

Trinity Equestrian Center Database Project

Primary Goals for the Database:

1. Track horse usage in terms of volume (hours), level of activity (effortless to strenuous) and type of activity (lesson, therapy, reinvesting)
2. Manage *Ranch Care* scheduling and participation related to events, participants and staff; track week and activity themes for both age groups (7-9 and 10-12); track hours contributed by different types of staff (paid in full, volunteer in full, 1:1 paid:vol) for payment or credit toward volunteer package
3. Track consumer medical history and progress in the *Healing with Horses* program; manage scheduling and participation related to horses, consumers, staff.

Additional Data-storage and Data-tracking Requirements for this Database:

1. Facilitate scheduling of volunteers and staff for events and activities based on flow and estimated participation
2. Track non-usage information for all horses (both TEC-owned and boarded)
3. Track fund-raising events and related relationship building with both community partners and donors

Future, Scalable, Web-accessible Requirements:

1. The database must provide secure access to TEC volunteers from anywhere with Internet access to insert/update their availability information and select available volunteer opportunities.
2. The database must provide secure access to TEC personnel from anywhere with Internet access to insert/update all database data.
3. The database must provide secure access to TEC donors and community partners from anywhere with Internet access to insert/update their profile data and track their giving record.

To meet the above goals, Trinity Equestrian Center needs data collected for the following:

- TEC Animals (TEC is adding alpacas starting Spring 2010 and will want the same information collected for both horses and alpacas)
 - Basic info (name, birthdate, gender)
 - Procurement info (date procured; mode of procurement—purchase, donation, trade; price)
 - Health history (vet visits, worms, medications given, vaccinations)
 - Hours used (volume, level and type of activity)
 - Unique characteristics (food allergies, feeding regime, special-care needs)
 - Show dates and results
 - Breeding dates and results
 - Status of animal (dead, sold, given away) and date
 - All data from the Investing_in_our_Horses_grid.pdf
- Boarding Horses
 - All data from the New_Boarder_Info.pdf form
 - Owner info (primary name and contact info; emergency name and contact info)
 - Basic info (name, birthdate, gender)
 - Boarding history (date(s) arrived/departed—including gaps, if any; location—stall, pasture; costs)
 - Health history (vet visits, worms, medications given, vaccinations, hoof care)
 - Unique characteristics (food allergies, feeding regime, special-care needs)

- Programs (including *Ranch Care*, *Healing with Horses*, Lessons (individual/group) Day Camps, Thursday @ Trinity and Eau Claire Academy (Project Morph)
 - Schedule information (consumers/participants; staff/instructors; basic info—name, descr, cost)
 - Special events (need only collect date of event, number of participants, time and length of event & what organization it is)
 - Healing Center (new arena to be built)
 - Calendar of arena use with organization (e.g., Girls Scouts), date, time, length of use, purpose of use
- Volunteers
 - All data from the volunteer_information_form.pdf
 - Profile (name, contact information, date first started volunteering)
 - Type of volunteer (e.g., UWEC Equine Team, weekend help)
 - Scheduling information (who is scheduled to do what when; who *actually did* what when)
 - Availability information (who is available on what days and during what hours)
 - Area(s) of interest for volunteering (6 different areas listed)
 - Participation in programs; riding time (both benefits of being a volunteer)
 - Ranch Care Volunteer “Benefit Package” received: date(s) received; contents of pkg—gift cards, etc. (This is only for those volunteers participating in the *Ranch Care* program.)
- Staff
 - Profile (name, photo, contact information, date first started)
 - Type of staff (e.g., full time; 1:1 paid/volunteer, weekend chores barter)
 - Scheduling information (who is scheduled to do what when; who *actually did* what when)
 - Participation in programs; Riding time
 - Employment application info
- Consumer
 - All consumer-related data indicated on the *HWH_Forms.pdf*
 - All data from the Financial_Aid_Request.pdf form (if applicable)
 - What horse is used for each session
 - # of hours on horse(s) (cumulative)
- Students
 - All data from the New_Student_Form.pdf
 - All data from the Lessons_Getting_to_Know_You_Form.pdf
 - All data from the Financial_Aid_Request.pdf form (if applicable)
 - Riding release
 - What horse is used for each session
 - # of hours on horse(s) (cumulative)
 - Registration form information
 - Progress evaluations (completed by instructors)
 - All data from the Ranch_Care.pdf forms
- Participants
 - Organization (e.g., Girls Scouts)
 - Description of type of activity
 - # of participants
 - Cost of activity

- Horses used & how long
- Community Partners
 - Basic information (company, contact person, contact info)
 - Donation history (dates, amounts)
 - Relationship-building history (mode of communication, purpose)
- Donors
 - Basic information (name, contact info)
 - Donation history (dates, amounts and/or items)
 - Relationship-building history (mode of communication, purpose)
- Other
 - incident information

Reports needed from this database include the following:

- Typical managerial questions related to ***every bullet*** listed above (sorted and organized appropriately). Queries might be implied or explicit. Examples include *but are not limited to* the following:
 - List all horses sorted by age or by gender and then age.
 - Provide a count of all horses; provide a count of all horses by gender.
 - When was Sterling last seen by a vet? Why was he seen? Did he receive any medications/vaccinations? Provide Sterling's complete medical history.
 - Provide Turk's activities for the past week. How long was he ridden? How was he used? How strenuous was each activity?
 - Provide a count of all boarded horses.
 - List all events for Summer 2010.
 - List all participants registered for each event during the week of X.
 - Which volunteer has been here the longest?
 - List when each *Ranch Care* volunteer received their Benefit Packet.
 - For which consumers are we missing a consumer release form? A riding release form?
 - Who are our community partners (and the contact person with phone number and email)?
 - Which donor(s) have supported us every year for the past 5 years?
- For both *all* horses and *any given* horse (e.g., Casper)
 - Lists of horses in ascending and descending order of hours used.
 - List of horses in ascending and descending order of hours used per activity type.
 - List of horses in ascending and descending order of hours used per activity type and level of activity.
 - List of reinvesting times, dates, lengths and riders (who rode whom when and how long?)
- For each *horse and rider* combination
 - Report identifying which staff member rode which horse for how long in what type and level of activity (to be tracked for Horse Use and Reinvesting)
 - Report identifying which student rode which horse for how long in what type and level of activity and what type of progress.
- For consumer in the *HWH* program

- Report ID which consumer rode which horse for how long in what type and level of activity and what type of progress.
 - Display both pre-program evaluation and post-program evaluation (using the same current instructor evaluation form in the HWH document collection)
 - Report of medical history coming into the program
 - Report of progress made in which areas (physical, emotional, social, learning, etc.) and with which horses
 - Identification of any consumers with (auditory, visual, speech, muscular, etc.) challenges in current *HWH* program
 - Who is the emergency contact for “Bob”
 - Comparison of consumer progress status on Date X and Date Y
- For each instructor
 - Display each instructor’s profile: basic contact info and level of instruction (e.g., beginners, intermediate, advanced, jumping, HWH or ECA (Project Morph)
 - List which instructors teach both regular and therapeutic lessons (2 instructors do both; there are 3 instructors for regular and 3 instructors for therapeutic)
 - Print a schedule of weekly lessons: who is scheduled to teach which lessons for which costs on which days at which times?
 - List which instructor is qualified to teach which lessons.
- For all programs
 - Which programs generate the most gross revenue (before costs and revenue splits)?
 - Which programs were the most/least attended?
- For each or all volunteers
 - Which volunteer worked the most/least this year?
 - Who is scheduled to work what jobs on what days at what times and for how long?
 - List when each Ranch Care volunteer received their Benefit Packet
 - An aggregate total of all volunteers hours by month/yr.
- For all services (e.g., Boarding)
 - Number of stalled horses vs number of pasture horses
 - Average number of stalls occupied per year by months
 - Average number of pastured horses on ranch per year by months
- Other
 - Which horses have been involved in incidents this past year?
 - When was our last incident? What were the details?
 - Who received what financial aid for what program on what date

Constraints/Limitations of TEC Database Project used in the IS 344 Database Management Class:

1. The TEC database will not track data for the following:
 - a. Facilities and related maintenance
 - b. Food inventories
2. The IS 344 *Database Management* class will develop the TEC database on an *Oracle* server. TEC does not have an *Oracle* server. The following modifications will help facilitate a TEC transition to a fully functional database system:
 - a. IS 344 students will be provided with an extra-credit opportunity to recreate the database in Microsoft Access. The Microsoft Access database application will include an end-user interface.
 - b. TEC will investigate the purchase of the Microsoft Access database.
 - c. TEC will investigate listing (starting Summer 2010) the Access database project as a UWEC Service-Learning project (<http://www.uwec.edu/sl/postproject.htm>) using the design documents created by the IS 344 students.
3. The TEC database will not be web accessible (and will therefore not have restricted—login—access). Although *IS 344* is a database-only class, options for accessing it via the Internet (via a web interface) exist.
 - a. *IS 314* (taught each fall semester) focuses on creating a web interface to a database. Students have to find a consumer project. The software in the course is Microsoft based.
 - b. A capstone computer science course requires students to build and implement a website (which I believe has an attached database). However, I'm unsure if the software is Microsoft based (to ensure smooth integration with Microsoft Access).
 - c. A web interface developed in either the IS or the CS course could have secure log-in capabilities.
 - d. The IS 344 students will create the necessary fields for a secure login (username and password).

