

CSC 131

Fall 2012

Problem Reports Application Project

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Purpose

To create a web-based problem reporting system this is compatible with the uses of the College of Engineering and Computer Science faculty, staff, and students. In addition, those with permission will use the information resulting from the problem report solutions as a knowledge base for future troubleshooting.

Overview

College of ECS problem reporting system is a cohesive system between the Tech Shop and the ECS Computing Services. Each entity has its own requirements, but the reports must be interchangeable between each entity.

System Requirements

Suggest the use of LAMP (Linux, Apache, MySQL, PHP)

PHP can be substituted with another application that is compatible with Linux, Apache, and MySQL

Available Resources

Project account:

- https://www.ecs.csus.edu/webApps/user_account/accounts.php

- Select Account Type = Project

MySQL database

- https://www.ecs.csus.edu/webApps/useraccount_app/index.cgi?form_id=request_mysql_database

MySQL tool (optional)

- <http://www.sqlmanager.net/products/mysql/manager/download>

- Use EMS SQL Manager for MySQL Freeware or the full version

Disclaimer

This document will contain screenshots and database details of the current system. These are provided solely as a means to help explain the project. They are examples and not to be used literally.

Key Areas to Remembers

A successful implementation of this project will include, among other things:

- 1) Verification and validation of all data
- 2) Secure access limited to the user roles
- 3) Beware of MySQL injection
- 4) Test for cases such as the use of single and double quotes in the text fields
- 5) If a verification and validation fails and the user goes back a page, then the data is not lost.
 - a. User will never need to re-enter data due to a refresh issue
- 6) No grammar or spelling errors
- 7) Well documented code
- 8) Easy maintainability

- 9) Application works across multiple browsers such as Internet Explorer, Firefox, Safari, and Chrome
- 10) When designing, if a choice needs to be made between size and speed. Go for speed.
- 11) Attachments are not to be directly stored in the database

Communication Methods

The purpose of communicating with the sponsor is to clarify details of the project. To enable this, the following will be provided:

- 1) Email address from every team given to the sponsor, Lynne Koropp
- 2) Lynne Koropp is available via email at lynne@ecs.csus.edu.
 - a. Replies to emails will go to all teams so that everyone is informed equally
- 3) Lynne is available from 10a-11a on Fridays in RVR 2030.
 - a. Key information and questions may be distributed to all teams via email as time allows

ECS Problem Reports

Report Problem Externally

This is when a user from the outside wants to report a problem. This section references the items labeled in Figure 1.

General Requirements

- 1) Subject (2), Description(3), Where(9), CAPTCHA (14) are required
- 2) Anonymous reports are allowed
- 3) Must have a way to return to the portal (15)
- 4) Must have a form of CAPTCHA(14) to prevent bots from reporting problems
- 5) Report is saved into the application database
- 6) Default status is pending

Current Database

```
CREATE TABLE `p_report_questions` (  
  `question` varchar(500) NOT NULL,  
  `id` int(4) unsigned NOT NULL,  
  `answer` varchar(45) NOT NULL,  
  PRIMARY KEY (`id`) USING BTREE  
) ENGINE=MyISAM DEFAULT CHARSET=latin1 COMMENT='questions and answers for captcha are stored  
in this table.';
```

```
CREATE TABLE `p_report` (  
  `ID` int(15) NOT NULL AUTO_INCREMENT,  
  `subject` varchar(100) DEFAULT NULL,  
  `prob_desc` blob,  
  `category` varchar(20) DEFAULT NULL,  
  `priority` enum('high','med','low') DEFAULT NULL,  
  `escalation` int(1) DEFAULT NULL,  
  `date_entered` datetime DEFAULT NULL,  
  `date_complete` datetime DEFAULT NULL,  
  `date_due` date DEFAULT NULL,  
  `hours` float(4,2) DEFAULT NULL,  
  `system_type` enum('workstation','pc','mac','laptop') DEFAULT NULL,  
  `room_building` char(3) DEFAULT NULL,  
  `room_number` varchar(5) DEFAULT NULL,  
  `position_room` varchar(40) DEFAULT NULL,  
  `problem_type` enum('lab','faculty','staff','student','cpe-eee_labs') DEFAULT 'lab',  
  `computer_name` varchar(20) DEFAULT NULL,  
  `reporter_name` varchar(30) DEFAULT NULL,  
  `reporter_email` varchar(35) DEFAULT NULL,  
  `reporter_phone` varchar(15) DEFAULT NULL,  
  `prob_resolution` blob,  
  `status` enum('loaned','pending','active','completed','waiting','deleted') DEFAULT NULL,  
  `completed_by` varchar(30) DEFAULT NULL,
```

```

`indexNum` int(10) DEFAULT NULL,
`personel` varchar(30) DEFAULT NULL,
`facIndexNum` int(10) DEFAULT NULL,
PRIMARY KEY (`ID`)
) ENGINE=MyISAM AUTO_INCREMENT=5491 DEFAULT CHARSET=latin1;

```

Field Descriptions

- 1) Website
 - a. It needs to be https
 - b. Make an absolute address to https://..., and it will work on the ECS servers
- 2) Subject
 - a. Short description
- 3) Description
 - a. Full description including details
- 4) Category
 - a. A general theme of problem
 - b. Include common categories
 - c. Allow for user entered value
 - d. Want: a listing of all categories without it being cumbersome
- 5) Date Due
 - a. Allows user to enter a due date
 - b. Default = 10 days from date entered
- 6) System Type
 - a. A general description of system
 - b. Example: Workstation, PC, mac, laptop
 - i. May want to say workstation = PC
 - ii. Other ideas: home, ipad, smart phone, etc.
- 7) Room
 - a. Where is the issue?
 - b. RVR, SCL, ARC
 - c. Number needs to include letters
 - i. Ex: 1234A
- 8) Position Room
 - a. Goal: have user explain where the system is
 - b. Current default is from the door, but how does the user know that?
- 9) Where
 - a. Other type of category
 - b. How it currently works
 - i. Other Labs = Pat issues
 - ii. CPE/EEE Labs = Ray issues
 - iii. Faculty = Lynne issues
 - iv. Staff = Lynne issues
 - v. Student = Lynne issues
 - c. The key is that a Faculty/Staff/Student report is an individual issue. It is not a person reporting a problem about a system in a lab
- 10) Computer Name

