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Developing a Website for The Sword of the Spirit Using an Agile Development Approach

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Developing a Website for The Sword of the Spirit Using an Agile Development Approach

Abstract
This creative project was created using an agile development process. Working in coordination with an organization called the Sword of the Spirit, a website was developed for their use. Using the agile approach, multiple iterations of the project were created and brought back to the organization for testing and feedback. The website was developed and is currently working here: https://sites.google.com/view/sosovemight/home.

For this project, a website, administrative email, and data collection and storage process were created. Security was added to ensure only registered profile holders would be able to view the information on the website. This was developed solely for the Sword of the Spirit to use. The purpose for developing this website was to provide a place for the Sword of the Spirit members to be able to connect with each other to find housing when visiting another city. This is a global organization so having a tool that will help members, travelling to other cities where there are communities, find housing with members of the local community is incredibly helpful.

The focus of the project was to develop a product with an organization according to their specifications. This website is currently being tested on a national level. In the future, plans have been made to coordinate efforts to integrate the current site into one for global use.

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Developing a Website for The Sword of the Spirit
Using an Agile Development Approach

By

James Smith

A Senior Thesis Submitted to the

Eastern Michigan University

Honors College

In Partial Fulfillment of the Requirements for Graduation

With Honors in Computer Information Systems

Approved at Ypsilanti, Michigan, on this date April 14, 2010

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Developing a Website for The Sword of the Spirit
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1. Introduction

This senior project is based on the submitted proposal attached to this document in Appendix D. The main purpose of this project is to work with an organization called Sword of the Spirit (SoS) to develop a website using an agile development approach. In completing this project I interacted with a representative of SoS to produce a working website that meets the organization’s needs, as stated in the proposal.

a. Background of Sword of the Spirit

Sword of the Spirit is a Christian organization that was founded in Ann Arbor, MI more than thirty years ago. The organization began as a parachurch grouping of individuals called the Word of God. As it grew in the area it gained recognition nationally. Many people moved from other parts of the country to be closer to the Word of God community. The community became so big they had to rent out large auditoriums in the area to hold the crowds that were attracted. Unfortunately the organizational leadership was not able to sustain a common vision for the group, with some wanting to focus more locally while others believed it was important to network with similar groups across the globe.

With time it became clear that there were two very different, and irreconcilable, visions for the future of the group. Thus, the group decided to split into two separate entities and pursue the different visions they had. This divergence in leadership occurred in 1982 and gave the group with aspirations for global networking, the opportunity to develop in an international direction. Since that time, the Sword of the Spirit, as the movement now became known, expanded to more and more countries and continents across the globe, connecting like-minded communities of people. Currently the Sword of Smith 5
the Spirit community describes its efforts in this way. “The Sword of the Spirit is a growing network of more than 75 lay Christian communities around the world that have a common vision, way of life, and spiritual culture. There are about 12,500 adult members plus about 5,000 children in our communities. We sometimes describe ourselves as a “community of communities.” Each community within the Sword of the Spirit is self-governing, but receives help in living out its life as a community from the sharing of resources with other communities around the world.

The Sword of the Spirit has a strong common culture that transcends our international differences. As a result, when members of different communities get together, even though they may be from different parts of the world, there is a very strong sense that we are part of the same international community of communities. One of the expressions of our common way of life is our celebration of the opening of the Lord’s Day – the opening of Sunday – on Saturday evening with prayers and a festive meal. The hallmarks of these times are joy and thanksgiving.”

b. Why this project matters to Sword of the Spirit

Within SoS, being hospitable to others, members and non-members, is an aspirational quality and considered something that demonstrates and builds a community spirit. Hosting a member of a sister community in one’s own home can benefit both the guest and the host. New friendships are forged, common life experiences can be shared and a sense of belonging to a global organization can be enjoyed. Since hospitality is highly encouraged, the leaders of individual communities are constantly seeking ways to improve interactions between local members and members from communities in other cities, nationally and globally. As the “community of communities” grows and new communities are formed or join, there is an increased demand for accommodation. Many
of the leaders and lay members of SOS communities travel often. The method for finding members able to host others has been rather inefficient in the past. Hospitality coordinators in local communities frequently survey their members to find out who has availability but the results of such surveys rapidly become outdated as individual’s circumstances change for their availability to host others. This system of ascertaining individual members’ availability and desire to host others in their own homes could easily be revised using more current technology.

I am working with a representative of the SoS to help develop a website that can achieve the goal of connecting guests with hosts. The website will be a very user-friendly place for hosts and guests to identify each other. Since the SoS has numerous entities, nationally and internationally, helping people from these places connect to their mutual advantage will be a huge benefit. The service this site will provide is to help individual members who plan to travel to another location, connect and find a host who will accommodate them free of charge in their home. This would remove the need for sending out repetitive surveys and maintaining a record of information regarding hosting availability that regularly becomes obsolete, necessitating more surveys. Individuals would be able to sign up through the website negating the need for anyone to ask on their behalf. The added advantage is that only those able to host would sign up on the website and they could remove their information if they no longer wanted to host. Thus information would always be current and no further surveying or recording of information would be necessary.

