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# Public opinion analysis of player comments for the PV of Genshin Impact

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# Introduction

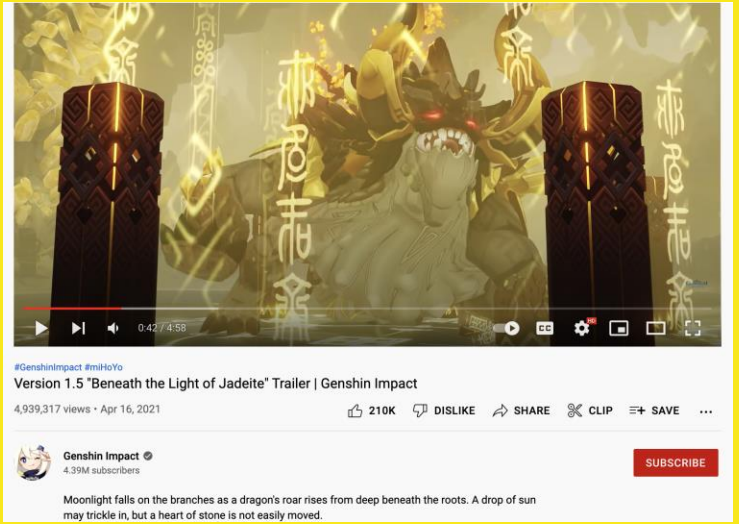
- Analyzing the public opinion of the comments under each trailer video
  - Youtube
  - Bilibili

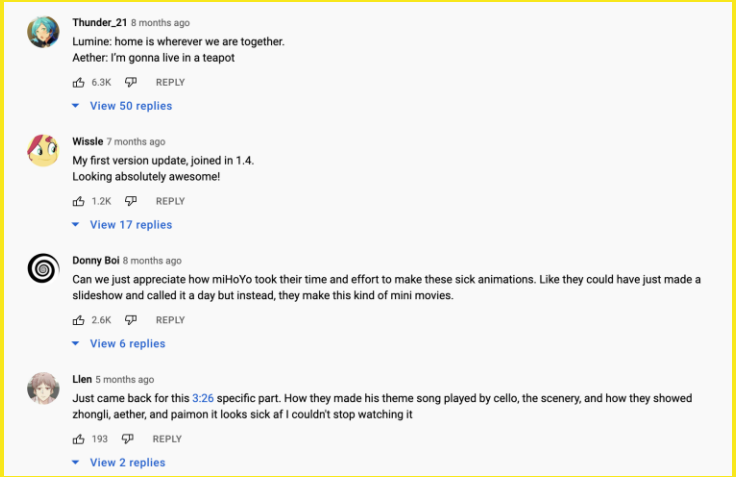
- Result
  - Most interested concerns of audience
  - Emotional tendency

- Compare players in different language communities
  - Check if the results would be similar results

