



Data
201A

HOW TO CREATE A POPULAR TED TALK?

-- *Data Analysis and
Visualizations of TED Talk
Dataset*



*Let's take a
brief look at the
dataset!*



comments	description	duration	event	film_date	languages	main Speaker	name	num Speaker	published Date	ratings	related talks
0	4553	Sir Ken Robinson makes an entertaining and pro...	1164 TED2006	1140825600	60	Ken Robinson	Ken Robinson: Do schools kill creativity?	1	1151367060	[{"id": 7, "name": "Funny", "count": 19645}, {"i...	[{"id": 86, "name": "https://pe.tedcdn.com/talks/1151367060.json"}, {"id": 100, "name": "https://pe.tedcdn.com/talks/1151367060.json"}]
1	265	With the same humor and humanity he exuded in ...	977 TED2006	1140825600	43	Al Gore	Al Gore: Averting the climate crisis	1	1151367060	[{"id": 7, "name": "Funny", "count": 544}, {"i...	[{"id": 24, "name": "https://pe.tedcdn.com/talks/1151367060.json"}, {"id": 100, "name": "https://pe.tedcdn.com/talks/1151367060.json"}]
2	124	New York Times columnist David Pogue	1286 TED2006	1140739200	26	David Pogue	David Pogue: Simplicity sells	1	1151367060	[{"id": 7, "name": "Funny", "count": 964}, {"i...	[{"id": 172, "name": "https://pe.tedcdn.com/talks/1151367060.json"}, {"id": 100, "name": "https://pe.tedcdn.com/talks/1151367060.json"}]

Variables	Definition
name	The official name of the TED Talk. Includes the title and the speaker.
title	The title of the talk
description	A blurb of what the talk is about.
main Speaker	The first named speaker of the talk.
speaker occupation	The occupation of the main speaker.
num Speaker	The number of speakers in the talk.
duration	The duration of the talk in seconds.
event	The TED/TEDx event where the talk took place.
film date	The Unix timestamp of the filming.
published Date	The Unix timestamp for the publication of the talk on TED.com
comments	The number of first level comments made on the talk.
tags	The themes associated with the talk.
languages	The number of languages in which the talk is available.
ratings	A stringified dictionary of the various ratings given to the talk (inspiring, fascinating, jaw dropping, etc.)
related talks	A list of dictionaries of recommended talks to watch next.
url	The URL of the talk.
views	The number of views on the talk.

comments 4553
description Sir Ken Robinson makes an entertaining and pro...
duration 1164
event TED2006
film_date 1140825600
languages 60
main_speaker Ken Robinson
name Ken Robinson: Do schools kill creativity?
num_speaker 1
published_date 1151367060
ratings [{"id": 7, "name": "Funny", "count": 19645}, ...
related_talks [{"id": 865, "hero": "https://pe.tedcdn.com/im...
speaker_occupation Author/educator
tags ['children', 'creativity', 'culture', 'dance', ...
title Do schools kill creativity?
url https://www.ted.com/talks/ken_robinson_says_sc...
views 47227110

Name: 0, dtype: object



DATA CLEANING

- Drop NA values.

object
Writer



```
comments           0
description        0
duration           0
event              0
film_date          0
languages          0
main_speaker       0
name               0
num_speaker        0
published_date     0
ratings            0
related_talks      0
speaker_occupation 6
tags               0
title              0
url                0
views              0
dtype: int64
```

```
comments           0
description        0
duration           0
event              0
film_date          0
languages          0
main_speaker       0
name               0
num_speaker        0
published_date     0
ratings            0
related_talks      0
speaker_occupation 0
tags               0
title              0
url                0
views              0
dtype: int64
```

isna().sum()

DATA CLEANING -- Part II

- Transform the “Date” column.

```
0    2006-06-27 00:11:00
1    2006-06-27 00:11:00
2    2006-06-27 00:11:00
3    2006-06-27 00:11:00
4    2006-06-27 20:38:00
      ...
2545   2017-09-19 20:00:16
2546   2017-09-20 15:02:17
2547   2017-09-21 15:01:35
2548   2017-09-21 20:00:42
2549   2017-09-22 15:00:22
Name: published_date, Length: 2550, dtype: datetime64[ns]
```

Unix timestamp of
the filming ?

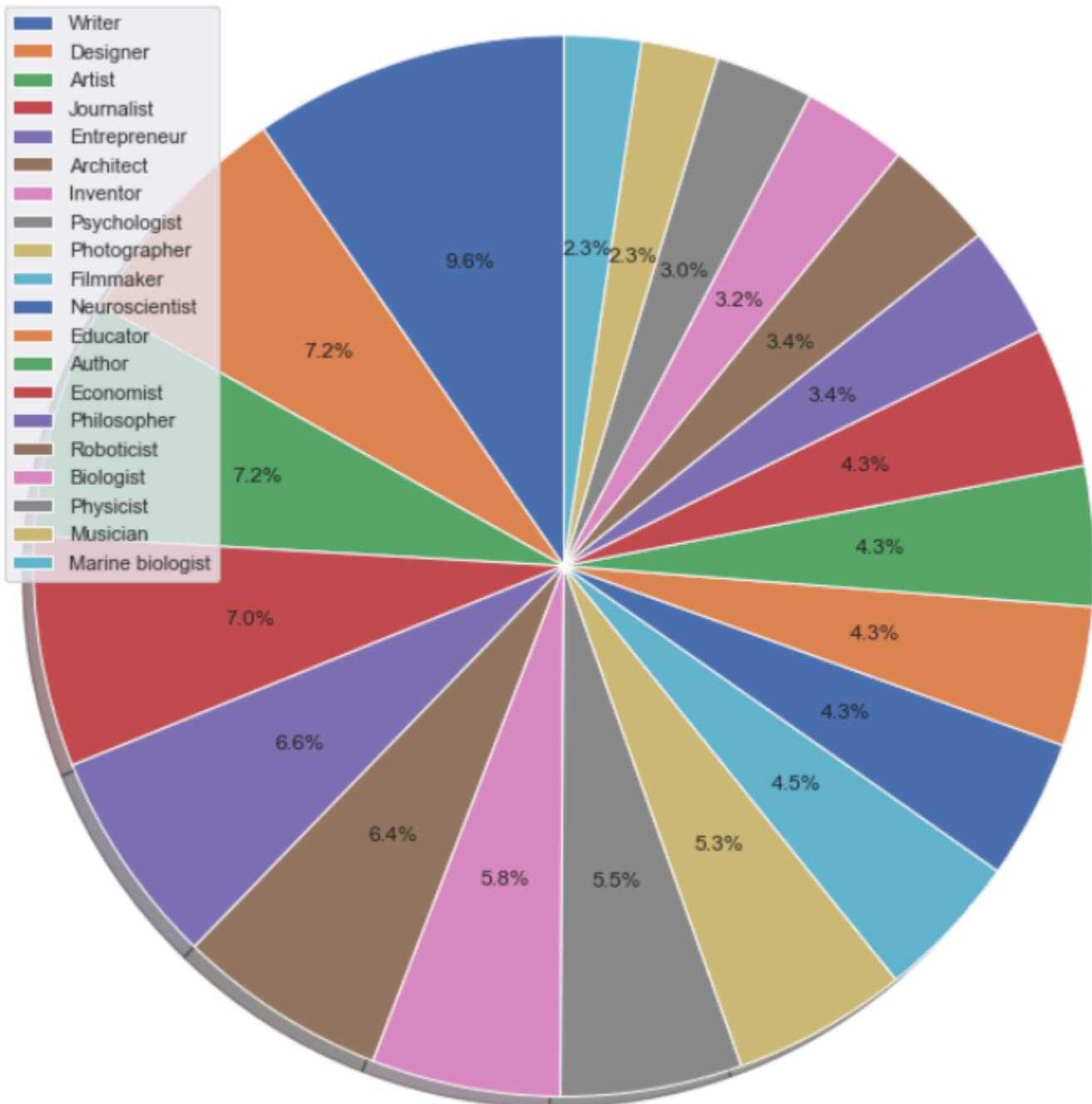
to_datetime()

