ALTERNATE UI FOR VTOP

PROJECT REPORT

FINAL REVIEW

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Submitted To

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Abstract

Every reliable website can be made better and last longer if given a small facelift and a little overhaul so that it is able to take advantage of the improvements of the underlying technologies. This project is intended to be of the same nature, with production quality code and features that would make a useful addition to current VTOP and boost student productivity overall.

Techniques & its Related Challenges

The current user interface uses Jquery and essentially blocks the UI every time it loads the new screen. It leads to incoherent user experience and basically puts people at a loading screen and now-a-days, waiting is the last thing you want people to do, even for work. VTOP does not use any client-sided caching with dynamic content and granular API, which increases server loads and causes more waiting to what was already a dredge. Another thing about VTOP is informational redundancy and separation. We would like to address that by giving all the related information in one place and in a convenient, fast way so that students can focus more on what is to be done in less time at a loading screen.

Research Findings

The current user interface of VTOP is reliable, simple and intuitive. However, it lacks use of modern web technologies resulting in poorer performance overall and does not make use of the performance boost use of newer technology can bring to it.

Our Approach

For this project, we have to following concrete objectives in mind:-

1. Improve client-side caching
2. Improve overall web application responsiveness.
3. Reduce overall server loads
4. Make information more accessible
5. Increase granularity of the APIs for faster updation
6. Improve splash screen and user experience.

This way it should be easy to integrate with the existing API of VTOP or entirely replace the backend and the frontend.

Methodology

The project methodology was based around the principle of sufficient familiarity combined with elegant improvement. Despite its shortcomings, VTOP has a solid baseline in the form of their UI and intuitive design. We have tried our best at trying to retain the design and add our own improvements wherever we felt the need to do so.

Modules

The project comprises of the following modules:-

1. PHP backend – The backend of the website is written in PHP
2. SQLite database – Connected to the PHP backend is the SQLite database used for the storage of the user information (lower privilege and higher privilege), admin accounts and the website data associated with each user account.
3. Frontend PHP module – The frontend HTML of the website created by

Code

.htaccess

```
# Run PHP with and without filename extension

RewriteEngine on
RewriteCond %{REQUEST_FILENAME} !-d
RewriteCond %{REQUEST_FILENAME}.php -f
RewriteRule ^(.*)$ $1.php
```

courses.php

```
<?php
require('db.php');
session_start();
if (!isset($_SESSION["regNo"])) {
    header("Location: loginStud");
    exit();
}
?>
<!DOCTYPE html>
<html lang="en">
<?php
include("templates/header.php");
?>
<?php
include("templates/nav.php");
?>
<!-- Main Content -->
<div class="container">
    <!-- Heading -->
    <div class="row mt-5">
        <h4>View All Courses</h4>
    </div>
    <!-- Table -->
    <div class="row">
        <div class="col s12">
            <div class="card material-table">
                <div class="table-header">
                    <span class="table-title">Available Courses</span>
                    <div class="actions">
                        <a href="#" class="search-toggle waves-effect
btn-flat nopadding"><i class="material-icons">search</i></a>
                    </div>
                </div>
                <table id="2ccCourseTable" class="responsive-table
highlight centered">
                    <thead>
                        <tr>
                            <th>CODE </th>
                            <th>COURSE NAME </th>
```

```
                            <th>FACULTY ID </th>
                        </tr>
                    </thead>
                    <tbody id="2ccCourses">
                        <?php
                        // Make Query & Get Result
                        $sql = "SELECT
courseCode,courseName,facultyCode FROM courses";
                        $result = mysqli_query($con, $sql);
                        while($row = mysqli_fetch_row($result)) {
                            echo "<tr>";
                            echo "<td>$row[0]</td>";
                            echo "<td>$row[1]</td>";
                            echo "<td>$row[2]</td>";
                            echo "</tr>";
                        }
                        ?>
                        <?php
                        // Free result set
                        mysqli_free_result($result);
                        ?>
                    </tbody>
                </table>
            </div>
        </div>
    </div>
</div>
<?php
include("templates/footer.php");
?>
<script
src="https://cdn.datatables.net/1.10.15/js/jquery.dataTables.min.js"></
script>
<script src="libs/js/coursesTable.js"></script>
<body>
</html>
```

