

Faculty Dashboard System



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1.Preview

Introduction

Faculty Dashboard is an online intranet website for an Institution where faculty can login and save their personal details such as email and phone number, academic details such as educational background, papers published and other details like being a club advisor etc. The website also allows faculty to apply for leave and make appointments with their respective HODs online. The HODs can approve or deny the requests for appointments as per their convenience. The leaves applied by the faculty are approved or rejected by the HOD for valid reasons. The website is also a hub for many other things such as Achievements, Papers published and Events conducted or attended.

Need and Motivation

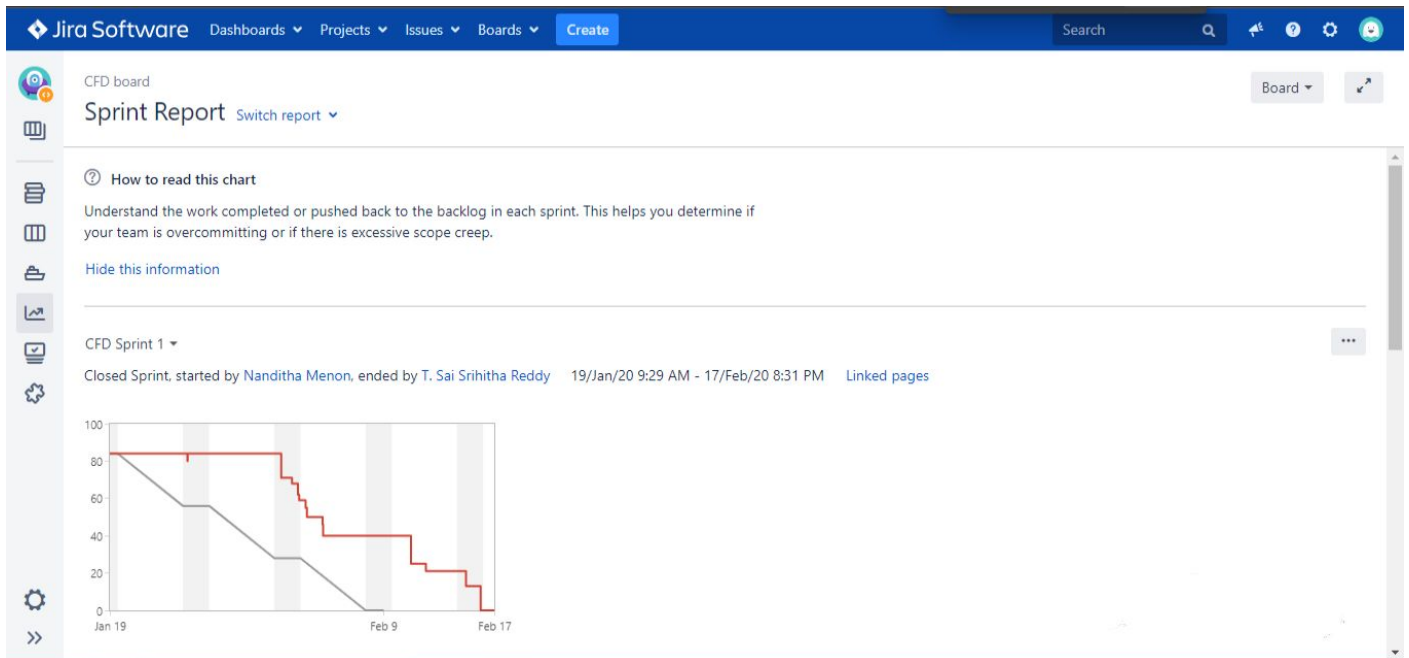
The motivation behind developing a faculty dashboard is to minimise the manual efforts put into finding details about the faculty in an institution. The features of the website include - being able to search for faculty details, viewing all the achievements and papers published of all the faculty in a single page, applying for leave and appointments online etc. These tasks are normally time consuming and trivial.

Tools Used

- ✓ PHP
- ✓ HTML
- ✓ CSS, BootStrap
- ✓ JavaScript, JQuery
- ✓ Visual Studio, Sublime Text
- ✓ Xampp, Wamp
- ✓ Heroku app
- ✓ Github
- ✓ Eclipse
- ✓ SonarQube
- ✓ Jenkins

2. Product Backlog

2.1 Report of your product backlog from JIRA



Status Report

Completed Issues View in Issue navigator

Key	Summary	Issue Type	Priority	Status	Story Points (84)
CFD-2	As a user, I can login	Story	Highest	DONE	4
CFD-9	As a user, I can search for a faculty by his/her ID	Story	High	DONE	5
CFD-10	As a user, I can search for a faculty by his/her name	Story	High	DONE	5
CFD-11	As a user, I can search for a faculty by his/her position	Story	Medium	DONE	5
CFD-12	As a user, I can search for a faculty by his/her department	Story	Medium	DONE	5
CFD-15	As a faculty, I can apply for a leave online to my department HOD	Story	Highest	DONE	6
CFD-16	As a faculty, I can view my pending leaves	Story	Highest	DONE	3
CFD-36	As a user, I can view my personal details	Story	Highest	DONE	4
CFD-37	As a user, I can view my academic details	Story	Highest	DONE	4
CFD-38	As a user, I can view my other details	Story	Highest	DONE	4
CFD-39	As a user I can view my security verification questions and their answers	Story	Medium	DONE	4
CFD-45	As an HOD, I can approve or roll back the applied leave	Story	Highest	DONE	5
CFD-46	As a faculty, I can cancel my future leaves either approved or pending	Story	High	DONE	4
CFD-52	As a user, I can view the list of conferences and seminars, conducted and attended, by the faculties of the institution in the profile page	Story	High	DONE	13
CFD-203	As a faculty I can view my timetable	Story	Highest	DONE	3
CFD-205	As a HOD, I can schedule meetings with all the faculties in my department	Story	Highest	DONE	6
CFD-206	As a faculty/HOD, I can view my scheduled meetings	Story	Highest	DONE	4

2.2 EPIC STORIES

2.2.1 Epic -1 stories: User Authentication

- As a user, I can login
- As a user, I get alerted when credentials entered are incorrect for 3 or more consecutive attempts
- As a user, I will get locked out of my account if there are too many failed login attempts

2.2.2 Epic -2 stories: Search

- As a user, I can search for a faculty by ID
- As a user, I can search for a faculty by his first name or last name
- As a user, I can search for a faculty by his department
- As a user, I can search for a faculty by his position
- As a user, I can view the list of papers published according to the department

2.2.3 Epic -3 stories: Faculty Profile

- As a user, I can view the list of conferences and seminars, conducted and attended, by the faculties of the institution in the profile page
- As a user, I can reset my password
- As a user, I can edit my personal details
- As a user, I can edit my academic details
- As a user, I can edit my security questions
- As a user, I can view my other details
- As a user, I can edit my other details
- As a user, I can view my personal details
- As a user, I can view my security questions and their answers
- As a user, I can view my academic details

2.2.4 Epic -4 stories: Schedule Management

- As a faculty, I can request for an appointment with HOD
- As a HOD, I can approve or reject appointments with my faculties according to my convenience
- As a faculty or HOD, I can view my schedule meetings
- As a HOD, I can schedule meetings with all the faculties in my department
- As a faculty, I can view my timetable

2.2.5 Epic -5 stories: Leave Management

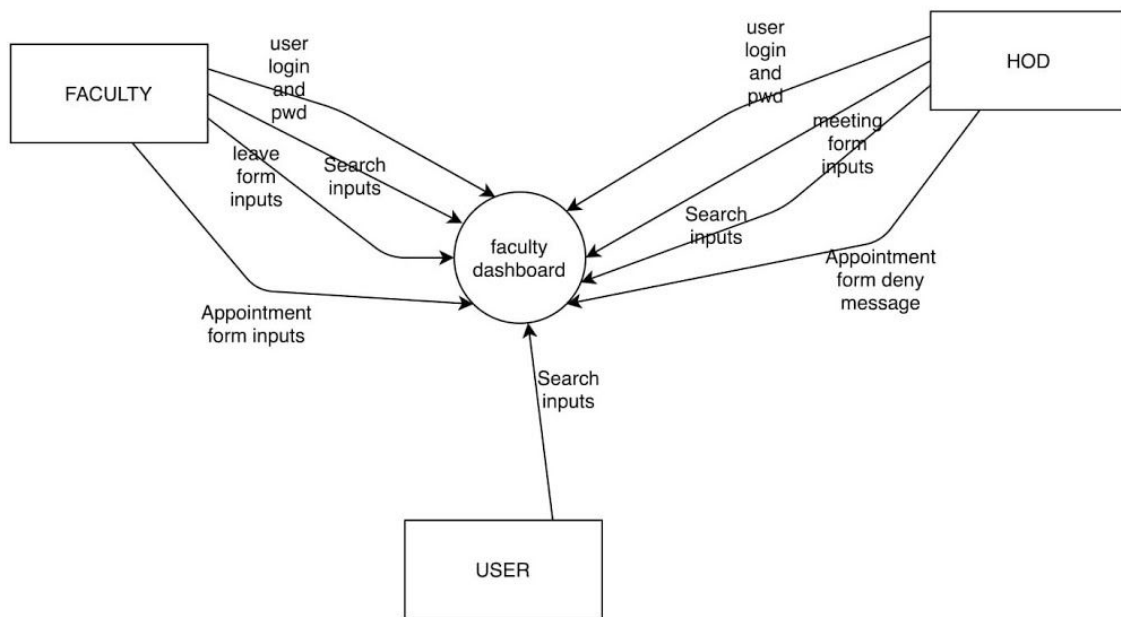
- As a faculty, I can view my net salary
- As a faculty, I am alerted when my limit of leaves are exceeded
- As a faculty, I can apply for a leave online to my department HOD
- As a faculty, I can cancel my future leaves either approved or pending
- As a faculty, I can view my pending leaves
- As a HOD, i can approve or roll back the applied leaves