DESCRIPTIVE ANALYSIS



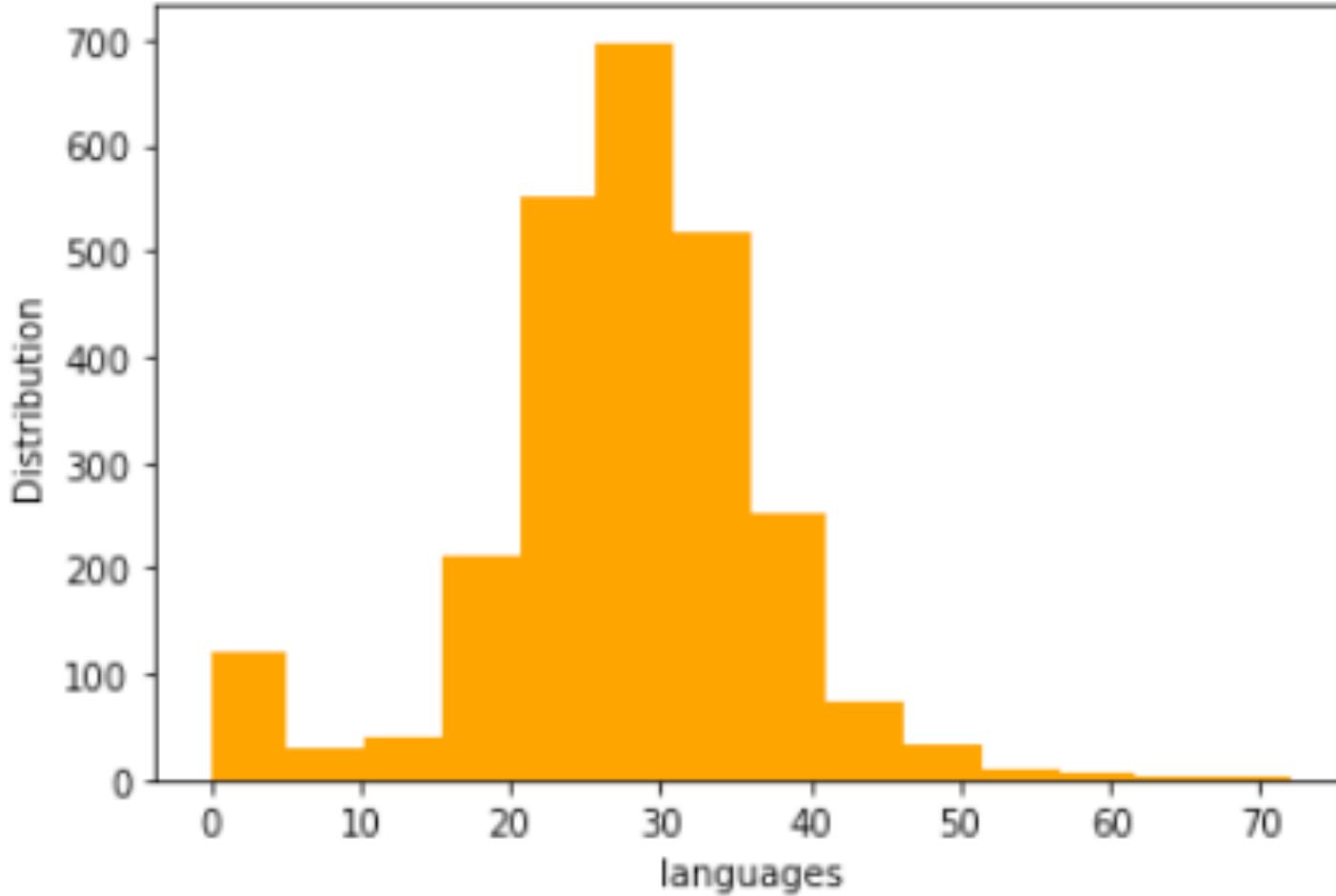
	count	mean	std	min	25%	50%	75%	max
comments	2550.0	1.915624e+02	2.823152e+02	2.0	63.00	118.0	221.75	6404.0
duration	2550.0	8.265102e+02	3.740091e+02	135.0	577.00	848.0	1046.75	5256.0
languages	2550.0	2.732627e+01	9.563452e+00	0.0	23.00	28.0	33.00	72.0
num_speaker	2550.0	1.028235e+00	2.077047e-01	1.0	1.00	1.0	1.00	5.0
views	2550.0	1.698297e+06	2.498479e+06	50443.0	755792.75	1124523.5	1700759.50	47227110.0

