

# Media Services Instructional Technology Tracker



Travis Schroeder

Final Report

December 7<sup>th</sup>, 2010

# *Application Development*

## *Project Concept Proposal*

*(Revised 09-11-2010 for proposal change)*

- This project is set up to allow workers from Media Services to enter data from classroom equipment checking sheets into a simple and easy to use database system. The reason behind this project is to allow for easier searching of classroom reports by different variables such as classroom location, person making the request, and date the request was made.
- This project will also allow Media Services to check on the status of instructional technology equipment in the classrooms by checking reports to see if the equipment needs to be fixed or replaced in the future.
- The goal of this project is to provide a database system installed on a local computer system with MySQL and PHP to allow users to add and find classroom sheets easily.
- The intended audience of this database system will be the workers at Media Services. The main usability goals of this project are to make a system which will allow a worker to add a new request to the system and also allow the worker to search for past requests.
- Expected Functionality:
  - Allow creation of new request sheets.
  - Manage request sheets; including allowing workers to edit requests already in the system.
  - Ability to view request sheets.
  - Ability to add notes about when equipment was checked or fixed.
- A similar product available that Media Services uses to keep track of requests is Microsoft Excel. This program is limited in its functionality because each request is listed on a separate row. This makes the ability to read requests difficult.
- This solution would allow workers to find requests easier and not have to look through different paperwork to find the same request.
- This application will be developed using MySQL, PHP, and HTML.
- Creating a database system for a workplace will be challenging. Getting MySQL and PHP to work correctly will be one challenge. Another challenge will be creating an easy to use web interface.
- Measures of Success:
  - If the database can be used by Media Services to keep track of instructional technology equipment in the classrooms, then this project is a success.
- Possible project extensions:
  - Login system for multiple users.
  - Report system to generate reports on requests for certain classrooms.
  - Hosting on a private secure web server.
  - Weekly reminder feature

## *About the Author*



Originally from Continental, Ohio, Travis Schroeder came to Berea College in 2007 to pursue a degree in Computer Science. He enjoys learning about computers, reading up on Disney news, and playing video games in his free time. He has been a Disney fan his entire life. Since coming to Berea, Travis has learned to program in C++, MySQL, and PHP, though he is learning new things every day. He hopes to take the information he has learned at Berea and go into a career with the Walt Disney Company working in their Information Technology department.

## *Inspiration*

- My motivation for this project is to give my department, Media Services, an easy to use system for keeping track of classroom requests without having to use a pile of paperwork to keep track of the requests. I want to give back something to the department I have worked for since I have started my education at Berea College.
- This project will help in starting my career and professional growth after my education at Berea College ends. I want to go into a career of web design and creating a database that is built into a webpage is a good start on learning how to use HTML and database programming tools. I will also be learning how to use SQL and PHP to develop the database.
- Web design is an area I am very interested in and I think this project will help in learning more about web design and also how to use databases on the internet.

## *Vision and Scope*

- At the current state of tracking the classroom equipment at Media Services, it is not very organized and not easily searchable. All the requests for workers to check classrooms are written on a sheet of paper. Eventually, that sheet of paper is put into a Microsoft Excel list with other classroom requests. When this project is finished, an easier to use database system should be in place which will allow Media Services workers and supervisors to view all classroom reports. This system will also allow supervisors to determine if equipment needs to be replaced in a particular classroom.
- The Media Services Instructional Technology Tracker will be a standalone web application that will allow for efficient searching of past classroom requests. It is designed to keep track of when requests are added to the system and allow for searching by classroom to see which classrooms have frequent problems. Outside of these essential

functions, the Media Services Instructional Technology Tracker may eventually be turned into a Windows GUI program instead of a web application.

