CODEMASTER'S REPORT

A PROJECT REPORT

codeMaster

LEARN ANYTIME ANYWHERE

Submitted by

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COLLEGE OF ENGINEERING GUINDY

ANNA UNIVERSITY

27-03-2021

CERTIFICATE

Certified that this project report “CODEMASTER” is the Bonafide work of “TEAM - A” who carried out the project work under my supervision.

Dr. NARASHIMAN	**Dr. Saswati Mukherjee**
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ACKNOWLEDGEMENT

I would like to express my special thanks of gratitude to my project guide **Dr. NARASHIMAN** who gave me the golden opportunity to do this wonderful project on the topic **CODEMASTER**, who also helped us in doing a lot of research and we came to know about so many new things. We are really thankful to him.

Date: 27-03-2021

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CONTENTS

1.INTRODUCTION

1.1. OVERVIEW OF THE PROJECT

In the past 10 years, E-Learning has increased in popularity. There are many benefits of E-Learning for both the learners and the organization. Online courses are an affordable, time-effective way to increase knowledge.

With online material and a lack of a regimented class timetable, people can fit the learning around their work and family life, rather than the other way around. They can approach the course in the way that works best for them, with courses deliberately tailored for self-study to make the process as flexible as possible.

Another benefit of E-Learning course is that they can be accessed throughout the day so employees can learn the subject at their own pace and in a comfortable environment.

Also, it ensures the fast learners may complete their training sooner which can enhance productivity.

Codemaster is an E-learning application. It will be of great use for those who are dreaming to pursue a career in IT in the field of Software development as it provides the basics for all programming languages.

The website allows the users to register, login, search and learn about their favourite course and leave a suggestion to improve the web site. HTML, CSS and JavaScript are the languages that are used to develop the User Interface (UI). NodeJS and MongoDB are used to store the data in database.

1.2 MODULE DESCRIPTION

Home module:

The home page provides the user with multiple functionalities that can be executed as per the choice of the user. The most commonly used functionalities include courses, login and register. Apart from these three functions, we also have the categories tab, contact us tab, feedback tab and the search tab.

Register module:

Doesn’t have an account register to access the courses page (Register followed by Login).

Login module:

After providing the correct username and password, the user is directed to the Codemaster courses page.

Courses module:

All the programming courses available in our website is listed here. The User can select the required language to learn further about them.

Categories module:

You can choose a category like Latest technologies or web development.

Feedback module:

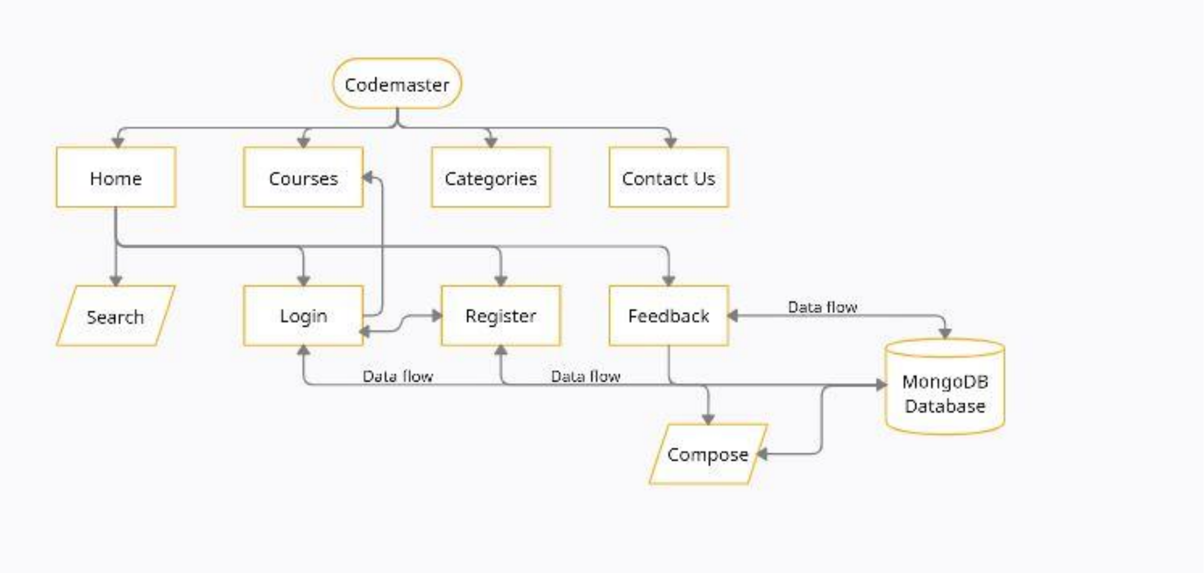
Users can also share their thoughts about improving our website by leaving their suggestions in the feedback form.

Search Module:

Search for a particular language in the search bar.

2.Architecture Diagram:

The First page visible to the user as soon as he opens the codemaster website is the Home page. It consists of many modules like Home, Courses, Categories, Feedback, Search, Register and Login. From Register form the user can access the login form and vice versa. Data from Login, Register and Feedback forms are stored in MongoDB database.