2.2.6 Epic -6 stories: Faculty Achievements

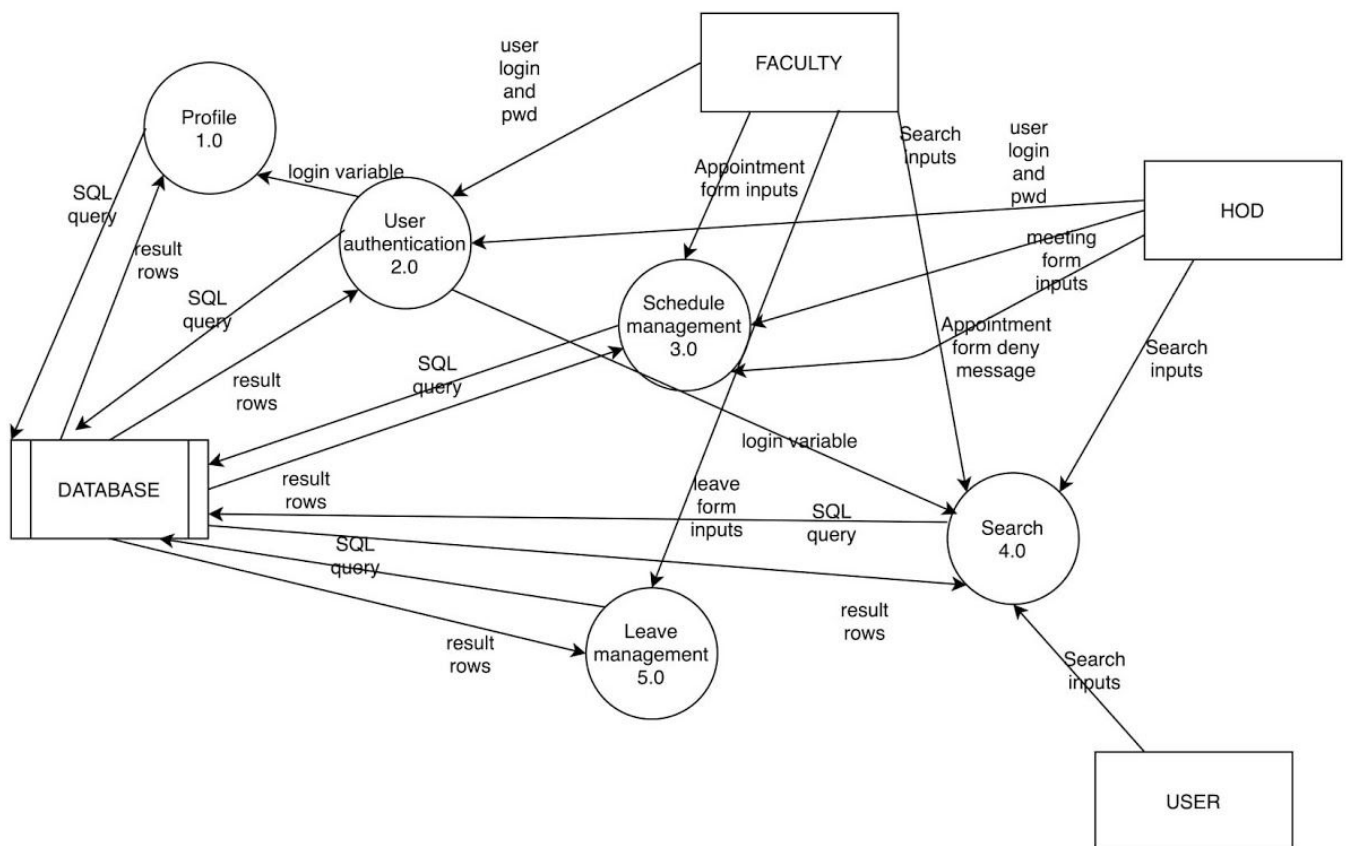
- As a user, I can view certifications achieved by the faculty members
- As a user, I can view the papers published by the faculties
- As a user, I can view the list of seminars and workshops conducted or attended by the faculty