# Datasets:

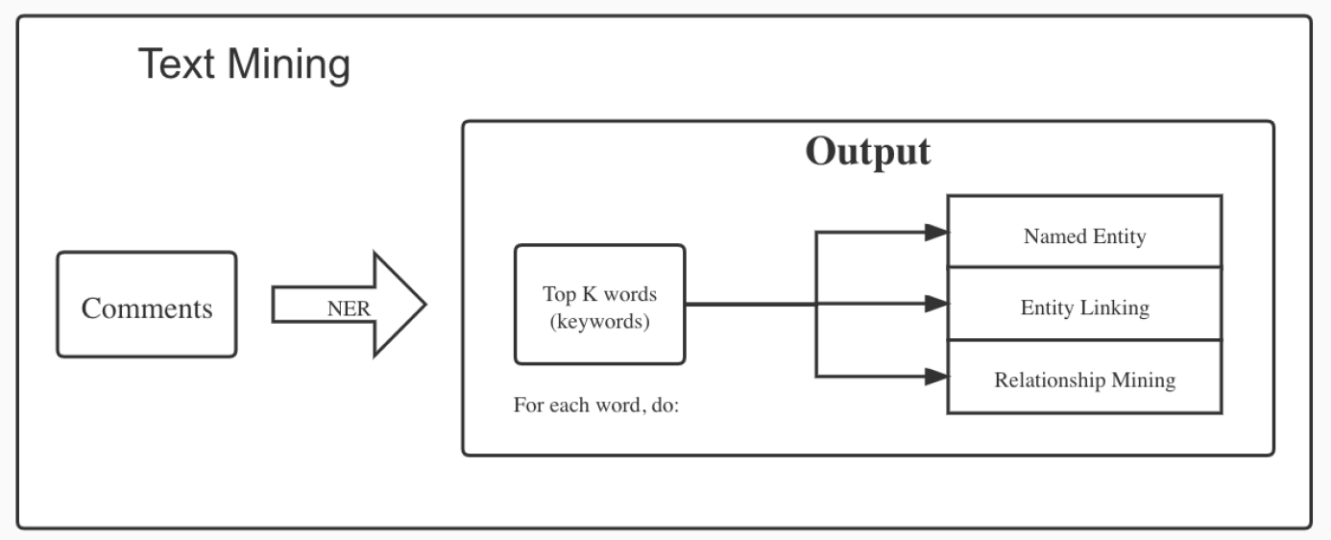
- Data Extraction
  - YouTube API
  - Handmade crawler
- Data Size
  - Version 1.5 - 18651 comments
  - Version 1.6 – 13854 comments
  - Version 2.1 – 19828 comments
  - Version 2.2 – 8050 comments
  - Version 2.3 – 15698 comments
  - Google-play-store comments(2000)



# Goals

- Text Mining
- Sentiment Analysis
- Text Mining + Sentiment Analysis



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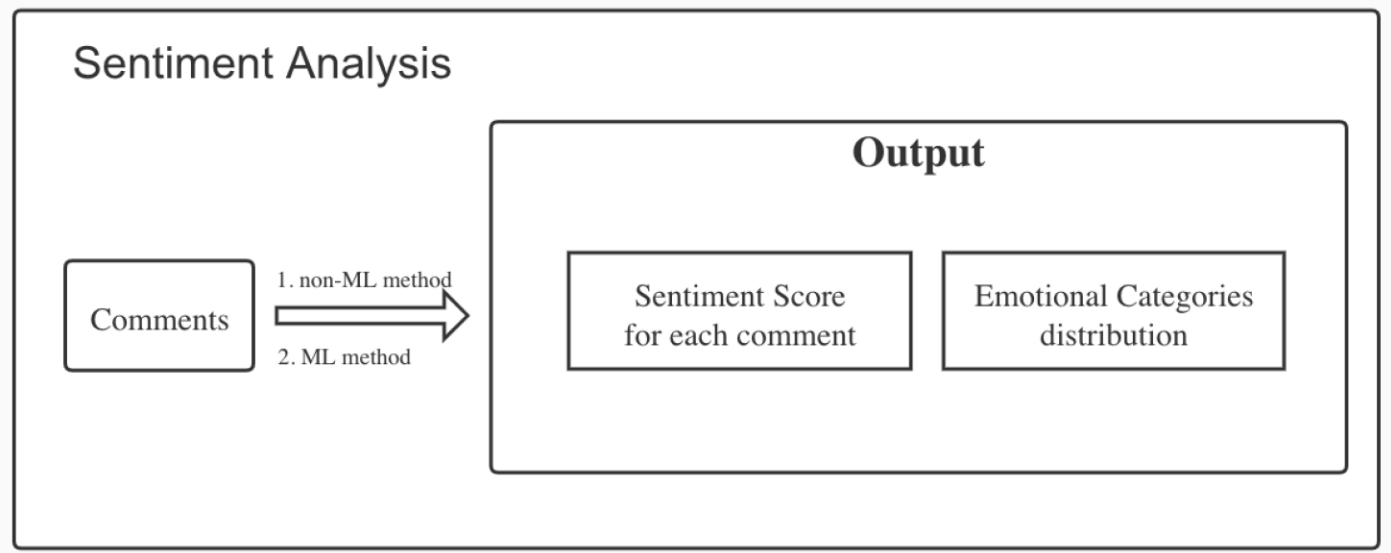

