



Greek Life Member Management System

09.21.2018

Software Engineering 1 - Group 9

Jason Pulis, Christopher Whetsel, Mike Winkelmann

File Repository - <https://github.com/mawinkelmann/databaseUpgradeSEGroup9>

Development Server - <http://glmms.online>

Client Server - <http://spdmizzou.com>

Development Blog - <https://glmms.home.blog>

Team Profile

Jason Pulis: I am a senior Information Technology major focusing in web development.

My strengths are in HTML, PHP, CSS, SQL, and the Angular framework. I have experience in C, C++, Java, and a very light amount of Python. My previous experience is mostly front end, however I have done backend work with good success. My skills in version control are still being refined, but I do a fairly good job of keeping up with my work. My organization style is fairly rigid. If I don't stick to a set way of organization, I tend to get more and more disorganized. My workflow is fairly easy to understand; I like having a clear goal, succeed in reaching the goal, and set a new goal.

Christopher Whetsel: I am a senior Computer Science major. My strengths include algorithm development, database design, customer relations, and organization. I have experience working with Python, C, PHP, Java, some Javascript and Bootstrap. I used Python extensively during my co-op and have taken several courses on algorithm design and efficiency. I have also designed multiple databases for courses, internships, and side projects. I have strong time management skills and a drive to succeed which will help our group to achieve its project goals. My weaknesses which may cause problems during the project are poor UI design skills and time constraints from other commitments. I am also a member and former webmaster of the Sigma Phi Delta Engineering Fraternity and have connections in other fraternities and sororities. I served on the Executive Board when the idea for the member information database was conceived and saw its first implementation fail.

Mike Winkelmann: I am a senior Computer Science major, focusing on mathematical modeling and algorithm design. My background consists of work in languages like C, C++, C#, Java and Javascript. I have done full stack development, using AWS and MySQL functionality in app design. I am very familiar with Git and its functionalities as a version control program because of my work at my internship during the school year. I also have experience in UI design, although it is not my favorite work, I am experienced at it and can make something that is aesthetically pleasing and functional for the user. My strengths are tenacity and time-management skills. My weaknesses are that I do many extracurriculars outside of my major and I am sometimes hard to get a hold of. I am also a member of the Sigma Phi Delta Engineering Fraternity and am currently the secretary of the Executive Board, so I know the issues that they are facing.

Project Description

Problem Diagnosis

One of the problems that the engineering fraternity Sigma Phi Delta is facing is the inability to effectively communicate events, knowledge and other pertinent information to the members of the group. This is brought about by the extensive list of applications that are designed to bring groups to a common line of communication. The customer is currently using a hybrid of communication networks such as Slack, GroupMe, email and OrgSync. As a result, the members and officers in the organization are frustrated by the constant application hopping, inconsistent notifications for events and the lack of carry-over from each application. Meeting with the Executive Board about their issues, we have also found out that many of the members have turned off the notifications from the chat because of the spam that comes from the communication overload. The executive board of Sigma Phi Delta has asked us to provide them with a centralized location for member information and communication.

Another issue that the customer is facing is a jumbled mess of documents, by-laws and bills that stream through emails and get put into a cluttered Google Drive. Unless a member of the fraternity plays a large role in the upkeep and development of the documents that are used every week, there is no reason for them to look at them. That being said, when a member does need to reference a by-law or lookup formatting for a bill, the Google Drive becomes a maze of folders - leading to dead-ends, out of date files and duplicates. Because of this, some variety of search function and organization needs to be implemented to help the less tech-savvy people in the organization.

For the executive board and other decision makers in the fraternity to be successful they need to be able to access information about the members they are leading. Currently, when information is needed, the member seeking it needs to search through the fraternity Google Drive for it, if it even exists. If that information cannot be found, they resort to polling the group message and hoping all necessary members will respond with their information. This is inefficient and often inaccurate, costing time and delaying meaningful work that requires these answers.

Last year, an attempt was made by members of the Sigma Phi Delta to implement a member information system. While the design of the database itself was good, the implementation of the web interface and small set of features offered made sure that it quickly failed. It has since fallen out of use and never fulfilled its goals. Its interface was confusing and difficult to navigate, providing little instruction on how to use the system. The database also never held information for all members, so using it did not provide valuable information.

Clearly, the customer is facing many issues regarding management of information, documents, and communication that frustrates the members of its organization, costs decision makers time, and could lead to inaccurate action to be taken.

Solution

To solve the problems described in the above section, we propose a Greek Life Member Management System, which will build upon the existing member information database that Sigma Phi Delta previously attempted to implement. Lack of interest because of unfinished features and an unpolished user experience were major drawbacks of the previous solution. So much so, that it has been abandoned as a solution to their problems. Our solution will be more user friendly and provide new features which will make it more appealing for general members and decision makers in the organization alike. The main benefit of the system to users will be a centralized and searchable location accessible to all members for information regarding organization personnel, announcements, events, and documents. We will also be rewriting the code base in Python for the existing features that will be migrated to improve code design and maintainability.