dashboard.php

```
<!DOCTYPE html>
<html lang="en">
<?php
include("templates/header.php");
?>
<?php
include("templates/nav.php");
?>
<!-- Main Content -->
<div class="container">
    <!-- Heading -->
    <div class="row mt-5">
        <h4>Faculty Dashboard</h4>
```

```
    </div>
    <!-- Cards -->
    <div class="row mb-5 mt-5">
        <div class="col s12">
            <a href="facultyCourses">
                <div class="card white card-top-blue">
                    <div class="card-content">
                        <div class="center">
                            <i class="material-icons small
text-colored">visibility</i>
                        </div>
                        <span class="card-title black-text center
mt-2">View Courses</span>
                    </div>
                </div>
            </a>
        </div>
    </div>
</div>
<?php
include("templates/footer.php");
?>
</body>
</html>
```

db.php

```
<?php
$con = mysqli_connect("localhost","root","","vpp");
// Check connection
if (mysqli_connect_errno())
  {
  echo "Failed to connect to MySQL: " . mysqli_connect_error();
  }
?>
```

faculty.php

```
<!DOCTYPE html>
<html lang="en">
<?php
include("templates/header.php");
?>
<?php
include("templates/nav.php");
?>
<!-- Main Content -->
<div class="container">
    <!-- Heading -->
    <div class="row mt-5">
        <h5>Courses</h5>
    </div>
```

```
    <!-- DataTable -->
    <div class="row">
        <div id="man" class="col s12">
            <div class="card">
                <table id="2ccCourseTable" class="responsive-table
highlight centered">
                    <thead>
                        <tr>
                            <th>TITLE </th>
                            <th>TYPE </th>
                            <th>DESCRIPTION </th>
                            <th>APPROVAL STATUS</th>
                            <th>VIEW</th>
                            <th>DELETE</th>
                        </tr>
                    </thead>
                    <tbody id="2ccCourses">
                        <!-- <?php foreach ($courses as $course) { ?>
                            <tr>
                                <td><?php echo
htmlspecialchars($course['code']); ?></td>
                                <td><?php echo
htmlspecialchars($course['title']); ?></td>
                                <td><?php echo
htmlspecialchars($course['emp_name']); ?></td>
                                <td><?php echo
htmlspecialchars($course['emp_school']); ?></td>
                                <td><?php echo
htmlspecialchars($course['max_seats']); ?></td>
                            </tr>
                        <?php } ?> -->
                    </tbody>
                </table>
            </div>
        </div>
    </div>
    <div class="row mt-5">
        <h5>Add Achievements</h5>
    </div>
    <form>
    <div class="row mx-4">
            <div class="input-field col s6" style="width:250px;">
                <input id="title" type="text" class="validate">
                <label for="title">Title</label>
            </div>
            <div class="input-field col s12" style="width:250px;">
            <select>
            <option value="" disabled selected>Type</option>
            <option value="1">Internship</option>
            <option value="2">Hack-a-thon</option>
            <option value="3">Competition</option>
```

```
            </select>
            </div>
    </div>
    <!-- <div class="row"> -->
    <div class="input-field col s6 mx-4">
          <input id="description" type="text" class="validate">
          <label for="description">Description</label>
    </div>
    <div class="row mx-5">
    Input file:
    <input type="file" name="fileToUpload" id="fileToUpload"
style="padding:20px">
    <input type="submit" value="Add achievement" name="submit"
class="btn blue">
    <!-- </div> -->
    </div>
    </form>
</div>
<?php
include("templates/footer.php");
?>
</body>
</html>
```