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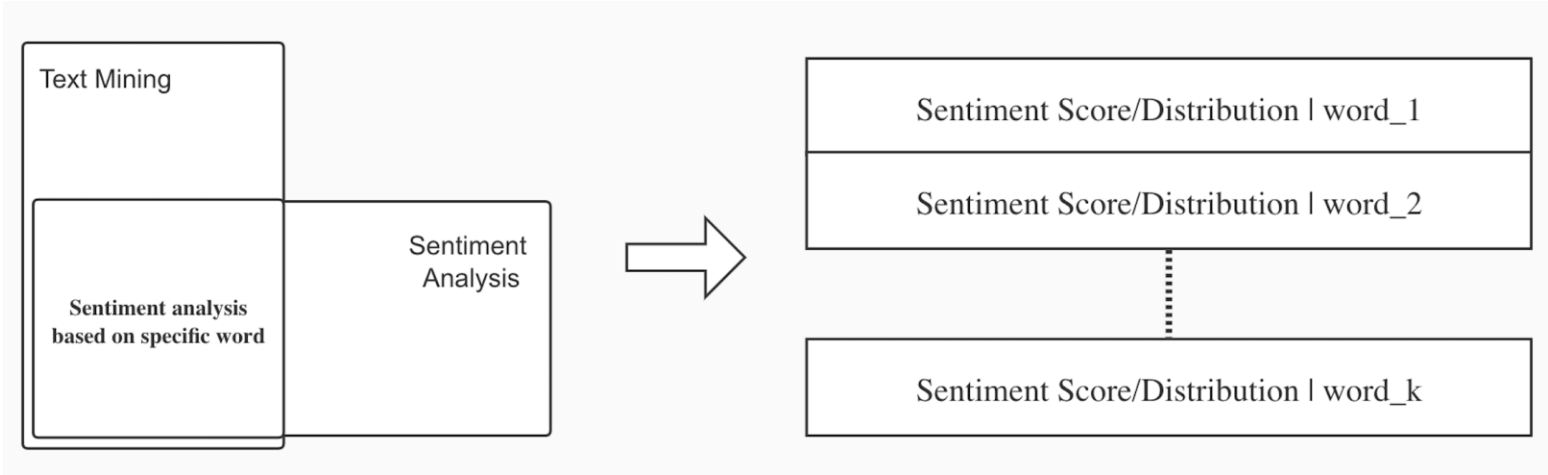
