



ChronoSync

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CIT498

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# 1. Project Summary

## Overview of the project

In busy modern day life, coordinating meeting times with people can be difficult, especially with a large number of people. It can also be difficult to find friends to play games or do things with that share your interests. Perhaps you like to play sports more competitively or intensely than most of your current friends and would like to find others that like to play on your level. Maybe you have a bit of free time and would like to meet some new friends in an online game? Does your group of friends have odd schedules that require several calls and texts just to figure out a meeting time? ChronoSynk is the solution to these problems by bringing together and figuring out the best times, places, and people for you.

ChronoSynk is web based and performs better as more people use it. Similar to a dating site, the more data it has available, the better the matches will be.

ChronoSynk benefits anyone seeking to spend time with others. It requires relatively small storage and modest computing capabilities. Databases were developed with MySQL and have add, delete, modify, and searching (here-in known as querying or selecting) capabilities to facilitate changing schedules and dynamic data. PHP was used for programming while HTML, CSS, and Javascript were used for the web interface, allowing for versatility and familiarity across platforms.

Keeping this system secure and available are policies and procedures set in place to inform users of obligations assumed in using ChronoSynk as well as documentation to support users in system functionality. Secure programming practices were researched and developed to ensure data integrity and availability during transit, rest, and processing.

ChronoSynk brings users closer to friends they haven't yet found.

## Overview of work

The development of ChronoSynk went fairly well. There were not many large hurdles that stopped my progress for very long. Anything that did stop me from progressing usually only took an hour or two in order to figure out what was wrong and correct the problem. One of the more difficult parts involved SQL and interacting with the database. Various items such as permissions, syntax, and reserved words were tricky to work out.

I think the most difficult aspect of the project was limiting myself to a predetermined schedule. Using the Secure Development Life Cycle as part of the development process was originally planned but after trying to go through the steps, it felt like I was spending too much time on planning and not getting enough work actually done. My estimated time line was also very specific in when I was to do certain things that restricted me from working on something I felt inspired to work on. This resulted in my throwing out the SDLC process and the estimated time line dates in order to allow myself to work on my project more organically, when and on what I wanted.

Using past experience I was able to work with PHP, MySQL, HTML, and CSS fairly well only having to check on certain syntax or methods here and there. Recognized sources such as php.net and w3schools.com and user driven sites like stackoverflow.com were used for coding help with various other sites found through Google providing information on topics such as hardware specifications and policy templates.

Overall, the project was fairly enjoyable since I got to do a lot of coding. This also kept me working as I enjoy coding and allowed me to keep away from procrastinating. There were some aspects that I didn't enjoy and there were some things I would have liked to add to the project but I am happy with the outcome.

## Depth requirements

### **1 – Design a project development and implementation plan.**

ChronoSynk was hosted on a WAMP server for small scale testing and development. Project needs were obtained through brainstorming and anything else that was discovered as needed during the development process. While users were not directly questioned about the project, off-hand comments were taken into consideration such as interface design.

Now complete, ChronoSynk can be rolled out to a proper hosting site to go live for users to use.

### **2 – Value teamwork, leadership, and consensus building.**

Opinions of people when looking at ChronoSynk were taken into account for things such as the design of the interface. Most decisions were made by Greggory Foust while consulting online resources for proper and recommended implementations of certain practices such as password storage. Dr. Gorka was also used for recommendations on various topics in what was the best way to go about implementing a feature.

### **3 – Develop consulting, decision making and time management skills.**

Comments of people observing the project, recommendations of Dr. Gorka, and sources found online were used as a basis for making decisions on how to implement various features.

A project journal was used to keep track of time spent on the project. This will be used to compare to estimated time requirements which will improve understanding and ability to estimate time requirements in the future.

### **4 – Identify and specify the processes which solve the organizational problem being addressed.**

ChronoSynk allows users to more efficiently plan meetings and meet new people that share their interests by automatically matching them to other users depending on various criteria such as activity, time, and friends.

### **5 – Explain and develop standards and policies associated with the project.**

ChronoSynk has an Acceptable Use Policy, Terms of Use, and Privacy Policy. Standard coding practices and W3 web standards were used as well as keeping a record of changes and backing up and separately storing files. Research was completed on recommended ways to implement certain features, such as input validation, and code was implemented in a way as to keep with those standards found.

### **6 – Explain the benefits of cross functional teams.**

According to Oxforddictionaries.com, cross-functional means “Denoting or relating to a system whereby people from different areas of an organization work together as a team.” This allows people from different areas of expertise, with different views and thought patterns, to look at a problem from multiple angles. This allows one team member to find problems or potential that another may not see and better use their collective knowledge.

### **7 – Explain and apply various life cycle concepts in engaging in and completing a project.**

ChronoSynk used the software development life cycle process to start the project. The actors, use cases, etc. found were used as a base to build the project from. Throughout the development process of ChronoSynk when a section of code was required, first an analysis was what that code needed to do was done. Using this analysis, code could then be designed and written, first with in small parts. This code was then tested and upon success, the code was expanded until the end result was acquired. Using this incremental model of the SDLC the code for the project was able to develop rapidly and with a small amount of troubleshooting.

### **8 – Prepare appropriate end-user documentation.**

Policies and contracts were drafted including an Acceptable Use Policy, Privacy Policy, and Terms of Use. A

FAQ and introduction guide was created for new user orientation as well as a contact form to allow users to get in touch for help or other reasons.

**9 – Explain how your project addresses the synthesis, application and analytical skills used throughout the degree program.**

The ChronoSynk project required project management, critical thinking, code review, networking, system administration, and other IT skills that are the subject of many of the courses in the BSI degree program.

## Breadth requirements

### Databases

A database is essential to this project. In order for users to be matched with each other, there has to be a substantial number of users submitting times they are available as well as potential games, sports, or activities they want to do. The database holds information on users, requested activities and times known as sessions, comments, and friends.

This database was created in MySQL and will be securely protected to keep user information safe.

### Documentation and Support

Documentation including an Acceptable Use Policy, Privacy Policy, and Terms of Service will be drafted to comply with pertinent laws and inform users of obligations assumed when using ChronoSynk.

A help guide, FAQ, and support service will also be created for new users to learn how to use the service and obtain help when needed.

### Information Assurance and Security

With security being as important as ever and surprisingly often lacking, ChronoSynk was created with security in mind to protect users and ourselves. This includes secure programming, data backups, encryption, and authentication and authorization. An Acceptable Use Policy, Privacy Policy, and Terms of Service are also utilized to fully explain how this service and how the data it collects can be used.

### Networks + Systems

ChronoSynk uses web based Internet as the primary and solitary use of communication. This allows versatility for use on many devices and platforms through many channels to provide the service to users.

During development, ChronoSynk utilized

- 64bit WampServer 2.5 running
  - Apache 2.4.9
  - MySQL 5.6.17
  - PHP 5.5.12
  - PHPMyAdmin 4.1.14
  - SqlBuddy 1.3.3
  - XDebug 2.2.5

When released on a server, the following hardware and specifications are recommended:

Hardware:

- 2 Core 2.8 ghz CPU
- 1gb RAM
- 540mb disk space for WampServer 2.5 or newer installation
- 5mb disk space for website pages

- 10GB disk space for database
- 50gb+ for Windows Server 2008 or similar OS

Software:

- 64bit WampServer 2.5 running or newer or similar software
  - Apache 2.4.9
  - MySQL 5.6.17
  - PHP 5.5.12
  - PHPMyAdmin 4.1.14
  - SqIBuddy 1.3.3
  - XDebug 2.2.5
- Any modern browser for surfing the site.

Network:

- 100Mb/s Bandwidth for the first six months, requirement may change depending on user base growth and site expansion.

Storage requirements are relatively small with data entries consisting entirely of text. Using rough estimates for record sizes in each table and numbers of records, a minimum of 10 gigabytes is recommended for the first six months. Actual storage requirements will vary depending on database expansion and the increase rate of users.

### ***Programming***

PHP was used to dynamically create web pages, interact with the database, process and validate form data, process contact forms. The ability to add, delete, modify, and query records is required for the majority of the database. Users, comments, sessions, participants, and friends are added, user, friends, and sessions are modifiable, friends, participants, and sessions can be deleted, and all tables are queryable.

This amount of modification and adding to the database allows users to contribute the necessary information to be matched with others and use the website.

### ***Web Technologies***

HTML, CSS, and Javascript was used to allow the user to interact with the service. These technologies allow for a diverse user base across many devices, platforms, and browsers. Ensuring users can chose which technology to use when using ChronoSynk gives ChronoSynk both the best chance of serving users by gathering more users to the service and developing rapport with them.

### **Research topic**

As noted in the Information Assurance and Security Depth Requirement section, system security is vital in modern day business, yet often lacking. With security holes and vulnerabilities occurring nearly everywhere along the data transmission, processing, and storage time-line, it is important and necessary to implement security at all points along the system.

