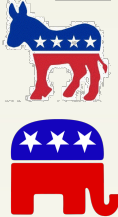# Viz Runner
2016 Presential Campaign Visualization

A visualization to explain the difference between campaign candidates and visualize summarized data

Presented by Group 1

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Visualization Problem

Why Not Read Newspaper?

Too Much Data

Too Many Data Sources

Lack of Insight

Our Goal

Political Visualization Analysis Tool

- Track Main Candidates' Performance by time, by competitor and by geographical

- Analyse Their Campaign Funding Raising and Spending Status

- Visualize Key-Words that News Media Used towards A Candidate

Our **Data** Source

Including Poll, SuperPAC data and Newspaper Report

Poll Data

Including national wide poll like CNN, Fox and ABC. And local poll date for different states
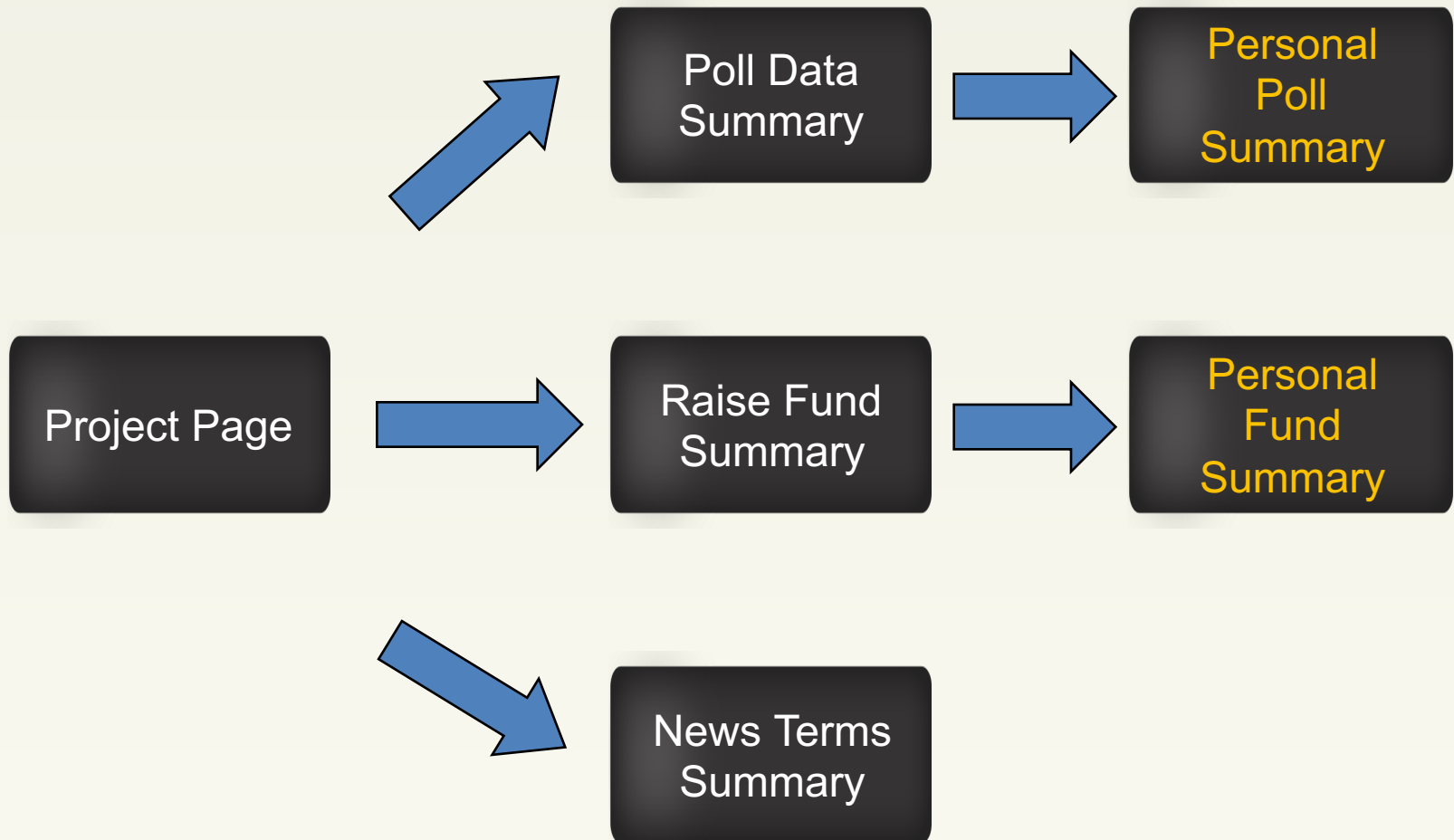
SuperPAC Information

