Lab 1 – Helping Hands Product Description

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Table of Contents

1. Introduction .................................................................................................................. 3
2. Helping Hands Product Description ........................................................................ 4
   2.1 Key Product Features and Capabilities ............................................................... 4
   2.2 Major Components (Hardware/Software) ............................................................ 6
3. Identification of Case Study ....................................................................................... 6
4. Helping Hands Product Prototype Description ....................................................... 
   4.1 Prototype Architecture (Hardware/Software) ...................................................... 
   4.2 Prototype Features and Capabilities .................................................................. 
   4.3 Prototype Development Challenges .................................................................... 
5. Glossary .....................................................................................................................
6. References .................................................................................................................

List of Figures

Figure 1: Helping Hands Major Functional Component Diagram .................................
1. Introduction

It is increasingly obvious that there is a population of people that are not getting the help that they need. There are large government organizations that exist for the sole purpose of providing these at-risk individuals with the resources that they need. Aside from the large government associated services, there are several smaller local organizations that want to help out those in need who in their area. We are fortunate that there are organizations and individuals who are capable and willing to help out those who may be experiencing bad situations, whether it is a single incident or a long term situation. However, there are many individuals who are in need of additional help and are not receiving help from any of the available resources around them. It is possible that these at-risk individuals may not be aware that some of these services exist but even if someone knows that a service exists, it can be difficult to find accurate and up to date information regarding these services.

When someone searches for services in their local area, they can easily be overwhelmed by a large amount of irrelevant resources making it difficult to find any information about the specific service that they are in need of. Even if someone is able to find information on a service that they are looking for, this information may be not always be accurate. A service that distributes food to those in need may have hours posted online, but if they reach capacity for the day those hours online often do not reflect that. An individual may see online that a service is open and make arrangements to travel to the location, just to be turned away when they get there.

For many reasons, it is almost impossible to measure the amount of people that are currently not receiving the appropriate help that they need which was confirmed in a study done by the Department of Housing and Urban Development (U.S. Department of Housing and Urban). There are individuals who may be transient or experiencing homelessness and that population is not always accurately represented in many of these types of surveys. There exists a disconnect between the people that need resources and those that are looking to provide others with resources.
A solution to this problem would be something to provide this needed connection between the at-risk individuals and those who are trying to help. If the people looking for help had a single service that could provide them relevant resources that was accurate and up to date, then it would be easier to locate and receive the services that they need the most. This ease of availability can improve access to vital resources to provide life changing help to those that need it.

Helping Hands will be a single easy to use platform that will provide accurate and up to date information to users based on the answers to questions about the specific services that they are seeking. Helping Hands will feature forums where users can discuss local services and their availability in real time to ensure the most accurate information for those seeking resources. People who want to volunteer at local organizations will be able to find resources that will direct them to organizations in their area that need more volunteers. The site will provide organizations with templates to fill out so the information is standardized and easy for them to keep up to date with minimal effort. It is these features that will allow Helping Hands to efficiently connect at-risk individuals with the services that they need the most.

2. Helping Hands Product Description

Helping Hands aims to simplify the process of connections at-risk individuals with the services that they need. This will be done by helping both sides of the equation. Users seeking help will be provided relevant, accurate, and up to date information so that they can get the help they need. Organizations will have an interface to provide information on their services as they change and individuals will be able to find information about organizations that require their help.

2.1 Key Product Features and Capabilities

Helping Hands will offer separate user interfaces based on the user’s role. For those seeking help, there will be a guided series of questions to narrow down the specific services that the person is in need of. The answers to these questions will be used to provide the user with the most
relevant information and not overwhelm them with information about services which they do not currently need. Users will also have the option to skip the questionnaire and browse through available services while filtering by location and types of services offered in order to find the most appropriate service for their needs.

For organizations, Helping Hands will provide easy to use templates for an administrator from the organization to keep up to date with information about the services which they are offering as well as any information for potential volunteers. When a local organization joins Helping Hands they will see that their organization page has been initially populated with data obtained by web scraping. The organization administrators will be able to update this data and add any information they wish to provide about services they offer. On the organization’s pages, there will be forums where users will be able to interact by using an upvote/downvote system and comments to discuss the accuracy of the information and can provide real time updates if the organization is not updating the page as often as they are able to. Helping Hands will be integrated with Google location services in order to help provide the most accurate location information and to allow users to search for services based on their own locations.

Some users may not want to make an account so Helping Hands will use session data to save the preferences and searches from users who elect not to make an account. However, having an account will afford users some extra convenience and less strict moderation in the forums so it will be beneficial for the users who choose to create and use an account on the site. The session data will be stored in the site’s database which will provide the user accounts, page templates, organization pages, and forums.

2.2 Major Components (Hardware/Software)

Figure 1

Helping Hands Major Functional Component Diagram
Helping hands will be a website accessible on any device that can run a web browser including Windows, MacOS, Linux, iOS, and Android. The frontend user interface will be done using HTML/CSS and JavaScript while the web server is done using Python. The hardware required will be the user's own device and the servers to host the site which will be hosted with a cloud provider.

Software used by Helping Hands will be an internet browser to reach the site. PostgreSQL will be used for the database. The GoogleAPI for location will be integrated with the Helping Hands to provide accurate location data for users. The development team will use GitHub and Trello to handle source control and tasking as well as Gradle for build management.

3. **Identification of Case Study**

Helping Hands will be used by three different types of users. Those seeking help, those looking to volunteer, and organizations which provide help. The site will be able to connect those in need with those that are trying to help by providing a single easy interface for each type of user. The users seeking help will benefit by obtaining the services that they need and the organizations benefit by being able to better provide resources to their community. If local organizations are able to more efficiently provide
the services that they can, it may reduce the load from loarge federally ran organizations trying to help much larger groups of people. The site will also provide a large amount of data that can potentially be used to help the local governments get a better idea of how many at-risk people there are seeking help and how to more effectively help that population and beter understand how they can help the community around them.

4. Helping Hands Product Prototype Description

4.1 Prototype Architecture (Hardware/Software)

4.2 Prototype Features and Capabilities

4.3 Prototype Development Challenges
5. Glossary

**501c3 Organization** - An organization or group that is tax exempt, often due to providing charitable services through non-profit or not-for-profit methods.

**At-risk Individual** - A person with ongoing risks to health or safety.

**API/Google API** - Application programming interface is a connection between computers or between computer programs. Programmatic interfaces to Google Cloud Platform services.

**Crowd-Source** - Obtain (information or input into a particular task or project) by enlisting the services of a large number of people, either paid or unpaid, typically via the internet.

**Google Maps** - A free-to-use service on the World-Wide Web that provides map display, locations and localization.

**GUI (Graphical User Interface)** - A human-computer interface that uses windows, icons, and menus that can be manipulated by a mouse (and often to a limited extent by a keyboard as well).

**Major Functional Component Diagram** - Used in modeling the physical aspects of object-oriented systems that are used for visualizing, specifying, and documenting component-based systems.

**Stakeholder** - Person with an interest or concern in something, especially a business.

**Web Server** - Software and hardware that uses HTTP and other protocols to respond to client requests made over the World Wide Web.

**Web Scraping** - Automatic method to obtain large amounts of data from websites.
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