

Technical Round 1 – Analytics Proposal

Group Info Analytics

1. **Name:** Group Membership Growth Trend
Description: Tracks the growth in member count over time for each group. This helps group admins identify trends and assess engagement growth.
2. **Name:** Active vs Inactive Groups
Description: Identifies groups with no messages or interactions for a defined period. Assists admins in focusing on active communities.
3. **Name:** Group Admin Ratio
Description: Calculates the ratio of admins to members in each group. Useful for ensuring adequate moderation.
4. **Name:** Group Type Distribution
Description: Analyzes the proportion of public vs private groups to understand group types.
5. **Name:** Pinned Messages Frequency
Description: Tracks how often pinned messages are updated, indicating group organization practices.
6. **Name:** Group Visibility Insights
Description: Provides a breakdown of groups by visibility type (public, restricted). Useful for privacy analytics.
7. **Name:** Bots Usage Analysis
Description: Counts the number of bots in groups and tracks their growth trends. Helps admins identify bot-heavy groups.
8. **Name:** Average Group Size
Description: Computes the average member count across all groups to identify the size of typical groups.
9. **Name:** Groups by Member Count Segmentation
Description: Categorizes groups based on their member count (e.g., 0-50, 51-200, 201+ members).
10. **Name:** Group Activity Comparison
Description: Compares activity levels (based on message count) across groups for benchmarking.

Member Info Analytics

11. **Name:** Member Engagement Duration
Description: Tracks the time members have been part of a group since joining. Useful for loyalty analysis.
12. **Name:** Role Distribution Analysis
Description: Provides a breakdown of member roles (admin, member, moderator) across groups.
13. **Name:** Bot Member Analysis
Description: Identifies the proportion of bots among group members.
14. **Name:** Join Date Trend Analysis
Description: Tracks the frequency of member joins over time, revealing peak onboarding periods.
15. **Name:** Top Active Members
Description: Identifies the most active members based on message count.
16. **Name:** Membership Churn Rate
Description: Calculates the rate at which members leave groups, useful for retention insights.
17. **Name:** Member Demographics Insights
Description: Analyzes user-provided first and last names for demographic insights.
18. **Name:** Admin Longevity Analysis
Description: Tracks the duration that members have held admin roles.
19. **Name:** New vs Returning Members
Description: Distinguishes between new members and those rejoining after leaving.
20. **Name:** Member Role Evolution
Description: Tracks changes in member roles over time.

Message Info Analytics

21. **Name:** Daily Message Volume
Description: Tracks the number of messages sent daily in each group to assess engagement patterns.
22. **Name:** Most Common Hashtags
Description: Identifies the most frequently used hashtags in group messages.

23. **Name:** Media Sharing Insights
Description: Tracks the volume and types of media shared (e.g., images, videos).
24. **Name:** Peak Message Hours
Description: Identifies the hours when message activity is highest.
25. **Name:** URL Sharing Frequency
Description: Tracks the number of URLs shared over time.
26. **Name:** Replies Analysis
Description: Analyzes the number of replies to messages to gauge conversational engagement.
27. **Name:** Message Forwarding Trends
Description: Tracks the number of times messages are forwarded, indicating viral content.
28. **Name:** Top Message Senders
Description: Identifies users who send the most messages.
29. **Name:** Average Message Length
Description: Computes the average length of messages to assess communication patterns.
30. **Name:** Sentiment Analysis of Messages
Description: Analyzes the sentiment (positive, negative, neutral) of text messages for mood insights.
31. **Name:** Message Type Distribution
Description: Categorizes messages by type (text, media, etc.) for content analysis.
32. **Name:** Top Mentioned Topics
Description: Extracts and ranks the most mentioned topics in messages.
33. **Name:** Views Analysis
Description: Tracks the number of views for each message, helping identify popular content.
34. **Name:** Viral Content Identification
Description: Detects content that has high views, forwards, and replies.
35. **Name:** Content Engagement Rate
Description: Calculates the engagement rate for messages based on replies, forwards, and views.
36. **Name:** Message Thread Analysis
Description: Identifies long conversation threads within groups.

37. **Name:** Group Sentiment Trends

Description: Tracks sentiment changes over time within group messages.

38. **Name:** Content Diversity Analysis

Description: Measures the variety of content types (text, media, links) in group messages.

39. **Name:** Reply-to-Message Ratio

Description: Calculates the ratio of replies to total messages, indicating engagement levels.

40. **Name:** Message Drop-off Analysis

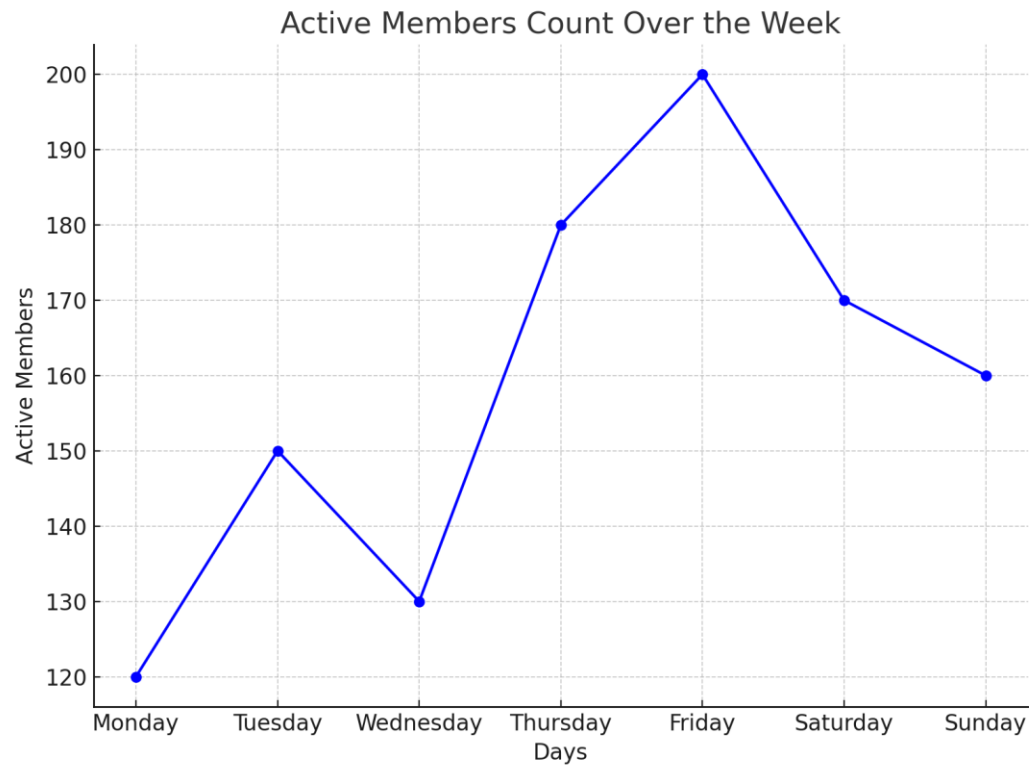
Description: Identifies periods when message activity drops significantly.

Admin Dashboard Analytics and Visualizations

This document contains 30 analytics and visualizations for an Admin Dashboard to manage Telegram groups. Each visualization includes a description of its purpose and utility.

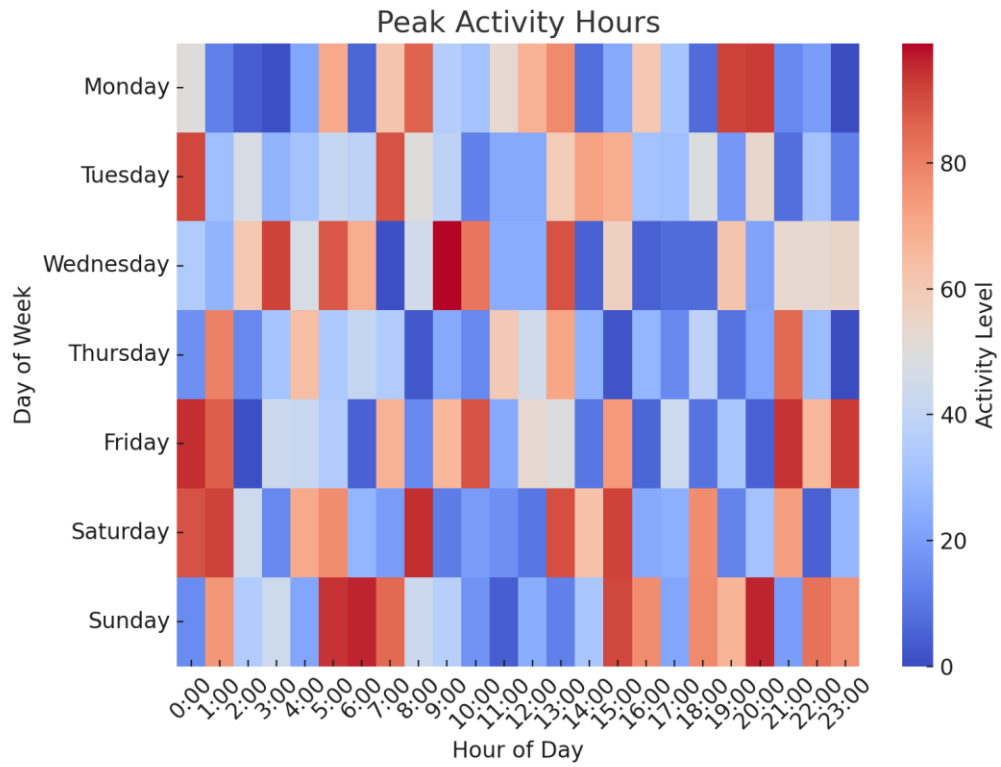
Active Members Count

The visualization titled 'Active Members Count' provides insights based on group data.