3. SYSTEM DESIGN

3.1. INPUT DESIGN

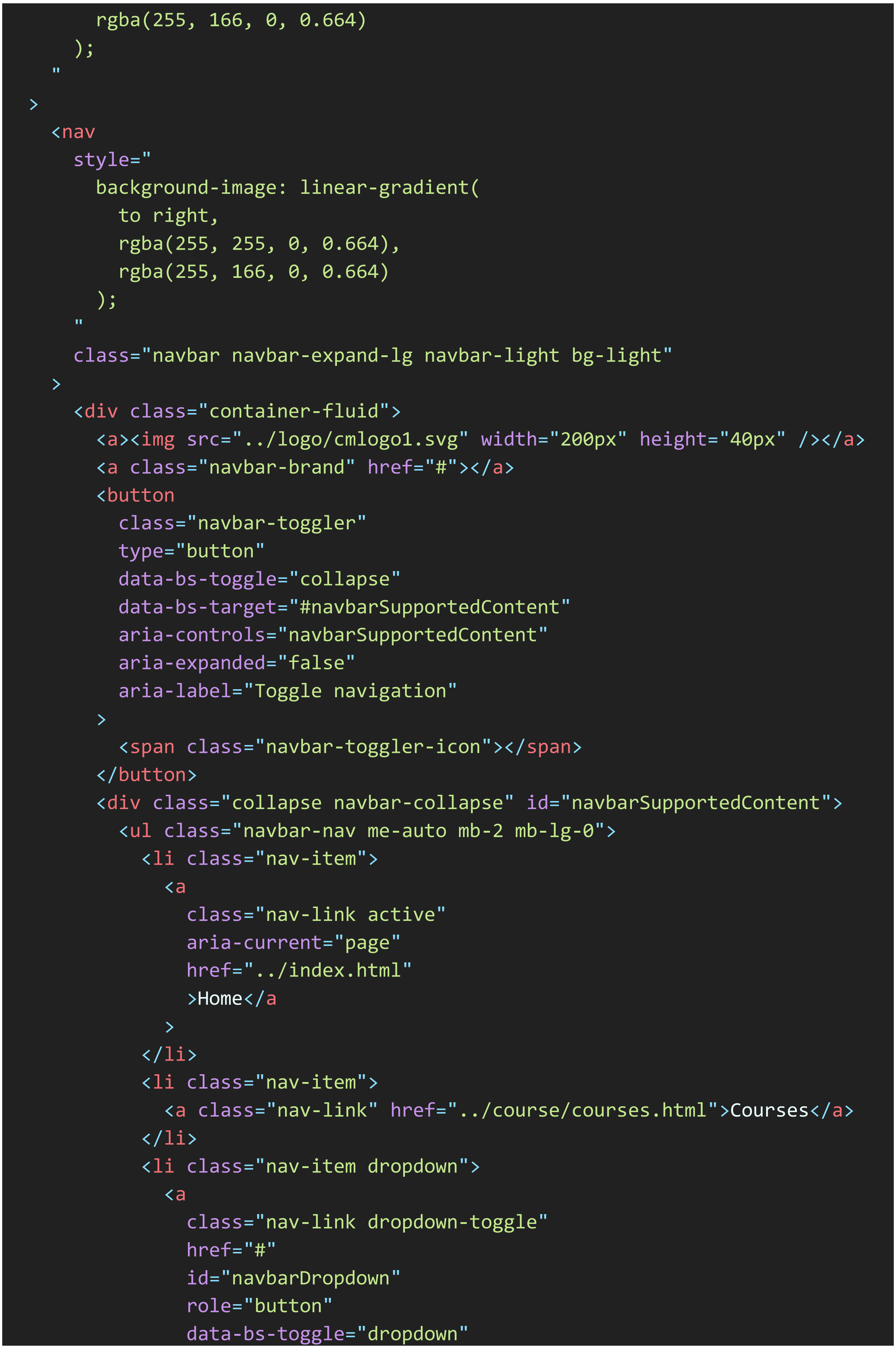
INDEX.HTML

```
<!DOCTYPE html>
<html lang="en">

<head>
  <meta charset="UTF-8"/>
  <title>CodeMaster Beta</title>
  <link rel="icon" href="./logo/titlelogo1.svg" type="image/icon type">
  <link rel="stylesheet" type="type/css" href="style.css">
  <script src="https://cdn.jsdelivr.net/npm/bootstrap@5.0.0-
beta1/dist/js/bootstrap.bundle.min.js"></script>
    <script src="javasc.js"></script>
  <link href="https://cdn.jsdelivr.net/npm/bootstrap@5.0.0-
beta1/dist/css/bootstrap.min.css" rel="stylesheet"/>
</head>


<body style="background-image: linear-
gradient(to right,  rgba(255, 255, 0, 0.664) , rgba(255, 166, 0, 0.664));">
  <nav class="navbar navbar-expand-lg navbar-light">
    <div class="container-fluid">
      <a><img src="./logo/cmlogo1.svg" width="200px" height="40px"></a>
      <a class="navbar-brand" href="#"></a>
      <button class="navbar-toggler" type="button" data-bs-
toggle="collapse" data-bs-target="#navbarSupportedContent"
        aria-controls="navbarSupportedContent" aria-expanded="false" aria-
label="Toggle navigation">
        <span class="navbar-toggler-icon"></span>
      </button>
      <div class="collapse navbar-collapse" id="navbarSupportedContent">
        <ul class="navbar-nav me-auto mb-2 mb-lg-0">
          <li class="nav-item">
            <a class="nav-link active" aria-
current="page" href="./index.html">Home</a>
          </li>
          <li class="nav-item">
            <a class="nav-link" href="./course/courses.html">Courses</a>
          </li>
          <li class="nav-item dropdown">
             <a class="nav-link dropdown-
toggle" href="#" id="navbarDropdown" role="button" data-bs-toggle="dropdown"
              aria-expanded="false">
              Categories
            </a>
            <ul style="background-color:goldenrod;" class="dropdown-menu"
              aria-labelledby="navbarDropdown">
              <li><a class="dropdown-
item" href="#">Latest Technologies</a></li>
              <li><a class="dropdown-item" href="#">Web Development</a></li>
              <li>
                <hr class="dropdown-divider" />
              </li>
              <li>
                <a class="dropdown-item" href="#">Action 3</a>
              </li>
            </ul>
          </li>
          <li class="nav-item">
            <a class="nav-link" href="#">Contact Us</a>
          </li>
        </ul>
        <form class="d-flex">
          <a style="margin-right: 10px;" class="btn btn-outline-
success" href="http://127.0.0.1:4000/">Feedback</a>
          <input class="form-control me-
2" type="search" placeholder="Search" aria-label="Search" />
          <a class="btn btn-outline-
success class=" login" href="http://127.0.0.1:3000/loginform" role="button">Lo
gin</a>
          <a style="margin-left: 5px;" class="btn btn-outline-
success" href="http://127.0.0.1:3000/registerform"
            role="button">Register</a>
        </form>
      </div>
    </div>
  </nav>
  <image width="650" height="540" style="float: right;" src="./logo/homelogo.s
vg"></image>
  <div style="margin-left: 10px;  margin-top:100px;">
    <div class="text" id="LEARN_ANYTIME_ANYWHEREand__ACC">
      <p style="font-family:fantasy; text-align:center; " class="fs-
1">LEARN ANYTIME,
        ANYWHERE <br /> AND <br />ACCLERATE FUTURE</p>
    </div>
    <div clss="text" id="LEARN_ANYTIME_ANYWHEREand__ACC">
      <p class="text" style=" text-align:center;" class="fs-
6">We believe everyone has the capacity to be
```

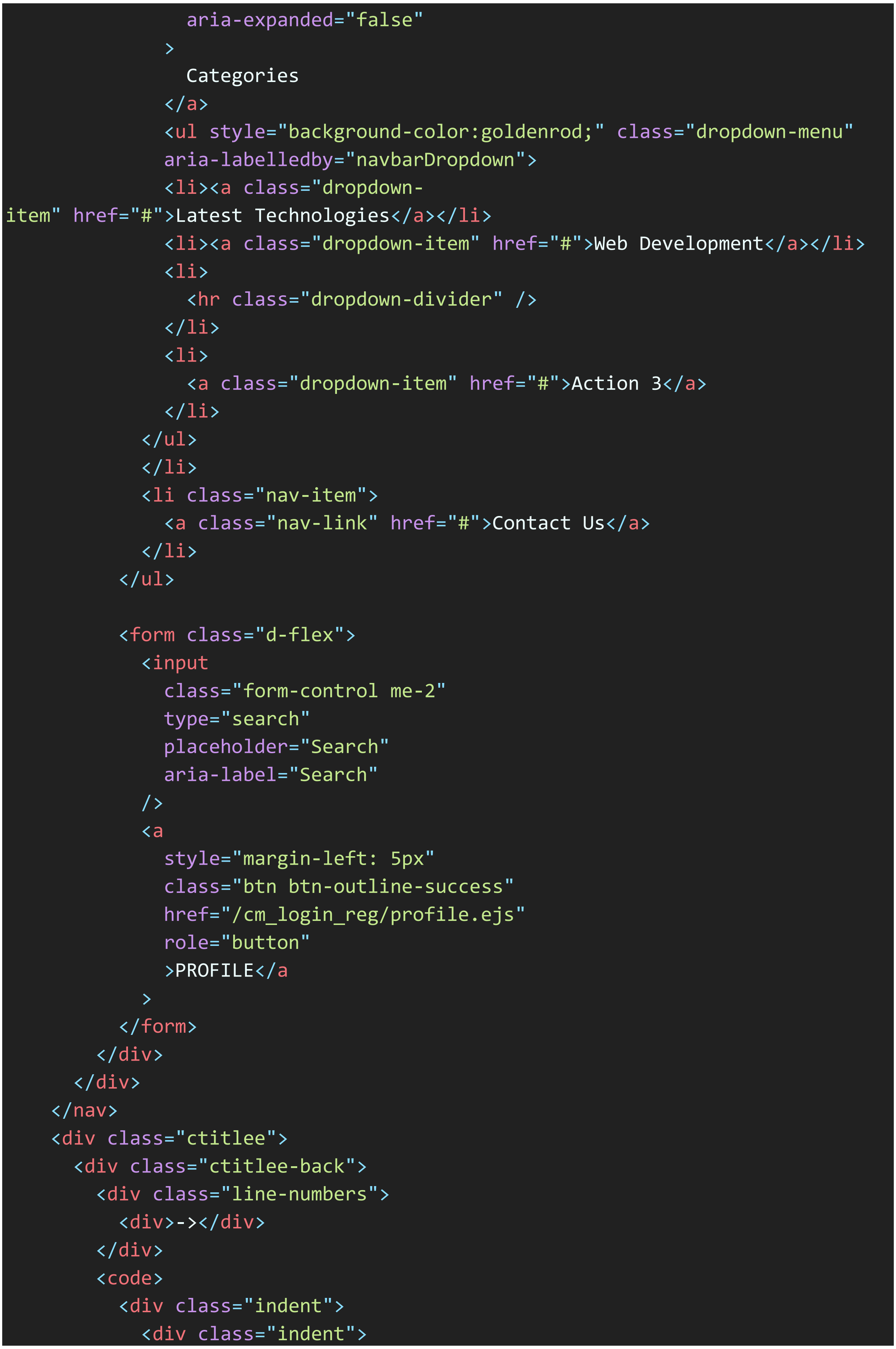
```
        creative.<br />CodeMaster is a place where people develop
        their own potential</p>
    </div>
    <a href="http://127.0.0.1:3000/registerform"><button type="button" class="
btn btn-outline-success" style="border-radius: 40px; letter-
spacing: 2px; margin-left: 12%;">
      Let's Start Learning Now</button></a>
  </div>
</body>
</html>
```