3. Use Case/ DFD diagrams

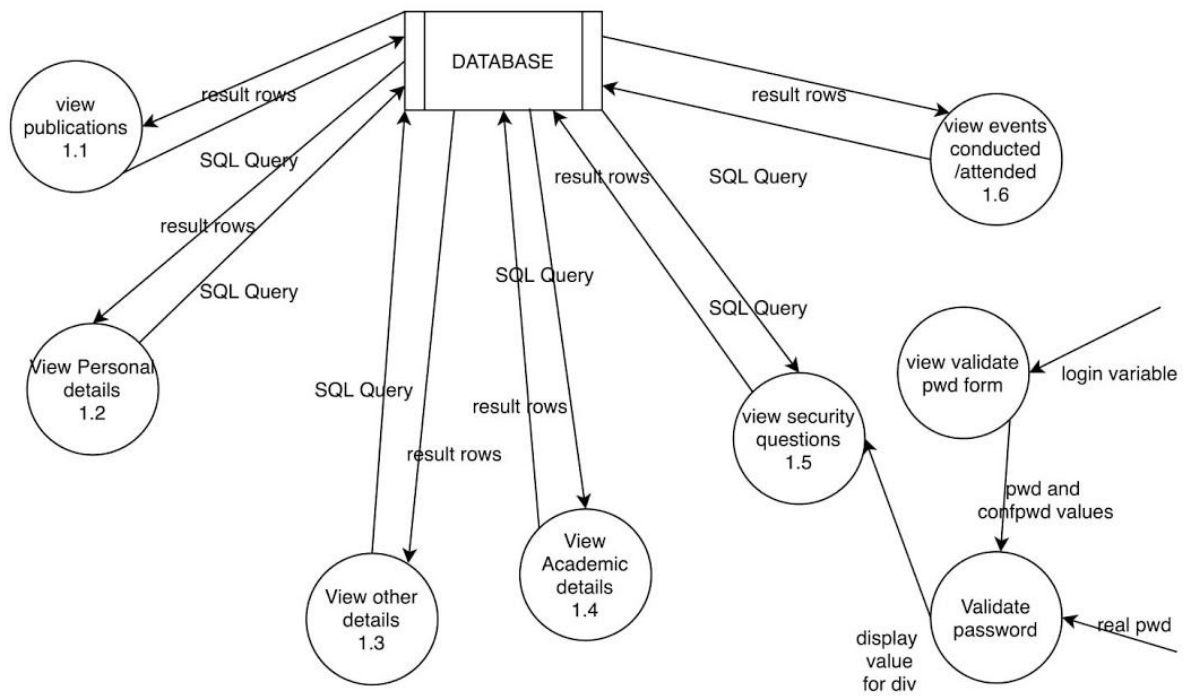
FACULTY DASHBOARD LEVEL 0 DFD



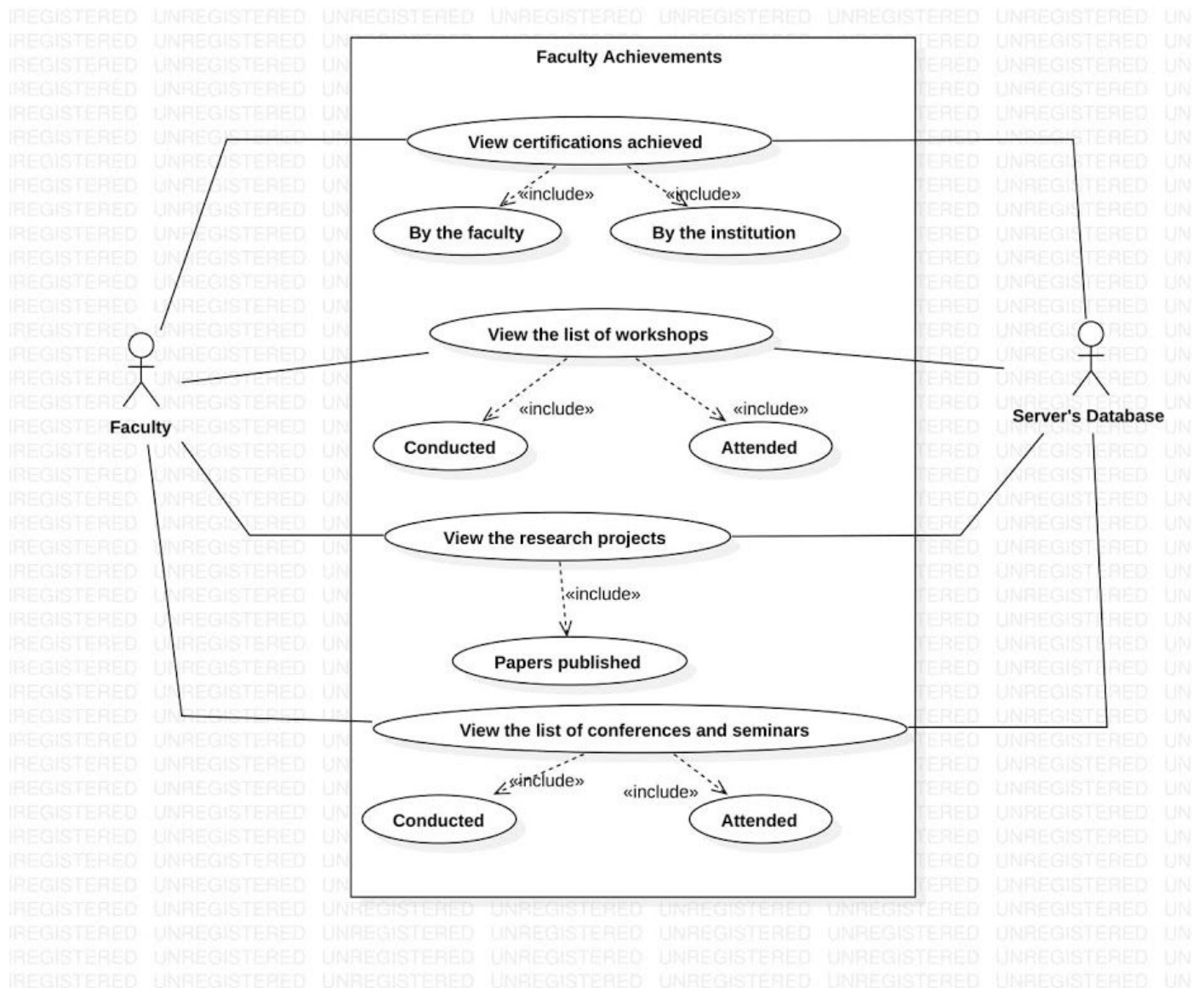
FACULTY DASHBOARD LEVEL 1 DFD



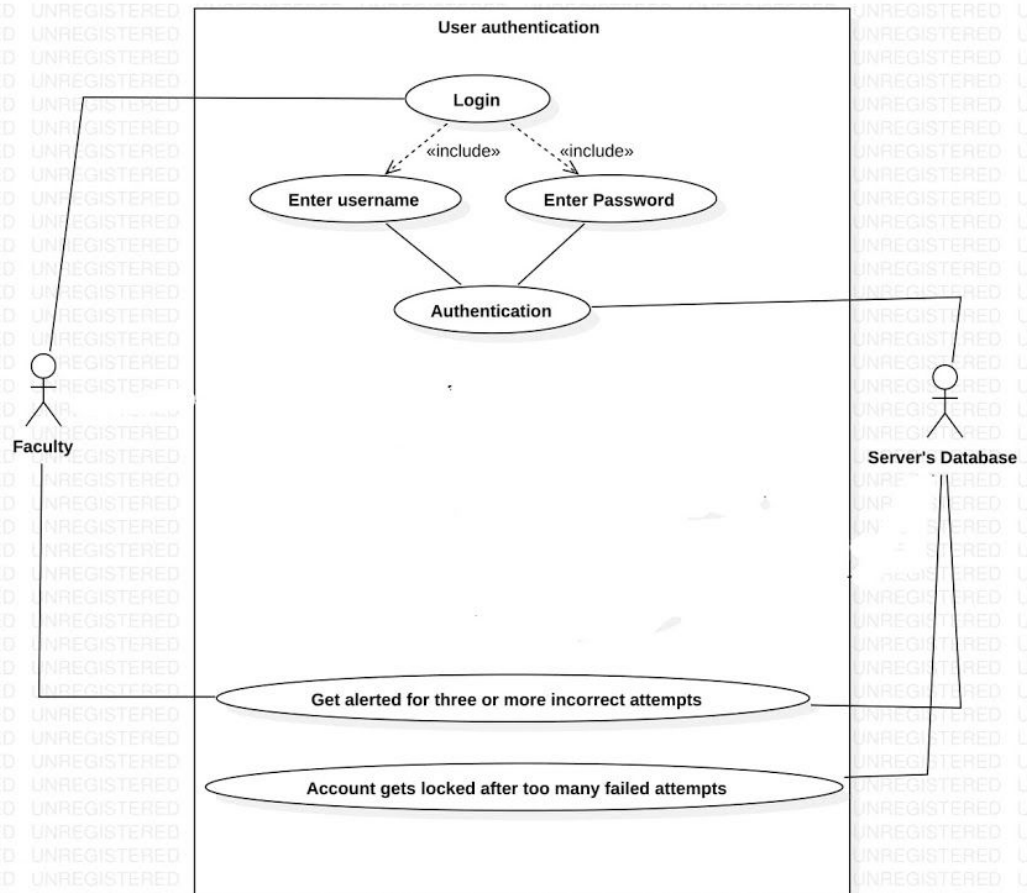
FACULTY DASHBOARD LEVEL 2 DFD

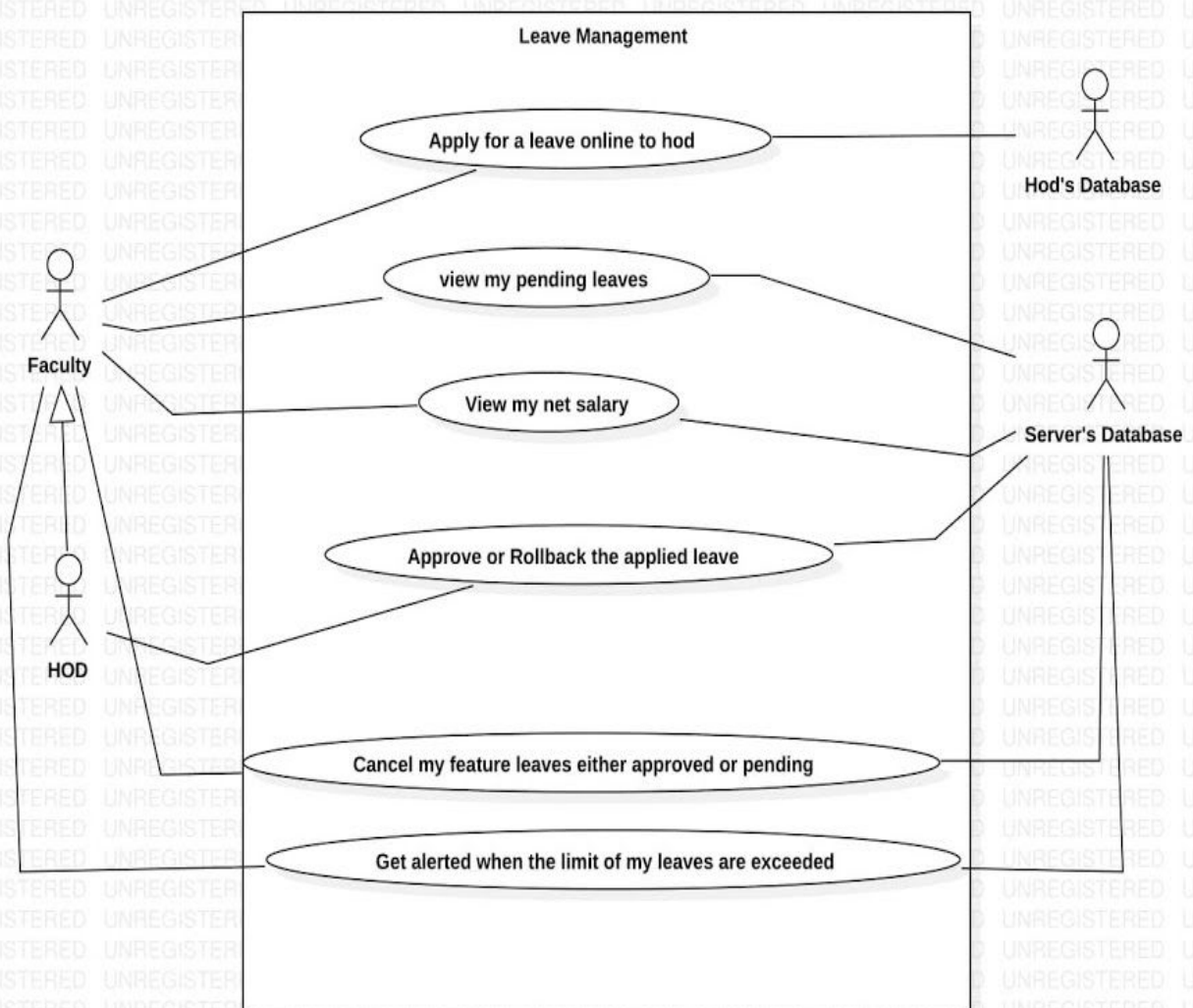


Use-Case Diagram

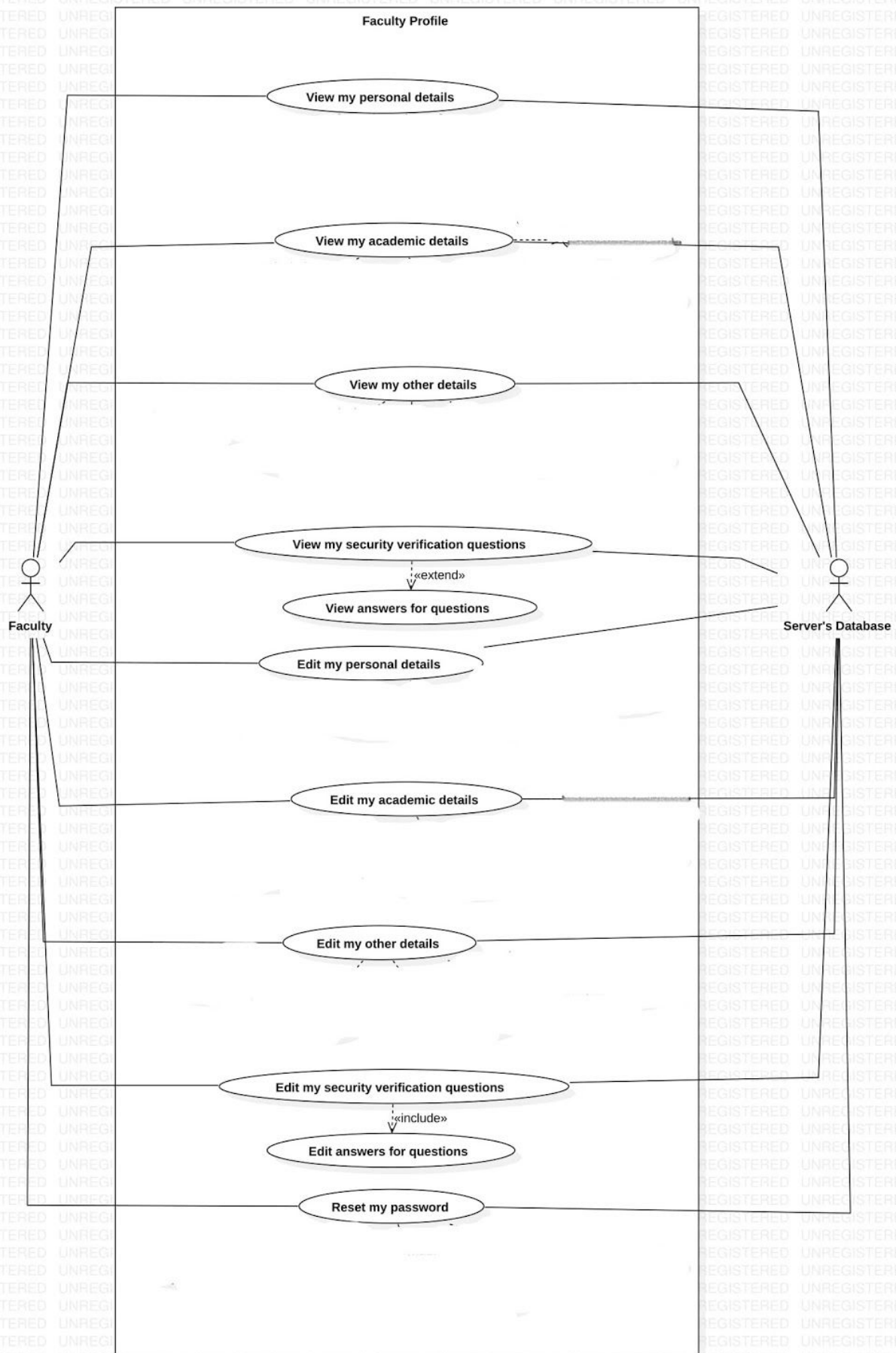


UML Use Case Diagram

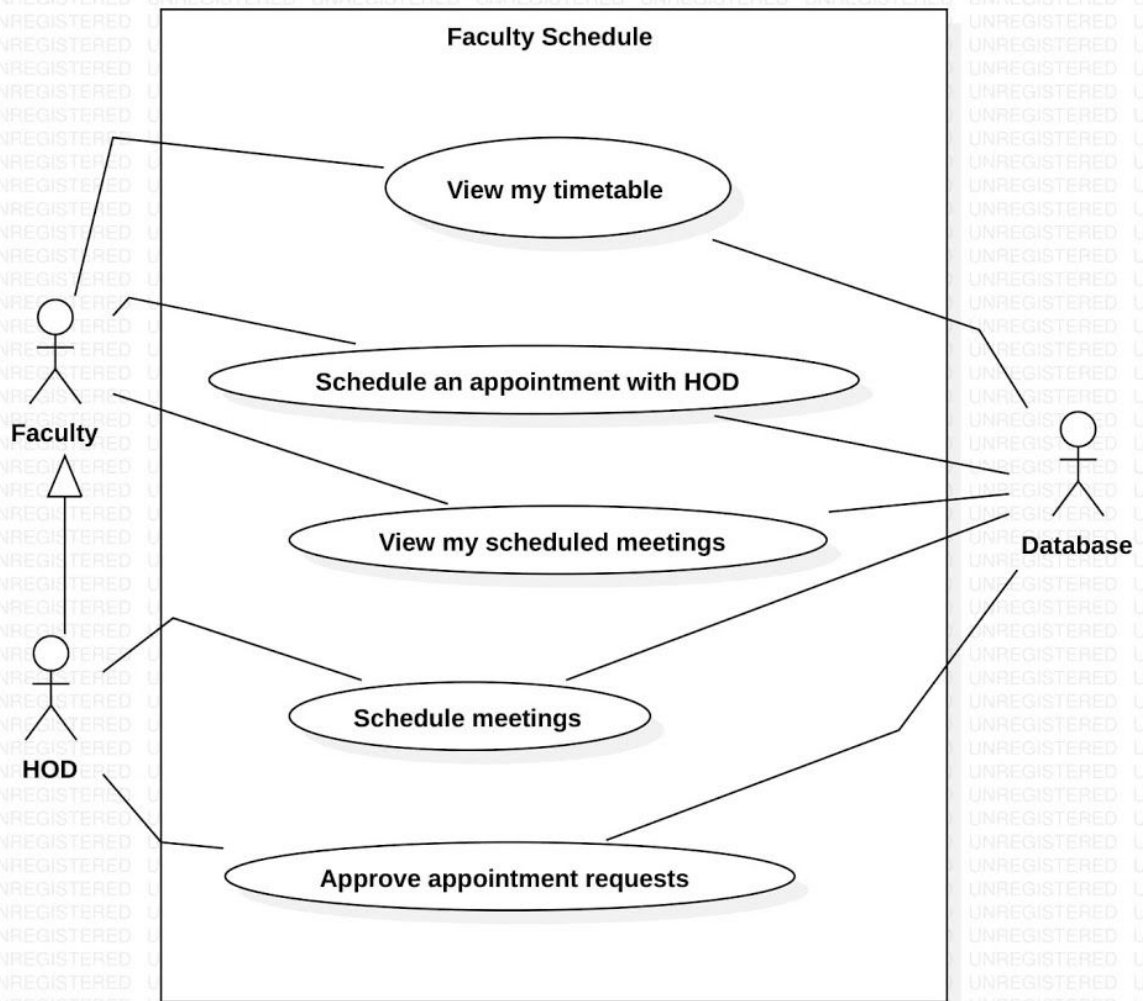


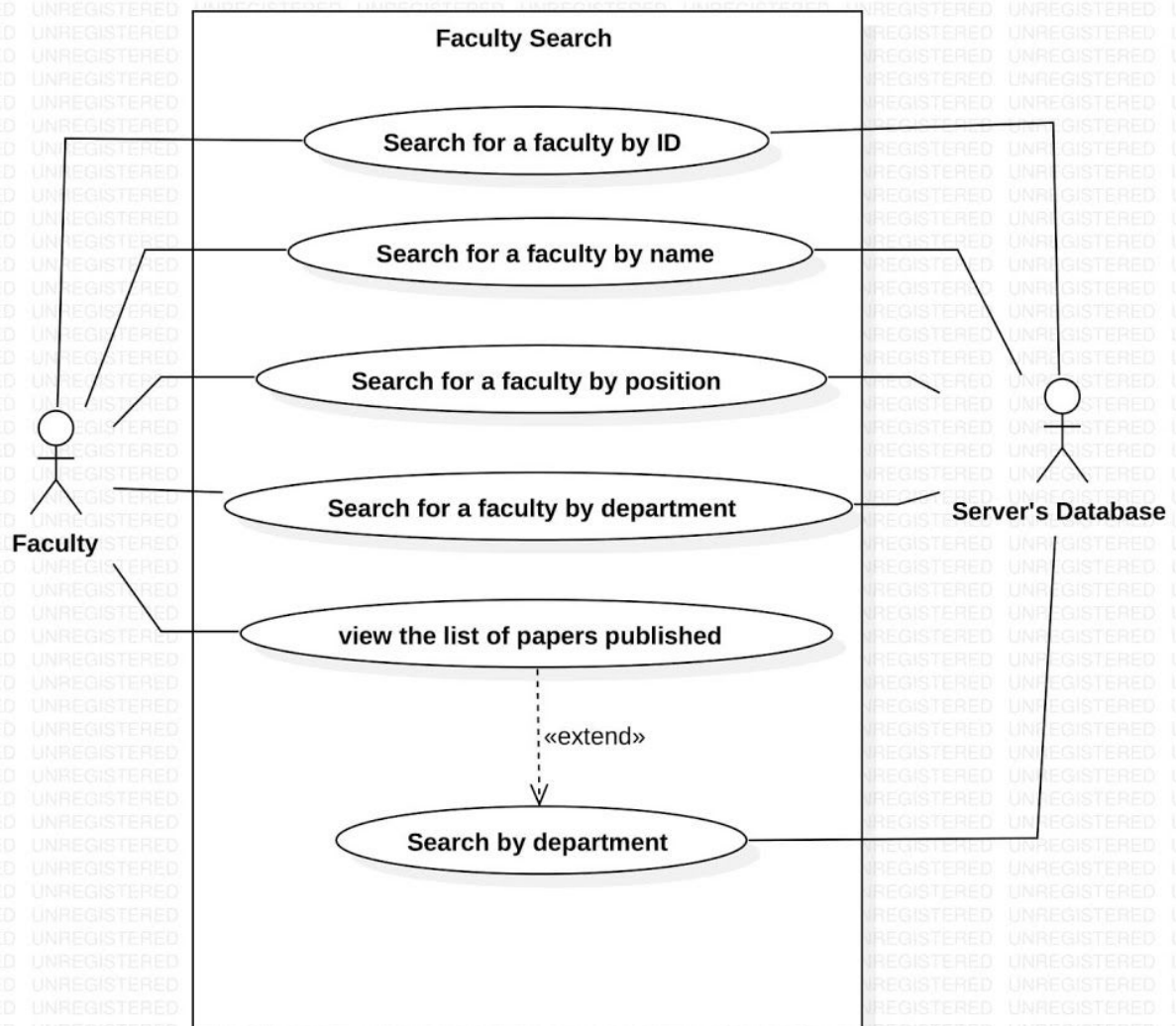


Module: User's Program



UML Use Case Diagram





Scrum Activities

Sprint 1 Backlog

- As a user, I can login
 - As a user, I can search for a faculty by his/her ID
 - As a user, I can search for a faculty by his/her name
 - As a user, I can search for a faculty by his/her position
 - As a user, I can search for a faculty by his/her department
 - As a faculty, I can apply for a leave online to my department HOD
 - As a faculty, I can view my pending leaves
 - As a user, I can view my personal details
 - As a user, I can view my academic details
 - As a user, I can view my other details
 - As a user I can view my security verification questions and their answers
 - As an HOD, I can approve or roll back the applied leave
 - As a faculty, I can cancel my future leaves either approved or pending
 - As a user, I can view the list of conferences and seminars, conducted and attended, by the faculties of the institution in the profile page
 - As a faculty I can view my timetable
 - As a HOD, I can schedule meetings with all the faculties in my department