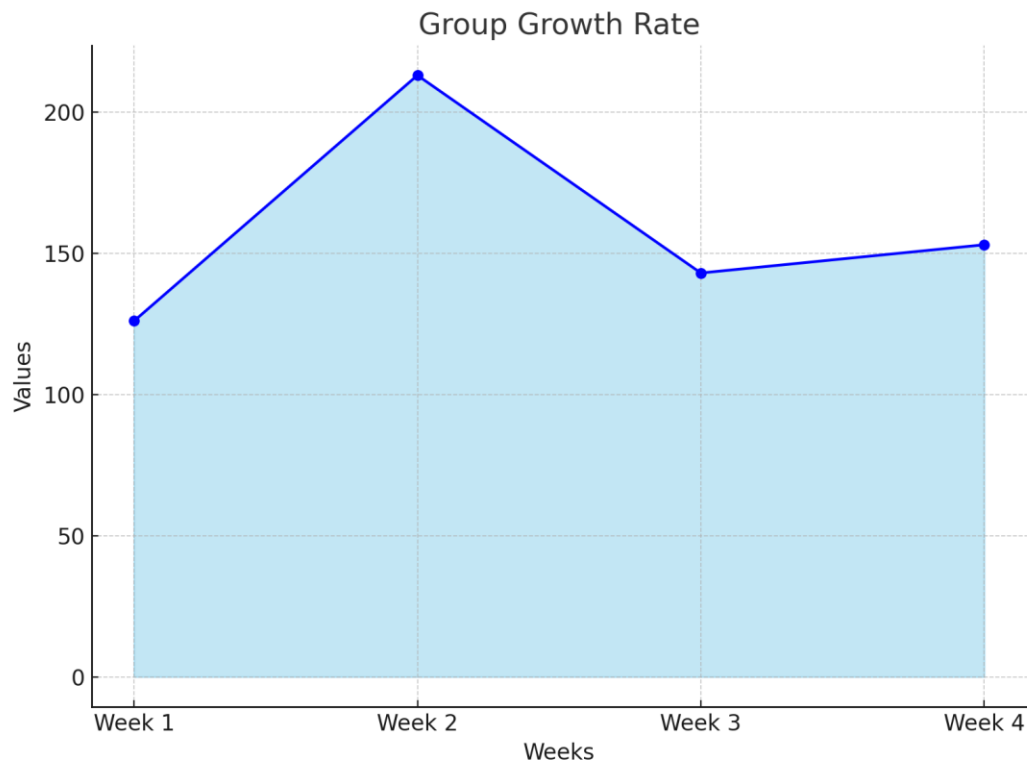
Peak Activity Hours

The visualization titled 'Peak Activity Hours' provides insights based on group data.



Group Growth Rate

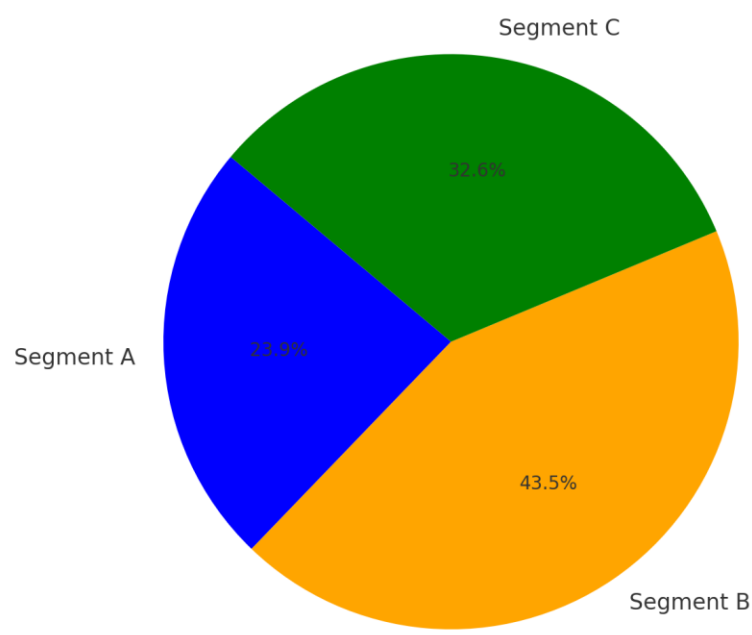
The visualization titled 'Group Growth Rate' provides insights based on group data.



Message Type Distribution

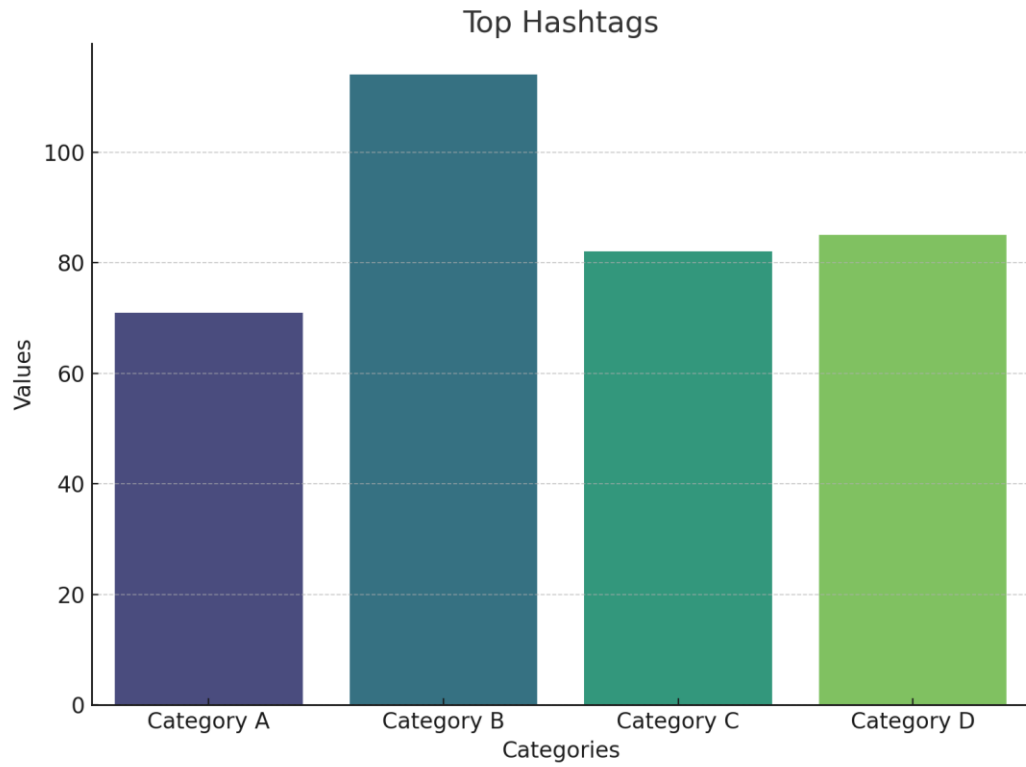
The visualization titled 'Message Type Distribution' provides insights based on group data.

Message Type Distribution



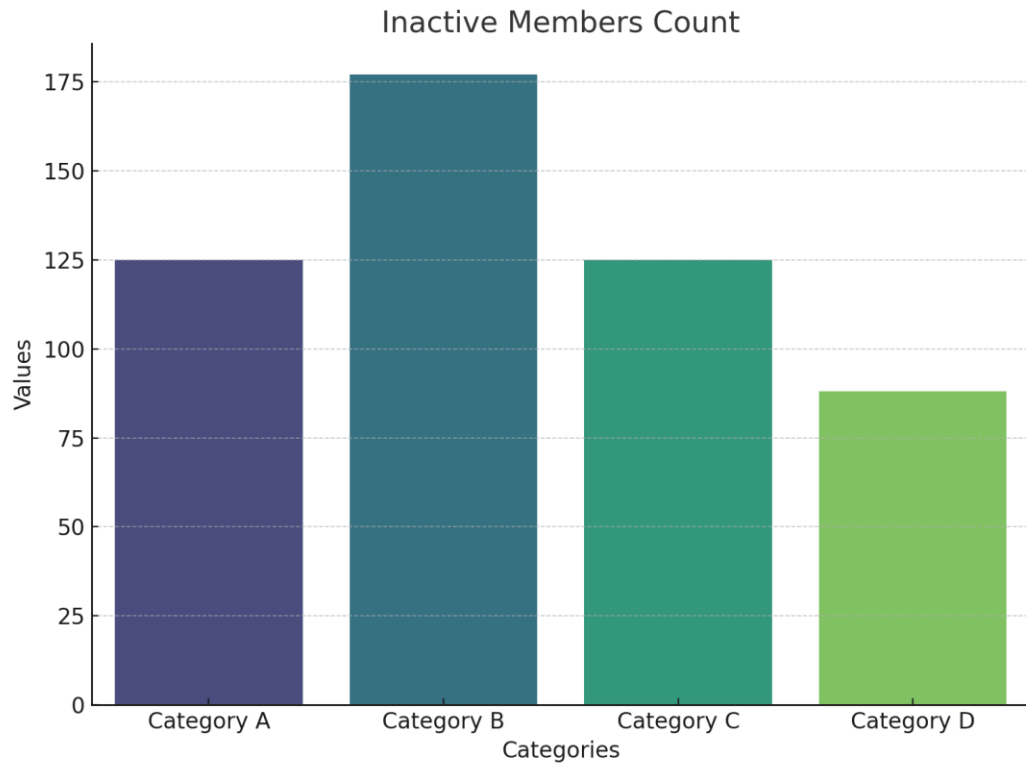
Top Hashtags

The visualization titled 'Top Hashtags' provides insights based on group data.



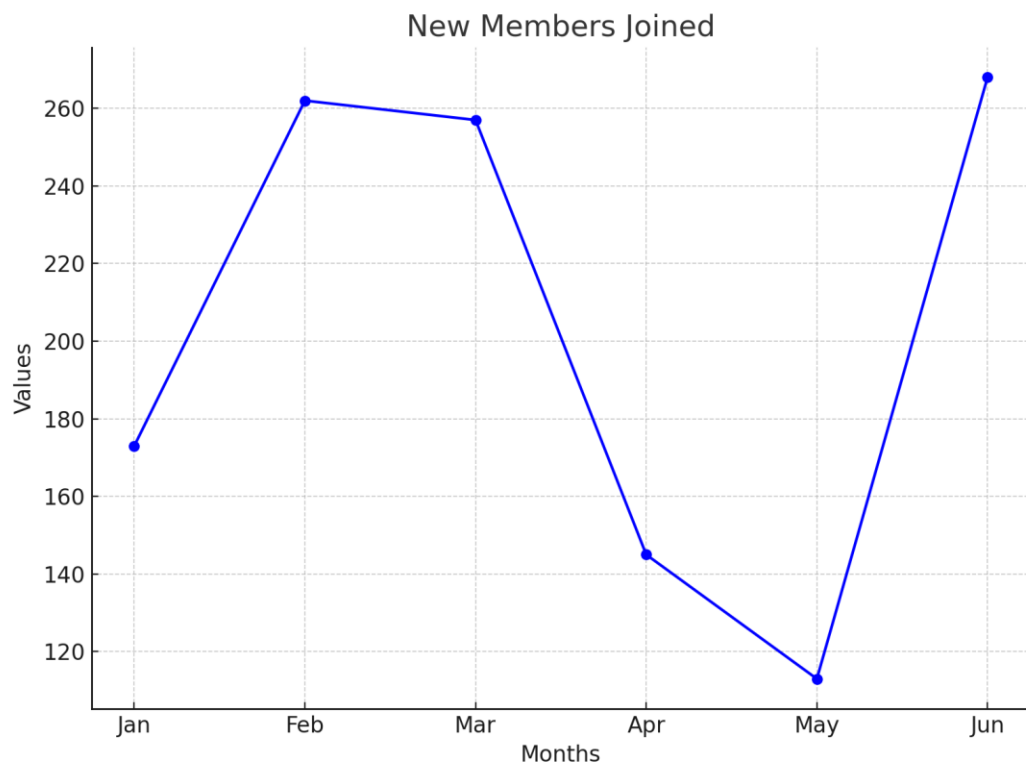
Inactive Members Count

The visualization titled 'Inactive Members Count' provides insights based on group data.