Including annual report and quarterly report of fund and raise status

Newspaper Report

Including 2000+ news reports from Washington Post for each main president candidates.
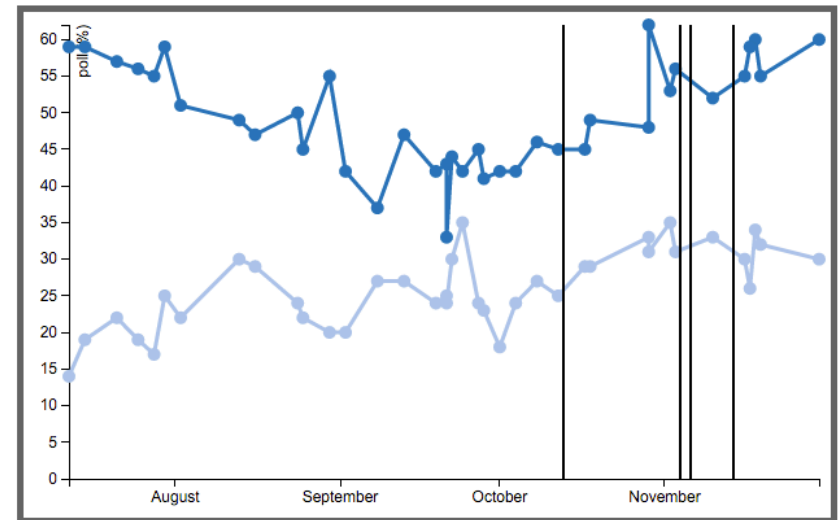
Our System Framework

Visual Design: Poll

Including 6 Recently Month Poll

We finally only considered candidates whose support rates are always above 5%, since there are too many candidates in republican group.

We used time series plus **event line** to indicate important **events** for reader's references

The left part shows two democrat candidates' poll: Hillary Cliton and Bernie Sanders. The poll result shows that Ms.Cliton has a stable advantage than Mr.Sanders. Even though, Benghazi Committed Inquire to Ms.Clinton in the middle of October successfully caused her support drop in a dramatic way, but her support soon recovered.

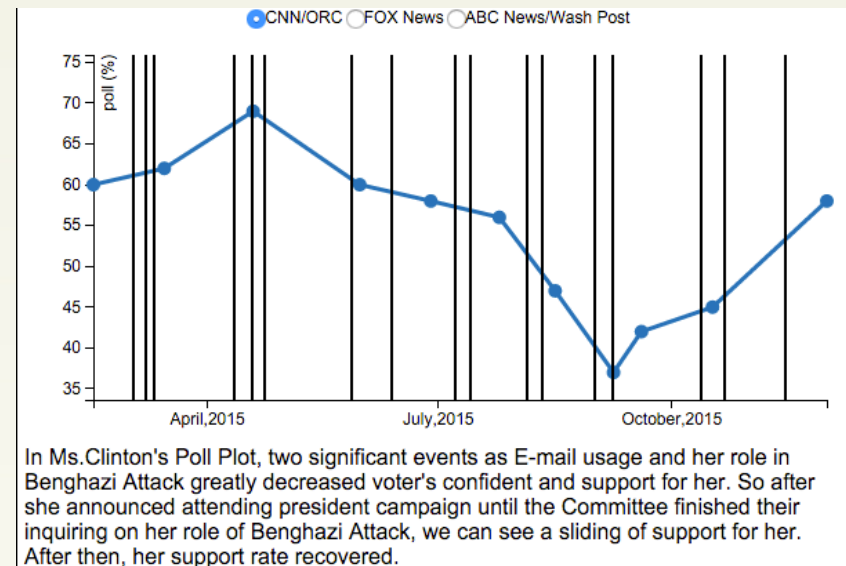**Please click on lines to enter personal page.**