## ***Software Requirements Specifications***

*(Revised 11-01-2010 to change requirements to be based on new database structure.)*

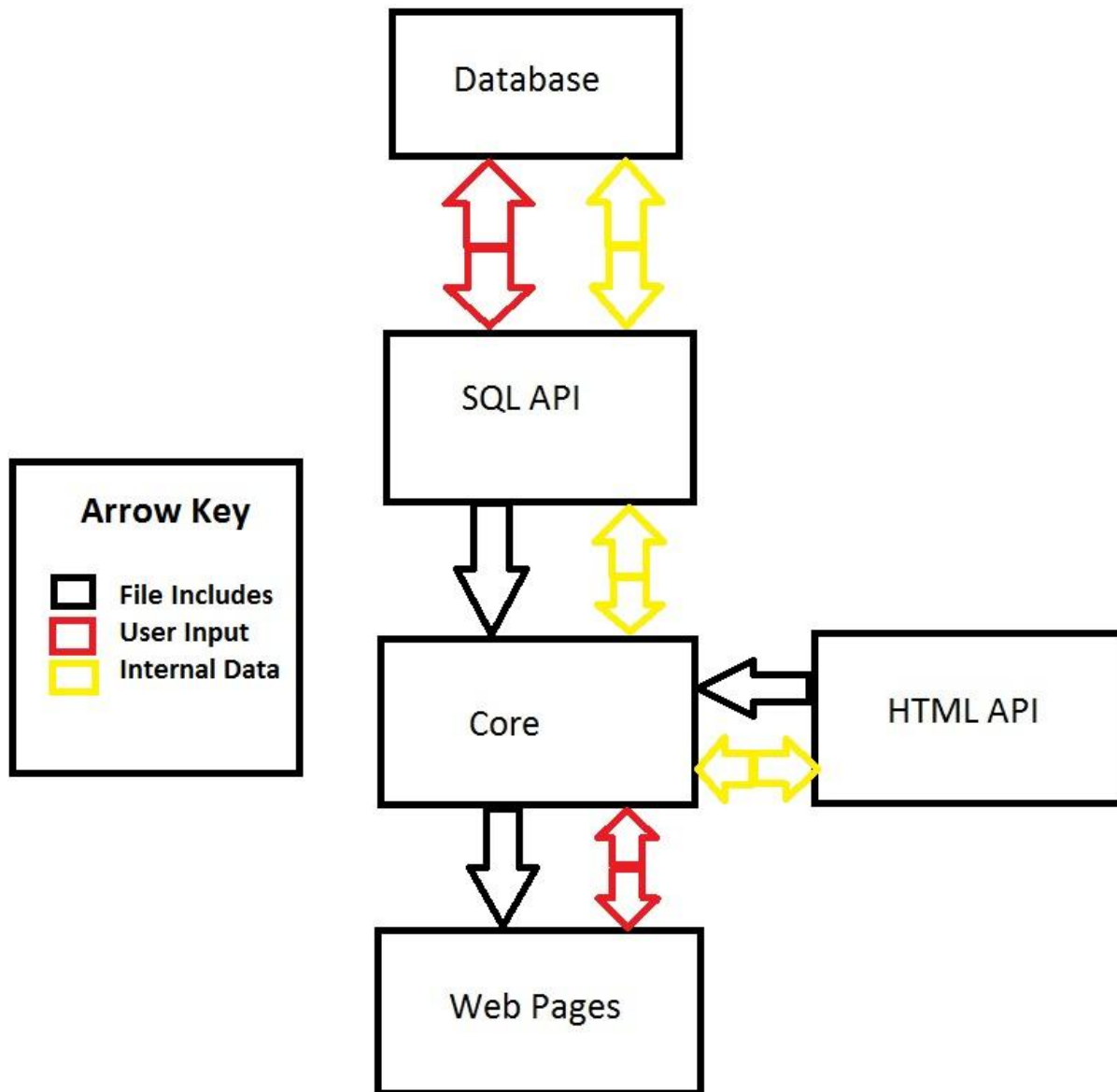
- **Functional Requirements:**
  1. Database system must be able to accept new equipment additions.
    - a. Evaluation: If the database is able to add in new equipment at any time, then this requirement is fulfilled.
    - b. Dependency: None
    - c. Priority: Essential
  2. Database system must be able to keep track of equipment that has been added.
    - a. Evaluation: If a user is able to view all the requests in the database without having to search, then this requirement is fulfilled.
    - b. Dependency: FR-1
    - c. Priority: Essential
  3. Database must be able to change request information as needed.
    - a. Evaluation: If the database system has pages that allow for editing or deleting of specific requests in the system, then this requirement is fulfilled.
    - b. Dependency: FR-2
    - c. Priority: Essential
  4. The database system must be easy to navigate.
    - a. Evaluation: If the database system has pages that are easy to understand and users can navigate them with little or no help, then this requirement is fulfilled.
    - b. Dependency: None
    - c. Priority: Essential
  