While users continuously heap more and more personal data onto the Internet, it becomes easier and easier for ne'er-do-wells to access this information, build profiles on targets, and use it against them. Therefore, ChronoSynk devoted resources researching and developing a modern security system to keep our data secure while remaining available to the necessary persons.

Using recommendations from such organizations as OWASP, Open Web Application Security Project, and web based security journals, blogs, and postings, many types of security were found and implemented. While some were not implemented, security is never 'finished' and provide opportunity for improvement in

the future. Security features implemented include user login, data validation ensuring proper data is submitted for clean running of code, HTML and special character escaping helping prevent embedding and cross site scripting, and admin automatic logout promoting good security practices and helping prevent unauthorized persons from accessing the system should a logged in account be left alone. Prepared statements were implemented to prevent first and second order SQL injection as well as checks against the database when performing statements to ensure authorization and legitimacy of the statement to prevent incorrect data being passed in through GET parameters or other methods.

### Planned vs actual time line

As expected, estimated and actual values for finish dates and time allotted were not equal. One estimate was as close as being 10 minutes off while the largest was overestimated by over 12 hours. The estimated deadlines do not match up at all, but this was expected since I threw out my estimated time line dates in order to work on things as I pleased. I did not complete interviews with potential clients or develop an algorithm for automatically creating matches. The estimated time for debugging was divided to delete, insert, php, select, and update in order to be able to compare times easier. I estimated both debugging and designing (CSS, HTML, aesthetics) very high because these tend to take a while and I do not consider myself very good at designing interfaces. Therefore my real times for these categories were much lower than estimated.

| Estimated |      | Actual   |      |               |            |
|-----------|------|----------|------|---------------|------------|
| End       | Time | End      | Time | Item          | Difference |
| 09/25/15  | 150  | 10/15/15 | 115  | Database      | -35        |
| 10/09/15  | 240  | 10/26/15 | 48   | Delete        | -192       |
| 10/04/15  | 1140 | 11/03/15 | 396  | Design        | -744       |
| 10/08/15  | 240  | 10/05/15 | 105  | Insert        | -135       |
| 09/30/15  | 180  |          |      | Interview     | -180       |
| 10/07/15  | 120  |          |      | Algorithm     | -120       |
| 10/24/15  | 1340 | 11/03/15 | 651  | PHP           | -689       |
| 10/30/15  | 240  | 10/29/15 | 50   | Policies      | -190       |
| 09/19/15  | 90   | 09/26/15 | 76   | SDLC          | -14        |
| 09/23/15  | 240  | 10/25/15 | 90   | Security      | -150       |
| 10/09/15  | 300  | 10/22/15 | 277  | Select        | -23        |
| 10/26/15  | 60   | 11/04/15 | 70   | Soft/Hardware | 10         |
| 10/08/15  | 300  | 11/02/15 | 145  | Update        | -155       |
| 09/19/15  | 10   | 10/30/15 | 55   | Wamp          | 45         |

Overall, I did a better job estimating my required time than I expected. As stated before in previous sections, there were features that I had wanted that I did not get around to implementing. If I had, I'm not sure how that would have impacted my project because they seemed so time consuming that I decided other parts of the project had higher priority before adding extra things.

### Summary and conclusion

I enjoyed the coding part of this project but the paperwork no so much. Throughout this project I have reaffirmed my belief that I do not want to be a project manager and would be content with typing away in an IDE all day but I don't know if this is a realistic expectation for a job. Project management requires serious planning and foresight and a scope much bigger than my preference. The lack of preparation I have received through my classes for areas of the project such as hardware and network requirements, policies, and planning made them seem frivolous and nonsensical but other parts seemed to be an O.K. crash course in what an enterprise project might entail. Maybe in the future I will warm up to leading projects as I have towards database management but that has not been the case with networking.

## 2. Project User Documentation

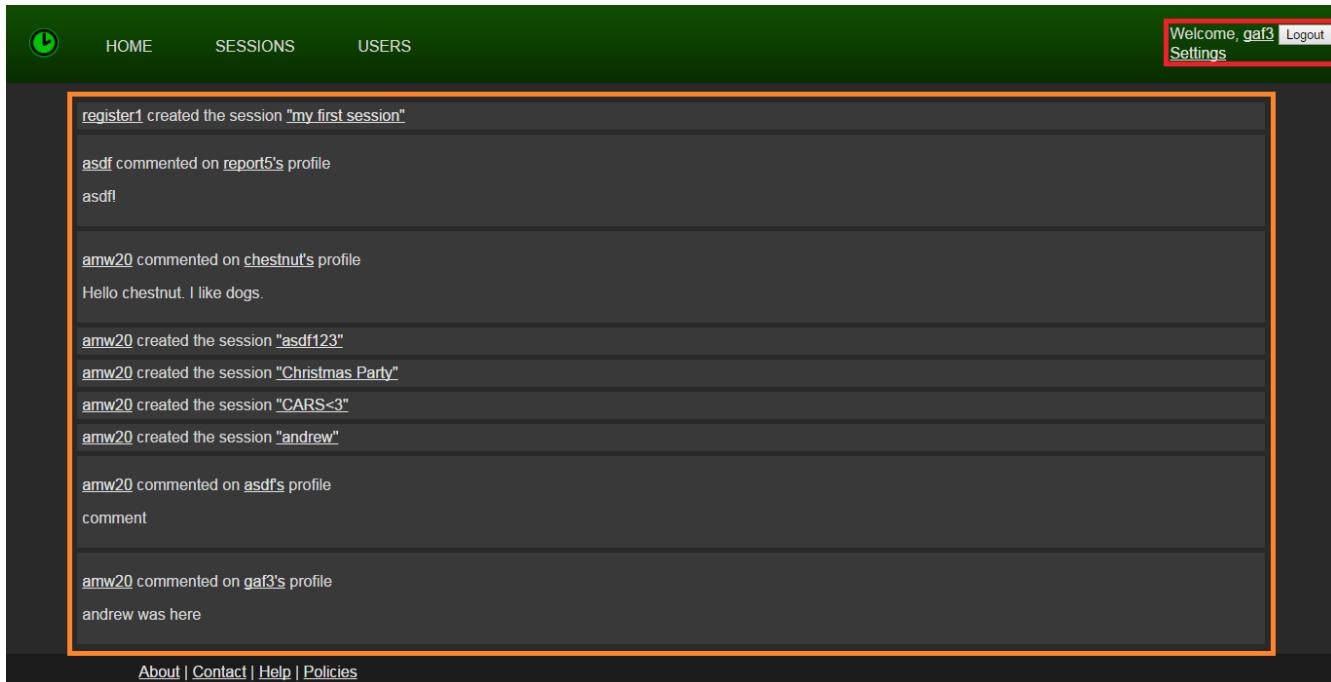
### Help Tutorial

Having trouble using the site? Look no further! If you have other questions please read our FAQ or please feel free to contact us.

The red outlined section to the right is the navigation bar. You can easily go to main parts of the site by clicking these links. Home will take you to your activity feed if logged in. Session will display available meetups (referred to as sessions) along with a search menu and, if logged in, a form to create new sessions. Users will provide you a list of users so you can find others. The orange section is where you can log in or recover your password if necessary. The yellow section is where you can register a new account if you do not yet have one. The blue section is the footer navigation that contains information the site such as who we are, how to use the site, how to contact us, and our policies.



After logging in you will be presented with this screen, your activity feed. You can log out in the red section as well as go to your profile or settings page. The orange section will display activity of your friends and things you might be interested in.



The sessions page looks like this when logged in. The red section will allow you to narrow down the sessions that are displayed. If you are logged in, you can create a new session in the orange area. The yellow area contains active sessions and some information about them. Clicking on the title of a session will bring you to another page with more information.

This screenshot shows the 'SESSIONS' page with a green header bar. On the left, there's a 'Search' form with fields for Title, Start Date, End Date, and Player Limit. Below it, three sessions are listed: 'Battlefield group' (by gaf3), 'FOOBALL' (by gaf3), and 'CARS<3' (by amw20). To the right, there's a 'Create' form for a new session, which includes fields for Title, Description, Start Date, End Date, Password (Optional), Player Limit (Blank for unlimited), and a 'Create' button. The entire page has a dark background with light-colored text and buttons.

This is the page you will see when viewing a session. You will see more information such as who is participating, comments, and a longer description. If you are the session creator, you will have the option to edit the session settings.

This screenshot shows a session details page for 'Battlefield group'. The top part has a red box around the 'Edit Settings' link. To the right, there's a 'Participants' section with 'gaf3' and a 'Leave' button. Below that, a yellow box highlights the 'Comments' section, which contains 1 comment from 'gaf3' at 2015-10-16 13:29:15 saying 'great idea'. There's also a 'Comment' input field and a 'delete' link. At the bottom, there are links for 'About | Contact | Help | Policies'.

Here you can make any changes to your session. If you no longer need your session, type delete into the field next to the delete button and click delete. You can return back to the session view with the link at the bottom of the form.

