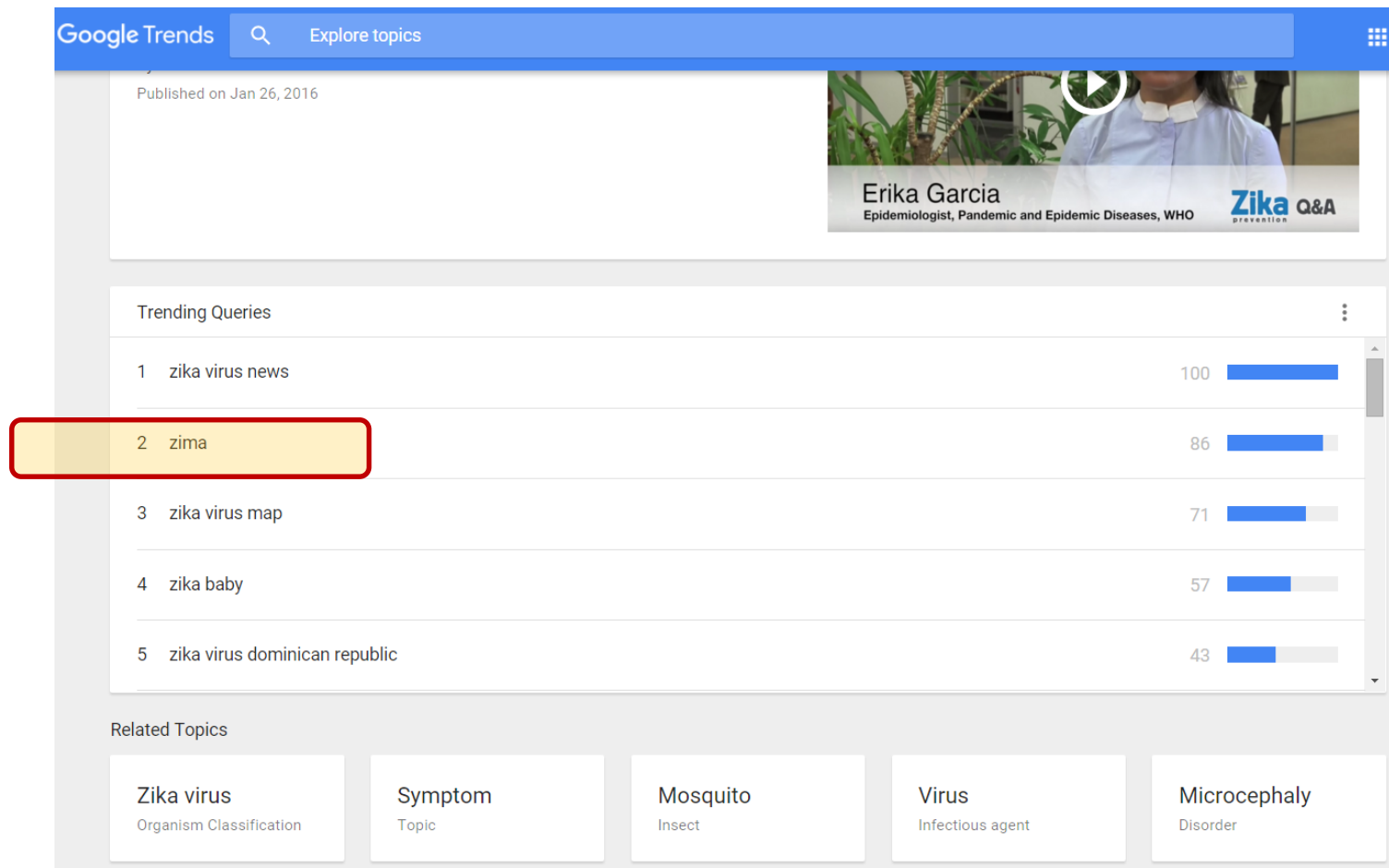
Google Trends

- 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.