- **Non-Functional Requirements:**
  5. The database must be able to run on the Windows operating system.
    - a. Evaluation: If the database system can run on Windows with no problems, then this requirement is fulfilled.
    - b. Dependency: None
    - c. Priority: High
  6. The database must be able to install on a server running PHP and MySQL.
    - a. Evaluation: If the database can be uploaded and installed to a server with this setup, then this requirement is fulfilled.
    - b. Dependency: None
    - c. Priority: Essential
  7. Database must work in Internet Explorer and Firefox.
    - a. Evaluation: Tested an installed database in Internet Explorer and Firefox. If they work the same, then this requirement is fulfilled.
    - b. Dependency: None
    - c. Priority: Essential

## ***System Design and Architecture***

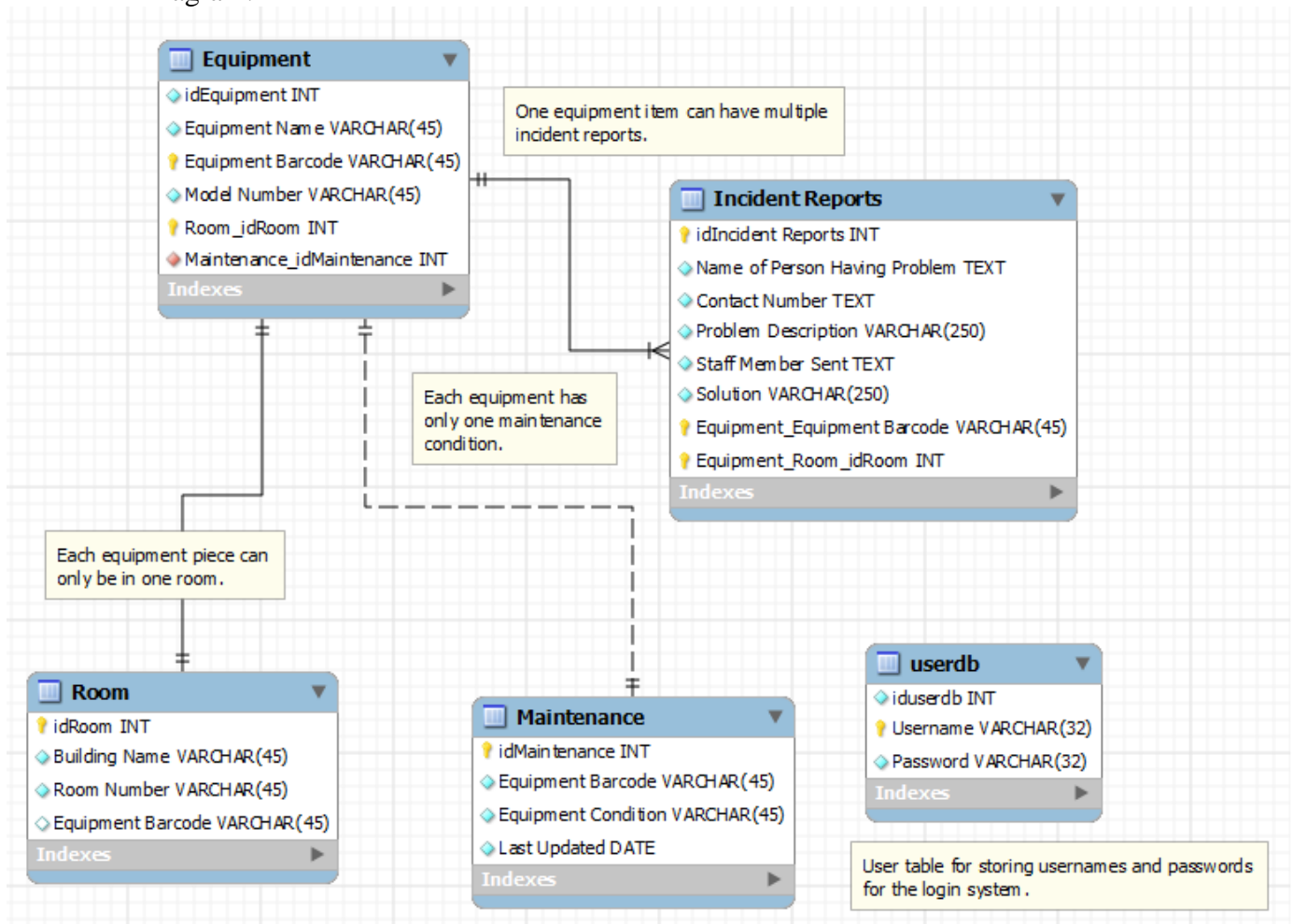
*(Revised 11-30-2010 to update images)*

- The Media Services Instructional Technology Tracker will be a complete system that will do the following:
  - Control equipment data: The system will be able to keep track of the technology equipment in the classrooms and edit the data as needed.
  - Search for equipment data: The system will be able to search through the database for a certain piece of equipment by barcode, what type of equipment it is, and what classroom it is in.
- The entire Media Services Instructional Technology Tracker is broken down into the following categories of classes and pages:
  - SQL API: Controls all data flow to and from the database.
  - HTML API: Deals with the construction and look of the web pages that users will visit.
  - Web Pages: These are the actual web pages that the users view and interact with.

- Below is a graphical representation of the structure:



- ER Diagram:



## ***Implementation***

*(Revised 12-07-2010 to add new pages and delete pages no longer needed)*

- README.txt – This holds information about the database system and how to install it.
- index.php – This holds the prototype starting webpage. This page will contain a link to login to the database.
- insertdata.php – This is the page which allows the database user to select which data to add to the database.
- insertequipment.php – This is the page which allows the user to add new equipment to the database.
- view.php – This is the page which allows the user to view the data inside the database tables.
- adduser.php – This page has code which adds a new user to the database. (Tested and works as of 10-25-10.)
- checkpass.php – This page has code which checks the username and password typed in on the login page to make sure they match before allowing access to the database. (Tested and works as of 10-25-10.)
- login.php – This page contains a username and password box to allow the user to enter their credentials to access the database.
- logout.php – This page has code which logs the user out of the database.
- members.php – This page is what non-administrator users see when they successfully login to the database.