TEC will receive the following deliverables (from each team) at the end of the Spring 2010 semester:

1. List of business rules defining data-related processes (.doc or .docx file format)
2. Full data model (ERD) illustrating the design of the database (*Visio* file format)
3. All the SQL code to build, populate and query the TEC database (either .txt or .sql file format)

Project Trinity



ADVANCED MANAGEMENT SOLUTIONS

TEAM 1

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Mission and Vision Statement

Our mission is to improve the technological abilities of Trinity Equestrian Center so the employees and management can better provide their customers and attract more volunteers with quality improvements to their system. Our goal is to reduce the amount of time spent organizing volunteers and improve the communication between the management and the volunteers. These improvements will allow Trinity Equestrian to accomplish more of its own goals.

Project Objective

In order to achieve our goals, we will be developing an online volunteer registration system for Trinity. It will solve many of the company's problems. Most of these problems are related to volunteer scheduling both on a weekly basis and for special events. For example, the secretary has to send and sort through numerous emails to find out when certain volunteers are available to work. This is a huge hassle when she is trying to put together a work schedule for 30 or more volunteers for an event. It also causes problems when schedules are already set and volunteers either need to cancel or change time slots. Our system will have a simple interface and be updated automatically, so that all users can easily learn and utilize the new volunteer registration methods. It will not be a local network system; anyone with an internet connection will be able to log in to sign up. There are also problems with the inconvenience for Ranch Care workers. The system will help smooth out some of the issues related to the complications and broken shifts that typically occur in that department. Our primary objective is to simplify the volunteer process as much as possible for all parties involved with this system.

Initial Needs Requirements

Users of this program need to have our system accomplish the following:

- Handle various volunteer levels on any given day
- Be able to compute various shift availability times
- Allow updates by the secretary or person posting the events going on and the need for volunteers
- Generate a populated list of volunteers with cutoff limits and restriction points
- Update permanent staff when volunteer staffing levels have been reached for a given task
- Give a confirmation screen to volunteers to confirm their volunteer times
- Provide an economical yet simple system to both the volunteers and the event coordinator

Description of Alternatives

Trinity could keep the system that they already have in place. This system would not take any additional training to staff or volunteers to keep implemented. Their system is cost-effective and staff has worked with it for many years by sending e-mails when volunteers are needed. Conversely, this system is slow and time consuming. There is no instant feedback for volunteers to confirm their volunteer times are approved. Even though this system is currently working for Trinity Equestrian Center, a more technology advanced system would benefit both staffers and volunteers alike.

Trinity could hire a third party development team to develop a system specifically fitting Trinity's needs. This system would no doubt be a technologically sound system that the center could use for years. This system would be detailed and would come with technical assistance for the volunteers from the mother company. However, this program would not be cost-effective. This program would undoubtedly cost much more than a non-profit organization such as Trinity would want to spend. Additionally, the time that this system would take to develop could breach the time allotted to get this system in place. In conclusion, while a third party team would design a suitable scheduling system, the costs and time constraints make this system less feasible to fully implement.

Trinity could look into leasing a scheduling system through a third party company. Some companies (such as calling services) are expanding their systems to scheduling centers. This system would allow Trinity to take a back-seat and let the center control their volunteer sign-ups as well as facilitate their web-based volunteer system. Consequently, Trinity would face long term costs with the implementation of this option. There is a subscription fee for services that these companies impose that

Trinity would have to forfeit on a scheduled basis. Additionally, Trinity needs their system to be extremely versatile; many of these companies have a set program to manage their volunteer databases. While this system would technically work for Trinity, it would again violate many of the cost barriers associated with a Non-Profit Organization such that Trinity is.

Method of Approach

Trinity Equestrian Center currently has an inefficient system to manage volunteer scheduling. Because sign-ups and postings are completed in person, on paper, or by e-mail, there is considerable room for errors. These include volunteer overbooking and overlap, schedule confusion, and the inability to notify volunteers of opportunities in a detailed and orderly manner.

Advanced Management Solutions is developing a comprehensive solution to these problems. We propose to create an online scheduling system that not only tracks all available volunteers but notifies those volunteers of opportunities within the center. Our program will conveniently display time slots that volunteers can sign up for, providing instant confirmation of the commitment to volunteer to both the center and to the volunteer.

Management will be able to post, alter, or delete opportunities at any time, and volunteers will be able to see those changes whenever they log into the system. Volunteer slots will be unique items on a visually conducive interface that will display times and durations of shifts to the user.

System Description

Since it is for a relatively small organization, our system doesn't need a great deal of hardware and software accommodations. Our system requires new hardware in the form of a new monitor and tower for Trinity Equestrian. It will need an Intel Core 2 Duo processor with minimum of 4 gigabytes internal memory and capabilities for wireless LAN. Trinity's workforce will connect the computer to their printer and be able to print and view schedules from the website. The program will be run over the internet, using a design from a Microsoft Visual Basic web template. A steady and secure internet connection will also be necessary, as the program will be run online. It is the company's decision whether they would prefer wireless internet or simply use an Ethernet cord, like they are currently doing. The system will not require a server, as Trinity only has one main computer that the system's website will be run on.

Feasibility Analysis

Economical Feasibility

The first year will be the most expensive for Trinity. The major cost will be the purchase of a computer to operate the system. We estimated that this would be around \$600. If it is determined that the center currently has the hardware in place to operate the system, this purchase will not be necessary.

The only other significant start-up cost the project would have will be the cost to outsource the programming of the system. To have the website interface developed and the program code written, it will cost approximately \$250. We estimated this as paying an Information Systems student \$10/hour for 25 hours. Through the years the system will need maintenance to keep it running smoothly and growing as Trinity Equestrian Center grows. These costs will be minimal and we estimate will cost \$50 per year if 5 hours of programming are needed to update the system each year. If Trinity is able to find a volunteer with the technical background necessary, especially one looking for their Service Learning credit, these costs will also be nullified.

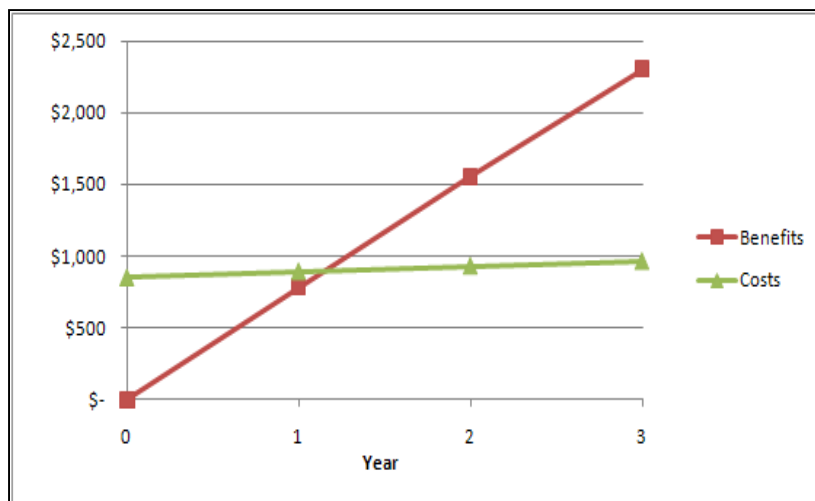
We believe the benefits of the project will significantly outweigh the costs. Even if Trinity needs to purchase a new computer and pay someone for development, the center will gain a system that will streamline scheduling activities long into the future. This system will save the time it takes for the secretary to go through emails from volunteers pertaining to when they are coming. Having an automated system will also reduce the confusion that comes with attempting to deal with separate emails from everyone, especially when the schedule changes.

For the benefits to the center, we found that all benefits are intangible. However, for the purposes of feasibility analysis, we decided to monetize the volunteer pay and hypothetically estimate the benefits. This system will save at least 25 hours of supervisory volunteer time (\$10/hour) for a total of \$250 per year. We also estimated that the system would save or create at least 2 hours per week at \$5/hour. This includes time that would be lost because volunteers would not know of opportunities arising in the short term. It also includes time that would be lost if volunteers e-mailed back for the same shift and only one was able to work.

In the long run, using the system will be very economically feasible for Trinity. The intangible value of the volunteer time gained will be a convincing incentive for Trinity to invest in the hardware and development if necessary.

Break-Even Analysis

		Year				
Benefits		0	1	2	3	Total
	Reduction in organizing expenses		250	250	250	750
	Increase in voluntary labor availability		500	500	500	1500
	Reduction in paper and printing		40	45	50	135
	Reduction in phone costs		20	20	20	60
Total Benefits			810	815	820	2445
Discount Rate	3%	1.0000	0.9709	0.9426	0.9151	
PV of Benefits		0	786	768	750	
Cumulative NPV of All Benefits		0	786	1555	2305	2305
Development Costs						
	1 Dell Computer	(600)	0	0	0	(600)
	System Development Labor	(250)	0	0	0	(250)
Total Development Costs		(850)	0	0	0	(850)
Operational Costs						
	Maintenance Costs		(50)	(50)	(50)	(150)
Total Operational Costs			(50)	(50)	(50)	(150)
Total Costs		(850)	(50)	(50)	(50)	(1000)
Discount Rate	15%	1	1	1	1	
PV of Recurring Costs		(850)	(43)	(38)	(33)	
Cumulative NPV Costs		(850)	(893)	(931)	(964)	(964)
Express Costs as Positive		850	893	931	964	964
Overall NPV						1341
Yearly NPV Cash Flow						
		(850)	743	730	718	
Cumulative Net Cash Flow		(850)	(107)	623	1341	
Return on Investment (ROI):		139.07%				
Break-even Fraction:		0.15				
Break-Even Point:		1.15				



Operational and Technical

The system which Advanced Management Solutions (AMS) is proposing will give the coordinators at Trinity a central page to see when they have volunteers coming in, and where they need more help. This system should solve the confusion that happens when there are multiple people individually emailing in their signups. Emails can get lost in the shuffle easily and all of a sudden Trinity has more volunteers than they can handle one day, and not enough the next. The proposed system will have time slots that volunteers can sign up for, and once that slot has been accepted, it will be appear on the webpage as “taken.” This way, Trinity will never have too many volunteers, and volunteers will clearly be able to see where Trinity needs them most.