Visual Design:
Personal Poll Plot

Including 1 Year Poll, One V.S. One and State Poll Result

In personal page, we collected two types national wide poll from three different sources as left wing, close to neutral and right wing media to give user a comprehensive representation. (ABC, CNN and Fox)

Selected **Important Personal News Events** are posted on the time plot.

In Ms.Clinton's Poll Plot, two significant events as E-mail usage and her role in Benghazi Attack greatly decreased voter's confident and support for her. So after she announced attending president campaign until the Committee finished their inquiring on her role of Benghazi Attack, we can see a sliding of support for her. After then, her support rate recovered.
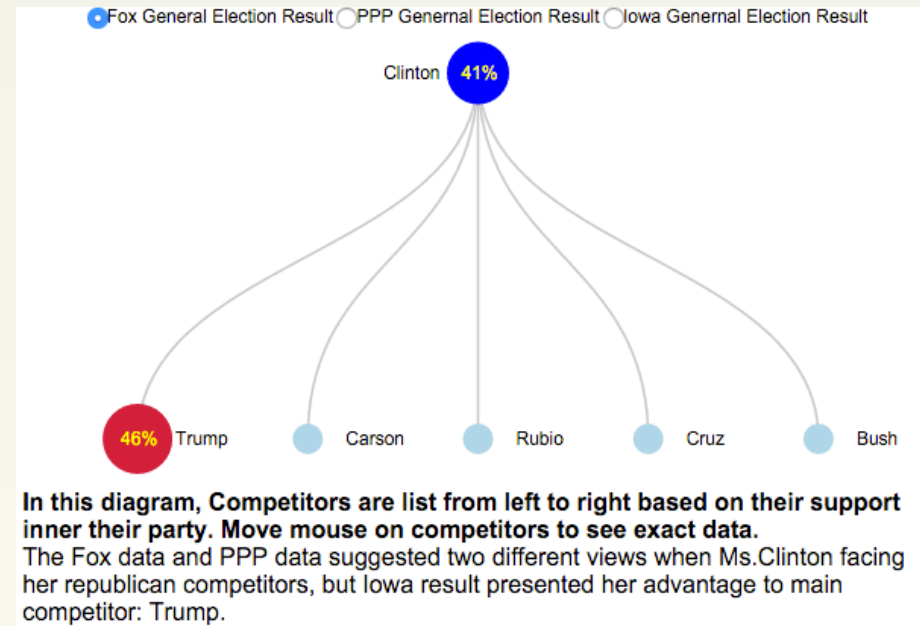
Visual Design:
1 vs. 1 Poll Plot

In 1 vs. 1 Visualization Part, we used a tree diagram to show user who has a advantage in 1 vs. 1 poll result. Red means win while Blue means lose, and Black represented tie.

The rank of competitors from left to right represents their rank from top 1 to top 5 in their inner party poll.