- mysql.php – This page contains the username and password to connect to the database system.
- signup.php – This page allows a user to sign up for access to the database. This page will only be accessible by database administrators. (Tested and works.)
- insertincidentreport.php – This page allows the user to add a new incident report to the database.
- searchequipment.php – This page allows a user to search for certain values in the equipment table.
- editdataselection.php – This page allows a user to select which database table they want to edit data in.
- edit\_equipment\_selection.php – This page contains the equipment table and allows the user to type in the number for which record they want to edit.
- edit\_equipment\_change\_form.php – This page contains a form which allows the user to change records in the equipment table.
- edit\_equipment\_change\_record.php – This page changes records in the equipment table.
- edit\_incident\_report\_selection.php – This page contains the incident report table and allows the user to type in the number for which record they want to edit.
- edit\_incident\_report\_change\_form.php – This page contains a form which allows the user to change records in the incident report table.
- edit\_incident\_report\_change\_record.php – This page changes records in the incident report table.
- edit\_maintenance\_selection.php – This page contains the maintenance table and allows the user to type in the number for which record they want to edit.



- edit\_maintenance\_change\_form.php – This page contains a form which allows the user to change records in the maintenance table.
- edit\_maintenance\_change\_record.php – This page changes records in the maintenance table.
- edit\_room\_selection.php – This page contains the room table and allows the user to type in the number for which record they want to edit.
- edit\_room\_change\_form.php – This page contains a form which allows the user to change records in the room table.
- edit\_room\_change\_record.php – This page changes records in the room table.
- navbar.html – This page contains a navigation bar for users to access important functions in the database without having to return to the main menu.
- adminnavbar.html - This page contains a navigation bar for administrators to access important functions in the database without having to return to the main menu. (Added 11-23-10)
- admin.php – This page is what administrator users see when they successfully log into the database.
- searchincidentreports.php - This page allows a user to search for certain values in the incident report table. (Added 11-23-10)
- searchmaintenance.php - This page allows a user to search for certain values in the maintenance table. (Added 11-23-10)
- searchroom.php - This page allows a user to search for certain values in the room table. (Added 11-23-10)
- sqldump120710.sql – This page contains the SQL code to create a database on a new SQL server.