The technical feasibility of this project might be out of the range for Trinity and AMS. The programming skills that are required for the development and the maintenance of the scheduling system will be outsourced to another party. We chose this option to make sure that the system is at a professional level and will operate efficiently.

Scheduling Feasibility

Because there is no real deadline for this project’s development (this idea was initiated by AMS), the scheduling feasibility is not a primary concern. Since Trinity is primarily a volunteer organization, there are no government-imposed deadlines or competitors to hurry the development and implementation of the system. Trinity will start to benefit from our system as soon as it is in place; it does not matter at what point in time the project is completed. Although the company would prefer to have the system in place for events in the spring, there is little pressure for us to have it finished by that time. However, we do hope to have the project completed by spring of 2010.

Legal, Contractual and Political

We are creating the system from scratch. We have investigated copyright laws, and we are not infringing on any of them. The project we have proposed does not violate any laws, and will not do so in the future.

Political feasibility will not be an issue either. Throughout the design of the project we have been in contact with Toni Mattson getting her input and making sure that our project fits the needs of Trinity now and in the future. From our understanding, Trinity has been looking to update their system for some time. With Toni’s support the political obstacles are nonexistent.

Management Issues

Within our team, each member has specific responsibilities to complete tasks relevant to the development and completion of the project. At weekly meeting, we collaborate all of our findings and explain our work and research to each other so it can be used in other aspects of the project. Heidi is the scribe: she takes notes of all of our group meetings and posts them in the repository so the other members can look back on prior meetings and as a reference. Jacob is has the responsibility of editing and compiling all of our information outside of meetings. He has excellent skills with document preparation and editing, so he makes sure the documents look business professional and are grammatically correct. As the group leader, Mike gets the other group members organized so there is no confusion between them. It is primarily his job to oversee the progress of the entire project and assign extra tasks when it is needed. Kory is the facilitator and timekeeper, so it is also his job to keep the group on task and make the group budget its meeting time wisely. Also, he reserves rooms for the group for comfortable and convenient meetings. Anthony is the group’s researcher; if the other group members need a large amount of extra information to put together document, he searches for all of the facts and figures necessary for the project.

We plan to use standard international business format to document all of the work done on the proposed system. All reports, summaries, and proposition will use a block writing style with a standard font and size for easy reading.

We use cell phones, email, and Facebook to communicate with our group members. We also do some collaboration at the end of class. This allows us to be available almost around the clock if an emergency arises, or if another group member needs urgent help. We also have weekly meetings on Wednesdays at one o'clock to keep the project on track. We have a secondary meeting time Mondays at noon if we fall behind and need to use it. Between meetings, the group makes sure to update the documents in the repository in order for us to have the most recent copies to use during the meetings.

For our document repository, we have selected a free program called Dropbox. Dropbox enables us to have a central location for all of our documents that is easily assessable and opens everything for editing. As changes are completed, group members with an internet connection can instantly access all of the updated documents.

Project Schedule

The first stage of the project will include the initial meeting of the clients and creating a plan for the end result. This stage should only take the first 8 days of the project. We will then move on to the analysis of the present system, and the design of the new system. This stage will take approximately 17 days and will include creating a project briefing, developing GANTT charts, conducting a Break-Even-Analysis, and completing other studies. Once the system has been planned out, we would move into finding someone to do the physical development of the system so it can be tested and fully functional by the end of the year. One issue that could come up in the future could be the need to push back the deadline for the system implementation if a suitable developer is not found in time. We do not plan on controlling this risk because it is uncontrollable.

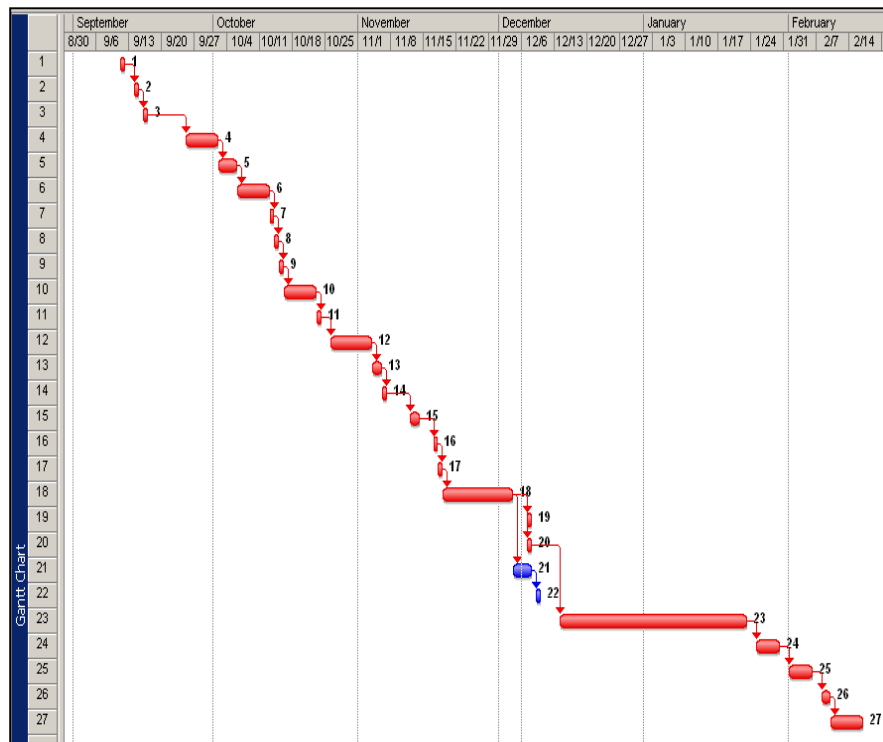
Our project schedule, in the analysis and design phase, is closely correlated with the schedule of our IS 310 class. Project deadlines are presented in the Gantt chart. Every part of the systems development process relied heavily on skills and concepts learned in class. Project achievements generally occurred within a week of learning that new skill or process, including the Gantt chart, feasibility analyses, break-even analysis, DFD's, and ERD's. In the future of the schedule, we have estimated the implementation timeline for the system. We plan to allow a month for the programmer to complete the program (this is extended due to the holidays during that time frame). The programmer will then test and debug the program, and then repeat that process with several users. The system could be published in early February, and all users would be trained and using the system within a week of publication.

Overall, we were able to follow our planned schedule almost exactly throughout the semester. This was partly due to a very clear course schedule that we relied on, and partly because we were able to meet almost every week, and met twice weekly several times to make sure that we did not fall behind on the project goals. The Gantt chart shows that almost all of our tasks are on the critical path. This is because we approached the project with a step-like approach; we paid special attention to each task to make sure it was done well before moving on to the next.