The main intention of this website is to connect SoS members to one another. However, after talking with the representative of SoS, we decided that it would be practical to open this up to friends of members. This would mean that a member could
sponsor a friend to become part of the process. This would allow more people to be served by the process and would expose more individuals to the organization itself.

Part of the job of the website would be to help users understand proper conduct in being hosted. Because the site is meant for free hosting and relies on the generosity of the participating members, it is important that the users respect those who are hosting and not just use the site as a way to find free accommodation while travelling. Being thoughtful of hosts, interacting with them and understanding the spoken and unspoken rules of basic politeness is important. Thus, one of the functions of the website is to educate the users how to properly conduct themselves during their stay. Hosts may also need some direction through the process. The more directly they can communicate their expectations to the guests, the more satisfying each visit will be for the host and for the guest.

This is actually a requirement of joining the website as a profile member. It is of paramount importance to the SoS community that the users of this site behave and act properly in other member’s homes. It is, in fact, such an important consideration that commitment to mutual respect between guests and hosts became a part of the profile application process. On the application form there are a few general rules that the profile member must agree to in order to be considered for approval. As a result users can subsequently be held accountable to a commitment to being respectful that they themselves made during the initial stages of the application process.

One of the hardest factors in building the website for this organization was the fact that I had to cater directly to older people. Most people in the SoS community belong to the baby boomer generation or generation X. These individuals have less facility with technology and find it more difficult to learn, understand and use effectively. Because of this, one of the most significant factors in developing the website was that the final
product needs to be easy to use and understand. Material had to be developed to enable users to connect with hosts as effortlessly as possible. If the target users can’t use the website easily then it won’t yield the hoped for benefits.

Another thing that strongly influenced the perception by SoS that the project would be beneficial was the fact that there are an increasing number of activities that the organization plans to sponsor and which require accommodating out-of-town guests for one or more nights. One such event is a two day annual soccer tournament, the location of which alternates between the communities of Ann Arbor and Lansing. Over the years, the number of teams that compete has increased. Team members, coaches, fans and family arrive at the host location hoping for accommodation. As a result, there is an increasing stress placed on these communities to find and provide places for participants to stay. This has been a huge headache for the event organizers.

Things like the soccer tournament become less feasible each year as the host communities feel the burden year after year of hosting so many people. One of my goals for this website was to ease the burden for the event coordinators of finding accommodation for so many people. Providing host communities with an easy way of connecting potential hosts with out-of-town guests should permit events such as the soccer tournament to take place without burdening the organizers with the mammoth task of finding hosts for all of the participants.

c. Security

Two of the biggest factors to shaping the project were security and data privacy. This website is meant to help The SoS accomplish and satisfy its need to facilitate offering and accessing hospitality to fellow members. The website holds personal information which will be invaluable for finding places to stay for free. However, to ensure this personal
data is protected, security measures had to be taken to limit access to the information on
the website to only the individuals with registered profiles. To do this, permissions had to
be added to the server side of things. Where the data is stored is the best and closest place
to manage the permissions. If someone who is not a user tries to access the forms they
will be unable to see anything. These features will be covered thoroughly in the following
sections.

Individuals who are creating profiles in the hopes of being hosted and people who are
hoping to be hosts will need to have different permissions granted. Each group needs to
be able to see different things. Because of this two permission files had to be made in
order to facilitate management of the different permissions in an efficient and effective
way.

By applying two different levels of security it should be fairly easy to manage the rest
of the website. In this way hosts can be reassured that their data will be secure and only
seen by those people who are registered and approved for profiles, not just any random
individual who finds the site. Having these reassurances will help the whole process as
more people will feel comfortable to sign up as hosts.

The most important feature of this program is that the information is not public. Thus
it is also important that, when people apply for a profile to see the private information
there is a screening process so that only those who are eligible can create a profile and get
into the member’s only area. I have set up a security measure that the administrator of the
site can use to screen profile applicants. Every user must first be approved before they are
given permissions on the server side of things to see host information. The same
requirement for screening occurs when applying via the site to become a host.
Information is provided so the members can be screened and then approved at the administrator’s discretion.

d. Getting users

The next challenge that shaped the website was finding ways to make the website user-friendly to the population likely to access it so that when it is released such people will feel comfortable enough to sign up for, and use, the website. Thus the security measures mentioned above are essential. When the users believe that security is high rather than low they will be more likely to adopt the technology quicker.