## ***Known Bugs and Other Issues – in Media Services IT Tracker 0.4 beta***

*(Revised 12-07-2010 to reflect current bugs and issues)*

- Update and Search functions of database do not work. Search produces a “mysql\_fetch\_array() expects parameter 1 to be resource” error. For Update function, can’t get an Update link to add to Update page to test updating data in database. (Update 11-02-10: Alternate method used for Update function.)
- Login system logs users in, but redirects back to the index.php page instead of the members.php page. (Resolved)
- No way to check whether users are administrators or non-admin users. (Resolved 11-23-10)
- No security measures installed at the moment, other than the login system. Unauthorized users can access pages that they are not allowed to access. (Update 11-02-10: Some pages and forms now have security measures added. The rest of the web pages and forms will have security measures added once they are completed and tested.)
- Update function added but function changes all data in table instead of just updating the record needing to be updated. (Resolved)
- No administrator area created yet. (Resolved 11-23-10)
- Search function presents all records in a database table instead of records that are supposed to be displayed with correct search term. (Resolved 11-23-10)

## ***Preliminary Test Plan and Preliminary Test Cases***

*(Revised 11-16-2010 to update test plan)*

- The Plan
  - The test plan for the Media Services Instructional Technology Tracker is to install the database on a computer system and test the main functions of the database: inserting data, editing data, viewing the database, and searching the database. I will run all these functions to ensure the database works correctly.
- Primary System Test Cases and Integration Testing
  - Install Case
    - Requirement Being Tested: NFR-6
    - Preconditions: None
    - Steps:
      - Unzip database system to a directory on a web server.
      - Follow database installation instructions.
    - Desired Result: The database system installs properly with no errors.
  - Operating System Case
    - Requirement Being Tested: NFR-5
    - Preconditions: NFR-6
    - Steps:
      - Make sure database is installed on web server.
      - Test database system to make sure it can run well on a Windows system.
    - Desired Result: The database system runs properly on a Windows operating system.
  - Web Browser Case
    - Requirement Being Tested: NFR-7
    - Preconditions: None
    - Steps:
      - Open up a web browser, either Internet Explorer or Firefox.
      - Test database system functions to make sure they work well with the internet browser.
    - Desired Result: The database system runs properly in Internet Explorer and Firefox.
  - New Equipment Case
    - Requirement Being Tested: FR-1
    - Preconditions: None
    - Steps:
      - Login to the database and select “Insert Data to Database” link.
      - Select “Equipment Table” link to add new equipment to the database.
      - Type in required information for each piece of equipment.
      - Verify the results by going back to the Main Menu and selecting the “View Tables” link.
    - Desired Result: The database system adds new equipment information to the database.

- Equipment Tracking Case
  - Requirement Being Tested: FR-2
  - Preconditions: FR-1
  - Steps:
    - Login to the database and select “View Tables” link.
    - View data in the database and make sure the database is keeping track of the correct information.
  - Desired Result: The database system keeps track of information inside the database and displays the information in an easy to read format.
- Edit Information Case
  - Requirement Being Tested: FR-3
    - Preconditions: FR-1
    - Steps:
      - Login to the database and select “Edit Data in the Database” link.
      - Select “Equipment Table” link.
      - Type in ID number for record that needs changed.
      - Edit information on Equipment form as needed and submit changes.
      - View tables to verify changes.
    - Desired Result: The database system updates records correctly and the user is able to view the changes immediately.
- Navigation Case
  - Requirement Being Tested: FR-4
    - Preconditions: None
    - Steps:
      - Login to the database and access each section of the database with little confusion about how to run the system.
    - Desired Result: The database can be used by any authorized user with few errors.
- Unit Test Cases
  - Password Encryption
    - Requirement Being Tested: Encrypting the password so unauthorized users cannot access the system.
      - Steps:
        - Login to the database using an administrator account and create a new user account.
        - Type in a password to use for the account.
        - An administrator checks the user database table (userdb) to confirm if the password was encrypted.
      - Desired Result: The user account password is encrypted in the database system.

## ***Software Demos***

*(Revised 12-07-2010 to update to final demo)*

- Demo of registered user area of database, including Insert Data, Edit Data, View Tables, and Search Database functions: <http://www.youtube.com/watch?v=Wi4QZ6qiqfc>.