- a. Label on the system
- 11) Your Name
 - a. Reporter's name
 - b. Want: Separate out first and last name?
 - i. Will want to be able to search by first/last name separately
- 12) Your Email Address
 - a. Report's email
- 13) Your Phone number
 - a. Allow for extensions, international numbers
 - b. Maintain a consistent format when displaying the data
 - i. Ex: 9162783547, 916-278-3547, (916) 278-3547
- 14) Question
 - a. A form of CAPTCHA to prevent bots from creating SPAM reports
- 15) Link to exit
 - a. Must provide a link back to the portal and/or ECS website

Problem Reports Application - Mozilla Firefox

File Edit View History Bookmarks Tools Help

Problem Reports Application

https://www.ecs.csus.edu/webApps/p_report/online_form.php

Most Visited Getting Started Latest Headlines Google

Problem Reports

15 [Exit Problem Reports](#)

[New Problem](#) [Search](#)

Problem Subject: 2	<input type="text"/>
Problem Description: 3	<input type="text"/>
Category: 4	Mouse
Date Due: 5	Month: 9 Day: 16 Year: 2012
System Type: 6	Workstation
Room: 7	RVR Number: <input type="text"/>
Position Room: 8	<input type="text"/>
Where: 9	Other Labs
Computer Name: 10	<input type="text"/>
Your Name: 11	<input type="text"/>
Your Email Address: 12	<input type="text"/>
Your Phone Number: 13	<input type="text"/>
Question 14	Please answer the question displayed below in one word. 'Which city is the capital of California?' <input type="text"/>

Report Problem

Figure 1: Report Problem Externally

Report Problem Externally Response

This is after a user submits a problem externally. (Figure 2)

General Requirements

- 1) Polite email sent to the user's email address
- 2) Email sent to the appropriate backend user
 - a. This is to be set internally
 - b. Options are:
 - i. All reports submitted
 - ii. All reports submitted internally
 - iii. All reports submitted externally
 - iv. All reports with "Where" field = X
 - v. Want: able to add other options
- 3) Email includes
 - a. ID
 - b. Subject
 - c. Problem Description
 - d. Reporter's information
 - e. Link
 - f. Signature "If you have any questions..."

Current Database

See previous section (page 6). Note that the ID number is an auto increment number.

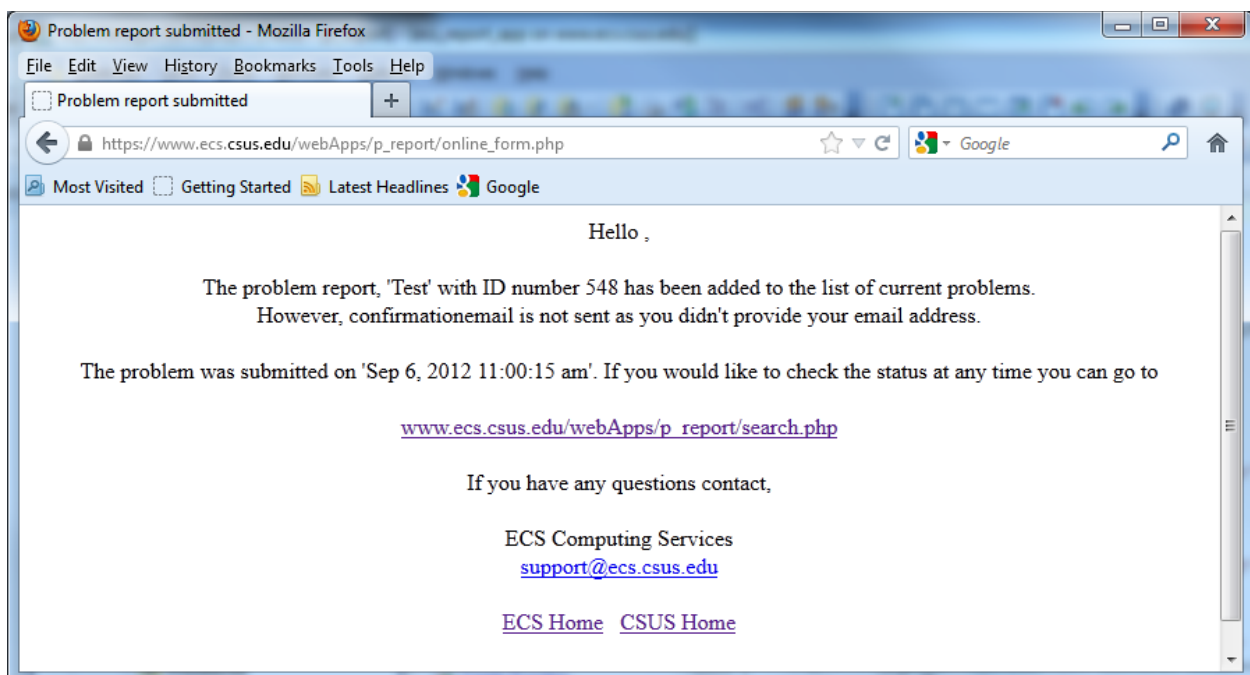


Figure 2: Report Problem Externally Response

Report Problem Externally Searched

This is so that the user may search (Figure 3) the status and information of the individual's problem report(s).