However this is just one of the ways users will be encouraged to use the site. One of the biggest ways to encourage use of the site, was by designing it to be extremely intuitive. It was very important to develop a good source of information at the outset. For this project that came in the form of a good “Frequently Asked Questions” page on the website. To compile this, I asked random users to give the website a trial run and generate questions they had. From this I could construct a list of questions that I could answer for other users through the page. You can see an example of some of the FAQs that are answered from the page in the screenshot above.

Finally the easiest way to recruiting users is using the established network of the SoS member communities. These communities have been in close coordination for a very long time together. As mentioned in an earlier section, the hospitality coordinator of the

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local Sword of the Spirit community currently sends emails with surveys in them to gather information that is intended to connect hosts and guests. The majority of users to this site will be recruited when they receive a link to this site sent by the coordinator, instead of a survey.

e. Importance of back end usability

A stringent requirement for back end usability shaped the project immensely. Not only would the front end of operation of the website have to be easy to use, but the backend must be also. In other words, not only must what the users of the website see need to be simple, but at least as importantly, what the site administrators will see has to be comprehensible as well. Working for the SoS on this project means at the end of development I will have to turn control of it over to a designated representative of theirs. This is the first iteration of how the data is stored on the back end of things so having the administrators be able to use it and change it for the next development will be important to develop.

Because of this lack of familiarity, the way I set up the data collection and storage had to be very straightforward and efficient. While designing and developing the storage of the data I had to make sure it was all accurate and simple. This was definitely the hardest part of the project. Making things as streamlined as possible turned out to be harder than it seemed initially. There seems as though there can always be a better way of doing things which will allow others to understand and use the site better. This consideration led to the concept of using an agile approach and using an iterative development process.
f. Agile approach using iterative processes

This is an approach that has become increasingly popular in technology development. Previously, many developers of large technical processes used what is called the waterfall method. To see a diagram of these processes refer to Figure 21 and 22 in Appendix B. This process means that, while working on a project the project team “waterfalls” from one section of the project to the next only after the previous is fully completed. Once all processes have been completed they present the project to the customer or end user. To understand more about an agile development, refer to the references portion.

The problem with this is that there is no room for customer feedback until the full product is presented, rather like a fait accompli, when it is too late to give any input. With an agile approach, each process is completed a little bit at a time, allowing a quick release of a very simple working version of the product that the customer can view and use at an early stage. In this way the user is able to give their input and changes can be made that are exactly what the customer wants. An improved version is delivered to the user and this process is repeated until the user is fully satisfied with the product.

Using such a process for this project was essential. I was able to create early versions of the project and present them to the SoS representative to see what he thought, what questions he had and what improvements he suggested. Adjustments were made accordingly. Using this process helped to keep me keenly aware of the needs of the client and helped us both avoid confusion. It also contributed to the scope and application of the project as a whole. As the project was adjusted and modeled through these interactions, the website took on its final shape which was a product of all the past iterations of the project.
2. Importance of the project

a. Importance of the website

The completed website will encourage travel between communities leading to mutual support and friendship. One thing that hinders individual community members from traveling to other communities, visiting old friends and making new ones is the overnight cost of accommodation. This website can help those travelers easily find somewhere to stay at little or no cost thus promoting inter-community relationships and support.

b. Importance of the structure of data on the back end of development

It is extremely important that the website works well at the administrator level. If the user interface looks good but the back end has significant errors, then what was designed will not meet the client’s needs. Thus an accurate and efficient information collection process is essential to data validation and storage. Developing this took the majority of the time through the process.

Probably the hardest part about this process was that there were multiple sets of data. In a similar manner to the permissions needing to be separate, the data that the users can see is different from the data that the administrators need. Creating a system that allows for users to have access to limited data while allowing administrators to see everything proved difficult. In consultation with the SoS representative, the data needed by each group (users and administrators) was identified and a system for importing data was devised.

I have been working with the SoS representative in an iterative process to help create a file order that fits the organization’s needs. These included, balancing usability and security, trying to make the system very intuitive for hosts and guests, as well as making it easy to use for an administrator. These sometimes competing goals made it a
challenging project. However, after a number of iterations I was able to get a format that the client’s representative considered met the organization’s needs well.

I met with the representative three times with these iterations. The first iteration of the project was a basic outline of the website. It was mainly to show how the website would look and function without any of the usability or data attached to it. This was really important as it really helped us both to get on the same page about how it would look and how the layout would be presented. After this first iteration, we had the basic layout and functions planned out. During the first iteration this is the document we drew up for the functions that would be included in the project.