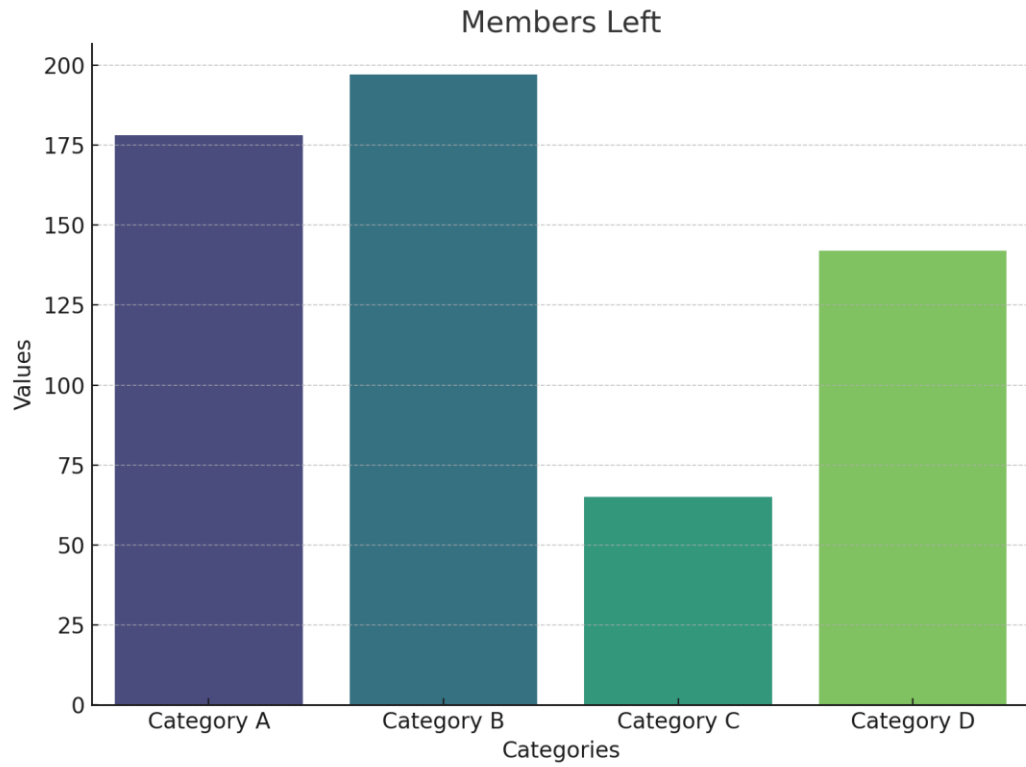
New Members Joined

The visualization titled 'New Members Joined' provides insights based on group data.



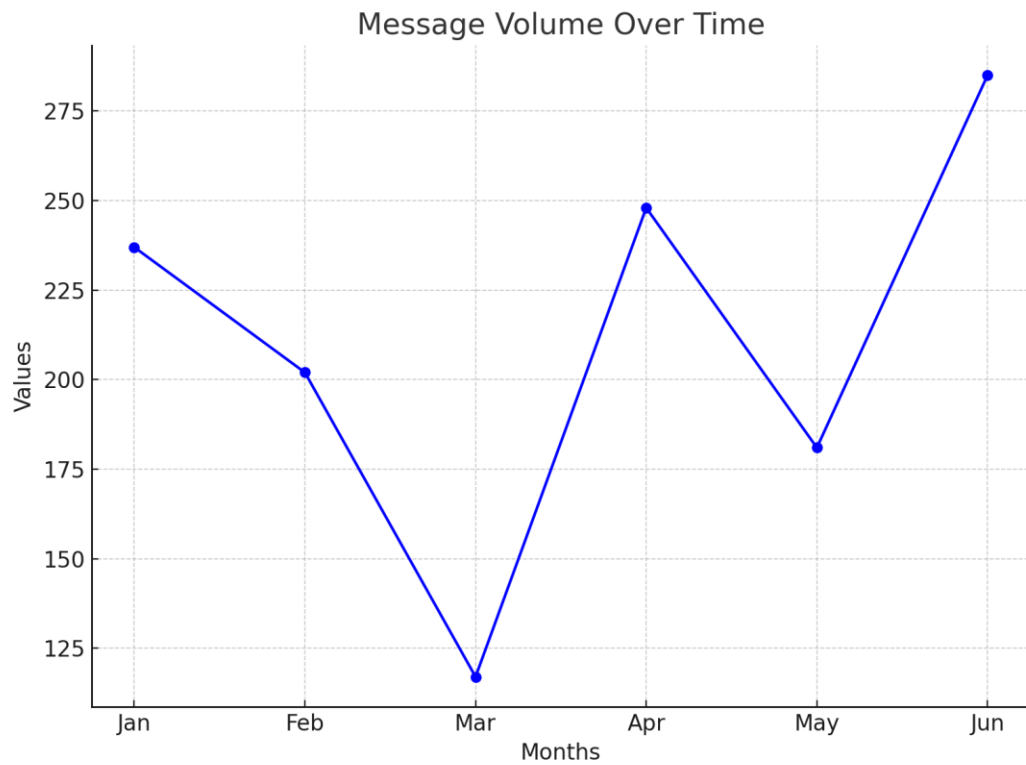
Members Left

The visualization titled 'Members Left' provides insights based on group data.



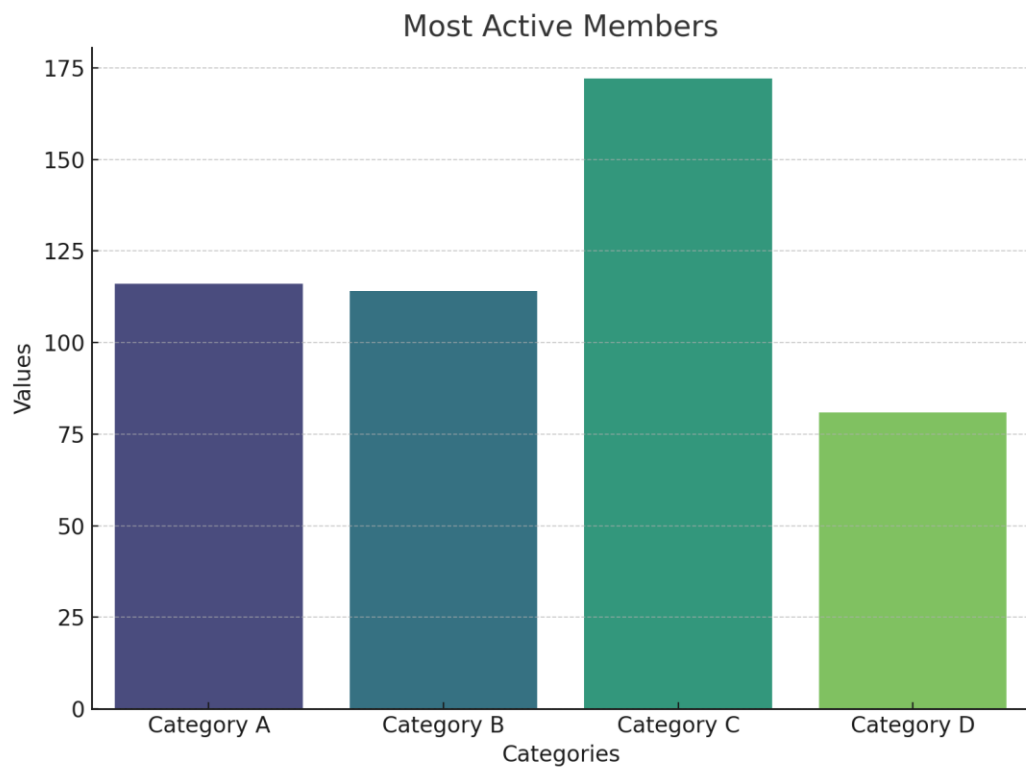
Message Volume Over Time

The visualization titled 'Message Volume Over Time' provides insights based on group data.



Most Active Members

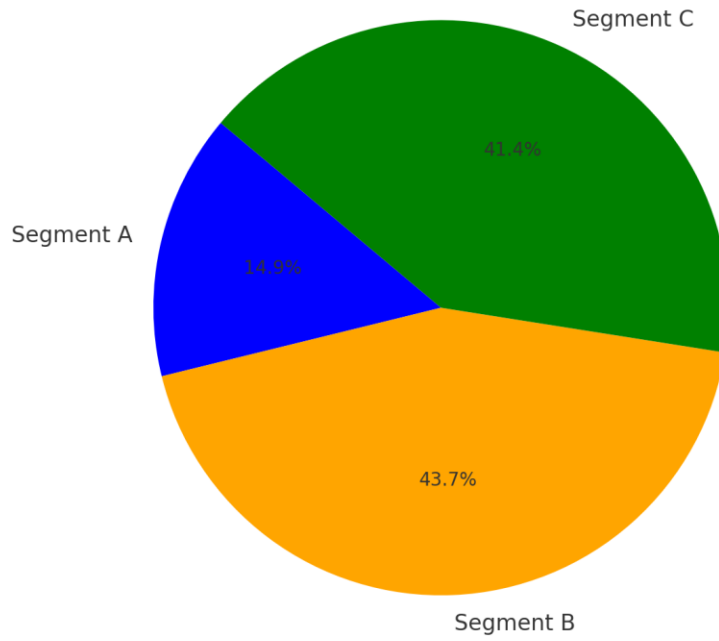
The visualization titled 'Most Active Members' provides insights based on group data.