pie chart for top 20 occupations

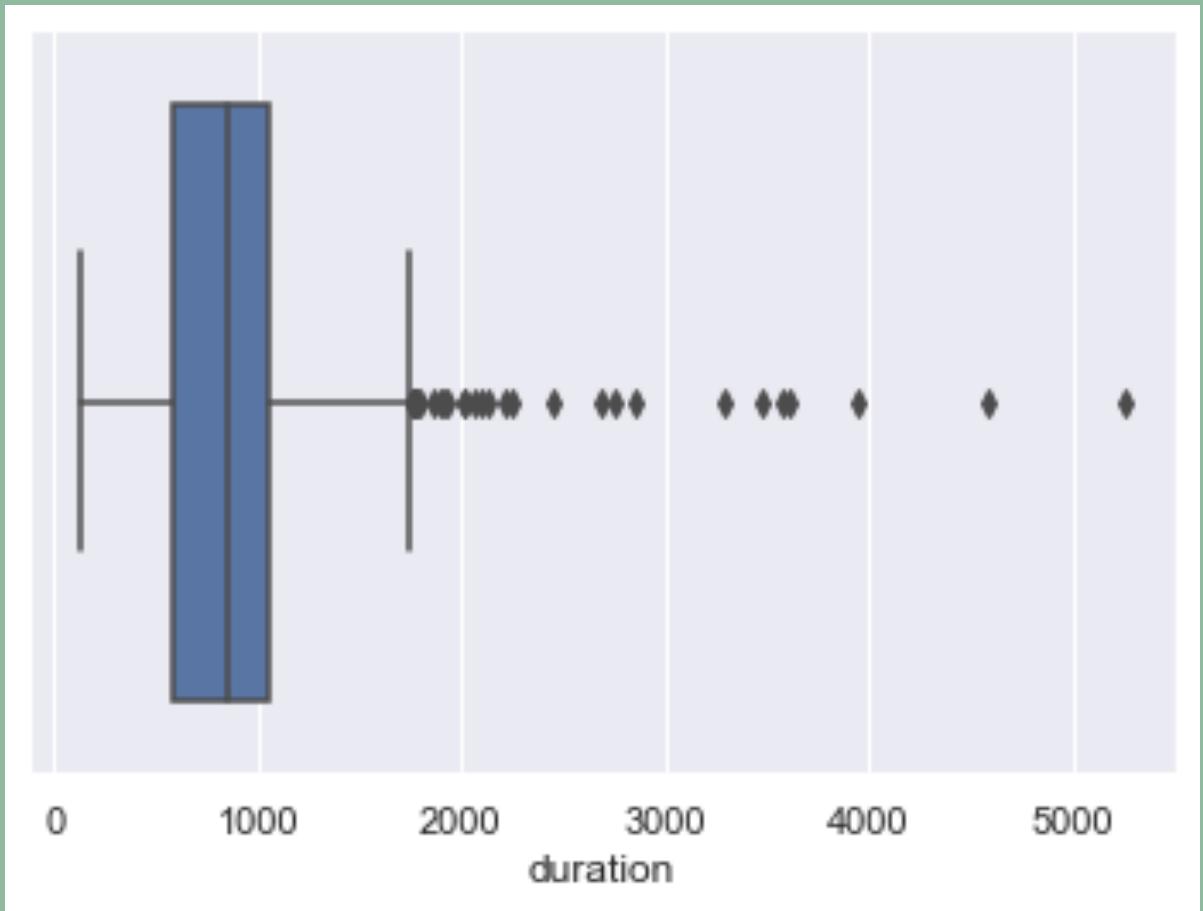
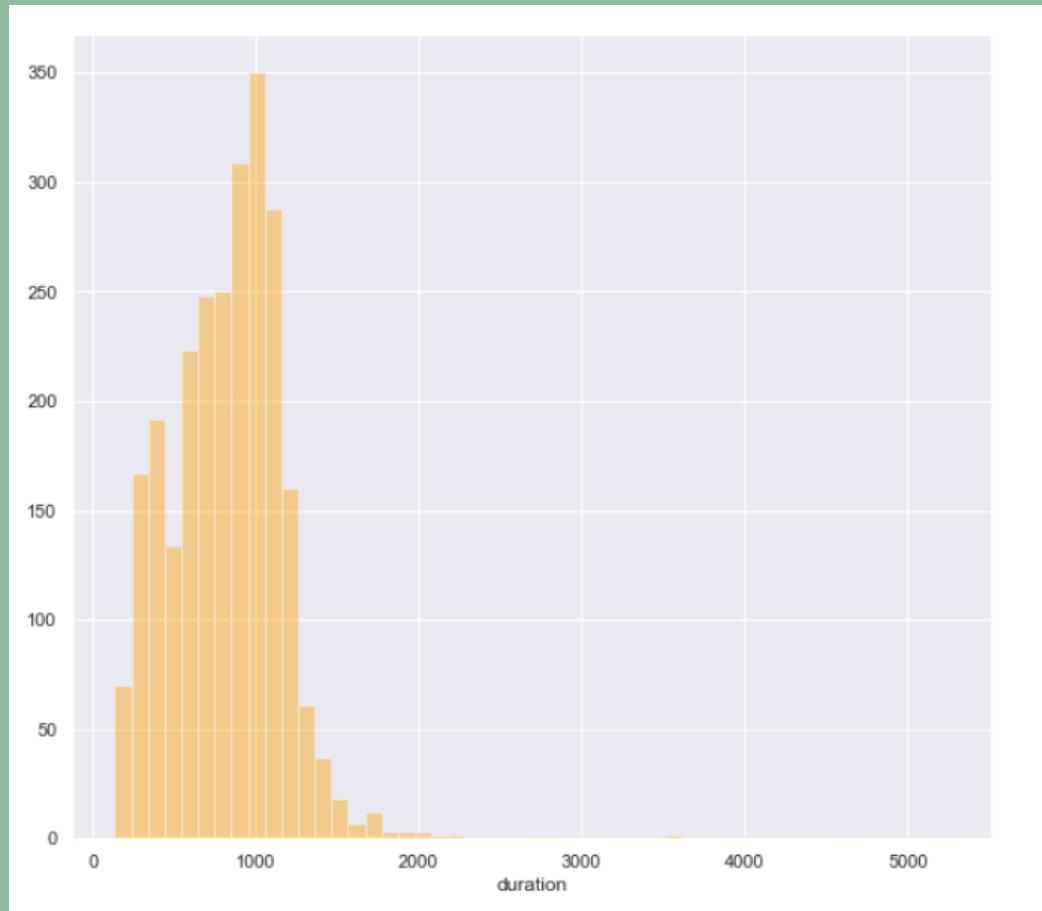


Analyze Author
Occupations

Analyze the LANGUAGE

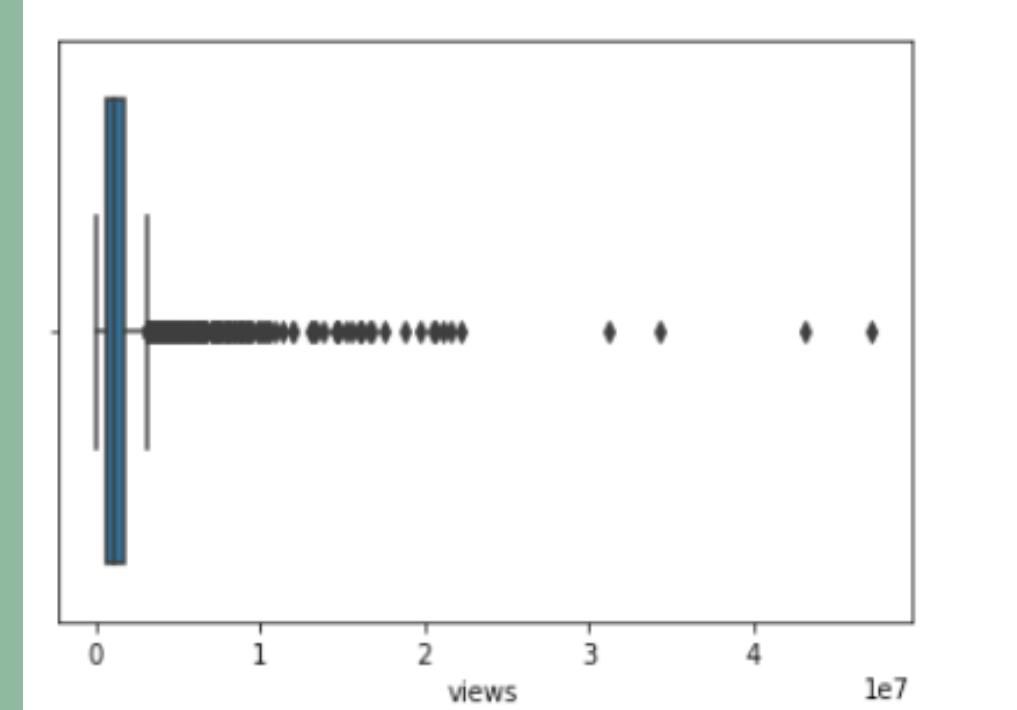
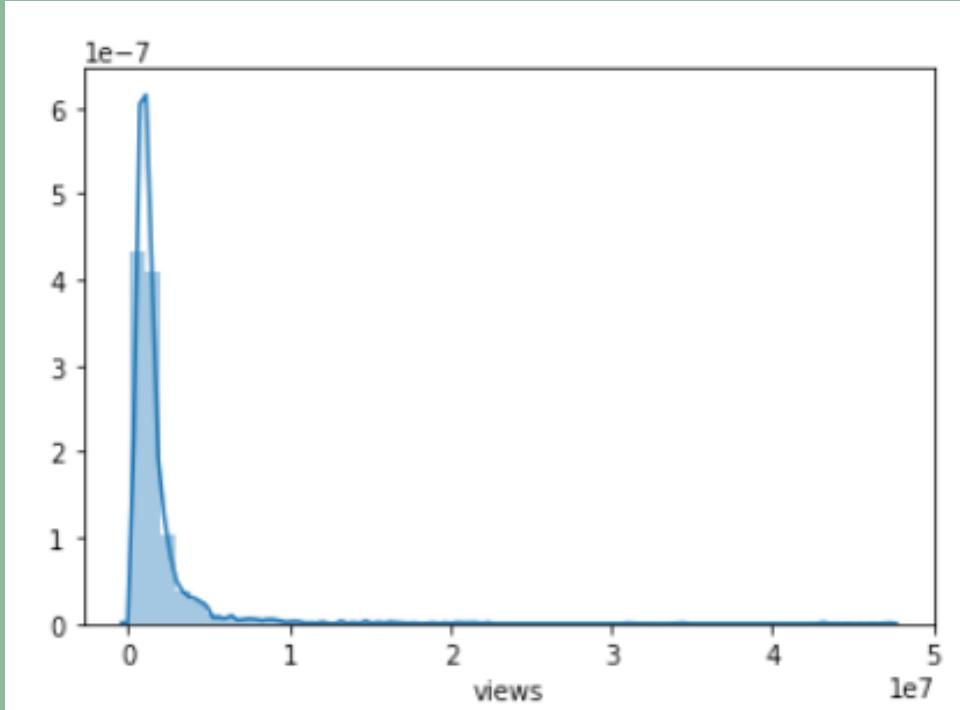


