Team #13:
Tanner Cronister 2824098,
Surabhi Khachar 2879481,
Annika Kuhnke 2866136,
Jacob Marshall 2876707,
Clare Meyer 2873337

**Project Name:** HandsIn

**Project Synopsis**:

A cohesive, centralized hub for volunteers and volunteer organizations that provides a variety of features to streamline and simplify the entire volunteering process.

**Project Description:**

HandsIn is a web application that will simplify and streamline the process of volunteering and community service for all parties involved. Currently, there is not any easy, centralized method to sign up to do volunteer work in communities. Websites tackling this problem are generally much more complicated than they should be. To fix this, HandsIn will provide a simple application that volunteers and volunteer seekers can log on to for either signing up for events, or posting volunteer opportunities. The application will have features that allow applicants and event organizers to be rated, so the public can view an individual's or organization's reputability. It will also let volunteers fill out forms that are often needed for community service to prevent having to fill them out more than once. Volunteers will be able to track their hours, and will be recommended on an ongoing basis more opportunities based on their past work in their area. Organizations will have to be verified to be able to post opportunities. The goal of this application is to centralize community service information in one application that is easily accessible and usable for all parties involved.

**Project Milestones:**

Semester 1
1) Talk to volunteer and campus organizations to determine interest around the Lawrence area [November 1]
2) Meet with businesses which are interested to determine specific needs to be accommodated [November 15]
3) Completion of fully articulated design layout [November 22]
4) Complete setup of database and information parsing modules for the application [December 13]

Semester 2
1) Full integration of front end and back end [February 28th]
2) Theme and complete layout of UI [March 5th]
3) Functionality in the UI [March 20th]

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4) Full prototype up and running [April 6th]
5) Testing of the application in house and live run of the application by a business [April 17]
6) Talk to UDK and other news agencies to disseminate introductory information about the application to potential users [April 24]
7) Generate concluding Design Document, Video, and Quad Chart ahead of final turn in [May 1]

**Project Budget:**

Database Hosting: Amazon DynamoDB $0 (Free tier would probably be sufficient but we can expand to paid tiers if necessary)

Web Hosting: $0 (Can upgrade from free hosting platform if necessary)

**Work Plan:**

- Pre-Design Research (Legal requirements, community need, etc.)
  - All
- Front-End
  - Surabhi/Clare/Tanner
- Back-End
  - Jacob
- Database
  - Annika
- UI/UX
  - Surabhi/Clare
- Partner Communications
  - Tanner/Clare

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## Gantt Chart:

| | | A - Annika | C - Clare | | | |
|---|---|---|---|---|---|---|
| | | J - Jacob | T - Tanner | | | |
| | | S - Surabhi | | | | |

| TASK NAME | DURATION (WEEKS) | OWNER | PERCENT COMPLETE | SEMESTER 1 | | | | SEMESTER 2 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | October | November | December | | January | Febuary | March | April | May |
| | | | | 4 | 1 2 3 4 | 1 2 3 4 | | 1 2 3 4 | 1 2 3 4 | 1 2 3 4 | 1 2 3 4 | 1 2 3 4 |
| Initial Project Defn. | | | | | | | | | | | |
| Research | 1 | All | 100 | | | | | | | | |
| Contact Companies | 1 | All | 50 | | | | | | | | |
| Dertermine Scope | 1 | All | 100 | | | | | | | | |
| Technical Proj. Defn. | | | | | | | | | | | |
| Determine Features | 1 | All | 100 | | | | | | | | |
| Design Layout | 2 | All | 100 | | | | | | | | |
| Identify Resources | 1 | All | 100 | | | | | | | | |
| InitialBuild | | | | | | | | | | | |
| combine front and back | 5 | All | 30 | | | | | | | | |
| Set up database | 7 | J, T, A | 60 | | | | | | | | |
| Connect outside features | 5 | All | 0 | | | | | | | | |
| Development | | | | | | | | | | | |
| UI Theme and layout | 2 | S, C | 10 | | | | | | | | |
| UI Functionality | 3 | S, C | 0 | | | | | | | | |
| Full Prototype | 3 | All | 25 | | | | | | | | |
| Deploy/Test | | | | | | | | | | | |
| Test/Deploy | 4 | All | 0 | | | | | | | | |
| Finishing Touches | 4 | All | 0 | | | | | | | | |