Layout
  - Need to first sign in to access search function (sign in or sign up)
  - Contact us page
    - Reporting system
  - FAQ

Sign Up system
1 - Verification system
  - SOS members
    - Register
      - Name
      - Email
      - Location
      - How many beds
      - What are you offering? (Couch, living room, private room, etc.)
    - Verified against members database from different communities
  - Online rule of conduct
    - Don’t overuse your power
    - Gift is a good idea
  - Terms of condition (liability)
  - Outside Members sponsored by SOS member
    - Register - indicate registered Sword of the Spirit member
    - Verified against website database of registered users (who are SOS member)
2 - Profile (Listings)
  - Hidden feature for those who want to hide their listing for some time
  - Ability to change your listing information
3 - Communication
  - Search place

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• Advance search feature
• Display database with hosts
  • Don’t need map
  • How many beds?
  • Description - what you are offering? (list of options - couch, living room, private room)
• Email the host

4 - Review
• Create administrator email
• Positive review goes to host listing
  • If you have any negative feedback, please send an email to administrator
• Negative review goes to administrator email

The second iteration of the project was a little more advanced. We started to be able to implement some of the data into the project. We created the forms for collecting the data and the process for storing the data. This was one of the most helpful iterations as it allowed us to discuss exactly how we wanted the data to be accessed. As mentioned before, security was a big priority so working with SoS to develop exactly how and who they wanted to see the data was important.

The third iteration finished up the front end of the website that all users can see and worked extensively with the backend of the website. This was where we spent a lot of time discussing and changing features. In this iteration of the project we formed the structure of the database. Using a lot of work and interacting permissions to develop a streamlined, efficient and secure process. We wanted to make sure that the users would have enough access to everything they needed without needlessly confusing them in the process. And in this iteration I think we accomplished that.

c. Importance of testing the website

As I progressed through each iteration, the SoS representative and I agreed that it would be wise to start testing the site with “typical” users. Thus the system has been tested by numerous users after each iterative process. These users contributed to
refinement of the system by the input they gave. This also yielded many direct user FAQs for which answers were developed and included on the FAQ page. Thus the FAQs are not just theoretical questions that the developers, myself and the SoS representative, theorize the end users might ask.

With each iteration we had users test the system. With the first two iterations, there was very little to test so we only had one or two users testing these parts, mainly to see if they thought that it flowed naturally and was understandable. Getting the user’s feedback on these two iterations helped shape our views on how to proceed with the third iteration. On the final iteration we were able to test with more users than before. Using about 5 users to test the full working of the site showed us that it works as intended. None of them were able to see the data before they were approved through the profile creation process as expected. Once they had their profiles and given access they were able to go through the system and even got to book a place with a host. Some of these users we asked to sign up to be a host and show us how to improve that process and from that we learned a lot about how the host process could be streamlined. The biggest thing that was added in this iteration was a calendar for each host to be able to access and show their availability so that guests could easily access this information.

3. How the functions of the website work

a. How the data will function for the administrators

While working with SoS on the project, we had to decide how to store the data. For the long term project it will be stored on a server in Chelsea. But for the scope of this project, we decided that it would be best to use the google drive that is attached to the administrator email. The basic layout of this drive is shown in Figure 1 located in

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Appendix B. One of the factors of the drive was being able to share the data with the end user. You can see from Figure 1 in Appendix B the folder called SoS Overnight Sharable. This folder holds the three things that a profile member, once accepted, will be able to see. From Figure 2 in Appendix B you can see what is in the folder.

Inside the sharable file are the three files users will gain access to. Once a user is accepted for their profile they will be added to the file so they may see the content using the share function shown in Figure 3 in Appendix B. Once a member’s email has been entered into here, the profile user will have access to the following three functions. Registering to become a host location, removing themselves from being a host, and the ability to see host locations available to stay at. These files will be explained in the following section.

When a new host signs up to be a host, they will gain access to two documents. This is important for the administrator to know as he will have to give them access to these two tools. These are under the host file. In this file, the Administrator will create two new documents for the hosts, one is a calendar and the other is a form to request to stay at that location. Samples of what these two tools look like are in Figure 4 and Figure 5 in Appendix B. The figures show the templates for each of these tools. The administrator will copy these templates and make them customized to the location of each host who signs up. Once they have been customized, the administrator will share these with only that host so profile holders will be able to view these tools but not edit them. The host then has the ability to fill out the calendar with their available dates and to customize their request to stay form as they wish.

Another thing that the administrators will have access to in the Google Drive is the locations folder. Inside this folder are separate folders representing the individual

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locations, this is show in Figure 6 in Appendix B. In each of these location folders, is a
customized survey sheet for that state. These surveys make sure that the host who is
entering the information is entering it into the correct state location. A sample of this
survey can be found in Figure 7 and 8 in Appendix B.