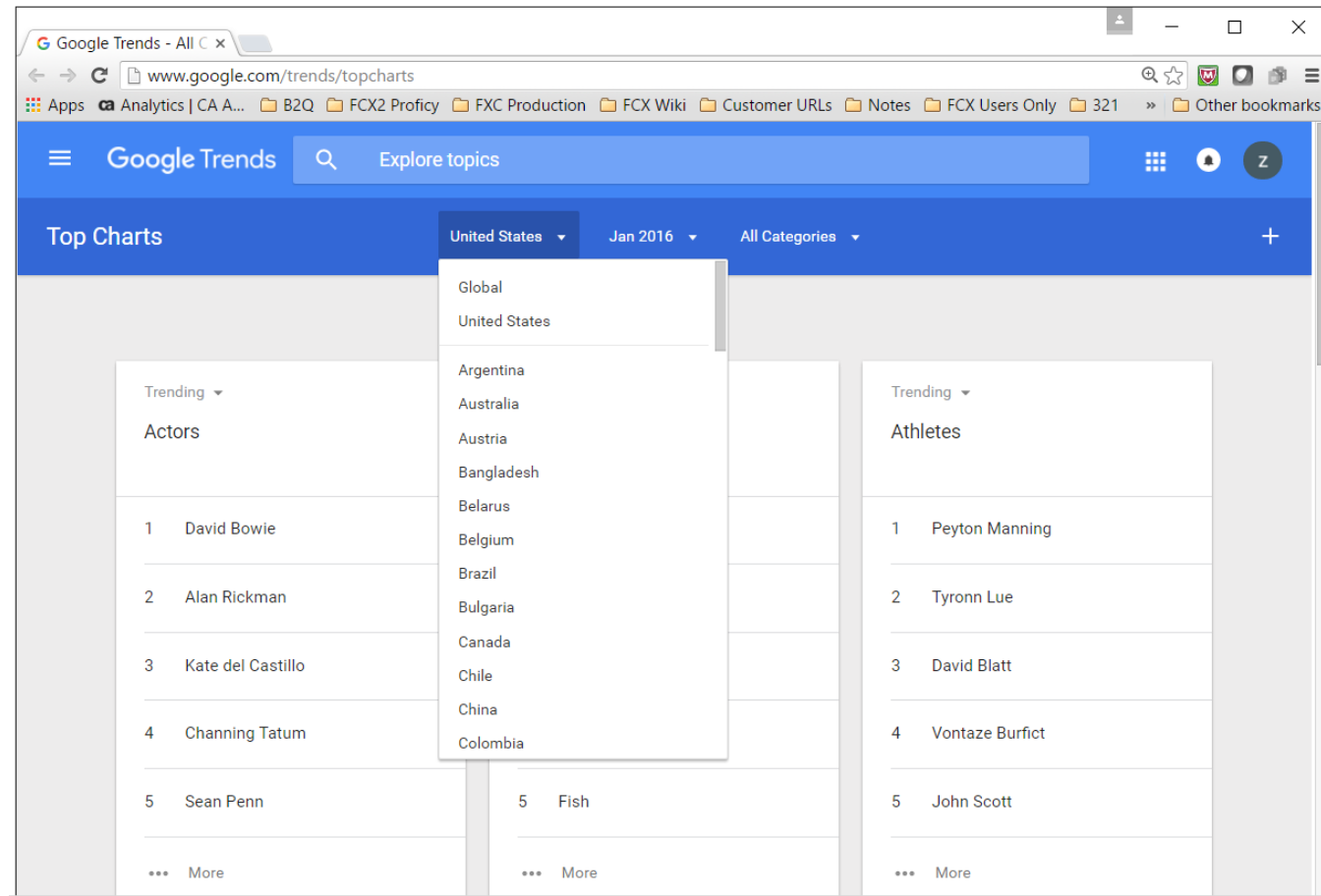
Google Trends

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

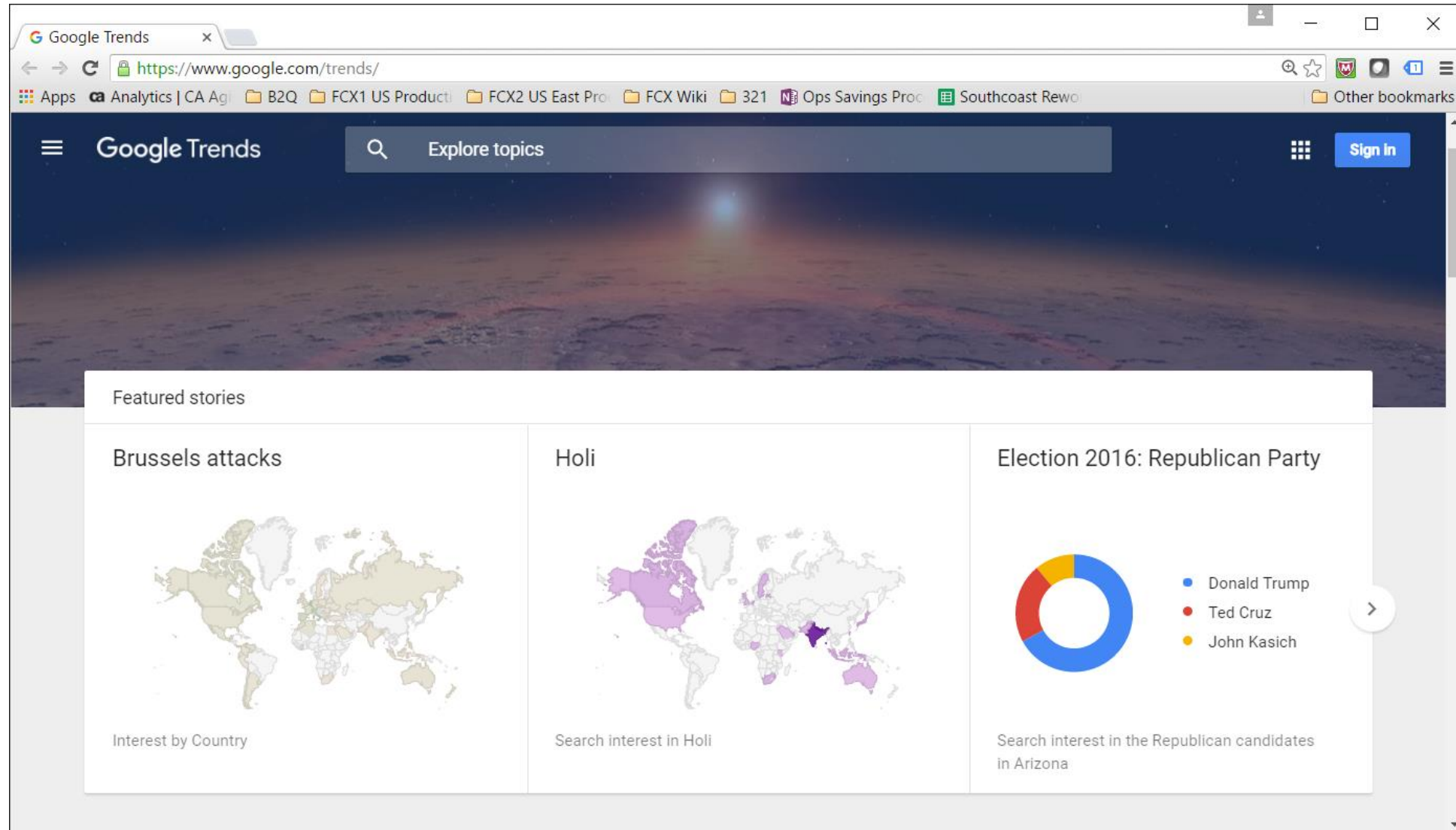


Google Trends