COURSES.HTML

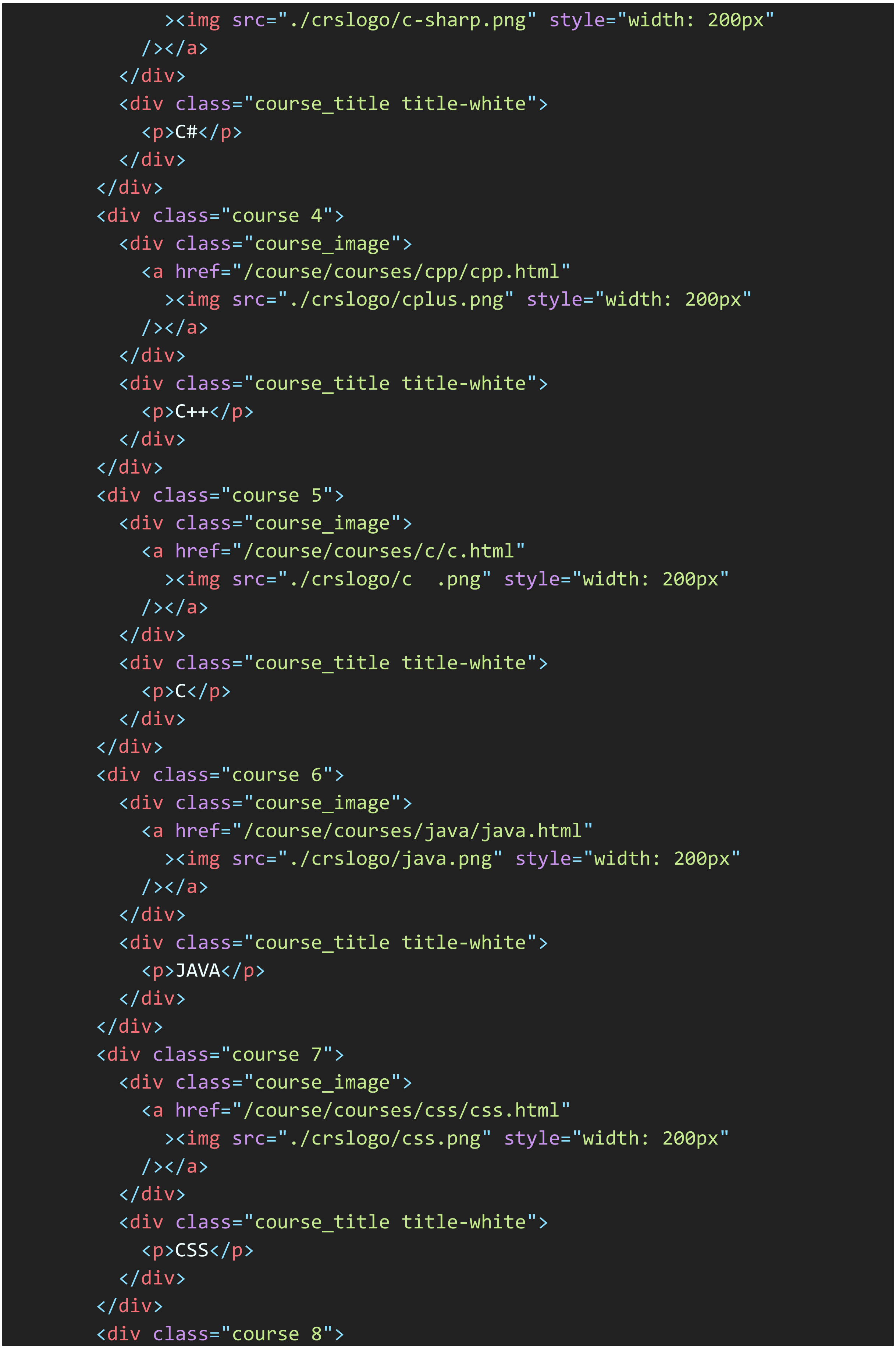
```
<!DOCTYPE html>
<html lang="en">
  <head>
    <meta charset="UTF-8" />
    <meta name="viewport" content="width=device-width, initial-scale=1.0" />
    <title>Courses</title>
    <link rel="icon" href="../logo/titlelogo1.svg" type="image/icon type" />
  </head>
  <script
    src="https://cdn.jsdelivr.net/npm/bootstrap@5.0.0-
beta1/dist/js/bootstrap.bundle.min.js"
    integrity="sha384-
ygbV9kiqUc6oa4msXn9868pTtWMgiQaeYH7/t7LECLbyPA2x65Kgf80OJFdroafW"
    crossorigin="anonymous"
  ></script>
  <link rel="stylesheet" href="../style.css" />
  <link rel="stylesheet" href="course.css" />
  <link
    href="https://cdn.jsdelivr.net/npm/bootstrap@5.0.0-
beta1/dist/css/bootstrap.min.css"
    rel="stylesheet"
    integrity="sha384-
giJF6kkoqNQ00vy+HMDP7azOuL0xtbfIcaT9wjKHr8RbDVddVHyTfAAsrekwKmP1"
    crossorigin="anonymous"
  />
  <body
    style="
      background-image: linear-gradient(
        to right,
        rgba(255, 255, 0, 0.664),
```



