PURATCHI THALAIVAR DR MGR

GOVERNMENT ARTS & SCIENCE COLLEGE,

UTHIRAMERUR – 603 406.

(Affiliated to University of Madras)

Department of Computer Science

Certificate

Certified that this report titled……………………….……...….……….....…….
is a bonafide record of the project work done by …………………….…….
under our supervision and guidance, towards partial fulfillment of the requirement
for award of the Degree of B.Sc Computer Science of Puratchi Thalaivar Dr. MGR
Govt. Arts and Science college, Uthiramerur.

Signature of Internal guide   **Head of the Department**

Project viva-vice held on ……………… at Puratchi Thalaivar Dr. MGR Govt. Arts and
Science college, Uthiramerur.

Internal Examiner   **External Examiner**

ACKNOWLEDGEMENT

I owe thanks to the following people who helped and supported us in the completion of the project. I would like to thank …………………………………….. principle, Puratchi Thalaivar Dr. M.G.R Government Arts and Science College, Uthiramerur.

I would like to express my gratitude to ……………………………………….. Head of the Department of Computer Science, Puratchi Thalaivar Dr. M.G.R Government Arts and Science College, Uthiramerur, for giving us the opportunity to take up this project.

I would also like to express my gratitude to my guide …………………………………….. Department of Computer Science, Puratchi Thalaivar Dr. M.G.R Government Arts and Science College, Uthiramerur, for his valuable guidance, timely help, consistent support, and encouragement, which greatly contributed towards the successful completion of the project. He has been a pillar of support to us throughout.

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1: INTRODUCTION

The purpose of the project was to design and develop an application for Puratchi Thalaivar Dr. M.G.R Government Arts and Science College, which enable teachers to monitor students in online web conference and minimizing the distraction of the student in online class by locking the application from minimizing once they have entered the meeting and if attempts are made to view other application the prototype will make the user leave the meeting and thus notifying the host. This project contains analysis of current method used, designing a prototype and implementation of the prototype.

1.1. Organization Overview:

Puratchi Thalaivar Dr. M.G.R Government Arts and Science College in Uthiramerur was established by the Government of Tamil Nadu on September 13th, 2013. It is the second government backed college in Kanchipuram district that offers 6 courses in the field of arts and science. Since its inception, the college has been providing quality education to its students and promoting higher education in the region. In the wake of COVID-19 pandemic, educational institutions across the globe have migrated towards online learning in order to ensure the safety of students and staff. Puratchi Thalaivar Dr. M.G.R Government Arts and Science College is of no exception to this practice, and like other universities and colleges, common web conference tools like google meet, zoom has primarily been used to conduct online classes. A drawback of these tools is that it lacks proctored technology that helps universities and colleges to monitor students during online classes and examination. This prototype project aims to create a proctored web conferencing website in order to facilitate online class that can also monitor students.

1.2. Problem Statement:

The shift towards online learning has brought about various challenges, one of which is the lack of visibility into student behavior during virtual classes. Staff are not always able to monitor students' discipline as they may be using various applications that can cause distractions, leading to an adverse effect on their studies. While virtual learning can offer flexibility, it also requires

self-discipline and motivation from students. However, without proper supervision, it can be challenging to ensure that students are staying on task and not getting sidetracked by social media, games, or other online distractions.

As a result, educators may need to explore new ways to monitor student engagement and implement strategies to help them stay focused and productive during virtual stay classes. This could include incorporating interactive activities and group discussions, setting clear expectations for student behavior, and leveraging technology to track student progress and engagement. By addressing these challenges, educators can help ensure that students are getting the most out of their online learning experience and are able to achieve academic success.

2: SYSTEM ANALYSIS

2.1. Existing methodology:

The COVID-19 pandemic has necessitated schools and colleges worldwide, including Puratchi Thalaivar Dr. M.G.R Government Arts and Science College in Uthiramerur to swiftly adopt remote learning, resulting in an increased demand for web conferencing tools that can aid communication, collaboration, and productivity in virtual environments. Some of the most popular web conferencing platforms used across the globe are Google Meet, Zoom, and several online classroom platforms. These platforms provide a wide range of features and functionalities that enable teachers, students, and colleagues to connect, interact, and learn from any location and device.

Web conferencing enables users to see and hear each other in real-time, while screen sharing enables them to share presentations, documents, or videos with others. Additionally, users can record their meetings and lectures for future reference and send text messages and links to each other during meetings using chat. Moreover, virtual whiteboards enable users to collaborate on ideas and projects in real-time, and several platforms also offer other features like breakout rooms, polling, raise hand, and integration with other tools and apps to enhance the learning and engagement experience. However, even though these platforms have been essential for remote learning and work during the pandemic, it is crucial for users to be familiar with their features and limitations and follow best practices and guidelines for using them safely and effectively in educational and professional settings.

2.2. Limitations of existing method:

The shift to online learning due to the COVID-19 pandemic has brought several challenges for teachers, one of which is monitoring student discipline during online classes. While traditional classroom settings allow teachers to monitor student behavior, online classes present a different set of challenges.

In particular, online classes may make it difficult for teachers to keep track of students who may be disengaged or not paying attention. Furthermore, online classes can create an environment where students may be more likely to engage in disruptive behavior, such as chatting with friends or surfing the web.

While online classroom platforms such as Google Meet and Zoom Meet offer features like chat monitoring and screen sharing control, these tools do not provide a comprehensive solution for monitoring student discipline. In some cases, these tools may even exacerbate the problem by allowing students to hide their behavior from the teacher.