General Requirements

- 1) Individuals may only search their own problem report (Figure 3)
 - a. Current version allows external users to view any given an email, name, or ID number
 - b. Current version needs to be fixed

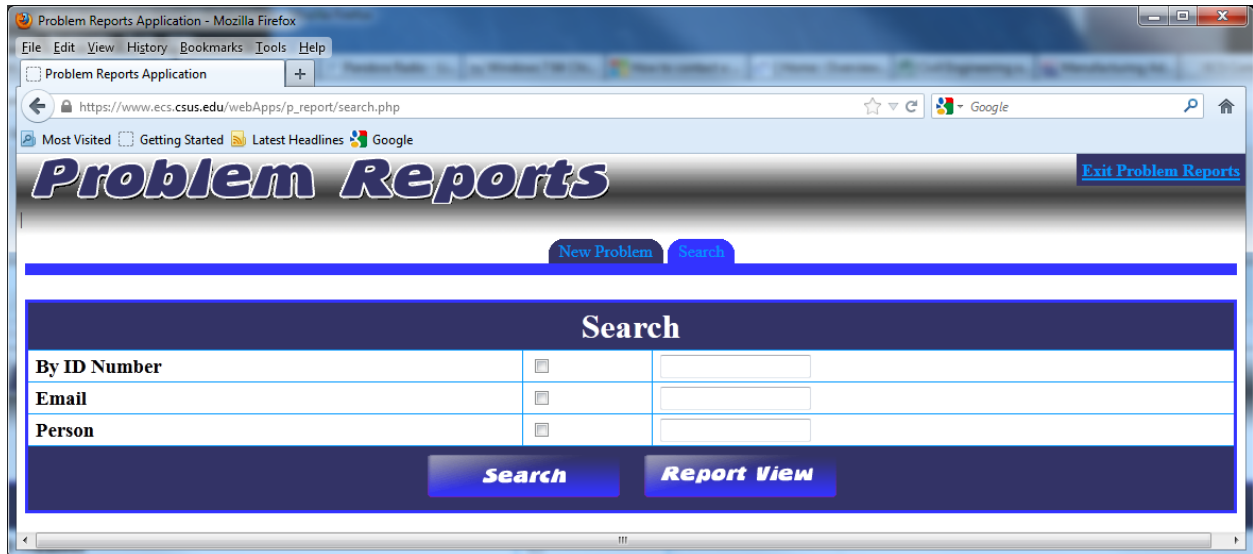


Figure 3: Report Problem Externally Searched

- 2) When "Search" is selected from Figure 3, all of the problems for the individual are displayed (Figure 4)
- 3) Each report is highlighted or distinguished from the others for ease of usability
- 4) Want the ability to set which fields are displayed
- 5) Want the ability for an administrator to set and modify the default display settings
- 6) Want the ability for an external user with contact information provided to be able to create a personal profile which maintains the user's preferences such as
 - a. Fields displayed upon a search result
 - b. Fields displayed upon viewing a report
 - c. Preferred grouping

Search Results						
Subject	Problem Type	Room	Category	Status	Date Entered	Date Completed
CSGC Office Workstation	Faculty	RVR 5025C	Hardware	Completed	Jul 24, 2012	Aug 15, 2012
Port Configuration	Faculty	RVR T5001	Hardware	Completed	Jul 25, 2012	Jul 25, 2012
Port Configuration	Lab	RVR 3016A	Locked system	Completed	Aug 3, 2012	Aug 3, 2012
Internet access	Staff	RVR 3016A	Software	Pending	Aug 28, 2012	In Progress

Figure 4: External Search Results

Report Problem Externally Viewed

This is so that the user may view the status of one or more of the individual's reports

General Requirements

- 1) Individuals may only view their own problem report (Figure 3)
 - a. Current version allows external users to view any given an email, name, or ID number
 - b. Current version needs to be fixed
- 2) When "Report View" is selected from Figure 3, all of the problems for the individual are displayed (Figure 5)
 - d. The original report, resolution, and who resolved the problem is displayed
 - e. No history items are displayed
- 3) Want the ability to set viewing:
 - f. Date range (from X to Y)
 - g. Fields to be viewed
 - i. Example: checkbox for each field with a select/deselect all option
- 4) Want the ability to print report
- 5) Want the ability to view percentages of status (complete, active, pending, waiting)
- 6) Want the ability to group reports by category, subject, system type, etc.

Report Results

Problem Number: 28		Dates	
ID	28	Date Submitted	2006-01-20 15:46:45
Problem Type	faculty	Date Complete	Jan 30, 2006
Subject	Quote for 60 GB harddrive	Date Due	2006-01-23
Category	Quote	Reporter Info	
Priority	high	Reporter Name	Lynne Ostroika
Hours	0.10	Reporter Email	Lynne@acs.csu.edu
System Type	laptop	Reporter Phone	916-278-3347
Room	RYR 2024		
Room Position			
Computer Name			
Problem Description	I need a quote for a 60 GB hard drive for a Latitude D600.		
Problem Resolution	Thanks Paul. The link for boot sector virus helped. The following link describes the original error as a possible boot sector virus and offers some other possibilities. Hopefully it helps. http://support.microsoft.com/default.aspx?scid=kb;en;315266&Product=winxp Thank you everyone else who contributed to the information. It will make it much easier to order the needed harddrive.		

Problem Number: 25		Dates	
ID	25	Date Submitted	2006-01-20 15:10:36
Problem Type	faculty	Date Complete	Feb 2, 2006
Subject	Inventory System	Date Due	2006-04-01
Category	software	Reporter Info	
Priority	low	Reporter Name	Lynne Ostroika
Hours	0.10	Reporter Email	Lynne@acs.csu.edu
System Type	workstation	Reporter Phone	916-278-3347
Room	RYR 0		
Room Position			
Computer Name			
Problem Description	Research and find an open source solution to a solid inventory system. Goals: 1) Managing incoming equipment 2) Managing outgoing equipment 3) Managing current active equipment 4) Managing storage 5) Managing repairs, history, location, etc.		
Problem Resolution	NULL		

Figure 5: Externally View Reports

- 7) When a given report is selected from Figure 4, the report is displayed in a more user friendly manner such as Figure 6.
- 8) Allows the user to upload an attachment
- 9) Need to be able to set default max file size and acceptable file types
- 10) Want administrator to be able to set/modify the upload limits
 - h. Includes file type
 - i. Includes file size
- 11) When displaying a report
 - j. The original report, resolution, and who resolved the problem is displayed
 - k. No history items are displayed
- 12) Want the ability to set viewing:
 - l. Date range (from X to Y)
 - m. Fields to be viewed
 - i. Example: checkbox for each field with a select/deselect all option
- 13) Want the ability to print report
- 14) Want user to be able to update the report with the changes recorded as a history item