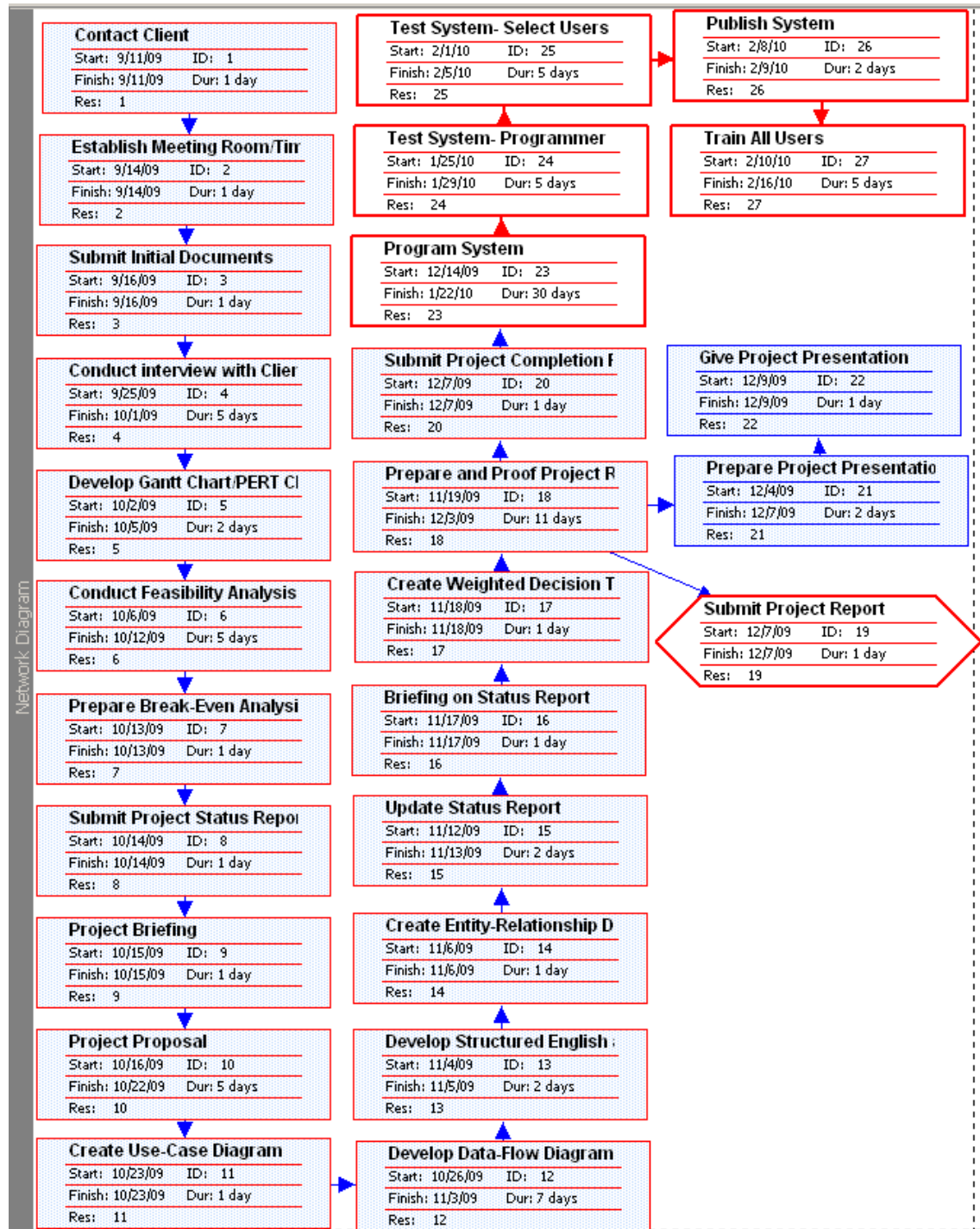
GANTT Events

	Task Name	Duration	Start	Finish	Predecessors
1	Contact Client	1 day	Fri 9/11/09	Fri 9/11/09	
2	Establish Meeting Room/Times	1 day	Mon 9/14/09	Mon 9/14/09	1
3	Submit Initial Documents	1 day	Wed 9/16/09	Wed 9/16/09	2
4	Conduct interview with Client	5 days	Fri 9/25/09	Thu 10/1/09	3
5	Develop Gantt Chart/PERT Chart	2 days	Fri 10/2/09	Mon 10/5/09	4
6	Conduct Feasibility Analysis	5 days	Tue 10/6/09	Mon 10/12/09	5
7	Prepare Break-Even Analysis	1 day	Tue 10/13/09	Tue 10/13/09	6
8	Submit Project Status Report	1 day	Wed 10/14/09	Wed 10/14/09	7
9	Project Briefing	1 day	Thu 10/15/09	Thu 10/15/09	8
10	Project Proposal	5 days	Fri 10/16/09	Thu 10/22/09	9
11	Create Use-Case Diagram	1 day	Fri 10/23/09	Fri 10/23/09	10
12	Develop Data-Flow Diagram	7 days	Mon 10/26/09	Tue 11/3/09	11
13	Develop Structured English and Deci	2 days	Wed 11/4/09	Thu 11/5/09	12
14	Create Entity-Relationship Diagram	1 day	Fri 11/6/09	Fri 11/6/09	13
15	Update Status Report	2 days	Thu 11/12/09	Fri 11/13/09	14
16	Briefing on Status Report	1 day	Tue 11/17/09	Tue 11/17/09	15
17	Create Weighted Decision Tables	1 day	Wed 11/18/09	Wed 11/18/09	16
18	Prepare and Proof Project Report	11 days	Thu 11/19/09	Thu 12/3/09	17
19	Submit Project Report	1 day	Mon 12/7/09	Mon 12/7/09	18
20	Submit Project Completion Form	1 day	Mon 12/7/09	Mon 12/7/09	18
21	Prepare Project Presentation	2 days	Fri 12/4/09	Mon 12/7/09	18
22	Give Project Presentation	1 day	Wed 12/9/09	Wed 12/9/09	21
23	Program System	30 days	Mon 12/14/09	Fri 1/22/10	20
24	Test System- Programmer	5 days	Mon 1/25/10	Fri 1/29/10	23
25	Test System- Select Users	5 days	Mon 2/1/10	Fri 2/5/10	24
26	Publish System	2 days	Mon 2/8/10	Tue 2/9/10	25
27	Train All Users	5 days	Wed 2/10/10	Tue 2/16/10	26

GANTT Chart

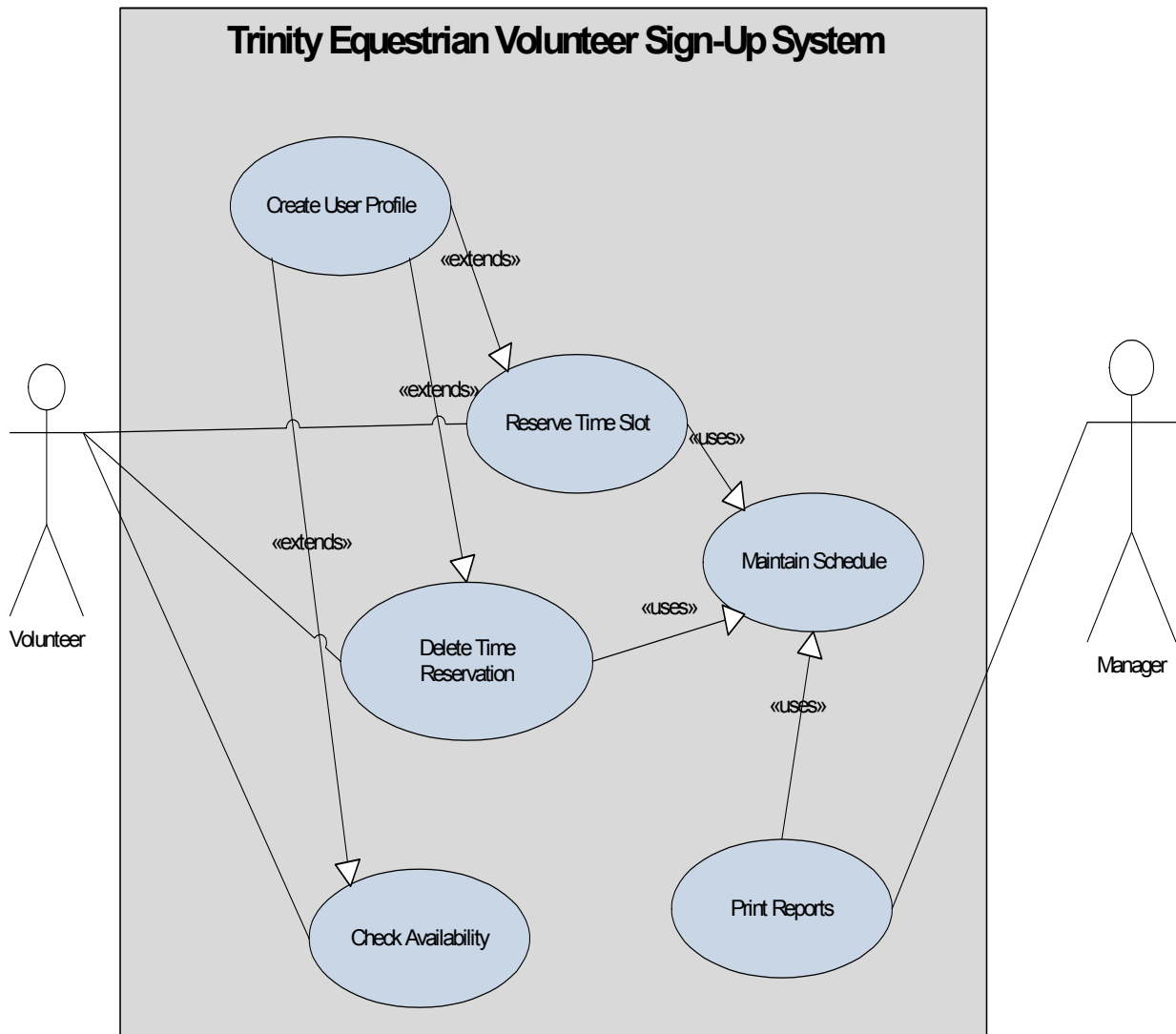


PERT Chart



Use Case

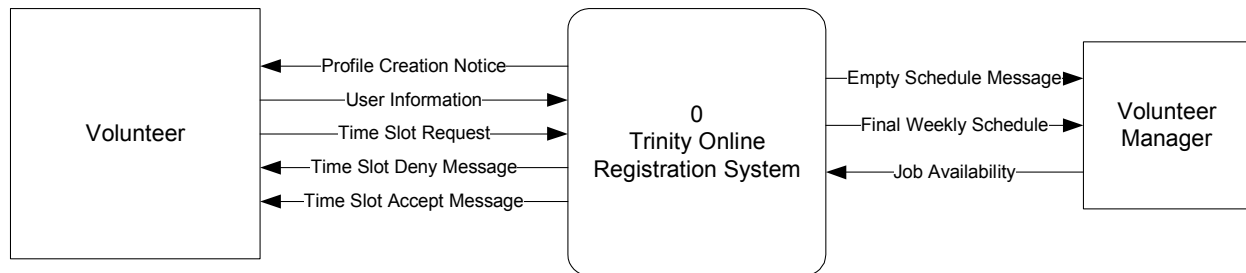
The Use-Case diagram illustrates the tasks the finished system will complete and who will complete the task. When a volunteer uses the system, they will be able to check availability as well as reserving or deleting time reservations. The system will also have them create a new user profile if they had not done so previously. The main function will be maintaining the schedule. When a volunteer reserves or deletes a time slot the schedule will automatically update. Managers can then go in and print the updated schedule at any time and know who will be coming in to volunteer and when they will be there.