Additionally, the use of these tools requires a certain level of technical proficiency, which not all teachers may possess. Without proper tracking tools, it can be difficult for teachers to ensure that students are engaged and participating in class. This can lead to a suboptimal learning experience for students and can also create additional work for teachers, who may need to spend more time following up with students who are not participating in class.

To address this issue, it may be necessary for online classroom platforms to develop more comprehensive tools for monitoring student discipline. This could include features like automated attendance tracking, real-time activity monitoring, and behavior reporting tools. Additionally, it may be helpful for teachers to receive training on how to effectively use these tools to monitor student behavior and engagement during online classes. Ultimately, it is essential to ensure that online learning environments are conducive to learning and that students have the support they need to succeed.

2.3. Proposed Solution:

During online classes, students may face several distractions that can hinder their ability to focus on the course material. To help students stay engaged during the class, many educators and institutions implement restrictions on accessing other functionalities during online classes thus helping to reduce potential distractions and increase student engagement throughout the class. These restrictions can include disabling access to social media, messaging apps, or gaming sites while the online class is in progress. This approach aims to prevent students from getting distracted by notifications or alerts from these sites or apps.

By limiting access to these distractions, students can concentrate on the online class, engage with the instructor and their peers, and participate in the learning process without any deviations. This approach can help students make the most of their online classes and improve their academic performance. It is also essential for students to take responsibility for their learning and make a conscious effort to stay focused during the online class. By adhering to these restrictions, students can create a conducive learning environment that allows them to learn effectively and efficiently.

This prototype was built to prevent students from accessing other applications during web conferences or online meetings by incorporating proctored technology. It works by disabling students to view or use other applications during online meetings and if any attempts are made, then the prototype makes the user exit the meeting or web conference, thus indirectly notifying the host. These restrictions on accessing other functionalities during online classes can help students stay focused, engaged, and achieve academic success. Students should take advantage of these restrictions and use them to make the most of their online learning experience.

Monitoring and evaluating the effectiveness and impact of restrictions on student learning and wellbeing is crucial in improving online classes. Teachers and administrators can use various tools and strategies to monitor and evaluate student engagement and wellbeing and make informed decisions to improve the online learning experience. By addressing the impact of restrictions on student learning and wellbeing, we can ensure that students continue to receive quality education.

2.4. Features of the solution:

Proctored web conference features are designed to ensure the integrity and security of online exams, assessments, and evaluations by monitoring and preventing cheating and academic misconduct. Some of the key proctored web conference features of the prototype includes,

Live restriction on other application during web conference, this prevents student from accessing any applications that can potentially distract or deviate them from their goals and academic achievements. Restrictions indirectly provide adequate information for the host to know which

individual have access other application, as accessing other application during online meeting will end the meeting, thus providing information.

Ease of attendance tracking, this prototype can be used to track and mark attendance for any web conference or online meeting, thus reducing the effort of the host. The prototype locks down other applications when meeting is live and also this prototype can be used to monitor and invigilate online test or exams conducted in web conference.

These proctored web conference features are essential for maintaining the integrity and security of online classes , exams, and assessments. They provide a reliable and secure platform for students to take exams and assessments, ensuring that their learnings and performance is based on their own knowledge and skills, rather than any external sources. By using these features, educational institutions can promote academic honesty, improved learning experience and ensure that students receive a fair and accurate evaluation of their academic performance.

2.5. System Requirement:

2.5.1 Software Requirement:

Table 2. 1 - Project software requirements

S.no	Requirements	Tools / Technologies	Purpose
1	Design tools	Figma, PowerPoint	To design user interface and user flow.
2	Text editor	Notepad, Visual studio code	To write development code.
3	Internet browser	Google chrome, Microsoft edge	To view project output.
4	Version control	GitHub	To manage repository and version control.
5	Languages	HTML, CSS, JavaScript & bootstrap	To develop project prototype.

2.5.2 Other Requirement:

- A computer with at least 4GB ram, multi-core processor, minimum 128GB free storage

- A stable internet connectivity.

3: DESIGN

3.1. Project Flow:

Fig 3.1 explains the steps a user takes to complete any task within the project. It maps out the user's journey from the initial point of entry to the exit point.