When a host registers an overnight location, the administrator will have full access to
all the data that the host includes in their form. Because we want to have detailed data on
the host, but may not want to show all these details to the guest, two sets of data had to be
stored. One that only the administrator would have access to, and one the users would be
able to see. You can see the file that the administrator can see in Figure 9 in Appendix B.
The file that the users are able to see with a more limited information view can be seen in
Figure 10 in Appendix B. In the file that is used to show the profile members the
information, I used data importing statements to be able to pull some of the data from the
administrator sheet to the users sheet. That code can be seen in Figure 11 in Appendix B.

b. How the data will function for users

I mentioned earlier in the report the need for security. Because of this, the first thing
that a user must do is register to become a profile holder of the site. To do this, they will
have to fill out a form. This form can be seen in Figure 12. This form will sort out
members into which community they are from and this will help administrators to
confirm their membership of SoS communities. This starting profile form takes all the
data entered and puts it into a file for the administrator to see. This file can be seen in
Figure 13. Every week for the first few weeks of the websites go live date, this file will
backed up to a CSV (comma-separated value) file. These files are easy to import and
export. These backups of this file will help to keep track of all the profiles made. This
process of data collection is outlined by Figure 3 in Appendix A.
When a user tries to access a location site without a profile, they will see the result shown in Figure 14. If the user has an email account logged in that does not have access they will see Figure 15. The security permissions are linked to the profile email address. When a user is given access, they must use the email that was given access. Only that one, and none of the others the user may have, will have access to the information. That is why the messages will differ for those who aren’t signed into any email versus those that are signed into an email that doesn’t have permissions. Once a user does have permissions, they are able to see the locations and the hosts at each location. An example of what a location can look like for a user can be found in Figure 16. The last thing that the profile holder will gain access to is the host sign up forms.

c. How the data will function for hosts

Before a person can become a host, they must set up and be approved for a profile. This was necessary as we want every host location to be approved and legitimate. If anyone could sign up to be a host before providing legitimate profile information, it would be incredibly difficult to monitor the site. If a user is trying to sign up as a host without having the correct profile, they will see the screen in Figure 17. If they have an approved account they will see Figure 18.

Once an approved profile member wants to become a host, they have to do so through the form provided in the host location of the website. This form allows the information collected to be stored into the file I mentioned earlier (Figure 9). The host signup form is represented by Figure 7 and 8. To make sure that each host is signing up in the correct location and that there is minimal room for error a document was developed that would point the host in the right direction. This document has the links for every state form and can be seen in Figure 19.
The last thing represented for the hosts is a way to exit the website. We recognized that there will be legitimate reasons where people will need to exit this site and take their listing off the website. Because of this a link to a host exit form was posted into the host portion of the website. You can see the link in the bottom of Figure 19. Clicking this link will take you to the form in Figure 20. Completing this form will send an email to the administrator signaling the hosts wish to leave.

4. Future Implications

a. Future of the website

The future use of the website is to go live once it is handed over to the SoS administrator. Since it was developed in direct collaboration with the client’s representative it should be a smooth transition. The website that I have been working to develop could be launched in the United States as a first working version. On release for use in this country, it will permit collection of multiple user profiles and host information collections as these individuals sign up to use the site. This US launch should be viewed as a first prototype can be considered as one more step in the iterative development process. It will allow further data to be generated on the usability, functionality and efficiency of the website. No doubt it will also generate more FAQs! More importantly, it will allow a demonstration of how the site works in a live environment with real users. This will allow for the identification of problems that may occur in the field and for the appropriate adjustments.

The SoS, as mentioned previously, is an international organization and it is hoped that a robust website can be developed for global use. For this website to be hosted globally on one platform, a more capable website host will be needed. Because of this, as the
popularity of the site increases across the US, it is the stated intention of the SoS representative to monitor the situation to determine if there is sufficient demand for a global site. Assuming a need for such a site is demonstrated, the plan would be to upgrade and improve the site with the information gathered from use of the current site while using a different website host. I will be working with SoS to help integrate the new international site with the national one.

b. Developing documents for profile holders

Before the site is launched, I will develop documentation on how to use its functions to the fullest. These documents will be sent to members on their initial approval for use of the website. They will explain again how individuals should interact with hosts as well as show how to search and find relevant information about host locations. Eventually it would probably be advantageous to develop an instructional video as well as documents to help educate users.

Along with these documents, each user will receive a confirmation email when they have been added to SoS Overnight. Developing these documents so that they can be sent along with these confirmation emails will be a helpful way to educate users as they are applying and accepted to the website.

c. Developing documents for hosts

Along with documents for basic profile members, I will work, in collaboration with the SoS representative, to develop instructional materials for the hosts. These materials will include instruction in how to operate the calendar and forms they will have access to on initial sign-up. These are the tools that allow profile holders to find and use the host locations. Helping hosts understand how to use these correctly to respond to the guests’ requests is important. Included in the documents, will be instructions to help hosts to
understand and customize the materials they are given access to as well as how to
deactivate their host profile if their availability or desire to host changes.