## ***Bibliography***

*(Revised 12-07-2010 to update bibliography to MLA style)*

- CSC 330 Database Code – I studied code from CSC 330 when working with a group to create a database for a local client. Some of this code will be used to create the database in this project.
- Groff, James R. and Paul N. Weinberg. *SQL: The Complete Reference, Second Edition*. Berkley, California: McGraw-Hill, 2002.
- Kelly, Connor. “Final Report.” *Berea College Senior Projects*. 8 Dec. 2009. 2 Sept. 2010 <<http://faculty.berea.edu/pearcej/csc493/projects-09/kellycFINAL.pdf>>. - I used this report to figure out ways to structure my weekly reports so they can look professional.
- “PHP: MySQL extension overview example.” *PHP.net*. 3 Dec. 2010. 6 Dec. 2010 <<http://us.php.net/manual/en/mysql.examples-basic.php>>. - I used this code snippet to study MySQL and PHP connections and to create a prototype view database page.
- “PHP MySQL – Updating the data Tutorial.” *Create a Free Website.net*. 4 Dec. 2010. 6 Dec. 2010 <<http://www.createafreewebsite.net/phpmysql/update.html>>. - I used this code in my database to create a function in the database to update data.
- “Tutorial/Login system in PHP and My SQL.” *PBBGDev.com*. 23 Mar. 2007. 2 Oct. 2010 <<http://www.pbbgdev.com/wiki/ow.asp?Tutorial%2FLogin+system+in+PHP+and+MySQL>>. – I used this code as a guide to create the login system for the database.

## *Executive Memos*

**Logo:**



**To:** Dr. Jan Pearce, Project Director

**From:** Travis Schroeder

**Subject:** Media Services Classroom Equipment Tracker

**Date:** September 7<sup>th</sup>, 2010

The last week of work on the Media Services Classroom Equipment Tracker consisted of the following being developed or designed:

- Thought of ideas for a Senior-level computer science project (2 hours).
- Looked into software to use for programming (30 minutes). WAMP Server was settled on being used.
- Explored alternative languages if a web-based database program is not approved, like Python. (1 hour).

The total time spent on work this week is 3 hours 30 minutes. The total spent on work since the project began is 3 hours 30 minutes.

Project goals for Week 2:

- Learn the MySQL and PHP programming languages and learn what functions to use for my database to work.
- Develop the structure for the database that will hold the requests. This will involve creating an entity relationship diagram.

**Logo:**



**To:** Dr. Jan Pearce, Project Director

**From:** Travis Schroeder

**Subject:** Media Services Instructional Technology Tracker

**Date:** September 14<sup>th</sup>, 2010

The last week of work on the Media Services Instructional Technology Tracker consisted of the following being developed or designed:

- Talking to Robert J. Lewis and Dr. Jan Pearce about ideas for a project in conjunction with Media Services. (1 hour)
- Rework of original proposal and scope documents for Senior-level computer science project. (1 hour 30 minutes)

The total time spent on work this week is 2 hours 30 minutes. The total spent on work since the project began is 6 hours.

Project goals for Week 3:

- Learn the MySQL and PHP programming languages and learn what functions to use for my database to work. I did not get a chance to learn the two languages this week because of the proposal re-works going on.
- Develop the structure for the database that will hold the requests.



**Logo:**



**To:** Dr. Jan Pearce, Project Director

**From:** Travis Schroeder

**Subject:** Media Services Instructional Technology Tracker

**Date:** September 21<sup>st</sup>, 2010

The last week of work on the Media Services Instructional Technology Tracker consisted of the following being developed or designed:

- Installing WAMPserver and learning the software. (15 minutes)
- Learning SQL programming language. (1 hour)

The total time spent on work this week is 1 hour 15 minutes. The total spent on work since the project began is 7 hours 15 minutes.

Project goals for Week 4:

- Create an entity relationship diagram for the database structure.
- Create tables to represent each building on campus that has instructional technology in it.