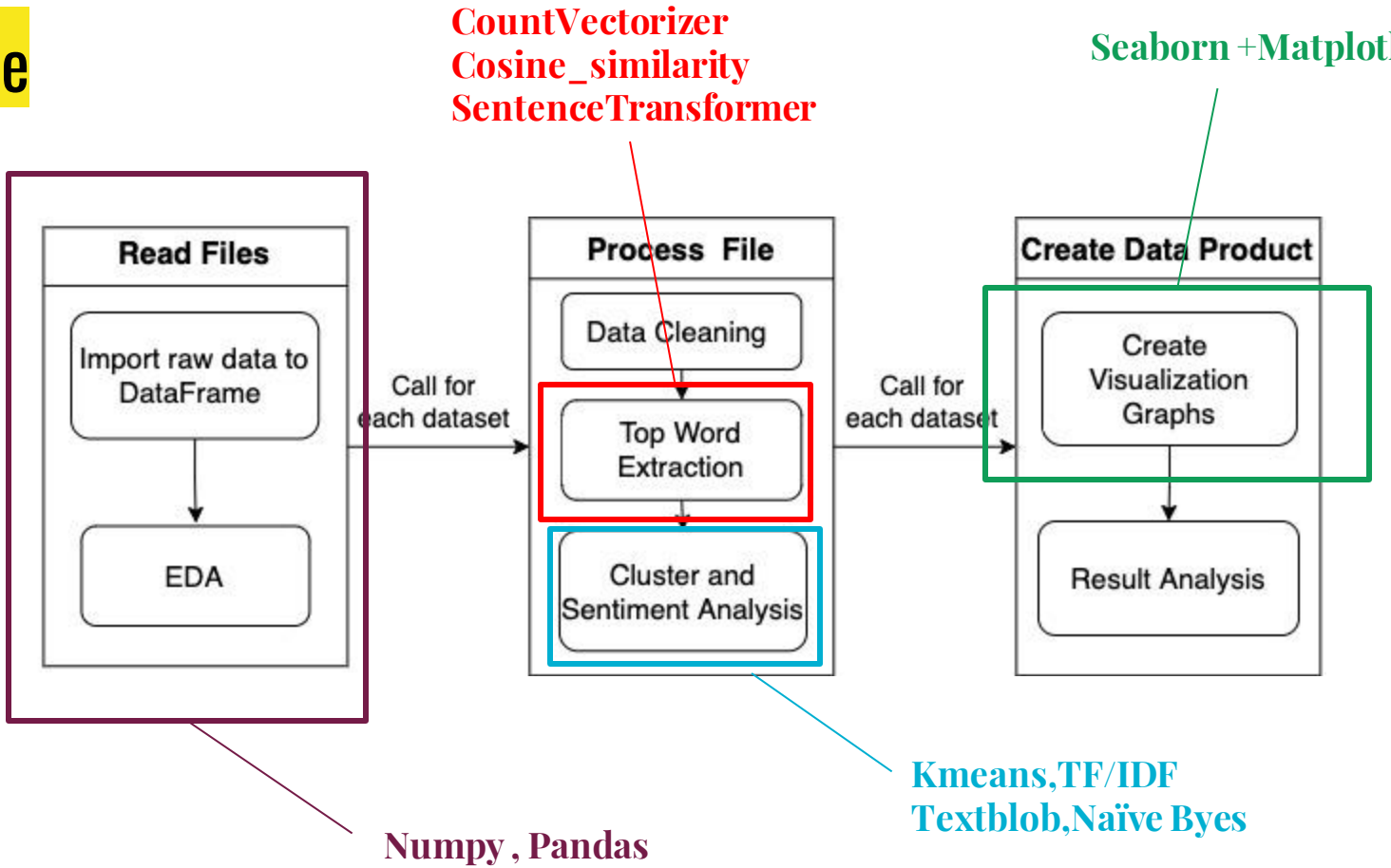
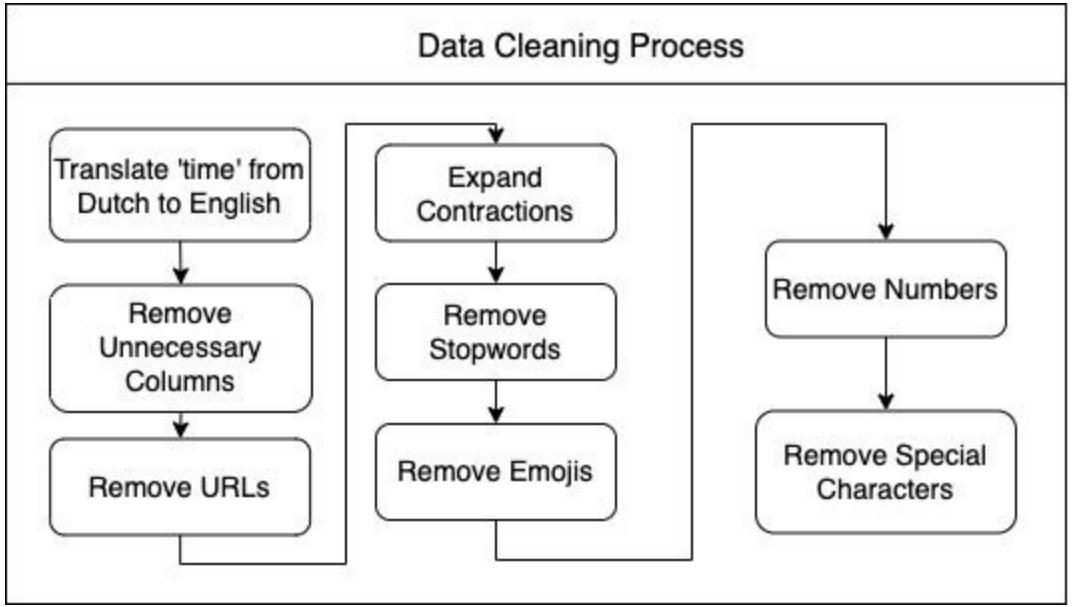