Analyze the DURATION

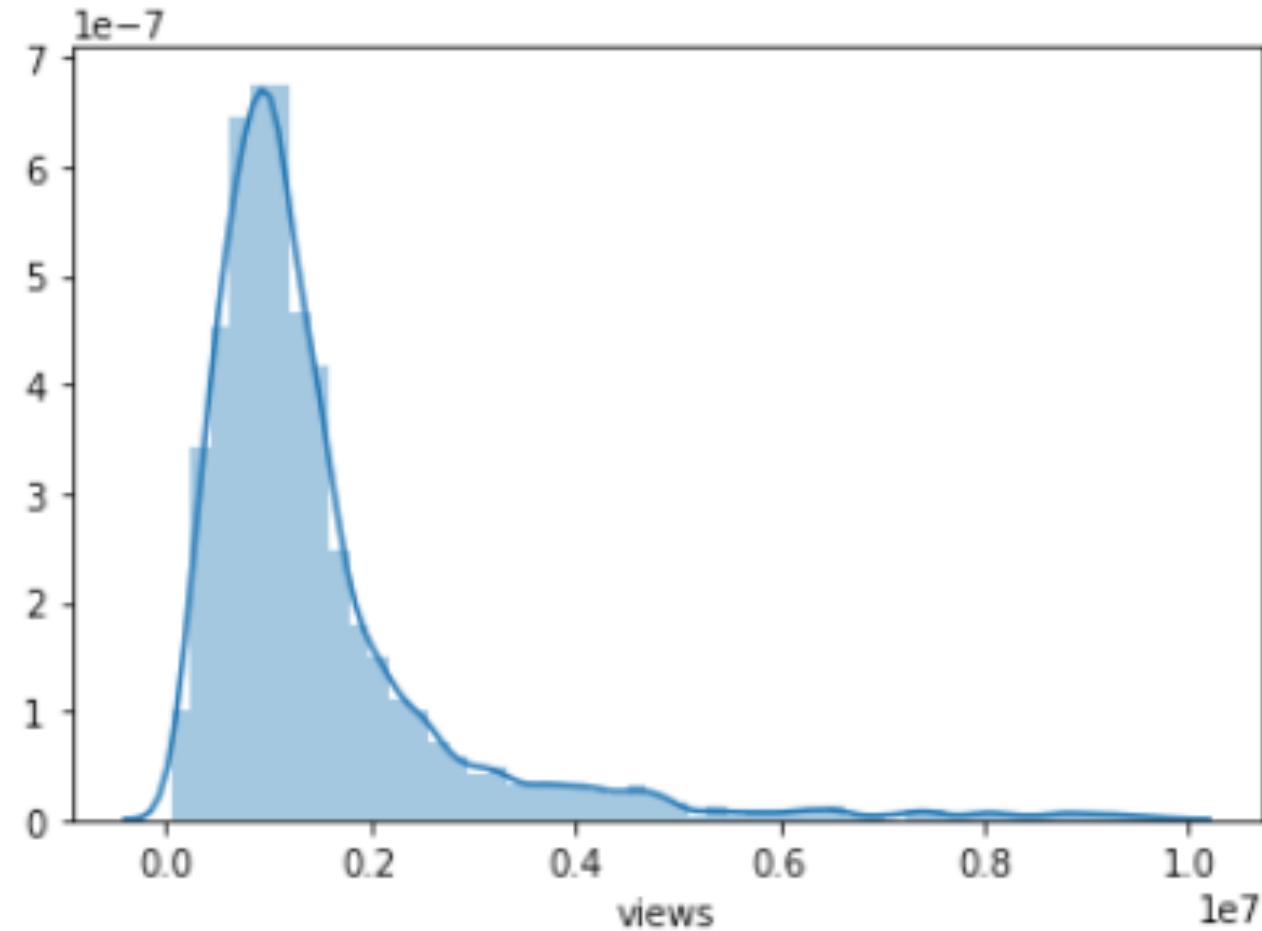


Analyze the VIEWS

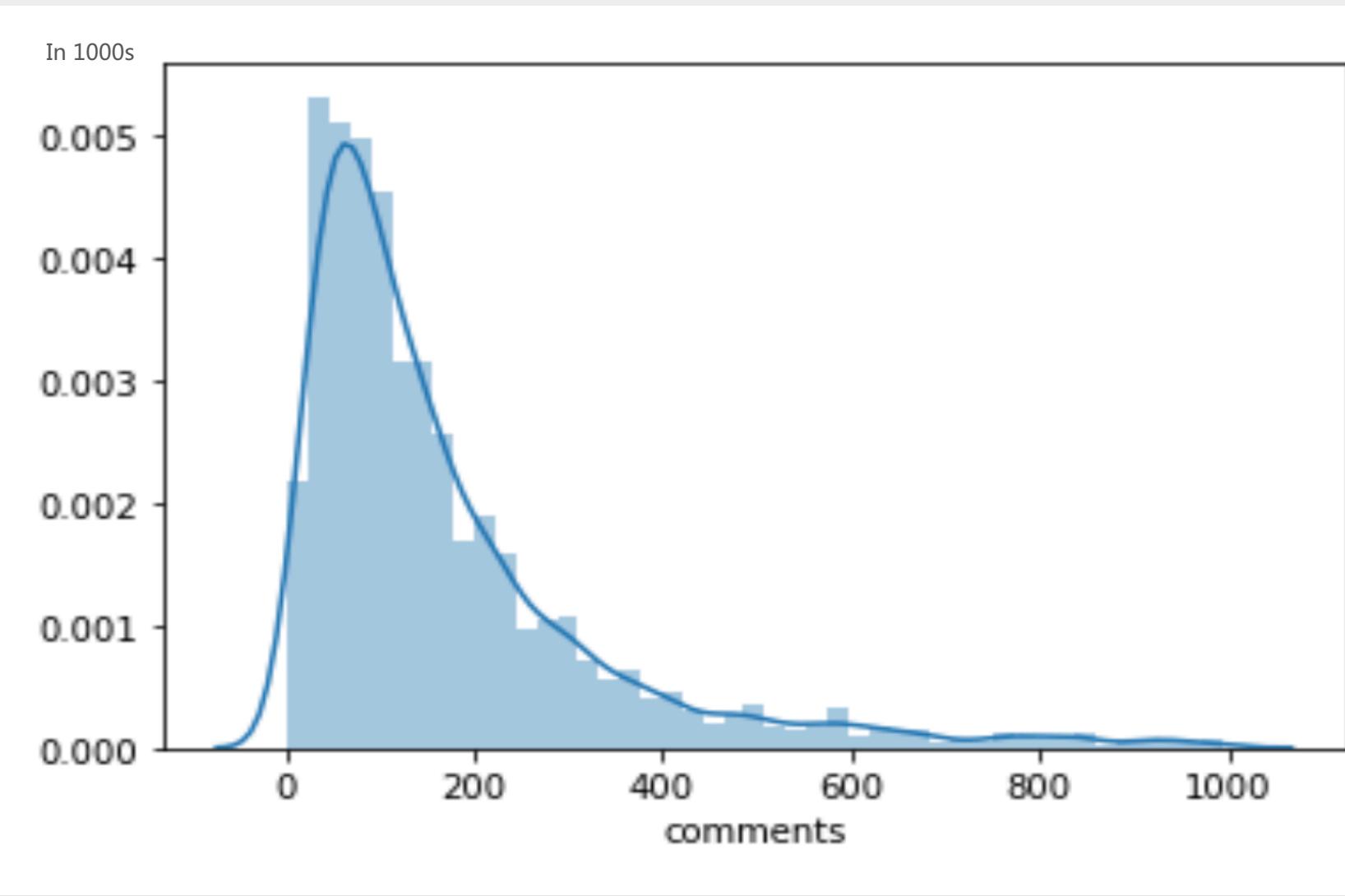
Two Ways to Look at How Views Are Distributed