Figure 3. 1 - Project user flow diagram
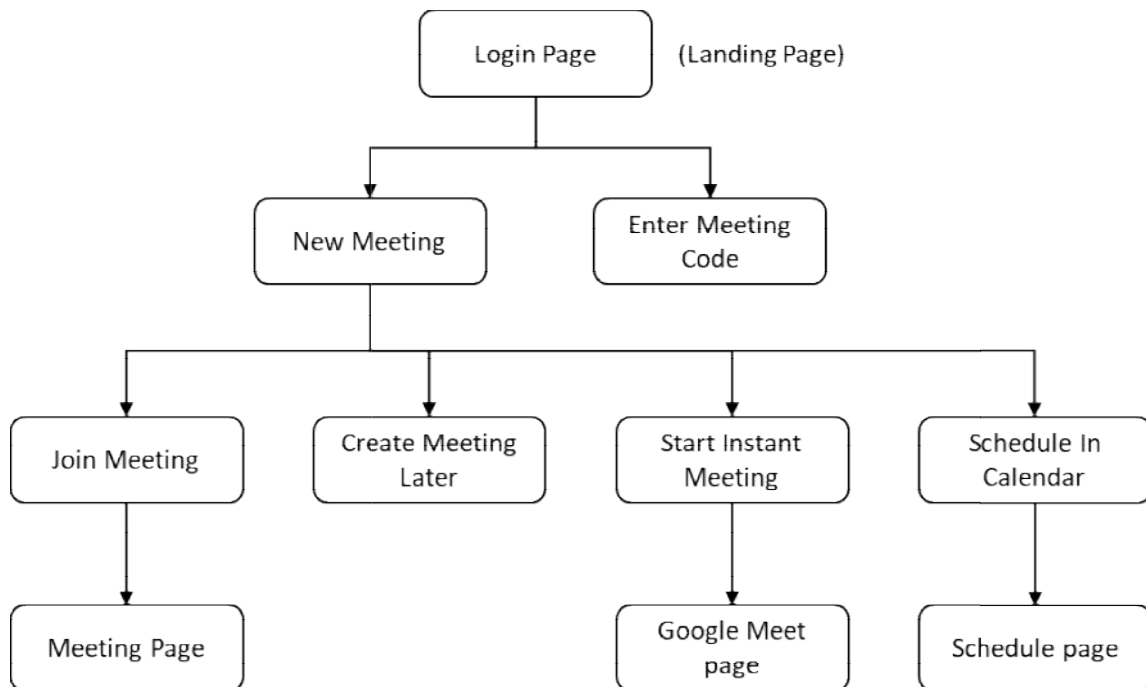
3.2. Project Figma Design:

Figs 3.2 to 3.4 showcase the output design for the project, this acts as reference for the development and implantation of the project's landing page, meeting homepage and live meeting page.

Figure 3. 2 - Landing page design
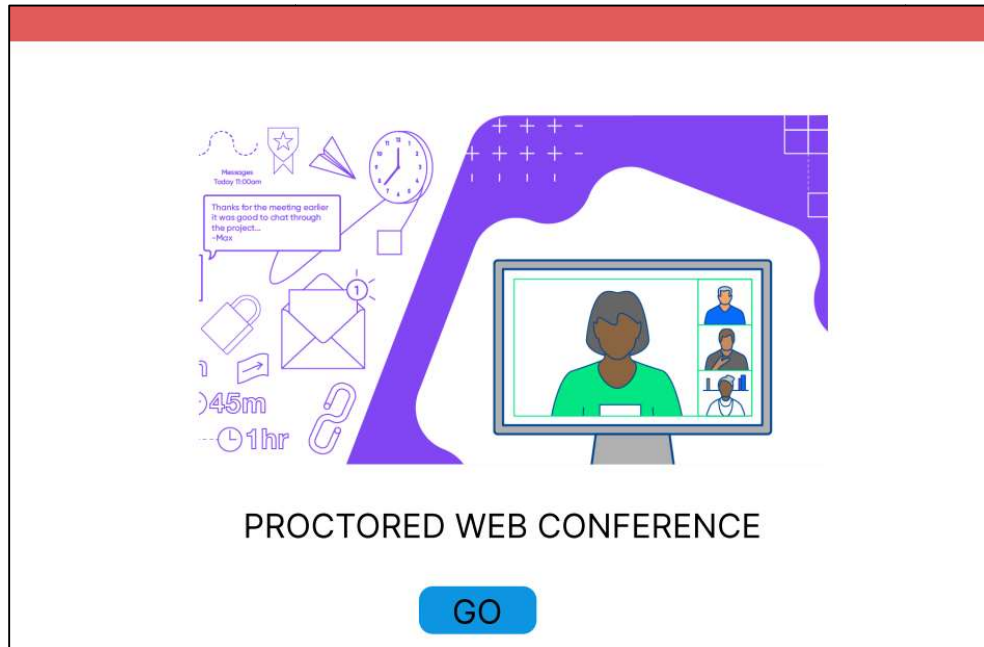
Figure 3. 3 - Meeting home page design
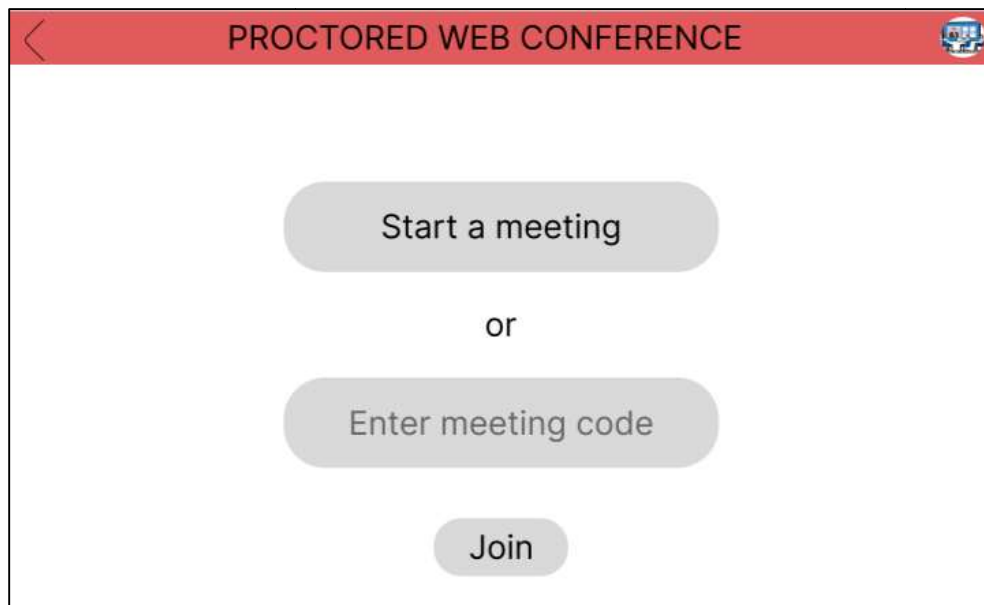
Figure 3. 4 - Live meeting page design
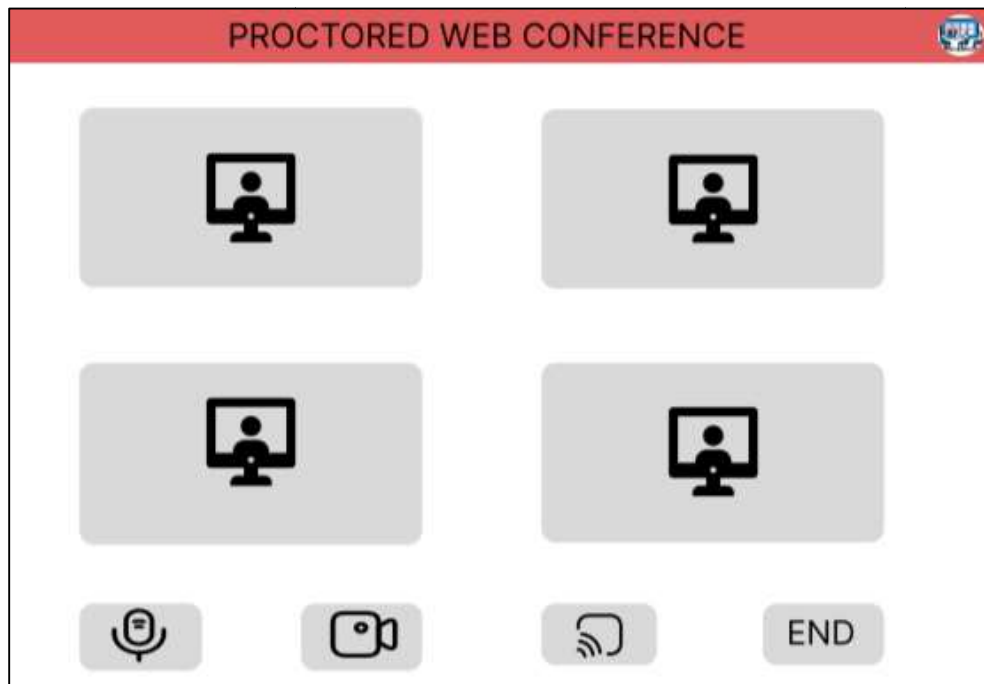
4: CODING