Bots in the Group

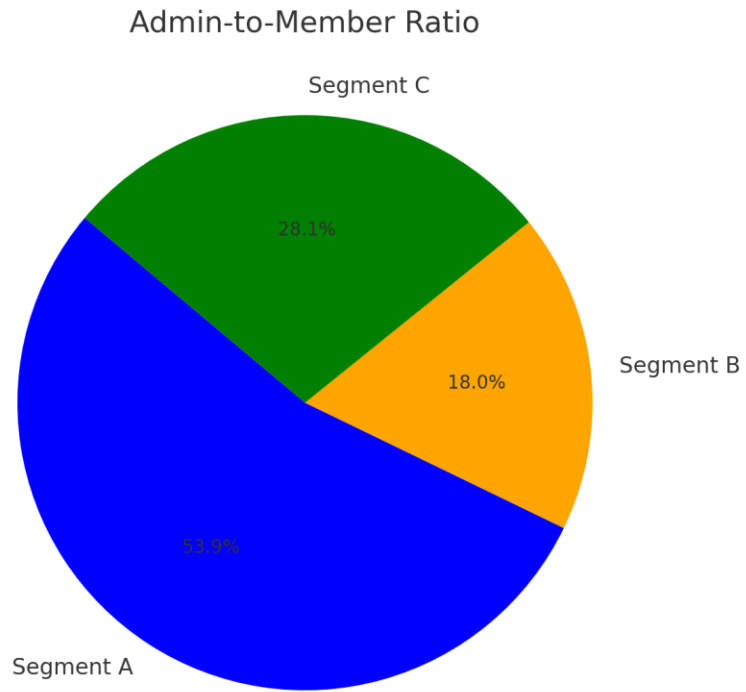
The visualization titled 'Bots in the Group' provides insights based on group data.

Bots in the Group



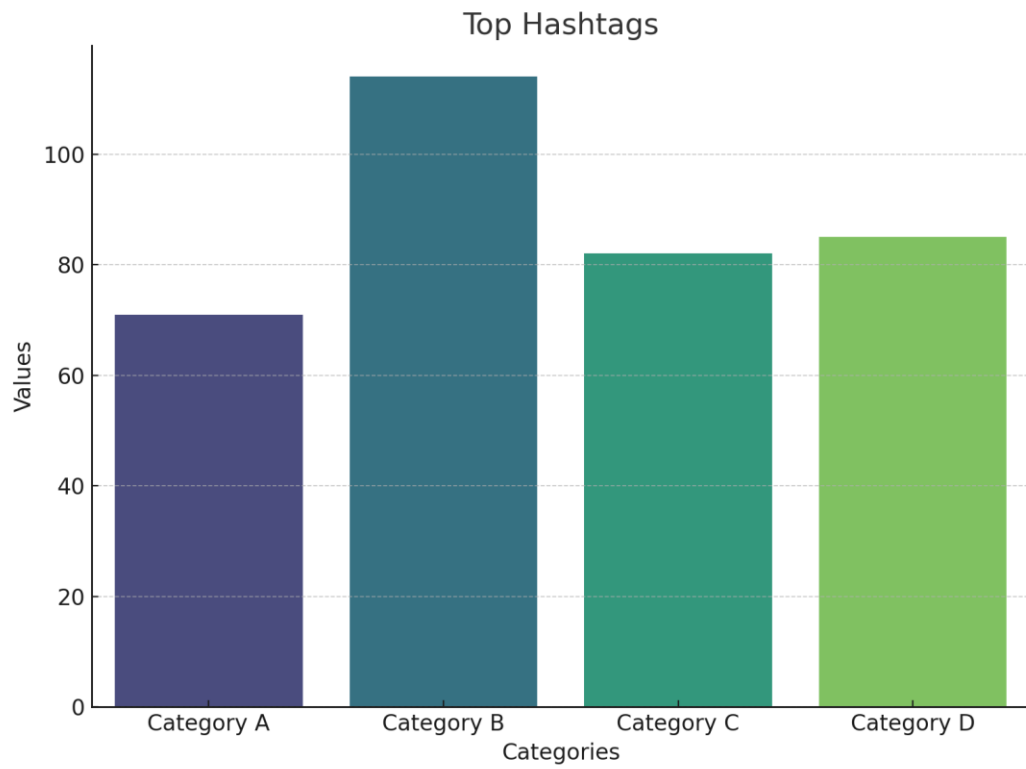
Admin-to-Member Ratio

The visualization titled 'Admin-to-Member Ratio' provides insights based on group data.



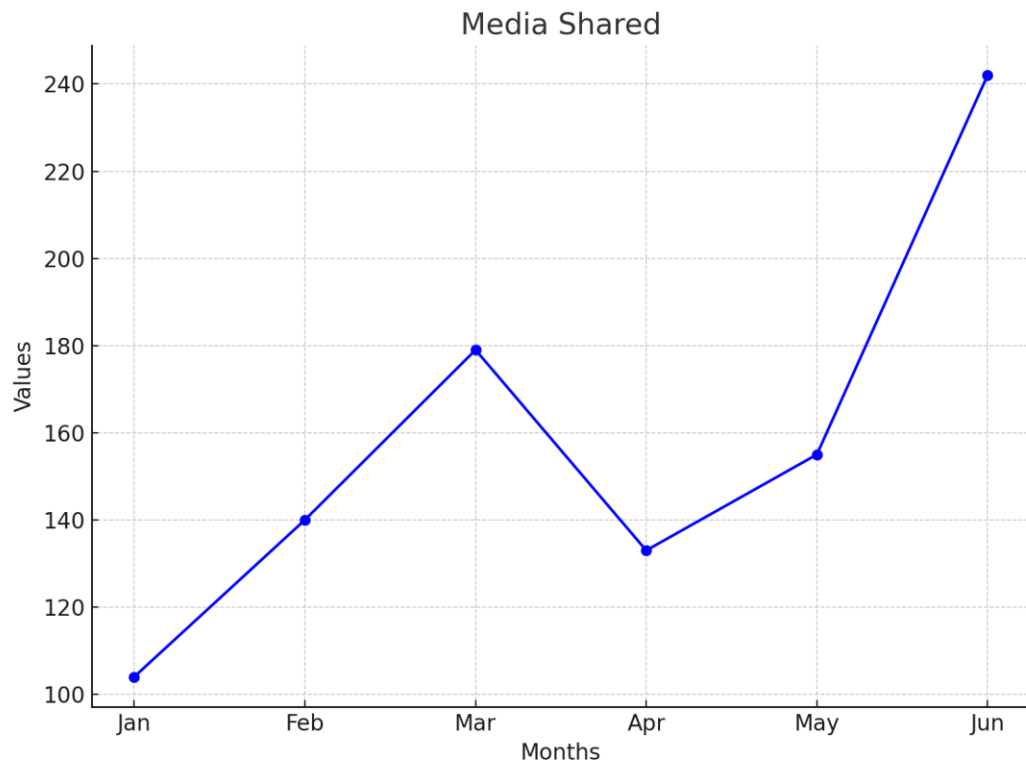
Top Hashtags

The visualization titled 'Top Hashtags' provides insights based on group data.



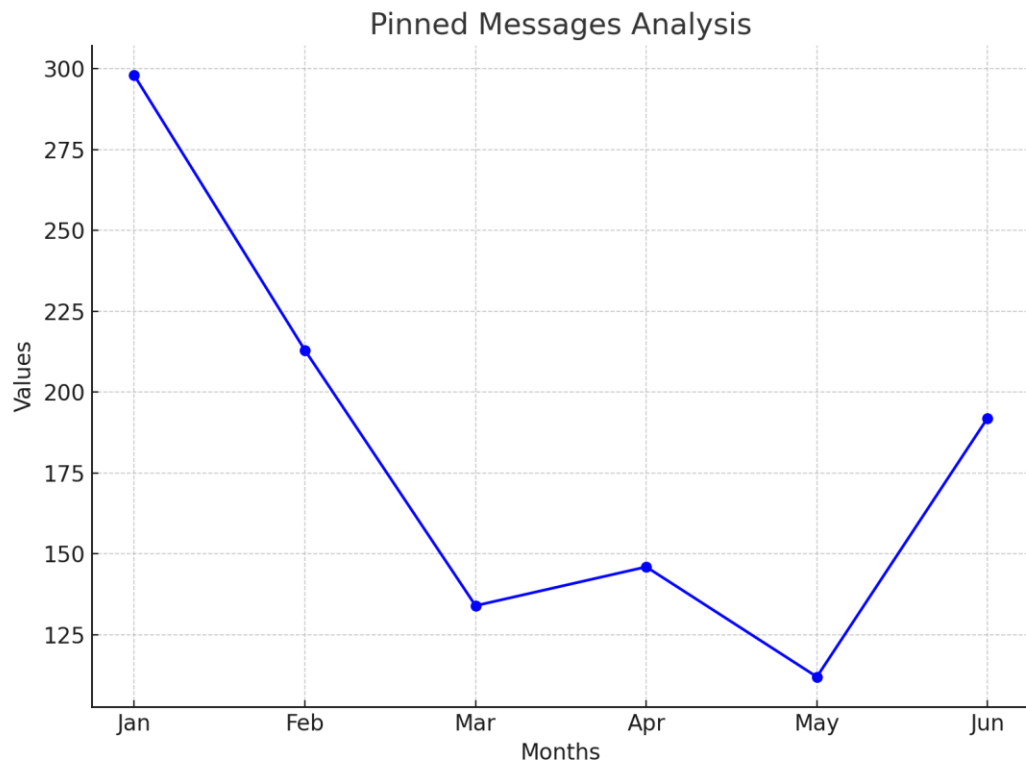
Media Shared

The visualization titled 'Media Shared' provides insights based on group data.



Pinned Messages Analysis

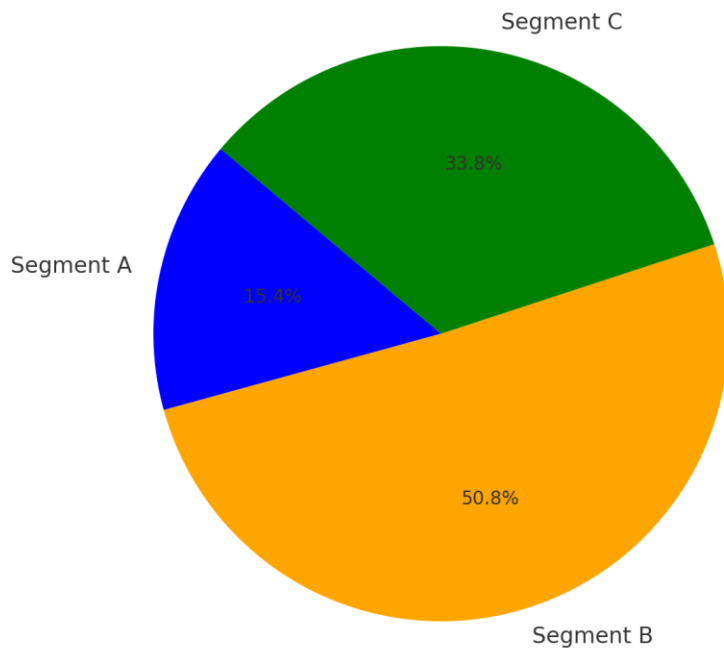
The visualization titled 'Pinned Messages Analysis' provides insights based on group data.