 - As a faculty/HOD, I can view my scheduled meetings
-

Sprint 1 Standup Notes

1:

B.Sasidhar reddy:

Yesterday-Install PHP My admin in wamp

Today-Work on database in PHP My admin

Impediments-NA

CH Sai phani jaswanth:

Yesterday-Install PHP My admin in wamp

Today-Work on database in PHP My admin

Impediments-NA

M.Mrudul Sai:

Yesterday-Install PHP My admin in wamp,Bootstrap,Jquery,Javascript

Today-Work on use-case diagram

Impediments-NA

Nanditha Menon:

Yesterday-Install PHP My admin in wamp,Bootstrap,Jquery,Javascript

Today-Work on use-case diagram

Impediments-NA

T. Sai Srihitha Reddy:

Yesterday-Installed and explored PHP ,Bootstrap,Jquery,Javascript,Wamp

Today-Create a basic background template work on DFD diagram.

Impediments-NA

2:

B Sasidhar Reddy:

Yesterday-Completed database

Today-Install and explore selenium

Impediments-faced difficulties normalizing tables

CH Sai Phani Jaswanth:

Yesterday-Completed database

Today-Install and explore selenium

Impediments-faced difficulties normalizing tables

M.Mrudul Sai:

Yesterday-Completed use case diagrams

Today-Will work on profile page

Impediments-NA

Nanditha Menon:

Yesterday-Completed Use Case diagrams

Today-Work on login page

Impediments-NA

T Sai Srihitha Reddy:

Yesterday-Created a basic themed HTML template for the project and applied css and js,completed DFD

Today-Work on search page

Impediments-Side navigation button was not responding properly to mouse clicks.