The screenshot shows a session creation form. At the top, there's a title "Battlefield group" and a subtitle "for people that like battlefield". Below this is a date and time selector with two rows: "03/10/2016" and "10 | 00 | PM" in the first row, and "03/24/2016" and "11 | 00 | PM" in the second row. There's also a "Password (Optional)" field containing "tag 1,tag 2,tag 3,...". A "Save" button is visible next to the password field. Below the date/time selector is a text input field with placeholder "Type 'delete' then submit to delete session" and a "Delete" button. At the bottom of the form is a "Back to session" link.

[About](#) | [Contact](#) | [Help](#) | [Policies](#)

You can get to someone's profile by clicking their name almost anywhere you see it. Here you can request them as a friend, see their profile biography, leave a comment, and view their friends.

The screenshot shows a user profile page for "amw20". The top navigation bar includes links for HOME, SESSIONS, and USERS, along with a welcome message "Welcome, gaf3" and links for Logout and Settings. On the left, the user's name "amw20" is displayed with a "Remove Friend" link. Below the name is a bio: "I like cars and EDM and Steph". To the right, a sidebar titled "Friends" lists "gaf3" and "asdf". The main content area shows "2 Comments". One comment from "gaf3" at 2015-10-26 20:27:51 says "another comment" with a "delete" link. Another comment from "gaf3" at 2015-10-05 21:15:52 says "Hi! Welcome to my awesome senior project!" with a "delete" link. At the bottom of the page are links for [About](#), [Contact](#), [Help](#), and [Policies](#).

On the settings page, you can change your password and update your profile biography.

The screenshot shows a dark-themed web application interface. At the top, there is a navigation bar with links for HOME, SESSIONS, and USERS. On the right side of the top bar, it says "Welcome, gaf3" and has "Logout" and "Settings" links. Below the navigation bar, there is a form for changing a password. It includes fields for "Current Password", "Password", "Confirm Password", and a "Change Password" button. Below this form is a large text area containing placeholder text: "This is my bio4" followed by a long paragraph of Latin placeholder text. At the bottom of the page, there is a footer bar with links for "About", "Contact", "Help", and "Policies".

These are the main features of ChronoSync but there is more and we plan on adding to the site  
We hope you enjoy your stay at ChronoSync!

## Contact Form

The screenshot shows a contact form on a dark-themed website. At the top, there is a navigation bar with links for HOME, SESSIONS, and USERS. On the right side of the navigation bar are fields for Username, Password, and a Login button, along with a link for Account Recovery. Below the navigation bar, a message encourages users to look at the help page for guides and frequently asked questions. The main area contains input fields for E-mail and Username (Optional), followed by a large text area for the Message. A Send button is located at the bottom left of the message area. At the very bottom of the page, there is a footer with links for About, Contact, Help, Policies, and FAQ.

## FAQ

The screenshot shows a Frequently Asked Questions (FAQ) page on a dark-themed website. At the top, there is a navigation bar with links for HOME, SESSIONS, and USERS. On the right side of the navigation bar are fields for Username, Password, and a Login button, along with a link for Account Recovery. The page lists several questions and their answers. **Q: Do you collect information from users?** The answer states that the only information collected is what the user provides, such as emails, session information, comments, etc. **Q: What do you do with that information?** The answer states that the information is used entirely for ChronoSynk and is not given to third parties, second parties, fourth parties, aliens, or anyone else. **Q: Is there a fee for using ChronoSynk?** The answer states that ChronoSynk will always be free (who would pay for it?). At the bottom of the page, there is a footer with links for About, Contact, Help, Policies, and FAQ.

## Acceptable Use Policy

### 1. Introduction

This Acceptable Use Policy (AUP) for IT Systems is designed to protect ChronoSync, our employees, customers and other partners from harm caused by the misuse of our IT systems and our data. Misuse includes both deliberate and inadvertent actions.

The repercussions of misuse of our systems can be severe. Potential damage includes, but is not limited to, malware infection (e.g. computer viruses), legal and financial penalties for data leakage, and lost productivity resulting from network downtime.

Everyone who works at ChronoSync is responsible for the security of our IT systems and the data on them. As such, all employees must ensure they adhere to the guidelines in this policy at all times. Should any employee be unclear on the policy or how it impacts their role they should speak to their manager or IT security officer.

### 2. Definitions

“Users” are everyone who has access to any of ChronoSync’s IT systems. This includes permanent employees and also temporary employees, contractors, agencies, consultants, suppliers, customers and business partners.

“Systems” means all IT equipment that connects to the corporate network or access corporate applications. This includes, but is not limited to, desktop computers, laptops, smartphones, tablets, printers, data and voice networks, networked devices, software, electronically-stored data, portable data storage devices, third party networking services, telephone handsets, video conferencing systems, and all other similar items commonly understood to be covered by this term.

### 3. Scope

This is a universal policy that applies to all Users and all Systems. For some Users and/or some Systems a more specific policy exists: in such cases the more specific policy has precedence in areas where they conflict, but otherwise both policies apply on all other points.

This policy covers only internal use of ChronoSync’s systems, and does not cover use of our products or services by customers or other third parties.

Some aspects of this policy affect areas governed by local legislation in certain countries (e.g., employee privacy laws): in such cases the need for local legal compliance has clear precedence over this policy within the bounds of that jurisdiction. In such cases local teams should develop and issue users with a clarification of how the policy applies locally.

Staff members at ChronoSync who monitor and enforce compliance with this policy are responsible for ensuring that they remain compliant with relevant local legislation at all times.

### 4. Use of IT Systems

All data stored on ChronoSync’s systems is the property of ChronoSync. Users should be aware that the company cannot guarantee the confidentiality of information stored on any ChronoSync system except where required to do so by local laws.

ChronoSync’s systems exist to support and enable the business. A small amount of personal use is, in most cases, allowed. However it must not be in any way detrimental to users own or their colleagues productivity and nor should it result in any direct costs being borne by ChronoSync other than for trivial amounts (e.g., an occasional short telephone call).

ChronoSynk trusts employees to be fair and sensible when judging what constitutes an acceptable level of personal use of the company's IT systems. If employees are uncertain they should consult their manager.

Any information that is particularly sensitive or vulnerable must be encrypted and/or securely stored so that unauthorized access is prevented (or at least made extremely difficult). However this must be done in a way that does not prevent—or risk preventing—legitimate access by all properly-authorized parties.

ChronoSynk can monitor the use of its IT systems and the data on it at any time. This may include (except where precluded by local privacy laws) examination of the content stored within the email and data files of any user, and examination of the access history of any users.

ChronoSynk reserves the right to regularly audit networks and systems to ensure compliance with this policy.

## **5. Data Security**

If data on ChronoSynk's systems is classified as confidential this should be clearly indicated within the data and/or the user interface of the system used to access it. Users must take all necessary steps to prevent unauthorized access to confidential information.

Users are expected to exercise reasonable personal judgment when deciding which information is confidential.

Users must not send, upload, remove on portable media or otherwise transfer to a non-ChronoSynk system any information that is designated as confidential, or that they should reasonably regard as being confidential to ChronoSynk, except where explicitly authorized to do so in the performance of their regular duties.

Users must keep passwords secure and not allow others to access their accounts. Users must ensure all passwords comply with ChronoSynk's safe password policy.

Users who are supplied with computer equipment by ChronoSynk are responsible for the safety and care of that equipment, and the security of software and data stored it and on other ChronoSynk systems that they can access remotely using it.

Because information on portable devices, such as laptops, tablets and smartphones, is especially vulnerable, special care should be exercised with these devices: sensitive information should be stored in encrypted folders only. Users will be held responsible for the consequences of theft of or disclosure of information on portable systems entrusted to their care if they have not taken reasonable precautions to secure it.

All workstations (desktops and laptops) should be secured with a lock-on-idle policy active after at most 10 minutes of inactivity. In addition, the screen and keyboard should be manually locked by the responsible user whenever leaving the machine unattended.

Users who have been charged with the management of those systems are responsible for ensuring that they are at all times properly protected against known threats and vulnerabilities as far as is reasonably practicable and compatible with the designated purpose of those systems.

Users must at all times guard against the risk of malware (e.g., viruses, spyware, Trojan horses, rootkits, worms, backdoors) being imported into ChronoSynk's systems by whatever means and must report any actual or suspected malware infection immediately.

## 6. Unacceptable Use

All employees should use their own judgment regarding what is unacceptable use of ChronoSynk's systems. The activities below are provided as examples of unacceptable use, however it is not exhaustive. Should an employee need to contravene these guidelines in order to perform their role, they should consult with and obtain approval from their manager before proceeding.

- All illegal activities. These include theft, computer hacking, malware distribution, contravening copyrights and patents, and using illegal or unlicensed software or services. These also include activities that contravene data protection regulations.
- All activities detrimental to the success of ChronoSynk. These include sharing sensitive information outside the company, such as research and development information and customer lists, as well as defamation of the company.
- All activities for personal benefit only that have a negative impact on the day-to-day functioning of the business. These include activities that slow down the computer network (e.g., streaming video, playing networked video games).
- All activities that are inappropriate for ChronoSynk to be associated with and/or are detrimental to the company's reputation. This includes pornography, gambling, inciting hate, bullying and harassment.
- Circumventing the IT security systems and protocols which ChronoSynk has put in place.

