

Final Project Report

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Goals & Motivation

One of the primary goals of "Meme Trends: The Last Year" is to visualize and track meme trends throughout the past year. This project offers users a comprehensive tool to compare different memes based on their popularity over time and other metrics like their views or brainrot score. By charting the rise and fall of various viral internet memes, this project aims to provide qualitative and quantitative insight into the historical context of how they evolve, spread, and influence online culture. This analytical approach helps users understand the lifecycle of memes and identify patterns in their popularity, offering both entertainment and analytical value. Ultimately, the project seeks to be a light-hearted data visualization, focusing on providing users with an enjoyable experience while still delivering usability and insight into the rapidly changing landscape of meme culture.

Intended Use Case

This data visualization is crafted for anyone curious about exploring and reminiscing over past meme trends, especially in today's fast-paced social media world. Given that memes often enjoy a fleeting moment in the spotlight before fading into internet history, our tool offers a fun way to rediscover forgotten favorites, trace the journey of viral content, and get a better sense of why certain memes captured the collective imagination when they did. Whether it's for a bit of casual browsing, some light research, or just a trip down memory lane, this tool aims to be an accessible and intuitive guide to the vibrant world of internet culture.

Related Material

Our journey in creating "Meme Trends: The Last Year" was sparked by several existing platforms and ideas: A cornerstone for our qualitative data and understanding the lore behind each meme was KnowYourMeme (KYM): the platform's vast database on meme origins and cultural impact provided the rich contextual flavor for our project. We wanted to take KYM's encyclopedic strength and blend it with a more dynamic, visual way to see how these trends flow. For the quantitative side of things (tracking how meme popularity shifts over time) we turned directly to Google Trends data. For our design, we drew some inspiration from other data visualization projects that tackle trend analysis in various fields. For instance, the design of our "Timeline Visualizer" was particularly influenced by a data visualization we encountered in class that depicted researchers and their publications: it was a visually cluttered line chart where each line represented an individual researcher, and points along that line marked their various research papers, which sparked ideas for how we might build upon this to represent individual meme lifecycles. Overall, our main

goal was to bring together KYM's qualitative analysis, Google Trends' quantitative analysis, and a user-friendly interface that makes exploring meme history an engaging interactive experience.

Data Source

To bring "Meme Trends: The Last Year" to life, we took a two-step process for gathering our data. First, we went web scraping on KnowYourMeme, using BeautifulSoup to collect meme details (website URL, image URL, page views, about section, origin section, and related TikToks) from their meme profile pages. Next, we tapped into the Google Trends API, using the meme titles sourced from KYM to analyze their popularity and search interest over a 3 month and 1 year period. This allowed us to capture both the stories and cultural context behind each meme (the qualitative side) and the numbers showing their rise and fall in popularity (the quantitative side). Towards finalizing the dataset, some manual intervention was necessary: we gave each meme a "brainrot score" as a sentimental measure of how nonsensical and abstract a meme is, and we looked through all the meme images, replacing some that we believe do not best represent the meme. The final datasets was compiled using Pandas dataframes and operations, and covers a range of popular memes from the past year, packing in essential details like meme names, an about section with their creation dates, a detail of their origin, images, KYM website views, brainrot score, related TikToks, and a timeline of their popularity (trend score). The qualitative data from KYM helped us build a detailed popup view of each meme while the quantitative data from the Google Trends API allowed us to create timeline visualizations.

Design Process

Our initial vision for the project, captured in an early sketch (Fig 1.), imagined a user journey built around a scrolling exploration of meme history. The page was planned to onboard the user with a friendly introduction to the project and modern memes. This would lead into an "Explore" section, essentially a browsable catalog where users could pick memes to see their detailed backstories. Any memes a user selected would then carry over to the "Interact" section. Here, the idea was for users to play with a (potentially 3D) line chart showing meme popularity over time, with a smaller catalog on the left for quick selections, and a close-up profile view of a chosen meme to the right. A filtering mechanism would also be under the graph, allowing users to filter through the catalog.