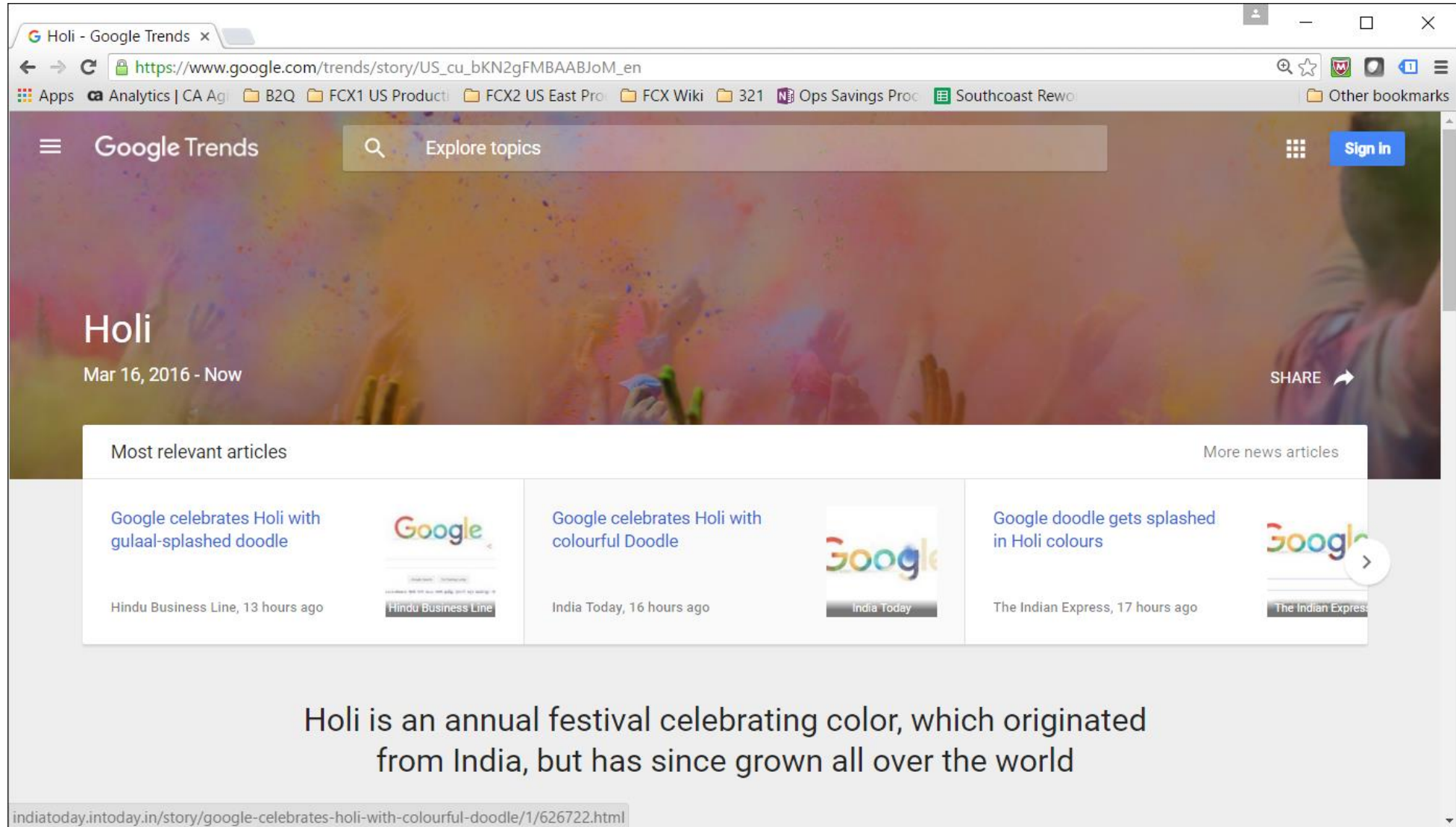
- Trends can be searched and trending keywords per category shown.



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 articles from Hindu Business Line, India Today, and The Indian Express, each accompanied by a thumbnail image of a Google Doodle celebrating Holi. The URL bar at the top shows the Google Trends story page for "Holi".