## Ethical Issues:

Due to the nature of our application, it must gather a bit of user data, including first/last names and contact information. We will have to ensure that this data will not be accessed or utilized except when necessary for the purposes of our application. We must also establish a secure server or database on which this information will be stored, so as to prevent an unauthorized third party from gaining access to sensitive data. It may also be important to relay this information to the end-users to explain exactly how their information will be used and stored. One option may be to establish an official Privacy Notice to be given to the users upon account creation. This will ensure that they know how we intend to use their information and, by accepting it, give us their consent to do so.

While this application is intended to be wholesome in nature, we must consider the possibility of it being used for any sort of nefarious purpose. In addition, depending on which organizations decide to use this app, some community service opportunities may be more sensitive than others. Examples may include working with children, elderly, or disabled members of our community. For these opportunities in particular, there will need to be some sort of vetting process to eliminate the possibility of selecting an individual not authorized to work in these situations. Another important aspect to consider is the vetting of organizations themselves. If we allow just

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anyone to post service opportunities, then we greatly increase the chances of posting a fake service opportunity that could put volunteers in threatening or dangerous situations. These possibilities considered, we must do our best to develop this application in a way that will best keep its users safe.

**Intellectual Property Issues:**

Although there are already websites and platforms in existence for what we are trying to do, they do not tackle many large issues. This is the reason there is not any intellectual property issues with what we want to build. We do not plan on using any one else's existing algorithms or code. This saves us from many issues regarding this. There is a possibility that we may want to apply for a patent depending on the outcome of our platform. We do have a unique outlook on this issue being college students. We do plan on using open source software in terms of languages and compilers. This is an unsponsored project and therefore we should be the owners of all that we create.

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**Preliminary Project Design:**

How the Software Works: The first chart here (Figure 1, volunteer flow chart) describes how the project will work from a potential or current volunteer's perspective. The volunteer and the organizer will both enter the same dashboard in the application. For the volunteer option, they basically can go two different routes; the first route is making changes to their profile or add reviews and ratings for their volunteer history, the second route is the route of signing up to volunteer somewhere.

From this preliminary dashboard, if the user chooses to make changes to their profile they will be taken to their specific profile after logging in. The user will have a lot of basic information on their profile like name, age, birthday, etc that they can change. They will also have a photo associated with their profile. Users will be able to view their specific volunteer history after logging in. Volunteer history will show all the places that they have volunteered with in the past, along with the hour log. Once they complete volunteer assignments, they can go back in their profile and add reviews and ratings for those places (only after the service has been completed). The user themselves will also see their own rating and reviews on their profile page. Users will also be able to add forms as PDF files to have stored on their profile for organizers to view. At any point, the user should be able to return to the main dashboard.

The second route that a potential/current volunteer can go through is signing up to volunteer somewhere. When they choose this route, they can either sign up by filtering options themselves and looking at events happening in their area by this filter, or they can view the recommended options that will be provided by the application. The filters will be things like distance, time commitment, type of work, etc. The recommendations will be powered by some data science or ML algorithm, most likely some vector analysis to find what is most closely related to the user's past experience or expressed interests. Once they have chosen an event, they confirm and then are taken to a confirmation page with the details of everything that they just chose. From here, they can return to the main dashboard. Users are able to sign up for multiple events. The events that they have upcoming will show up in their user profile.

Both processes should be relatively simple and self explanatory for the user, since this is the overarching goal of the whole application.