Faculty Problem		Dates	
Status:	Completed	Date Entered:	Mar 21, 2006 9:00:27 am
Hours/Minutes:	0:20	Date Due:	Month: 3 Day: 21 Year: 2006
Category:	Software	Date Complete:	Mar 23, 2006 12:28:04 pm
Priority:	High	Reporter Info	
System Type:	Laptop	Reporter Name:	Lynne Onitsuka
Rooms:	RVR	Reporter Email Address:	Lynne@ecs.csus.edu
Position Room:		Reporter Phone Number:	916-278-3547
Problem Type:	Faculty	Problem Options	
Computer Name:		Escalation Level:	ECS Computing Services
Faculty Index:	0	Attachments:	Browse... Upload File
Problem ID Number:	533	Existing Attachments:	[This Problem Report Has No Attachments]
Problem Subject:	Install Adobe Acrobat Writer 7.0 Pro		
Problem Description:	Install and purchase license for Pat Homen		
Completed By:	lynn		
Problem Resolution:	Software installed, and the licenses are purchased.		

Figure 6: Externally Searched Report Display

Manage Users and Permissions

This section explains the requirements for managing the user base (Figure 8).

General Requirements

- 1) Administrators (ECS Computing Services) need to be able set the users and permissions
- 2) Non-administrators do not have access to the user management
- 3) Want external users to be added automatically
- 4) Want to control the view of the users
 - a. Example: view internal only, view external only, view all, view active/inactive, etc.
- 5) Need to be able to add users
- 6) Need to be able to set priority level for an internal user
- 7) Need to be able to set/update email signature for each internal user
- 8) Need to be able to update users
- 9) Need to be able to set users as active/inactive
- 10) Need to record when a user is added
- 11) Need to record when a user is inactive

- 12) Need to save personal contact information for each user
 - a. Name
 - b. Email
 - c. Phone
- 13) Want to be able to record ranges of inactive/active
 - a. Example:
 - i. active 6/1/2011-8/4/2011, 5/1/2012-current
 - ii. inactive 8/5/2011-4/30/2011
- 14) Need to be able to view the number of completed problems per user
- 15) Need to be able to view the number of history items added per user
- 16) Need to be able to set whom and/or which groups are emailed for:
 - a. Creation of a problem report internally
 - b. Creation of a problem report externally
 - c. Creation of a problem report based on type
 - i. Faculty/Staff/Student/Other Labs/EEE and CPE Labs
- 17) Need to have the user correlated to an ECS account for portal login ability
- 18) Want to have the login tied to the portal
 - a. Need to have the ability, but may not be implemented in this project

Current Database

```
CREATE TABLE `p_report_login` (  
  `username` varchar(30) NOT NULL DEFAULT "",  
  `priority` int(15) DEFAULT NULL,  
  `completed_problems` int(5) DEFAULT NULL,  
  PRIMARY KEY (`username`)  
) ENGINE=MyISAM DEFAULT CHARSET=latin1;
```

Field Descriptions

- 1) New User
 - a. Ability to add a new user (Figure 7)
 - i. Note: What happens if a username is reused?

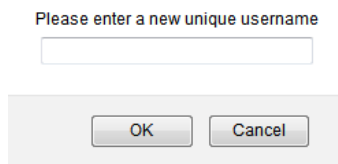


Figure 7: New User

- 2) Username
 - a. Identifier for the user
- 3) Priority
 - a. External
 - i. Only has access to own problem reports

- b. Labbie
 - i. Has access to all reports of priority level “labbie”
 - ii. May view any report through the search option
- c. Floater
 - i. Has access to all reports of priority level “labbie” and “floater”
 - ii. May view any report through the search option
- d. ECS Computing Services
 - i. Has access to all reports
 - ii. Administrator permissions
- e. Service Center
 - i. Has access to all reports
 - ii. Escalates from ECS Computing Services
 - iii. Maintains technician hardware tasks
- 4) Number of Completed Problems
 - a. Calculated value per user of the total number of completed problems
- 5) Update/Delete
 - a. The ability to update users
- 6) Inactive/Active
 - a. The ability to set a user as active or inactive
 - b. Save the date of the change
 - c. This replaces the delete for users
- 7) Number of History Items Added
 - a. Calculated value per user of the total number of history items added
- 8) Total time
 - a. Calculated total time spent on problem reports