## 7. Enforcement

ChronoSynk will not tolerate any misuse of its systems and will discipline anyone found to have contravened the policy, including not exercising reasonable judgment regarding acceptable use. While each situation will be judged on a case-by-case basis, employees should be aware that consequences may include the termination of their employment.

Use of any of ChronoSynk's resources for any illegal activity will usually be grounds for summary dismissal, and ChronoSynk will not hesitate to cooperate with any criminal investigation and prosecution that may result from such activity.

## Terms of Use

### Agreement between user and [www.chronosynk.com](http://www.chronosynk.com)

Welcome to [www.chronosynk.com](http://www.chronosynk.com). The [www.chronosynk.com](http://www.chronosynk.com) website (the "Site") is comprised of various web pages operated by ChronoSynk ("ChronoSynk"). [www.chronosynk.com](http://www.chronosynk.com) is offered to you conditioned on your acceptance without modification of the terms, conditions, and notices contained herein (the "Terms"). Your use of [www.chronosynk.com](http://www.chronosynk.com) constitutes your agreement to all such Terms. Please read these terms carefully, and keep a copy of them for your reference.

[www.chronosynk.com](http://www.chronosynk.com) is a Social Networking Site ChronoSynk allows users to connect with others in order to schedule meetings and get together based on mutual interests.

### Privacy

Your use of [www.chronosynk.com](http://www.chronosynk.com) is subject to ChronoSynk's Privacy Policy. Please review our Privacy Policy, which also governs the Site and informs users of our data collection practices.

### Electronic Communications

Visiting [www.chronosynk.com](http://www.chronosynk.com) or sending emails to ChronoSynk constitutes electronic communications. You consent to receive electronic communications and you agree that all agreements, notices, disclosures

and other communications that we provide to you electronically, via email and on the Site, satisfy any legal requirement that such communications be in writing.

### **Your account**

If you use this site, you are responsible for maintaining the confidentiality of your account and password and for restricting access to your computer, and you agree to accept responsibility for all activities that occur under your account or password. You may not assign or otherwise transfer your account to any other person or entity. You acknowledge that ChronoSync is not responsible for third party access to your account that results from theft or misappropriation of your account. ChronoSync and its associates reserve the right to refuse or cancel service, terminate accounts, or remove or edit content in our sole discretion.

ChronoSync does not knowingly collect, either online or online, personal information from persons under the age of thirteen. If you are under 18, you may use [www.chronosync.com](http://www.chronosync.com) only with permission of a parent or guardian.

### **Links to third party sites/Third party services**

[www.chronosync.com](http://www.chronosync.com) may contain links to other websites ("Linked Sites"). The Linked Sites are not under the control of ChronoSync and ChronoSync is not responsible for the contents of any Linked Site, including without limitation any link contained in a Linked Site, or any changes or updates to a Linked Site. ChronoSync is providing these links to you only as a convenience, and the inclusion of any link does not imply endorsement by ChronoSync of the site or any association with its operators.

Certain services made available via [www.chronosync.com](http://www.chronosync.com) are delivered by third party sites and organizations. By using any product, service or functionality originating from the [www.chronosync.com](http://www.chronosync.com) domain, you hereby acknowledge and consent that ChronoSync may share such information and data with any third party with whom ChronoSync has a contractual relationship to provide the requested product, service or functionality on behalf of [www.chronosync.com](http://www.chronosync.com) users and customers.

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All content included as part of the Service, such as text, graphics, logos, images, as well as the compilation thereof, and any software used on the Site, is the property of ChronoSync or its suppliers and protected by copyright and other laws that protect intellectual property and proprietary rights. You agree to observe and abide by all copyright and other proprietary notices, legends or other restrictions contained in any such content and will not make any changes thereto.

You will not modify, publish, transmit, reverse engineer, participate in the transfer or sale, create derivative works, or in any way exploit any of the content, in whole or in part, found on the Site. ChronoSync content is not for resale. Your use of the Site does not entitle you to make any unauthorized use of any protected content, and in particular you will not delete or alter any proprietary rights or attribution notices in any content. You will use protected content solely for your personal use, and will make no other use of the content without the express written permission of ChronoSync and the copyright owner. You agree that you do not acquire any ownership rights in any protected content. We do not grant you any licenses, express or implied, to the intellectual property of ChronoSync or our licensors except as expressly authorized by these Terms.

## Use of communication services

The Site may contain bulletin board services, chat areas, news groups, forums, communities, personal web pages, calendars, and/or other message or communication facilities designed to enable you to communicate with the public at large or with a group (collectively, "Communication Services"), you agree to use the Communication Services only to post, send and receive messages and material that are proper and related to the particular Communication Service.

By way of example, and not as a limitation, you agree that when using a Communication Service, you will not: defame, abuse, harass, stalk, threaten or otherwise violate the legal rights (such as rights of privacy and publicity) of others; publish, post, upload, distribute or disseminate any inappropriate, profane, defamatory, infringing, obscene, indecent or unlawful topic, name, material or information; upload files that contain software or other material protected by intellectual property laws (or by rights of privacy of publicity) unless you own or control the rights thereto or have received all necessary consents; upload files that contain viruses, corrupted files, or any other similar software or programs that may damage the operation of another's computer; advertise or offer to sell or buy any goods or services for any business purpose, unless such Communication Service specifically allows such messages; conduct or forward surveys, contests, pyramid schemes or chain letters; download any file posted by another user of a Communication Service that you know, or reasonably should know, cannot be legally distributed in such manner; falsify or delete any author attributions, legal or other proper notices or proprietary designations or labels of the origin or source of software or other material contained in a file that is uploaded, restrict or inhibit any other user from using and enjoying the Communication Services; violate any code of conduct or other guidelines which may be applicable for any particular Communication Service; harvest or otherwise collect information about others, including e-mail addresses, without their consent; violate any applicable laws or regulations.

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## Materials provided to [www.chronosynk.com](http://www.chronosynk.com) or posted on any ChronoSynk web page

ChronoSynk does not claim ownership of the materials you provide to [www.chronosynk.com](http://www.chronosynk.com) (including feedback and suggestions) or post, upload, input or submit to any ChronoSynk Site or our associated services (collectively "Submissions"). However, by posting, uploading, inputting, providing or submitting your Submission you are granting ChronoSynk, our affiliated companies and necessary sublicensees permission to use your Submission in connection with the operation of their Internet businesses including, without limitation, the rights to: copy, distribute, transmit, publicly display, publicly perform, reproduce, edit, translate and reformat your Submission; and to publish your name in connection with your Submission.

No compensation will be paid with respect to the use of your Submission, as provided herein. ChronoSynk is under no obligation to post or use any Submission you may provide and may remove any Submission at any time in ChronoSynk's sole discretion.

By posting, uploading, inputting, providing or submitting your Submission you warrant and represent that you own or otherwise control all of the rights to your Submission as described in this section including, without limitation, all the rights necessary for you to provide, post, upload, input or submit the Submissions.

### **International Users**

The Service is controlled, operated and administered by ChronoSynk from our offices within the USA. If you access the Service from a location outside the USA, you are responsible for compliance with all local laws. You agree that you will not use the ChronoSynk Content accessed through [www.chronosynk.com](http://www.chronosynk.com) in any country or in any manner prohibited by any applicable laws, restrictions or regulations.

### **Indemnification**

You agree to indemnify, defend and hold harmless ChronoSynk, its officers, directors, employees, agents and third parties, for any losses, costs, liabilities and expenses (including reasonable attorneys' fees) relating to or arising out of your use of or inability to use the Site or services, any user postings made by you, your violation of any terms of this Agreement or your violation of any rights of a third party, or your violation of any applicable laws, rules or regulations. ChronoSynk reserves the right, at its own cost, to assume the exclusive defense and control of any matter otherwise subject to indemnification by you, in which event you will fully cooperate with ChronoSynk in asserting any available defenses.

### **Liability disclaimer**

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### **Termination/access restriction**

ChronoSynk reserves the right, in its sole discretion, to terminate your access to the Site and the related services or any portion thereof at any time, without notice. To the maximum extent permitted by law, this agreement is governed by the laws of the State of Pennsylvania and you hereby consent to the exclusive jurisdiction and venue of courts in Pennsylvania in all disputes arising out of or relating to the use of the Site. Use of the Site is unauthorized in any jurisdiction that does not give effect to all provisions of these Terms, including, without limitation, this section.