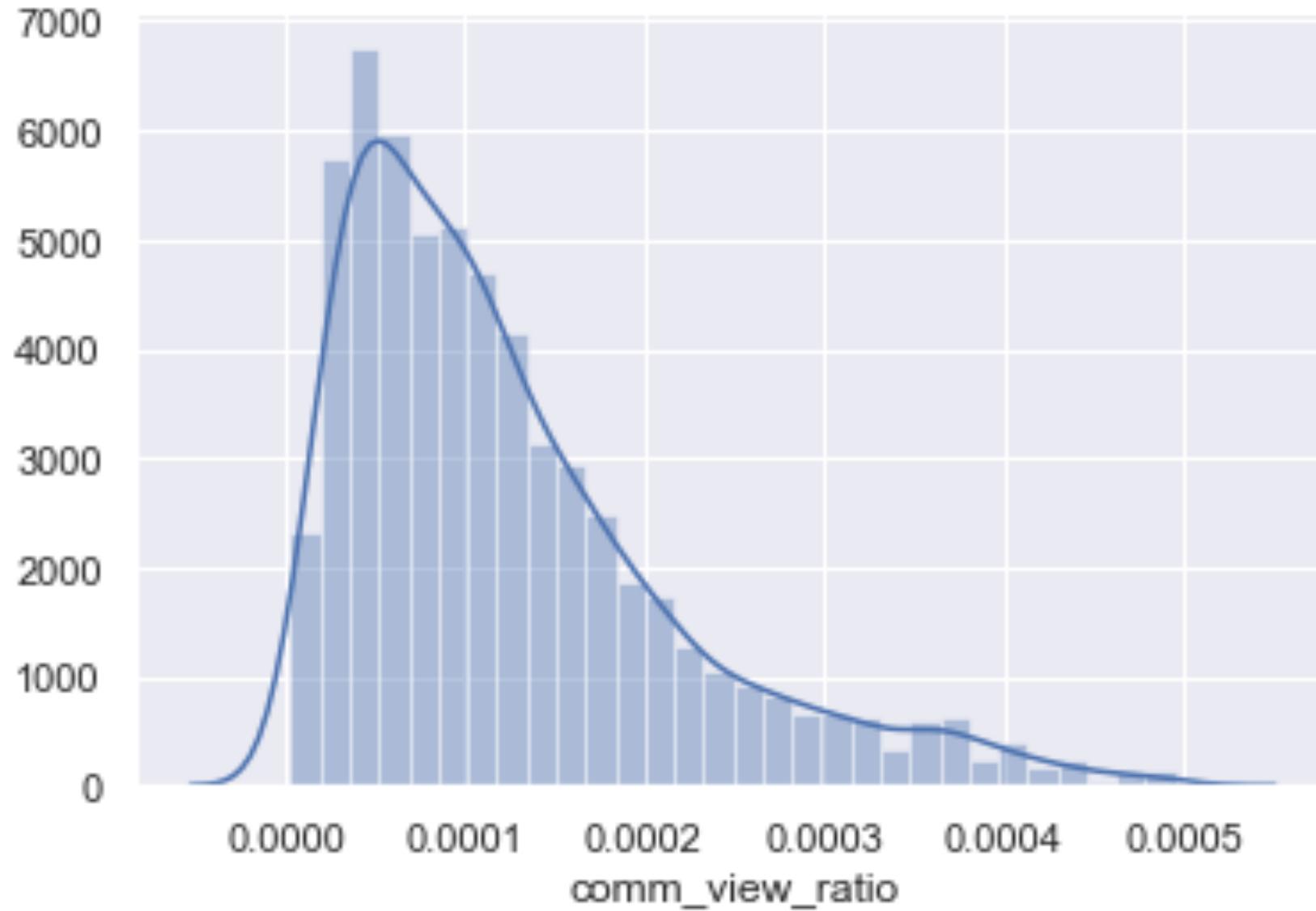


Make the plot More Digestible:



Analyze the COMMENTS





TED Talks with Top 5 Most Comments

comments	description	main_speaker	name	title	url
6404	Richard Dawkins urges all atheists to openly s...	Richard Dawkins	Richard Dawkins: Militant atheism	Militant atheism	https://www.ted.com/talks/richard_dawkins_on_militant_atheism
4553	Sir Ken Robinson makes an entertaining and pro...	Ken Robinson	Ken Robinson: Do schools kill creativity?	Do schools kill creativity?	https://www.ted.com/talks/ken_robinson_says_schools_kill_creativity
3356	Questions of good and evil, right and wrong ar...	Sam Harris	Sam Harris: Science can answer moral questions	Science can answer moral questions	https://www.ted.com/talks/sam_harris_science_can_answer_moral_questions
2877	Jill Bolte Taylor got a research opportunity f...	Jill Bolte Taylor	Jill Bolte Taylor: My stroke of insight	My stroke of insight	https://www.ted.com/talks/jill_bolte_taylor_my_stroke_of_insight
2673	Our consciousness is a fundamental aspect of o...	David Chalmers	David Chalmers: How do you explain consciousness?	How do you explain consciousness?	https://www.ted.com/talks/david_chalmers_how_to_explain_consciousness

TED Talks with Top 5 Most Views

description	main_speaker	name	title	url	views
Sir Ken Robinson makes an entertaining and pro...	Ken Robinson	Ken Robinson: Do schools kill creativity?	Do schools kill creativity?	https://www.ted.com/talks/ken_robinson_says_schools_kill_creativity	47227110
Body language affects how others see us, but i...	Amy Cuddy	Amy Cuddy: Your body language may shape who you are	Your body language may shape who you are	https://www.ted.com/talks/amy_cuddy_your_body_language_may_shape_who_you_are	43155405
Simon Sinek has a simple but powerful model for...	Simon Sinek	Simon Sinek: How great leaders inspire action	How great leaders inspire action	https://www.ted.com/talks/simon_sinek_how_great_leaders_inspire_action	34309432
Brené Brown studies human connection -- our ab...	Brené Brown	Brené Brown: The power of vulnerability	The power of vulnerability	https://www.ted.com/talks/brene_brown_on_vulnerability	31168150
"Bonk" author Mary Roach delves into obscure s...	Mary Roach	Mary Roach: 10 things you didn't know about orgasm	10 things you didn't know about orgasm	https://www.ted.com/talks/mary_roach_10_things_you_didnt_know_about_orgasm	22270883