facultyCourses.php

```
<?php
require('db.php');
session_start();
if (!isset($_SESSION["empId"])) {
    header("Location: loginFaculty");
    exit();
}
?>
<!DOCTYPE html>
<html lang="en">
<?php
include("templates/header.php");
?>
<?php
include("templates/nav.php");
?>
<!-- Main Content -->
<div class="container">
    <!-- Heading -->
    <div class="row mt-5">
        <h4>View All Courses</h4>
    </div>
    <!-- Table -->
    <div class="row">
        <div class="col s12">
            <div class="card material-table">
```

```
                <div class="table-header">
                    <span class="table-title">Available Courses</span>
                    <div class="actions">
                        <a href="#" class="search-toggle waves-effect
btn-flat nopadding"><i class="material-icons">search</i></a>
                    </div>
                </div>
                <table id="2ccCourseTable" class="responsive-table
highlight centered">
                    <thead>
                        <tr>
                            <th>CODE </th>
                            <th>COURSE NAME </th>
                            <th>FACULTY ID </th>
                        </tr>
                    </thead>
                    <tbody id="2ccCourses">
                        <?php
                        // Make Query & Get Result
                        $fac=$_SESSION["empId"];
                        $sql = "SELECT
courseCode,courseName,facultyCode FROM courses WHERE facultyCode=$fac
ORDER BY courseCode";
                        $result = mysqli_query($con, $sql);
                        echo($fac);
                        if($result){
                            while($row = mysqli_fetch_row($result)) {
                                echo "<tr>";
                                echo "<td>$row[0]</td>";
                                echo "<td>$row[1]</td>";
                                echo "<td>$row[2]</td>";
                                echo "</tr>";
                            }
                        }
                        ?>
                        <?php
                        // Free result set
                        mysqli_free_result($result);
                        ?>
                    </tbody>
                </table>
            </div>
        </div>
    </div>
</div>
<?php
include("templates/footer.php");
?>
<script
src="https://cdn.datatables.net/1.10.15/js/jquery.dataTables.min.js"></
script>
```

```
<script src="libs/js/coursesTable.js"></script>
<body>
</html>
```

home.php

```
<!DOCTYPE html>
<html lang="en">
<?php
include("templates/header.php");
?>
<?php
include("templates/nav-vit.php");
?>
<!-- Main Content -->
<div class="container">
    <!-- Notice -->
    <div class="row mt-5">
        <div class="col s12">
            <div class="card white card-top-orange">
                <div class="card-content">
                    <span class="card-title black-text">Notice</span>
                    <ul id="spotlight">
                        <li class="text-colored">1. A simplified vTop
for the next generation of users</li>
                        <li class="text-colored mt-2">2. A student can
login and view all his registered courses.</li>
                        <li class="text-colored mt-2">3. A faculty can
see the courses he teaches.</li>
                        <li class="text-colored mt-2">4. Students can
submit project and faculty can view and add grade for the project.</li>
                    </ul>
                </div>
            </div>
        </div>
    </div>
    <!-- Cards -->
    <div class="row mb-5">
        <div class="col s12 m6">
            <div class="card white card-top-blue">
                <div class="card-content">
                    <span class="card-title black-text">VTOP for
Students</span>
                    <p class="text-colored">With responsive fresh look
and feel.</p>
                </div>
                <div class="card-action center">
                    <a href="loginStud" class="btn btn-exc z-depth-0
waves-effect">Login to vTop++</a>
                </div>
            </div>
        </div>
```

```
        <div class="col s12 m6">
            <div class="card white card-top-green">
                <div class="card-content">
                    <span class="card-title black-text">VTOP for
Employees</span>
                    <p class="text-colored">With more information about
students.</p>
                </div>
                <div class="card-action center">
                    <a href="loginFaculty" class="btn btn-exc-green
z-depth-0 waves-effect">Faculty Login</a>
                </div>
            </div>
        </div>
    </div>
</div>
<?php
include("templates/footer.php");
?>
</body>
</html>
```

index.php

```
<?php
require('db.php');
session_start();
if (!isset($_SESSION["regNo"])) {
    header("Location: home");
    exit();
}
?>
<!DOCTYPE html>
<html lang="en">
<?php
include("templates/header.php");
?>
<?php
include("templates/nav.php");
?>
<!-- Main Content -->
<div class="container">
    <!-- Heading -->
    <div class="row mt-5">
        <h4>Dashboard</h4>
    </div>
    <!-- Cards -->
    <div class="row mb-5 mt-5">
        <div class="col s12">
            <a href="courses">
                <div class="card white card-top-blue">
                    <div class="card-content">
```

```
                        <div class="center">
                            <i class="material-icons small
text-colored">visibility</i>
                        </div>
                        <span class="card-title black-text center
mt-2">View Courses</span>
                    </div>
                </div>
            </a>
        </div>
    </div>
</div>
<?php
include("templates/footer.php");
?>
</body>
</html>
```