4.1. Code files segregation:

4.1.1 Project folder:

Table 4. 1 - Project file folder

S.no	File name
1	assets (folder)
2	index.html
3	calander.html
4	meetingpage.html
5	videoconference.html
6	README.md

4.1.2 Assets folder:

Table 4. 2 - Project assets file folder

S.no	assets
1	Css (folder)
2	Image (folder)

4.1.3 CSS folder:

Table 4. 3 - Project CSS file folder

S.no	css
1	index.css
2	calander.css
3	meetingpage.css
4	videoconference.css

4.1.4 Image folder:

Table 4. 4 - Project Image file folder

S.no	image
1	login.png
2	toggle.png

4.2. Index page coding:

4.2.1 index.html:

```
<!DOCTYPE html>
<html lang="en">
  <head>
    <meta charset="UTF-8">
    <meta http-equiv="X-UA-Compatible" content="IE=edge">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title> login page </title>
    <link rel="stylesheet" href="assets/css/index.css">
    <link href="https://cdn.jsdelivr.net/npm/bootstrap@5.0.2/dist/css/bootstrap.min.css"
rel="stylesheet" integrity="sha384-
EVSTQN3/azprG1Anm3QDgpJLIm9Nao0Yz1ztcQTwFspd3yD65VohhpuuCOmLASjC"
crossorigin="anonymous">
  </head>
  <body>
    <br><br>
    <div class="container-fluid">
      <div class="row">
        <div class="col-6 ">
          <h1> <b>Web Conference</b></h1>
          <br>
```

```html
<h2>Protected web conference is a communications platform that allows users to
connect with video, audio, phone....</h2>
        <div>
          <img class="img-fluid p-5" src="assets/image/login.png" alt="photo empty">
        </div>
      </div>
      <div class="col-6">
        <div class="logincenter">
          <div class="contentbox">
            <div class="formbx">
              <h2> Login</h2>
              <form>
                <div class="inputbx">
                  <span> User name :</span>
                  <input type="text" name="">
                </div><br>
                <div class="inputbx">
                  <span>Password :</span>
                  <input type="password" name="">
                </div><br>
                <div class=" remmember">
                  <label><input type="checkbox" name=""> Remember me </label>
                </div><br>
                <button type="button" class="btn btn-primary"><a style="color: white;"
                    href="meetingpage.html">Log in </a></button>
                <div class="inputbx"><br>
                  <p> Don't have an account <a href="#"> login</a></p>
                </div><br>
              </form>
            </div>
          </div>
        </div>
```

```
                </div>
            </div>
        </div>
    </div>
  </body>
</html>
```