TED Talks with Top 5 Most View/Comment Ratio

description	main_speaker	name	title	url	comm_view_ratio
Hours before New York lawmakers rejected a key...	Diane J. Savino	Diane J. Savino: The case for same-sex marriage	The case for same-sex marriage	https://www.ted.com/talks/diane_j_savino_the_case_for_same_sex_marriage	0.002220
David Bismark demos a new system for voting th...	David Bismark	David Bismark: E-voting without fraud	E-voting without fraud	https://www.ted.com/talks/david_bismark_e_voting_without_fraud	0.001534
Richard Dawkins urges all atheists to openly s...	Richard Dawkins	Richard Dawkins: Militant atheism	Militant atheism	https://www.ted.com/talks/richard_dawkins_on_militant_atheism	0.001464
Filmmaker Sharmeen Obaid-Chinoy takes on a ter...	Sharmeen Obaid-Chinoy	Sharmeen Obaid-Chinoy: Inside a school for sui...	Inside a school for suicide bombers	https://www.ted.com/talks/sharmeen_obaid_chinoy_inside_a_school_for_suicide_bombers	0.001421
Janet Echelman found her true voice as an arti...	Janet Echelman	Janet Echelman: Taking imagination seriously	Taking imagination seriously	https://www.ted.com/talks/janet_echelman_taking_imagination_seriously	0.001360

MOST COMMON TAGS



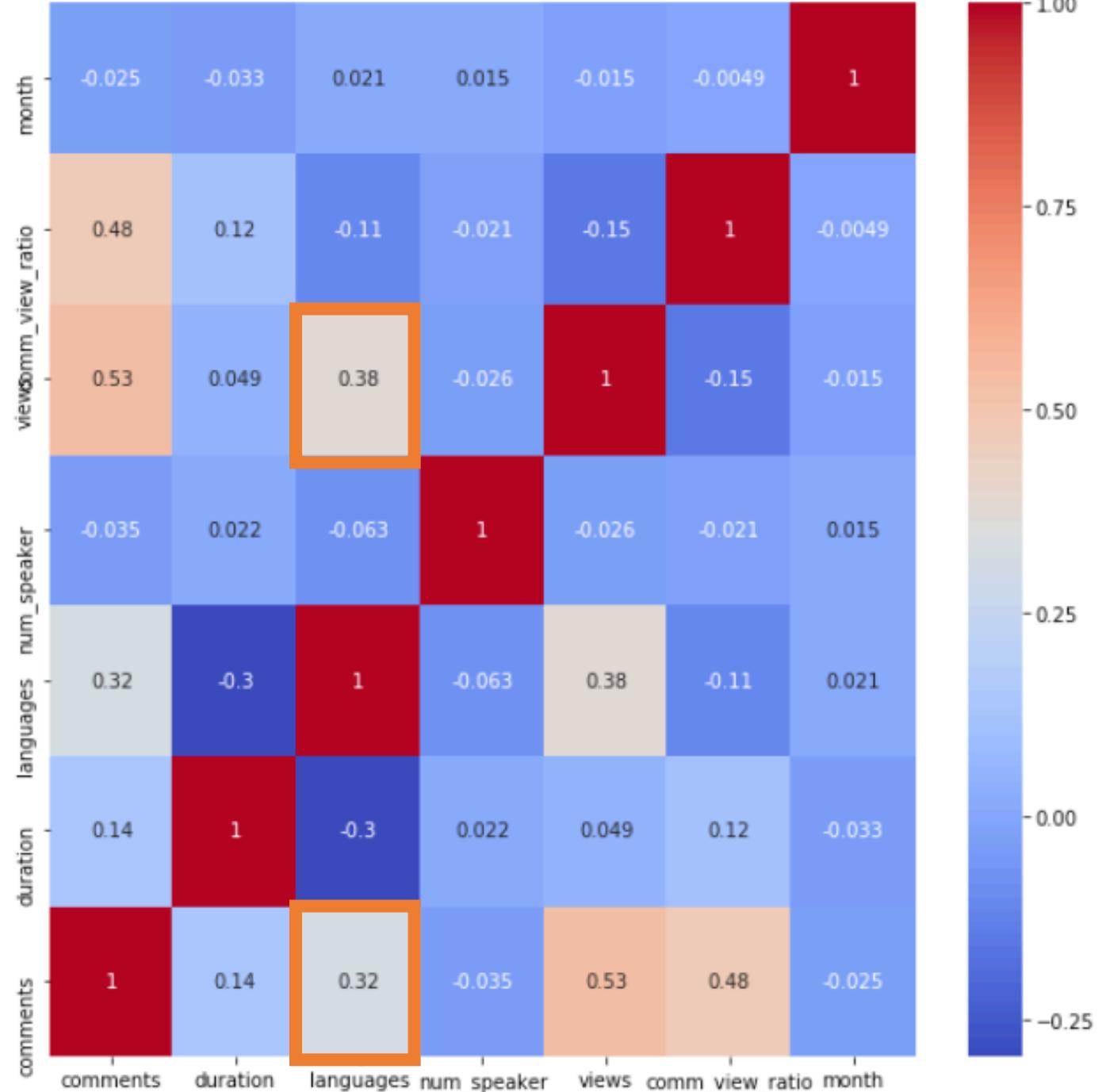
Top 10 Funniest and Most Confusing TED Talks

	title	main_speaker	views	published_date	funny
837	The power of vulnerability	Brené Brown	31168150	1293115500	21444
0	Do schools kill creativity?	Ken Robinson	47227110	1151367060	19645
1030	How to live before you die	Steve Jobs	8744428	1317868920	17290
201	My stroke of insight	Jill Bolte Taylor	21190883	1205284200	14447
1129	The happy secret to better work	Shawn Achor	16209727	1328112578	11213
1940	The price of shame	Monica Lewinsky	11443190	1426894031	8668
2109	What makes a good life? Lessons from the longe...	Robert Waldinger	16601927	1450889841	8590
1747	Why good leaders make you feel safe	Simon Sinek	6803938	1400511643	8569
553	The thrilling potential of SixthSense technology	Pranav Mistry	16097077	1258333200	8416
176	Underwater astonishments	David Gallo	13926113	1200011280	8328