You agree that no joint venture, partnership, employment, or agency relationship exists between you and ChronoSynk as a result of this agreement or use of the Site. ChronoSynk's performance of this agreement is subject to existing laws and legal process, and nothing contained in this agreement is in derogation of ChronoSynk's right to comply with governmental, court and law enforcement requests or requirements relating to your use of the Site or information provided to or gathered by ChronoSynk with respect to such use. If any part of this agreement is determined to be invalid or unenforceable pursuant to applicable law including, but not limited to, the warranty disclaimers and liability limitations set forth above, then the invalid or unenforceable provision will be deemed superseded by a valid, enforceable provision that most closely matches the intent of the original provision and the remainder of the agreement shall continue in effect.

Unless otherwise specified herein, this agreement constitutes the entire agreement between the user and ChronoSynk with respect to the Site and it supersedes all prior or contemporaneous communications and proposals, whether electronic, oral or written, between the user and ChronoSynk with respect to the Site. A printed version of this agreement and of any notice given in electronic form shall be admissible in judicial or administrative proceedings based upon or relating to this agreement to the same extent and subject to the same conditions as other business

documents and records originally generated and maintained in printed form. It is the express wish to the parties that this agreement and all related documents be written in English.

### **Changes to Terms**

ChronoSynk reserves the right, in its sole discretion, to change the Terms under which [www.chronosynk.com](http://www.chronosynk.com) is offered. The most current version of the Terms will supersede all previous versions. ChronoSynk encourages you to periodically review the Terms to stay informed of our updates.

### **Contact Us**

ChronoSynk welcomes your questions or comments regarding the Terms:

ChronoSynk  
1 College Avenue  
Williamsport, Pennsylvania 17701

Email Address:  
[contact@chronosynk.com](mailto:contact@chronosynk.com)

Telephone number:  
123-456-7890

Effective as of November 10, 2015

### **Privacy Policy**

Protecting your private information is our priority. This Statement of Privacy applies to the [www.chronosynk.com](http://www.chronosynk.com) and ChronoSynk and governs data collection and usage. For the purposes of this Privacy Policy, unless otherwise noted, all references to ChronoSynk include [www.chronosynk.com](http://www.chronosynk.com) and ChronoSynk. The ChronoSynk website is a Social Networking site. By using the ChronoSynk website, you

consent to the data practices described in this statement.

### **Collection of your Personal Information**

ChronoSync may collect personally identifiable information, such as your name. We may gather additional personal or non-personal information in the future.

Information about your computer hardware and software may be automatically collected by ChronoSync. This information can include: your IP address, browser type, domain names, access times and referring website addresses. This information is used for the operation of the service, to maintain quality of the service, and to provide general statistics regarding use of the ChronoSync website.

Please keep in mind that if you directly disclose personally identifiable information or personally sensitive data through ChronoSync's public message boards, this information may be collected and used by others.

ChronoSync encourages you to review the privacy statements of websites you choose to link to from ChronoSync so that you can understand how those websites collect, use and share your information. ChronoSync is not responsible for the privacy statements or other content on websites outside of the ChronoSync website.

### **Use of your Personal Information**

ChronoSync collects and uses your personal information to operate its website(s) and deliver the services you have requested.

ChronoSync may also use your personally identifiable information to inform you of other products or services available from ChronoSync and its affiliates. ChronoSync may also contact you via surveys to conduct research about your opinion of current services or of potential new services that may be offered.

ChronoSync does not sell, rent or lease its customer lists to third parties.

ChronoSync may share data with trusted partners to help perform statistical analysis, send you email or postal mail, provide customer support, or arrange for deliveries. All such third parties are prohibited from using your personal information except to provide these services to ChronoSync, and they are required to maintain the confidentiality of your information.

ChronoSync will disclose your personal information, without notice, only if required to do so by law or in the good faith belief that such action is necessary to: (a) conform to the edicts of the law or comply with legal process served on ChronoSync or the site; (b) protect and defend the rights or property of ChronoSync; and, (c) act under exigent circumstances to protect the personal safety of users of ChronoSync, or the public.

### **Use of Cookies**

The ChronoSync website may use "cookies" to help you personalize your online experience. A cookie is a text file that is placed on your hard disk by a web page server. Cookies cannot be used to run programs or deliver viruses to your computer. Cookies are uniquely assigned to you, and can only be read by a web server in the domain that issued the cookie to you.

One of the primary purposes of cookies is to provide a convenience feature to save you time. The purpose of a cookie is to tell the Web server that you have returned to a specific page. For example, if you personalize ChronoSync pages, or register with ChronoSync site or services, a cookie helps ChronoSync to recall your specific information on subsequent visits. This simplifies the process of recording your personal information, such as billing addresses, shipping addresses, and so on. When you return to the same ChronoSync website, the information you previously provided can be retrieved, so you can easily use the ChronoSync features that you customized.

You have the ability to accept or decline cookies. Most Web browsers automatically accept cookies, but you can usually modify your browser setting to decline cookies if you prefer. If you choose to decline cookies,

you may not be able to fully experience the interactive features of the ChronoSynk services or websites you visit.

### **Security of your Personal Information**

ChronoSynk secures your personal information from unauthorized access, use or disclosure.

**Children Under Thirteen** ChronoSynk does not knowingly collect personally identifiable information from children under the age of thirteen. If you are under the age of thirteen, you must ask your parent or guardian for permission to use this website.

**Opt-Out & Unsubscribe** We respect your privacy and give you an opportunity to opt-out of receiving announcements of certain information. Users may opt-out of receiving any or all communications from ChronoSynk by contacting us here: - Web page: - Email: - Phone:

**Changes to this Statement** ChronoSynk will occasionally update this Statement of Privacy to reflect company and customer feedback. ChronoSynk encourages you to periodically review this Statement to be informed of how ChronoSynk is protecting your information.

### Contact Information

ChronoSynk welcomes your questions or comments regarding this Statement of Privacy. If you believe that ChronoSynk has not adhered to this Statement, please contact ChronoSynk at:

ChronoSynk  
1 College Avenue  
Williamsport, Pennsylvania 17701

Email Address:  
[contact@chronosynk.com](mailto:contact@chronosynk.com)

Telephone number:  
123-456-7890

Effective as of November 10, 2015

### 3. Project Proposal - ChronoSynk

In busy modern day life, coordinating meeting times with people can be difficult, especially with a large number of people. It can also be difficult to find friends to play games or do things with that share your interests. Perhaps you like to play sports more competitively or intensely than most of your current friends and would like to find others that like to play on your level. Do you have a bit of free time and would like to meet some new friends in an online game? Does your group of friends have odd schedules that require several calls and texts just to figure out a meeting time? ChronoSynk intends to solve these problems by bringing together and figuring out the best times, places, and people for you.

ChronoSynk is web based and will perform better as more people use it. Similar to a dating site, the more data it has available, the better the matches will be. Users will be able to rate each other depending on whether or not their match was enjoyable which will affect and improve matching capabilities. Users can create groups to better coordinate meetings as well as more easily find others with similar interest groups.

ChronoSynk will benefit anyone seeking to spend time with others. It will require relatively small storage and modest computing capabilities. Databases will be developed with MySQL and will need to be add, delete, modify, and search-able (here-in known as querying) to facilitate changing schedules and dynamic data. PHP will be used for programming while HTML, CSS, and Javascript will be used for the web interface allowing for versatility and familiarity across platforms.

Keeping this system secure and available will be policies and procedures set in place to inform users of obligations assumed in using ChronoSynk as well as documentation to support users in system functionality. Secure programming practices will be researched and developed to ensure data integrity and availability during transit, rest, and processing.

ChronoSynk brings users closer to friends they haven't yet found.

#### Depth Requirements

##### ***1 – Design a project development and implementation plan.***

ChronoSynk will be hosted on a WAMP server for small scale testing and development. Project needs will first be obtained through brainstorming and surveying potential users. Throughout development, input from users will be reached for in order to develop the most satisfactory service possible. Peers will be consulted with for code and design review.

Upon completion, ChronoSynk will be rolled out to an appropriate server hosting site.

##### ***2 – Value teamwork, leadership, and consensus building.***

In order for any service to fully serve users, customer and peer input and opinions must be taken into account. As they are the ones using it, getting a variety of opinions from different sources can help make a better project that's more enjoyable for more people.

Greggory Foust will be leading the project, under the supervision of Dr. Gorka, and will have the final say in decision making.

##### ***3 – Develop consulting, decision making and time management skills.***

Peers and potential users will be surveyed for information on design ideas. Peers and manager Dr. Gorka will be counseled on code implementation.

Greggory Foust will be leading the project, under the supervision of Dr. Gorka, and will have the final say in decision making.

A Project Log Journal will be kept to keep track of project time duration. This will be compared to project time-line forecasts to gauge the accuracy of the predictions.

##### ***4 – Identify and specify the processes which solve the organizational problem being addressed.***

ChronoSynk allows users to more efficiently plan meetings and meet new people that share their interests by automatically matching them to other users depending on various criteria such as activity, time, and friends.

**5 – Explain and develop standards and policies associated with the project.**

ChronoSynk will have an Acceptable Use Policy, Terms of Use, and Privacy Policy. Standard coding practices and W3 web standards will be used as well as keeping a record of changes and backing up and separately storing files.

