

## Your Task (as an Annotator)

1. Make a copy of [📄 INFO159 RedditPostPopularity Annotation Helper](#)
  - Note: Rows 2-251 are the evaluation data, and rows 252-501 are the exploration data.
2. Fill in the three remaining columns of categories: **Clarity, Sarcasm, and Tone.**
3. Final label of each document will be automatically generated.
4. Copy and paste the 'Label' column.

## Bookmarks

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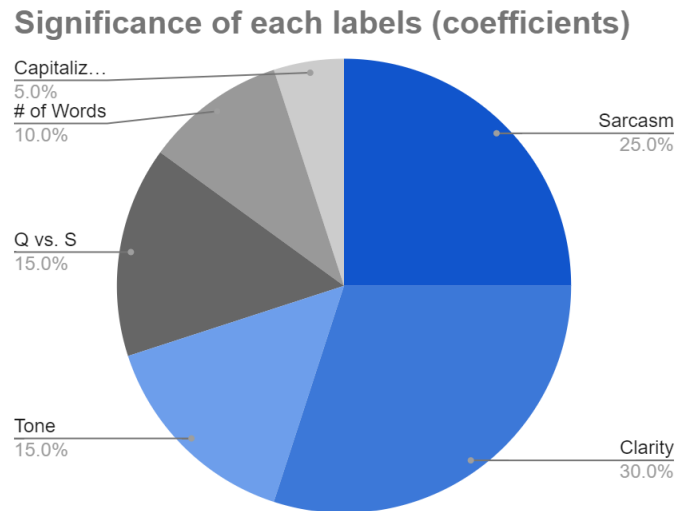
## Ranking Chart for Criterias

	0 (Not Popular)	0.5 (Average)	1 (Popular)
<b>Clarity</b>	Confusing & Vague	-	Clear & Concise
<b>Sarcasm</b>	Does not sarcasm	-	Contains sarcasm
<b>Tone</b>	Neutral	Negative emotions	Positive emotions
<b>Question v. Statement</b>	Statement	-	Question
<b>Number of Words</b>	20+ words	11 - 20 words	0 - 10 words
<b>Capitalization</b>	No capitalization	-	Contains capitalization

## A. Introduction

For this annotation project, we aim to identify factors that contribute to the popularity of posts on Reddit. We will utilize components of posts' title to determine the popularity of the posts. Labelers will rate the sarcasm, clarity, and tone of each Reddit post title. Once those ratings are provided, the R-score, which is explained under "D. Justification for the Weights of Categories to Calculate R-value," will be calculated based on the annotators' ratings in addition to the non-human judge based labels (already provided), to decide what label the document belongs to. Three possible labels include "not popular," "average," or "popular."

Non-human judgment based labels ("# of words," "capitalization," and "question vs statement") are **already provided for the annotators** and will be used in the calculation of each documents' label. The ratings for each label will be multiplied by coefficients that reflect their significance (Figure 1) in determining the post's popularity level and then summed up to give a final score, denoted as R.



*Figure 1: Proportion of significance of ratings determining the final label (Only the blue portion are the ones that are rated by annotators)*

Once 'R' is calculated, we will use the this value to determine whether the Reddit post, given the title, would be "non-popular," "average," or "popular."

- "Non-popular" for  $0 < R \leq 0.3$
- "Average" for  $0 < R \leq 0.5$
- "Popular" for  $0.5 < R \leq 1$ .

These ranges of  $R$  were chosen to partition the data in a way that reflects the proportion of non-popular, average, popular posts from actual sample of Reddit posts, suggested in Figure 2.

