

Team Brown

Assignment-3 Final Presentation

Team Members :

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Type of Data

- Our Datasets include feature releases and app reviews for the following during the period of 2022 – 2024 :

1. Zoom

- The type of Data here we are going to work is **traceability between features and app reviews** to understand how updates impacts user feedback.

Temporal Aspects in Data

- Temporal aspect in data refers to the time-related characteristics of the data.
- Here, Feature releases and app reviews which consists of timestamps allowing us to track feature adoption trends over the time, surge in user feedback after updates and long-term sentimental analysis.

Who Benefits from This Visualization? (Usefulness)

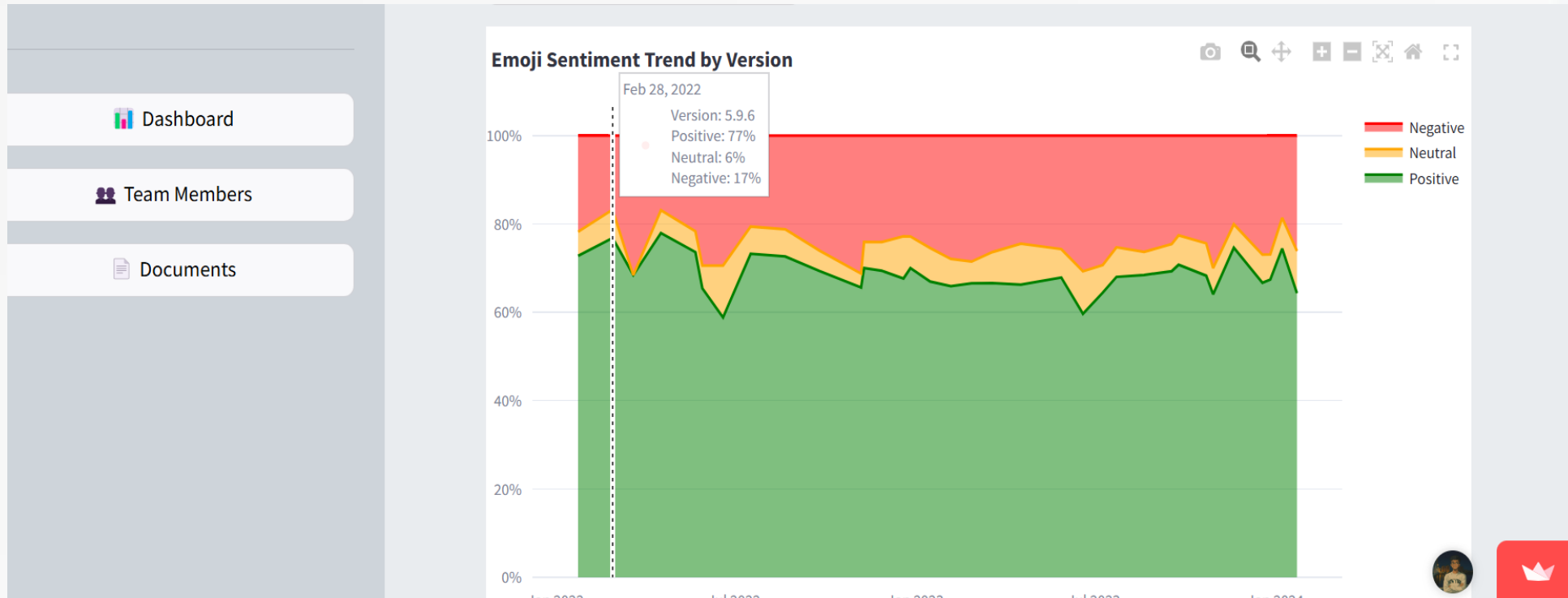
- **Primary Stakeholder:** Product Managers at Zoom.
- Product managers are responsible for understanding user feedback, monitoring satisfaction, and making decisions about new or existing features.
- They need to know how users emotionally respond to new feature launches—but going through thousands of reviews manually is slow and difficult.
- Our visualization gives them a clear, time-aligned view of user sentiment, using emojis as emotional signals.
- With this dashboard, they can:
 - Track emotional reactions (positive, neutral, negative) over time.
 - Link spikes or drops in sentiment to the release of specific features.
 - Make faster, evidence-based product decisions.