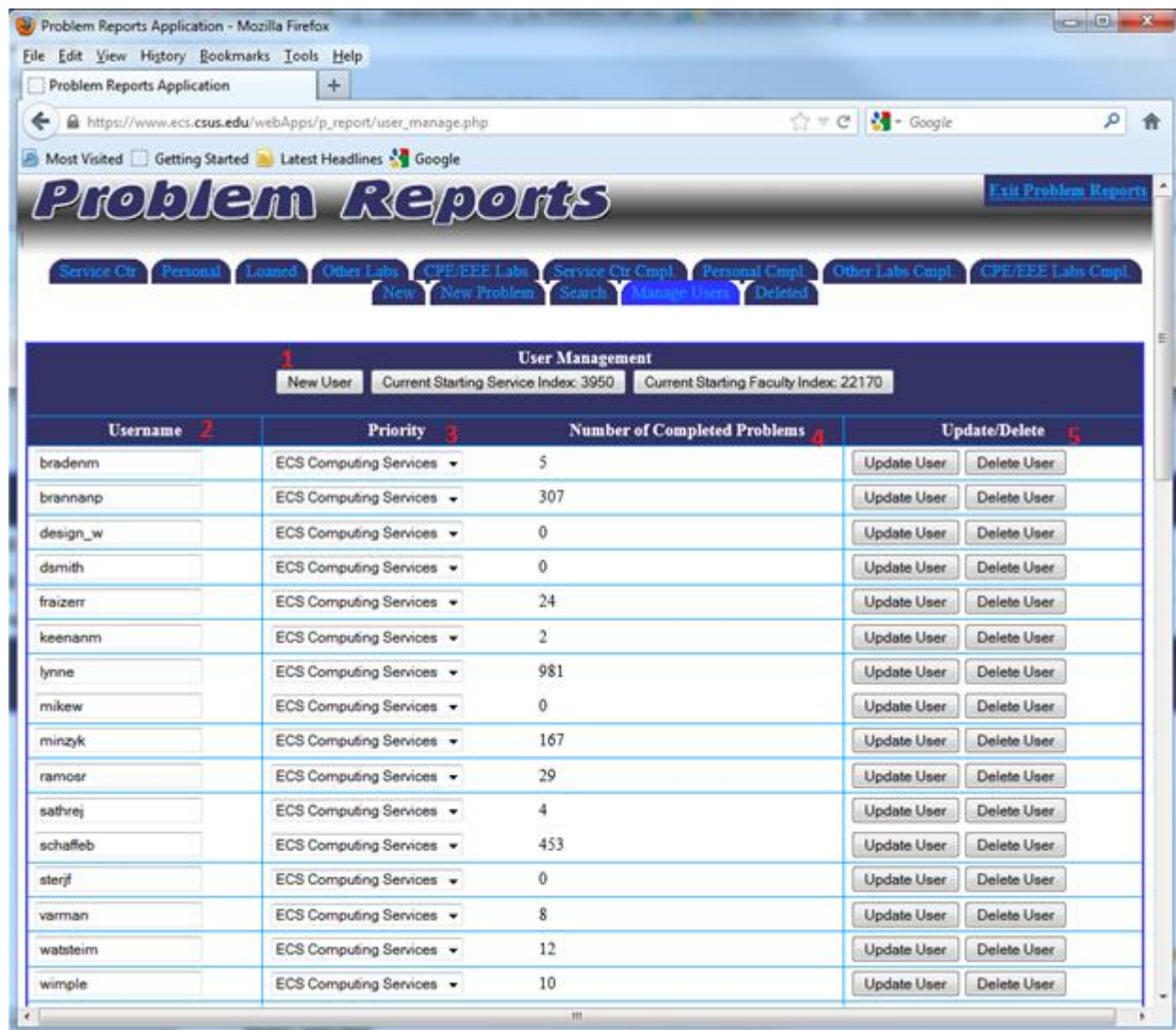


Figure 8: Manage Users and Permissions

Reports for Administrators

This section explains the requirements for overall application reports.

General Requirements

- 1) Want the ability to set and view for a given set of users:
 - a. Date range (from X to Y) or all
 - b. Fields to be viewed
 - i. Number of completed problems
 - ii. Number of added history items
 - iii. When user added
 - iv. When user active/inactive
 - v. Total time spent
 - c. Grouped by none, category, subject, system type, etc.
 - a. Display data for each user as well as a total for the set of users

- 2) Want the ability to view reports of users assigned to given reports and how many of those reports were completed by that user
 - a. Example: John assigned to ID 5. Did he complete ID5 or someone else?
- 3) Want the ability to print report
- 4) Want the ability to view percentages of status (complete, active, pending, waiting) for all problem reports
- 5) Want the ability to view percentages of status (complete, active, pending, waiting) for a given set of problem reports, according to
 - a. All reports
 - b. Range of users
 - c. Date range (from X to Y)
 - d. Category, subject, system type, etc.
- 6) Want the ability to group reports by category, subject, system type, etc.
- 7) Want the ability to receive a report for any update errors, mysql errors, or other system errors
- 8) Want error log emailed to specified group per a specified time frame
- 9) Want to be able to set and change the error log group and time frame
 - a. Time frame example: once a month, after X errors
- 10) Need to maintain the completion/history information even after the user is no longer active

Report Problem Internally Reported

This is when a user internally wants to report a problem. This section references the items in Figure 9.

General Requirements

- 1) Subject (2), Description(3), Where(9) are required
- 2) Anonymous reports are allowed
- 3) Must have a way to return to the portal (1)
- 4) Report is saved into the application database
- 5) Priority can be set (14)
- 6) Escalation level can be set (15)
- 7) Able to add "entered by" to indicate which user is creating the problem report on the reporter's behalf
- 8) Status can be set
- 9) Default status is pending
- 10) Want "YourName", "Your Email Address", "Your Phone Number", "Room" (which includes building) to be auto completed according to the Dean's Office's Faculty and Staff Listing
 - a. Includes easy search for a name that auto fills the rest of the contact information
- 11) Want to easily update the faculty and staff contact information via the Dean's Office's Faculty and Staff Listing, which is an Excel spreadsheet.
 - a. Soft copy of the spreadsheet will be available upon request

Current Database

See Current Database on page 6.

Field Descriptions

- 1) See Field Description on page 7 for items 1-13
- 2) Priority (14)
 - a. Low
 - b. Medium
 - c. High
 - d. Default - Low
- 3) Escalation level see Priority on Field Description page 15
- 4) Entered by
 - a. User who is entering the data on someone else's behalf
 - b. Not currently in the system, hence not in the screenshot

The screenshot shows a web browser window titled "Problem Reports Application - Mozilla Firefox". The address bar shows the URL "http://www.ecs.csus.edu/webApps/p_report/new.php". The page has a header with the title "Problem Reports" and a navigation bar with buttons: "Service Ctr", "Personal", "Loaned", "Other Labs", "CPE/EEE Labs", "Service Ctr Compl", "Personal Compl", "Other Labs Compl", "CPE/EEE Labs Compl", "New Problem", "Search", "Manage Users", and "Deleted". The main form is titled "Problem Subject:" and "Problem Description:". Below these are fields for "Category:" (Mouse), "Priority:" (Low), "Date Due:" (Month: 9, Day: 17, Year: 2012), "System Type:" (Workstation), "Room:" (RVR), "Position Room:" (Number:), "Where:" (Other Labs), "Computer Name:" (Labbie), "Escalation level:", "Your Name:", "Your Email Address:", and "Your Phone Number:". A "Report Problem" button is at the bottom.