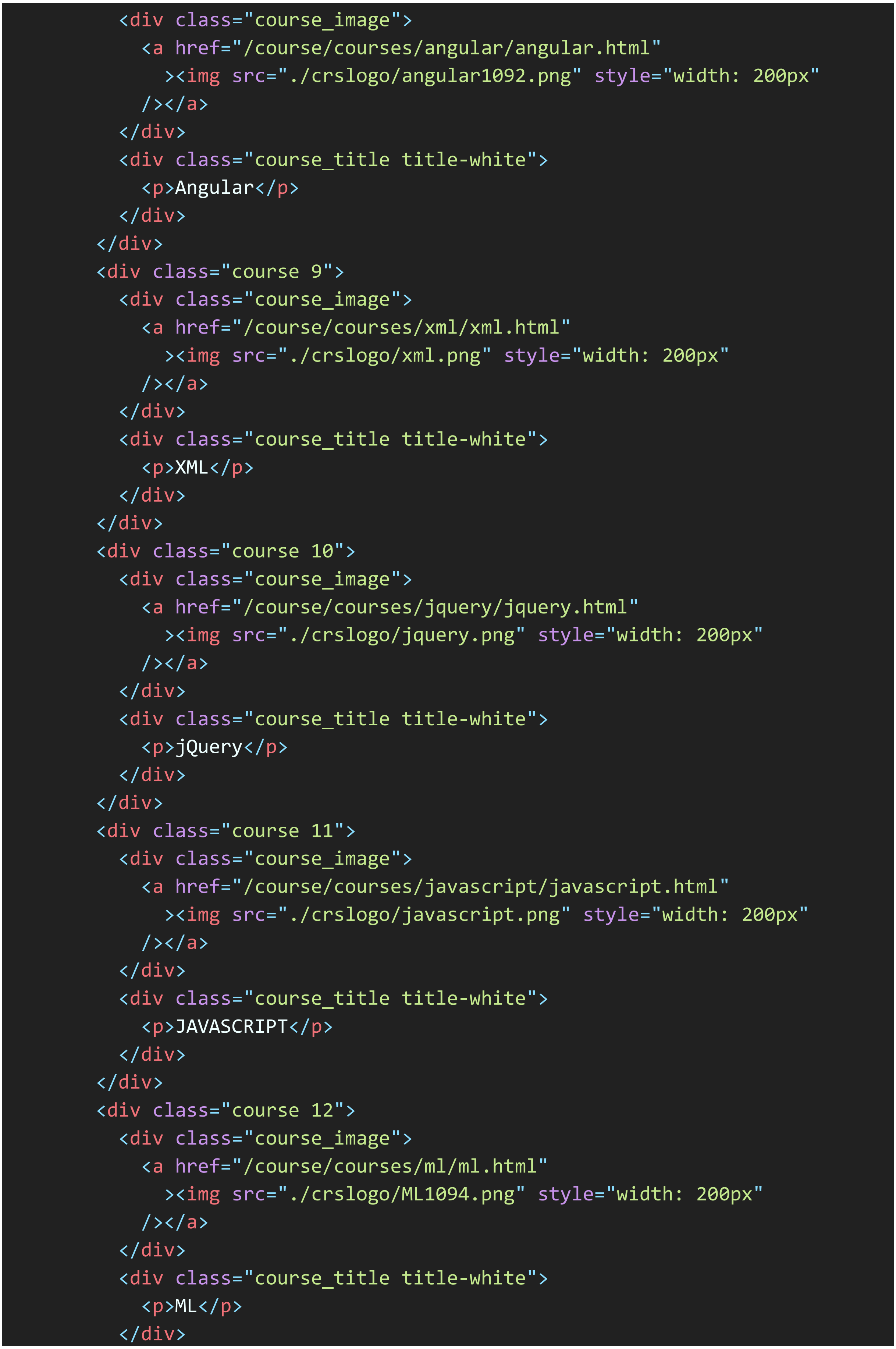
```
      rgba(255, 166, 0, 0.664)
    );
  "
>
  <nav
    style="
      background-image: linear-gradient(
        to right,
        rgba(255, 255, 0, 0.664),
        rgba(255, 166, 0, 0.664)
      );
    "
    class="navbar navbar-expand-lg navbar-light bg-light"
  >
    <div class="container-fluid">
      <a><img src="../logo/cmlogo1.svg" width="200px" height="40px" /></a>
      <a class="navbar-brand" href="#"></a>
      <button
        class="navbar-toggler"
        type="button"
        data-bs-toggle="collapse"
        data-bs-target="#navbarSupportedContent"
        aria-controls="navbarSupportedContent"
        aria-expanded="false"
        aria-label="Toggle navigation"
      >
        <span class="navbar-toggler-icon"></span>
      </button>
      <div class="collapse navbar-collapse" id="navbarSupportedContent">
        <ul class="navbar-nav me-auto mb-2 mb-lg-0">
          <li class="nav-item">
            <a
              class="nav-link active"
              aria-current="page"
              href="../index.html"
              >Home</a
            >
          </li>
          <li class="nav-item">
            <a class="nav-link" href="../course/courses.html">Courses</a>
          </li>
          <li class="nav-item dropdown">
            <a
              class="nav-link dropdown-toggle"
              href="#"
              id="navbarDropdown"
              role="button"
              data-bs-toggle="dropdown"
```