4.2.2 index.css:

```css
* {
    margin: 0;
    padding: 0;
    box-sizing: border-box;
    font-family: 'poppins', sans-serif;
}

section {
    position: relative;
    width: 100%;
    height: 100vh;
    display: flex;
}

select .imageR {
    position: relative;
    width: 50%;
    height: 100%;
}

select .imageR::before {
    content: '';
    position: absolute;
```

```css
    top: 0;

    left: 0;

    width: 1005;

    height: 100%;

    background: linear-gradient(225deg, #e91e63, #03a9f4);

    z-index: 1;

    mix-blend-mode: screen;

}


section .imageR img {

    position: absolute;

    top: 0;

    left: 0;

    width: 100;

    height: 100%;

    object-fit: cover;

}


section .contentbox {

    display: flex;

    justify-content: center;

    align-items: center;

    width: 150%;

    height: 100%;

}


section .contentbox .formbx .inputbx {

    margin-bottom: 20px;

}


section .contentbox .formbx .inputbx span {
```

```css
    font-size: 16px;

    margin-bottom: 5px;

    display: inline-block;

    color: rgba(250, 247, 247, 0.829);

    font-weight: 300;

    font-size: 16px;

    letter-spacing: 1px;

}


section .contentbox .formbx .inputbx input {

    width: 100px;

    padding: 10px 20px;

    outline: none;

    font-weight: 400;

    border: 1px solid #607;

}


.logincenter {

    text-align: center;

    /* margin: 25%; */

    background-color: rgba(228, 131, 212, 0.705);

    height: 70vh;

    padding: 50px;

    border-radius: 60px;

    margin: 70px;

}


.formbx {

    padding-top: 120px;

}
```

```css
input {
    border-radius: 10px;
}

button {
    border-radius: 10px;
}

h1 {
    text-align: center;
    paddinG: 10PX;
    font-family: 'Courier New', Courier, monospace;
    color: black;
}

img {
    align-items: center;
}

.frombx {
    text-align: center;
}

h2 {
    text-align: center;
}

a {
    text-decoration: none;
}
```

4.3. Meeting page coding:

4.3.1 meetingpage.html:

```html
<!DOCTYPE html>
<html lang="en">
  <head>
    <meta charset="UTF-8">
    <meta http-equiv="X-UA-Compatible" content="IE=edge">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <link href="https://cdn.jsdelivr.net/npm/bootstrap@5.3.0-alpha1/dist/css/bootstrap.min.css"
rel="stylesheet" integrity="sha384-
GLhlTQ8iRABdZLl6O3oVMWSktQOp6b7In1Zl3/Jr59b6EGGoI1aFkw7cmDA6j6gD"
crossorigin="anonymous">
    <link href="assets/css/meetingpage.css" rel="stylesheet">
    <style>
      .container-fluid {
        width: 100%;
        height: 7vh;
      }
    </style>
    <link rel="stylesheet"
href="https://maxcdn.bootstrapcdn.com/bootstrap/4.0.0/css/bootstrap.min.css">
    <link rel="stylesheet" href="https://cdn.jsdelivr.net/npm/bootstrap-
icons@1.10.3/font/bootstrap-icons.css">
    <script
src="https://maxcdn.bootstrapcdn.com/bootstrap/4.0.0/js/bootstrap.min.js"></script>
    <title>Proctored Web Conference</title>
  </head>
  <body>
    <div class="container-fluid">
      <div class="row">
        <div class="col-2">
```

```html
        <img class="btn img-fluid" src="assets/image/toggle.jpg" width="15%"
height="50%">
        </div>
        <div class="col-8">
          <div> PROCTORED WEB CONFERENCE </div>
        </div>
        <div class="col-2">
          <i class="bi bi-person-circle account"></i>
        </div>
      </div>
    </div>
    <div class="meeting-box col-8 col-md-10 col-lg-12">
      <div class="dropdown">
        <a class="btn btn-lg dropbtn text-black meeting" href="#" role="button"
id="dropdownMenuLink" data-bs-toggle="dropdown" aria-expanded="false">
          New meeting...
        </a>
        <div class="dropdown-content">
          <a href="#">Create a meeting for later</a>
          <a href="https://meet.google.com/eow-wsdg-tvt">Start an instant meeting</a>
          <a href="calander.html">Schedule in Calendar</a>
        </div>
      </div><br>
      <div class="p">-OR-</div><br>
      <input class="text-center" type="text" name="name" placeholder="--Enter a code or
link--" /><br><br>
      <button type="button" class="btn btn-primary btn-lg button-radius">
        <a style="color: white;"href="videoconference.html"> Join</a>
      </button><br>
    </div>
  </body>
```

</html>

4.3.2 meetingpage.css:

```css
.meeting-box {
  text-align: center;
  font-size: 200%;
  border: 2px solid black;
  padding: 20px;
  margin-top: 20vh !important;
  width: fit-content;
  max-width: fit-content !important;
  margin: auto;
  border-radius: 20%;
  background-color: whitesmoke;
}

.button-radius {
  border-radius: 20px !important;
}

.container-fluid {
  padding: 9px;
  color: black;
  background-color: whitesmoke;
  font-size: 200%;
  text-align: center;
}

input {
  border-radius: 20px;
```

```css
  border-width: 3px;
}

.account {
  position: absolute;
  left: 86%;
}

.img-fluid {
  position: absolute;
  left: 5%;
  margin-top: 2%;
}

.dropdown {
  position: relative;
  display: inline-block;
}

.meeting {
  width: 300px;
  background-color: white;
  border: 1px solid black !important;
  border-radius: 10px !important;
}

.dropdown-content {
  border: 1px solid black;
  display: none;
  position: absolute;
  z-index: 1;
```

```css
  background-color: white;
  width: 300px;
}


.dropdown-content a {
  color: #0d6efd;
  padding: 10px;
  text-decoration: none !important;
  display: block;
  background-color: white;
  font-size: 60%;
  border-bottom: 1px solid black;
}


.dropdown:hover .dropdown-content {
  display: block;
  text-decoration: none !important;
}


.dropdown a:hover {
  background-color: rgb(45, 168, 206);
}
```

