**DogEm Calling Function Research**

**What is the DogEm Calling Function?**

The DogEm calling function is an important functionality of the Dogem app which allows the user to make repeated phone calls.

**How does it work?**

The user enters a phone number or selects one from his contact list. Upon selecting the “Phone Call” button, DogEm opens their device’s default calling app and automatically displays the dialer with the selected phone number. Then, the user is required to click on the call button (which is usually green on both iOS and Android). Once they hit the “call” button in the dialer menu DogEm opened, the contacts will be called via their phone numbers for a specified interval (currently we allow 2 calls every hour). After making the initial phone call, DogEm will re-open their default calling app again and automatically fill the contact field with the phone number previously entered. More importantly, after entering the contact information then selecting the “Phone Call” button, all the users must do for repeated phone calls is repeatedly hit the call button in the dialer. DogEm will keep track of the phone call status and monitor when the phone call has been declined or answered. Therefore, the repeated messaging function will stop immediately once the ‘dogged’ contact answers to the phone call.

**Semi-Automated vs. Fully Automated:**

The biggest difficulty we faced while implementing the phone call function was related to the inability to make automated phone calls without requiring the user input. To begin with, we were able to implement this functionality using the React Native CLI with the native module called ‘react-native-immediate-phone-call’. This API allows to make automated phone calls without opening the phone’s dialer menu. However, this functionality only works on the Android platform, since iOS restricts the implementation of fully automated phone call. Since our most important requirement is having a fully functioning and cross-platform app, we decided to compensate with a semi-automated approach. The automated component is the app’s ability to repeatedly fill the contact information in the dialer menu before making the phone call, which prevents the user from selecting the desired contact multiple times. The required user interaction is hitting the call button for each phone call in the dialer menu. By choosing this approach, we save the user 1 keystroke per phone call which reduces the time required to send repeated phone calls.