**6 – Explain the benefits of cross functional teams.**

According to Oxforddictionaries.com, cross-functional means “Denoting or relating to a system whereby people from different areas of an organization work together as a team.” This allows people from different areas of expertise, with different views and thought patterns, to look at a problem from multiple angles. This allows one team member to find problems or potential that another may not see and better use their collective knowledge.

**7 – Explain and apply various life cycle concepts in engaging in and completing a project.**

ChronoSynk will require several development steps in order to efficiently and properly create a successful project including actor identification, use case glossary, context diagrams, decomposition diagrams, database normalization, and code review.

**8 – Prepare appropriate end-user documentation.**

The proper policies and contracts will be drafted including an Acceptable Use Policy, Privacy Policy, and Terms of Use. A FAQ and introduction guide will be created for new user orientation.

**9 – Explain how your project addresses the synthesis, application and analytical skills used throughout the degree program.**

ChronoSynk will require project management, critical thinking, code review, networking, system administration, and other IT skills that are the subject of many of the courses in the BSI degree program.

## Breadth Requirements

### Databases

A database will be essential to this project. In order for users to be matched with each other, there will have to be a substantial number of users submitting times they are available as well as potential games, sports, or activities they want to do. This database will hold information on users, requested activities and times known as sessions, and match histories.

This database will be created in MySQL and will be securely protected to keep user information safe.

### Documentation and Support

Documentation including an Acceptable Use Policy, Privacy Policy, and Terms of Service will be drafted to comply with pertinent laws and inform users of obligations assumed when using ChronoSynk.

A help guide, FAQ, and support service will also be created for new users to learn how to use the service and obtain help when needed.

### Information Assurance and Security

With security being as important as ever and surprisingly often lacking, ChronoSynk will be created with security in mind to protect ourselves and the users. This includes secure programming, data backups, encryption, and authentication and authorization. An Acceptable Use Policy, Privacy Policy, and Terms of Service will also be utilized to fully explain how this service and the data it collects can be used.

### Networks + Systems

ChronoSynk will use web based Internet as the primary and solitary use of communication. This allows versatility for use on many devices and platforms through many channels to provide the service to users.

During development, ChronoSynk will utilize 64bit WampServer 2.5 running Apache 2.4.9, MySQL 5.6.17, PHP 5.5.12, PHPMyAdmin 4.1.14, SqlBuddy 1.3.3, and XDebug 2.2.5.

Using pingdom.com's feature of obtaining page sizes of various websites, page sizes were found to range from 600kB for more text base websites like Reddit to 4MB for content heavy sites like Youtube. ChronoSynk will not be content heavy and will therefore require roughly 600kB bandwidth.

Storage requirements will be relatively small with data entries consisting mostly of text and some pictures. Using rough estimates for record sizes in each table and numbers of records, a minimum of 30 gigabytes will be required for a four month testing period.

As development progresses, a more comprehensive system resource requirement specification sheet will be created.

### Programming

PHP will be used to generate the matches created by analyzing the information in the databases. The ability to add, delete, modify, and query records will be required for the majority of the database. User records must be able to be added when a user joins ChronoSynk, modified if information such as if email or other information changes, deleted if the user wishes to quit the service, and queried in order to display profile information.

Sessions must be able to be added, modified, and deleted in order to accommodate flexible and changing schedules of users as well as query-able to gather information to make the best matches possible.

Match history must be able to be added to and query-able for logging purposes and aiding in session matching. Modifying and deleting is not expected and should only be required in rare situations.

Creating the best matches possible will require developing and implementing algorithms and processes to create the best matches possible. Sessions and cookies will need to be developed securely to prevent

exploitation and keep users safe.

### ***Web Technologies***

HTML, CSS, and Javascript will be used to allow the user to interact with the service. These technologies will allow for a diverse user base across many devices, platforms, and browsers. Ensuring users can chose the technology they want to use gives ChronoSynk both the best chance of serving users by gathering more users to the service and developing rapport with them.

### ***Research Area(s)***

As noted in the Information Assurance and Security Depth Requirement section, system security is vital in modern day business, yet often lacking. With security holes and vulnerabilities occurring nearly everywhere along the data transmission, processing, and storage time-line, it is important and necessary to implement security at all points along the system.

While users continuously heap more and more personal data onto the Internet, it becomes easier and easier for ne'er-do-wells to access this information, build profiles on targets, and use it against them. Therefore, ChronoSynk will have a research team committed to researching and developing a modern and comprehensive security system to keep our data secure while remaining available to the necessary persons.

## 4. Planned Time Line

| Thing   | Time (minutes) | Deadline |
|---|----------------|----------|
| Download and Install WAMP   | 10             | 09/19/15 |
| Identify actors   | 30             | 09/19/15 |
| Use case analysis   | 60             | 09/19/15 |
| Research Secure Programming Methods (secure database development, secure programming)   | 240            | 09/23/15 |
| Design database   | 30             | 09/25/15 |
| Implement database  | 120            | 09/25/15 |
| Analyze Interface Requirements (What webpages need to be created, what data they need to display)                                   | 180            | 09/27/15 |
| Question possible clients for what they like to see in web interfaces compared to commonly used examples today such as social media | 180            | 09/30/15 |
| Design Interface (draw pictures)  | 60             | 10/01/15 |
| Implement Interface (write html/css)  | 600            | 10/04/15 |
| Develop matching algorithm  | 120            | 10/07/15 |
| Add Record PHP Methods  | 60             | 10/08/15 |
| Modify Record PHP Methods   | 120            | 10/08/15 |
| Delete Record PHP Methods   | 60             | 10/09/15 |
| Query PHP Methods   | 120            | 10/09/15 |
| Other code for logging in, browsing, logging out, sessions/cookies, chatting/messages   | 900            | 10/24/15 |
| Troubleshoot  | 1800           | 10/26/15 |
| Define server hardware and software requirements  | 60             | 10/26/15 |
| Research laws   | 120            | 10/28/15 |
| Create Acceptable Use Policy, Privacy Policy, Terms of Use  | 120            | 10/30/15 |
| Total   | 3190           | 53.17    |

## 5. Project Proposal Presentation

### Welcome to ChronoSynk

By Greggory Foust

### What is ChronoSynk?

ChronoSynk is a scheduling management system that aims to make meeting others easier.

Busy lives, niche interests, and curiosity are all reasons why you should let ChronoSynk help you find others to meet up and hang, physically or cyberly.

### What will it be like?

There are many ways ChronoSynk can help. Perhaps you have a niche interest that your friends don't share. Maybe you have an hour of free time that you would like to quickly find a group to play a game with. Maybe you just want to meet new people and make new friends. Maybe your friends have busy schedules and would like to find the best time to all get together.

In any of these cases, ChronoSynk can help people of all ages to meet their new friend.

## Database

A database will be essential to ChronoSync and will hold all the data to match users.

The more that data available, the better the matches will be.

This database will be created in MySQL and will be securely protected to keep user information safe.

## Documentation and Support

Documentation including an Acceptable Use Policy, Privacy Policy, and Terms of Service will be drafted to comply with pertinent laws and inform users of obligations assumed when using ChronoSync.

A help guide, FAQ, and support service will also be created for new users to learn how to use the service and obtain help when needed.

## Information Assurance and Security

With security being as important as ever and surprisingly often lacking, ChronoSync will be created with security in mind to protect ourselves and the users.

- Secure programming
- Data backups
- Encryption
- Authentication and Authorization.

An Acceptable Use Policy, Privacy Policy, and Terms of Service will also be utilized to fully explain how this service and the data it collects can be used.

| <h2 style="text-align: center;">Networks + Systems</h2>  |  |   |
|--|--|---|
| <p>ChronoSynk will use web based Internet as the primary and solitary use of communication. This allows versatility for use on many devices and platforms through many channels to provide the service to users.</p>   |  |   |
| 64bit WampServer 2.5   | Development Server   | Testing Server  |
| <ul style="list-style-type: none"><li>• Apache 2.4.9</li><li>• MySQL 5.6.17</li><li>• PHP 5.5.12</li><li>• PHPMyAdmin 4.1.14</li><li>• SqlBuddy 1.3.3</li><li>• XDebug 2.2.5</li></ul>   | <ul style="list-style-type: none"><li>• Windows 7 Home Premium 64bit SP1</li><li>• i7-3610QM 2.3 Ghz</li><li>• 8gb RAM</li></ul> | <ul style="list-style-type: none"><li>• 700kB Bandwidth</li><li>• 30 GB Storage Minimum</li></ul> |
| <h2 style="text-align: center;">Programming</h2>   |  |   |
| <p>PHP will be used to generate the matches created by analyzing the information in the databases.</p> <p>The majority of the database will have the ability to add, delete, modify, and query records to facilitate a fast pace and changing world.</p> <p>Sessions and cookies will need to be developed securely to prevent exploitation and keep users safe.</p>                 |  |   |
| <h2 style="text-align: center;">Web Technologies</h2>  |  |   |
| <p>HTML and Javascript will be used to allow the user to interact with the service. These technologies will allow for a diverse user base across many devices, platforms, and browsers. Ensuring users can chose the technology they want to use gives ChronoSynk both the best chance of serving users by gathering more users to the service and developing rapport with them.</p> |  |   |

## Research

As noted before, system security is vital, yet often lacking. With security holes and vulnerabilities occurring nearly everywhere along the data transmission, processing, and storing time-line, it is important and necessary to implement security at all points along the system.