4.4. Calendar page coding:

4.4.1 calandar.html:

```html
<!DOCTYPE html>
<html lang="en">
  <head>
    <meta charset="UTF-8">
    <meta http-equiv="X-UA-Compatible" content="IE=edge">
```

```html
<meta name="viewport" content="width=device-width, initial-scale=1.0">
<link href="https://cdn.jsdelivr.net/npm/bootstrap@5.3.0-alpha1/dist/css/bootstrap.min.css"
rel="stylesheet" integrity="sha384-
GLhlTQ8iRABdZLl6O3oVMWSktQOp6b7In1Zl3/Jr59b6EGGoI1aFkw7cmDA6j6gD"
crossorigin="anonymous">
<link rel="stylesheet"
href="https://maxcdn.bootstrapcdn.com/bootstrap/4.0.0/css/bootstrap.min.css">
<link rel="stylesheet" href="https://cdn.jsdelivr.net/npm/bootstrap-
icons@1.10.3/font/bootstrap-icons.css">
<link href="assets/css/calander.css" rel="stylesheet">
<script
src="https://maxcdn.bootstrapcdn.com/bootstrap/4.0.0/js/bootstrap.min.js"></script>
<title>Proctored Web Conference</title>
</head>
<body>
  <div class="container-fluid"><br><br>
    <form>
      <div class="row1">
        <div>
          <i class="bi bi-x-lg icon-1"></i>
          <input type="text" id="add-title" name="add-title" placeholder="Add title"
required>
        </div>
      </div><br>
      <div class="row2">
        <div class="input-type">
          <input type="datetime-local" id="date">
          <p>to</p> <input type="datetime-local" id="date-1">
        </div>
      </div>
      <div class="row3">
```

```
            <input type="checkbox" id="checkbox"> <label>All day</label>
        </div>
        <div class="row5">
            <label>Guests</label><br>
            <input type="email" id="email" name="email" placeholder="Add guest"
required><button class="add"
                type="sumbit">Add</button>
        </div>
        <div class="row4">
            <i class="bi bi-camera-video"></i>
            <button class="btn-outline-primary join-button ">Join with Google
Meet</button><br>
            <button class="btn-primary join-button1"><a
href="meetingpage.html">Save</a></button>
        </div>
    </form>
  </div>
 </body>
</html>
```

4.4.2 calandar.css:

```
* {
   margin: 0;
   padding: 0;
   box-sizing: border-box;
   font-family: 'poppins', sans-serif;
}

.join-button {
   border-radius: 20px;
```

```css
    margin-left: 10px;
    width: 40%;
}

.join-button1 {
    border-radius: 20px;
    margin-left: 10px;
    width: 20%;
    margin-top: 3vh;
}

.icon-1 {
    margin-right: 10px;
}

.container-fluid {
    font-size: x-large;
    border: 3px solid black;
    width: 40%;
    text-align: center;
    margin-top: 13vh;
    border-radius: 20px;
}

p {
    padding: 10px;
}

.row1,
.row2,
.row3,
```

```css
.row4,
.row5 {
  padding-bottom: 30px;
}


#add-title {
  border-style: none;
  border-bottom: 2px solid black;
}


#add-guest {
  background-color: rgb(211, 203, 203);
}


.add {
  margin-left: 10px;
  padding: 5px;
}


a {
  color: white;
}
```