Google Trends

Explore topics

Holi

Mar 16, 2016 - Now

SHARE

Most relevant articles

More news articles

Google celebrates Holi with gulaal-splashed doodle

Hindu Business Line, 13 hours ago

Google celebrates Holi with colourful Doodle

India Today, 16 hours ago

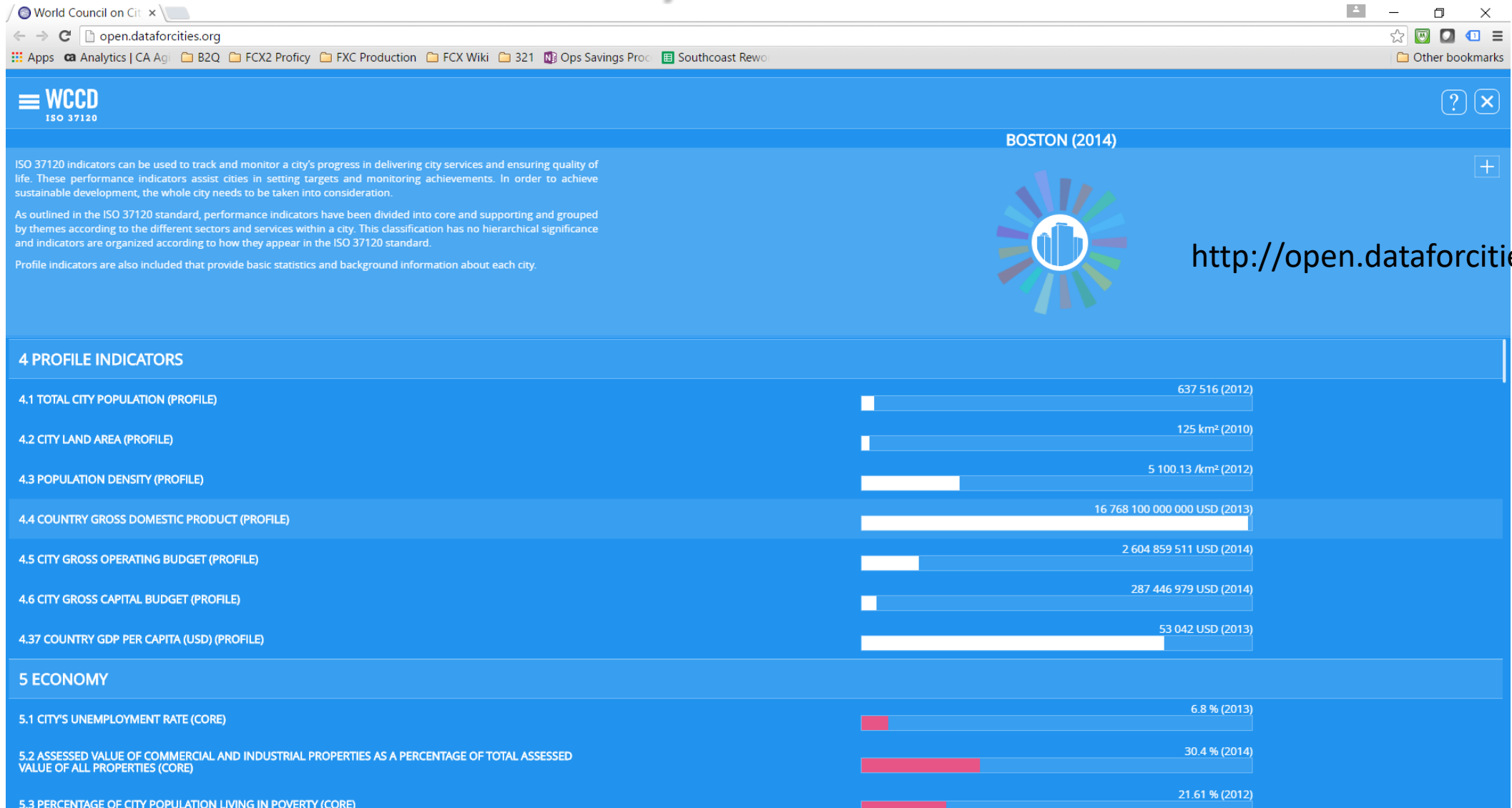
Google doodle gets splashed in Holi colours

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

Useful for City Indicators studies



Google Correlate

Google Correlate

(<https://www.google.com/trends/correlate>).