While users continuously heap more and more personal data onto the internet, it becomes easier for ne'er-do-wells to access this information, build profiles on targets, and use it against them. Therefore, ChronoSync will have a research team committed to finding and developing a modern and comprehensive security system to keep our, and your, data secure and available to the necessary persons.

## 6. Interim Status Report

ChronoSynk is a web based social media platform designed to link people together based on shared interests. Depending on daily schedules and interests, it can be hard to meet up with friends and do what you want to do. ChronoSynk solves this by linking you with other people of similar schedules and interests for you to pick from or be matched with automatically.

So far, much of the back-end development of ChronoSynk has been accomplished. Users can register and log in, create and join sessions, and leave comments on session and user profiles. A large portion of the database has been constructed and some front-end development has been completed to make the site usable if not yet very aesthetic. As development progressed, some changes have been made to initial designs such as including the form to create a new session on the same page as is used to search and view sessions. The database has also been slowly growing as fields are added as needed to support functionality of the website.

While the Estimated Time-line still stands as a good reference for time requirements, completion dates should be viewed more as a guideline as development has been found to take a more natural and dynamic form rather than segmenting tasks into compartments that lead from one to the next. While use-case analysis and similar SDLC techniques were of some help in the beginning stages of design, further documentation and analysis was halted due to the strain and retarding effect that it had on development of actual service functions.

Security research has been partially completed and implemented in the case of password storage and guarding against SQL injections. More research will be needed as functionality is further developed. With much of the coding being similar between functions and many of those functions being completed, development henceforth should proceed more rapidly with the experience and code based gained. Components left to develop include allowing users to alter session and profile settings, developing and algorithm for automatic session matching at the request of users, and fleshing out the sites appearance more completely.

Current project time totals to 30 hours with roughly one third of that originating from preliminary paperwork, leaving the projected total project hours of 53 hours within reach.

## 7. Interim status presentation

**ChronoSynk**  
by Greggory Foust

**What is ChronoSynk?**

ChronoSynk is a scheduling management system that aims to make meeting others easier.

Busy lives, niche interests, and curiosity are all reasons why you should let ChronoSynk help you find others to meet up and hang, physically or cyberly.

**What has been accomplished?**

- Register
- Login
- Create sessions
- View sessions and profiles
- Join sessions
- Comment
- Delete comments

## What has been learned?

- Some security research
  - Prepared statements
  - Password storage

## What is left?

- Pretty CSS
- Develop algorithm to automatically place users into sessions if requested
- Allow users to edit session and profile settings
- Password protected sessions
- Paperwork – AUP, TOS, PP
- Continue security research

## Time estimation

|   |      |     |
|---|------|-----|
| Download and Install WAMP   | 10   | 6   |
| Identify actors   | 30   | 18  |
| Use case analysis   | 60   | 58  |
| Research Secure Programming Methods (secure database development, secure programming)             | 240  | 100 |
| Design database   | 30   | 15  |
| Implement database  | 120  | 30  |
| Analyze Interface Requirements (What webpages need to be created, what data they need to display) | 180  | 60  |
| Design Interface (draw pictures)  | 60   |     |
| Implement Interface (write html/css)  | 600  |     |
| Develop matching algorithm  | 120  |     |
| Add Record PHP Methods  | 60   | 90  |
| Modify Record PHP Methods   | 120  | 40  |
| Delete Record PHP Methods   | 60   | 100 |
| Query PHP Methods   | 120  | 150 |
| Other code for logging in, browsing, logging out, sessions/cookies, chatting/messages             | 900  | 60  |
| Troubleshoot  | 1800 |     |
| Define server hardware and software requirements  | 60   |     |
| Research laws   | 120  |     |
| Create Acceptable Use Policy, Privacy Policy, Terms of Use  | 120  |     |

## 8. Actual Time Line

The following time line is a compilation of times logged in the project journal. Time spent was categorized into appropriate topics and totaled. Start date denotes the first time that topic was worked on and end date denotes the last day it was worked on.

| Start    | End      | Time<br>(Minutes) | Item     |
|----------|----------|-------------------|----------|
| 09/19/15 | 09/26/15 | 76                | SDLC     |
| 09/19/15 | 10/30/15 | 35                | Wamp     |
| 09/22/15 | 10/15/15 | 115               | Database |
| 09/23/15 | 10/25/15 | 90                | Security |
| 09/28/15 | 11/03/15 | 396               | Design   |
| 09/28/15 | 11/03/15 | 631               | PHP      |
| 10/03/15 | 10/05/15 | 105               | Insert   |
| 10/03/15 | 10/22/15 | 277               | Select   |
| 10/03/15 | 11/02/15 | 145               | Update   |
| 10/05/15 | 10/26/15 | 48                | Delete   |
| 10/08/15 | 10/30/15 | 40                | Email    |
| 10/29/15 | 10/29/15 | 50                | Policies |

## 9. Project Journal

| Date     | Start    | End      | (Minutes) | Description  |
|----------|----------|----------|-----------|--|
| 08/18/15 | 02:00 PM | 03:15 PM | 75        | Met with manager Dr. Gorka about project expectations and requirements   |
| 08/20/15 | 02:00 PM | 02:30 PM | 30        | Met with Dr. Gorka for clarification on a few aspects of the project. Initial brief description of project seems to meet requirements  |
| 08/20/15 | 04:50 PM | 05:30 PM | 40        | Downloaded documents from PLATO, created project journal, and began and completed proposal introduction.   |
| 08/20/15 | 07:45 PM | 09:15 AM | 90        | Began and completed proposal breadth requirements.   |
| 08/23/15 | 07:40 PM | 08:00 PM | 20        | Began project depth requirements. Researched cross-functional team definition. Created resources document to log information sources for project.  |
| 08/24/15 | 09:30 PM | 10:00 PM | 30        | Continued project depth requirements.  |
| 08/25/15 | 10:10 AM | 10:45 AM | 25        | Reviewed proposal draft feedback from Dr. Gorka. Made appropriate changes to proposal draft breadth requirements.  |
| 08/25/15 | 01:20 PM | 01:55 PM | 35        | Revising project depth and breadth requirements.   |
| 08/25/15 | 02:00 PM | 02:15 PM | 15        | Met with Dr. Gorka for update on project development. Clarification on meaning of network breadth requirement.   |
| 08/30/15 | 06:34 PM | 06:35 PM | 1         | Reviewed Dr. Gorka's journal 2 feedback.   |
| 08/31/15 | 07:42 PM | 09:00 PM | 78        | Reviewed Dr. Gorka's proposal draft 2 feedback. Reviewed bandwidth. Researched project needs including WAMP version, hardware, and page sizes and updated project proposal breadth requirements. Brainstormed for project name. Created proposal presentation using project proposal as a guide. |
| 09/01/15 | 09:00 AM | 09:55 AM | 55        | Completed proposal presentation  |
| 09/03/15 | 02:00 PM | 02:05 PM | 5         | Presented initial project proposal to stakeholders.  |
| 09/03/15 | 09:00 PM | 09:50 PM | 50        | Expanded project proposal summary summarizing specifications and information added on 8/31   |
| 09/09/15 | 09:20 AM | 09:35 AM | 15        | Downloaded and reviewed proposal draft 3 feedback. Created note in project summary that searching will be referred to as querying. Changed sentence wording in Programming Breadth Requirement and Research Area slightly.   |
| 09/10/15 | 04:00 PM | 04:10 PM | 10        | Met with Dr. Gorka for weekly meeting due to class cancellation on Tuesday. Received pre-preliminary approval to begin working on project until proposal is reviewed again.  |
| 09/14/15 | 07:20 PM | 08:00 PM | 40        | Created estimated timeline. Thought of what needs to be done and guessed how long it would take.   |