# Pipeline


CountVectorizer
Cosine_similarity
SentenceTransformer
Seaborn +Matplotlib
Read Files
Import raw data to DataFrame
EDA
Call for each dataset
Process File
Data Cleaning
Top Word Extraction
Cluster and Sentiment Analysis
Call for each dataset
Create Data Product
Create Visualization Graphs
Result Analysis
Numpy , Pandas
Kmeans,TF/IDF
Textblob,Naïve Byes

# Pipeline-Data Cleaning

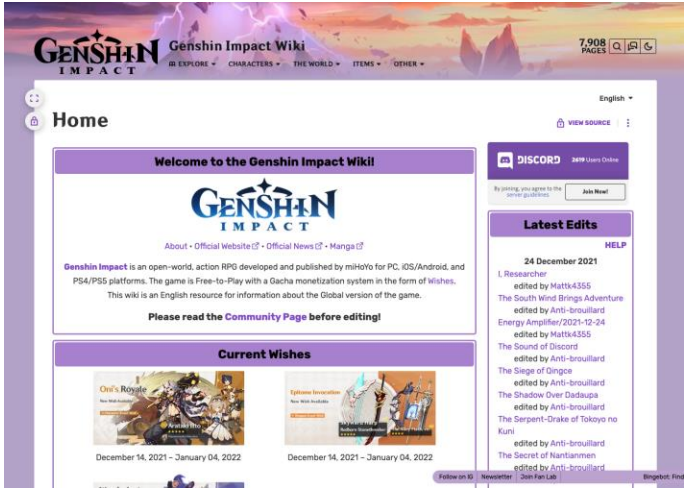


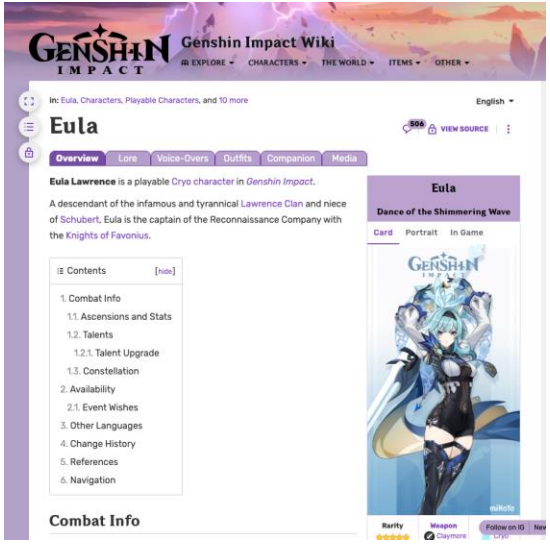
# Datasets

| | |
|---|---|
| read quran and this is solution madam 🌟🌟🌟🌟🇵🇰🇵🇰... | read quran solution madam |
| On paper it looks bad, but they need real worl... | On paper looks bad need real world data draw... |
| @Dominic Furlong Go and look at Worldometers... | Go look Worldometers rather Parrot MSM told yo... |
| Don't forget about Marmite Variants and Vegemi... | Do forget ite Variants Vegehemite Variants ... |
| @esecallum If you had an ounce of intelligen... | If ounce intelligence would understand stupid ... |
| @Dominic Furlong reeeeeee | reeeeeee |
| @Dominic Furlong BE A GOOD LITTLE BOY AND TA... | BE A GOOD LITTLE BOY AND TAKE YOUR JABS AND BO... |