**Logo:**



**To:** Dr. Jan Pearce, Project Director

**From:** Travis Schroeder

**Subject:** Media Services Instructional Technology Tracker

**Date:** September 28<sup>th</sup>, 2010

The last week of work on the Media Services Instructional Technology Tracker consisted of the following being developed or designed:

- Creating the database and table structure. (1 hour)

The total time spent on work this week is 1 hour. The total spent on work since the project began is 8 hours 15 minutes.

Project goals for Week 5:

- Continue creating and refining the database structure.
- Start looking at PHP so a prototype webpage can be created.

**Logo:**



**To:** Dr. Jan Pearce, Project Director

**From:** Travis Schroeder

**Subject:** Media Services Instructional Technology Tracker

**Date:** October 5<sup>th</sup>, 2010

The last week of work on the Media Services Instructional Technology Tracker consisted of the following being developed or designed:

- Created the SQL table and started working with PHP. (2 hours)
- Created PHP pages to test database showing on a webpage. (2 hours)

A lot of this time was spent working with the SQL code trying to get the table the way I want it. Once I got the table set up in a way to be used for a prototype, I started working with PHP. I used a PHP code snippet from <http://us.php.net/manual/en/mysql.examples-basic.php> to create a test page and altered the code to work for my table.

The total time spent on work this week is 4 hours. The total spent on work since the project began is 12 hours 15 minutes.

Project goals for Weeks 6 & 7:

- Create the edit database page for administrator users.
- Study ways to add security to the database.

**Logo:**



**To:** Dr. Jan Pearce, Project Director

**From:** Travis Schroeder

**Subject:** Media Services Instructional Technology Tracker

**Date:** October 19<sup>th</sup>, 2010

The last two weeks of work on the Media Services Instructional Technology Tracker consisted of the following being developed or designed:

- Refining database table structure. (2 hours, 15 minutes)
- Creating Login System. (2 hours)
- Creating Members area page, Insert Equipment page. (2 hours)
- Researched ways to secure web pages. (1 hour)
- Testing Insert Equipment form and Viewing Tables page. (30 minutes)
- Researching how to create an Update Data page. (2 hours, 30 minutes)
- Creating report and commenting code for prototype submission. (1 hour, 30 minutes)

The total time spent on work these two weeks is 11 hours, 45 minutes. The total spent on work since the project began is 24 hours.

I spent a lot of time during these two weeks creating new pages and refining my table structure. Some of the pages created so far need to be tested and fixed. The login system is one example in which I have created the pages but need to get the bugs fixed. I hope to get all the pages and forms for the database created by the end of October and start testing and fixing bugs in November.

Project goals for Week 8:

- Create Update Data form and figure out how to get current data into in order for a user to update it.
- Figure out how to separate administrator and non-administrator users in the login system.
- Create an administrator-only web page to link to administrator-specific actions.

**Logo:**



**To:** Dr. Jan Pearce, Project Director

**From:** Travis Schroeder

**Subject:** Media Services Instructional Technology Tracker

**Date:** October 26<sup>th</sup>, 2010

The last week of work on the Media Services Instructional Technology Tracker consisted of the following being developed or designed:

- Created database search function and tested. (3 hours)
- Created form for adding incident reports and tested. (1 hour, 30 minutes)
- Fixed some errors in login system and experimented with security features. (2 hours)

I have been spending time this week creating new functions for the database but I am running into errors with some functions (particularly the Update and Search functions). I have concluded that the Insert Data functions work in the database. I also looked at how to use sessions to allow only authorized users to access critical database functions like inserting data or looking at the database.

The total time spent on work this week is 6 hours, 30 minutes. The total spent on work since the project began is 30 hours, 30 minutes.

Project goals for Week 9:

- Create all forms and pages for the database (including administrator functions).
- Implement security in database so unauthorized users cannot access functions inside database by just typing in a webpage url.

**Logo:**



**To:** Dr. Jan Pearce, Project Director

**From:** Travis Schroeder

**Subject:** Media Services Instructional Technology Tracker

**Date:** November 2<sup>nd</sup>, 2010

The last week of work on the Media Services Instructional Technology Tracker consisted of the following being developed or designed:

- Adding security to forms and web pages that have been tested to prevent unauthorized access. (1 hour)
- Created update forms for Equipment and Incident Report forms and tested. (3 hours)
- Created update forms for Maintenance and Room forms and tested. (2 hours)
- Troubleshooting Update function. (30 minutes)
- Commenting code for new functions. (30 minutes)

I spent most of my time this week working on the Update function to get that up and running. I tested the function and got it to update a database record. However, there's a bug in which the function updates all the records in the database with the same information. I think I have figured out the problem and it will be fixed in the next version of the software.

