Software 6

4/16/18

Milestone 4 Beta Launch

and Reviews

Principles of Software Engineering, Spring 2018

CEN 4010

Team Info

Team name: Software 6

Project: Access Control Device

Team Number: Milestone Group 6

Team Members:

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2.2 Product summary

1. Name of the product

Access Control System

1. Explicit list of ALL major committed functions.
2. The system is design to grant access to users that would be using lab equipment or workstation
3. The system is designed to keep track of all available workstations and lab equipment
4. The system shall grant a two-level access, students and administrators
5. The system shall grant access to users by using their credentials, student Z-number and password
6. The system shall only allow access to users who hold a valid student ID number (student Z-number)
7. The system shall allow the admin to add, delete or block a user from using the site
8. The system shall allow student users only to use the site for lab equipment or workstation.
9. The system shall assign randomly an available workstation to the user
10. The system shall keep track of the time allotted to each student using a workstation
11. The system will periodically remind the user of their remaining time and will be warned when the time is approaching 0
12. The system shall support different type of workstations (drill press, soldering station)
13. The system will be accessed via an internet browser on a mobile device (smartphone, tablets, etc.)
14. The system shall keep track of multiple devices such as lab tools, soldering workstations, etc.
15. Describe unique features in your product (if any)

The site will provide the user a selection of two choices to choose from, one if bench is clean and operable and the other if is not. If the bench is not in good shape the user will be asked to take a picture of the workstation which will then be send to EE management team, while the student will be assigned a new available workstation.

1. URL to your product accessible to instructors, on deployment server

http://lamp.cse.fau.edu/~CEN4010\_S2018g06/

2.3 Usability test plan – maximum 2 pages

1) Test objectives: 0.5 page

An Equipment Checkout, Power Management & Safety Lockout System. This system will provide a safety lockout allowing students only to use equipment they have been trained and approved to use. The system will automatically time-out and shut off after a reasonable time if the equipment is not reactivated via smart phone before the timeout occurs. The Professors teaching a class can request the equipment be turned on for the class period.

We will be using the Sonoff Wi-Fi switch relay module provided by Perry Whinthal to complete the project. The school website is the intended log on page to be used by students approved to use the program/system: the team has a page set up with a form to test the logon accessibilities. As of yet, the API has not been found or provided. Date of testing is to be determined but the location is Engineering East specified labs. Our goal is to make the Engineering labs safer for all users and make accountability a thing by having students log on and show the state of their selective benches

2) Test plan: System setup, starting point, task to be accomplished, who is the intended user, completion criteria, URL of the system to be tested. 3/4 page

1. App to confirm access via the OIT password verification system
2. Allow access: unit, student, room, group of equipment, etc.
3. Allow group enable / disable by time period: time (hour) block, or by minutes.
4. Users can request “x” minute time windows, as assigned to the equipment.
5. Access & Times are assigned by staff / faculty, only.
6. Locked & Encrypted Wifi Communications must be implemented.
7. Up to 15 minutes session per student. Adding a session is allowed
8. Allow students to logon in order to use benches
9. One setup of equipment designed for the use of one person. For example, a soldering station, drill press station, or microscope station: Soldering iron, roll of tin, bottle of flux, loop, and wire holder.
10. Website demo to get student`s credentials: <http://lamp.cse.fau.edu/~CEN4010_S2018g06/demo/>
11. Sonoff Wi-Fi switch relay module can be control wirelessly to allow users permission
12. Give users login permission to desk by using MySql server to match saved info
13. Users can register their z-number
14. MySql will be used to store pictures submitted by users

3) Questionnaire form: 3 Lickert scale questions, in a form easy to be used by reviewer (check class slides).

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Questions | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
|  | 1-3 | 1-3 | 1-3 | 1-3 | 1-3 |
| The system is user friendly |  |  |  |  |  |
| The system is fully functional |  |  |  |  |  |
| The system’s homepage is well designed and organized |  |  |  |  |  |
| The system can allow two level access |  |  |  |  |  |
| The system can support multiple devices (lab tools, workstations) |  |  |  |  |  |
| The system can be accessed via mobile device, tablet other than a desktop |  |  |  |  |  |
| The system keeps track of time allotted to each user |  |  |  |  |  |
| The system keeps track of workstation availability |  |  |  |  |  |
| The system is secured via authentication/password protected |  |  |  |  |  |
|  |  |  |  |  |  |
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|  |  |  |  |  |  |

Total Scores

2.4 QA test plan – maximum 2.5 pages

1.) Test objective:

The objective of this test is to ensure the proper operation of the timer functionality of our system. The timer should start after a user logins and requests a bench. The timer should start at 30 minutes and count down to 0. The user should also be able to check how much time is left with the timer being cancelled or reset and should be able to extend as needed. Finally when the timer runs out the device should stop and the user should be able to request a new one.