loginFaculty.php

```
<!DOCTYPE html>
<html lang="en">
<?php
include("templates/header.php");
?>
<?php
include("templates/nav-vit.php");
?>
<?php
require('db.php');
session_start();
if (isset($_POST['empId'])) {
    // Removes backslashes
    $empId = stripslashes($_REQUEST['empId']);
    // Escapes special characters in a string
    $empId = mysqli_real_escape_string($con, $empId);
    $empPass = stripslashes($_REQUEST['empPass']);
    $empPass = mysqli_real_escape_string($con, $empPass);
    // Checking if user exists in the database or not
    $query = "SELECT * FROM `employees` WHERE empId='$empId' and
empPass='" . $empPass . "'";
    $result = mysqli_query($con, $query);
    $rows = mysqli_num_rows($result);
    if ($rows == 1) {
        $_SESSION['empId'] = $empId;
        echo "<script>window.location.href='dashboard';</script>";
    } else {
        echo "<script>alert('Invalid
Credentials');window.location.href='home';</script>";
    }
} else {
    ?>
```

```
<!-- Main Content -->
<div class="container">
    <!-- Login Form -->
    <div class="row mt-5 mb-5">
        <div class="w-100 w-md-50 mx-auto">
            <div class="card white card-top-green">
                <div class="card-content">
                    <span class="card-title black-text">vTop++ Faculty
Login</span>
                    <form method="POST" action="loginFaculty.php">
                        <div class="row">
                            <div class="input-field col s12">
                                <i class="material-icons
prefix">account_circle</i>
                                <input id="empId" name="empId"
type="text" class="validate" maxlength="7" required>
                                <label for="empId">Employee ID</label>
                            </div>
                            <div class="input-field col s12">
                                <i class="material-icons
prefix">lock</i>
                                <input id="empPass" name="empPass"
type="password" class="validate" required>
                                <label for="empPass">Password</label>
                            </div>
                            <div class="center">
                                <button id="loginFacultyBtn"
name="loginFacultyBtn" class="btn btn-exc-green z-depth-0 waves-effect
mb-n4" value="Login">Login</button>
                            </div>
                        </div>
                    </form>
                </div>
            </div>
        </div>
    </div>
</div>
<?php } ?>
<?php
include("templates/footer.php");
?>
</body>
</html>
```

loginStud.php

```
<!DOCTYPE html>
<html lang="en">
<?php
include("templates/header.php");
?>
<?php
```

```
include("templates/nav-vit.php");
?>
<?php
require('db.php');
session_start();
if (isset($_POST['regNo'])) {
    // Removes backslashes
    $regNo = stripslashes($_REQUEST['regNo']);
    // Escapes special characters in a string
    $regNo = mysqli_real_escape_string($con, $regNo);
    $studPass = stripslashes($_REQUEST['studPass']);
    $studPass = mysqli_real_escape_string($con, $studPass);
    // Checking if user exists in the database or not
    $query = "SELECT * FROM `students` WHERE regNo='$regNo' and
studPass='" . $studPass . "'";
    $result = mysqli_query($con, $query);
    $rows = mysqli_num_rows($result);

    if ($rows == 1) {
        $_SESSION['regNo'] = $regNo;
        // Redirect user to index page
        echo "<script>window.location.href='index';</script>";
    } else {

        echo "<script>alert('Invalid
Credentials');window.location.href='home';</script>";
    }
} else {
    ?>
    <!-- Main Content -->
    <div class="container">
        <!-- Login Form -->
        <div class="row mt-5 mb-5">
            <div class="w-100 w-md-50 mx-auto">
                <div class="card white card-top-lightblue">
                    <div class="card-content">
                        <span class="card-title black-text">vTop++
Login</span>
                        <form method="POST" action="" name="loginStud">
                            <div class="row">
                                <div class="input-field col s12">
                                    <i class="material-icons
prefix">account_circle</i>
                                    <input id="regNo" name="regNo"
type="text" class="validate" pattern="[1-2][5-9][A-Za-z]{3}[0-9]{4}"
required>
                                    <label for="regNo">Registration
Number</label>
                                </div>
                                <div class="input-field col s12">
```

```
                                    <i class="material-icons
prefix">lock</i>
                                    <input id="studPass"
name="studPass" type="password" class="validate" required>
                                    <label
for="studPass">Password</label>
                                </div>
                                <div class="center">
                                    <button name="loginStudBtn"
class="btn btn-exc z-depth-0 waves-effect mb-n4" id="loginStudBtn"
value="Login">Login</button>
                                </div>
                            </div>
                        </form>
                    </div>
                </div>
            </div>
        </div>
    </div>
<?php } ?>
<?php
include("templates/footer.php");
?>
</body>
</html>
```