Problem Subject:	
Problem Description:	
Category:	Mouse
Priority:	Low
Date Due:	Month: 9 Day: 17 Year: 2012
System Type:	Workstation
Room:	RVR
Position Room:	Number:
Where:	Other Labs
Computer Name:	Labbie
Escalation level:	
Your Name:	
Your Email Address:	
Your Phone Number:	

Report Problem

Figure 9: Report Problem Internally

Report Problem Internally Searched

This is so that internal users may search (Figure 10Figure 3) the status and information of the problem report(s).

General Requirements

- 1) Internal users may search for any problem report (Figure 10)
- 2) Search fields include
 - a. ID Number
 - b. Date Submitted
 - c. Date Completed
 - d. Date Due
 - e. Reporter's Email (Your Email Address in Figure 1)
 - f. Last X Days
 - g. From X to Y Days
 - h. Location
 - i. Category
 - i. Select from available categories
 - j. Subject
 - k. Person
 - l. Completed by
 - i. User who completed the problem report
 - m. Description
 - n. History
 - o. Possible keyword field
 - i. A separate field for common keywords to search
- 3) The given criteria is automatically selected once the field has been modified
- 4) There may be one or more criteria selected for a given search

Search		
By ID Number	<input type="checkbox"/>	<input type="text"/>
By Date Submitted	<input type="checkbox"/>	Month: 1 Day: 1 Year: 2012
By Date Completed	<input type="checkbox"/>	Month: 1 Day: 1 Year: 2012
By Date Due	<input type="checkbox"/>	Month: 1 Day: 1 Year: 2012
Email	<input type="checkbox"/>	<input type="text"/>
Last X days	<input type="checkbox"/>	<input type="text"/>
From X to Y days	<input type="checkbox"/>	Start Date: Month: 1 Day: 1 Year: 2012 End Date: Month: 1 Day: 1 Year: 2012
Location	<input type="checkbox"/>	RVR <input type="text"/>
Category	<input type="checkbox"/>	<input type="text"/>
Subject	<input type="checkbox"/>	<input type="text"/>
Person	<input type="checkbox"/>	<input type="text"/>
Completed By	<input type="checkbox"/>	<input type="text"/>

Figure 10: Problem Report Internally Searched

- 5) When “Search” is selected from Figure 10, the results of the search according to the selected criteria are displayed as in Figure 4.
- 6) Each report is highlighted or distinguished from the others for ease of usability
- 7) Want the ability to set which fields are displayed
- 8) Want the ability for an administrator to set and modify the default display settings
- 9) Want the ability for a given user to be able to create a personal profile which maintains the user’s preferences such as
 - a. Fields displayed upon a search result
 - b. Fields displayed upon viewing a report
 - c. Preferred grouping

Report Problem Internally View Reports

This is so that the user may view the status of one or more reports

General Requirements

- 1) Internal users may search for any problem report (Figure 10)
- 2) When “Report View” is selected from Figure 10, the results of the search according to the selected criteria are displayed (Figure 5)
 - a. The original report, resolution, and who resolved the problem is displayed
 - b. No history items are displayed
- 3) Want the ability to set viewing:
 - c. Date range (from X to Y)
 - d. Fields to be viewed
 - ii. Example: checkbox for each field with a select/deselect all option
- 4) Want the ability to print report

- 5) Want the ability to view percentages of status (complete, active, pending, waiting)
- 6) Want the ability to group reports by category, subject, system type, etc.

Report Problem Internally List Reports

This section is for how users list the available problem reports. There are two ways to list the problem reports. First is through the search method as explained in the section Report Problem Externally Searched on page 11. The second is as follows: (Figure 11)

General Requirements

- 1) Display listing of problem reports according to Problem Type (Where on page 7)
- 2) Listings separated from active and completed by problem type
- 3) Need ability to create new reports
- 4) Need ability to search reports
- 5) Need ability to manage users
- 6) Want ability to generate reports
- 7) Need ability for an administrator to set the default displayed fields per problem type
- 8) Want ability to set and save the selected displayed fields per internal user
- 9) Want ability to set and save the selected primary and secondary sort fields per internal user
- 10) Need to be able to sort via two columns
- 11) View field options include:
 - a. Status
 - b. Time spent
 - c. Category
 - d. Priority*
 - e. System Type
 - f. Room
 - g. Building
 - h. Position Room
 - i. Computer Name
 - j. Index
 - k. Problem Report ID
 - l. Subject
 - m. Description
 - n. Date Entered
 - o. Date Due
 - p. Date Complete
 - q. Reporter Name
 - r. Reporter Email
 - s. Report Phone
 - t. Attachments*
 - u. Escalation*
 - v. Date of latest history item

- w. History item added flag*
 - x. Ownership
- 12) View fields with that * can be displayed as a flag to indicate color, Y/N, etc.
- a. A possible option would be to create an icon to indicate the field name
- 13) Each report is highlighted or distinguished from the others for ease of usability

Field Descriptions

- 1) Time spent
 - a. Total time spent on a given problem report
- 2) Index
 - a. Integer value to indicate importance beyond escalation and priority
- 3) Ownership
 - a. The user responsible for seeing a given problem report to completion
- 4) All other fields have been previously defined