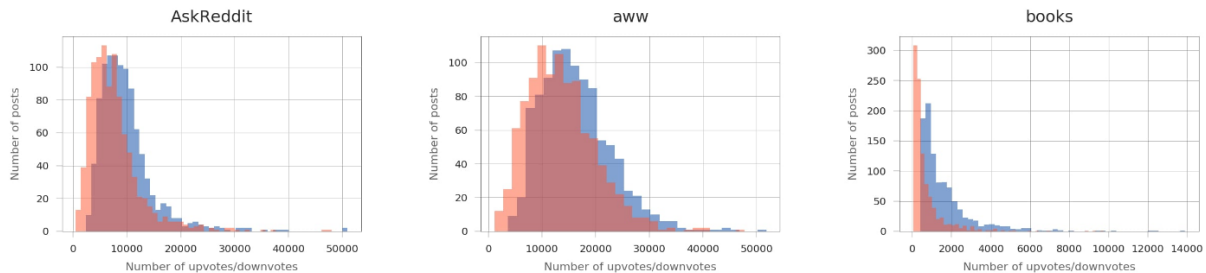


Figure 2: Proportion of upvotes in example subreddits

## B. Annotation Categories (Requires Human Judgement)

**\*You MUST annotate documents using three categories below.**

### 1. Clarity of Title / Weight: 0.3

- Hypothesis:** A clear title catches the eye of readers, making them more likely to engage with the post or article. Also, a clear title helps readers understand what the post is about and what they can expect to gain from reading it. Thus, we believe that a higher clarity in the title of Reddit posts will generate a higher number of upvotes, a metric that represents user engagement.
- Ranking:** Clear title > Confusing/unclear title
  - Rating 0: Confusing title

- a. Vague or ambiguous: The title lacks specificity and doesn't clearly convey the subject matter of the post.
  - b. Poor grammar and punctuation
  - c. Lengthy and convoluted: It is excessively long or contain unnecessary information
  - d. Use excessive information or convoluted language, making them more difficult for readers to quickly grasp the main idea.
2. Rating 1: Clear title
- a. Concise and specific: The title is brief and avoids vague phrases.
  - b. Proper grammar and punctuation

## 2. Presence of Sarcasm in Title / Weight: 0.25

- a. **Hypothesis:** One of the most popular posts in online communities including Reddit are the ones with negative / complaints. We've decided and hypothesized that sarcasm is a strong sign of negative sentiment plus a sign of humor which attracts people's attention.
- b. **Ranking:** Clear sarcasm > No apparent sarcasm
  - 1. Rating 0: No sarcasm
    - a. Does not contain a contextual sarcasm
    - b. Does not fit into any of the categories of sarcasm listed below
  - 2. Rating 1: Sarcasm
    - a. Use of positive words, such as "happy" and "great" in a negative context
    - b. Use of certain punctuation(...) and inappropriate use of punctuation
      - i. "..." can be a hint of sarcasm
        - 1. Ex) You'd be in good shape... if you ran as much as your mouth.
      - ii. "!" in a clearly negative statement is a strong hint of sarcasm
        - 1. Ex) Laid off!
    - c. Vocabulary markers
      - i. Stretched words tend to show as a sign of sarcasm.

1. Ex) 'reaaaaally' would be a stretched version of the word 'really' and can serve as a hint of sarcasm.
- d. Use of emojis
  - i. Not all titles with emojis would serve as a sign of sarcasm, but there are emojis like “😏” or “😬” or “🤔” or “🙄”, which are often used as a hint of sarcasm.
  - ii. Similarly, any emojis that don't fit the context of title, subreddit, or post may serve as a huge sign of sarcasm.
    1. Ex) Y'all wouldn't have survived COD lobbies in 09 😏
- e. Use of Capitalization
  - i. Words like 'SERIOUSLY' or any other word, excluding acronyms, are clear signs of extreme positiveness or sarcasm.
    1. I'm back to getting up 50-75 ...row & yelled HEY MAN, THERE'S A TORNADO WARNING & I thought it was some kind of compliment on my shooting(???) so I yelled back I KNOW THAT'S RIGHT

### 3. Positive, Negative, Neutral Tone / Weight:

#### 0.15

- a. **Hypothesis:** As the tone of the post engenders and provokes emotions, we believe that there is a correlation between the tone of the post and number of upvotes, which represents engagement rate among users. In general, positive and emotionally charged content will generate more engagement than neutral or negative content. People are often drawn to positive messages, as they evoke emotions like happiness, joy, and inspiration. That said, negative content can also generate engagement, especially if it triggers emotions such as anger or fear, which can be highly shareable.
- b. **Ranking:** Positive > Negative > Neutral
  - ii. Rating 0 : Neutral