Group Visibility Statistics

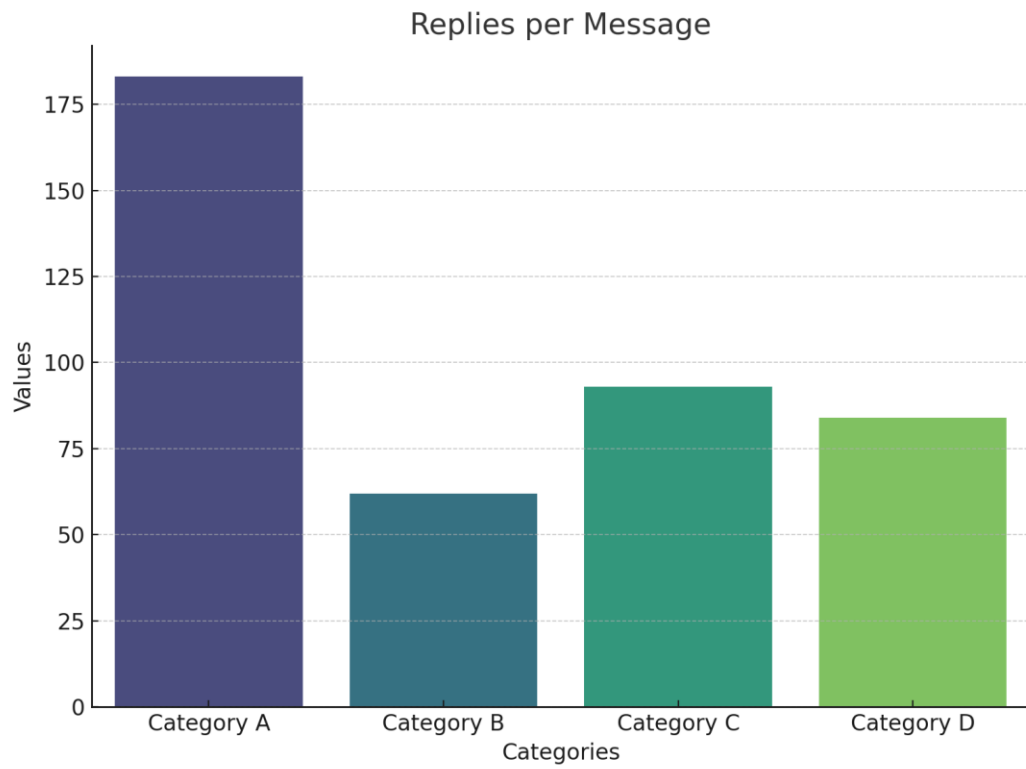
The visualization titled 'Group Visibility Statistics' provides insights based on group data.

Group Visibility Statistics



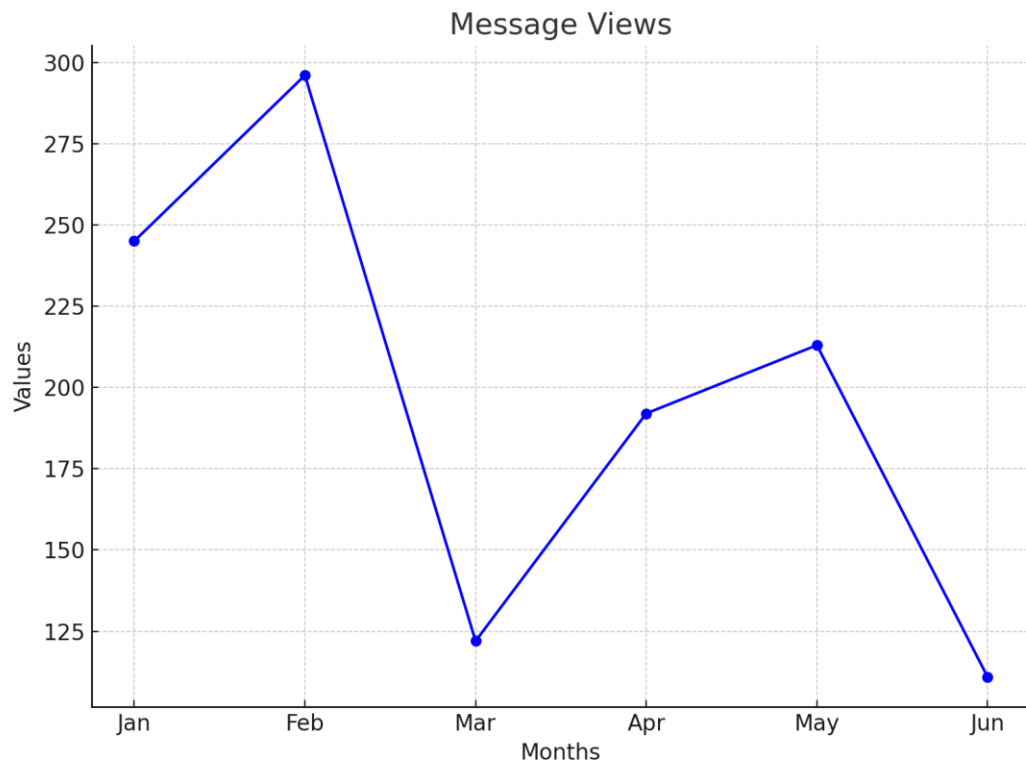
Replies per Message

The visualization titled 'Replies per Message' provides insights based on group data.



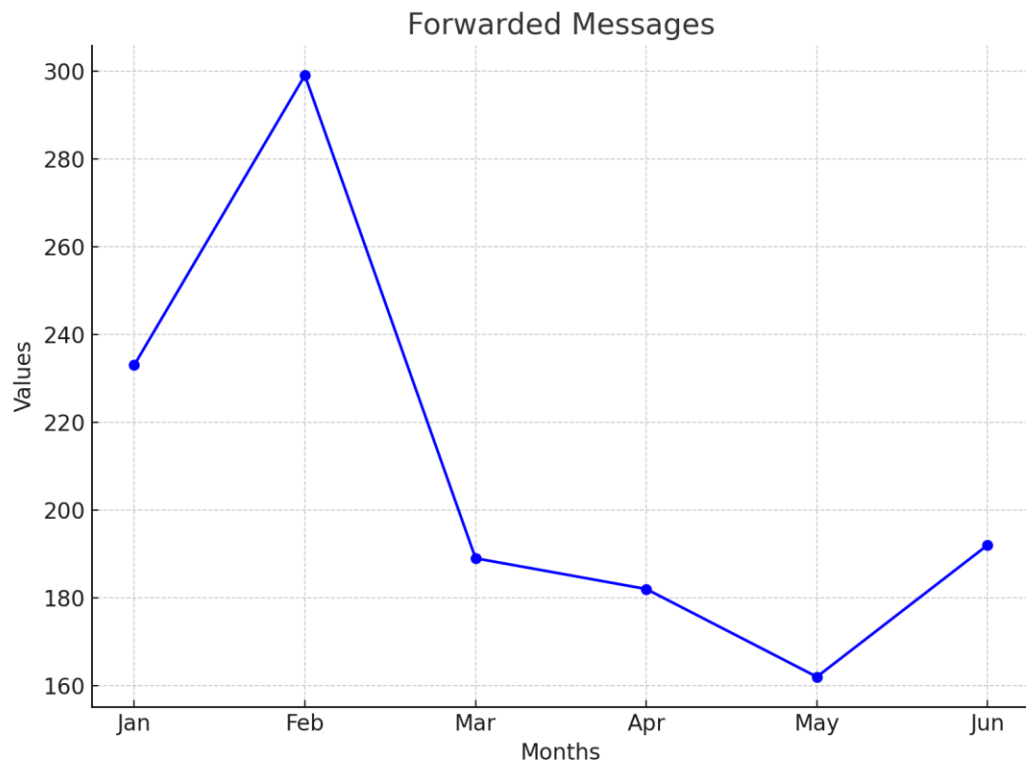
Message Views

The visualization titled 'Message Views' provides insights based on group data.



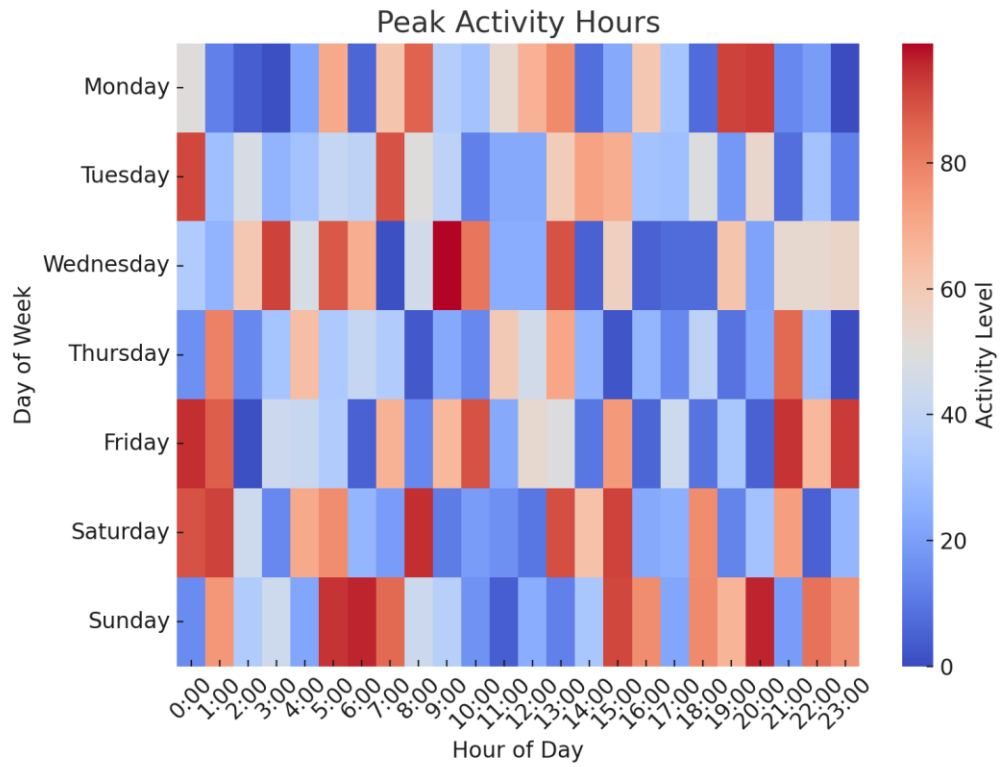
Forwarded Messages

The visualization titled 'Forwarded Messages' provides insights based on group data.