ID	Subject	Index	Room	Reporter Name	Reporter Phone	Category	Date Assigned	Last Mod.	Priority	Status	hh:mm	Esc
5077	Upgrade Moodle	5	RVR 2030	Lynne Onitsuka		Software	May 24, 2011	Dec 14, 2011	High	Active	0:00	E
5098	build 2 VMs - Virtual Desktop Candidate	19580	RVR 3030	Dennis Dahlquist	916-278-6185	Software	Jul 8, 2011	Apr 27, 2012	High	Active	1:00	E
5000	ME website	18830	RVR	Sue Holl		Software	Mar 22, 2011	Jun 11, 2012	Low	Waiting	0:00	E
5381	Update all software in altiris	21160	RVR			Software	May 10, 2012	Jul 13, 2012	Med	Active	0:00	F
5394	Report weekly printing status	21270	RVR 2011	ECS Computing Services		Software	May 15, 2012	Aug 2, 2012	Med	Active	0:00	F
5421	Rebuild Laptop: Sangay	21540	RVR 2016	System Support		Hardware	Jun 26, 2012	Aug 10, 2012	Low	Active	0:00	F
5437	Salems desktop	21690	RVR 2016	Ahmed Salem		Hardware	Jul 24, 2012	Sep 6, 2012	High	Pending	0:00	L
5444	quicktime on Reginatos laptop	21730	RVR 4012	Justin Reginato	86592	Software	Jul 31, 2012		High	Pending	0:00	L
5470	Jaime White's printer	21950	RVR 2016	Jaime White	2785468	Printer	Aug 24, 2012	Sep 6, 2012	High	Active	0:20	L
5474	Install software	21990	RVR			Software	Aug 27, 2012	Aug 29, 2012	High	Pending	0:00	L
5479	Slow with security messages	22030	SCL 1213	Anyssa Lumbert		Software	Aug 30, 2012	Sep 5, 2012	High	Active	1:00	L
5482	Winmail.dat	22060	RVR 2030	Lynne Koropp		Software	Sep 4, 2012	Sep 7, 2012	High	Active	0:00	L
5486	Rebuild system	22100	RVR	Farshad	9163078448	Software	Sep 4, 2012	Sep 5, 2012	High	Active	2:00	L
5452	printer does colors weird	21800	RVR 4024			Printer	Aug 3, 2012	Aug 27, 2012	Med	Active	0:00	L
5480	Slow system	22040	SCL 1213	Anyssa Lumbert		Hardware	Aug 30, 2012	Sep 5, 2012	Med	Active	0:00	L
5343	Skype hangs on log in	20950	RVR 5026	Milica Markovic	87327	Software	Apr 18, 2012	Aug 27, 2012	Low	Waiting	0:00	L
5398	Printing error	21290	RVR	Dongmei Zhou		Printer	May 16, 2012	Jun 29, 2012	Low	Waiting	0:00	L
5475	Internet access		RVR 3016A	Cody Tudor	916-529-6278	Software	Aug 28, 2012	Sep 5, 2012	Low	Pending	0:00	L

Figure 11: Problem Report Internally Listed

Report Problem Internally Update Reports

This section is for how users update and utilize the problem reporting process.

General Requirements

- 1) When a given report is selected from Figure 11, the report is displayed in a user friendly manner such as Figure 13.
- 2) Allows the user to upload an attachment

- 3) Need to be able upload attachments
- 4) Need to have uploaded attachments listed
- 5) Want to be able to email attachments via the application
- 6) Need to be able to send email with the following
 - a. Default To: is the Reporter Email
 - b. Default Subject
 - i. Include ID number
 - ii. Include subject
 - c. Default Body
 - i. Hello <user name>
Let us know if you have any questions,
<User signature>
 - d. Able to modify To field
 - e. The message is copied as a history item
 - f. See
 - g. Figure 12 as an example
- 7) Need to be able to update all fields
- 8) Need to be able to set the fields shown per problem type
- 9) Need to be able to set the index per problem type
- 10) Want the ability to print report
- 11) Need to be able to add a history item (Figure 14)
- 12) Need to be able to update history item
- 13) History items can **only be deleted by the user who created it** and administrators
- 14) Want to be able to modify history and a given the problem report field and only hit one update button
- 15) Need to be able to escalate a report with a comment in the history automatically added
- 16) Need to be able to deescalate a report with a comment in the history automatically added
- 17) Need to be able to create a copy of the report with the ability to modify fields as appropriate and copy select history items (Figure 15)
- 18) Want user *to want* to add a history item
- 19) Want user *to want* to add the time spent on a given problem
- 20) Need total time spent
- 21) Want time per user, such time spent per history item
- 22) History item needs to include
 - a. Comment
 - b. Who entered it
 - c. Last modied
 - d. Time spent
- 23) Need ability to view one or more entire history items without the need to scroll