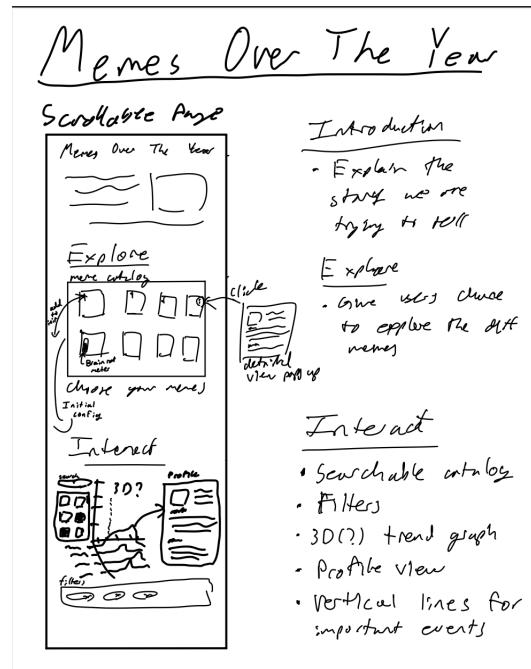


Fig 1. Initial Sketch

This initial concept was our starting block, a launchpad for further idea:

Fig 2. Final Design: Brainrot Quiz

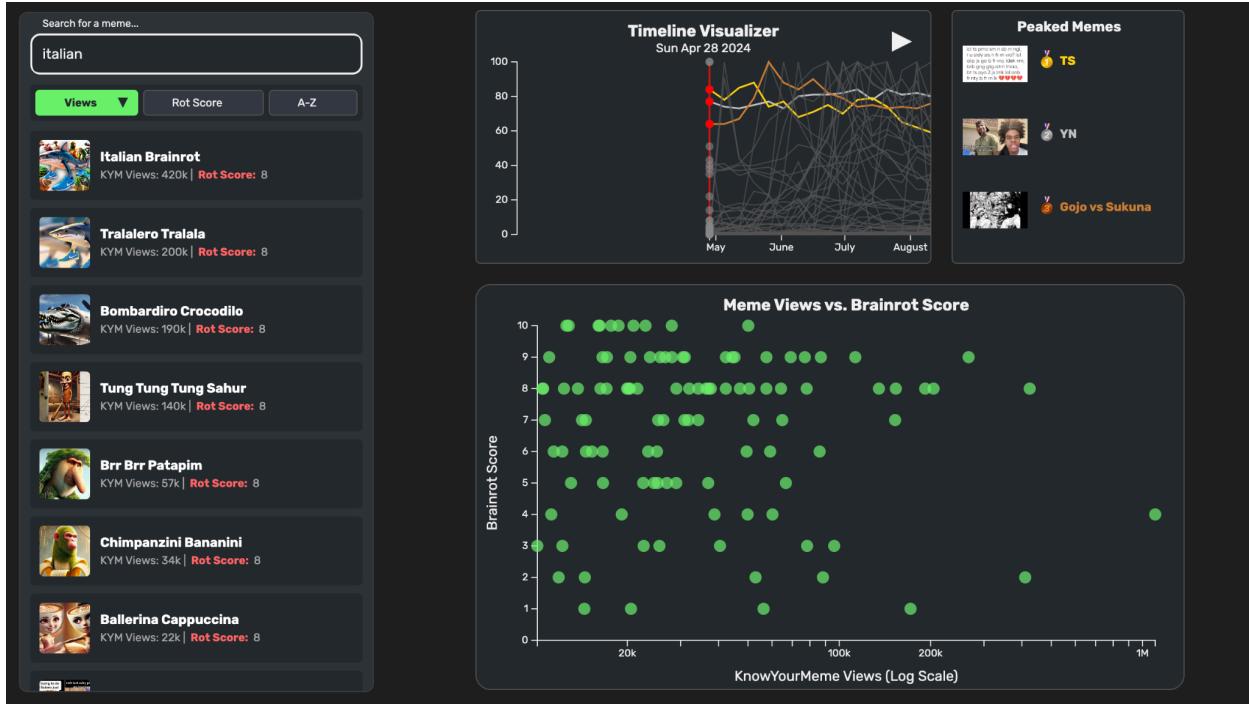


Fig 3. Final Design: Timeline Visualizer and Scatterplot

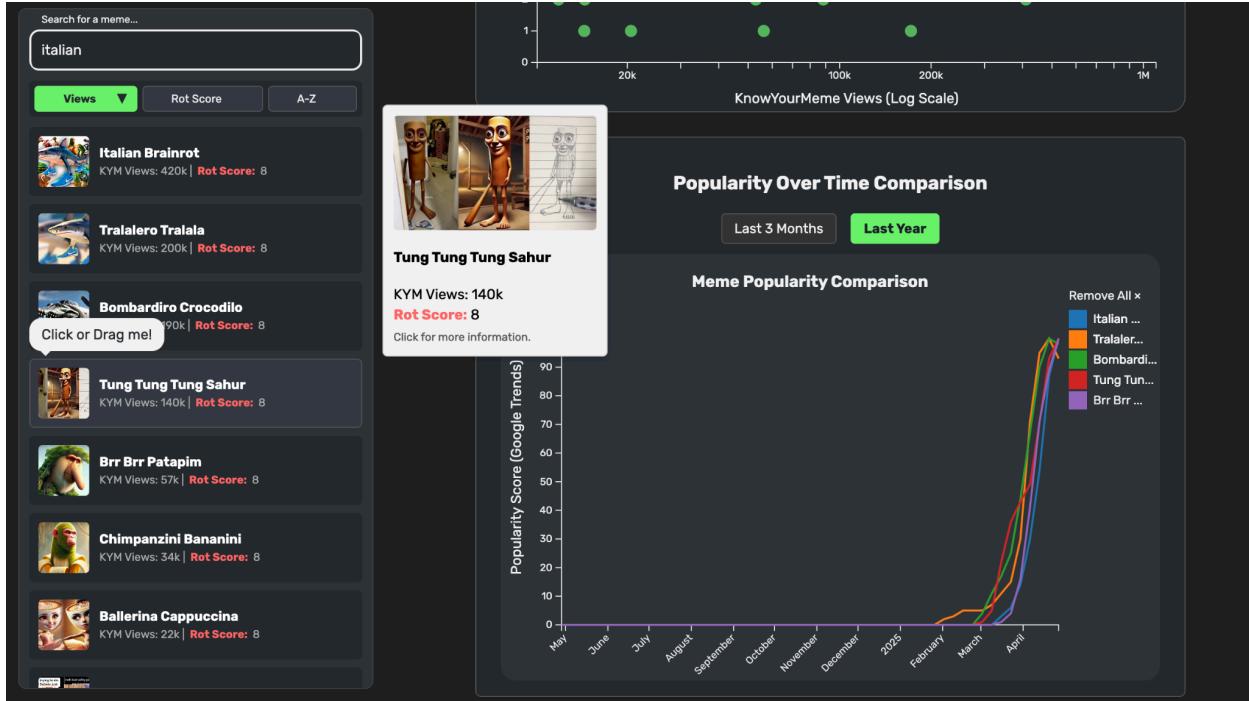


Fig 4. Final Design: Popularity Over Time Comparison + Meme Catalog Interaction

While the final application evolved into a more consolidated single-page dashboard rather than a long scrolling page, several core elements from this early vision were carried forward. We thought a simple onboarding as shown in our initial sketch (Fig 1.) would be

