GroupMe and Discord Content Analysis and Comparison Using APIs

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***Abstract*— This project will look at the speech patterns and habits between users of two of the most common chat applications at the University of Tennessee, Discord and GroupMe. Data for the project is gathered via usage of the respective APIs for both applications. By employing these APIs, one can examine not only the kind of communication that occurs but also when it occurs.**

We explore two chats within a larger group and see how the chats function in terms of discourse. Each application has professional and casual sides, but the goal is to see where the line is drawn between these two diverging purposes.

I. Introduction

GroupMe and Discord are two common social media applications that students at the University of Tennessee use to coordinate with each other. Both applications differ in their own ways, such as Discord having audio and chat channels while GroupMe emphasizes easy-to-create chat groups. GroupMe chats are typically created on a class by class basis, with clubs and organizations also having their own chats. Discord chats are usually based around an umbrella organization like the EECS department or the Esports Club, with separate chats being contained within for certain classes or groups. The goals of this project are to analyze the way students interact on each of these platforms and see how posted content differs through a variety of text analytics.

II. Background

GroupMe and Discord are both social media applications that are popular among students and organizations alike. Some organizations, like the Esports club, moved club communications from GroupMe to Discord.

A. GroupMe

GroupMe was conceived in 2010 at a hackathon in New York and released later the same year[1]. The application evolved from a simple way to create private SMS groups to full mobile app with a complementary web application and client. It has become widespread among colleges for the ability to easily create group chats for both serious discourse, such as in an officer GroupMe, or for entertainment, such as "meme" GroupMe chats. These are chats where users post funny pictures and discuss topics like TV shows, cartoons, and games for fun.

It is notable that GroupMe has built in features to facilitate the latter type of conversation; any uploaded picture can be easily "memed", or captioned in the style of popular internet memes. Pictures can also be recaptured and easily uploaded.

B. Discord

Discord was developed by Hammer & Chisel, a game development studio founded in 2012[2]. Utilizing funding obtained through YouWeb's 9+ incubator, Discord was officially released in May 2015[3]. Discord functions similar to the way an IRC chat server does. While originally intended for gamers, its consistent stream of updates and effective branding have helped it branch out into multiple communities. The application's ease of use allows users to organize large communities by creating separate chat rooms for whatever niche topic a group has an interest in. Discord has an advantage over GroupMe in that it allows voice chat, with video chat coming in the near future. The Voice-over-IP option, or VoIP, has allowed Discord to increase its user base by appealing to users of Skype.

C. Motivation

The Esports club at UTK, a competitive gaming club, was founded in 2016 after evolving from the League of Legends club, an organization devoted to playing and competing in the game of League of Legends. Originally, the club had two GroupMe chats, one for serious communication, and one for casual chats.

Since then, the club has moved to Discord for most of its communication but the GroupMe chats still exist and are still active. With the goal of looking to improve club communication, both authors, who are officers in the club, will analyze posted content in each application. Obviously, collection will only occur after member permission has been acquired.

They will look to establish metrics to qualitatively and quantitatively define the text and images posted in chat for both GroupMe and Discord. Those metrics will then be used to compare the two platforms.

III. Methods

The proposed analysis will use the following APIs to complete the project. The denoted milestones will mark project progression and represent short-term goals.

A. GroupMe API

GroupMe's API is a simple REST API. A bot or application is manually associated with a specific group, given an identifying token, and is added as a user to a given group. From there, the bot or application can post and receive messages via JSON request envelopes [4].

Beyond simple group interaction, a bot or application can create groups, message people, and view leaderboard data. Leaderboard data tracks popular messages in each group [5].

Using some existing bots provided by one of the authors, the project will seek to collect daily message data from multiple group chats affiliated with the Esports club. User ids will be discarded to preserve anonymity. The rest of the message content and metadata will be collected and stored for qualitative and quantitative analysis.

B. Discord API

Discord's API is based around two core layers, a HTTPS/REST API for general operations, and a persistent secure websocket-based connection for sending and subscribing to real-time events[6]. To create a Discord chatbot, we have to obtain a bot token. A bot token allows us to automate data collection from chat rooms. While the API lets us capture the unique user ID attached to every message, we'll be ignoring it to protect the privacy of users. We can also track the differences between admins and normal users, so we can observe how users with special privileges behave differently compared to normal users.

C. Milestones

These milestones represent major checkpoints that need to be passed in order to achieve the goals of the project. The following milestones will track the progress of the project:

1. Establish requirements on information collected (<1 week)
2. Generate a list of metrics to gauge the data (<1week).
3. Create and deploy bots to collect message data from GroupMe and Discord (4 weeks counting collection).
4. Begin processing results (2 weeks).
5. Write up a report of the results (1 week).

IV. Expected Outcomes

From our analysis, we hope to find how GroupMe and Discord users differ in the ways they communicate using the applications. Both authors have used each application extensively and expect to see differences between usage.

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