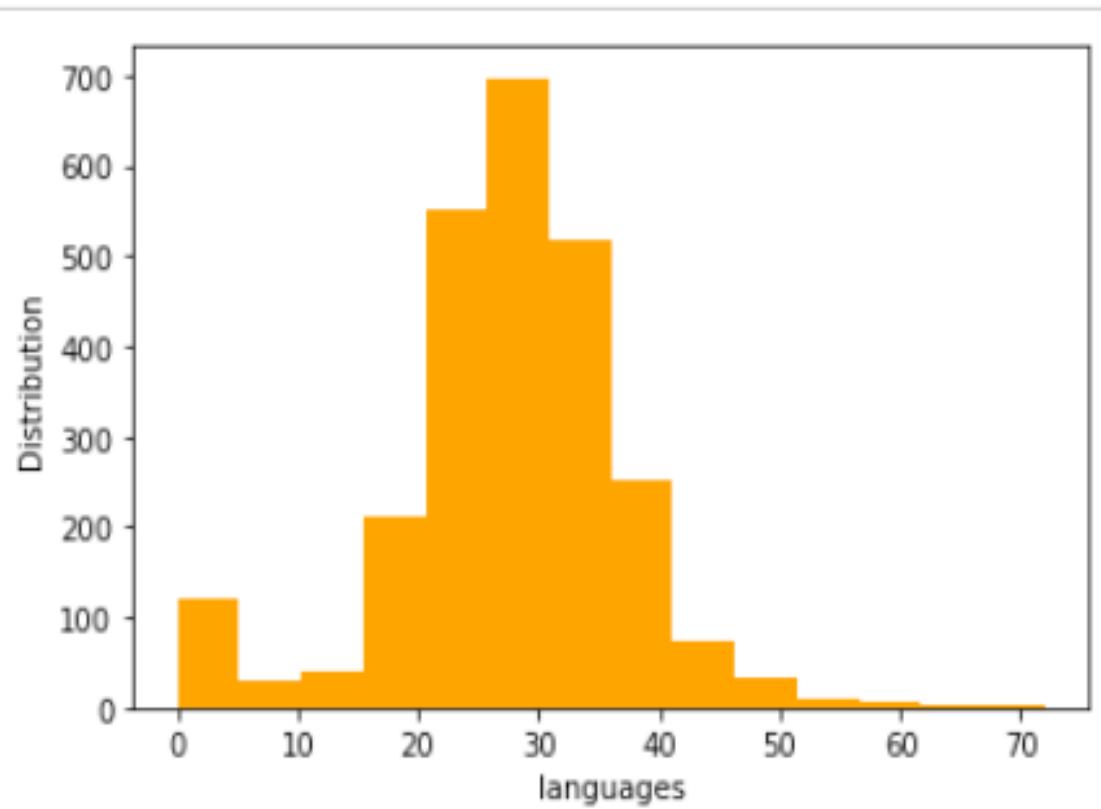
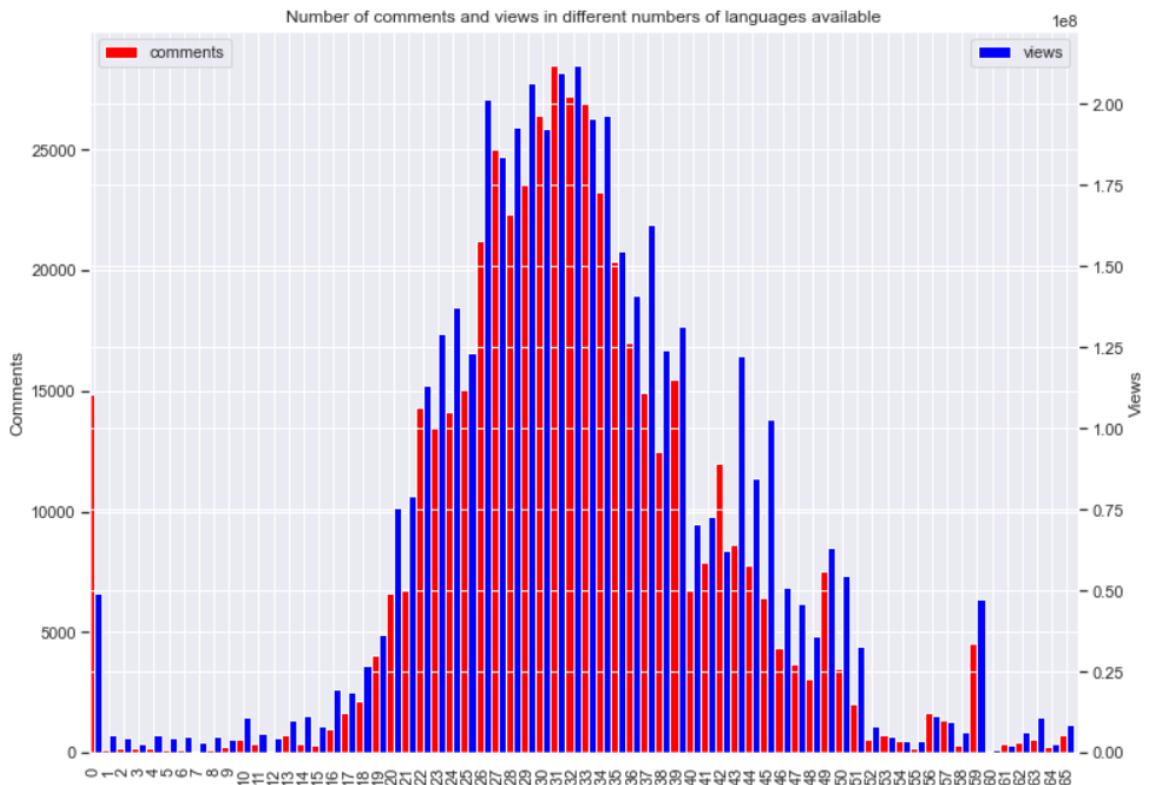
	title	main_speaker	views	published_date	confusing
1346	Your body language may shape who you are	Amy Cuddy	43155405	1349103608	11111
201	My stroke of insight	Jill Bolte Taylor	21190883	1205284200	10464
1163	The power of introverts	Susan Cain	17629275	1330720092	10218
246	The transformative power of classical music	Benjamin Zander	9315483	1214355600	8108
837	The power of vulnerability	Brené Brown	31168150	1293115500	7942
972	Building a park in the sky	Robert Hammond	704205	1309445640	6685
0	Do schools kill creativity?	Ken Robinson	47227110	1151367060	6073
919	3 things I learned while my plane crashed	Ric Elias	6636475	1303482960	5834
176	Underwater astonishments	David Gallo	13926113	1200011280	5201
1776	How to speak so that people want to listen	Julian Treasure	21594632	1403879897	5167