boring and not fit the theme of memes. Then, we remembered a meta-meme called the "AP Brainrot Quiz/Exam" where users had to guess certain memes to receive a brainrot score. Using this as inspiration, we made a brainrot quiz (as seen in Fig 2.) as part of the user onboarding, allowing them to playfully gauge their familiarity with modern memes. The "Explore" section's browsable catalog directly translated into the fixed meme catalog featured on the left in our final design (as seen in Fig 2~4.). We realized we could eliminate the need for two catalogs as shown in our initial sketch (Fig 1.) by having a fixed one that persists throughout the scrolling of the page. The idea of selecting a meme for a "detailed synopsis" is realized through the profile modal that appears when a meme is clicked (an example of a tooltip leading to this is visible in Fig 4., showing "Tung Tung Tung Sahur" details), providing its "About" and "Origin" details from Know Your Meme, along with related TikToks. The "Interact" section's line chart is central to our final application, manifesting as both the main "Timeline Visualizer" (Fig 3.) and the more focused "Popularity Over Time Comparison" chart (Fig 4.), where users can drag memes from the catalog into the chart to compare their trends.

Final Design Justification & Implementation

The final design of "Meme Trends: The Last Year" was developed from our initial sketches into a dynamic and interactive single-page application. The user interface is organized into several interconnected modules. The application interface includes a basic introduction and an engaging brainrot quiz (Fig 2.), designed as an initial point of user engagement. A fixed meme catalog (visible in Fig 2~4.) then allows users to browse the meme collection, offering search and sort capabilities alongside thumbnail previews and key metrics such as "KYM Views" and our custom "Rot Score." The central "Timeline Visualizer" (Fig 3.), a line chart that displays their Google Trends popularity scores over time, is complete with an automatic animation or manual scrolling option to navigate it and a section highlighting "Peaked Memes." To provide an alternative analytical perspective, a scatter plot titled "Meme Views vs. Brainrot Score" (Fig 3.) visualizes the relationship between KYM views (utilizing a log scale for clarity) and the "Rot Score." Lastly, a dedicated "Popularity Over Time Comparison" chart (Fig 4.) allows for a more focused examination of the trends of selected memes, featuring controls for different time windows ("Last 3 Months" & "Last Year") and a clear interactive legend (clicking on a legend removes the associated meme from the graph). We employed various visual channels, including meme images, descriptive text, color-coded line graphs, and intuitive icons, while interactions include standard clicks and scrolls, as well as drag-and-drop functionality for comparing memes in the "Popularity Over Time Comparison" chart.

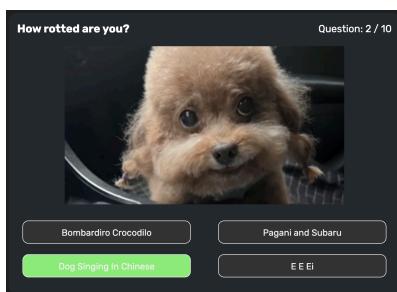
The development of the final design was an iterative process, significantly informed by user feedback and collaborative refinement. For instance, initial feedback during demo day highlighted that the meme catalog lacked a search mechanism; consequently, we implemented a search bar to enable users to quickly locate specific memes. We also received feedback regarding the "Popularity Over Time Comparison" graph, where users expressed a desire to see the exact date at the dashed vertical line (appears when hovering

on graph). This was addressed by adding a feature where upon hovering, the specific date is displayed at the top of the dashed vertical line that appears at the cursor. Another valuable piece of feedback concerned the "Timeline Visualizer" and its "Peaked Memes" section. Initially, the correspondence between the three highlighted timelines and the memes in the "Peaked Memes" list was not immediately clear. To resolve this, we introduced a color-coding system, employing Gold, Silver, and Bronze colors (along with 🥇, 🥈, 🥉 emojis) to visually link the top three trending lines on the visualizer to their respective entries in the "Peaked Memes" display. Furthermore, to improve the identification of individual lines within the line-dense Timeline Visualizer, an on-hover effect was added that not only highlights the hovered timeline but also displays a tooltip with that meme's details. Feedback also indicated a need for clearer affordance on how to interact with the "Popularity Over Time Comparison" graph. This was addressed by implementing a speech bubble that appears when hovering over a list element with the prompt "Click or Drag me!" to guide users.