| Date     | Start    | End      | (Minutes) | Description  |
|----------|----------|----------|-----------|--|
| 09/14/15 | 11:30 PM | 11:31 PM | 1         | Reviewed Dr. Gorka's feedback. Received preliminary approval.  |
| 09/15/15 | 02:00 PM | 02:10 PM | 10        | Met with Dr. Gorka. Initial review of Estimated Time-line was good. Minor changes need to be made.   |
| 09/17/15 | 08:10 AM | 08:25 PM | 15        | Made small changes to Estimated Time-line  |
| 09/19/15 | 10:25 AM | 10:31 AM | 6         | installed wamp   |
| 09/19/15 | 10:31 AM | 10:49 AM | 18        | Identified actors (Advertisers, Users, Leader, Moderator, Administrator, Email Server, Time)   |
| 09/19/15 | 10:49 AM | 11:27 AM | 38        | Worked on Context Diagram, Use Cases   |
| 09/22/15 | 01:40 PM | 01:55 PM | 15        | Database table design  |
| 09/22/15 | 02:10 PM | 02:20 PM | 10        | Met with Dr. Gorka. Initial review of Estimated Time-line was good. Minor changes need to be made.   |
| 09/23/15 | 09:00 AM | 09:40 AM | 40        | Researched secure development practices.   |
| 09/23/15 | 12:15 PM | 12:17 PM | 2         | Met with Dr. Gorka about research area and how much security I should try to add.  |
| 09/25/15 | 06:00 PM | 06:30 PM | 30        | Started to design database. Brainstormed table and field requirements  |
| 09/26/15 | 07:00 PM | 07:40 PM | 40        | Continued database design and use cases. New use cases and field requirements keep being brought up so they will most likely be continually developed as more pages and functions are added.   |
| 09/28/15 | 09:00 PM | 10:00 PM | 60        | Brainstormed required pages and sketched layout possibilities.   |
| 09/28/15 | 10:00 PM | 11:50 PM | 120       | Started coding initial page layouts focusing mostly on the 'header' and 'footer' that will be used on all of the pages.  |
| 09/28/15 | 11:50 PM | 12:00 PM | 10        | Created a front page graphic for guests, similar to the Facebook landing page.   |
| 09/29/15 | 02:00 PM | 02:05 PM | 5         | Met with Dr. Gorka. Showed her page development.   |
| 09/30/15 | 12:20 PM | 12:40 PM | 20        | Looked into OWASP recommendations for password storage. Found that GET and Post requests are not secure and SSL seems to require significant effort so save for later implementation if possible.  |
| 10/03/15 | 02:20 AM | 03:00 AM | 40        | Looked into prepared statements. Could not get sample code to work even after using code exactly like an example and checking spelling. Finally figured out that the phpmyadmin account I was using for the query only had select permissions. |
| 10/03/15 | 12:00 PM | 12:15 PM | 15        | Tried using phpmyadmin account with write permissions to execute query. It worked.   |
| 10/03/15 | 12:50 PM | 01:20 AM | 30        | Continued and finished work on password storage: hashing and salting.  |

| Date     | Start    | End      | (Minutes) | Description  |
|----------|----------|----------|-----------|--|
| 10/03/15 | 02:40 PM | 03:30 PM | 50        | Retrieve password from database through prepared statements. Getting SQL syntax just right was time consuming: column and table names do not need to have quotations   |
| 10/03/15 | 04:50 PM | 05:30 PM | 40        | Implemented code to change password. Prepared statement was causing issues again. After a lot of trial and failure I had to look up how to get the error message. Apparently accounts need select privileges to perform update statements.             |
| 10/03/15 | 05:35 PM | 05:50 PM | 15        | Implemented 'invalid username or password' notification code for login.  |
| 10/03/15 | 07:10 PM | 07:30 AM | 20        | Implemented barebones profile page   |
| 10/03/15 | 09:40 PM | 12:00 AM | 140       | Worked on session and add session pages.   |
| 10/04/15 | 02:20 AM | 02:35 AM | 15        | Sessions can now be created by users   |
| 10/04/15 | 10:20 PM | 10:55 PM | 35        | Moved add session to session page. Added comment section to session and user pages. Cannot create comments yet   |
| 10/05/15 | 12:10 AM | 12:50 AM | 40        | Users can post comments to session and user pages  |
| 10/05/15 | 03:45 PM | 07:00 PM | 195       | Implemented 'deleting' comments. Installed MySQL workbench to reverse engineer. Added relationships to database tables. Translated userID's that are displayed in comments to usernames by changing sql statement to have a join with the user table.  |
| 10/05/15 | 11:35 PM | 01:20 AM | 95        | Created presentation for interim report.   |
| 10/06/15 | 01:20 AM | 02:00 AM | 40        | Created interim report document.   |
| 10/06/15 | 12:30 PM | 12:40 PM | 10        | Presented interim report.  |
| 10/07/15 | 12:00 PM | 12:25 PM | 25        | Join/Leave session button now only visible to logged in users. Looked into jquery/ajax style tag system similar to youtube – will implement in the future after required functionality   |
| 10/07/15 | 12:25 PM | 12:40 PM | 15        | Create session form now only visible by logged in users.   |
| 10/07/15 | 12:40 PM | 12:43 PM | 3         | Added more fields to session search form   |
| 10/08/15 | 11:00 PM | 12:20 AM | 80        | Added account recovery/password reset  |
| 10/11/15 | 08:00 PM | 08:30 PM | 30        | Added changing password and account bio  |
| 10/12/15 | 12:45 PM | 01:50 AM | 65        | Added changing session settings. SQL was throwing errors and took a while to debug. The problem turned out to be that 'limit' is a reserved word and was using it as such instead of a column name. Column name was changed to 'cap' to resolve issue. |
| 10/13/15 | 01:20 PM | 01:45 PM | 25        | Started the 'feed' feature that shows recent events. It currently shows everyone's comments and where they were made   |

| Date     | Start    | End      | (Minutes) | Description   |
|----------|----------|----------|-----------|---|
| 10/13/15 | 05:00 PM | 05:30 PM | 30        | Started validating input for registration form  |
| 10/15/15 | 01:00 PM | 02:30 PM | 60        | Finished form validation for registering and creating sessions. Added charset method statements to database connections to hopefully prevent against 2nd order sql injections.  |
| 10/15/15 | 06:00 PM | 07:00 PM | 60        | Changed datetime selection method because the script that was being used was clunky. There is now a more aesthetic interface for date selection and dropdown menus for hour, minute, and period. Added updated column to session table to record when they are changed for use in feeds |
| 10/15/15 | 10:00 PM | 10:35 PM | 35        | Added security to editing sessions: you must be leader or admin/mod.  |
| 10/15/15 | 10:35 PM | 11:20 PM | 45        | Cleaning code to implement methods calls for data validation instead of various implementations on various pages.   |
| 10/20/15 | 02:08 PM | 02:35 PM | 27        | Met with Dr. Gorka. Showed her various parts of the system and what a user can do. Showed which requirements have been fulfilled.   |
| 10/21/15 | 09:30 AM | 09:40 AM | 10        | Fixed unset editSessionError and unset userID error messages in edit session page   |
| 10/21/15 | 09:50 AM | 09:58 AM | 8         | Added messages when password and bio is updated successfully in user settings   |
| 10/21/15 | 12:00 PM | 01:00 PM | 60        | Implemented friends: friend request, cancel request, accept request, and remove friend  |
| 10/21/15 | 05:00 PM | 05:10 PM | 10        | Friend list now displays on profiles with clickable links to those friends  |
| 10/22/15 | 08:00 PM | 08:40 PM | 40        | Changed activity feed so that only activity involving friends is displayed  |
| 10/23/15 | 10:30 AM | 11:20 AM | 50        | Edit session form now auto fills and editing works again  |
| 10/25/15 | 10:00 PM | 10:30 PM | 30        | Implemented auto-logout for admins and mods. This was not implemented for normal users since sites like Facebook with much more personal information on it does not feel the need.  |
| 10/26/15 | 11:20 PM | 11:50 PM | 30        | Changed comment to actually delete instead of 'hide'. Implemented logging of all sql statements that are executed.  |
| 10/26/15 | 11:50 PM | 12:05 AM | 15        | Added ability to delete sessions.   |
| 10/29/15 | 05:40 PM | 06:30 PM | 50        | Researched and used online resources to generate Acceptable Use Policy, Terms of Use Policy, and Privacy Policy   |
| 10/29/15 | 07:20 PM | 07:50 PM | 30        | Converted and formatted policies correctly and added to site.   |

| Date     | Start    | End      | (Minutes)         | Description  |
|----------|----------|----------|-------------------|--|
| 10/29/15 | 07:50 PM | 07:56 PM | 6                 | Added checkbox for users to agree to policies when registering.  |
| 10/30/15 | 12:00 AM | 12:25 PM | 25                | Emails can now be sent from my server. I previously thought that there was a much more in depth process required but only two settings in the php.ini file (smtp server and originating email) |
| 11/02/15 | 12:50 PM | 01:00 PM | 10                | Added changing visibility to edit session  |
| 11/02/15 | 05:00 PM | 06:30 AM | 90                | CSS, Contact form now sends emails   |
| 11/03/15 | 05:00 PM | 06:00 PM | 60                | Help page, About page  |
| 11/03/15 | 07:30 PM | 08:40 PM | 50                | FAQ, Max 100 characters show for description in sessions list  |
| 11/04/15 | 05:40 PM | 06:50 PM | 70                | Defined software and hardware requirements   |
| 11/05/15 | 01:35 PM | 01:40 PM | 5                 | Met with Dr. Gorka for final approval on remaining project requirements  |
|          |          | Total    | 2983              | minutes  |
|          |          |          | 49.716666<br>6667 | hours  |

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