logout.php

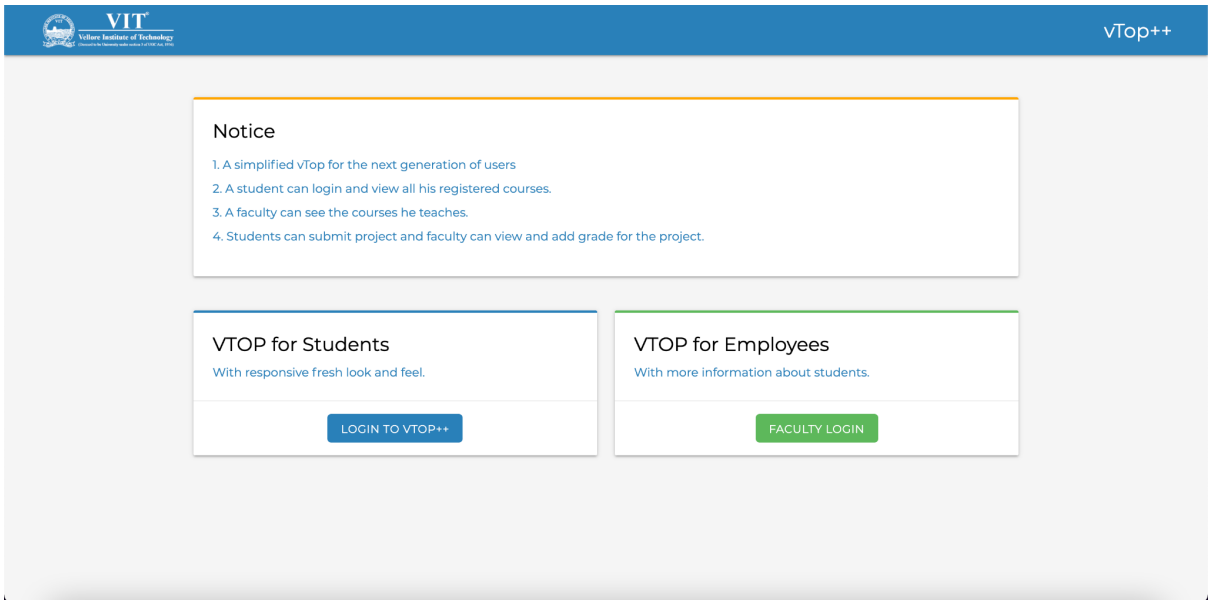
```
<?php
session_start();
// Destroying All Sessions
if(session_destroy())
{
// Redirecting To Home Page
header("Location: home");
}
?>
```