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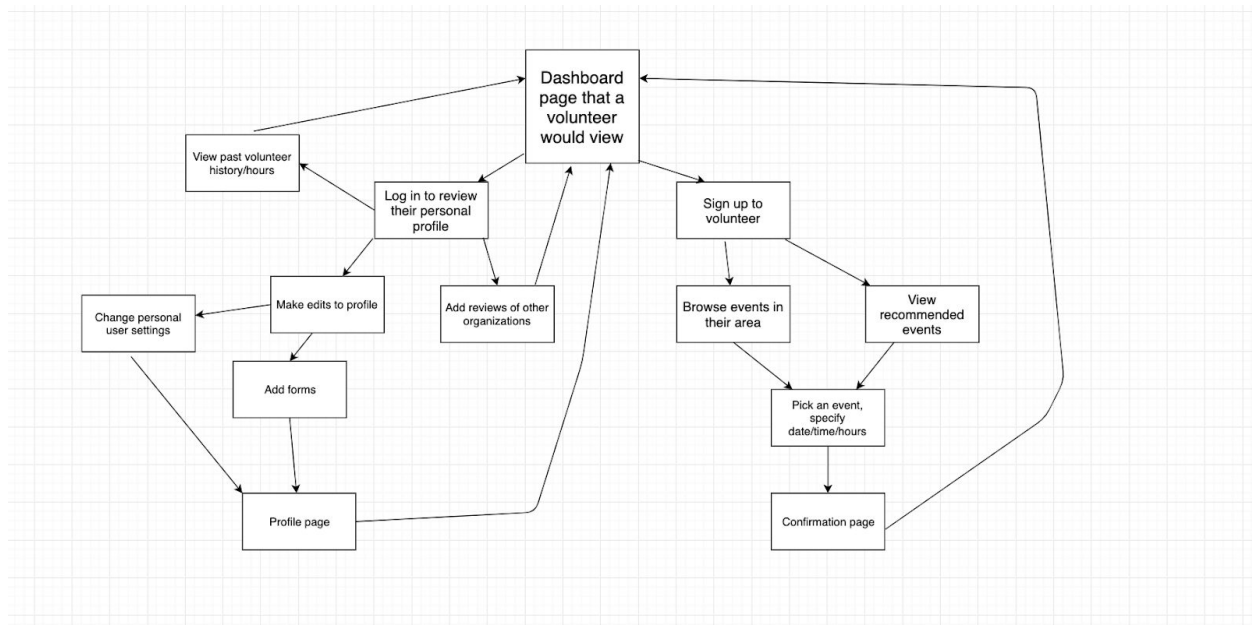Jacob Marshall 2876707,
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Figure 1 - Volunteer Flowchart

The organization side of the application is designed for any approved organization to post volunteer opportunities and/or donation requests. The user will start by creating an account, which will contain general information about the organization to be displayed when the account is approved. Upon creating the account, it will remain private until it is either approved or denied by the application.

If approved, then the user will be presented with a homepage upon logging in to their account. This homepage will display all current posts made by their organization, as well as options to view these posts and create new ones. There will also be an option here for the organization to change information on their profile, such as the name, description, or possibly a profile picture or logo. If they would like to make a post, then they must simply designate whether it is a request for volunteers or a request for donations. An additional dialog will appear, depending on which option they select, to obtain more information about the request. This information will contain descriptions of the event and, if it is a request for volunteers, the estimated amount of time it will take to complete and how many volunteers would be desired.

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Once the information has been filled out, the post will be created and displayed to all Volunteer users on the app.

The posts that are displayed on the organization homepage will be determined by whether or not they have been marked as "Complete". A post will be marked as complete after the date listed on the post has passed and the organization has confirmed that the volunteers listed on the post all attended the event. To access this, the user can simply select a post from their homepage, where they will then be presented with options to cancel or manage the post. At this screen, the number of users signed up for the event will be listed, as well as links to each of their profiles. By viewing the profiles, the organization will be able to see their "rating" as a volunteer, as well as general demographic information. If they choose to manage the post, then they will be able to change information about the request if the post is still active (i.e. if the end date has not yet passed). However, if the post is no longer active and the post was a request for volunteers, then managing the post will consist of confirming the volunteers for that event. The organization will also have the option to "rate" their volunteers, which will affect their overall rating as a volunteer, which will be viewable when an organization selects a volunteer that signed up for one of their events.