Why This Visualization is Important for Product Managers?

- **Quick Issue Detection:**
 - Identify **when and why** user satisfaction suddenly drops (e.g., bugs, poor UX).
- **Feature Validation:**
 - See which feature rollouts led to **positive emotional feedback**, so they can replicate success.
- **Prioritization Made Easier:**
 - Use emotional patterns to **decide what to fix, improve, or promote** in future releases.
- **No Guesswork:**
 - Managers don't need to interpret complex charts — this area chart is **visually intuitive** and shows **real-time user mood** at a glance.
- **Saves Time & Adds Insight:**
 - Instead of reading endless reviews, teams get a **compressed, emotional timeline** that tells a complete story.

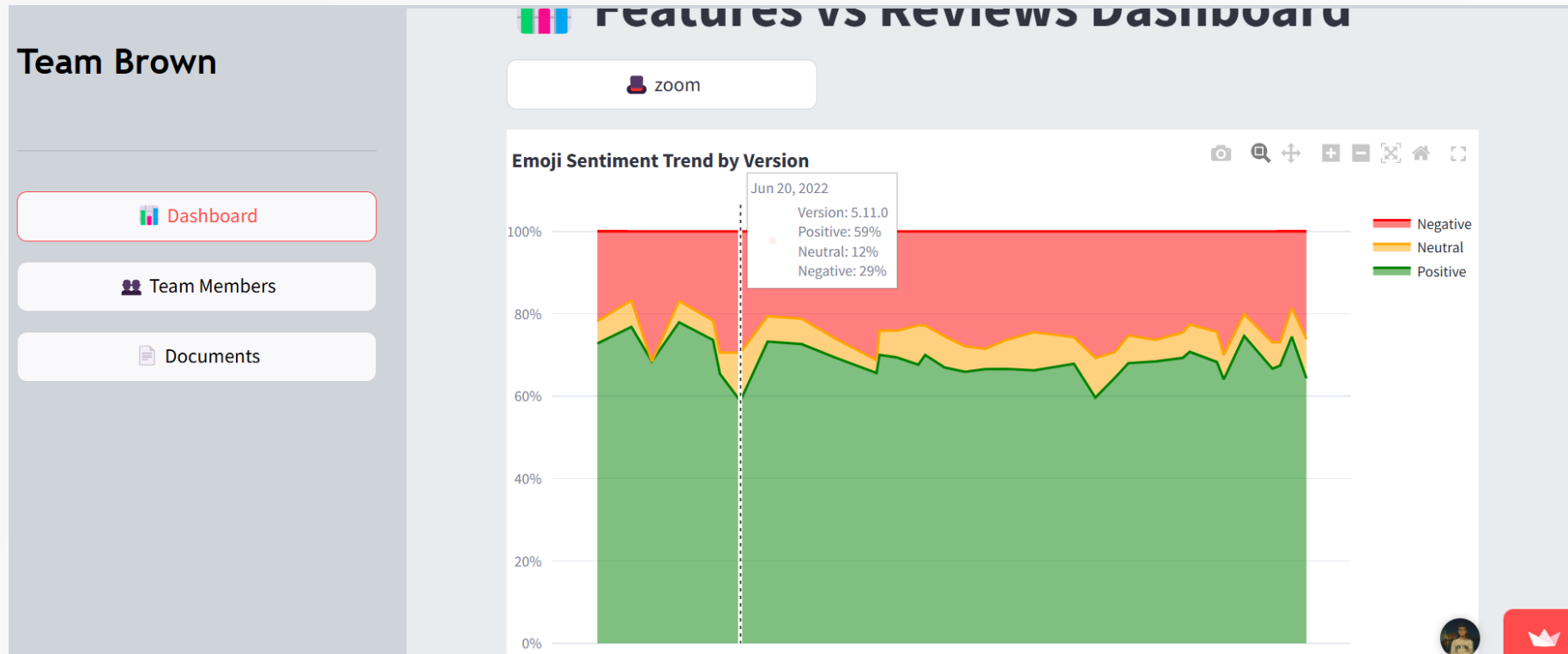
Real-World Use Case – Product Manager at Zoom