Google Correlate

Search correlations

[Enter your own data](#)



Compare US states



Compare weekly time series



Compare monthly time series

Shift series weeks

Country:

United States ▼

Documentation

[Comic Book](#)

[FAQ](#)

[Tutorial](#)

[Whitepaper](#)

[Correlate Algorithm](#)

Correlate Labs

[Search by Drawing](#)

Find searches that correlate with real-world data

Google Correlate finds search patterns which correspond with real-world trends.

Compare time series

Many search terms vary in popularity over time. To find terms that vary in a similar way to your own time series, enter your data using the link above. Or take a look at these examples to see which search terms:

- [...are more popular in winter](#)
- [...were most likely to be issued in 2005](#)
- [...match the pattern of actual flu activity](#)
(this is how we built Google Flu Trends!)

You can also enter a query into the search box above to find search terms that have a similar pattern of activity, or try one of these:

- [mittens](#)
- [losing weight](#)
- [ribosome](#)

Compare US states

Search terms are often popular in some states and less popular in others. To find terms whose pattern of activity across the United States reflects your own US states dataset, enter your data using the link above. Or, you can find terms correlated with:

- [...the state's latitude](#)
- [...being in New England](#)
- [...annual rainfall in the state](#)

You can also use the search box above to see which searches correlate state-by-state to any query, or try one of these:

- [mittens](#)
- [hunting season](#)
- [southern cooking](#)



Google Correlate

Google introduced in 2011, inverse form Google Trends.

1. Compare US States – terms popularity per state

- Gives you the best correlated terms and the state distribution
- Marketing campaigns and content strategies can be built around this

2. Time Series – terms popularity change over time

- Seasonal changes, holidays etc. in trending pattern
- Interesting to notice how a US holiday such as Halloween becomes trendier in other countries such as Portugal.

Lab project: Google Correlate

- Select what do you want to use:
 1. **Compare US States** – terms popularity per state
 - Analyze in which US state is most appropriate to advertise your type of business based on your key words.
 2. **Time Series** – terms popularity change over time
 - Create a seasonal business marketing campaign for a foreign country
- Submit your result (screenshots & description of your small business) as PowerPoint or similar. Show:
 - Screenshots of your term search (including the other most correlated terms).
 - Screenshots of the geographical area.
 - Marketing campaign conclusion you may draw.

Lab project: Google Correlate - Compare US States

Choose this project or the one on the next slide

- Task: Create small company (startup) marketing campaign based on data analysis from Google Correlate. Focus your marketing efforts on particular geographic areas and find out where to start with the introduction of your new type of product.
 - Invent a small business (Type, and distinctive product)
 - Select (1 or 2) terms (key words) that distinct your product from the others (Note these common terms are the ones people typically do Google search for other reasons than your company)
 - Compare US States – terms popularity per state
 - Analyze in which US state is most appropriate to advertise your type of business based on your key words.
- Submit your result (screenshots & description of your small business) as PowerPoint. Show
 - Screenshots of your term search (including the other most correlated terms)
 - Screenshots of the geographical area
 - Marketing campaign conclusion

Lab project: Google Correlate - Time Series

Choose this project or the one on the previous slide

- Task: Create small company (startup) marketing campaign based on data analysis from Google Correlate. Focus your marketing efforts on particular geographic areas and find out where to start with the introduction of your new type of product.
 - Invent a small business (Type, and distinctive product)
 - Select (1 or 2) terms (key words) that distinct your product from the others (Note these common terms are the ones people typically do Google search for other reasons than your company)
 - Time Series – terms popularity change over time
 - Create a seasonal business marketing campaign for a foreign country
- Submit your result (screenshots & description of your small business) as PowerPoint. Show
 - Screenshots of your term search (including an offset of few weeks before and after)
 - Marketing campaign conclusion