# Entity Linking

- **Fandom**
  - Repository of entertainment culture
  - Identify all entities related to the game
  - No word disambiguation



# Results-Text Mining

- **Entity Link :** https://genshin-impact.fandom.com/wiki/Yanfei
- **Entity Name:** yanfei
- **Frequency_Based_Top_Words:**
  - ['yanfei yanfei', 'noelle eula', 'zhongli diluc', 'klee jean', 'ganyu xingqiu']
- **Similarity_Based_Top_Words:**
  - ['yanfei cute', 'beloved  yanfei', 'precious love ', 'yanfei beloved , 'yanfei beloved ']

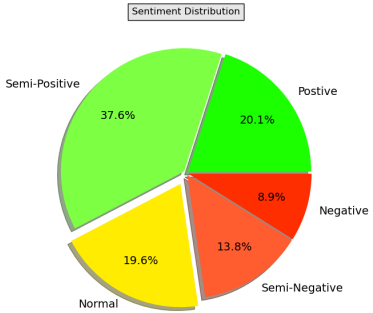
# Sentiment Analysis

- **Pipeline**
    - Data cleaning and reorganization
      -remove punctuation/quoted/too long/duplicated

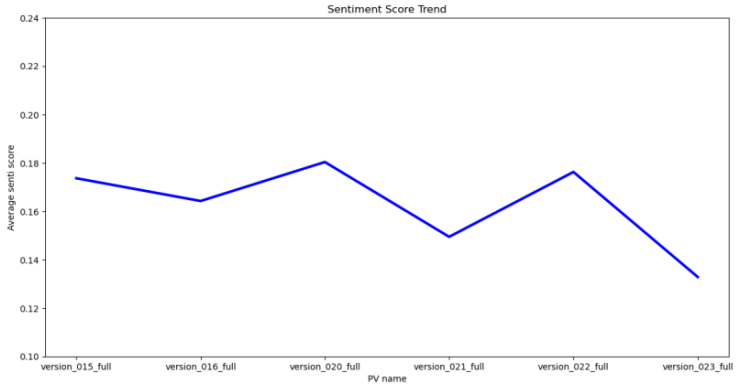
# Sentiment Analysis

1.TextBlob

| | J | K | L | M | N | O | P |
|---|---|---|---|---|---|---|---|
| | score | | | | | | |
| 0 | Sentiment | (polarity=0.7, | subjectivity=0.6000000000000001) | | | | |
| 0 | Sentiment | (polarity=0.0, | subjectivity=0.0) | | | | |
| 0 | Sentiment | (polarity=0.5, | subje | | | | |
| 0 | Sentiment | (polarity=0.0, | subje | | | | |
| 0 | Sentiment | (polarity=0.06666666 | | | | | |
| 0 | Sentiment | (polarity=-0.3125, | s | | | | |



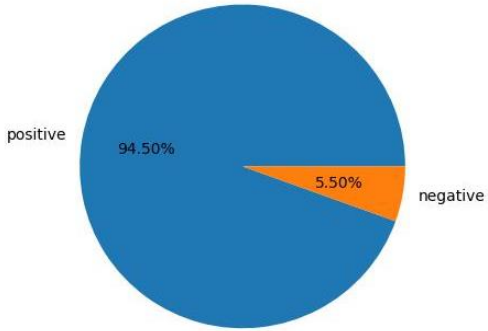

- Textblob
  - Return polarity and subjectivity.
    - remove subjectivity ==0
  - Score and Labeling <5>
  - Focus on the meaning of single word