Similar to the emails sent out to the profile holders for confirmation, hosts will receive these emails too. Their listing will become active when they register but they will also be given access to two other abilities. They will be given a calendar and a form they can customize for each guest to use to stay with the host.

Along with these two abilities, the host will also be given information on how to host their guests and what to expect from them. They will have access to a form for reporting users as well. If a user is disrespectful of isn’t using the system as it is intended, these hosts may report such users to the administrator email. The last thing that hosts will receive is instructions on how to apply to hide their hosting location or to permanently delete it. With these tools we hope to equip every host to feel prepared.

d. Developing documents for administrators

The last set of documentation needed will be the most complicated set. Developing documents to help the system administrators to understand the system and how it is designed to function is critical. This set of documents will include instructions explaining how to operate the system and add additional content using the data collection tools employed in the design. Additional instructions will help the administrators understand how the forms compile data and how the data validation is set up. One of the most important features of these documents will be to equip the administrators to recognize when there are errors and to problem solve these issues.

e. Completed system and final iterations

The first major test of the completed system will come in the summer. I mentioned before one of the big things that happens every year that needs a lot of hosting is the
soccer tournament. In this event there will be about 100-150 people who will need to be hosted coming from out of town. With the representative I have talked and we have agreed that we will allow this site to be running to the members for this period of time. This will be a major test for the system.

Because of this opportunity, we will also have a great chance to get a lot of feedback about the system. We will make sure that the website is made known to the hosts and the potential guests as early as possible so the site may be as efficient as possible. We will create a form that every user will be given after their experience of the website to get their opinion on it and see what their improvement suggestions would be. With this data we will base another iteration of the project.

The fourth iteration will take place after the summer when all the user improvement data has been collected and analyzed. It will be an opportunity for the site to grow to the last needs that may have been overlooked.

Once this site has been fully developed and got to the point where it encompasses the full usability and potential that it was planned for, then we will together try to build one for the global SoS community. This is the exiting future of the project. I will have been able to work on a project that will have global impacts. I am thankful to have this opportunity to take on such a large scale project with a group like SoS.

5. Site link
https://sites.google.com/view/sosovernight/home
References


Appendix A: Evaluation

Method of Evaluation

During the multiple iterations we had users test the functionality and usability of the website. After the last iteration a method for evaluating the website was made to see what the users thought of the final product. Unfortunately we haven’t been able to use this evaluation before publication of this project but here is the form we developed for future evaluation.
SoS Overnight Website Evaluation

1. Does the visual design of the website look appealing to you? Yes or No

2. Does the visual design of the website make intuitive sense to you? Yes or No

3. Were you able to understand where to apply to become a profile holder? Yes or No

4. Before you applied to become a profile holder were you able to see any data under the location or the host tabs? Yes or No

5. Did you receive your confirmation email when you became a profile holder? Yes or No

6. After becoming a profile member, were you able to see the data under location or the host tabs? Yes or No

7. Once becoming a profile holder, were you able to register to be a host? Yes or No

8. Did you receive your confirmation email when you became a host? Yes or No

9. With either becoming a profile holder or a host did you have to use the FAQ page? Yes or No

10. If you had to use the FAQ page, did it answer your questions? Yes or No or N/A

11. As a member, were you able to understand how to contact a host to stay at their location as a guest? Yes or No

12. Were you able to access the host’s calendar and request to stay form? Yes or No

13. On a scale of 1-10 how satisfied were you with your experience on SoS Overnight?
   
   1 2 3 4 5 6 7 8 9 10

14. What suggestions do you have for improving the site?
Appendix B: Figures

Figure 1

Figure 2
Figure 5

Request to Stay Form Template

First name: 

Last name: 

Email: 

What home community are you from (If guest please put Guest) 

Figure 6

Google Drive  Search Drive

My Drive > Locations ->

Folder: California, Florida, Maryland, Massachusetts, Michigan, Minnesota, New Jersey, Ohio, Pennsylvania, West Virginia

Trash, Backup, Get Drive for PC
SOS Overnight Signup Form for Ohio

This form is for those who are looking to sign up to become a host location.

Email address

What is your full name?

What is your profile name? (If you haven't registered to become a member first, please do so before continuing)

Continue to next section
Description

What SOS community are you a part of?

Street Address (e.g., 123 Example Dr.)