- **Scenario 1:**
- **Version:** “5.9.6” released in Feb 2022.
- **Timeline view shows:** Positive sentiment at **77%**, Neutral at 6%, Negative dropped to 17%.
- **Features:** Language Interpretation relay enhancement, Expanded access to invitee status feature, Expand/Collapse all Breakouts when self-selecting, Enhancement to public channel mentions, Enhancement to App notifications.



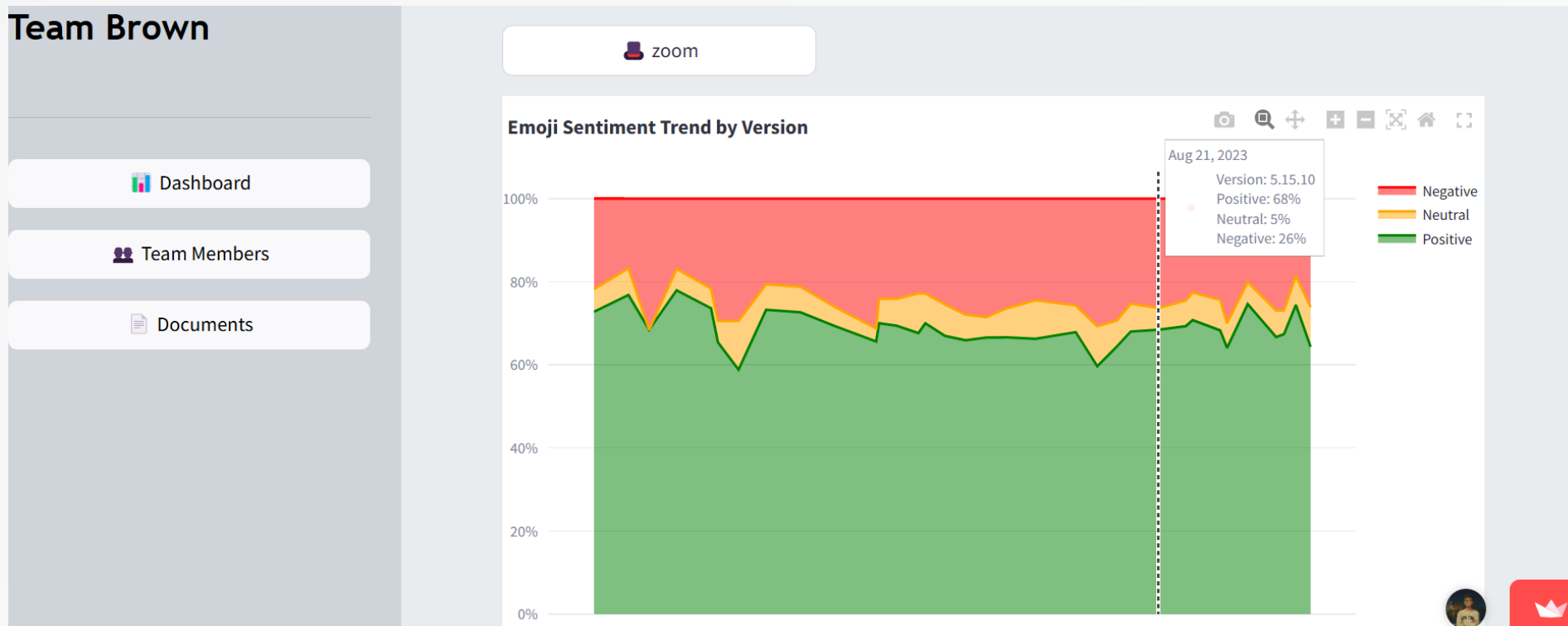
Real-World Use Case – Product Manager at Zoom