# Sentiment Analysis

2.Naive Bayes

| | cid | text | time | author | channel | votes | photo | heart | result |
|---|---|---|---|---|---|---|---|---|---|
| 0 | UgwJLxAtr | QiQi beir | 1 uur gel | Venti The | UCMV3YJNz | 0 | https://y | 0 | 1 |
| 1 | UgwzoDdzc | 2:27-2:29 The chase in the background XD | 2 dagen g | Legendary | UC1CVxGws | 1 | https://y | 0 | 1 |
| 2 | UgyooaHlm | I forgot | 4 dagen g | Scar | UCudsWV-F | 0 | https://y | 0 | 1 |
| 3 | UgwW025bF | 3:26 | 6 dagen g | Noerrohma | UCoiC5w2G | 0 | https://y | 0 | 1 |
| 4 | UgxmGuByI | i got eul | 6 dagen g | iisunnxy | UCtkAauT4 | 0 | https://y | 0 | 0 |
| 5 | UgwJIS2j_ | Gosh,,, w | 11 dagen | Yeet | UCfch-uA_ | 2 | https://y | 0 | 0 |
| | | 3:10 while | | | | | | | |

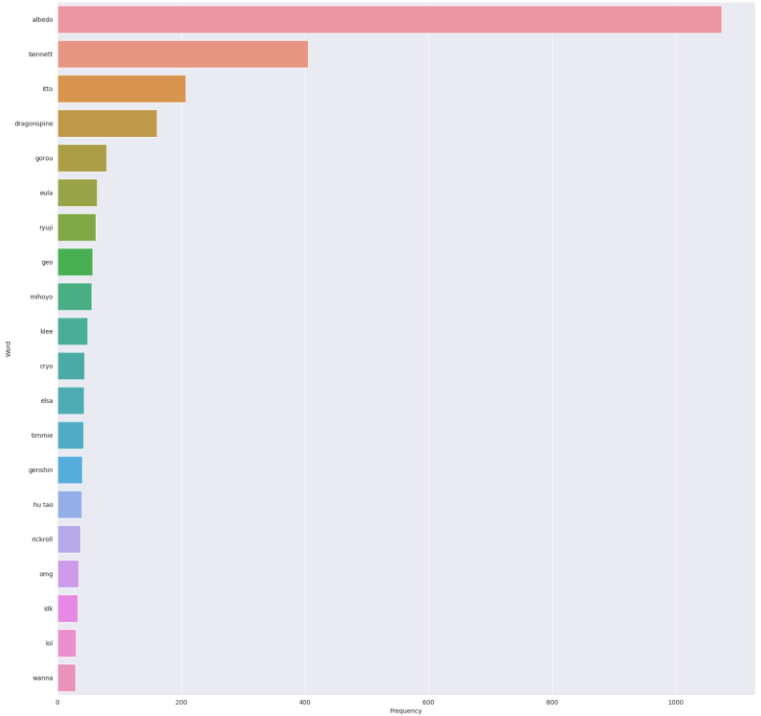



- Crawler
  - Google Play
  - User Score
  - 2000 comments: Train + Test
  - Accuracy of this model is about 75%.

