SOCIAL FAMILY
Cloud Application Development: Team E

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Application URL-
Github-

1 Introduction

With the advent of internet and it's growing popularity over the last decade, children aged between 5-13 have been exposed to a plethora of messaging applications regularly. It seems that almost every week there is a new app or website that kids are using to IM (instant message) each other and it can be hard to keep up for parents. [1] It is really important for the parents to know how these applications work, and how old their child should be, to be able to use them, to help avoid *cyberbullying* or *sexting*. We, as a group of 7 people, have come up with an application designed for kids to communicate using messages, with an added advantage of parental guidance.

2 Prototype functionality

The Social Family app is designed for parents to be able to add another child's contact, and thus authorize the communication between their child and this added contact. When a child comes up with a contact name/ID to be added to his friend list, the request has to go through the Parent. In this way, the parent is aware of who their child is making friends, or having a conversation with. The application functionality is summarized in the following steps:

1. In the first step, when a Parent tries to load the application, they would be redirected to the Google login page, as this app uses the Google login authentication.

2. For the first login, Registration is required. For this, the user is asked to create a 4-digit PIN. This would serve as an identification for the following sessions.

3. The parent, once successfully logged in, would now be able to log in on the child's device, and search for the child's friend ID.

4. Once the parent adds a friend to the child's contact, the child will now be authorized to have a chat session with the friend. The child is not authorized to add new contacts on his own. Parental authentication is a must for this.

5. To send/receive messages, **Twilio** SDK packages are used. Twilio enables the parent to track their child's conversations by keeping the HTTP cookies saved. This way, the parent would be able to monitor the content of the messages as well.

3 TOOLS AND TECHNIQUE

3.1 Tools

- GAE for platform hosting
- Mongo/Datastore for database
- Google authentication, means one less pass word for the user to remember
- Twilio - a hosted third part chat service, manages chat channels and chat history
- IBM Watson - a hosted third part natural language processing for sentiment analysis on messages to enable automatic parental alerts for concerning messages
- React - client side GUI toolkit
- Webpacks - packaging of javascript client
- python unittest - unit tests for server side rest API
- flask - python applicaction framework
- Bable - platform portability, support for older browsers
- jinja2 - html templating framework

3.2 Development techniques

- Github for source code management using feature branching
- Mandatory code reviews for merges to master via pull request approvals
- Trello board and agile development approach.
- Google Docs for Document sharing
- Jetbrains Pycharm,Microsoft code,Notepad++ as text editors
- We used a code review process before features were merged into the master branch or made live. This helped us discover bugs before they became a big problem and highlighted areas where code could be made more efficient. We also setup the repository so that anyone submitting a pull request could not review or merge it,which prevented unchecked code entering the main branch.

4 Relevant Statistics

Total commits to master-142

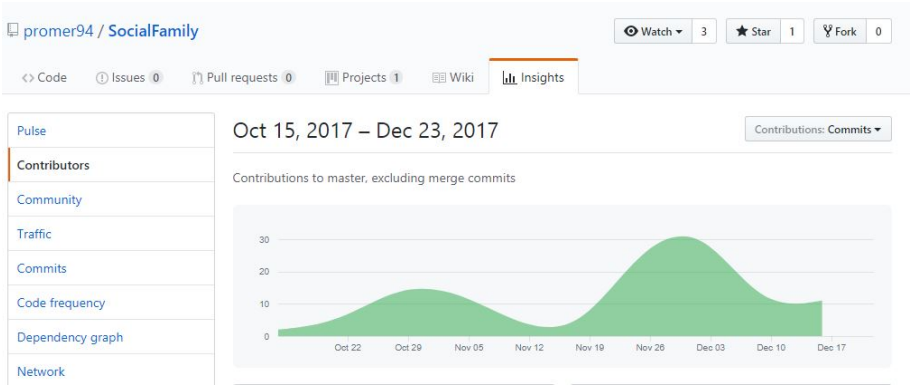

Figure 1: Total number of commits over a period of time

Total lines of code-
Total number of spaces-
Total number of comments-

5 Design and Implementation

There are four pages in our app.They are

- Index:The index page describes the service that the app provides.The basic features of the app.
- Signin:The signin page of the app allows users to signin using google credentials.
- Register:The register page allows the user to create an account in our app and set a lock pin . Lock/unlock is only set by parents and child users have not access to this functionality
- Home: This is the main app page with contacts and chat window

6 Critical Evaluation

As described in the previous sections,we have used mordern and design patterns to keep our code clean,maintainable and testable.Our architecture is aimed to be very scalable as it should be for any cloud application.
We have also done a lot of background research and market analysis to find out what exactly we want to build and why. We found that although there are a lot of similar apps in the market,none of them serves the same purpose as ours.Here is a list of apps that we found

- Monster messenger:
  URL-https://monster-messenger.com/
  Available platform-ios,android
  Target Audience-under 13
  Not supported on Amazon kindle,No sentimental analysis

- Roo kids:
  URL-http://www.rookidsapp.com/
  Available platform-ios, android ,amazon kindle
  No specific target audience No sentimental analysis

- MMguardian:
  URL-http://www.mmguardian.com/welcome-to-messenger-kids/
  Available platform-android iphone
  No specific target audience

- Facebook messenger kids:
  URL-https://www.wired.com/story/facebook-for-6-year-olds-welcome-to-messenger-kids/
  Available platform-ios, android ,amazon kindle
  Target Audience-Target Audience-under 13 No sentimental analysis

What makes us unique is that we have an app which targets pre teens(4-13) which supports all the platforms, especially amazon kindle with sentimental analysis.

7 Conclusion

References