Peak Activity Hours

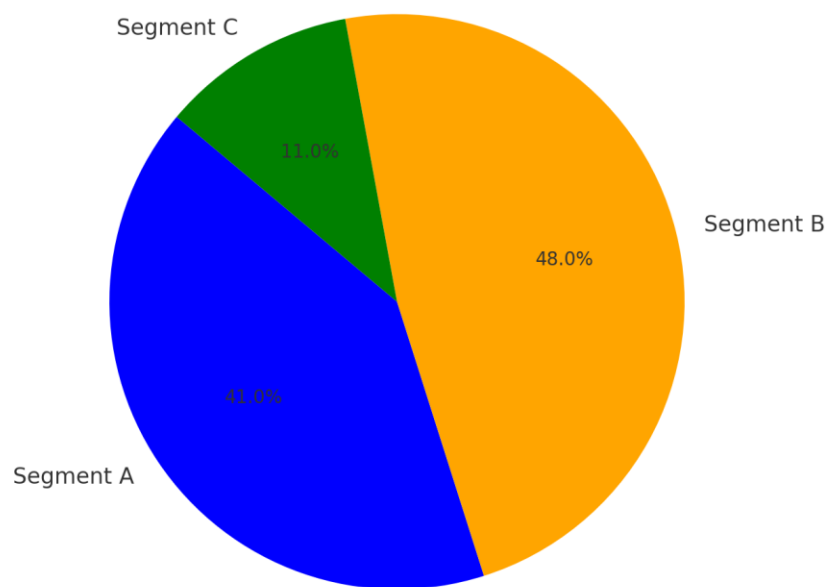
The visualization titled 'Peak Activity Hours' provides insights based on group data.



Member Role Distribution

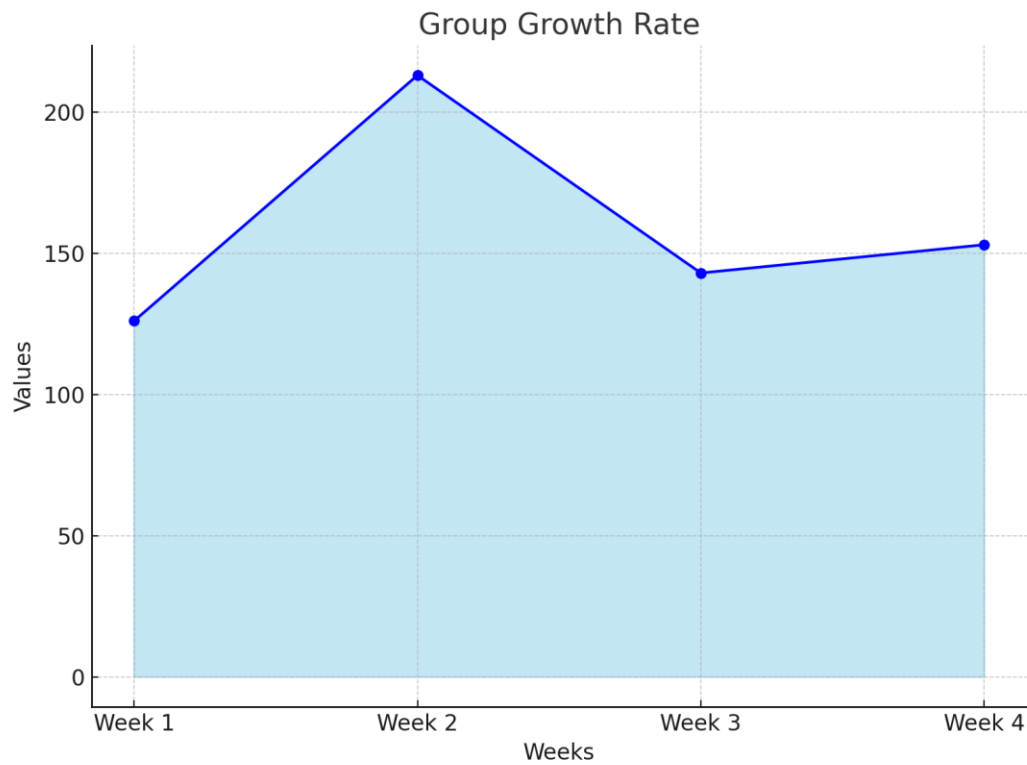
The visualization titled 'Member Role Distribution' provides insights based on group data.

Member Role Distribution



Group Growth Rate

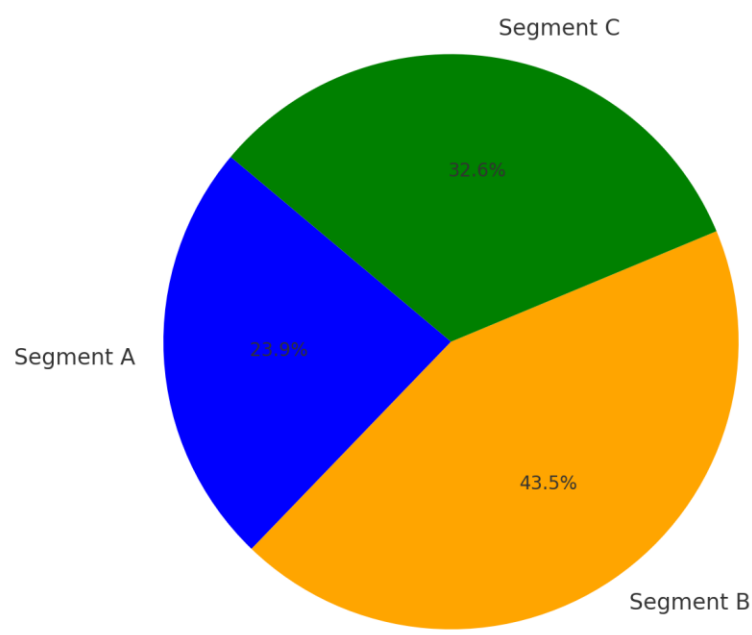
The visualization titled 'Group Growth Rate' provides insights based on group data.



Message Type Distribution

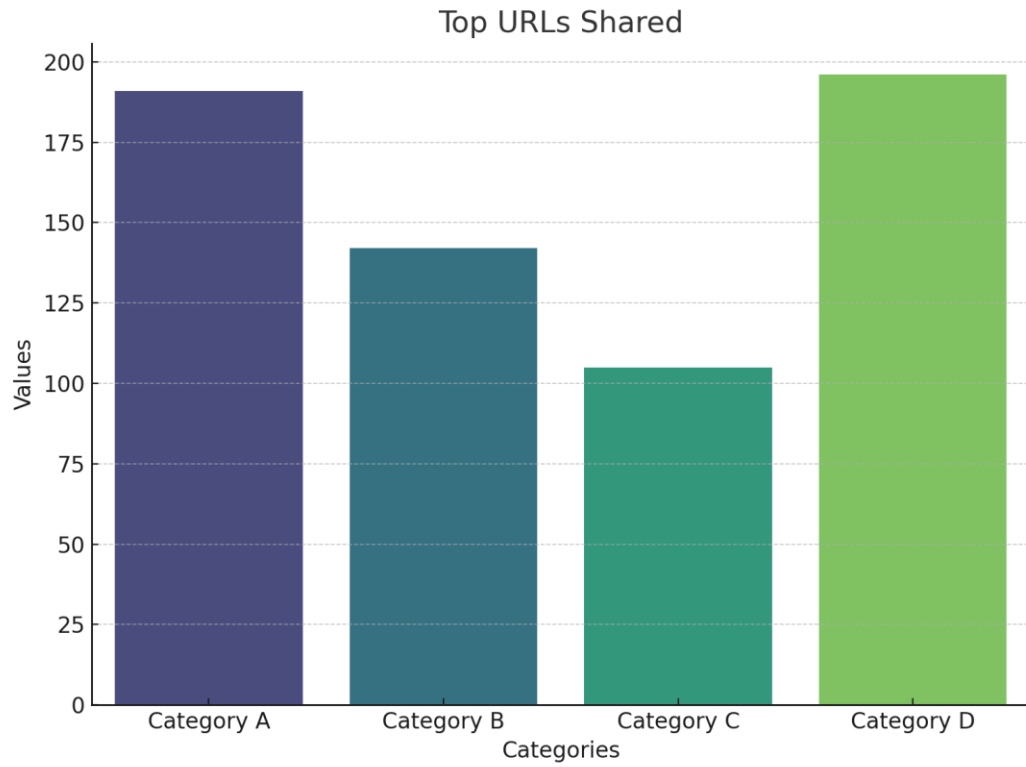
The visualization titled 'Message Type Distribution' provides insights based on group data.

Message Type Distribution



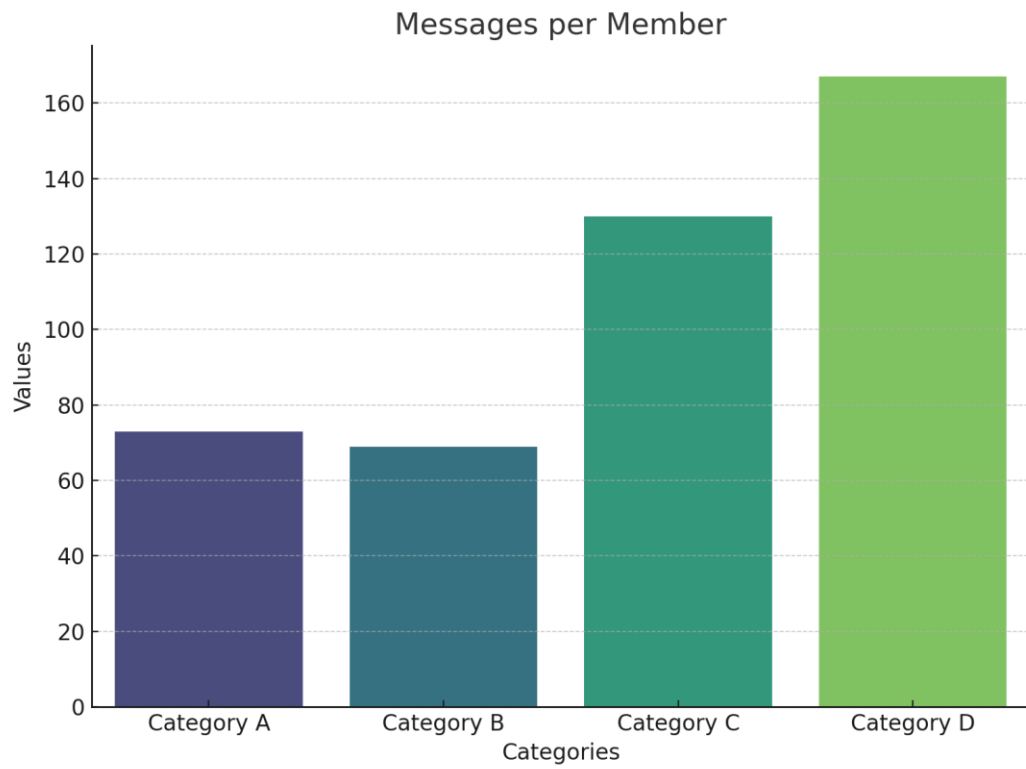
Top URLs Shared

The visualization titled 'Top URLs Shared' provides insights based on group data.