In this diagram, Competitors are list from left to right based on their support inner their party. Move mouse on competitors to see exact data.
The Fox data and PPP data suggested two different views when Ms.Clinton facing her republican competitors, but Iowa result presented her advantage to main competitor: Trump.
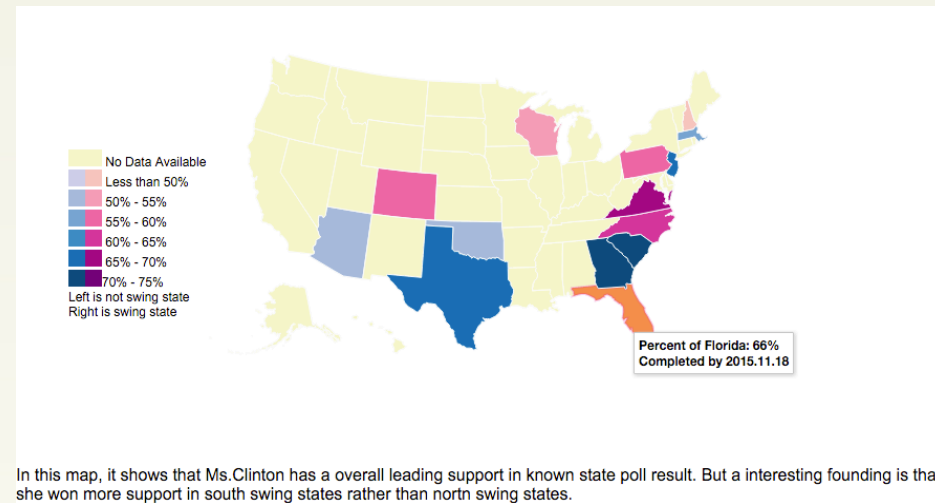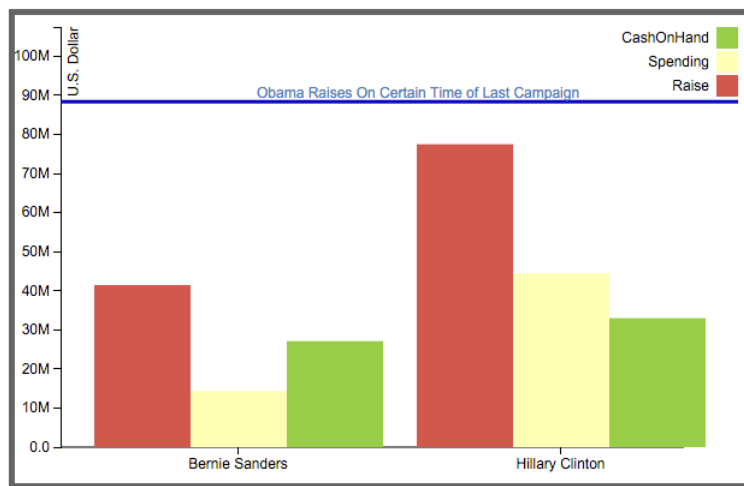
Visual Design:
State Poll Plot

In State Poll Plot, we shows a candidate's supporting rate in different states, especially in Swing States which are critical for president campaign. Two different colours(purple for swing states, blue for non-swing states of Democratic) used to mark two type states (and Republican will use red colour)

An interactive function provided to show exact rate in different states.

No Data Available
Less than 50%
50% - 55%
55% - 60%
60% - 65%
65% - 70%
70% - 75%
Left is not swing state
Right is swing state

Percent of Florida: 66%
Completed by 2015.11.18

In this map, it shows that Ms.Clinton has a overall leading support in known state poll result. But a interesting founding is that she won more support in south swing states rather than nortn swing states.

Visual Design:
SuperPAC Sum

The left part shows two Democrat candidates' SuperPAC raise, spending and cash on hand: Hillary Cliton and Bernie Sanders.
The SuperPAC data result shows that every category, Ms. Clinton is almost the doublenof Sen. Sanders, which may illustrated her advantage on SuperPAC size.

Please click on bars to enter personal page.