4.5. Videoconference page coding:

4.5.1 videoconference.html:

```html
<!DOCTYPE html>
<html lang="en">
  <head>
    <meta charset="UTF-8">
    <meta http-equiv="X-UA-Compatible" content="IE=edge">
```

```html
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <link href="https://cdn.jsdelivr.net/npm/bootstrap@5.3.0-alpha1/dist/css/bootstrap.min.css" rel="stylesheet" integrity="sha384-GLhlTQ8iRABdZLl6O3oVMWSktQOp6b7In1Zl3/Jr59b6EGGoI1aFkw7cmDA6j6gD" crossorigin="anonymous">
    <link href="assets/css/videoconference.css" rel="stylesheet">
    <link rel="stylesheet" href="https://maxcdn.bootstrapcdn.com/bootstrap/4.0.0/css/bootstrap.min.css">
    <link rel="stylesheet" href="https://cdn.jsdelivr.net/npm/bootstrap-icons@1.10.3/font/bootstrap-icons.css">
    <script src="https://maxcdn.bootstrapcdn.com/bootstrap/4.0.0/js/bootstrap.min.js"></script>
    <title>Proctored Web Conference</title>
    <style>
      .header {
        width: 100%;
        height: 7vh;
      }
    </style>
  </head>

  <body>
    <div class="container-fluid header">
      <div class="row">
        <div class="col-2">
          <img class="btn img-fluid" src="assets/image/toggle.jpg" width="15%" height="50%">
        </div>
        <div class="col-8">
          <div> PROCTORED WEB CONFERENCE </div>
        </div>
```

```html
        <div class="col-2">
          <i class="bi bi-person-circle account"></i>
        </div>
      </div>
    </div>
    <br><br><br>
    <div class="container-fluid overall-users">
      <div class="row">
        <div class="col-lg-6 col-6 user-1">
          <div>
            <video id="video1"></video>
            <canvas id="canvas1"></canvas>
          </div>
        </div>
        <div class="col-lg-6 col-6 user-2">
          <div>
            <video id="video2"></video>
            <canvas id="canvas2"></canvas>
          </div>
        </div>
      </div>
      <div class="row">
        <div class="col-lg-6 col-6 user-3">
          <div>
            <video id="video3"></video>
            <canvas id="canvas3"></canvas>
          </div>
        </div>
        <div class="col-lg-6 col-6 user-4">
          <div>
            <video id="video4"></video>
```

```html
            <canvas id="canvas4"></canvas>
          </div>
        </div>
    </div>
</div><br>
<div class="row icon-border">
    <div class="col-3 icon-border-1">
        <div>
            <a href="#"> <i class="bi bi-mic"> </i></a>
        </div>
    </div>
    <div class="col-3 icon-border-2">
        <div>
            <a href="#"> <i class="bi bi-camera-video"></i> </a>
        </div>
    </div>
    <div class="col-3 icon-border-3">
        <div>
            <a href="#"> <i class="bi bi-share"></i> </a>
        </div>
    </div>
    <div class="col-3 icon-border-4">
        <div>
            <a href="meetingpage.html"> <b>END</b> </a>
        </div>
    </div>
</div>

<script type="text/javascript">
    var video1 = document.getElementById('video1');
    var canvas1 = document.getElementById('canvas1');
```

```
        var context1 = canvas1.getContext('2d');
        var video2 = document.getElementById('video2');
        var canvas2 = document.getElementById('canvas2');
        var context2 = canvas2.getContext('2d');
        var video3 = document.getElementById('video3');
        var canvas3 = document.getElementById('canvas3');
        var context3 = canvas3.getContext('2d');
        var video4 = document.getElementById('video4');
        var canvas4 = document.getElementById('canvas4');
        var context4 = canvas4.getContext('2d');
        navigator.getUserMedia = navigator.getUserMedia || navigator.webkitGetUserMedia ||
navigator.mozGetUserMedia || navigator.oGetUserMedia || navigator.msGetUserMedia;
        navigator.getUserMedia({ video: true }, webcamFeed1, showError1);
        navigator.getUserMedia({ video: true }, webcamFeed2, showError2);
        navigator.getUserMedia({ video: true }, webcamFeed3, showError3);
        navigator.getUserMedia({ video: true }, webcamFeed4, showError4);
        function webcamFeed1(stream) {
            video1.srcObject = stream;
            video1.play();
        };
        function webcamFeed2(stream) {
            video2.srcObject = stream;
            video2.play();
        };
        function webcamFeed3(stream) {
            video3.srcObject = stream;
            video3.play();
        };
        function webcamFeed4(stream) {
            video4.srcObject = stream;
            video4.play();
```

```
};
function showError1(e) {
   alert(e.name);
};
function showError2(e) {
   alert(e.name);
};
function showError3(e) {
   alert(e.name);
};
function showError4(e) {
   alert(e.name);
};
function snap1() {
   canvas1.width = video1.clientWidth;
   canvas1.height = video1.clientHeight;
   context1.drawImage(video1, 0, 0);
};
function snap2() {
   canvas2.width = video2.clientWidth;
   canvas2.height = video2.clientHeight;
   context2.drawImage(video2, 0, 0);
};
function snap3() {
   canvas3.width = video3.clientWidth;
   canvas3.height = video3.clientHeight;
   context3.drawImage(video3, 0, 0);
};
function snap4() {
   canvas4.width = video4.clientWidth;
   canvas4.height = video4.clientHeight;
```

```
          context4.drawImage(video4, 0, 0);
        };
      </script>
    </body>
</html>
```

4.5.2 videoconference.css:

```css
* {
  margin: 0;
  padding: 0;
  font-family: Arial, Helvetica, sans-serif;
}

.header {
  padding: 9px;
  color: black;
  background-color: whitesmoke;
  font-size: 200%;
  text-align: center;
}

.row {
  text-align: center;
}

/* Style for the container */
/* Style for the container */
.overall-users {
  padding: 20px;
}
```

```css
/* Style for the user columns */
.user-1,
.user-2,
.user-3,
.user-4 {
  display: flex;
  justify-content: center;
  align-items: center;
  height: 250px;
  max-width: 20% !important;
  background-color: rgb(216, 211, 211);
  border: 2px solid black;
  border-radius: 23px;
  margin-bottom: 20px;
}

.user-1,
.user-3 {
  margin-left: auto;
  margin-right: 40px;
}

.user-2,
.user-4 {
  margin-right: auto;
  margin-left: 40px;
}

/* Style for the user images */
img {
```

```css
  max-width: 100%;
  max-height: 100%;
}

.icon-border-1,
.icon-border-2,
.icon-border-3,
.icon-border-4 {
  border: 2px solid black;
  border-radius: 20px;
  font-size: xx-large;
  width: fit-content;
  max-width: fit-content !important;
  margin-right: 5px;
  margin: auto;
  background-color: rgb(216, 211, 211);
}

.account {
  position: absolute;
  left: 213vh;
}

.account {
  position: absolute;
  left: 86%;
}

.img-fluid {
  position: absolute;
  left: 5%;
```

```css
    margin-top: 2%;
}


video {
  width: 80%;
  border-radius: 10px;
  margin-top: 55%; }
```

5: RESULT

The prototype of Proctored Web Conference was development using languages such as HTML, CSS, JavaScript, and bootstrap after complete analysis of the existing application used in Puratchi Thalaivar Dr. M.G.R Government Arts and Science College for conducting online web conference and classes. The output can be viewed by Clicking here, fig 5.1 to 5.3 are output image of the prototype.