2.) Software and hardware setup:

The code for our site is hosted on the FAU Lamp server and is written in PHP. The hardware being used for the test is a windows desktop pc and for software we are going to test it in both Mozilla Firefox and Google Chrome.

3.) Feature to be tested:

|  |  |  |  |
| --- | --- | --- | --- |
| **Item to Test** | **Test Description** | **Test Date** | **Responsibility** |
| Timer start | This will test when the timer is first started | April 16,2018 | Jonathan Parreira |
| Timer time remaining | This will test if the timer is correctly updating part way | April 16,2018 | Jonathan Parreira |
| Timer ended | This will test if the timer stops after reaching 0 | April 16,2018 | Jonathan Parreira |

4.) Test cases:

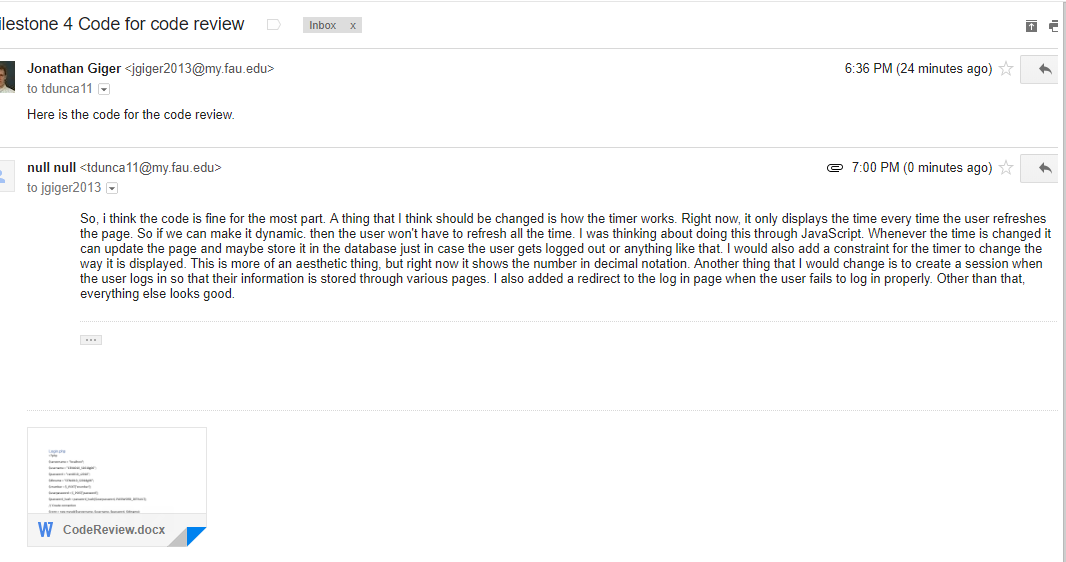
Firefox Test:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Test #** | **Title** | **Description** | **Input** | **Expected output** | **Results (pass or fail)** |
| 1 | Timer test start | This will test when the timer is first started | Start timer | Timer starts with 30 minutes | Pass |
| 2 | Timer test check | This will test if the timer is correctly updating part way | Refresh page at 15 minutes | Timer shows about 15 minutes left | Pass |
| 3 | Timer test ended | This will test if the timer stops after reaching 0 | Refresh page at 35 minutes | Timer shows no time is left | Pass |

Chrome Test:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Test #** | **Title** | **Description** | **Input** | **Expected output** | **Results (pass or fail)** |
| 1 | Timer test start | This will test when the timer is first started | Start timer | Timer starts with 30 minutes | Pass |
| 2 | Timer test check | This will test if the timer is correctly updating part way | Refresh page at 15 minutes | Timer shows about 15 minutes left | Pass |
| 3 | Timer test ended | This will test if the timer stops after reaching 0 | Refresh page at 35 minutes | Timer shows no time is left | Pass |