3:

B.Sasidhar Reddy:

Yesterday-Installed selenium

Today-Work on selenium test cases

Impediments-faced errors like incompatibility with Javase,chrome drive version issue

CH Sai Phani Jaswanth:

Yesterday-Installed selenium

Today-Work on selenium test cases

Impediments-faced page load time out implicitly wait error time unit import error

M.Mrudul Sai:

Yesterday-Applied CSS and HTML for profile page

Today-Work on conference list and security verification questions

Impediments-Configuring template codes to fit the requirements

Nanditha Menon:

Yesterday-Created login page ,front-end and back-end work on pending leaves

Today-Install and explore Sonar qube

Impediments-CSS was not compatible with internet explorer

T Sai Srihitha Reddy :

Yesterday-Work on search.php

Today-Work on leave management

Impediments-Faced complications with sql queries

4:

B.Sasidhar Reddy:

Yesterday-Worked on selenium test cases: profile,schedule, search

Today-install and explore alternative testing tools; jasmine

Impediments-configuring locators

CH. Sai Phani Jaswanth:

Yesterday-Worked on selenium test cases: profile,schedule, search

Today-install and explore alternative testing tools; jasmine

Impediments-configuring locators

M Mrudul Sai:

Yesterday-Worked on conference list and security questions

Today-add publications, achievements and events

Impediments-faced difficulties with css value for displaying and writing Js functions

Nanditha Menon:

Yesterday-installed Sonarqube

Today-run sonarqube on project and debug it

Impediments-incompatible java version installing sonarqube

T. Sai Srihitha Reddy:

Yesterday-worked on leave management backend and frontend

Today-add additional features in schedule management

Impediments-had trouble syncing the count of remaining leaves with the no.of leaves taken

Sprint 1 Retrospective Notes

Continue:

1. Regularly update github repository to share code
2. Sonarqube is very helpful in finding bugs, vulnerabilities, continue using sonarqube for code optimization
3. Selenium is useful in end to end testing and UI testing
4. Continue documentation of standup meetings as well
5. Continue taking user feedback regularly

Stop:

1. Added new features in middle of the sprint already existing user stories had to be pushed back which exceeded sprint-1 time, stop adding new features and stick to user stories and in sprint
2. Stop duplicating code as it duplicates errors and makes it difficult to debug
3. Stop using Xampp server as it gave performance issues

Start:

1. Start implementing continuous integration
2. Start doing standup meeting twice a week
3. Update Jira user stories on a regular basis
4. Better estimate of how to split user stories b/w developers

Sprint 2 Backlog

- As a user, I can reset my password
- As a user, I can edit my personal details
- ❑ As a user, I will get locked out of my account if there are too many failed login attempts
- ❑ As a user, I can edit my academic details
- ❑ As a user, I can edit my security verification questionsAs a user, I get alerted when credentials entered are incorrect for 3 or more consecutive attempts
- ❑ As a faculty I can request for an appointment with HOD
- ❑ As a faculty, I can view my net salary
- ❑ As a user, I can view certifications achieved by the faculty members
- ❑ As a user, I can edit my other details
- ❑ As a user, I can view the papers published by the faculties
- ❑ As a user, I can view the list of papers published according to the department
- ❑ As a faculty, I am alerted when the limit of my leaves are exceeded
- ❑ As a user, I can view the list of seminars and workshops conducted or attended by the faculties
- ❑ As a HOD, I can approve or reject appointments with my faculties according to my convenience

Sprint 2 Standup Notes

1:

B.Sasidhar reddy:

Yesterday- Install jenkins tool for CI

Today-Explore Jenkins tool

Impediments- faced difficulties while installing software plugin

CH Sai phani jaswanth:

Yesterday-Install jenkins tool for CI

Today- Explore Jenkins tool

Impediments- faced difficulties in installing Jenkins latest version due to compatibility issues

M.Mrudul Sai:

Yesterday-

Today- Work on awards page

Impediments-NA

Nanditha Menon:

Yesterday-

Today-Work on the search page- search for papers tab.

Impediments-NA

T. Sai Srihitha Reddy:

Yesterday-

Today-Work on edit page- edit personal details

Impediments-NA

2:

B Sasidhar Reddy:

Yesterday-Cloning Github repository

Today-Download Gitlab plugin and linking it with Jenkins tool

Impediments-faced difficulties normalizing tables

CH Sai Phani Jaswanth:

Yesterday-Cloning Github repository

Today-Download Gitlab plugin and linking it with Jenkins tool

Impediments-faced difficulties normalizing tables

M.Mrudul Sai:

Yesterday- Awards page finished

Today-Will work on papers page

Impediments- NA

Nanditha Menon:

Yesterday- search for papers tab ready

Today-Work on login page- keep track of logins

Impediments-NA

T Sai Srihitha Reddy:

Yesterday- Able to edit personal details

Today-Work on edit page- edit other details and update password

Impediments- NA

3:

B.Sasidhar Reddy:

Yesterday-Created pipeline tool using Jenkins

Today-Successfully cloned Gitlab code repository to Jenkins tool

Impediments-faced compile errors like incorrect credentials ,incorrect specified path to clone gitlab

CH Sai Phani Jaswanth:

Yesterday-Created pipeline tool using Jenkins

Today-Successfully cloned Gitlab code repository to Jenkins tool

Impediments-faced compile errors like incorrect credentials ,incorrect specified path to clone gitlab

M.Mrudul Sai:

Yesterday- Publications page ready

Today-Work on events page

Impediments-NA

Nanditha Menon:

Yesterday- Able to keep track of logins and alert the user.

Today- lock user out if too many logins.

Impediments- faced issues with keeping track of number of attempts

T Sai Srihitha Reddy :

Yesterday- Able to edit other details and update password

Today-Work on edit page- Edit the publications according to show variable, add new publications form

Impediments-NA

4:

B.Sasidhar Reddy:

Yesterday-Installed all the dependencies required to perform CI using Jenkins

Today-Successfully triggered Build stage in Pipeline

Impediments-configuring system tools for PHP

CH. Sai Phani Jaswanth:

Yesterday-Installed all the dependencies required to perform CI using Jenkins

Today-Successfully triggered Build stage in Pipeline

Impediments-configuring system tools for PHP

M Mrudul Sai:

Yesterday- events page is ready

Today- working on dashboard- add achievements

Impediments-NA

Nanditha Menon:

Yesterday- able to lock user out for too many logins

Today- link to security questions page and provide new password on correct answers

Impediments-NA

T. Sai Srihitha Reddy:

Yesterday- Able to add and hide publications

Today-Do the same for achievements and events

Impediments-NA

5:

B.Sasidhar Reddy:

Yesterday-Worked on generating sonarQube report using Jenkins

Today-install sonarqube plugin and explore pipeline script to generate sonargate code quality

Impediments-NA

CH. Sai Phani Jaswanth:

Yesterday-Worked on generating sonarQube report using Jenkins

Today-install sonarqube plugin and explore pipeline script to generate sonargate code quality

Impediments-NA

M. Mrudul Sai:

Yesterday- achievements available on dashboard page

Today- Do the same for events on dashboard page

Impediments- faced issues with configuring CSS

Nanditha Menon:

Yesterday- new password generated on answering correct security answers

Today- Calculate net salary based on number of leaves taken

Impediments-NA

T. Sai Srihitha Reddy:

Yesterday- Able to add and hide achievements and events

Today- Faculty should be able to apply appointments for HOD

Impediments-NA

6:

B.Sasidhar Reddy:

Yesterday-Successfully performed CI using jenkins tool and pipeline concepts

Today-Worked on deploying the code to herokuapp

Impediments-Build failure in heroku due to uninstalled packages

CH. Sai Phani Jaswanth:

Yesterday-Successfully performed CI using jenkins tool and pipeline concepts

Today-Worked on deploying the code to herokuapp

Impediments-

M Mrudul Sai:

Yesterday- events available on dashboard page

Today-faculty should get alerted if his limit of leaves exceeds

Impediments-NA

Nanditha Menon:

Yesterday- net salary being calculated correctly

Today- sonarqube testing

Impediments- faced issues with calculating the proper salary

T. Sai Srihitha Reddy:

Yesterday- faculty is able to request for appointment

Today- HOD should be able to approve or deny the appointment requests

Impediments-NA

7:

B.Sasidhar Reddy:

Yesterday-Worked on selenium test cases: profile,schedule, search

Today-install and explore alternative testing tools; jasmine

Impediments-configuring locators

CH. Sai Phani Jaswanth:

Yesterday-Worked on selenium test cases: profile,schedule, search

Today-install and explore alternative testing tools; jasmine

Impediments-configuring locators

M Mrudul Sai:

Yesterday- faculty gets alerted on leave limit exceed

Today- debugging and reducing duplications

Impediments-NA

Nanditha Menon:

Yesterday- sonarqube testing

Today- debugging and reducing duplications

Impediments-NA

T. Sai Srihitha Reddy:

Yesterday- HOD is able to approve and reject appointment requests

Today- debugging and reducing duplications

Impediments-NA

Implementation

The project has been developed using HTML, CSS, PHP, Bootstrap and JavaScript. The local host servers used are xampp and wamp, whichever convenient. To use MySQL and store the database, phpMyAdmin was employed. Code was regularly updated and pushed into a github folder for ease of access amongst the team members. User stories are also regularly updated in Jira software. SonarQube was used for static code analysis and debugging by developers.

Sample Code

dashboard.php

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="utf-8">
  <meta http-equiv="X-UA-Compatible" content="IE=edge">
  <title>Dashboard</title>
  <script type="text/javascript" src="js/jquery-3.4.1.js"></script>
  <link rel="stylesheet" href="css/bootstrap.min.css">
  <script type="text/javascript" src="js/bootstrap.min.js"></script>
  <link rel="stylesheet" href="css/basic.css">
  <link rel="stylesheet" href="css/dashboard.css">
  <link rel="stylesheet" href="https://fonts.googleapis.com/icon?family=Material+Icons">
  <script type="text/javascript" src="js/basic.js"></script>
  <script type="text/javascript" src="js/dashboard.js"></script>
</head>
<body>
  <?php
    session_start();
    $login=$_SESSION['login'];
  ?>
  <div class="navbar">
    <a style="font-size:30px; cursor:pointer; color: white; " onclick="openNav()">&#9776;</a>
    <h2 align="center" class="page-name">DASHBOARD</h2>
    <em class="material-icons" onclick="openSearch()">search</em>
  </div>

  <div id="mySidenav" class="sidenav">
    <a href="javascript:void(0)" class="closebtn" onclick="closeNav()">&times;</a>
    <a href='dashboard.php'>Dashboard</a>
    <a href='events.php'>Events</a>
    <a href='awards.php'>Acheivements</a>
    <a href='papers.php'>Publications</a>

    <?php
      if($login=='OK'){
        echo "<a href='profile.php'>Profile</a>";
        echo "<a href='loutprocess.php'>Logout</a>";
      }else{
```

leaveform.php

```
<?php
  session_start();
  $fid=$_SESSION['fid'];
  $deptid=$_SESSION['deptid'];
  $acctype=$_SESSION['acctype'];
  ?>
  <div class="navbar">
    <a style="font-size:30px; cursor:pointer; color: white; " onclick="openNav()">&#9776;</a>
    <h2 align="center" class="page-name">LEAVE MANAGEMENT</h2>
    <em class="material-icons" onclick="openSearch()">search</em>
  </div>