Data Flow Diagram Components

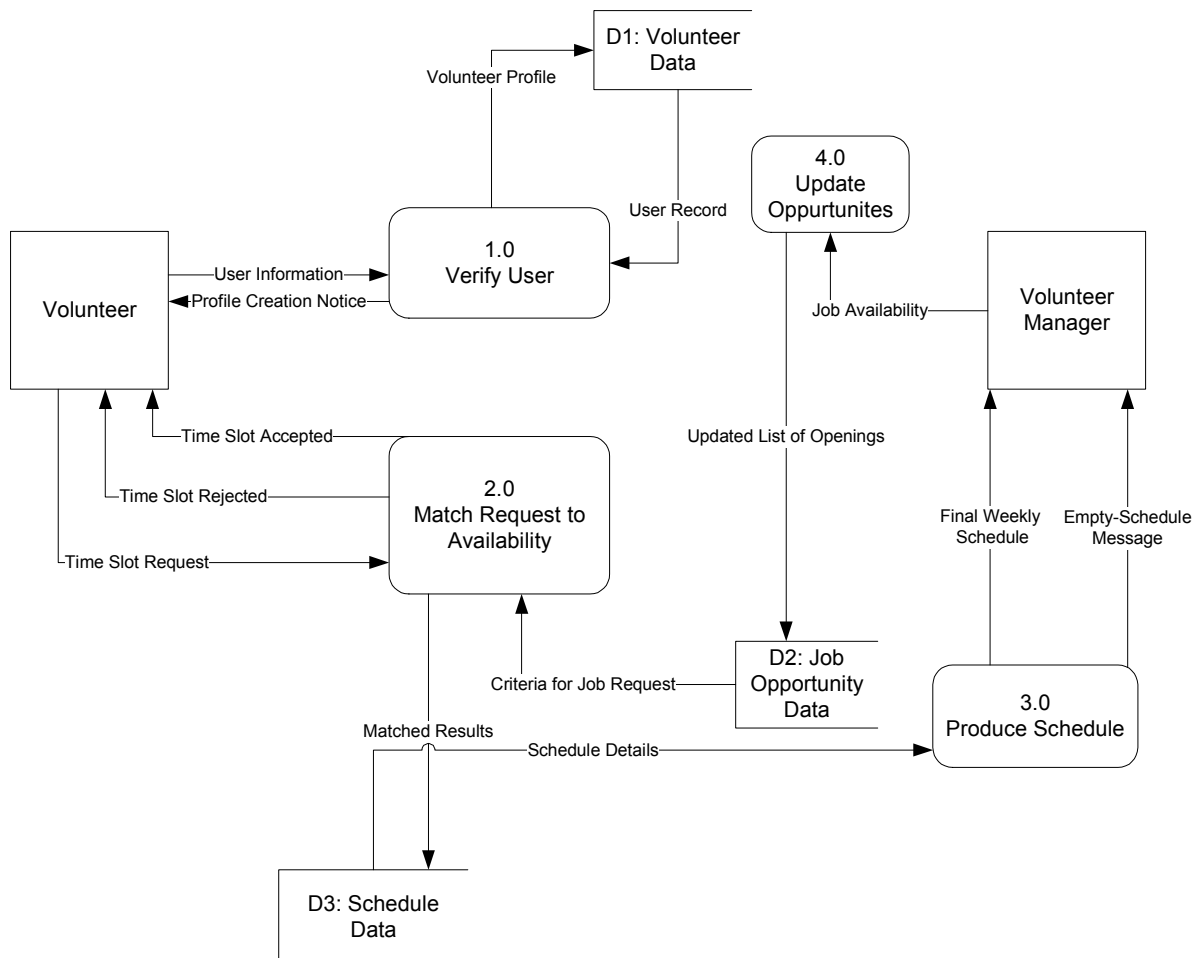
Context Diagram

The context diagram shows that the online registering system needs a variety of information from the user, which in turn is transformed into usable reports to be used by the volunteer manager. The user needs to give the system data regarding personal profiles and the time slot they wish to volunteer for. If there are no volunteers for a specific job, and empty schedule message is sent to the manager before and empty final weekly schedule is printed.



Level 0

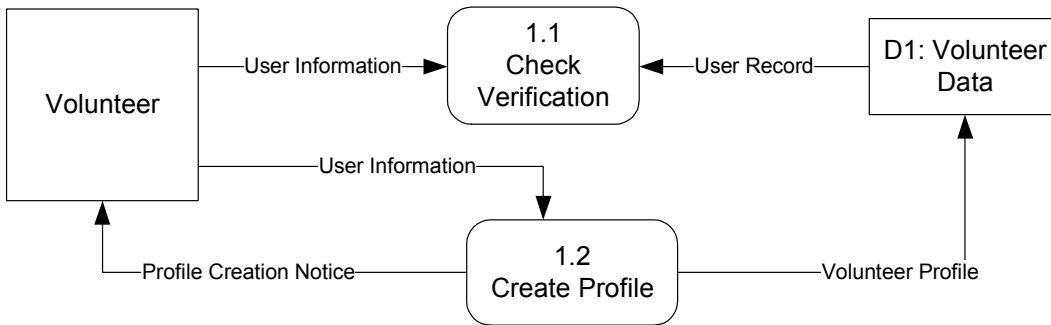
The level 0 diagram shows how the user's data is transformed into a compact, meaningful printed output form. It is fairly simple since the system is based around matching a volunteer's time slot request to an open opportunity listing, and then storing it in a data file. Also, all volunteers must create a profile before being able to use the system. The volunteer data store will keep track of all of the contact information.



Level 1 Diagrams

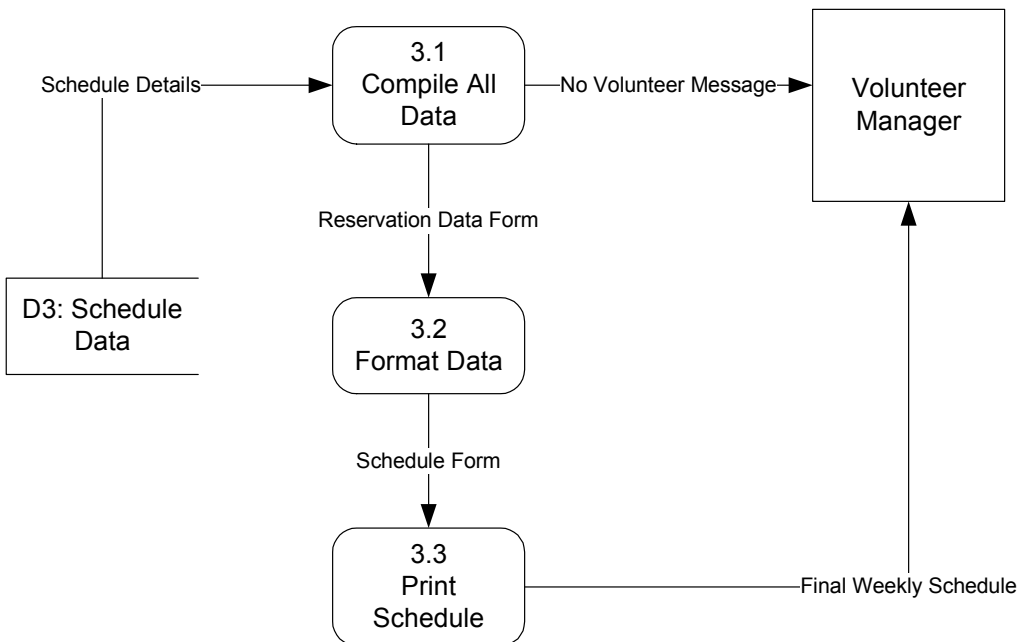
Process 1

This process 1 diagram shows how certain users must create profiles before entering the system. The system first checks for verification by matching the login input to a record from the volunteer data store. Once a user creates a profile, the system sends a “profile creation notice” to the volunteers email address.