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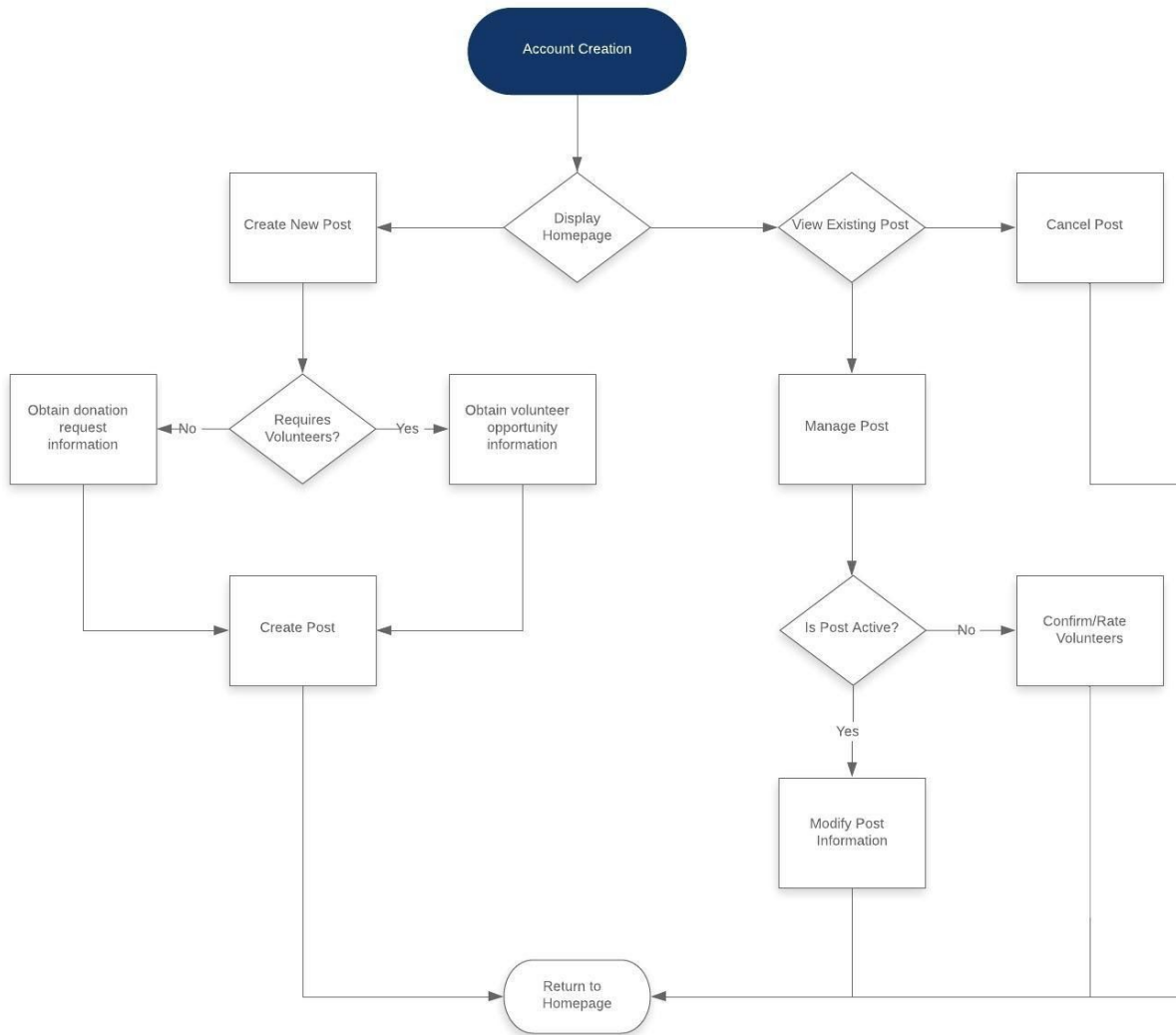Jacob Marshall 2876707,
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Figure 2 - Organization Flowchart