  <div id="mySidenav" class="sidenav">
    <a href="javascript:void(0)" class="closebtn" onclick="closeNav()">&times;</a>
    <a href="dashboard.php">Dashboard</a>
```

Activate Windows
Go to Settings to activate Windows.

search.php

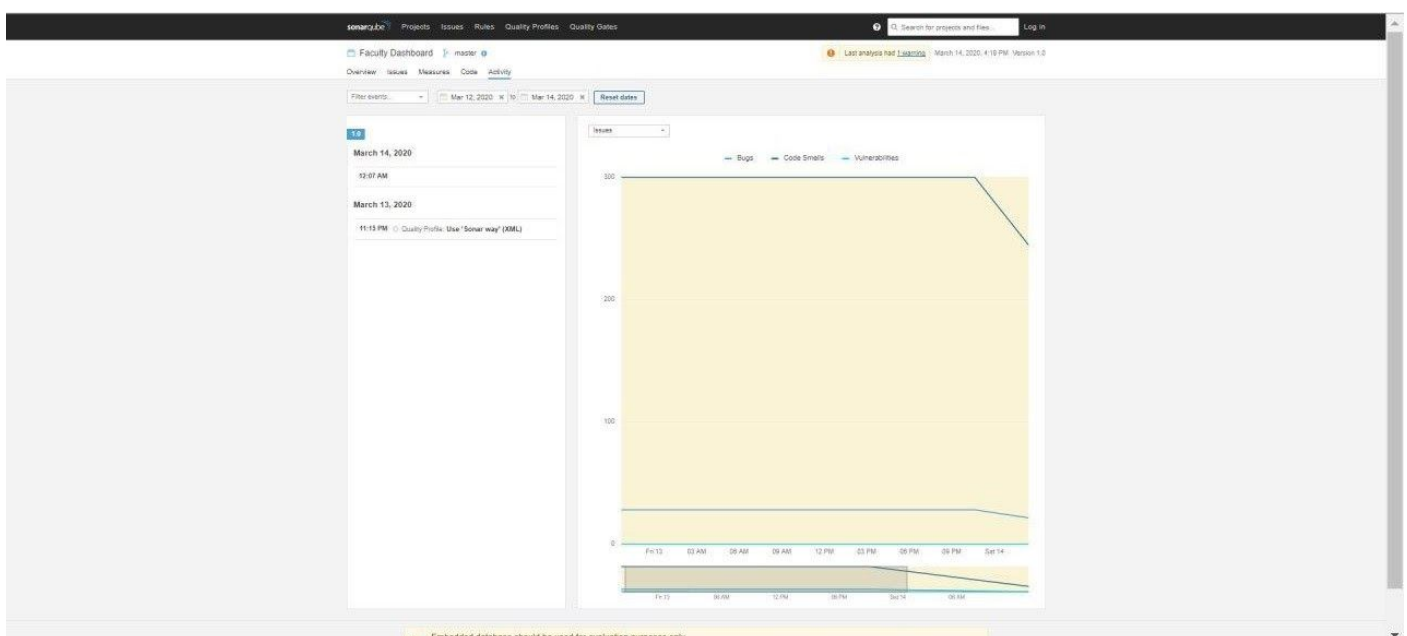
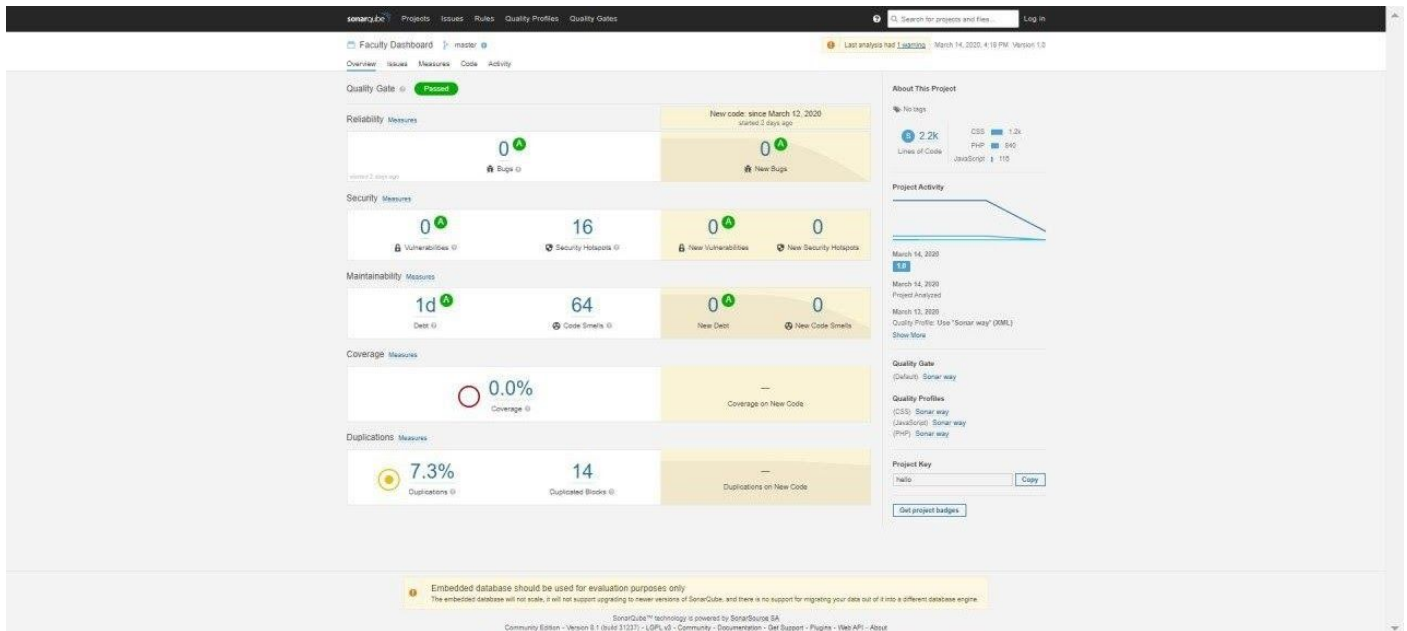
```
52         <li class="nav-item active">
53             <a class="nav-link" data-toggle="tab" href="#faculty">Faculty</a>
54         </li>
55     <li class="nav-item">
56         <a class="nav-link" data-toggle="tab" href="#papers">Papers</a>
57     </li>
58     <li class="nav-item">
59         <a class="nav-link" data-toggle="tab" href="#workshops">Seminars/Workshops</a>
60     </li>
61 </ul>
62 <div class="tab-content">
63     <div id="faculty" class="tab-pane fade in active">
64         <h3>Search for faculty</h3>
65         <form method="POST">
66             <div class="form-group row">
67                 <label for="fac_id" class="col-sm-2 col-form-label">Faculty ID</label>
68                 <div class="col-sm-10">
69                     <input type="text" class="form-control" name="fac_id" placeholder="Faculty ID">
70                 </div>
71             </div>
72             <div class="form-group row">
73                 <div class="form-group col-md-6">
74                     <label for="fac_fname">First Name</label>
75                     <input type="text" class="form-control" id="fac_fname" name="fac_fname" placeholder="First Name">
76                 </div>
77                 <div class="form-group col-md-6">
78                     <label for="fac_lname">Last Name</label>
79                     <input type="text" class="form-control" id="fac_lname" name="fac_lname" placeholder="Last Name">
80                 </div>
81             </div>
82             <div class="form-group">
83                 <label for="fac_dept">Department</label>
84                 <select class="form-control" id="fac_dept" name="fac_dept">
85                     <option value="--">--</option>
86                     <option value="CSE">CSE</option>
87                     <option value="ECE">ECE</option>
88                     <option value="EEE">EEE</option>
89                     <option value="IT">IT</option>
90                 </select>

```

Software Engineering Tools

7.1 Static Code Analysis

7.1.1 Screenshots/report of the scanning results



7.1.2 Actions taken

The debugging process was followed as per the suggestions of sonarQube. A few had to be ignored because they would change the meaning of the code. To bring the percentage of duplications down, we created functions in PHP for the repeating code. Much of the CSS and JS code was being repeated, so we put the duplicating code in a separate file and attached it to the PHP files, thereby reducing the percentage by a great deal.

7.1.3 Additional details

Most of the security hotspots were regarding password for database. To remove the security hotspots, a password was added to the account in phpMyAdmin instead of an empty string which is the password by default. So each time we establish a connection to the database, password is also passed.

7.2 Unit Testing

7.1.1 Tool used and setup details

The tool used for unit testing is PHPUnit. We have installed PHPUnit using composer through a command line instruction: *"composer require --dev phpunit/phpunit"* and included the file phpunit.xml in the project folder. We stored the test code in another folder of the project named 'tests'. Now if we open the cmd in the project folder and give the command line *"phpunit tests/SearchTest.php"* as the instruction where SearchTest is the test code written for search.php, we will get the results in cmd.

7.1.2 Test Cases Statistics

The test cases are normally written for php functions and assert whether they return correct answers or not. For 2 units, a total of 6 assertions were written. Example, here, Below is the display function in search.php for which 2 assertions were written.

```
function display($sql){
    $con=mysqli_connect("localhost", "root", "pass");
    mysqli_select_db($con,"fac_dash");
    $result = $con->query($sql);
    if($result->num_rows==0){
        echo "<h3>No such user</h3>";
    }else{
        echo "<table class='table table-striped table-dark'>";
        echo "<thead class='thead-dark'>";
        echo "<tr>";
        echo "<th scope='col'>#</th>";
        echo "<th scope='col'>fid</th>";
        echo "<th scope='col'>First Name</th>";
        echo "<th scope='col'>Last Name</th>";
        echo "<th scope='col'>Department</th>";
        echo "<th scope='col'>Position</th>";
        echo "<th scope='col'>Link to Profile</th>";
        echo "</tr>";
        echo "</thead>";
        echo "<tbody>";
        $i=1;
        while($row = $result->fetch_assoc()) {
            $result1 = mysqli_query($con,"select * from department where deptid=".$row['deptid']."");
            $row1= mysqli_fetch_array($result1);
            $deptname=$row1['deptname'];
            echo "<tr>";
            echo "<th scope='row'>".$i."</th>";
            echo "<td>".$row['fid']."</td>";
            echo "<td>".$row['fname']."</td>";
            echo "<td>".$row['lname']."</td>";
            echo "<td>".$deptname."</td>";
            echo "<td>".$row['fposition']."</td>";
            echo "<td><form action='profile.php' method='POST'>";
            echo "<input type='submit' name='profile' id='profile' value='View Profile'>";
            echo "<input type='hidden' id='fid' name='fid' value='".$row['fid']."'></form></td>";
            echo "</tr>";
            $i=$i+1;
        }
        echo "</tbody>";
        echo "</table>";
        return 1;
    }
}
```

7.2.3 Test Case Code

Below is the test code written for display function:

```

<?php
use PHPUnit\Framework\TestCase;

class SearchTest extends TestCase
{
    public function testDisplay()
    {
        include('search.php');
        $sql = "select * from department where deptname='CSE'";
        $ans=display($sql);
        $this->assertEquals(1, $ans);
        $sql = "select * from department where deptname='AAA'";
        $ans=display($sql);
        $this->assertEquals(0, $ans);
        $sql="select * from workshop where fid=20171521 order by wdate desc";
        $ans=event($sql);
        $this->assertEquals(1, $ans);
        $sql="select * from workshop where fid=000 order by wdate desc";
        $ans=event($sql);
        $this->assertEquals(0, $ans);
    }
}

```

Result:

```
C:\Windows\System32\cmd.exe
```

```
</div>

</form>

</div>
</div>
</div>
<div class="results">
    </div>
</div>

</body>
</html>

<table class='table table-striped table-dark'><thead class='thead-dark'><tr><th scope='col'>#</th><th scope='col'>fid</th><th scope='col'>First Name</th><th scope='col'>Last Name</th><th scope='col'>Department</th><th scope='col'>Position</th><th scope='col'>Link to Profile</th></tr></thead><tbody><tr><th scope='row'>1</th><td></td><td></td><td></td><td></td><td></td><td><b>CSE</b></td></tr><td><td><form action='profile.php' method='POST'><input type='submit' name='profile' id='profile' value='View Profile'><input type='hidden' id='fid' name='fid' value=''></form></td></tr></tbody></table><h3>No such user</h3><table class='table table-striped table-bordered tposition'><thead><tr><th scope='col'><b>#</b></th><th scope='col'><b>Name</b></th><th scope='col'><b>Department</b></th><th scope='col'><b>Event Name</b></th><th scope='col'><b>Place</b></th><th scope='col'><b>Date</b></th></tr></thead><tbody><tr><td>1</td><td>Sai Srihitha Reddy Thummala</td><td>CSE</td><td>asdfgh</td><td>asdfgh</td><td>2020-01-01</td></tr><tr><td>2</td><td>Sai Srihitha Reddy Thummala</td><td>CSE</td><td>Student workshop on android app development</td><td>SWAD</td><td>2019-09-14</td></tr><tr><td>3</td><td>Sai Srihitha Reddy Thummala</td><td>CSE</td><td>Workshop on 'Publishing your research' for PG students for 3 days</td><td>Amrita Vishwa Vidyapeetham</td><td>2018-05-16</td></tr></tbody></table>
```

```
Time: 821 ms, Memory: 10.00 MB
```

```
OK (1 test, 4 assertions)
```

```
C:\wamp64\www\project>
```

7.3 UI testing

7.3.1 Tools used and setup details

For UI testing, Selenium a framework to test web applications is used. To install Selenium, we followed steps from : <https://www.guru99.com/installing-selenium-webdriver.html> .

Step 1 - **Install Java** on your computer. Download and **install** the **Java** Software Development Kit (JDK) here.

Step 2 - **Install** Eclipse IDE. Download the latest version of "Eclipse IDE for **Java** Developers" here.

Step 3 - Download the **Selenium Java** Client Driver.

Step 4 - **Configure** Eclipse IDE with **WebDriver**.

7.3.2 Test Case Statistics

Number of UI pages in project: 15

Number of UI tests written: 15

Test ID	Description	Expected Results	Actual Results	Automated?
1.1	Faculty Sign-in Testing(positive test)	Successful sign-in	pass	yes
1.2	Faculty Sign-in testing, username which is not in the database(negative test)	Error is displayed by showing "login failed please try again".(In span text)	fail	yes
1.3	Faculty sign-in testing with valid username and invalid password	Error is displayed by showing " login failed please try again".(In span text)	fail	yes
2.1	HOD Sign-in Testing(positive test)	Successful sign-in	pass	yes
2.2	HOD sign-in testing with username which is not present in the database(negative test)	Error is displayed by showing " login failed please try again".(In alert message)	fail	yes
2.3	HOD sign-in testing with valid username and invalid password	Error is displayed by showing " login failed please try again ".(In alert message)	fail	yes
3.1	Faculty search testing without login	Successfully displayed by showing search results	pass	yes

3.2	Faculty profile testing with valid username and valid password	Profile is displayed to faculty	pass	yes
4.1	Faculty schedule testing	Schedules are displayed successfully	pass	yes
4.2	Faculty leaves taken with valid username and password (positive test)	Displays leaves taken and remaining leaves	pass	yes
4.3	Faculty security verification questions check	Displays questions and answers for valid password	pass	yes
5.1	HOD schedule, notify testing with valid username and password (negative test)	Displays HOD schedule and meetings, notifies for valid date	fail	yes
5.2	HOD leaves approval testing with valid username and password	Displays leaves applied by faculty to HOD for approval	pass	yes

7.3.3 Test Case Code:

Example, below is the test case code for positive faculty login. We pass the correct username and password into the login page.

```
public void posfacinvoke(){
    try {
        System.setProperty("webdriver.chrome.driver", "C:\\Users\\mrudulsai\\eclipse-workspace\\chromedriver.exe");

        driver = new ChromeDriver();

        driver.manage().deleteAllCookies();

        driver.manage().window().maximize();

        driver.manage().timeouts().implicitlyWait(30, TimeUnit.SECONDS);

        driver.manage().timeouts().pageLoadTimeout(30, TimeUnit.SECONDS);

        driver.get("http://localhost/project/dashboard.php");

        Thread.sleep(3500);

        driver.findElement(By.xpath("//a[@onclick='openNav()']")).click();

        Thread.sleep(3500);

        driver.findElement(By.xpath("//a[@href='main.php']")).click();

        Thread.sleep(2500);
```

```

        driver.findElement(By.name("user")).sendKeys("20171521");

        Thread.sleep(2500);

        driver.findElement(By.name("pass")).sendKeys("srihitha");

        Thread.sleep(3500);

        driver.findElement(By.className("btn")).click();

    }

    catch (Exception e) {

        // TODO Auto-generated catch block

        e.printStackTrace();

    }

}

```

Result:

```

Jenkins  ▸ FacultyDashboard_Pipeline  ▸ #53

Running in C:\Users\mrudulsai\eclipse-workspace\Edureka_Selenium
[Pipeline] {
[Pipeline] bat

C:\Users\mrudulsai\eclipse-workspace\Edureka_Selenium>java -cp bin;lib/* org.testng.TestNG testng.xml
[TestNG] Running:
  C:\Users\mrudulsai\eclipse-workspace\Edureka_Selenium\testng.xml

Starting ChromeDriver 80.0.3987.106 (f68069574609230cf9b635cd784cfb1bf81bb53a-refs/branch-heads/3987@{#882}) on port 43897
Only local connections are allowed.
Please protect ports used by ChromeDriver and related test frameworks to prevent access by malicious code.
[1584307864.871][WARNING]: Timed out connecting to Chrome, retrying...
Mar 16, 2020 3:01:07 AM org.openqa.selenium.remote.ProtocolHandshake createSession
INFO: Detected dialect: W3C
[1584307871.648][WARNING]: Timed out connecting to Chrome, retrying...
[1584307874.912][SEVERE]: Timed out receiving message from renderer: 0.100
[1584307875.358][SEVERE]: Timed out receiving message from renderer: 0.100

=====
TestNG Framework Suite
Total tests run: 1, Failures: 0, Skips: 0
=====

[Pipeline] }
[Pipeline] // dir
[Pipeline] }
[Pipeline] // script
[Pipeline] }

```


7.4 Continuous Integration

7.4.1 Tools used: Jenkins

Jenkins is an open source Continuous Integration server capable of orchestrating a chain of actions that help to achieve the Continuous Integration process (and not only) in an automated fashion

7.4.2 Brief description of how CI has been done

After installing jenkins from the official website: <https://jenkins.io/download/> with suggested plugins, additional plugins like github branch source v2.6, gradle v1.3, sonarQube scanner for jenkins, selenium plugin for jenkins were downloaded and installed. We created a new item under pipeline project and configured it with pipeline script. To link SonarQube for static coding analysis with jenkins, we had to configure sonarQube scanner globally by downloading the required version and enabling environment variables in SonarQube server settings of Jenkins. Define pipeline script under Pipeline in Jenkins with the below code:

```
stage('Install dependencies') {  
    steps {  
        bat 'echo @php "%~dp0composer.phar" %*>composer.bat'  
        echo 'Composer installed'  
    }  
}  
  
stage('Selenium testing'){  
    steps{  
        script{  
            dir("C:\\Users\\mrudulsai\\eclipse-workspace\\Edureka_Selenium") {  
                bat "java -cp bin;lib/* org.testng.TestNG testng.xml"  
            }  
        }  
    }  
}
```

```

    }

stage('Code Quality') {
    steps {
        script {
            def scannerHome = tool 'sonar scanner';
            withSonarQubeEnv("SonarQubeEnvironment") {
                bat "${tool("sonar scanner")}/bin/sonar-scanner"
            }
        }
    }
}