- **Scenario 2:**
- **Version:** “5.11.0” released in June 2022.
- **Timeline view shows:** Positive sentiment at **59%**, Neutral at 12%, Negative dropped to 29%.
- **Features:** Meetings with Multiple Participants Share Content pre-enabled, Persistent Gallery view after pinning, Quicker enablement of gesture recognition, Video quality improvements, Search breakout rooms.

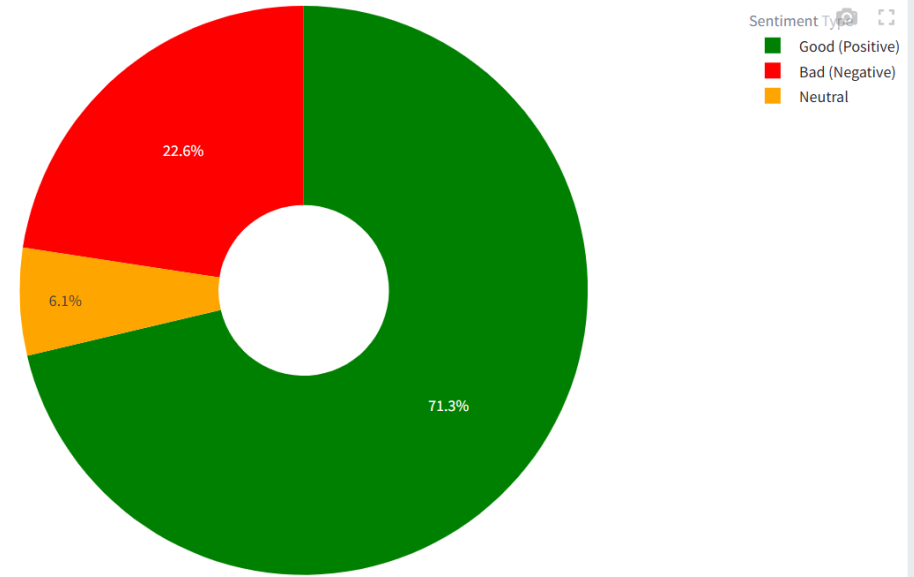


Real-World Use Case – Product Manager at Zoom

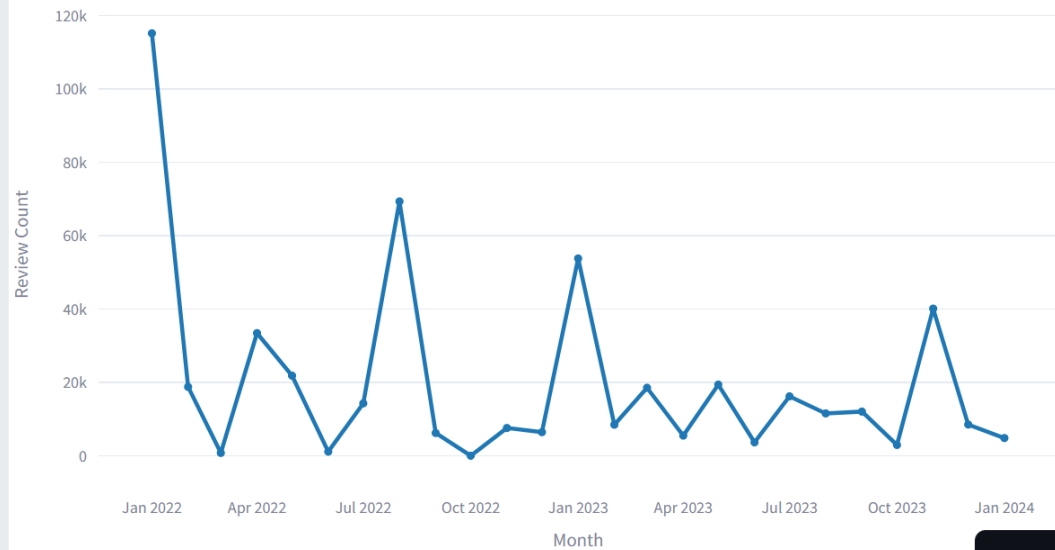
- **Scenario 3:**
- **Version:** “5.15.10” released in April 2023.
- **Timeline view shows:** Positive sentiment at **68%**, Neutral at 5%, Negative dropped to 26%.
- **Features:** Video quality improvements, Transcription profanity filter support, Auto-accept far end camera control, Personalized speech denoises.