heatmap of correlation among numeric variables

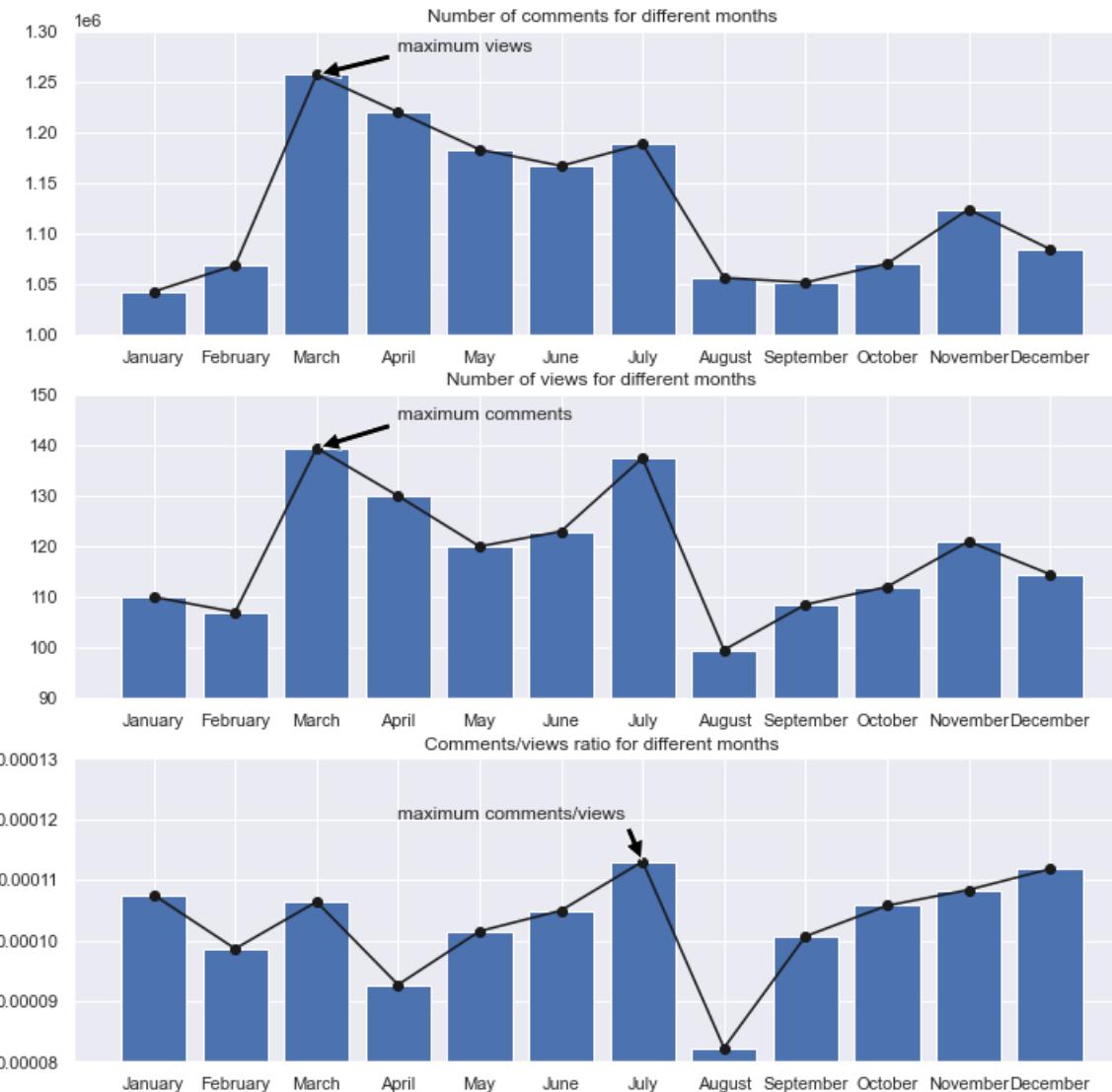


Heat Map for All Numerical Variables

Number of languages in which the talk is available vs. Popularity



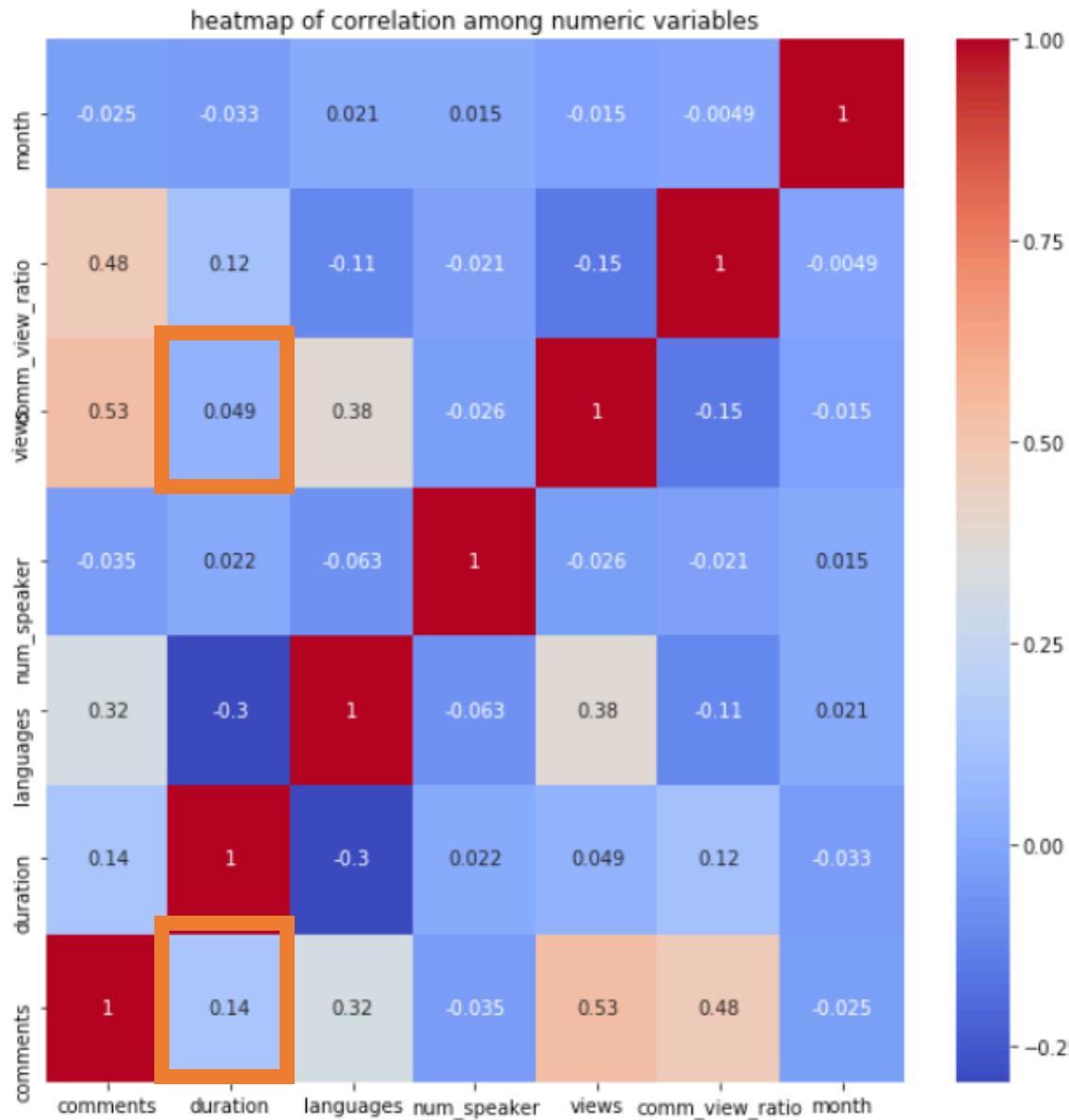
Popularity of monthly analysis



Question:

Why the uneven distributions over months??

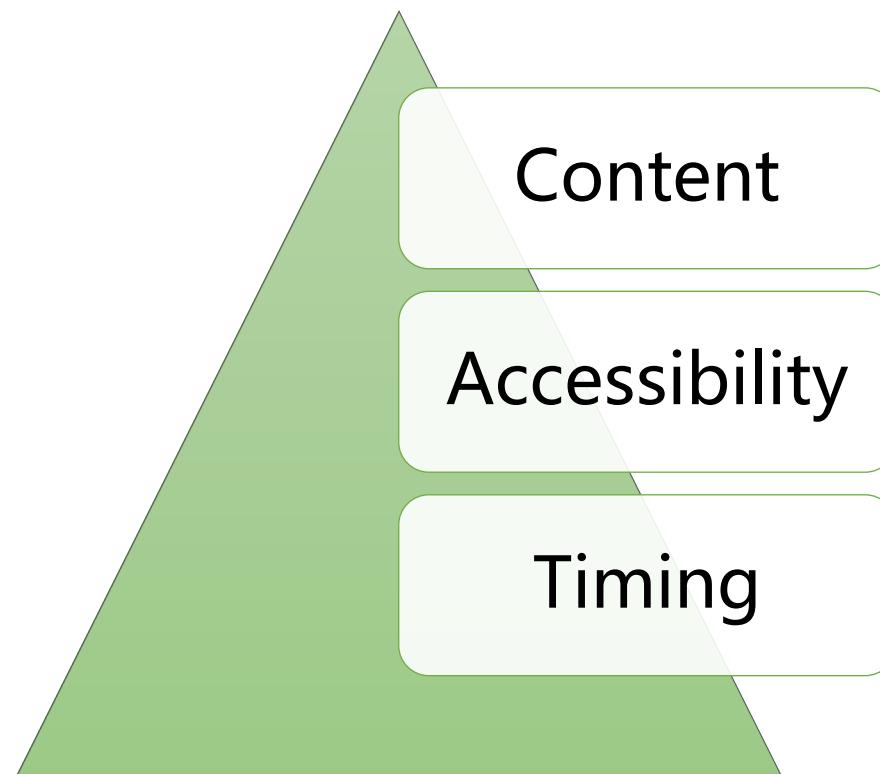
Duration vs. Popularity



- We make a conclusion that duration doesn't relate too much with comments and views, which means viewers usually don't care how long the speech is.

Conclusion

Key factors to make a more popular and funnier Ted Talk:





Thank You for Watching!