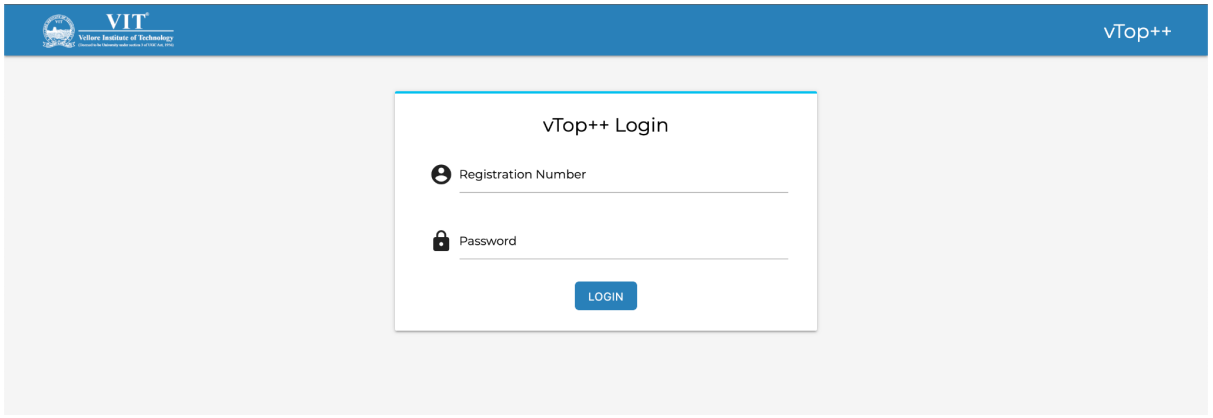
Testing

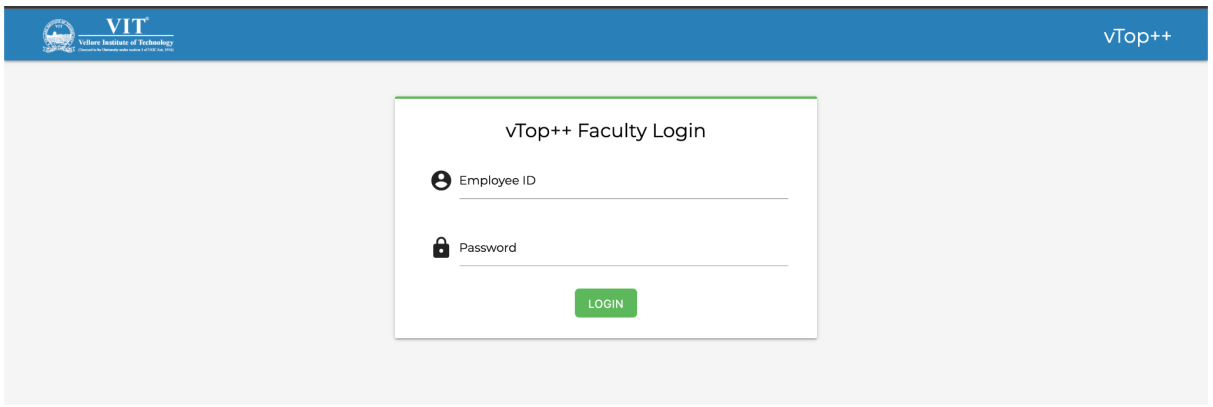
We penetration tested our application by ourselves using the experience that we had of the way the application functions and testing the modules that the other teammates had written. This allowed us to develop a greater understanding of the modules and allowed us to make use of lessons learnt from other mistakes. The following bugs were fixed :-

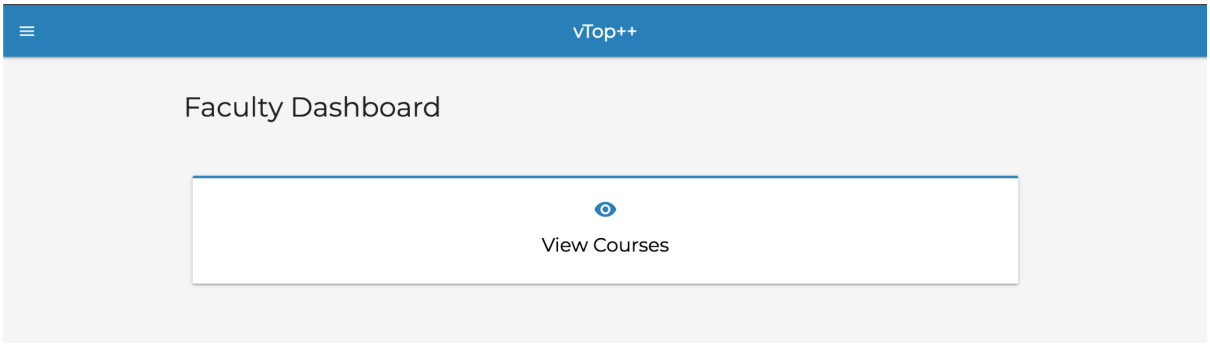
- Bugs in session manager - There was a bug in session which did not properly logout.
- Bugs in UI - An invisible box was covering part of the logout button
- Bugs in UI - The original page transitions were very clumsy to look at so they were changed to smoother ones.
- Bugs in UI - The input fields allowed for SQL injections which were later patched.
- Bugs in file handler - The file handler would put all files as temporary so we tried to change it. However, we could not fix the problem and had to remove the feature itself.