1. Factual and unbiased statement/information
2. Absence of emotions in a sentence
3. Guidelines to detect neutral statements
  - a. Absence of sentiment words, such as “love”
  - b. Focus on objective information
  - c. Use of unbiased language and terms
  - d. Inclusion of various perspectives
  - e. Formal/professional tone
- iii. Rating 0.5 : Negative
  1. Contains negative emotions such as anger and sadness
  2. Guidelines
    - a. Negative sentiment words: “hate,” “sad”
    - b. Negative phrases: “Not worth”
    - c. Negative qualifiers that are paired with positive words, such as “not good”
    - d. Negative emojis, such as angry face
    - e. Negative adjectives, such as terrible
- iv. Rating 1 : Positive
  1. Contains positive emotions such as happy and excitement
  2. Guidelines
    - a. Positive sentiment words: “love,” “happy,” “fun”
    - b. Positive phrases: “The best,” “finally made it”
    - c. Positive emojis, such as happy face
    - d. Positive adjectives, such as good

## C. Annotation Categories (Does NOT Require Human Judgement)

*\*Although the annotation categories below will be used to calculate the popularity of Reddit posts, you should NOT manually annotate on categories below.*

### 1. Question v. Statement / Weight: 0.15

- a. **Hypothesis:** There are many posts that have a title consisting of questions that the writer wants to ask. Since the title with a question shows a very clear purpose of

the post and actively calls for actions from other users, we believe it would affect the number of views and eventually the number of upvotes it receives.

b. **Ranking:** Questions > Statements

1. Rating 0: Statements

- a. A Reddit post title that only consists of statements will have a value of 0.
  - i. Ex) Skunk spotted about 15 minutes ago at 37.8703820, -122.2618447
  - ii. Ex) Found headphones near physics north

2. Rating 1: Questions

- a. A Reddit post title contains questions that will have a value of 1. Questions don't have to include a question mark.
  - i. Ex) Where to buy cheesecake ?
  - ii. Ex) Anybody know of haircuts for boys

## 2. Number of Words / Weight: 0.1

- a. **Hypothesis:** We have noticed several posts where the number of words in the title affects the number of upvotes it receives. We hypothesize based on this observation that shorter titles are more likely to engage users and increase the number of upvotes, as they are concise and allow readers to quickly understand the content. To test our hypothesis, we will use the number of words as another predictor variable for classifying the number of upvotes.

b. **Guidelines**

- 1. Each word is separated by a space character, which means that space is a delimiter.
  - a. If each word is separated by an underscore, the underscore is a delimiter:  
Ex) Final\_Rough\_Draft\_History\_Paper
- 2. Hyphenated compound words are treated as a single word: (ex. king-size, merry-go-round)
- 3. Verb contractions and 's split into two separate words: (ex. did\_n't, children\_'s)
- 4. Forward Slash
  - a. Single word:
    - Abbreviations: (ex. w/o, a/c)
    - Dates and fractions: (ex. 1/2, 3/27/2023)

- b. Two separate words:
      - Indicate “or”: (ex. fft/data, he//him)
- 5. URLs, email addresses, and file names are considered as a single word: (ex. <https://www.berkeley.edu/>, [abc\\_def\\_gh@gmail.com](mailto:abc_def_gh@gmail.com))
- 6. Ignore punctuation marks when it does not fit with the above rules. Here is the list of punctuations:
  - a. Period (.)
  - b. Comma (,)
  - c. Question mark (?)
  - d. Exclamation point (!)
  - e. Colon (:)
  - f. Semicolon (;)
  - g. Quotation marks (" ")
  - h. Apostrophe (')
  - i. Hyphen (-)
  - j. Dash (—)
  - k. Underscore (\_)
  - l. Parentheses (())
  - m. Brackets ([])
  - n. Ellipsis (...)
  - o. Slash (/)
  - p. Ampersand (&)
  - q. Emoji
    - i. For example, the sentence “I didn’t see the parade.” tokenized into 6 words: [I, did, n’t, see, the, parade].
- c. **Ranking:** 0 - 10 words > 11 - 20 words > 20+ words
  - 1. Rating 0: 20+ words
    - a. A title that contains 20+ words will have a value of 0.
      - a. Ex) want to graduate in 3 years with a ba in data science and work in data science not swe (data analyst, data scientist, data engineer, product manager, etc.), what 8 upper divs should i take?
      - b. Ex) When do Berkeley 2023 decisions come out? Does anyone know? Is it today or next week? Also what time does it come out?
  - 2. Rating 0.5: 11 - 20 words
    - a. A title that contains 11 to 20 words will have a value of 0.5.
      - a. Ex) Does berkeley provide any transport facility from airport to dorm on move-in day ?