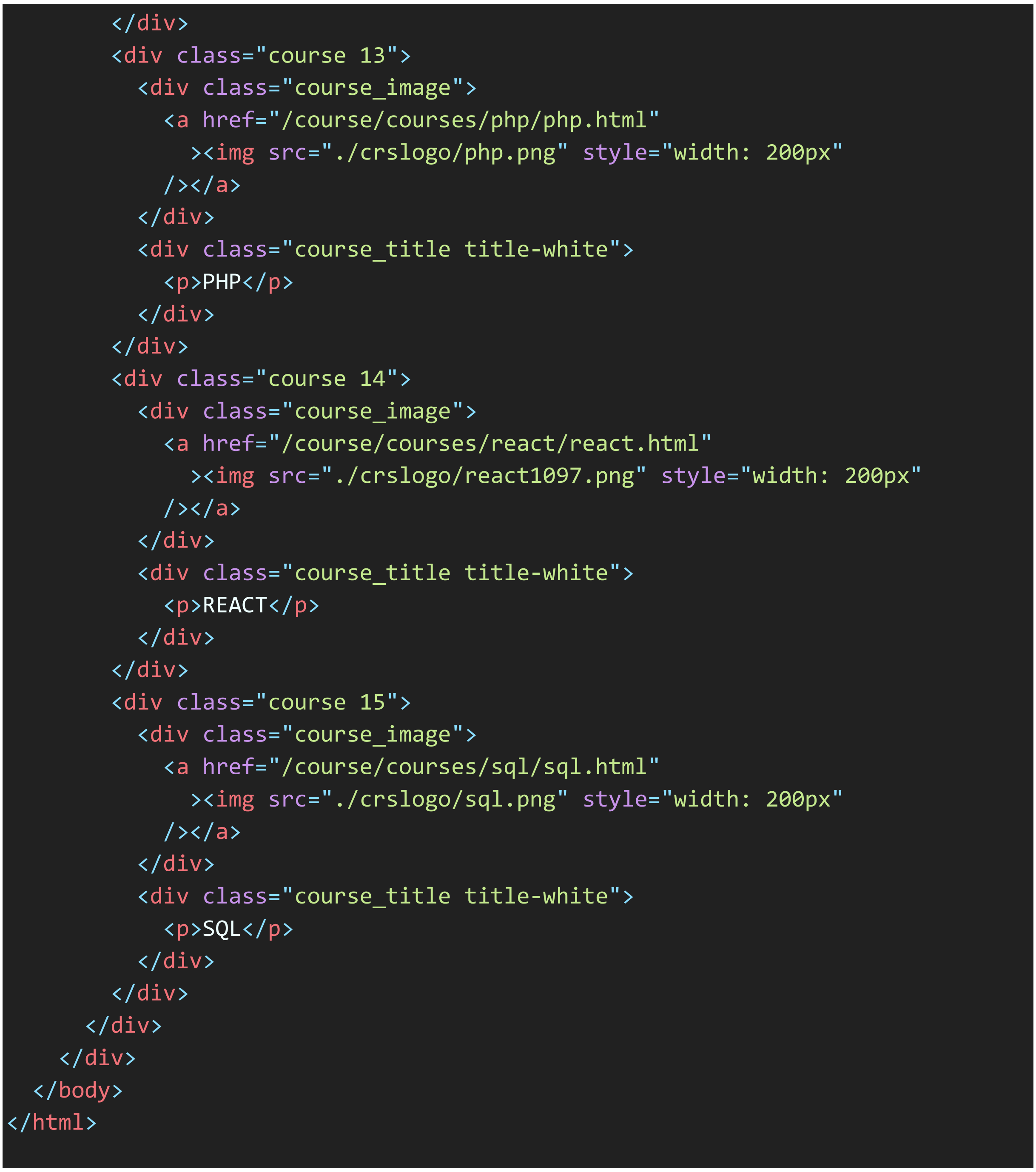
```
                aria-expanded="false"
              >
                Categories
              </a>
              <ul style="background-color:goldenrod;" class="dropdown-menu"
              aria-labelledby="navbarDropdown">
              <li><a class="dropdown-
item" href="#">Latest Technologies</a></li>
              <li><a class="dropdown-item" href="#">Web Development</a></li>
              <li>
                <hr class="dropdown-divider" />
              </li>
              <li>
                <a class="dropdown-item" href="#">Action 3</a>
              </li>
            </ul>
            </li>
            <li class="nav-item">
              <a class="nav-link" href="#">Contact Us</a>
            </li>
          </ul>

          <form class="d-flex">
            <input
              class="form-control me-2"
              type="search"
              placeholder="Search"
              aria-label="Search"
            />
            <a
              style="margin-left: 5px"
              class="btn btn-outline-success"
              href="/cm_login_reg/profile.ejs"
              role="button"
              >PROFILE</a
            >
          </form>
        </div>
      </div>
    </nav>
    <div class="ctitlee">
      <div class="ctitlee-back">
        <div class="line-numbers">
          <div>-></div>
        </div>
        <code>
          <div class="indent">
            <div class="indent">
          <span class="variable"><</span>
          <span class="string"> Learn on the web and on the go.</span
          ><span class="variable">
            You are browsing the best resource for Online Education</span
          >
          <span class="string">/></span>
        </div>
      </div>
    </code>
  </div>
  <div class="ctitlee-front">
    <div class="line-numbers">
      <div>-></div>
    </div>
    <code
      <span class="variable"><</span>
      <span class="string"
        >Select Your Course And Start Learning Now</span
      >
      <span class="variable">/></span></code
    >
  </div>
</div>
<div>
  <div class="courses-list" style="padding-left: 5%">
    <div class="course 1">
      <div class="course_image">
        <a href="/course/courses/python/python.html"
          ><img src="./crslogo/python.png" style="width: 200px"
        /></a>
      </div>
      <div class="course_title title-white">
        <p>Python</p>
      </div>
    </div>
    <div class="course 2">
      <div class="course_image">
        <a href="/course/courses/html/html.html"
          ><img src="./crslogo/html.png" style="width: 200px"
        /></a>
      </div>
      <div class="course_title title-white">
        <p>HTML</p>
      </div>
    </div>
    <div class="course 3">
      <div class="course_image">
        <a href="/course/courses/csharp/csharp.html"
```



```
      ><img src="./crslogo/c-sharp.png" style="width: 200px"
    /></a>
  </div>
  <div class="course_title title-white">
    <p>C#</p>
  </div>
</div>
<div class="course 4">
  <div class="course_image">
    <a href="/course/courses/cpp/cpp.html"
      ><img src="./crslogo/cplus.png" style="width: 200px"
    /></a>
  </div>
  <div class="course_title title-white">
    <p>C++</p>
  </div>
</div>
<div class="course 5">
  <div class="course_image">
    <a href="/course/courses/c/c.html"
      ><img src="./crslogo/c  .png" style="width: 200px"
    /></a>
  </div>
  <div class="course_title title-white">
    <p>C</p>
  </div>
</div>
<div class="course 6">
  <div class="course_image">
    <a href="/course/courses/java/java.html"
      ><img src="./crslogo/java.png" style="width: 200px"
    /></a>
  </div>
  <div class="course_title title-white">
    <p>JAVA</p>
  </div>
</div>
<div class="course 7">
  <div class="course_image">
    <a href="/course/courses/css/css.html"
      ><img src="./crslogo/css.png" style="width: 200px"
    /></a>
  </div>
  <div class="course_title title-white">
    <p>CSS</p>
  </div>
</div>
<div class="course 8">
```



```
          <div class="course_image">
            <a href="/course/courses/angular/angular.html"
              ><img src="./crslogo/angular1092.png" style="width: 200px"
            /></a>
          </div>
          <div class="course_title title-white">
            <p>Angular</p>
          </div>
        </div>
        <div class="course 9">
          <div class="course_image">
            <a href="/course/courses/xml/xml.html"
              ><img src="./crslogo/xml.png" style="width: 200px"
            /></a>
          </div>
          <div class="course_title title-white">
            <p>XML</p>
          </div>
        </div>
        <div class="course 10">
          <div class="course_image">
            <a href="/course/courses/jquery/jquery.html"
              ><img src="./crslogo/jquery.png" style="width: 200px"
            /></a>
          </div>
          <div class="course_title title-white">
            <p>jQuery</p>
          </div>
        </div>
        <div class="course 11">
          <div class="course_image">
            <a href="/course/courses/javascript/javascript.html"
              ><img src="./crslogo/javascript.png" style="width: 200px"
            /></a>
          </div>
          <div class="course_title title-white">
            <p>JAVASCRIPT</p>
          </div>
        </div>
        <div class="course 12">
          <div class="course_image">
            <a href="/course/courses/ml/ml.html"
              ><img src="./crslogo/ML1094.png" style="width: 200px"
            /></a>
          </div>
          <div class="course_title title-white">
            <p>ML</p>
          </div>
```



```
        </div>
        <div class="course 13">
          <div class="course_image">
            <a href="/course/courses/php/php.html"
              ><img src="./crslogo/php.png" style="width: 200px"
            /></a>
          </div>
          <div class="course_title title-white">
            <p>PHP</p>
          </div>
        </div>
        <div class="course 14">
          <div class="course_image">
            <a href="/course/courses/react/react.html"
              ><img src="./crslogo/react1097.png" style="width: 200px"
            /></a>
          </div>
          <div class="course_title title-white">
            <p>REACT</p>
          </div>
        </div>
        <div class="course 15">
          <div class="course_image">
            <a href="/course/courses/sql/sql.html"
              ><img src="./crslogo/sql.png" style="width: 200px"
            /></a>
          </div>
          <div class="course_title title-white">
            <p>SQL</p>
          </div>
        </div>
      </div>
    </div>
  </body>
</html>
```