Overall Review Sentiment



Total Reviews Trend



Total Reviews Over Time

Why is this Visualization Novel ?



1. Turns Reviews into Action

- Instead of reading thousands of reviews, teams can quickly spot issues or successes and take action right away.
- It saves time and gives clear direction for what to fix or improve next.

2. Shows Feelings + Features Together

- We don't just show what features were released — we show how users felt about them, all in one clear graph.
- This helps teams see the emotional impact of each update with the version.

3. Easy to Understand at a Glance

- Uses emojis to show how people felt — happy, sad, or angry — making it fast and simple to spot problems or wins.

Technologies & Tools We Used.

Core Technologies:

- **Python** – Backend logic, data processing.
- **Streamlit** – Interactive dashboard interface.
- **Plotly** – Used for stacked area chart with hover interactivity.
- **Pandas** – Data manipulation and cleaning.

Data Insights:

- Used monthly review data for Zoom.
- Extracted emojis + sentiment using RoBERTa model + custom logic .

Why These?

- Tools were easy to integrate, supported fast prototyping, and enabled a rich, visual experience.

Challenges & How We Solved Them

1. No direct link between features & reviews.

- Used keywords from reviews to connect features and sentiment over time. That will be in the Model-2 of this Visualization

2. Emoji sentiment isn't always accurate

- Created custom polarity logic + combined with RoBERTa output.

3. Large, noisy review data

- Cleaned using Pandas, removed irrelevant or duplicate reviews.

4. Styling and interactivity in UI

- Customized Streamlit UI with CSS for a clean, user-friendly layout.

Highlights of Our Prototype

1. Stacked Area Graph with Hover

- Shows positive, neutral, and negative trends per version.
- Displays version titles on hover — clear and contextual.

2. Modular Code

- Minimal hardcoding — dropdowns, feature loading, and charting are reusable.
- App toggle options (Zoom, Webex, Firefox) already integrated.

3. Dashboard Navigation

- Sidebar with pages: Dashboard, Team, Documents.
- Embedded PDF preview via bash64 — extra touch for polish.

⚠ Limitations & Future Improvements

Current Limitations:

- Sentiment alignment with features is approximate, not exact.
- Only Zoom data fully implemented for now.

Future Plans:

- Adding Model – 2 in Dashboard, Mapping individual reviews to specific features by extracting technical keywords and matching them against the feature list by using Sentimental Analysis—found ~1,400 precise matches out of 1.4 million total reviews.
- Add filtering options (by sentiment, feature type, time)
- Expand for real-time updates and multi-app comparisons
- Improve emoji classification using advanced NLP (e.g., sarcasm detection)

Link to our working prototype :

<https://team-brown.streamlit.app/>

Note :

- Open Website(prototype) in the Light Mode
- If it opens in the Dark Mode by default, switch to light mode using following steps :
 - ⋮(3 dots icon in the upper right corner) → Settings → Choose App theme → Change it to Light Mode

Thank You!