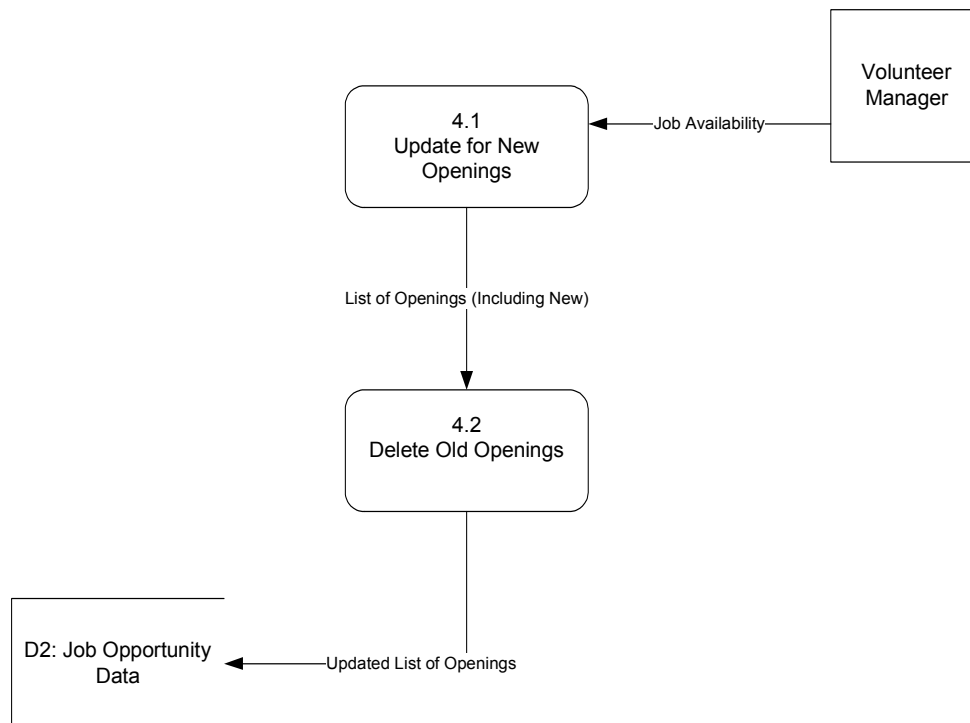
Process 3

The process 3 diagram shows how schedule details from the system are organized into a printable schedule. First all of the necessary data must be pulled from the data store, and then it must be formatted to fit a schedule form so that the volunteer manager that is reading it knows exactly what the schedule is.



Process 4

The process 4 diagram shows how the system will be continuously updating when new job availabilities are posted by the volunteer manager; it also shows how old, irrelevant jobs will be deleted from the system.



Structured English

Process 1.0 Verify User

```
BEGIN
  BEGIN IF
    IF user-profile exists
      THEN APPROVE verification
    ELSE
      CREATE new-user-profile
      STORE profile in volunteer-data
      SEND profile-creation-notice
    END IF
  END IF
END
```

Process 2.0 Match Request to Availability

```
READ Criteria-for-job-request
WHILE available-slots exist DO
BEGIN IF
    IF time-slot-opening exists
    THEN  ACCEPT request
          RECORD acceptance
          DECREASE available-slots
          SEND matched-results to schedule-data
    ELSE REJECT request
END IF
END DO
```

Process 3.0 Produce Schedule

Process 3.1 Compile All Data

```
BEGIN
READ schedule-details
SEPARATE upcoming-week-data
BEGIN IF
    IF data-exists
    THEN COMPILE data
    ELSE  SEND message
          TERMINATE process
END IF
END
```

Process 3.2 Format Data

```
BEGIN
    READ Reservation-data
    ARRANGE data into schedule-format
END
```

Process 3.3 Print Schedule

```
BEGIN
    READ schedule-form
    PRINT schedule-form
END
```

Process 4.0 Update New Opportunities

Process 4.1 Update for New Openings

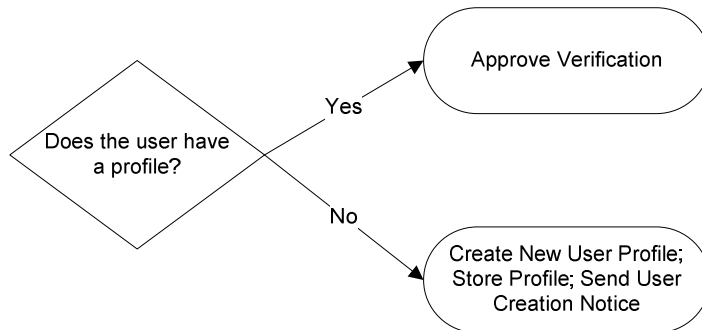
```
BEGIN
    BEGIN IF
        IF new-job-opening exists
        THEN CREATE file in job-opportunity-data
        ELSE DO nothing
    END IF
END
```

Process 4.2 Delete Old Openings

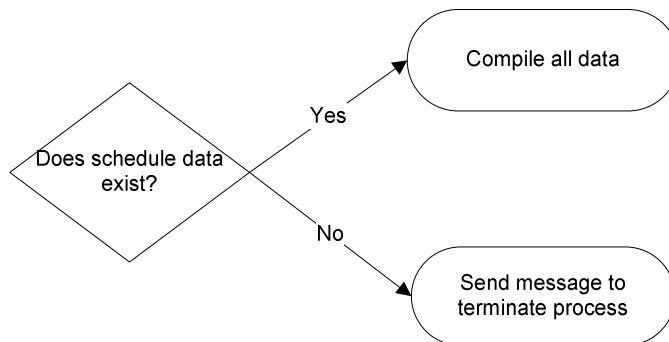
```
BEGIN
  CHECK job-opportunity-file date
  BEGIN IF
    IF job-opportunity-date has passed
    THEN DELETE FILE
    ELSE DO nothing
  END IF
END
```

Decision Trees

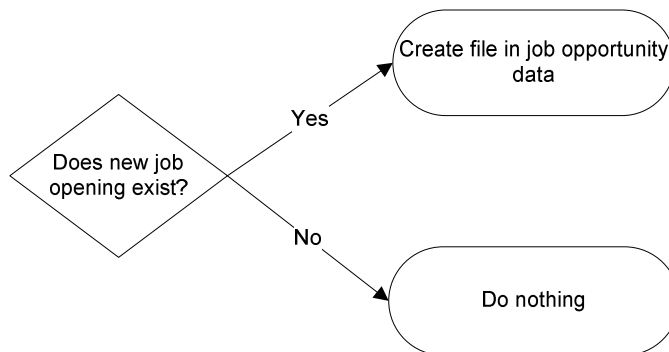
Process 1.0



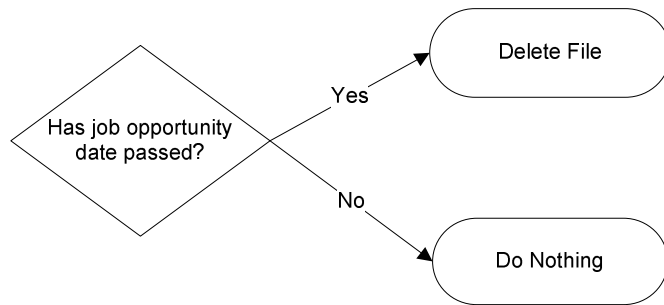
Process 3.0



Process 4.1



Process 4.2



Decision Tables

Process 1.0

Does the User-Profile already exist?	Yes	No
Approve Verification	x	
Create new user profile		x
Store profile in volunteer data		x
Send profile creation notice to volunteer		x

Process 2.0

Are there available slots?	Yes	No
Accept request	x	
Record acceptance	x	
Decrease available slots	x	
Send matched results to D3: Schedule Data	x	
Reject request		x

Process 3.1

Is there data from the upcoming week?	Yes	No
Compile data	x	
Send message		x
Terminate Process		x

Process 4.1

Is there a new job opening?	Yes	No
Create a file in D2: Job Opportunity Data	x	
Do nothing		x

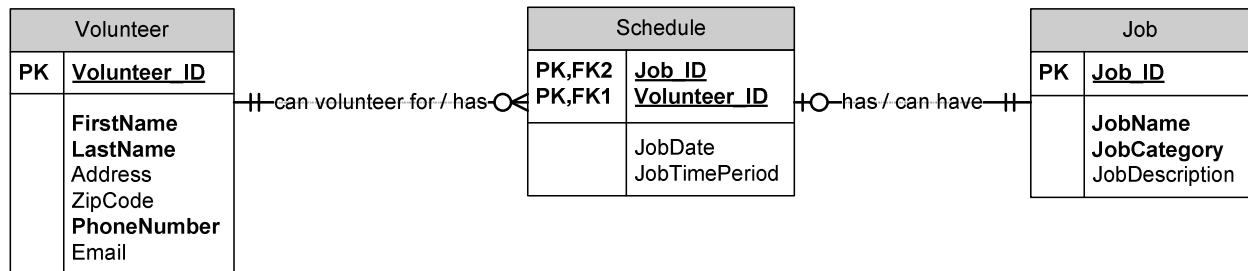
Process 4.2

Has the job opportunity date passed?	Yes	No
Delete File	x	
Do nothing		x

Entity - Relationship Diagram

Diagram

The ERD consists of three entities: volunteer, schedule, and job. The entity named schedule links individual jobs (by their respective ID numbers) to volunteers that search for jobs of that particular criterion, creating a match where the volunteer and job are temporarily linked to each other in the schedule entity.



Business Rules

Each volunteer can volunteer for zero or more jobs.

Each specific job can have zero or one volunteers.