LOGIN.JS

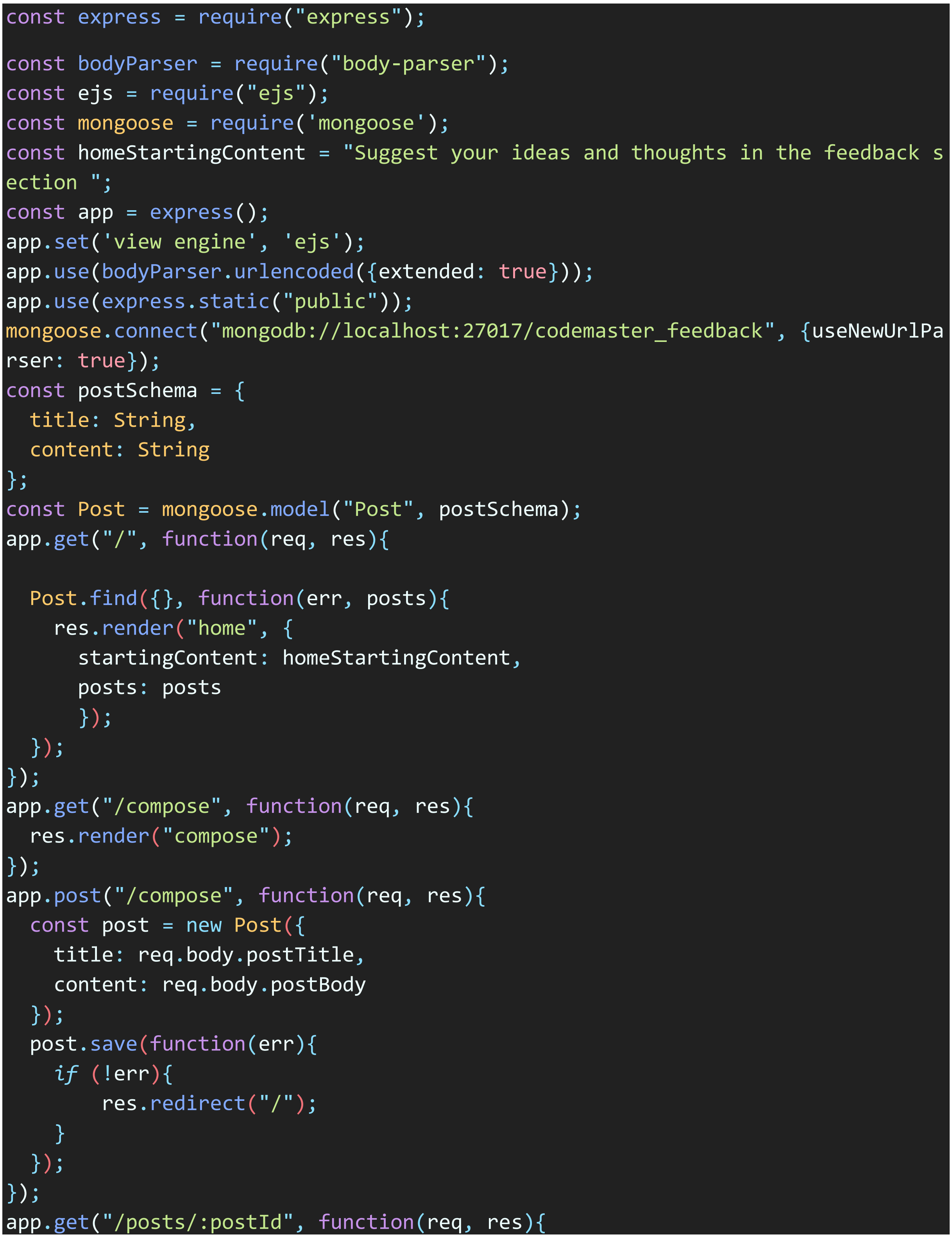
```
var express = require('express');
var bodyParser = require('body-parser');
var session = require('express-session');
var path = require('path');
var usersModel = require('./usermodel');
const moongoseUtils = require('./moongoseUtils');
var app = express();
app.use(session({
    secret: 'secret',
    resave: true,
    saveUninitialized: true
}));
app.use(bodyParser.urlencoded({ extended: true }));
app.use(bodyParser.json());

app.get('/', function (request, response) {
    response.sendFile(path.join(__dirname + '/register.html'));
});
app.get('/registerform', function (request, response) {
    response.sendFile(path.join(__dirname + '/register.html'));
});
app.get('/loginform', function (request, response) {
    response.sendFile(path.join(__dirname + '/login.html'));
});
app.post('/register', async function (request, response) {
    let reqData = request.body;
    reqData.createdOn = new Date();
    let addUser = new usersModel(reqData);
    await addUser.save().then(function (data) {
        response.redirect('http://127.0.0.1:3000/loginform');
    }).catch(function (error) {
        let errorMessage = moongoseUtils.mongooseErrorHandler(error, reqData.u
serName);
        response.send(errorMessage);
    });
});
app.post('/login', async function (request, response) {
    const userName = request.body.userName;
    const password = request.body.password;
    await usersModel.findOne({ userName: userName, password: password }).exec(
).then(function (data) {
        request.session.loggedin = data != null ? true : false;
        request.session.username = userName;
        response.redirect('/home');
    }).catch(function (error) {
        request.session.loggedin = false;
        request.session.username = userName;
        response.redirect('/home');
    });
});
app.get('/home', function (request, response) {
    if (request.session.loggedin) {
        response.redirect('http://127.0.0.1:5500/course/courses.html');
    }
        else {
        response.send('Invalid Username & Password!');
    }
    response.end();
});
app.listen(3000);
```

COMPILER.HTML

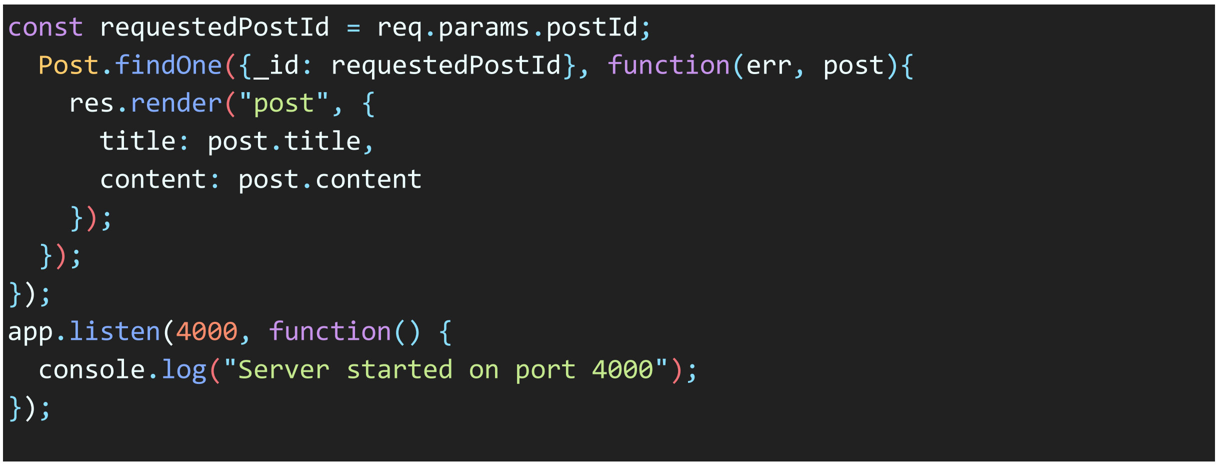
```
<!DOCTYPE html>
<html>
    <title>java compiler</title>
    <link
    href="https://cdn.jsdelivr.net/npm/bootstrap@5.0.0-
beta1/dist/css/bootstrap.min.css"
    rel="stylesheet"/>
<head>
    <link rel="icon" href="/logo/titlelogo1.svg" type="image/icon type" />
</head>
<body class="container">
<div>
    <iframe height="800px" width="100%" src="https://repl.it/@ajithshah/Bouncy
RustySymbol?lite=true" scrolling="no" frameborder="no" allowtransparency="true
" allowfullscreen="true" sandbox="allow-forms allow-pointer-lock allow-
popups allow-same-origin allow-scripts allow-modals"></iframe>
</div>
</body>
<style>
body{
    background-image: linear-
gradient(to right,  rgba(255, 255, 0, 0.664) , rgba(255, 166, 0, 0.664));"
    padding-bottom: 20%;
}
</body>
</style>
</html>
```

