

**TECHNICAL MANUAL**

**University Survey System (USS)**

This software was the basis of Computer Science Senior Project / Senior Capstone classes, and was finished in the spring of 2018. For information about how to use the software, see the USS User Guide included in the software.

**Development:**

The USS was developed using PHP, HTML, JavaScript, CSS, JSON, ajax, charts.js, JQuery, MySQL, and Bootstrap. As much as was deemed reasonable, the JavaScript is contained in separate files that are interspersed throughout the file system, rather than being mixed into HTML files. JS files that apply to large sections of the system are in the *scripts* folder. XAMPP version 7.2.1 was used as a stack package for development. Individual component specifications are included below in the “XAMPP / component specifications” section. Development can be continued using software versions included there, and/or with the same version of XAMPP.

**Organization:**

There are two folders at the top of the file hierarchy. The *database* folder contains the MySQL database, and the *dev* folder contains everything else.

The main MySQL database, called *csdss* (Career Services Department Survey System) contains nine tables that are organized by utility.

The *dev* folder contains the *backend* folder, which holds php files for manipulating specific sections of the database using files in the *config* and *objects* folders. Those two folders, *config* and *objects* are divided simply for organizational purposes, and are used to manipulate specific parts of the database for various purposes.

The *TEMPLATE.html* file contains code to create the basic window used in the rest of the system. The file is not used in the system directly. Its contents have been copied to other files and modified appropriately throughout the system.

The *SEP* (Single Entry Point) folder contains the rest of the system software. The name is simply an archive from the development process, which was modified so that all system files are coordinated through a single file, *index.php*.

In the *SEP* folder:

*Bootstrap:* bootstrap 3.3.7, used primarily for resizing of content.

*chart.js-2.7.2:* Open-source HTML5 JavaScript chart-creation software from www.chartjs.org used for average response level bar graph in results page.

*chartPage:* Contains all code necessary to create charts with chart.js

*CSS:* All CSS for the system, in *styles.css*

*documentation:* All htm/html files for user / quick start guides, contact / about us info, help menus, and the *originalDocuments* folder, which contains the Word documents used to create the html files, and a copy of this document. Folders with names ending in “*\_files”* are configuration files created when the Word documents were converted to html files.

*graphics:* Images used in the system

*JQuery:* JQuery 3.3.1.min.js JavaScript source code

*pHp:* All PHP files corresponding with pollster-, user-, and survey-based HTML files

*pollster*: HTML and JavaScript files for everything related to the survey administrator (the “pollster”): Account creation / manipulation / activation, dashboard functionality, survey creation / manipulation

*scripts:* JavaScript files that are used extensively throughout the system

*user:* HTML and JavaScript files for display and functionality for the survey-taker

*header.html, headerLoggedIn.html, plainHeader.html:* Used by system files to display the appropriate header content (menus at the top right of the screen, mainly) in appropriate places

*index.php:* The “single entry point” for the system. HTML files set the $\_POST variable, and its contents are used to determine the corresponding PHP file to be run. Organized by section through the *aType* variable

**Installation on the EWU network:**

**Virtual machine specifications / instructions from EWU IT department:**

OS: Ubuntu server 16.04.3 LTS x64   
Procs: 4 x Xeon 2420 @ 1.9GHz   
RAM: 2GB   
Size of / partition: 15GB   
IP address: 146.187.135.30   
Listening ports: 22, 80, 443   
Sudo account: csdev pw: \*\*7Db&-4dD$p   
MySQL root password: \*\*7Db&-4dD$p   
  
Students will need to be connected to the student VPN to access the server from off campus. They can add other Linux accounts as they see fit but new accounts will not be able to SSH into the server until their usernames are added to the AllowUsers directive in /etc/ssh/sshd\_config and the SSH daemon restarted. They should not remove the csdepadmin account from the server. Phpmyadmin is installed and can be accessed @ https://146.187.135.29/phpmyadmin. Browsers will complain about the SSL cert but it is safe to accept (it is self-signed). They'll be prompted for credentials to access the page. They should use the 'csdev ' credentials above. For the phpmyadmin page itself, log in to MySQL as root. Root logins are of course not optimal so I'd advise the team to create their own MySQL user to admin the app databases and tables making sure not to hard code any root credentials in php.   
  
Also, as we talked about previously, if they are working via wireless on campus, they need to make sure they authenticate into the "WiEWUs" or "eduroam" wireless networks with their SSO credentials (see https://access.ewu.edu/it/services/network-wireless for more details). If they connect to the WiEWUGuest network, which doesn't require credentials, they will not be able to hit the open ports on the server. This traditionally has caused some senior project teams consternation as they don't realize they're on the WiEWUGuest network which only grants limited internal access Please be conscious of this before assuming the server is inaccessible on wireless.

**XAMPP / component specifications:**

ApacheFriends XAMPP Version 7.2.1 ######

Important! PHP in this package needs the Microsoft Visual C++ 2008 Redistributable package from

http://www.microsoft.com/en-us/download/details.aspx?id=5582. Please ensure that the VC++ 2008 runtime

libraries are installed on your system.

+ Apache 2.4.29

+ MariaDB 10.1.30

+ PHP 7.2.1 (VC15 X86 32bit thread safe) + PEAR

+ phpMyAdmin 4.7.4

+ OpenSSL 1.1.0g

+ ADOdb 518a

+ Mercury Mail Transport System v4.63 (not included in the portable version)

+ FileZilla FTP Server 0.9.41 (not included in the portable version)

+ Webalizer 2.23-04 (not included in the portable version)

+ Strawberry Perl 5.16.1.1 Portable

+ Tomcat 7.0.56

+ XAMPP Control Panel Version 3.2.2 by hackattack142 (Great Thanks!!))

See: http://www.apachefriends.org/f/viewtopic.php?f=16&t=46743

+ XAMPP mailToDisk 1.0 (write emails via PHP on local disk in <xampp>\mailoutput. Activated in the php.ini as mail default.)