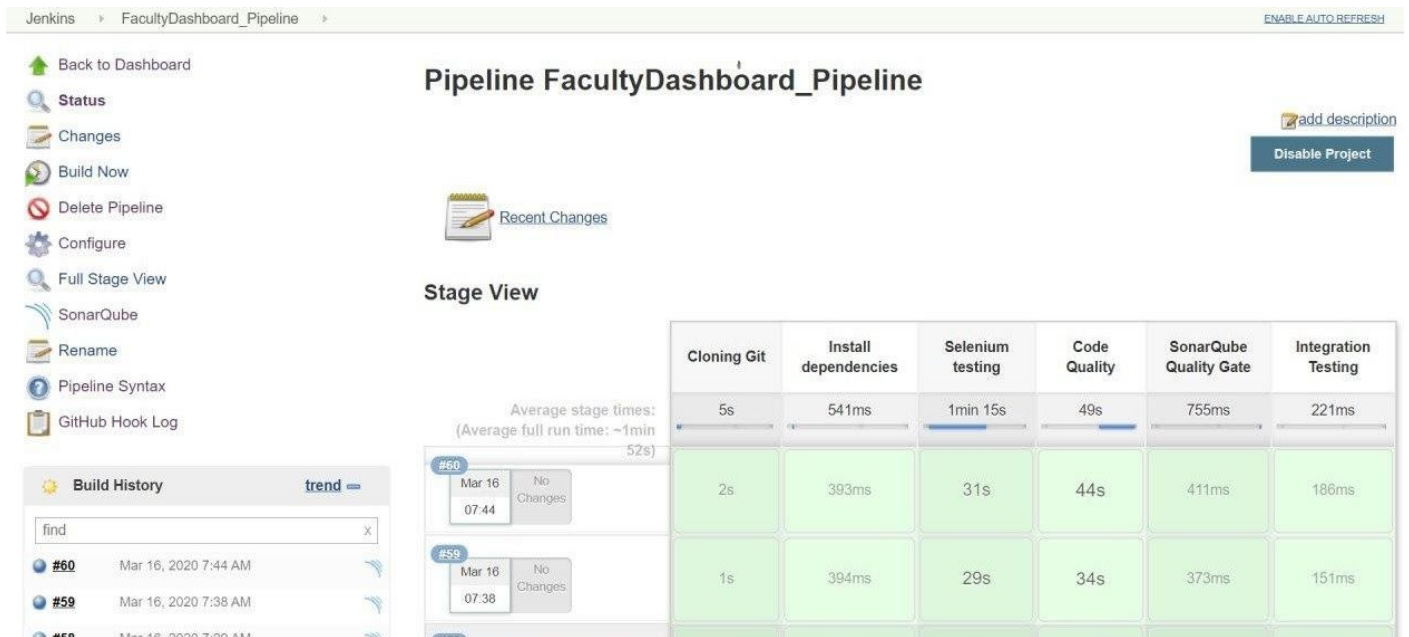
stage("SonarQube Quality Gate") {
    steps {
        script{
            timeout(time: 1, unit: 'HOURS') {
                def qg = waitForQualityGate()
                if (qg.status != 'OK') {
                    error "Pipeline aborted due to quality gate failure: ${qg.status}"
                }
            }
        }
    }
}

```

Finally, by clicking on build now option, Continuous Integration can be started and results are seen on the screen.

7.4.3 Any analysis/findings

Continuous Integration with Jenkins makes it easier to test the code as soon as the code is changed. By running Jenkins we were able to find that our code is robust and meets the basic standards .



INNOVATION!!!

7.5.1 TestNG testing framework:

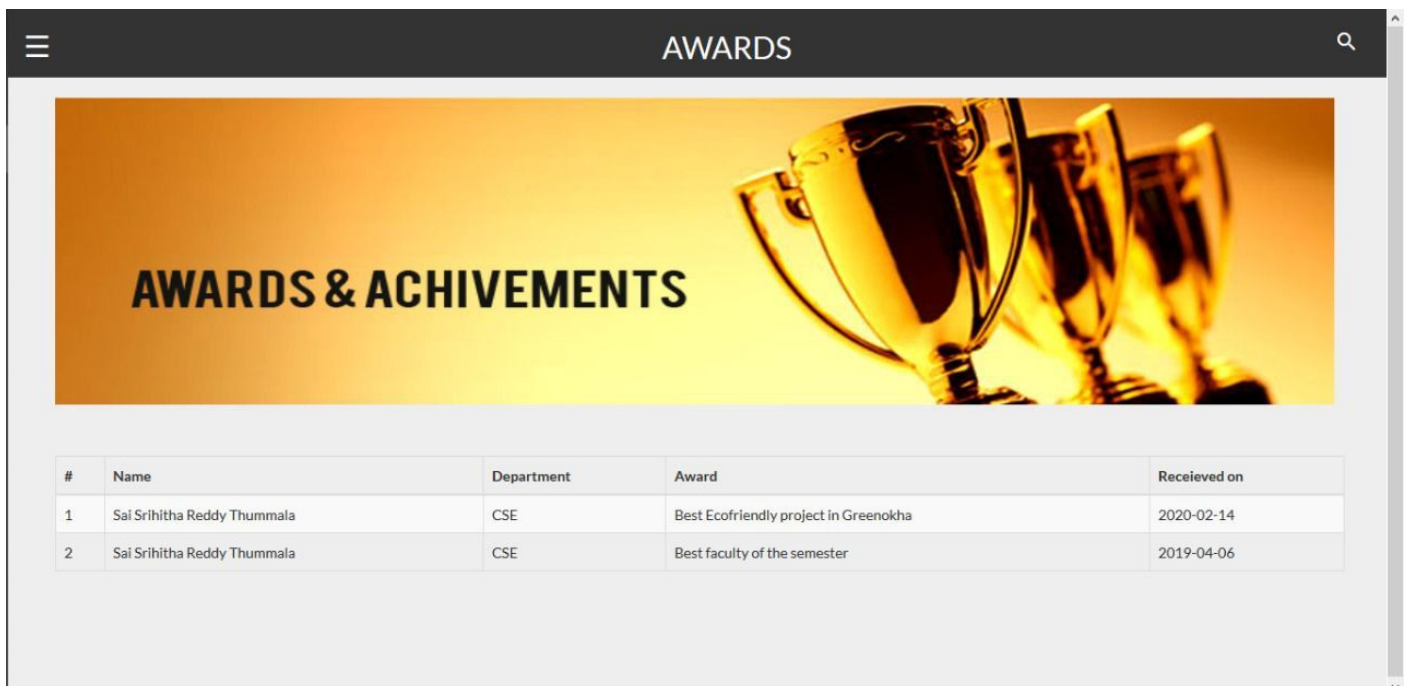
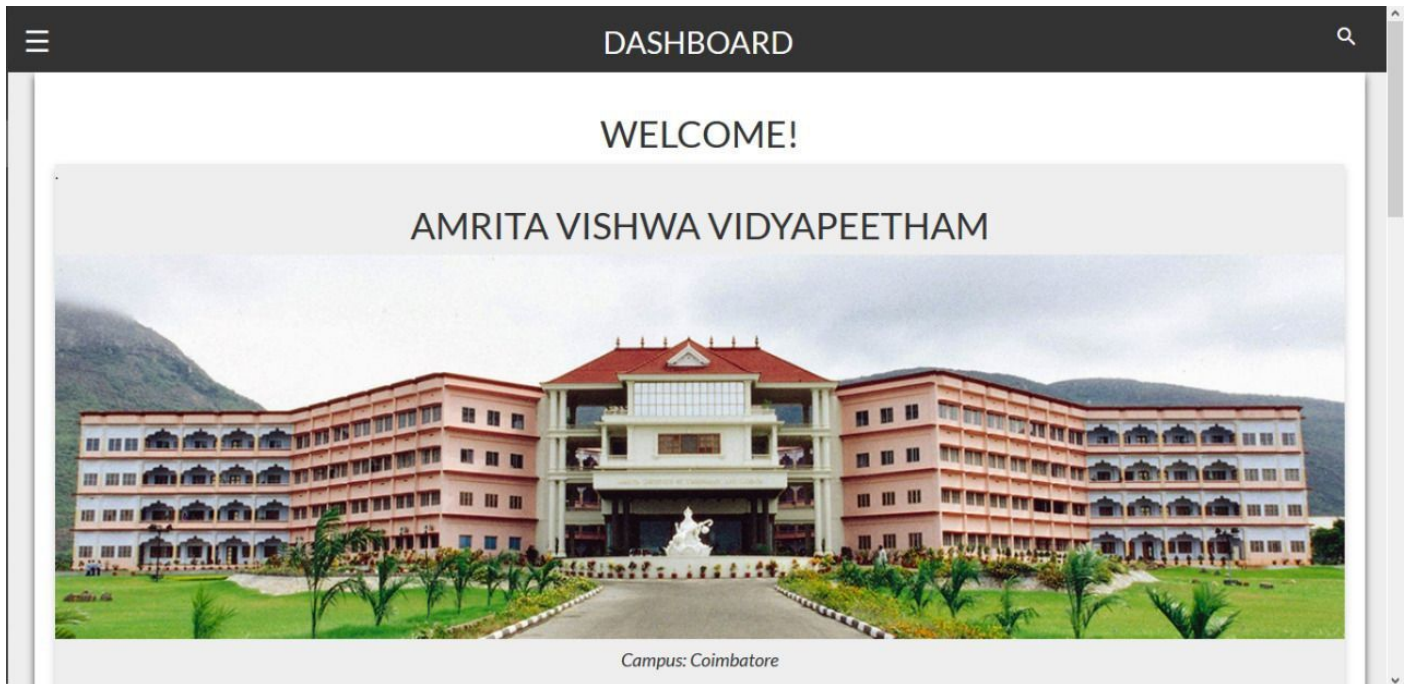
TestNG is a testing framework for the Java programming language created by Cédric Beust and inspired by JUnit and NUnit. The design goal of TestNG is to cover a wider range of test categories: unit, functional, end-to-end, integration, etc., with more powerful and easy-to-use functionalities.

we have implemented user interface testing with the help of TestNG testing framework test suite as part of innovation.

7.5.2 Test suites with results portal for unit test using Jasmine:



Screenshots of project



EDIT PROFILE

EDIT PERSONAL DETAILS

Old Password:

Confirm Old Password:

New Password:

Submit

EDIT PERSONAL DETAILS

First Name

Sai

Last Name

Thummala

Email

srihithareddy100@gmail.com

Phone Number

9597856932

SEARCH

Search by

Faculty

Papers

Seminars/Workshops

Search for faculty

Faculty ID

Faculty ID

First Name

First Name

Last Name

Last Name

Department

--

Position

--

Search

Faculty department search results

#	fid	First Name	Last Name	Department	Position	Link to Profile
1	10012001	Lily	Thomson	CSE	HOD	View Profile
2	10012004	Charlie	West	CSE	Assistant Professor	View Profile
3	10012005	Jessica	Campbell	CSE	Professor	View Profile
4	20171521	Sai Srihitha Reddy	Thummala	CSE	Professor	View Profile

Welcome to /localhost / MSecurity V.xDFD0.drawioDFD2.drawioDFD1.drawioInbox - srihithaProjectsProfilesurface pen n+--x

localhost/project/secques.php

Inbox - srihithareddy1...gre school notes Learning 100 days of code cryptosecurityPractice | GeeksforGee...InfyTQ | Home

Security Verification Questions

Password:

Confirm Password:

Submit

Edit your Security verification Questions and Answers

What is your mother's maiden name?

Aavula

What is your first pet's name?

Sunny

Where is your highschool located at?

Kukatpally

Where is your hometown?

Hyderabad

What is your nickname?

abc


Submit

Welcome to Amlocalhost / MySProfile xDFD0.drawio - dDFD2.drawio - dDFD1.drawio - dInbox - srihithaProjectsProfile+--x

localhost/project/profile.php

Inbox - srihithareddy1...gre school notes Learning 100 days of code cryptosecurityPractice | GeeksforGee...InfyTQ | Home

PROFILE



EDIT

Sai Srihitha Reddy Thummala

Faculty ID: 20171521

Department: CSE

Position: Professor

Phone Number: 9597856932

Email: srihithareddy100@gmail.com

TIMETABLE

SCHEDULE

LEAVES

SECURITY

Academic

Publications

Achievements

Events

Academic Details

Experience: 3 years

Courses handled currently: Operating System, C programming, Embedded Systems, Machine Learning

Educational Qualifications:

Qualification	College/University	Year of Graduation
---------------	--------------------	--------------------

CONCLUSION

All of the promised features are now being implemented in our Web application. All the required testing has been done with the respective testing tools. We inferred a great source of knowledge from this project with respect to Software Engineering. Our sincere acknowledgement to the faculty.