FEEDBACK FORM

APP.JS

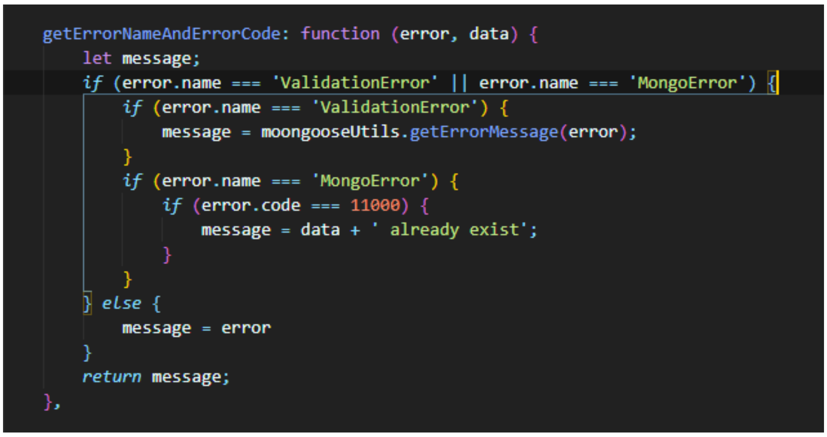


```
const express = require("express");

const bodyParser = require("body-parser");
const ejs = require("ejs");
const mongoose = require('mongoose');
const homeStartingContent = "Suggest your ideas and thoughts in the feedback s
ection ";
const app = express();
app.set('view engine', 'ejs');
app.use(bodyParser.urlencoded({extended: true}));
app.use(express.static("public"));
mongoose.connect("mongodb://localhost:27017/codemaster_feedback", {useNewUrlPa
rser: true});
const postSchema = {
  title: String,
  content: String
};
const Post = mongoose.model("Post", postSchema);
app.get("/", function(req, res){

  Post.find({}, function(err, posts){
    res.render("home", {
      startingContent: homeStartingContent,
      posts: posts
      });
  });
});
app.get("/compose", function(req, res){
  res.render("compose");
});
app.post("/compose", function(req, res){
  const post = new Post({
    title: req.body.postTitle,
    content: req.body.postBody
  });
  post.save(function(err){
    if (!err){
        res.redirect("/");
    }
  });
});
app.get("/posts/:postId", function(req, res){
```



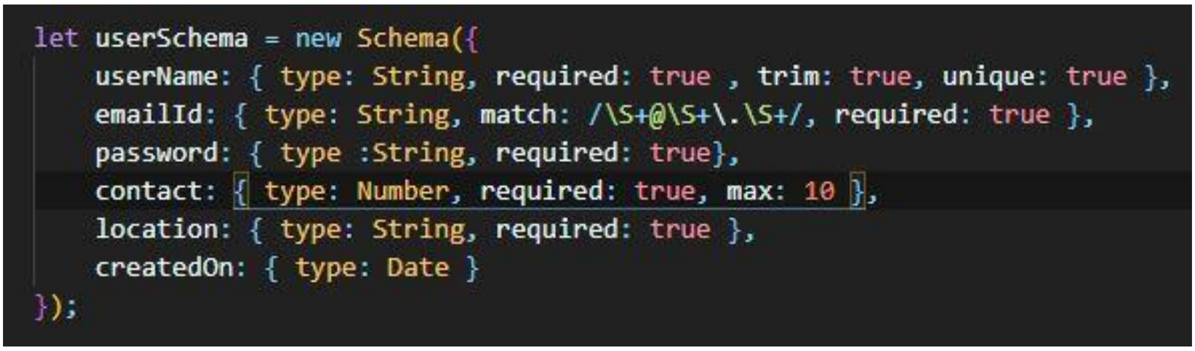
```
const requestedPostId = req.params.postId;
  Post.findOne({_id: requestedPostId}, function(err, post){
    res.render("post", {
      title: post.title,
      content: post.content
    });
  });
});
app.listen(4000, function() {
  console.log("Server started on port 4000");
});
```

Won’t allow user with same **user name** to register.



```
getErrorNameAndErrorCode: function (error, data) {
    let message;
    if (error.name === 'ValidationError' || error.name === 'MongoError') {
        if (error.name === 'ValidationError') {
            message = moongooseUtils.getErrorMessage(error);
        }
        if (error.name === 'MongoError') {
            if (error.code === 11000) {
                message = data + ' already exist';
            }
        }
    } else {
        message = error
    }
    return message;
},
```

Some **restrictions** are added for users to create a new account.

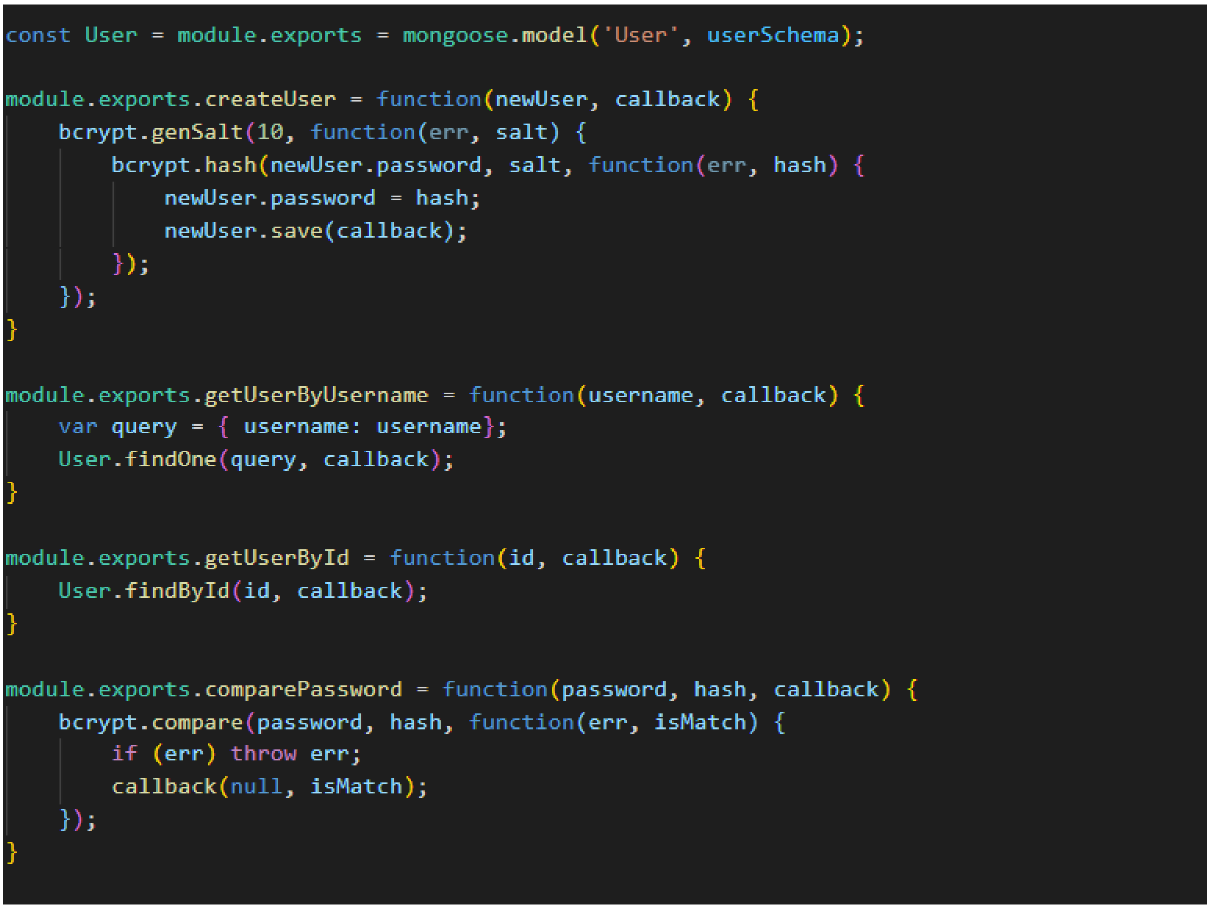


```
let userSchema = new Schema({
    userName: { type: String, required: true , trim: true, unique: true },
    emailId: { type: String, match: /\S+@\S+\.\S+/, required: true },
    password: { type :String, required: true},
    contact: { type: Number, required: true, max: 10 },
    location: { type: String, required: true },
    createdOn: { type: Date }
});
```