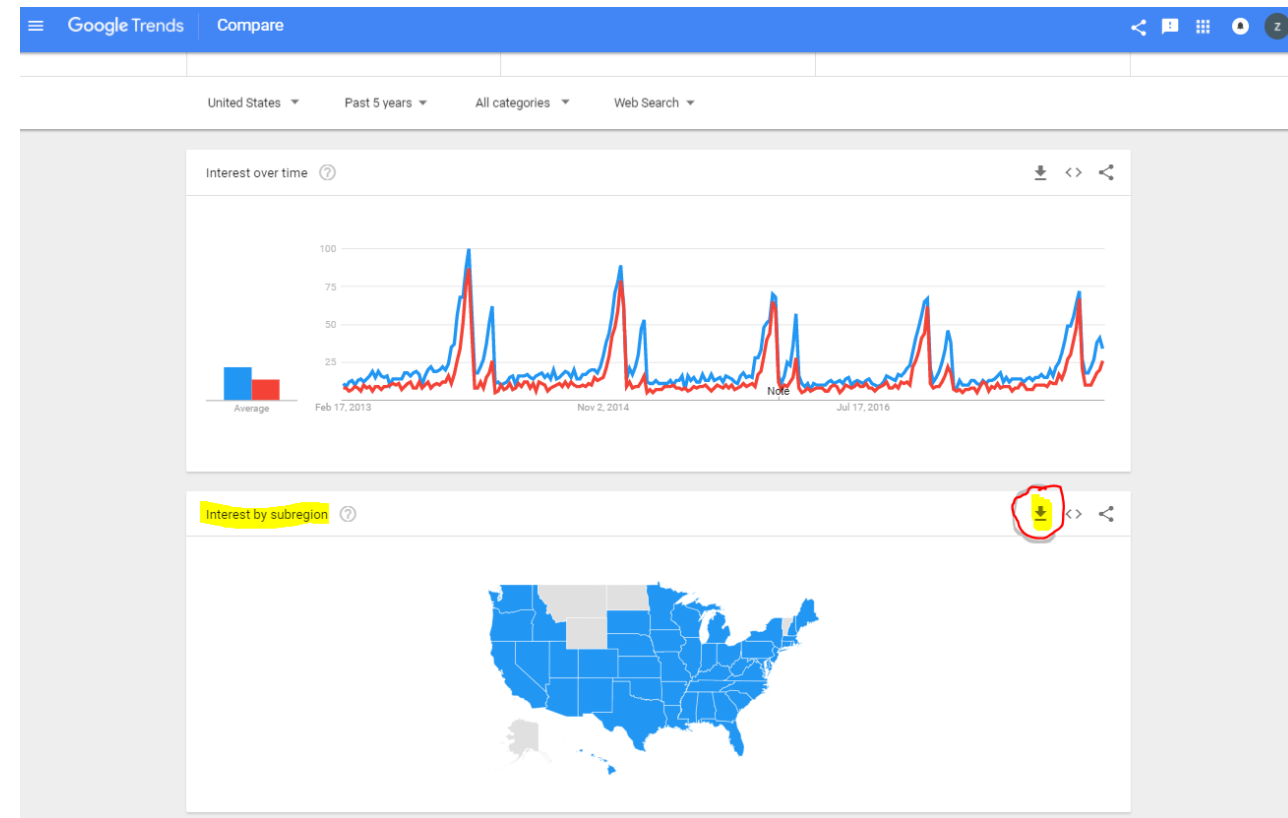
Lab project: Google Trends

Task: Using Google Trends data and R code to explore the following topic:

- Compare US interest in “gift for boyfriend”(GB) vs. “gift for girlfriend”(GG) over the last 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 “Google Trends”
 - 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

- Explore the CVS 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



R Lab project with Google Trends

- Here is an example of the code that you can use

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