This is the summary plot of each candidate's fund status in Raised, Spend and Cash. A marker line as in the 2012 presidential campaign the level money raised by President Obama and Governor Romney at same period is draw on the top.
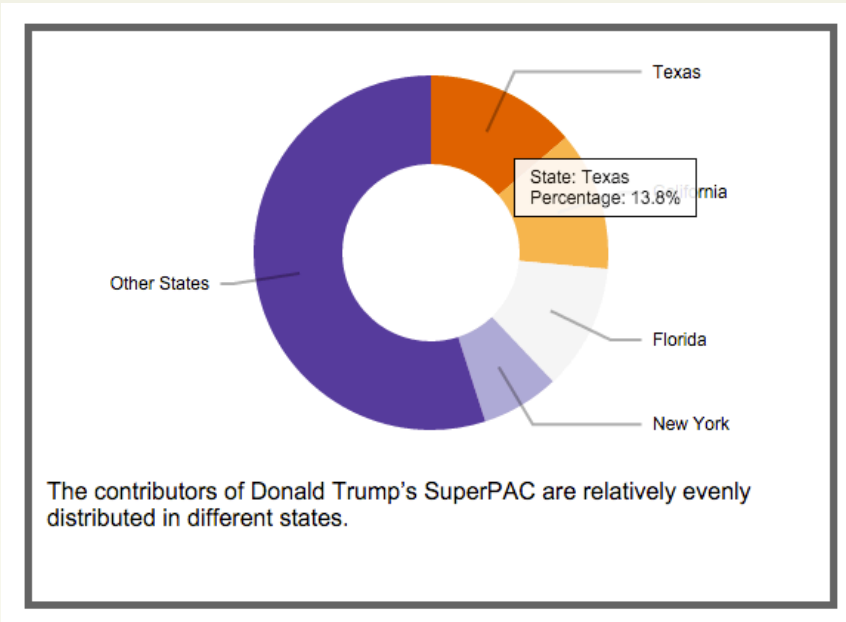
As same design in plot summary, by clicking on each person's bar, user can enter personal page.

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Visual Design: PAC in State

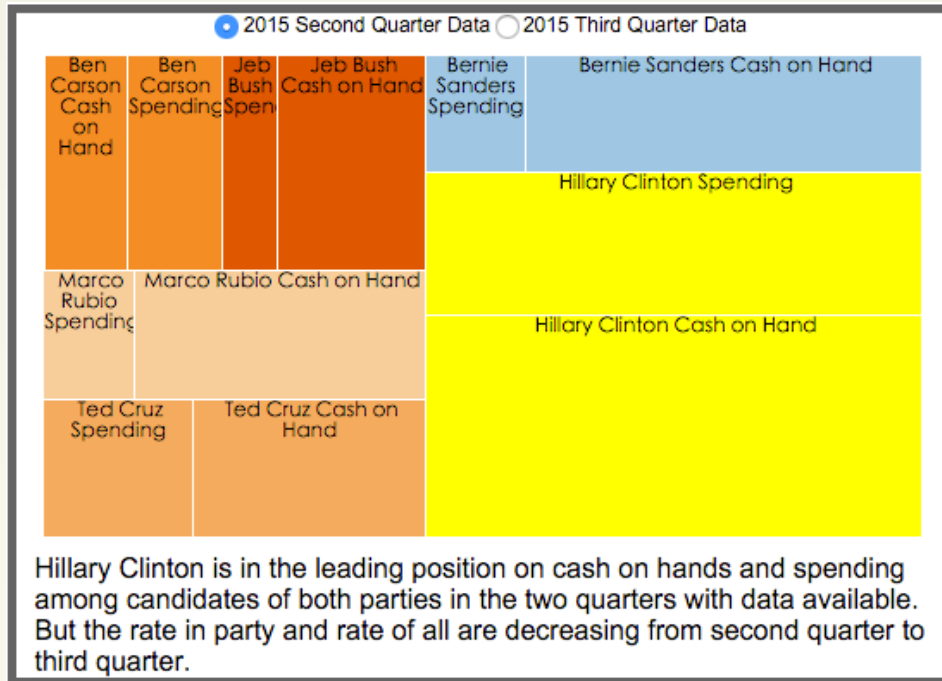The contributors of Donald Trump's SuperPAC are relatively evenly distributed in different states.