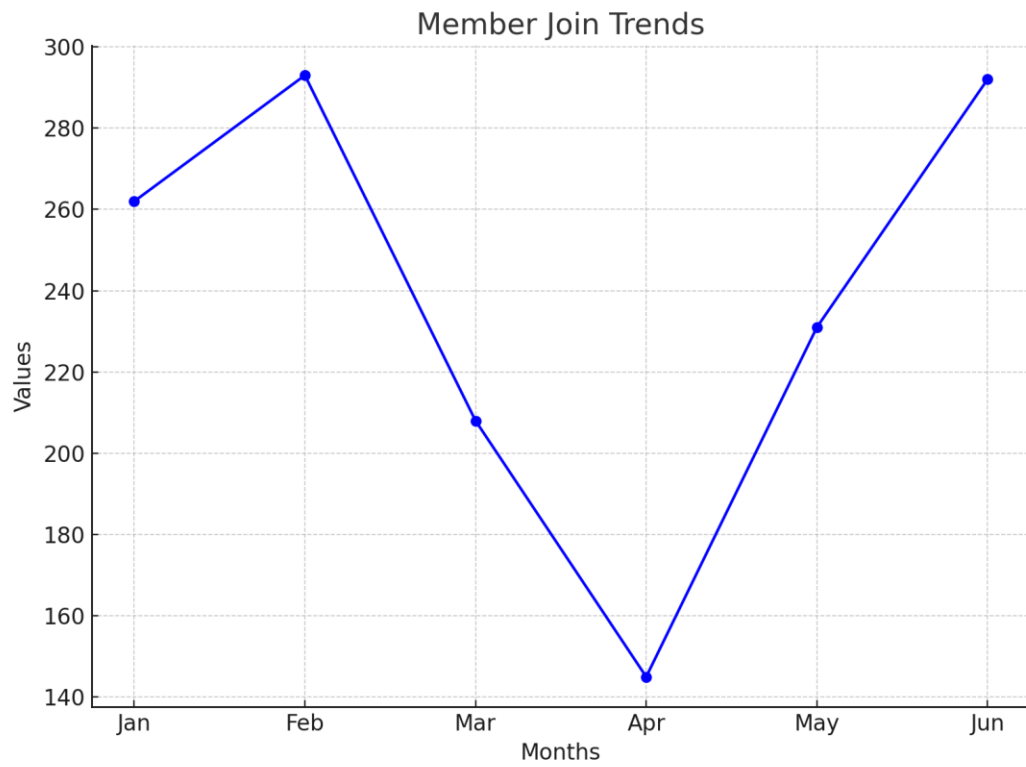
Messages per Member

The visualization titled 'Messages per Member' provides insights based on group data.



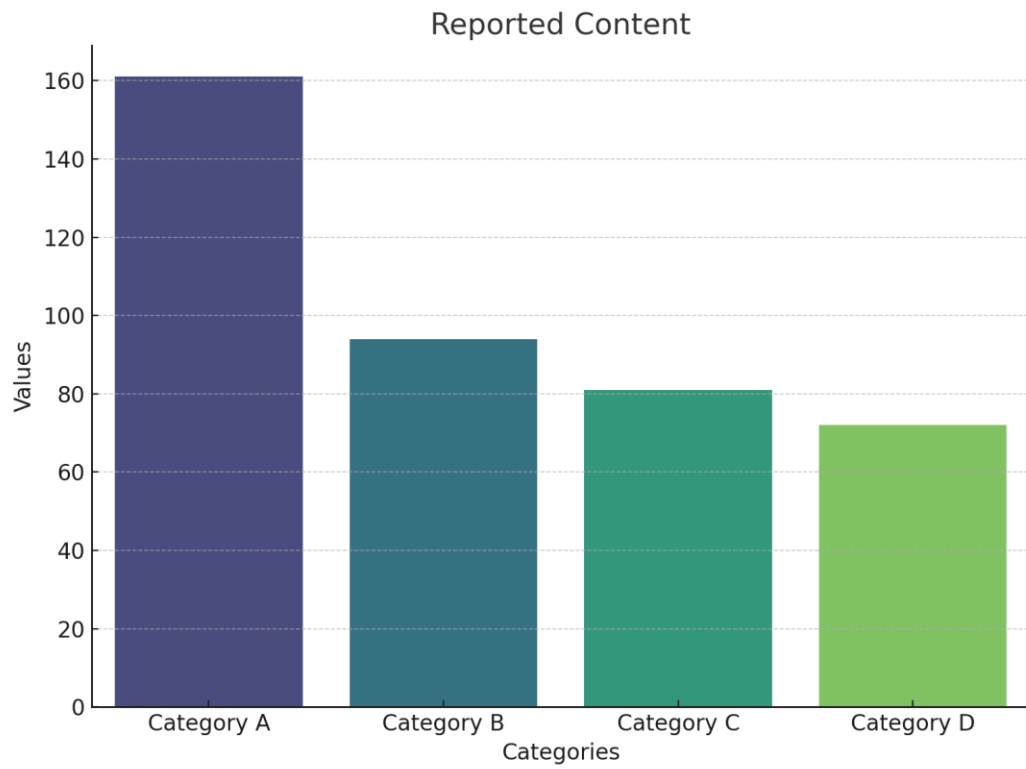
Member Join Trends

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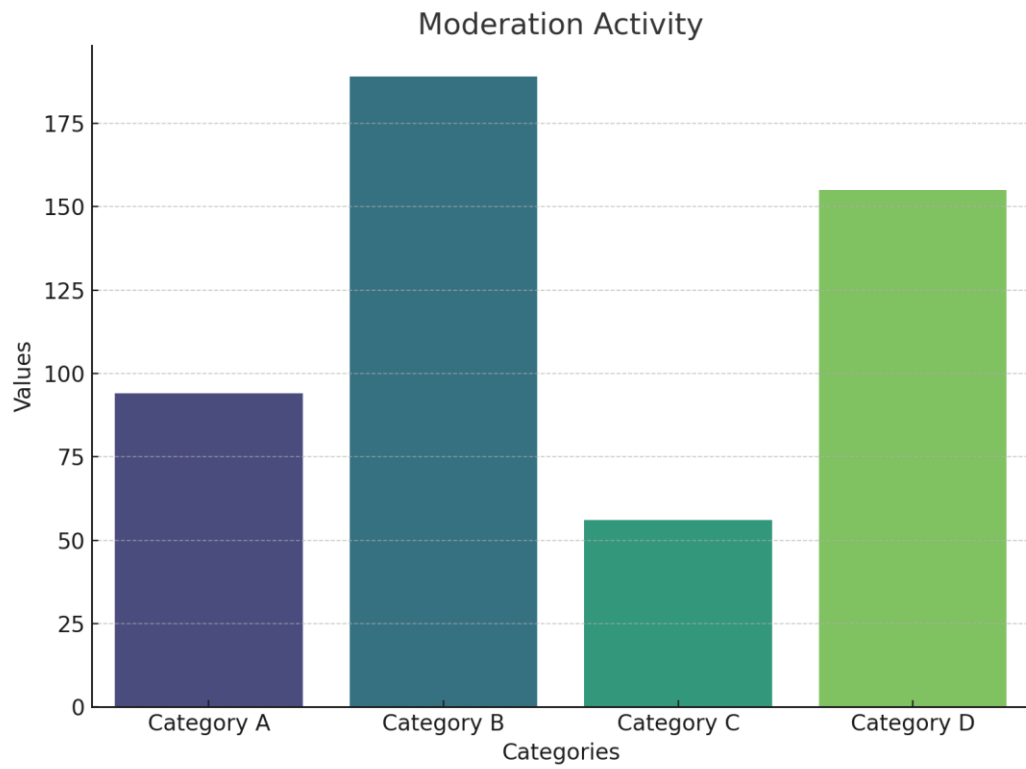
Reported Content

The visualization titled 'Reported Content' provides insights based on group data.



Moderation Activity

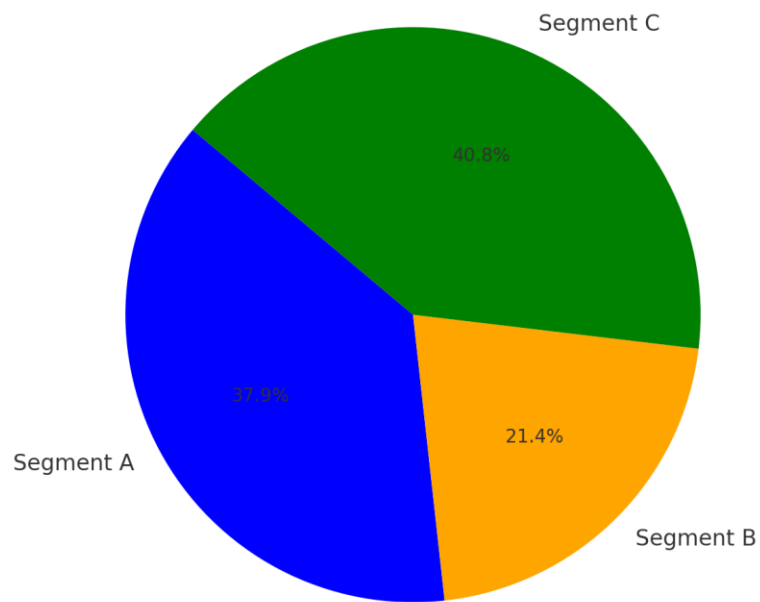
The visualization titled 'Moderation Activity' provides insights based on group data.