Database Relations

Volunteer						
Volunteer_ID	First Name	Last Name	Address	Zip Code	Phone Number	Email Address
101	Julia	Engelhardt	254 Governors	54701	555-836-3886	starburst@aol.com
102	Megan	Pattarozzi	302 Towers South	54701	555-628-7041	pattarozzi@gmail.com
103	Dan	Winters	914 First Ave	54751	555-540-6033	wintersd@uwstout.edu

Schedule			
Volunteer_ID	Job_ID	Job Date	Job Time Period
102	1002	11/28/2009	1pm-3pm
103	1001	11/30/2009	4pm-5pm
101	1003	11/30/2009	4pm-5pm

Job			
Job_ID	Job Name	Job Category	Job Description
1001	Clean Stalls	Maintenance	Keep the stalls clean
1002	Guide	Healing with Horses	Walk the horse around making sure the horse stays calm while the client is riding
1003	Hay Duty	Horse Care	Feeding hay to the horses

Weighted Decision Table

We evaluated four alternatives for our project development. The least productive system is the e-mail/phone system currently in place at Trinity. It has almost no ability to update users regularly, is only available when a staff member is at their computer, and cannot display time slots available. However, it is also the cheapest alternative so it scored well in the constraints portion. It provides no way for management to view all available slots in an easy-to-read format.

A slightly better plan would be to move registrations to an Excel spreadsheet. This would be a much more organized approach, and multiple users could open the file to view and edit open spots. Still, it fails to provide instant feedback and updating of the slots currently available. However, the file would not be secure from accidental deletion, mistyped information, and would eventually become very difficult to use as more and more shifts appeared on the page.

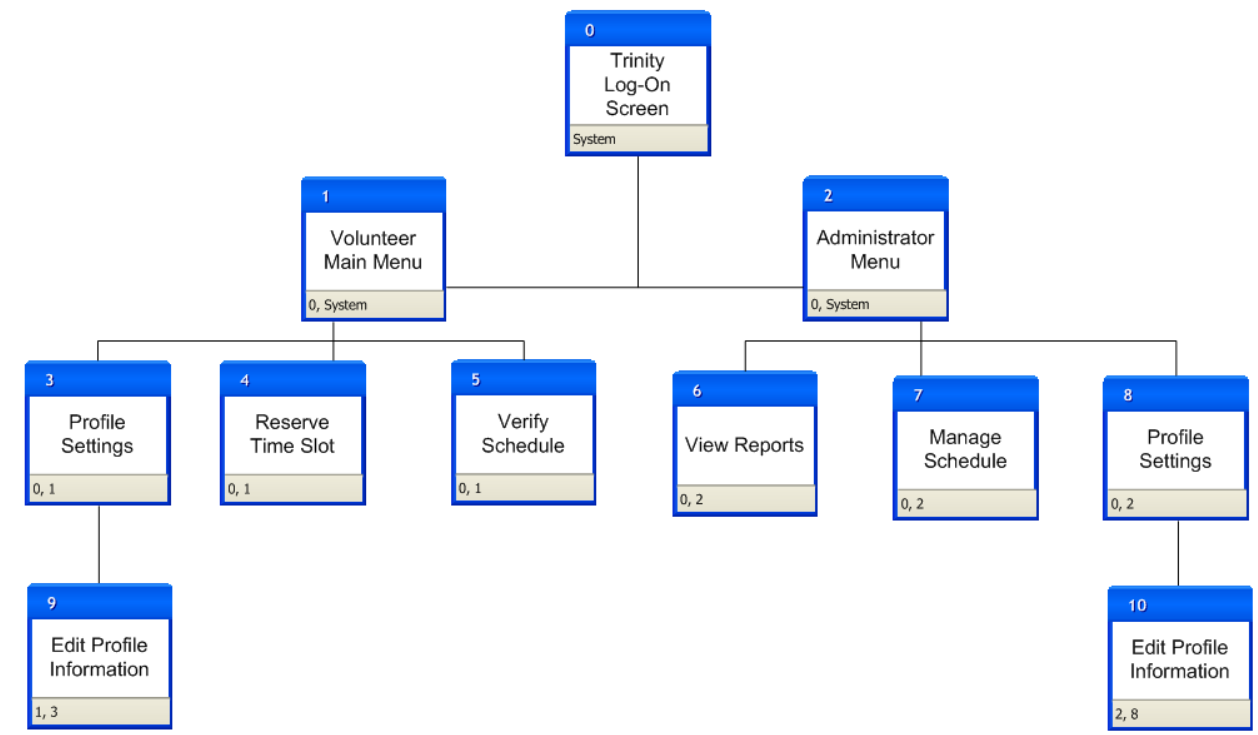
The second-best alternative was a windows application. This allows multiple users to log in to a local computer. Administrators can provide shifts to the system, and volunteers can log in to select shifts. It would prevent any doubling of volunteers and would keep the data stored and organized for users and management to do.

The best alternative is the web-based volunteer registration system. It does everything that the windows application does, but it adds to key features: users can log in from any computer, and the data is stored online rather than on a local computer that could be damaged or corrupted. It meets all cost requirements, but is still more expensive than the lowest-end alternatives.

Criteria		Weight	Online Registration System		Develop Windows Application		E-mail/Phone Call System		Excel Spreadsheet System	
			Rank	Score	Rank	Score	Rank	Score	Rank	Score
Requirements										
Easily view and choose a time slot		15	10	150	10	150	1	15	5	75
Display time slots available		10	10	100	10	100	1	10	8	80
System must be easy to use for administrators		5	7	35	6	30	6	30	3	15
System must be easy to use for users		10	9	90	4	40	5	50	7	70
System must quickly update for new positions		5	9	45	2	10	3	15	7	35
System must quickly update when slots are taken		10	8	80	2	20	3	30	7	70
System must allow for cancellations		10	9	90	5	50	7	70	3	30
Constraints										
System development can cost no more than \$1,500		10	10	100	5	50	10	100	7	70
New hardware costs must be less than \$300		5	6	30	8	40	10	50	7	35
Must take less than 2 weeks to train employees		10	5	50	7	70	2	20	4	40
Must be in operation before Spring events begin		10	2	20	4	40	10	100	7	70
Total				790		600		490		590

Dialogue Diagram

Our dialog diagram shows how both users and administrators use the system to accomplish specific tasks. After login, the system recognizes which people are volunteer users versus administrators and branches them to their respective main menus. Volunteers can branch off to view their profile, verify their schedule, or to sign up for a time slot. If they wish to change their information, they can do so on the “edit profile information” form. The administrator can use the system to view and manage the schedules as well as adding or editing time slots for volunteers.



Interfaces

System

The screenshot shows a 'Login' window with the Trinity Equestrian Center logo. It includes input fields for 'Login:' and 'Password:', and buttons for 'Enter' and 'Exit'.

Main Menus

Volunteer



Administrator



Profile

Profile

Trinity Equestrian Center

Volunteer Profile Settings

Personal Information

User ID: Stallion214
Name: Lee Harvey
Address: 1414 Marvel Court
City: Eau Claire
State: Wisconsin
Phone Number: (715) 379 - 2515
Email: Cool_Horses@hotmail.com
Password: *****

Reserve Time Slot

Schedule Registration

Trinity Equestrian Center

Job Registration

Month: View:
Day:

Job Type:

From:
 To:

Verify Schedule

Volunteer Schedule

Trinity Equestrian Center

My Schedule

Job Type	Date	Time
Ranch Care	Monday, August 10, 2009	Begin 2:00PM End 3:00PM
Healing with Horses	Tuesday, August 25, 2009	Begin 12:00PM End 2:00PM

Edit Schedule Print Schedule

Help Return to Menu

New Profile/Edit Information

Profile

Trinity Equestrian Center

Volunteer Profile Settings

Personal Information

User ID:

Name:

Address:

City:

State:

Phone Number:

Email:

Password:

Apply Help Exit Settings

View Reports

Administrator Report

Trinity Equestrian Center

Ranch Care

Name	Begin Time	End Time	Date
Lee Harvey	8:00AM	10:00AM	Monday August 1, 2009
Jack Brown	8:00AM	10:00AM	Monday August 1, 2009
Katherine Smith	12:00PM	1:00PM	Monday August 1, 2009

Healing with Horses Special Events Barn Help

Help Print Schedule Return to Menu

Manage Schedule

Schedule Management

Trinity Equestrian Center

Ranch Care

Begin Time	End Time	Slot	Slots Available	Date
9:00AM	10:00AM	Available	1	Monday August 1st, 2009
		Closed	2	Tuesday August 2 nd , 2009
			3	Wednesday August 3 rd , 2009
			4	
			5	
			6	