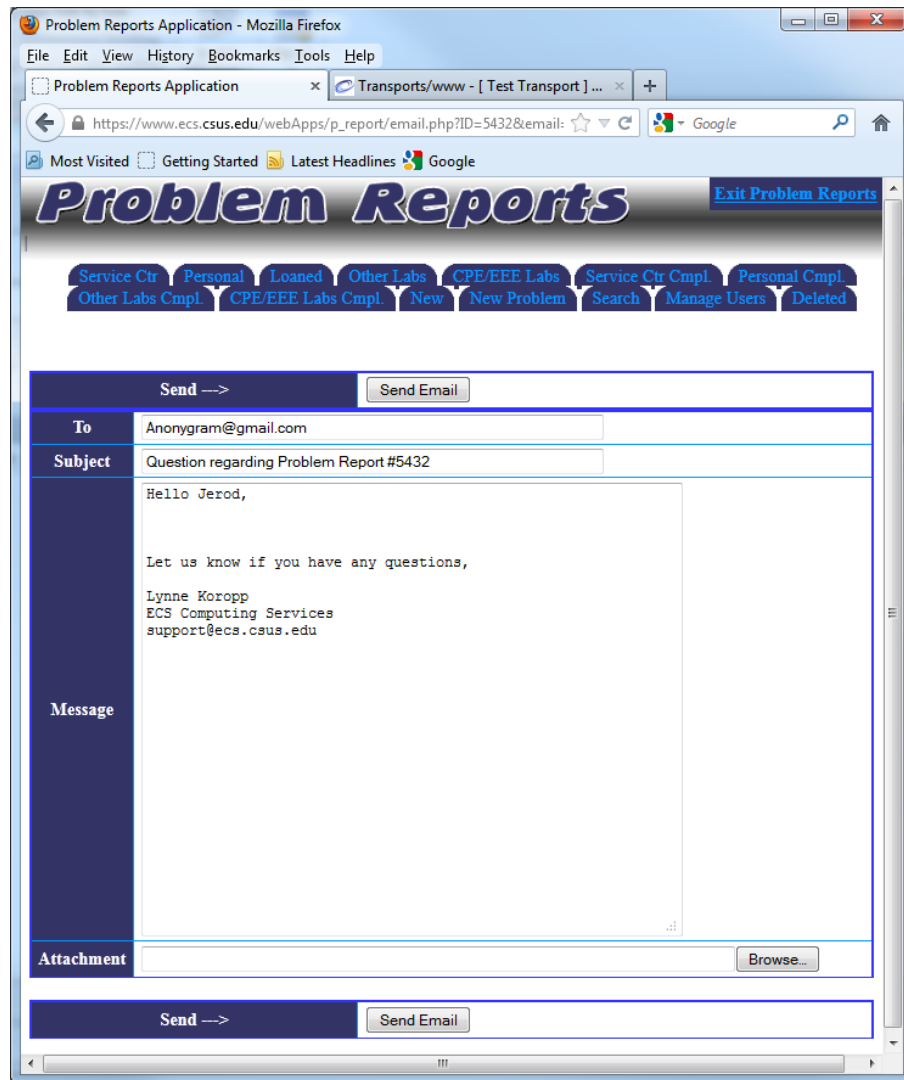


Figure 12: Email Example

Problem Reports Application - Mozilla Firefox

File Edit View History Bookmarks Tools Help

Problem Reports Application

https://www.ecs.csus.edu/webApps/p_report/detailed_view.php?ID=5470

Most Visited Getting Started Latest Headlines Google

Problem Reports

Exit Problem Reports

Service Ctr Personal Loans Other Labs CPE/EEE Labs Service Ctr Compl Personal Compl Other Labs Compl CPE/EEE Labs Compl New New Problem Search Manage Users Deleted

Faculty Problem		Dates	
Status:	Active	Date Entered:	Aug 24, 2012 8:13:43 am
Hours:Minutes:	0:20	Date Due:	Month: 12 Day: 3 Year: 2012
Category:	Printer	Date Complete:	Sep 6, 2012 9:53:39 am
Priority:	High	Reporter Info	
System Type:	Workstation	Reporter Name:	Jaime White
Room:	RVR 2016	Reporter Email Address:	whitej@ecs.csus.edu Em@il User
Position Room:	On table to the left of the door	Reporter Phone Number:	2785468
Problem Type:	Faculty	Problem Options	
Computer Name:		update problem delete problem	
Faculty Index:	21950	Copy Problem Move to EEE Request	
Problem ID Number:	5470	Escalation Level:	Lobby
Problem Subject:	Jaime White's printer	Attachments:	Browse... Upload File
Problem Description:	<p>Jaime White called about the status of his printer. Found a note in RVR 2016 on a printer that says on it broken and needs new print head.</p> <p>Entered by Ashley Gregory</p>	Existing Attachments:	[This Problem Report Has No Attachments]

[New History](#) [View History](#)

Figure 13: Problem Report Internally Viewed

Problem History				
New History View History				
	Last Updated By	Date/Time Updated	History Content	Delete/Update
<input type="checkbox"/>	lynne	Aug 27, 2012 11:11:16 am	Spoke to Jaime. Find the cost of the print heads. If it costs about the same as a new printer, then he will go that way. Lynne	update history delete history
<input type="checkbox"/>	ewertj	Aug 29, 2012 6:23:07 pm	He would also like to be hooked up to the campus printing system.	delete history
<input type="checkbox"/>	lynne	Sep 5, 2012 8:34:57 am	Requested quote from Mainstreet Technologies	update history delete history
<input type="checkbox"/>	lynne	Sep 6, 2012 9:55:17 am	Hello Jaime White, It turns out that the printheads for your printer are no longer sold by HP and there are no more in the HP spare parts department. Other vendors are also out. Given that HP no longer makes supplies for the printer, it is probably time to	update history delete history

Figure 14: Display History

Problem Reports

Service Ctr Personal Loaned Other Labs CPE/EEE Labs Service Ctr Compl Personal Compl Other Labs Compl CPE/EEE Labs Compl New New Problem Search Manage Users Deleted

Problem Subject		Problem Description	
Report weekly printing status		Use the form for printing status. This will be used for consistent maintenance reports. ___: Boxes of Paper Phaser 8860: ___	
Notes (reason for making new report)		Reporter Info	
		Reporter Name:	ECS Computing Services
		Reporter Email:	systemsupport@ecs.csu
		Reporter Phone:	

History			
Save	Last Updated By	Date/Time Updated	History Content
<input type="checkbox"/>	lynne	May 15, 2012 8:34:58 am	Use information in the problem description to send out weekly reports. Update form as needed.
<input type="checkbox"/>	ewertj	Jun 29, 2012 9:31:50 am	2 ___: Boxes of Paper Phaser 8860: 9 ___ magenta (red) toner 4 ___ yellow toner 5 ___ cyan (blue) toner
<input type="checkbox"/>	thompsog	Aug 2, 2012 3:25:14 pm	1 box of paper at the moment.

Figure 15: Copy Problem Report

Current Database

```
CREATE TABLE `p_report_index` (
  `indexStart` int(15) NOT NULL,
  `facIndexStart` int(15) DEFAULT NULL,
  PRIMARY KEY (`indexStart`)
) ENGINE=MyISAM DEFAULT CHARSET=latin1;
```

```
CREATE TABLE `p_report_history` (
  `history_ID` int(15) NOT NULL AUTO_INCREMENT,
  `name` varchar(30) DEFAULT NULL,
  `date_added` datetime DEFAULT NULL,
  `ID` int(15) DEFAULT NULL,
  `info` blob,
  PRIMARY KEY (`history_ID`),
  KEY `ID` (`ID`)
) ENGINE=MyISAM AUTO_INCREMENT=9585 DEFAULT CHARSET=latin1;
```

Conversion to ServiceNow

It would be great if a given problem report could be converted in to a ServiceNow ticket including watch emails for helpdesk@ecs.csus.edu and the reporter's email. ServiceNow tickets can be generated at <http://webapps2.csus.edu/atg/ATGsoftware.aspx> or <https://csus.service-now.com/>

Tech Shop Problem Reports

This section will be defined when a given project team is ready

General Requirements

- 1) Needs its own version of a problem report
- 2) Includes uploading initial draft files
- 3) Managing changes – tracking changes - file versions
- 4) Fields different but needs to be able to shift to/from the ECS problem report and EEE problem report