Message Sentiment Analysis

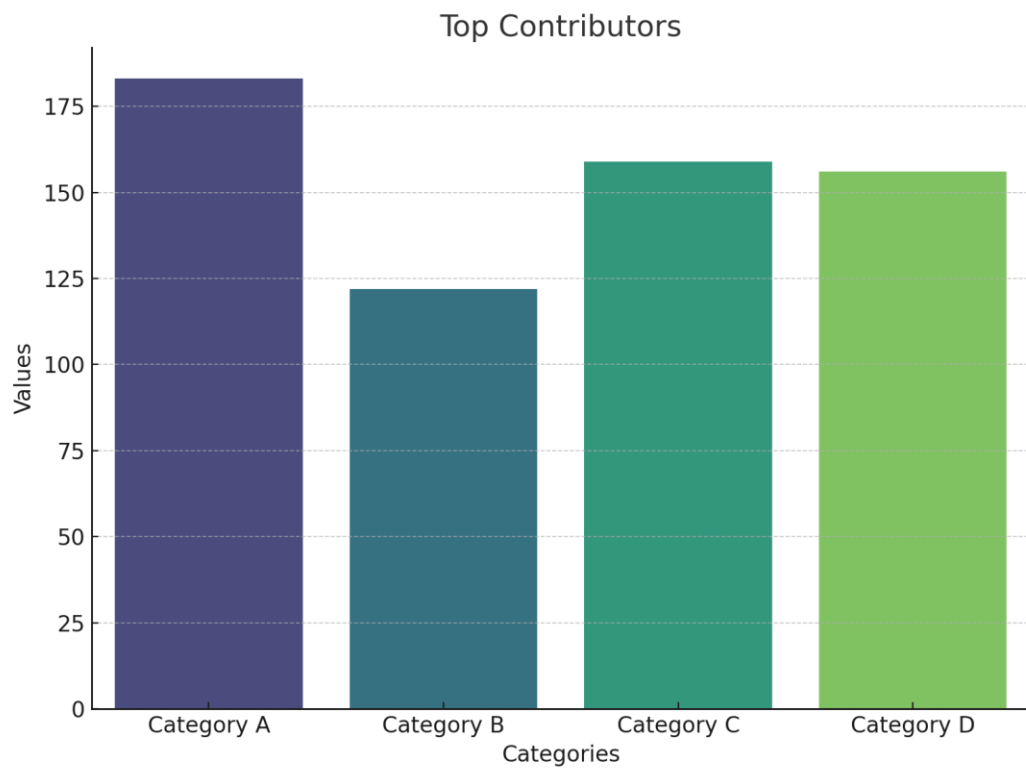
The visualization titled 'Message Sentiment Analysis' provides insights based on group data.

Message Sentiment Analysis



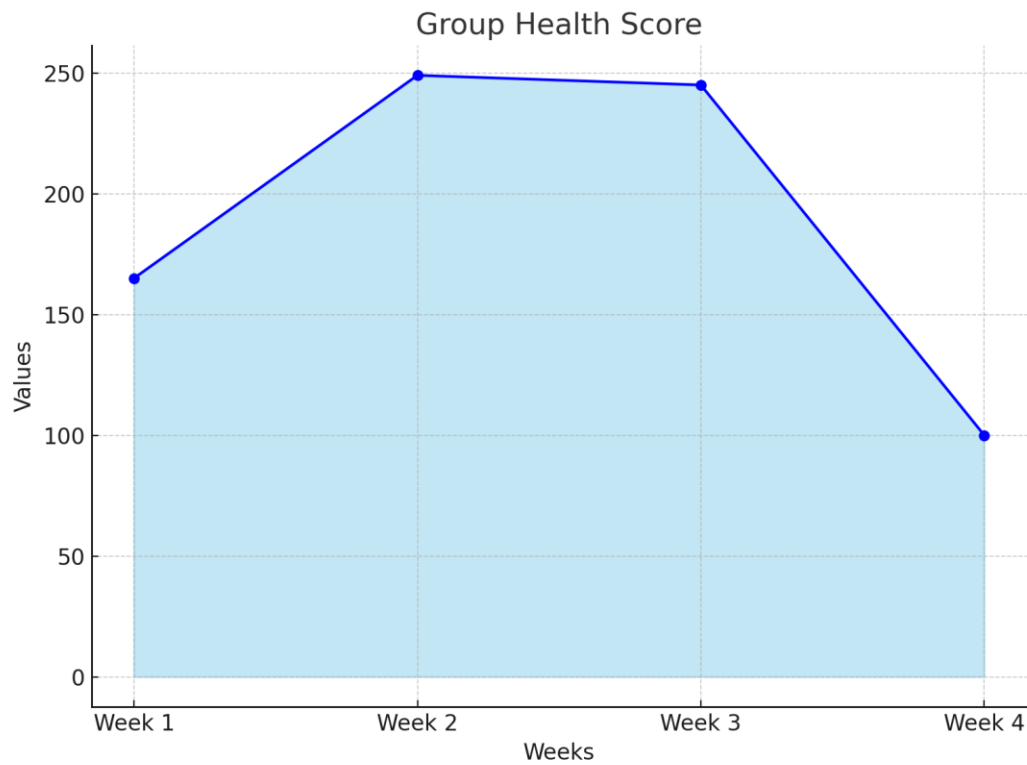
Top Contributors

The visualization titled 'Top Contributors' provides insights based on group data.



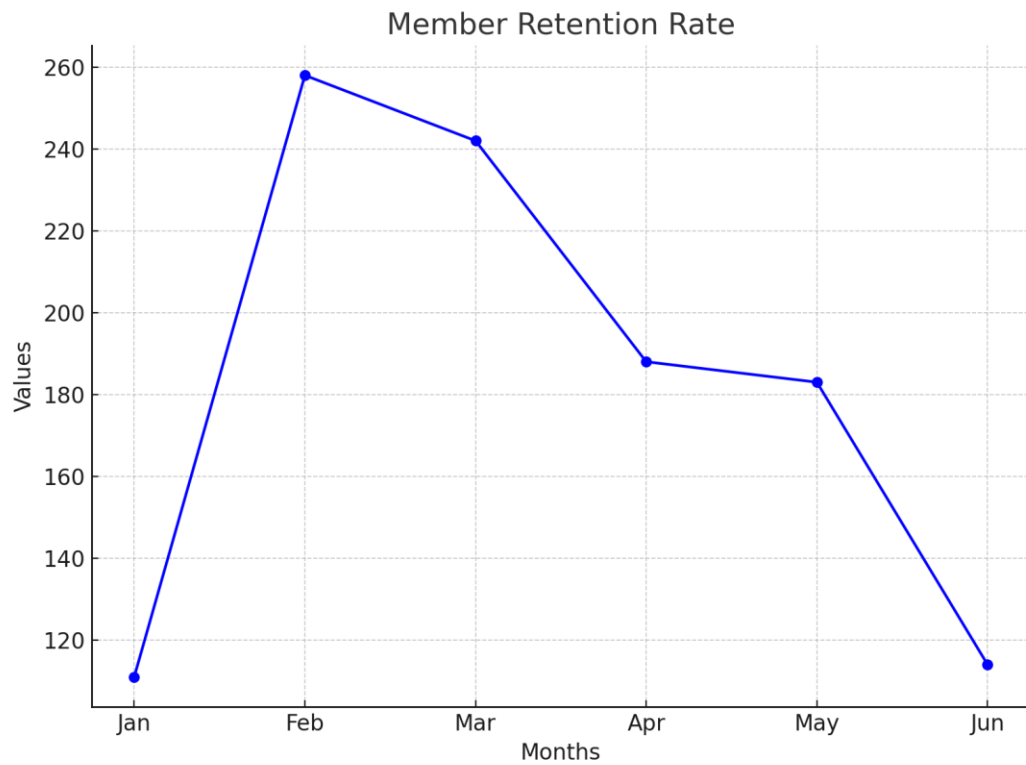
Group Health Score

The visualization titled 'Group Health Score' provides insights based on group data.



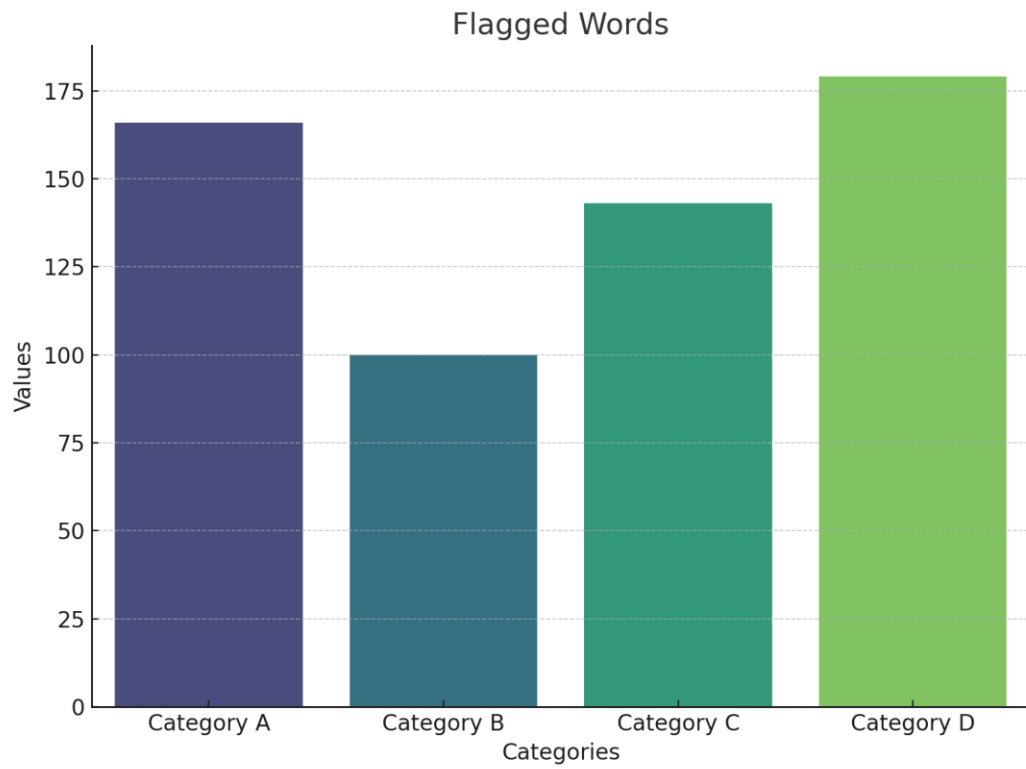
Member Retention Rate

The visualization titled 'Member Retention Rate' provides insights based on group data.



Flagged Words

The visualization titled 'Flagged Words' provides insights based on group data.



Engagement Heatmap

The visualization titled 'Engagement Heatmap' provides insights based on group data.