State (Use State code, e.g., MI or MN)

City (e.g., Ann Arbor)

How many beds are you offering? (e.g., 1 bed, 1 couch, 2 floor space)

How many rooms are you offering? (e.g., 1 room, living room)

Do you have a dog or a cat?
### Figure 9

**SOS Overnight Signup Form (Responses)**

<table>
<thead>
<tr>
<th>Timestamp</th>
<th>Email Address</th>
<th>What is your full name?</th>
<th>What is your profile name?</th>
<th>What SOS community are Street Address (e.g. 111 State Ave, City, State)</th>
<th>How many beds are available?</th>
</tr>
</thead>
<tbody>
<tr>
<td>3/27/2017 24:43:47</td>
<td><a href="mailto:Cal@gmail.com">Cal@gmail.com</a></td>
<td>Cal</td>
<td>man</td>
<td>Calen55</td>
<td>Cal</td>
</tr>
</tbody>
</table>

### Figure 10

**Registered Overnight Locations**

<table>
<thead>
<tr>
<th>Email Address Name</th>
<th>State</th>
<th>City</th>
<th>Address</th>
<th>Beds</th>
<th>Rooms</th>
<th>Dogs/Cats</th>
<th>Comments</th>
<th>Calendar</th>
<th>Request to stay for</th>
</tr>
</thead>
<tbody>
<tr>
<td><a href="mailto:Cal@gmail.com">Cal@gmail.com</a></td>
<td>CA</td>
<td>LA</td>
<td>Cal Road</td>
<td>4 Beds</td>
<td>2 rooms</td>
<td>Yes, both</td>
<td>Test Calendar</td>
<td>Request to stay at 1</td>
<td></td>
</tr>
</tbody>
</table>
Figure 11

Registered Overnight Locations

File Edit View Insert Format Data Tools Add-ons Help

Last edit was 3 days ago

Figure 12

Starting Profile Form

Section 1 of 2

QUESTIONS

RESPONSES

First Name

Last Name

Email

Phone Number (Optional)

Smith 34
Below are the FAQs for the state. You can look at the last column and see how the questions were sorted by an area. Please look at the calendar attached to the listing before filling out the registration form for that location. Please respect the hosts' comments so they are not contacted with questions for the same time frame.

Section Title

Registered Oversight Locations

<table>
<thead>
<tr>
<th>State</th>
<th>City</th>
<th>Address</th>
<th>State</th>
<th>City</th>
<th>Address</th>
<th>State</th>
<th>City</th>
<th>Address</th>
<th>State</th>
<th>City</th>
<th>Address</th>
<th>State</th>
<th>City</th>
<th>Address</th>
</tr>
</thead>
<tbody>
<tr>
<td>California</td>
<td>LA</td>
<td>Cal Rest</td>
<td>California</td>
<td>CA</td>
<td>Cal Rest</td>
<td>California</td>
<td>LA</td>
<td>Cal Rest</td>
<td>California</td>
<td>CA</td>
<td>Cal Rest</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Figure 17

Host Form

To register to be a host please click the link below that correctly corresponds to the state you are offering to host in.

Google Drive

We're sorry. This document is not published.

Host Exit Form

Use this form if you would like to temporarily or permanently remove your home from the listings of available host places.

Google Drive

We're sorry. This document is not published.
## Host Form

To register to be a Host please select the box below that correctly represents the state you are offering to host in.

<table>
<thead>
<tr>
<th>State</th>
<th>Host Form Link</th>
</tr>
</thead>
<tbody>
<tr>
<td>California</td>
<td>California Host Form</td>
</tr>
<tr>
<td>Florida</td>
<td>Florida Host Form</td>
</tr>
<tr>
<td>Maryland</td>
<td>Maryland Host Form</td>
</tr>
<tr>
<td>Massachusetts</td>
<td>Massachusetts Host Form</td>
</tr>
<tr>
<td>Michigan</td>
<td>Michigan Host Form</td>
</tr>
<tr>
<td>Minnesota</td>
<td>Minnesota Host Form</td>
</tr>
<tr>
<td>New Jersey</td>
<td>New Jersey Host Form</td>
</tr>
<tr>
<td>Ohio</td>
<td>Ohio Host Form</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>Pennsylvania Host Form</td>
</tr>
<tr>
<td>Texas</td>
<td>Texas Host Form</td>
</tr>
<tr>
<td>Washington</td>
<td>Washington Host Form</td>
</tr>
<tr>
<td>Washington DC</td>
<td>Washington DC Host Form</td>
</tr>
</tbody>
</table>

## Host Exit Form

Use this form if you would like to temporarily or permanently remove your name from the listing of available HOST SITES.