The Fund Raising Pie Chart shows the percentage of top 4 states and other states which contribute fund to a candidate

By hovering mouse on parts of pie chart, user can see exact percentage of each part
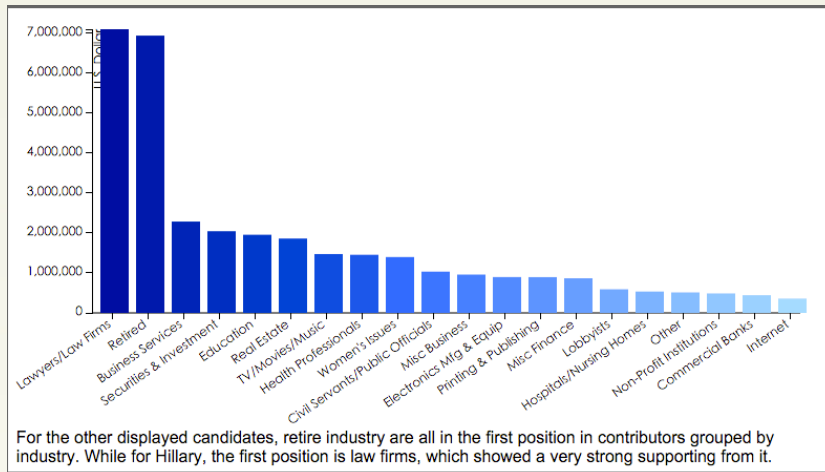
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Visual Design: Fund TreeMap

The Treemap is designed to show user a straightforward way of each candidate's superPAC performance (ability to raise and spend money) for given quarter . Two quarter data are available.

Selected candidate will be highlighted by yellow

Visual Design:
Industry Bar

For the other displayed candidates, retire industry are all in the first position in contributors grouped by industry. While for Hillary, the first position is law firms, which showed a very strong supporting from it.

The last part of SuperPAC visualization is the bar chart representing each industry's donation to a candidate. Sorted from largest amount donor to the least donor.

Text Mining:
Words from Media

1. Target: Showing **Key-Words** related to **Most Competitive Candidates**

2. Source: **Washington Posts, 12-Month Period**

3. Method: **Python Scrap** + **TF-IDF= Word Cloud** of **Top 100 words,** only for **Noun** and **Adjective**

5. Topic:
(1)National-Politics
(2)Opinions
(3)Editorial-Opinion
(4)Post-Politics

4. Data: Each Candidate with average 1500 documents from Posts. Including **Hillary Clinton**, **Donald Trump**, **Ben Carson**, **Marco Rubio.**

Text Mining: Words Cloud

Hillary Clinton

- Top Frequent Words about **Benghazi Inquiry**
- Some words also linked to **O'Malley** for attending presidential campaign

Donald Trump

- Top Frequent Words about **Media** He attended
- Top noun words related to his **Social Status** and **Positions**

Some Interesting Findings: Industry Donation

- Currently, the top industry made donation to all candidates are **Retired Industry**
- **Retried Industry** also leads Florida to become one of the top 4 states for most candidates

- H: 1. Law, **2. Retired** 3. Business
- S: **1. Retired** 2. Education 3. Health
- T: **1. Retired** 2. Health 3. Misc Biz
- B: **1. Retired** 2. Health 3. Supporter
- C: **1. Retired** 2. Law 3. Health
- R: **1. Retired** 2. Real Estate 3. Law
- J: **1. Retired** 2. Security 3. Law

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Some Interesting Findings: Donald Trump

- His SuperPAC is very small while he enjoy top support in Republican, two guess:
    1. **He runs campaign by his own money (low)**
    2. **His SuperPAC is not in fully operation since he announced later than others (high)**

- Although he always making controversial comments, his word cloud shows many media/programme names, two guess:
    1. **He really wants to be hard core Conservative (low)**
    2. **He is using controversial comments to earn coverage from media in order to win campaign (high)**

Limitions

- 1. We do not have a global visualization design that connected all data in one
- 2. We lack some data as quarterly superPAC reports and state poll result
- 3. We can do more on text mining than only word cloud

Our
Future Works

Keep Tracking Data

Rich Data Tells More

Color Design

Color for Each Candidate

Web Page Improvement

Rich CSS & Navigation

Automatic Date Update

Server & Database

Reference

- In Visualization Design, we referred several designs from **New York Times**
- Our poll data comes from **RealClear Politics**
- Our SuperPAC data cames from **OpenSecrets**
- A detailed list of references is in our final reports

THANK YOU

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