- b. Ex) Ppl who live off student loans- how do you pay rent over the summer?
- 3. Rating 1: 0 - 10 words
  - a. A title that contains 0 to 10 words will have a value of 1.
    - a. Ex) When can we enroll in decal courses ?
    - b. Ex) Are there decals in the summer?

### 3. The Use of Capitalization / Weight: 0.05

- a. **Hypothesis:** Users like to draw attention and emphasize meanings through capitalization of words or sentences. We've seen a reasonable correlation in a few sample reddit posts, so we've decided to include this factor to annotate documents into 3 different ratings of capitalization. Below are the examples:
- b. **When we are referring to 'capitalization', we are only referring to words that are non-acronyms and words that are ALL CAPS.**
  - i. Bad Example of capitalized word: CS70, TL;DR, LGTM, Obama
  - ii. Good Example of capitalized word: BREAKING, ALL, FIRE
- c. **Ranking:** Cpmtaoms capitalization > No capitalization
  - i. Rating 0: No capitalization
    - 1. Ex) CS 70 after Math 55, non-math major
    - 2. Ex) To be read in the voice of Obama
  - ii. Rating 1: Contains capitalization
    - 1. Sentences that contain 1 or more 'capitalized word' in the sentence excluding the acronyms (referring to the guide above)
      - a. Ex) when you don't have any plans or work to do (i.e. break) how often do you literally laze in bed ALL day?
      - b. Ex) BREAKING: All major news networks call presidential race for Oski following historic 50-state sweep. He will be coming to Sproul to make a speech in a few moments.
      - c. Ex) URGENT: MISSING STUDENT. PLEASE LET US KNOW IF YOU HAVE SEEN HIM.

## D. Justification for the Weights of Categories

There may be traits other than the 3 human-judgment based categories that we've included that signify correlation with the posts' popularity. Since annotators may have different opinions on which category would weigh more in determining whether a title would be popular or unpopular, we've decided to rank the categories in the order of their significance according to our research to provide an approximate coefficient for the calculation to reduce the variation of final predicted label.

After having each member refer to multiple examples of both popular and non-popular Reddit posts and their relationships to the categories that we've included, each of the members ranked each category in the order that they think were able to observe correlation from. Additionally, by referencing the general consensus about what makes a Reddit post popular, we've come up with 3 non-human judgment-based categories that further show frequent correlation with posts' popularity.

All combined, the 3 human-based judgment and 3 non-human based judgment, we came up with final ranks and its weight for the final value R, with differences between coefficients caused based on its rank and estimated correlation with posts' popularity.

### Weights:

1. Clarity {0, 1}: **0.3**
2. Sarcasm {0, 1}: **0.25**
3. Tone {0, 0.5, 1}: **0.15**
4. Question vs. Statement {0, 1}: **0.15**
5. Number of words {0, 0.5, 1}: **0.1**
6. Capitalization {0, 1}: **0.05**

### Calculation of R-Value:

$$R = 0.3 * \text{Clarity } \{0, 1\} + 0.25 * \text{Sarcasm } \{0, 1\} + 0.15 * \text{Tone } \{0, 0.5, 1\} + 0.15 * \text{Q/S } \{0, 1\} + 0.1 * \text{\# of Words } \{0, 0.5, 1\} + 0.05 * \text{Capitalization } \{0, 1\}$$