Overall, the web conference prototype application, enhances the credibility of the student attending the online class, reduce their distraction and amplifies the productivity. Meanwhile the host can also monitor the students, know their attention period and identify other miscellaneous activity.
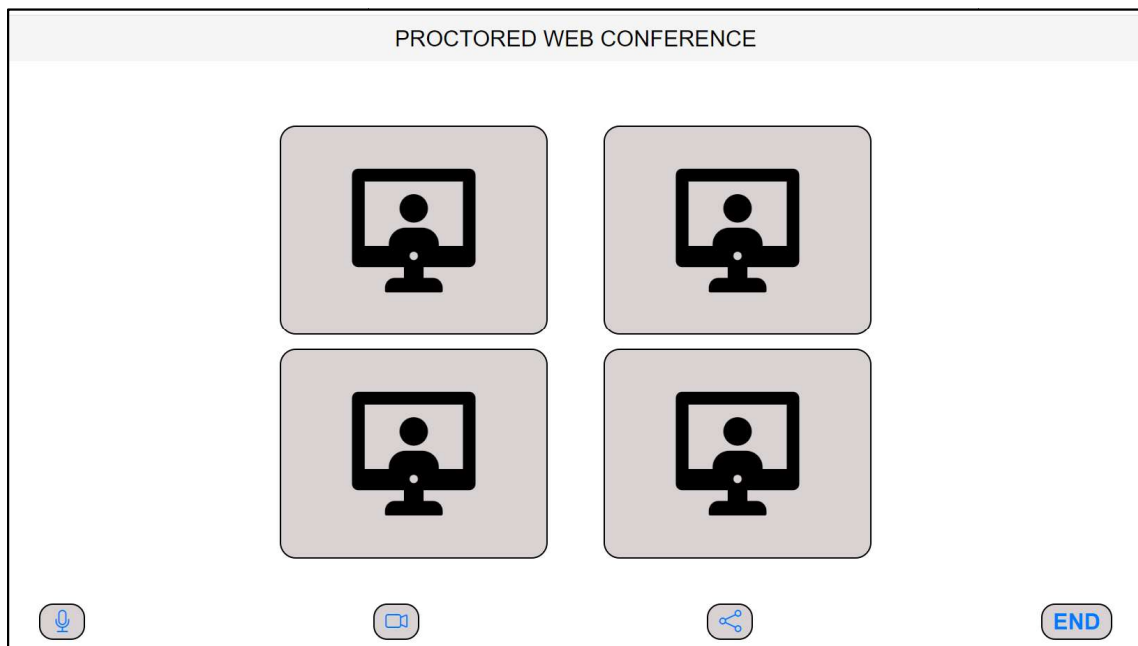
Figure 5. 1 - Output landing page
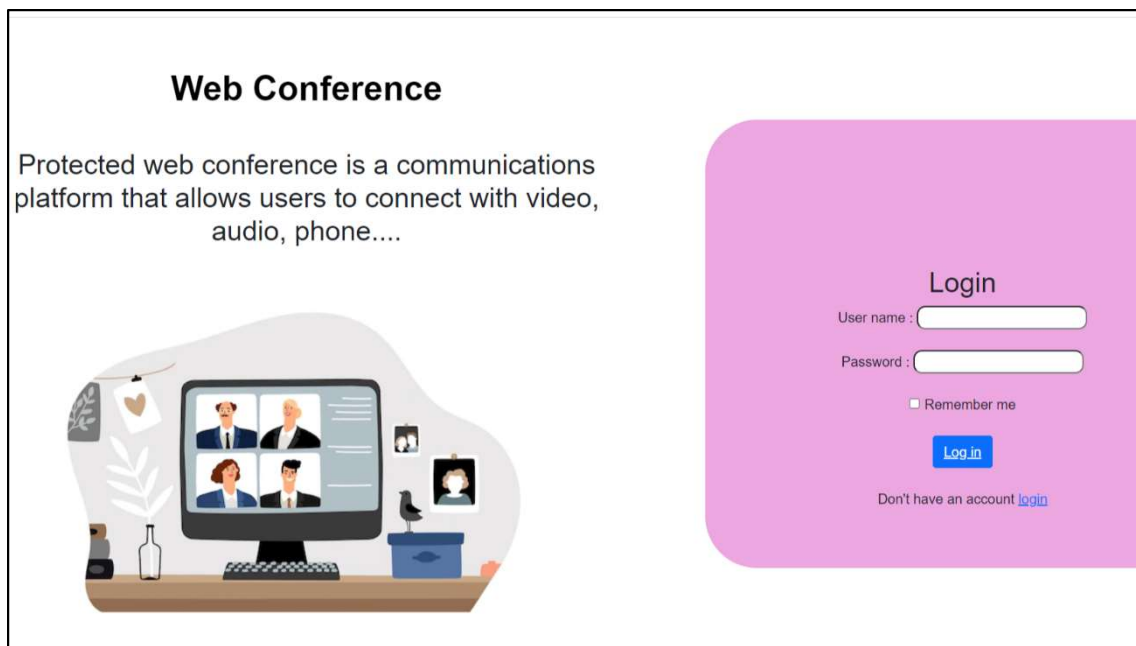
Figure 5. 2 - Output meeting home page

Figure 5. 3 - Output meeting web conference page

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