The main idea behind this application is to connect individuals that want to help and volunteer in their community and organizations that need volunteers. We want this application to be utilized on the web while also looking nice on a mobile phone so that a variety of features are able to be added. This includes a geolocation feature to check in and out of events and keep track of hours served. The whole idea is to make this process as simple as possible for both the user

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and the organization so that more hours are able to be served and less are spent figuring out the logistics of events that need volunteers.
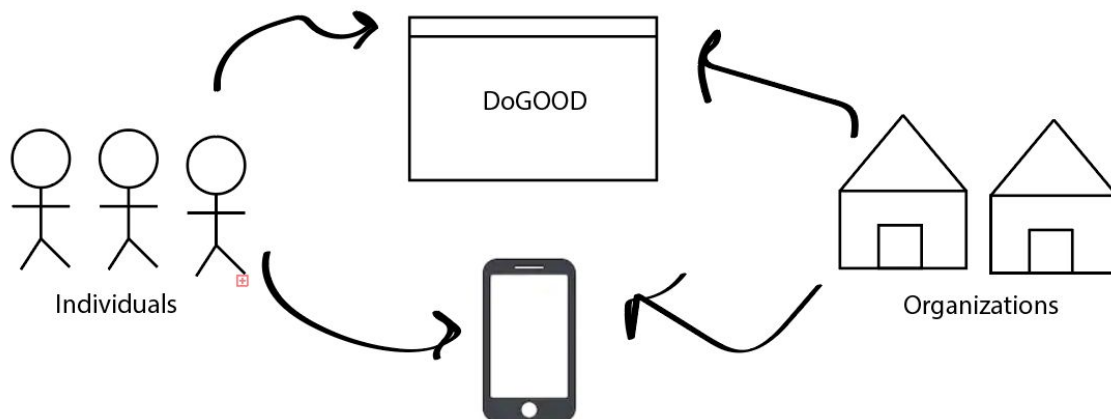


**Design Constraints:**

Technical Constraints:

    Programming Languages:

- Front-End: NextJs which is a framework for React (HTML/JavaScript/CSS)
- Back-End: ExpressJs
- DB: MySQL through AWS

    Platforms Supported:

- Google Chrome, Mozilla Firefox, Safari, support for both mobile and web browsing

    Libraries/Frameworks:

- Front-End: Material UI, NextJs, Google Maps/Calendar API
- Back-End: ExpressJs, AWS

    Business Constraints:

        Schedule:

- Prototype Date: April 6, 2020
- Final Delivery Date: April 22, 2020

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Budget: should not exceed $100 total expenses, this should be more than enough to cover costs associated with web hosting, database hosting, domain name and other miscellaneous fees

Team Composition: All members of Project Group #13 should be involved in the development of this project (see Gantt chart)

Software Licensing: All software used will be open source and guidelines for utilizing open source software will be strictly adhered to

**Change Log:**
- We made a minor change in the selection of the framework we are using for the front end. We are now using Next.js as opposed to React.js because of the functionality when changing between pages.
- We also changed the backend framework from sails to express.js because of the ease of use. Sails was turning out to be unnecessarily difficult and express.js has been much easier to integrate.
- We took out the cost of a domain name because we were informed that this is not something the school will pay for. We instead are going to host the application locally.
- We added material-UI as a library for our UI/UX design because it is nice to incorporate with Next.js and has great visually appealing options.
- Updated Gantt Chart with new dates, categories, and percent completions.

Semester 1 Changes:
- The project name was changed from the Initial Project Description to expand the branding of the application in conjunction with the change of the project scope.
- The project synopsis was changed from the Initial Project Description to accommodate the change in scope of the project.
- The project description was changed from the Initial Project Description to accommodate the expanded problem the project is addressing.
- Two project milestones were changed from the Initial Project Description to reflect the change to organizations that the application is targeting.

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- The project budget was changed to reflect the change from a mobile application to a web based application.