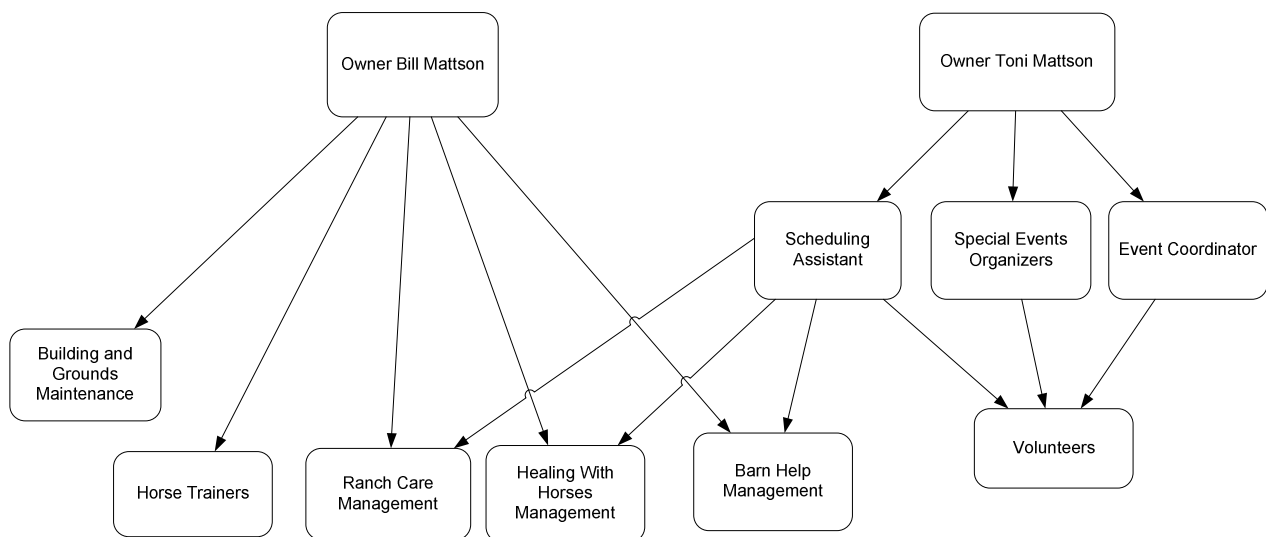
Add Time Slot Update Schedule

Help Return to Menu

Organizational Structure

Our project is aimed mainly toward the scheduling department of trinity equestrian center although the entire organization will reap its benefits. It will especially help owner Toni Mattson and company organize and schedule their volunteers. This will involve less intensive work for the scheduling assistant and special events coordinators. Volunteers will benefit from this system's instant feedback. The employees of the center will not really be affected by the system, because their hours are already set.

The owners, Bill and Toni Mattson, share the responsibilities of managing Trinity Equestrian center. Although they are both involved in all aspects of the everyday operations, they each focus on a different share organization's duties. Toni's tasks tend to be related to personnel management and public relations, whereas Bills tasks have to do more with building and grounds maintenance and tasks that are more involved with the horses themselves.



Factors Leading to the Need for a New System

Trinity's current system of email and phone correspondence between the volunteers and the management always has communication issues. Missed calls or unanswered emails can throw off the whole schedule if a volunteer is unable to come to their designated time. Another problem with the current system is that neither the volunteers nor the managers could see when the open spots were. A manager either had to ask the volunteer if a certain time would work and hope that the slot wasn't offered to someone else, or the volunteer had to show up and hope that the program needed help then. Both alternatives are highly inefficient.

Information Requirements

In order to complete this project, we needed to have good communication with the Trinity Equestrian Center staffing, specifically Toni Mattson. Through our various phone and e-mail conversations with Toni over the months of this project, we were able to devise a detailed and specified program objective that would, if implemented, benefit Trinity for the years to come.

Our group also communicated well with each other to achieve this end result. We were in constant contact with one another throughout the longevity of this project, through e-mail, person to person contact, phone, and social networking. By utilizing these diverse resources, we were able to stimulate one another to think beyond our personal vision to create a simple, yet substantial plan.

System Specifications

Because Trinity Equestrian Center is an organization that relies greatly on volunteers and generates much of their revenue through donations, their base computer doesn't need to achieve the high end performance that a computer at a high end profit-generating organization would. Here are the base system specifications that detail the system that Trinity Equestrian has employed:

Hard Drive:	Western Digital 200GB SATA
Processor:	Intel Pentium 3.0E w/ Hyperthreading Technology
Video Card:	G-Force AGP 5200 128 MB
Operating System:	Windows XP Home Edition w/ SP2
Monitor:	Rosewill 19" Widescreen Monitor (1378X1024 Res.)

Testing Plan

In order to implement this system correctly, we will need some time to install this system into the existing platform at Trinity Equestrian and work through the program to diagnose and correct any problem areas or questions that the users of our new system may have. The actual installation time will be undoubtedly measured in a scale of hours; however, the staffing implementation time could potentially take up to a few weeks to get everyone familiarized with the program and the various aspects of updating the system.

Depending on how seamlessly various volunteers adhere to our system and taking into account the potential unseen roadblocks, total implementation time could range anywhere from two weeks to a month's time, barring any significant programming errors or interface errors unseen by our team through the months designing the program.

Implementation Plan

Installation

As stated previously, installation of our program should be relatively simple. With all aspects considered, our program should bind well with Trinity's established operating system and localized hardware. The actual installation process should take roughly a day to complete; in this time, we will integrate our program with the Windows XP operating system that Trinity employs and put our volunteer sign-up program through various scenarios to clearly see the problems, if any, that could arise from software-to-software unconformities or software-to-hardware unconformities.

User Training

Teaching users how to effectively utilize our sign-up program could potentially be the tricky part of our entire implementation plan. Although our Trinity Sign-Up program was designed to be simplistic and user-friendly while still getting its task accomplished, getting users acquainted with the system will still be a significant task and take up a significant portion of our implementation time, or roughly five days. In this time, we will fully train the volunteers who will be updating our program on how to correctly update our system and make them feel comfortable manipulating the software. We will also be on hand to answer any volunteer sign-up questions and address any concerns that other volunteers and staffers may have.

Post-Installation Review

Even though our system will be installed and users will be trained with our program, there will be subsequent unseen roadblocks in the future for our system. As a group, we'll have to take a step back and look at our system as a whole to see if any advancements and changes would be out of necessity for Trinity to continue to use our system for years to come. At this point, we will also take any user feedback from the volunteers at Trinity to hopefully update our system and make it satisfactory to fit their needs and desires. Through this thorough installation and review process, we will be able to confidently say that Project Trinity was a success in every approach.

Appendix

Initial Interview with Client Transcript

This is a transcript from the first interview with Toni Mattson outlining some of the information needed for the system. Toni's responses are in italics.

Are there different jobs or areas that volunteers work- or is it one main category?

- *There are different categories. Mainly Ranch Care, Healing With Horses, Special Events or Barn Help.*

What times during the day are you open for volunteers?

- *Healing With Horses is Monday & Thursdays from 4 to 6:15 on both days or Saturdays from 11 to noon.*
- *Special Events is mostly weekdays in the PMs but that varies greatly.*
- *Barn Help is M-F 8Am to noon whenever anyone can...*
- *Ranch Care is M-F, 7:30 to 5:30 they come and go broken into shifts (this one we'll need to talk to you about because it's rather complicated, BUT really needed!!!!)*

How many volunteers needed max/min in a shift?

- *For our Healing with Horses it could be as many as 15 or a few as 10 per shift.*
- *Sp. Events could be 6 to 10 helpers*
- *Barn Help is usually 1 helper per day, usually changes per day.*
- *Ranch Care...again complicated, many volunteers needed and REALLY need a grid to manage this!!!!*

Do volunteers work for a set amount of time, or whenever they can?

- *They work as long and as frequently as possible. Ranch Care DOES have set schedules for staff volunteers, usually 5hr. shifts, except Directors have 8 hr. shifts*

Do you schedule your times by a certain amount of hours? Or like 'Monday afternoon'?

- *It's scheduled by the activity it is. If is Healing with Horses, it's by the session times and days. If it's a special event, its ½ hr before the actual event starts to set-up and ½ hr. after its conclusion for clean-up. Barn help is just by the day.*

Vendor Specification

Our system is designed specifically for Trinity Equestrian Center, and it would have to be generalized to meet the needs of various other organizations that bring in volunteers. Our system will work with a variety of operating system vendors, since all we need is an internet connection. The vendor we will select for the operating system on Trinity's computers is Microsoft Windows XP. It is compatible with their hardware and is very easy to operate. We chose the Microsoft Office business package because it is fairly cheap and Microsoft Excel will handle all of our data storage needs. We considered OpenOffice because it is open source, but chose Microsoft Office instead because the management at Trinity is more comfortable using Word and Excel.

Meeting Records

9/9 Initial Group Meeting

- Chose Trinity Equestrian center
- Developed system concept for volunteer registration

9/16 General Meeting

- Met with client, finalized "Getting Organized" report
- Developed Gantt Chart

9/21 General Meeting

- Completed Break-Even Analysis

9/30 General Meeting

- Finalized Status Report I
- Completed Feasibility Analyses

10/6 Project Briefing w/ Dr. Pratt

- Project on schedule with no concerns

10/7 General Meeting

- Finished Use-Case Diagram
- Met with client on 10/6 to develop priorities and needs requirement

10/12 General Meeting

- Finalized Project Proposal

10/14 General Meeting

- Began DFD Work

10/21 General Meeting

- DFD work
- Structured English

11/4 General Meeting

- DFD, Structured English, and Decision Trees

11/11 General Meeting- Finalized Status Report II

- Finalized DFD, Structured English, and Decision Trees

11/17 Project Briefing w/ Dr. Pratt

- Project on schedule with no concerns

11/18 General Meeting

- Finished ERD

11/25 General Meeting

- Developed final goals and assigned tasks to complete the project
- Weighted Decision Table

12/2 General Meeting

- Consistency verification
- Compilation of all elements
- Met with client to finish

12/6 Workday in the library

- Final work on project- proofreading, compilation

12/7 Final meeting to finish/publish Project Report, plan for presentation

- Submitted project report to printing services
- Practiced presentation