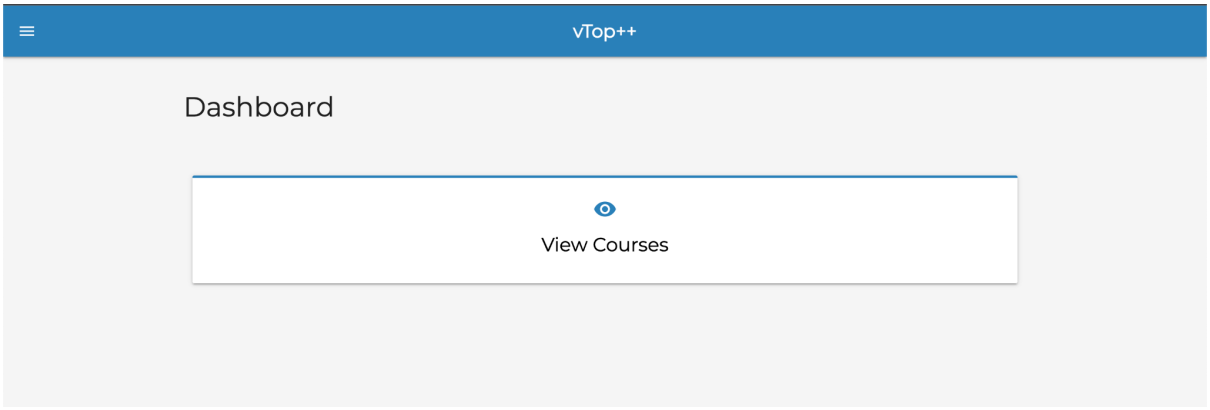
Results

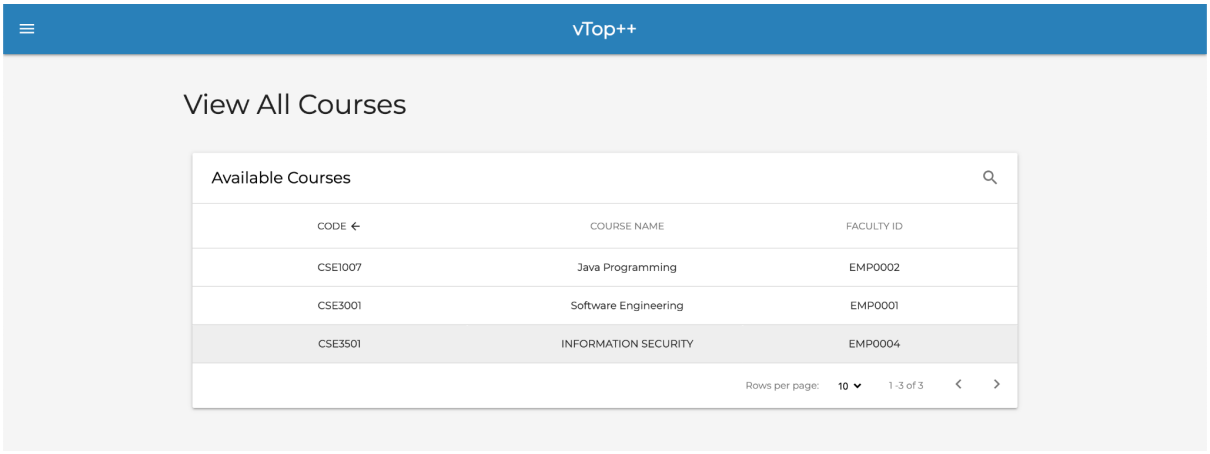

VIT
Vellore Institute of Technology
vTop++
Notice
1. A simplified vTop for the next generation of users
2. A student can login and view all his registered courses.
3. A faculty can see the courses he teaches.
4. Students can submit project and faculty can view and add grade for the project.
VTOP for Students
With responsive fresh look and feel.
LOGIN TO VTOP++
VTOP for Employees
With more information about students.
FACULTY LOGIN


VIT
Vellore Institute of Technology
vTop++
vTop++ Login
Registration Number
Password
LOGIN


VIT
Vellore Institute of Technology
vTop++
vTop++ Faculty Login
Employee ID
Password
LOGIN







Conclusion

The goal of the project was to demonstrate the enhanced version of VTOP in terms of UI/UX. Making it look more fresh and modern. On the backend side the goal was to make the downtime less and handle traffic at high time.

Future Enhancements

Our plan is to add new features to our system which will include more interactive design with modern design principles. We are exploring new ideas to add to our website so that users can find it helpful and use it on a daily basis.