The total time spent on work this week is 7 hours. The total spent on work since the project began is 37 hours, 30 minutes.

Project goals for Week 10:

- Fix Update function and work on Search function.

**Logo:**



**To:** Dr. Jan Pearce, Project Director

**From:** Travis Schroeder

**Subject:** Media Services Instructional Technology Tracker

**Date:** November 16<sup>th</sup>, 2010

The last week of work on the Media Services Instructional Technology Tracker consisted of the following being developed or designed:

- Worked on Search function and started troubleshooting. (1 hour, 30 minutes)
- Small change on update form and login system updates. (2 hours, 30 minutes)
- User interface work. (3 hours, 30 minutes)

I spent some time this week working on a navigation bar so users of the database can access useful functions in the database without having to go back to the main menu. I also worked on my Search function, but ran into a bug in which the function displays the entire database table instead of just the records it is searching for. I want to get the Search function working so I can use it in the upcoming video demos. I also want to get the user interface cleaned up for the demos as well.

The total time spent on work this week is 7 hours, 30 minutes. The total spent on work since the project began is 45 hours.

Project goals for Week 12:

- Get Search function fully working.
- Continue work on user interface to get it ready to go for video demos.

**Logo:**



**To:** Dr. Jan Pearce, Project Director

**From:** Travis Schroeder

**Subject:** Media Services Instructional Technology Tracker

**Date:** November 23<sup>rd</sup>, 2010

The last week of work on the Media Services Instructional Technology Tracker consisted of the following being developed or designed:

- Cleaned up user interface to be presentable for video demo. (1 hour, 30 minutes)
- Troubleshooting Search Equipment page. (1 hour, 30 minutes)
- Getting Room and Maintenance IDs to match with correct records in Equipment table. (30 minutes)
- Thursday Meeting with Jan to discuss Search function. (30 minutes)
- Debugged login function to get database system to redirect administrator users to administrator main menu once logged in. (1 hour)
- Added Search function to Incident Report, Room, and Maintenance tables. (1 hour)
- Monday Meeting with Jan to fix a small Search bug. (15 minutes)
- Created video demo for YouTube. (30 minutes)

The total time spent on work this week is 6 hours, 45 minutes. The total spent on work since the project began is 51 hours, 45 minutes.

Project goals for Week 13:

- Continue user interface cleanup.
- Add comments to code where it is needed.



**Logo:**



**To:** Dr. Jan Pearce, Project Director

**From:** Travis Schroeder

**Subject:** Media Services Instructional Technology Tracker

**Date:** November 30<sup>th</sup>, 2010

The last week of work on the Media Services Instructional Technology Tracker consisted of the following being developed or designed:

- Editing Search function on all pages and testing to make sure the function searches for a string of characters the user types in. (2 hours, 30 minutes)
- Adding comments to pages. (2 hours)
- Evaluating posted practice video demos. (1 hour)

The total time spent on work this week is 5 hours, 30 minutes. The total spent on work since the project began is 57 hours, 15 minutes.

Project goals for Week 14:

- Finish adding comments to all pages.
- Work on a finalized project demo.
- Find a web host to host database on.

**Logo:**



**To:** Dr. Jan Pearce, Project Director

**From:** Travis Schroeder

**Subject:** Media Services Instructional Technology Tracker

**Date:** December 7<sup>th</sup>, 2010

The last week of work on the Media Services Instructional Technology Tracker consisted of the following being developed or designed:

- Adding final comments to PHP web pages. (1 hour, 15 minutes)
- Working on project poster for poster session. (3 hours)
- Working on final video demo. (1 hour, 30 minutes)

The total time spent on work this week is 5 hours, 45 minutes. The total spent on work since the project began is 63 hours.

My experience with this project this term has been an interesting one. There have been times where I was doing well on this project and there were other times where I struggled to find out a solution to problems I was having. I learned a lot more about SQL which I did not get much experience with in the Databases course since I was on the interface team. Even with all the problems I had this semester, I think this project was a success and I was excited when I had a working product at the end of the semester.