2.5 Code Review



[Code for Timer](#Code)

[YouTube link](https://www.youtube.com/watch?v=oow_yRpPabY&t=29s)

2.6 Self-check on best practices for security – ½ page

The only assets that are being protected are the user credentials. This includes their z-number and password, more so their password. The password is encrypted using the PHP password\_hash function. The function takes in the user’s password as a parameter and passes it through the crypt function. The crypt function generates a random salt and uses that in the algorithm to encrypt the password. The resulted encrypted password is then stored in a variable that is then passed into the database. Along with the encrypted password, the salt that is generated and the algorithm used is also stored in the database so that it can be used to decrypt the password when validating a user’s credentials. The only information that is being validate is the user’s z-number and their password.

The z-number is validated through the input field in the html file. The field only takes numbers as inputs and the input must be 8 characters long as this is the length of a z-number. If the input is less than 8 characters, the user is notified with a message saying that it must be 8 characters long. If the input is anything other than a number, it is not registered. Passwords are validated through the input field in the html file also. The password is hidden when typed and it cannot exceed a length of 25 characters. This prevents any malicious code from being inputted into the system.

2.7 Self-check: Adherence to original Non-functional specs

|  |  |  |
| --- | --- | --- |
| 1.) The access control device needs to be simple to use and most users should be able to intuitively figure out how to operate it. | DONE |  |
| 2.) The access control device should activate and deactivate the assigned equipment within 15 seconds of being requested. | DONE |  |
| 3.) The access control device should resume its previous state when recovering from a power failure. | DONE |  |
| Organizational requirements: |  |  |
| 4.) Users will be required to use their z number to access the system. | DONE |  |
| External requirements: |  |  |
| 5.) The access control device should be able to operate across multiple browsers. | ISSUE | NO API |
| 6.) Users should not have access to other users information except for staff for privacy concerns. | DONE |  |

Revision History Table:

Project revised on 4/16/2018

Code for Timer

## Login.php

//Create Session for future use

<?php

$servername = "localhost";

$username = "CEN4010\_S2018g06";

$password = "cen4010\_s2018";

$dbname = "CEN4010\_S2018g06";

$znumber = $\_POST['znumber'];

$userpassword = $\_POST['password'];

$password\_hash = password\_hash($userpassword, PASSWORD\_DEFAULT);

// Create connection

$conn = new mysqli($servername, $username, $password, $dbname);

// Check connection

if ($conn->connect\_error) {

die("Connection failed: " . $conn->connect\_error);

}

$sql = "select name from users where znumber = '".$znumber."' ";

$sql2 = "select times from users where znumber = '".$znumber."'";

$result = $conn->query($sql);

$result2 = $conn->query($sql2);

//ResetTimer

function resettime()

{

$sql3 = "update users set time = " . time() . " where znumber = '".$znumber."'";

$conn->query($sql3);

}

if ($result->num\_rows > 0) {

// output data of each row

$row2 = $result2->fetch\_assoc();

while($row = $result->fetch\_assoc()) {

echo "Login Successful!<br>Your Name: " . $row["name"]. "<br>";

echo "Current Time: ".time()."<br>MySQL Time: ".$row2["times"]."<br>";

if(time() > $row2["times"] + 1800)

{

echo "Session time is up Start new session?<br><form action='called.php' method='POST'><input type='submit' class='button' name='reset' value='resettime' /><input type='text' name='znumber' value='". $znumber ."' /></form>";

}

else {

echo (1800-(time() - $row2["times"]))/60 . " minutes remaining";

}

}

} else {

echo "Login Failed!";

echo "<script>setTimeout(\"location.href = '../index.html ';\",1500);</script>";

}

$conn->close();

?>

# Called.php

<?php

$servername = "localhost";

$username = "CEN4010\_S2018g06";

$password = "cen4010\_s2018";

$dbname = "CEN4010\_S2018g06";

$znumber = $\_POST['znumber'];

// Create connection

$conn = new mysqli($servername, $username, $password, $dbname);

// Check connection

if ($conn->connect\_error) {

die("Connection failed: " . $conn->connect\_error);

}

$sql3 = "update users set times = " . time() . " where znumber = ".$znumber;

$conn->query($sql3);

echo "Workstation reserved successfully, use this site again to check how much time is remaining."; //Maybe throw in a redirect to another page

$conn->close();

?>