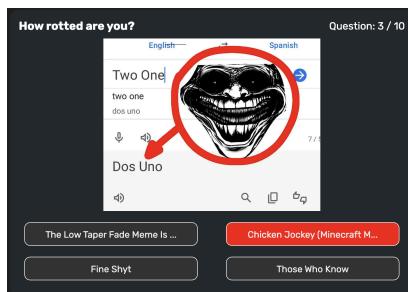
In making design decisions, we addressed several key trade-offs, particularly concerning visual presentation and information density. A primary challenge was the "Timeline Visualizer," where displaying numerous meme trend lines risked creating a cluttered interface. To mitigate this, we employed several strategies: we used distinct colors for highlighted memes (Top 3 or hovering memes), de-emphasized less relevant or unselected trend lines by rendering them in a muted gray, and incorporated hover effects that highlight a specific line and provide tooltip details for better identification. However, even with these measures, displaying an extensive number of selected memes still test the limits of visual clarity. The "Popularity Over Time Comparison" chart serves as an alternative, more focused, and less visually dense environment when users can compare a smaller subset of memes. The choice of a dark theme was made to help visualizations stand out and reduce eye strain during exploration, though we recognize this might not be a universal preference. These decisions reflect a continuous effort to balance the richness of the data with an intuitive and aesthetic user experience. Lastly, our custom "Rot Score," while intended as an engaging metric, is inherently subjective and primarily intended for entertainment.

Finally, here are some screenshots to show our implementation:

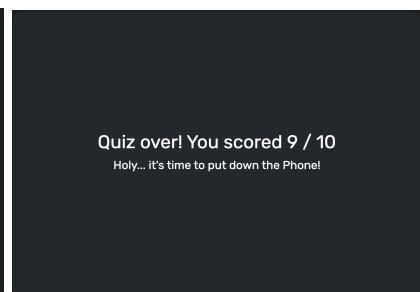
Brainrot Quiz:



Correct

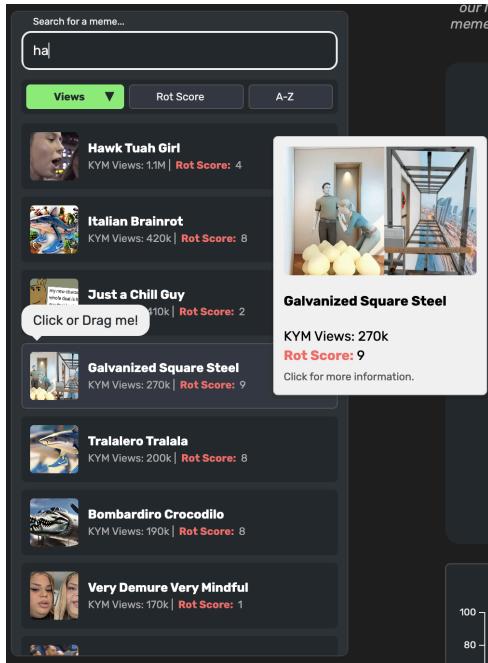


Incorrect



Quiz Over

Meme catalog:



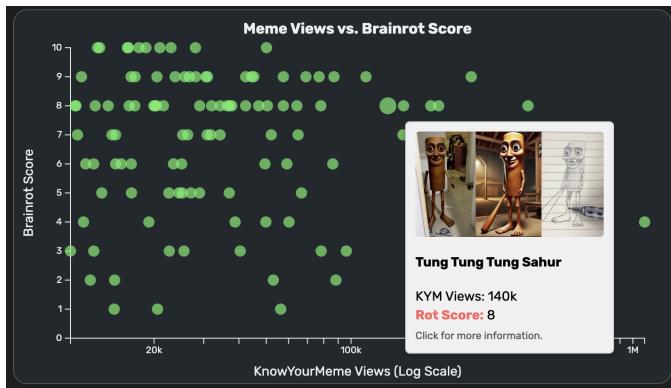
Cursor hovering over Galvanized Square Steel

Timeline Visualizer & Peaked Memes:



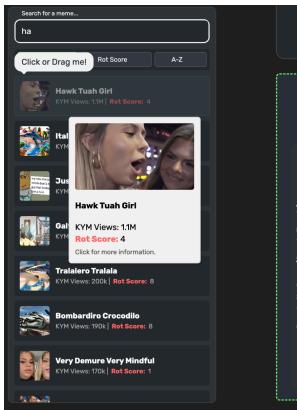
Hovering over AI Rick Laughing timeline

Meme Views vs. Brainrot Score:

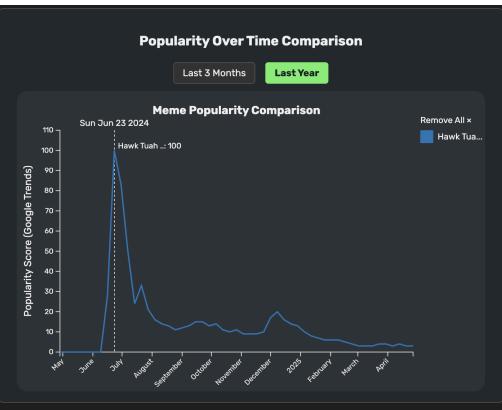
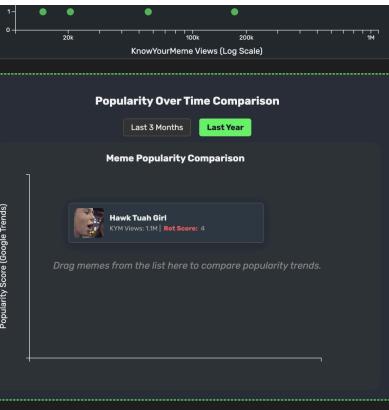


Hovering over Tung Tung Tung Sahur data point

Popularity Over Time Comparison:



Draggin Hawk Tuah Girl into the graph



Dropping Hawk Tuah Girl into the graph

Meme Profile Modal:



Indonesian brainrot characters like Hotspot Bro trended during the same timeframe. The meme may have been inspired by French Bitcoin Burger IbraTV videos with a similar text-to-speech word association style. In Indonesian and Malaysian culture, a large double-headed drum called a "bedug" is employed to signal prayer times and, during Ramadan, to announce Suhoor. "Tung tung tung" is onomatopoeia made to resemble the sound of the drum.

Origin

On February 28th, 2025, TikToker^[1] @noxaasht posted the earliest known "Tung Tung Tung Sahur" image, showing an AI-generated image of a wooden stick-man holding a baseball bat standing in a place that resembles a train or bus stop. The voice-over on the video is transcribed and translated below;

[View on KnowYourMeme](#)

Related TikToks



Profile modal of Tung Tung Tung Sahur

Contribution

Peter:

- Scraped and cleaned the necessary data from the KnowYourMeme websites through a script
- Created main visualizations for presentation:

- Scrollable meme catalog with filtering by views, brainrot score, or alphanumerical order
- Brainrot quiz with randomly selected memes and answer choices
- Timeline Visualizer explorable through scrolling or auto playing with a button
- Peaked Memes section to the right of the Timeline Visualizer showing the top 3 memes at the instance the visualizer is at
- Meme Views vs. Brainrot Score scatterplot
- Popularity Over Time Comparison line chart with a toggleable Last 3 months or Last Year view

Asen:

- Changed parts of the data that required manual intervention
 - Assign brainrot scores
 - Find replacement images for certain memes.
- Refined the design of data visualizations after feedback:
 - In the meme catalog (left side), added a search bar with basic searching mechanism, and a "Click or Drag me!" speech bubble that appears on hover.
 - In Timeline Visualizer, added color coding for top 3 memes, feature showing meme detail on hover and opening profile modal on click for all timelines.
 - In Peaked Memes, added the same things as in Timeline Visualizer (color coding, on hover, on click).
 - In Meme Views vs. Brainrot Score, feature showing meme detail on hover and opening profile modal on click for all data points
 - In Popularity Over Time Comparison, added a remove all button in the legend, a date element above the dashed vertical line, and the same on hover & on click features for the timelines as those in the Timeline Visualizer.
- Prepared and wrote the final report