# Conclusion/Result

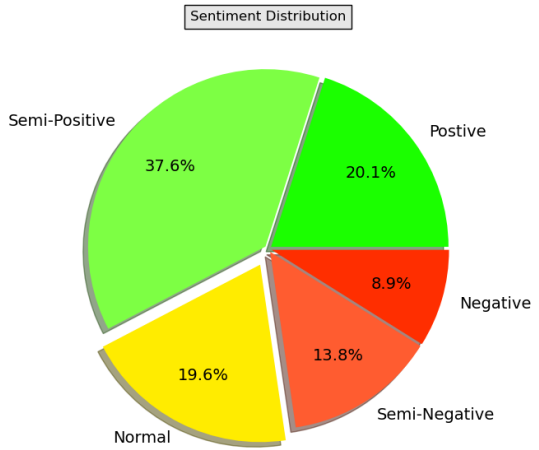
| Named Entity | Entity Linking | Top Related Words(by frequency) | Top Related Words(by similarity) |
|---|---|---|---|
| albedo | https://genshin-impact.fandom.com/wiki/Albedo | ['albedo albedo', 'cryo delusion', 'eula devil', 'dragonspine event', 'story quest'] | ['1154 albedo devil', '11737 albedo secretly', 'fighting 10735 doe', 'dragonspine 4305 fake', 'idiotic theories 3647'] |
| itto | https://genshin-impact.fandom.com/wiki/Itto | ['itto itto', 'albedo eula', 'voice actor', 'playable character', 'new boss'] | ['hot bully 11144', 'best husbando 11678', 'sexier girl 12367', 'biggest cat fish', 'favorite fictional character'] |
| mihoyo | https://genshin-impact.fandom.com/wiki/Mihoyo | ['mihoyo albedo', 'game coincidence', 'people china', 'death flags', 'story anniversary'] | ['story amazing battle', '10784 just dragon', 'snowman 6844 love', 'got balls 2022', 'battle su 150'] |
| bennett | https://genshin-impact.fandom.com/wiki/Bennett | ['bennett bennett', 'team albedo', 'amber eula', 'screen time', 'pyro archon'] | ['4575 dear diary', '1785 bennett dragon', 'actually hate dragonspine', '6870 funny knights', 'hate dragonspine seeing'] |
| dragonspine | https://genshin-impact.fandom.com/wiki/Dragonspine | ['dragonspine dragonspine', 'albedo cyro', 'new event', 'itto part', 'dragon durin'] | ['getting flashbacks dragonspine', '2975 thank dragonspine', 'fast 10686 dragonspine', '2675 dragonspine nightmare', 'returning dragonspine 5153'] |
| genshin | https://genshin-impact.fandom.com/wiki/Genshin | ['genshin genshin', 'game mihoyo', 'new albedo', 'quest lines', 'cryo accident'] | ['3909 rifthounds whopperflowers', '2018 halloween lol', 'game free anime', '336 bestfriend plays', 'anime game 2010'] |
| geo | https://genshin-impact.fandom.com/wiki/Geo | ['geo vision', 'albedo cryo', 'itto part', 'khemia life', 'lay lines'] | ['itto 10351 christmas', '2396 albedo better', 'albedo gives 5132', 'dad 4647 albedos', 'love geo tank'] |
| gorou | https://genshin-impact.fandom.com/wiki/Gorou | ['gorou gorou', 'itto part', 'albedo notes', 'hangout event', 'voice actor'] | ['best boy 6949', 'sleeping gorou 8215', 'trailer hyped gorou', 'arguing youtube comments', 'fighting huge monster'] |
| hu tao | https://genshin-impact.fandom.com/wiki/Hu_Tao | ['hu tao', 'itto albedo', 'weapon banner', 'eula cryo', 'fates primos'] | ['12915 albedo rerun', 'mihoyololyall gotta dragonspine', 'lost wanting hu', 'absolu 9893 sorry', '7622 regret pulling'] |

Entity and linking result

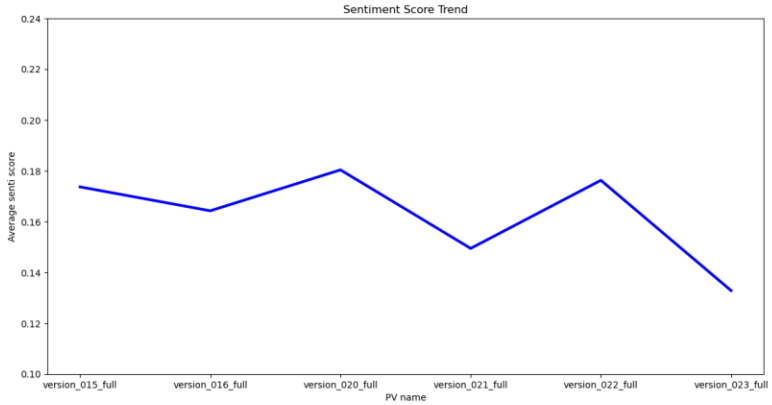



Histogram of named entity

# Conclusion/Result




**Pie graph of sentiment categories**




Line graph of trend