Our solution has several goals to improve fraternity communication and information management. One goal in creating this system is to provide valuable and accurate information for the leaders of the fraternity as they make decisions impacting all members. The solution must also be easy to use and should save members time and hassle when they are trying to compile information. The information must be gatherable by the members without having to reach out to each member individually or through a group message. The system should also provide a way to coordinate members for events and will provide an organized archive for past chapter documents. Our solution will also make it simple to find important announcements for the chapter and will allow urgent messages to be sent out by text to all members. Finally, the solution must be secure and only accessible to members of the hosting organization.

This project hopes to satisfy the requirements for what a Greek Life chapter needs to function as one cohesive unit. The better we implement features that are easy to learn and maintain, the better the organization will survive in the long run because they will be able to manage and learn from their information. Each member must be able to pick-up the programs that we create and intuitively solve whatever they seek to accomplish. As an end goal, this could be used for any Greek Life organization. One of the things that this relies on is member participation in the system, because if they do not consistently use this as their form of communication and keep their information up to date, they will not be able to benefit from this system.

Examples of the solution at work:

1. When ordering shirts for an event, a full list of up to date fraternity shirt sizes can be gathered by making a simple query on the web application instead of asking each member to enter it into a google sheet.
2. A full list of graduating members, members who are active or inactive can be obtained quickly at any time - instead of polling a group message and waiting for a response.
3. Fraternity Family lineages can be traced and represented graphically. Currently most people do not know above one generation in their fraternity family tree.
4. When planning an Adopt-A-Spot outing, the philanthropy chair can create an event on the web application. Members can then RSVP and receive reminders about those events instead of liking a message in GroupMe to say they are coming which could be missed or forgotten about.
5. The re-envisioned UI for the web application will be easier to use and users will not be intimidated and confused, which contributed to the failure of the previous solution.
6. When searching for an old announcement about the location of this week's Chapter meeting, a member can go to the announcements feed and filter on the chapter topic.
7. An urgent announcement about a change of location for an event can be sent out from the website as a text to all members to insure that they will see it.

System Features Will Include:

1. Secure login over https
2. Forgot Password emails
3. Different levels of access for certain users (i.e. admin or executive member)
4. A filterable announcements feed with topics.
5. Send urgent announcements via text message to all active members.
6. Searchable Member information database with the ability to generate spreadsheets from a query.
7. Ability for each member to update and view their information on the system.
8. Generate a graphical fraternity family tree
9. Position election voting polls.
10. Organised File archive.
11. Create an event that users can RSVP to and the event creator can send email reminders to the RSVP-ed users.
12. Administrators can change member information and add new members.
13. Members who have a position will be able to access transition material and the description of their position responsibilities.
14. Be able to display member and alumni employment information and position history.
15. The system will be able to send initial and periodic reminders for users to update their information.

Plan Of Work

Each member of our team will be assigned functional features that they are responsible for developing as listed below. Responsibilities will be divided so that the overall difficulty of the assigned features is equivalent for each team member. Consideration will also be made to each team member's strengths and interests, but will not be the only deciding factor. Each member will manage their code using the github repository. Group communication will be done using GroupMe and meeting times will be decided by when2meet to assess the best time for the group meetings. In the weekly meetings, each group member will provide an update on their assigned tasks, including any difficulties keeping them from completing their tasks for the week and projected completion dates. During the meetings, tasks will be assigned to be completed by the next meeting and progress on course deadlines will be assessed. Meetings will be conducted according to the meeting agenda document and recorded by Christopher Whetsel. An archive of the meeting agendas will be kept on the blog and the github. During the next week we plan to meet with the executive board of Sigma Phi Delta to get their requirements for the system if they differ from our proposed system functionality. In the near future we will assess what functionality can be converted from the previous failed member database. Since the database is the heart and soul of this project, we will also examine the database schema to ensure its proper design and decide where additions will need to be made to support the new functionality.

We believe our group is well equipped to tackle this problem. Our group has the skills in database design, both front and backend web development, and customer relations to make this system work. Jason has extensive experience working with front end design using AngularJS, Mike has experience with full stack development and algorithm design. Christopher has the organization skills and drive to keep the team on track as well as experience in testing and requirements. Mike and Christopher have also been members of the Sigma Phi Delta for several years, so they intimately know the problem. Our skills sets overlap to cover all areas required by this project.

Jason Pulis will own the features to allow sending urgent announcements as text messages, to facilitate secure login and user access to features, and to create the announcement feed. Jason will be in charge of managing the project website and blog. He will also get a https certificate for the client and development server.

Christopher Whetsel will own the features to generate a graphical fraternity family tree, to allow users to search the database and generate spreadsheets, to create and manage events, to provide voting polls for fraternity elections. Christopher will also work on the Documentation of how to set up the project for other Greek Organisations.

Mike Winkelmann will own the features to have an organized file archive, to add and edit information to the database from the web interface, to allow fraternity position holders to



view documents related to their position. Mike will also work on creating a UI theme for the website.