## Figure 19

Proper form submission

<table>
<thead>
<tr>
<th>State</th>
<th>Host Form Link</th>
</tr>
</thead>
<tbody>
<tr>
<td>California</td>
<td>California Host Form</td>
</tr>
<tr>
<td>Florida</td>
<td>Florida Host Form</td>
</tr>
<tr>
<td>Maryland</td>
<td>Maryland Host Form</td>
</tr>
<tr>
<td>Massachusetts</td>
<td>Massachusetts Host Form</td>
</tr>
<tr>
<td>Michigan</td>
<td>Michigan Host Form</td>
</tr>
<tr>
<td>Minnesota</td>
<td>Minnesota Host Form</td>
</tr>
<tr>
<td>New Jersey</td>
<td>New Jersey Host Form</td>
</tr>
<tr>
<td>Ohio</td>
<td>Ohio Host Form</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>Pennsylvania Host Form</td>
</tr>
<tr>
<td>Texas</td>
<td>Texas Host Form</td>
</tr>
<tr>
<td>Washington</td>
<td>Washington Host Form</td>
</tr>
<tr>
<td>Washington DC</td>
<td>Washington DC Host Form</td>
</tr>
</tbody>
</table>
Host Exit Form

Fill this form out if you are a host who wants to either hide your hosting location or permanently delete it. You have three options. You will be able to remove links to your signup survey and calendar in your listing, hide all your details of your listing but still keep your listing up to reopen to guests in the future, and finally, you may delete your listing entirely from the website.

Email address used for your listing

Address of listing

I would like to

- Permanently delete my Hosting Entry
- I would like to disable my links to my calendar and request form but keep my address and details visible
- I would like to keep my listing information on file but not visible to guests online
Figure 21: Agile method

![Agile Development Diagram]

Figure 22: Waterfall method

![Waterfall Method Diagram]

Figure 23: Flow of Data from Collection to Storage

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Starting Profile Form

First Name

Last Name

Email

Phone Number (Optional)

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Appendix C: Timeline

Timeline for Project

February 4th, 2017: First initial meeting with SoS to talk about project and understand what the website is used for.

February 11th, 2017: Developed the document of all the capabilities of the website as seen in section 2, sub section b. These were developed with the intention of what the site would be able to do when fully developed.

February 15th, 2017: The first iteration of the website was made and brought to the representative to see what they thought about initial visual design.

February 17th, 2017: The first user tested the system here to see the design of the website to see if it was intuitive enough.

February 27th, 2017: The second iteration of the website was made. This iteration began to make the areas where the data would be displayed fully.

March 1st, 2017: The second user to test the system made sure that the data would be displayed in intuitive places.

March 11th, 2017: The third iteration of the website was made with the focus being on the data and how to secure it. Making sure that users would not be able to see data that should not be available to them.

April 3rd, 2017: Final project submission

Projected – June 17th & 18th, 2017: Soccer tournament and first chance to open website to the users

Projected – July 2017: Last iteration of the National site

Projected – August 2017: Integrating national site into a globally capable website to service all SoS community members worldwide.
Appendix D: Original Proposal

Honors Thesis Proposal: SOS Overnight Website
Using an Agile development approach

The topic and scope of the project:
This project will be a creative project for the Senior Thesis portion of my Departmental Honors program. The topic of this project is to create a website that has a similar idea to Airbnb. This website idea stemmed from the need of an organization in the area that has a worldwide presence that has a need for a website such as this. Sword of the Spirit (SOS) is a Christian organization that has a local branch in the Ann Arbor area. This organization has locations all over the US and the globe. Sword of the Spirit encourages its members to help each other when they travel and host them in their own homes. A centralized website for this issue will be a great way to encourage this amongst this organization locally and eventually worldwide.

The website will be built using agile development. These are commonly used tools to help build projects effectively and affordably. Using these tools I will be able to make a website that will function smoothly and professionally. The website will be able to do a number of functions.

- The website will have the ability to create membership profiles for both members of the Sword of the Spirit as well as guests sponsored by existing members
- **Primary Objective:** The website have the ability of members to sign up as hosts. Hosts will have their house listed as a free option for members of Sword of the Spirit to use.
- The website should have the ability for users to search areas for SOS hosts and places to stay.
- The website will have the ability to get guests and hosts in contact.
- The website will have a way a commonly asked questions and a guide for how to properly use the system as well as good practices.
- The website will have an authentication process that will identify the user and make sure that only registered members will have access to the information.
- The website will have a reviewing feature allowing the members to review hosts with positive and negative feedback. The negative feedback will not be made public unless it becomes necessary for a host to receive such feedback.

The proposed methodology:
Not much research is needed for this project as the website has a distinct purpose and need to fill. I have found this need by being a member of the Sword of the Spirit. I have also interviewed a few members about the idea of the website and features needed for it. This is what has helped compromise the list of objectives above. Once the website is fully operational the operation and management of the system will be passed onto the organization. I will be working with a few of the local leaders to make sure that the creation and implementation of the system is what the organization wants.
Form of the completed thesis:

This projects form of completion will have two products. The completed website will be the product that will have been created. I will also provide a 15 page detailed lab report outlining the creation process and what I learned from the project. I will provide a link in the lab report to the created website so that anyone reading the lab report may go directly to the website as a finished product.