Encryption for passwords

The passwords given by the users for their respective account during registration has been protected with double standard encryption which are highly profound to be safe rather than storing them in the given manner itself.

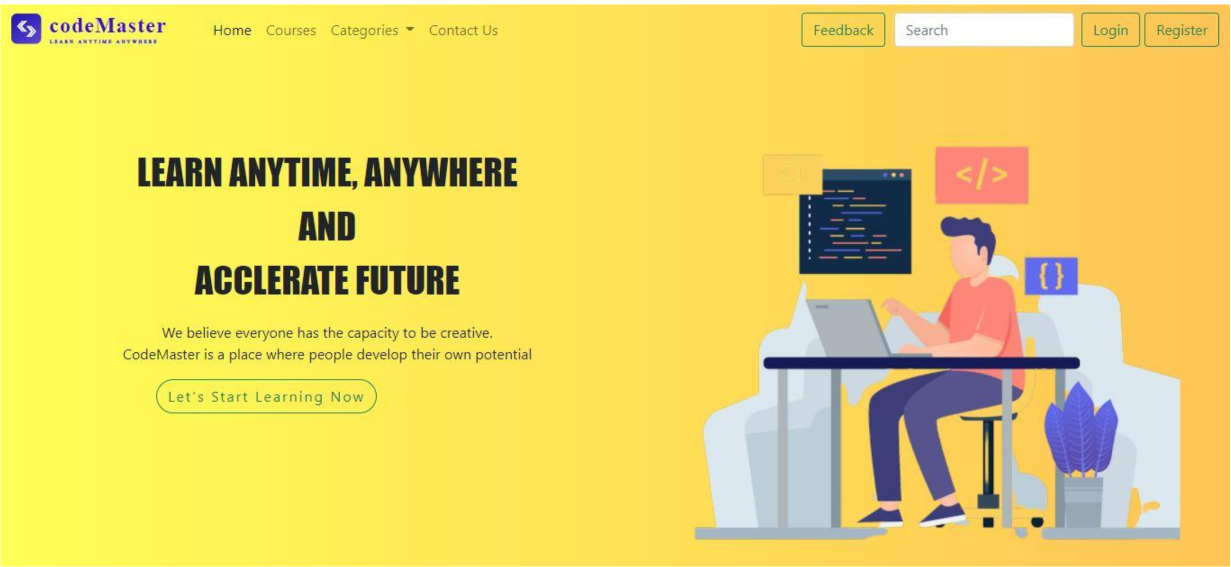
The encryption methods that has been used to crypt the passwords were created using the NPM package BCRYPT for both the salting and hashing of the passwords.



```
const User = module.exports = mongoose.model('User', userSchema);

module.exports.createUser = function(newUser, callback) {
    bcrypt.genSalt(10, function(err, salt) {
        bcrypt.hash(newUser.password, salt, function(err, hash) {
            newUser.password = hash;
            newUser.save(callback);
        });
    });
}

module.exports.getUserByUsername = function(username, callback) {
    var query = { username: username};
    User.findOne(query, callback);
}

module.exports.getUserById = function(id, callback) {
    User.findById(id, callback);
}

module.exports.comparePassword = function(password, hash, callback) {
    bcrypt.compare(password, hash, function(err, isMatch) {
        if (err) throw err;
        callback(null, isMatch);
    });
}
```

3.2. OUTPUT DESIGN

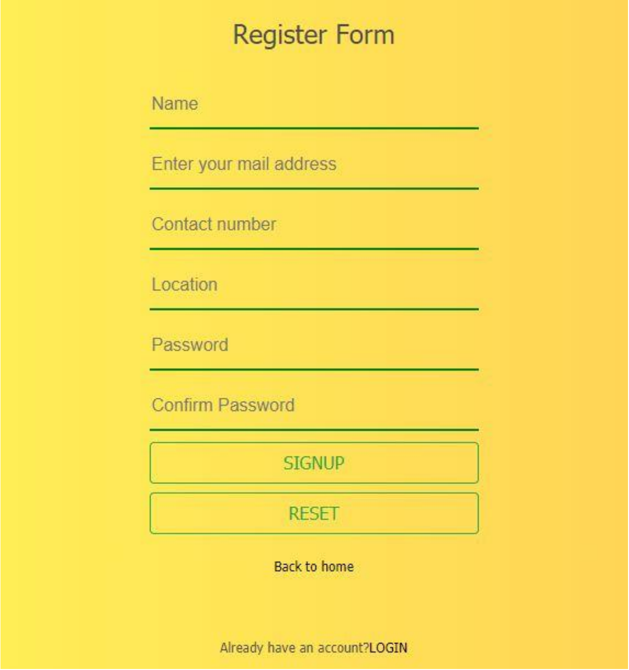
HOME PAGE



LEARN ANYTIME, ANYWHERE
AND
ACCLERATE FUTURE

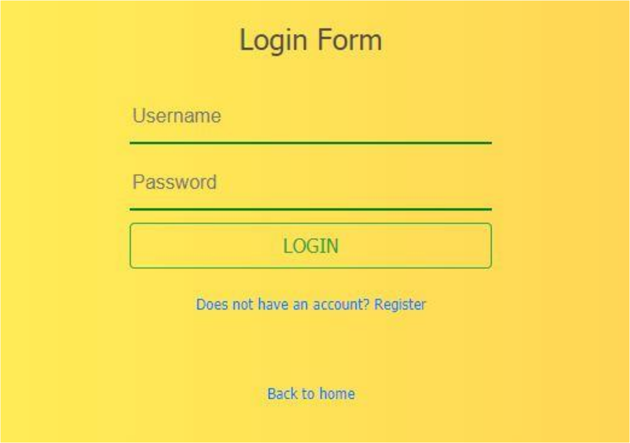
We believe everyone has the capacity to be creative.
CodeMaster is a place where people develop their own potential

REGISTER FORM


Register Form

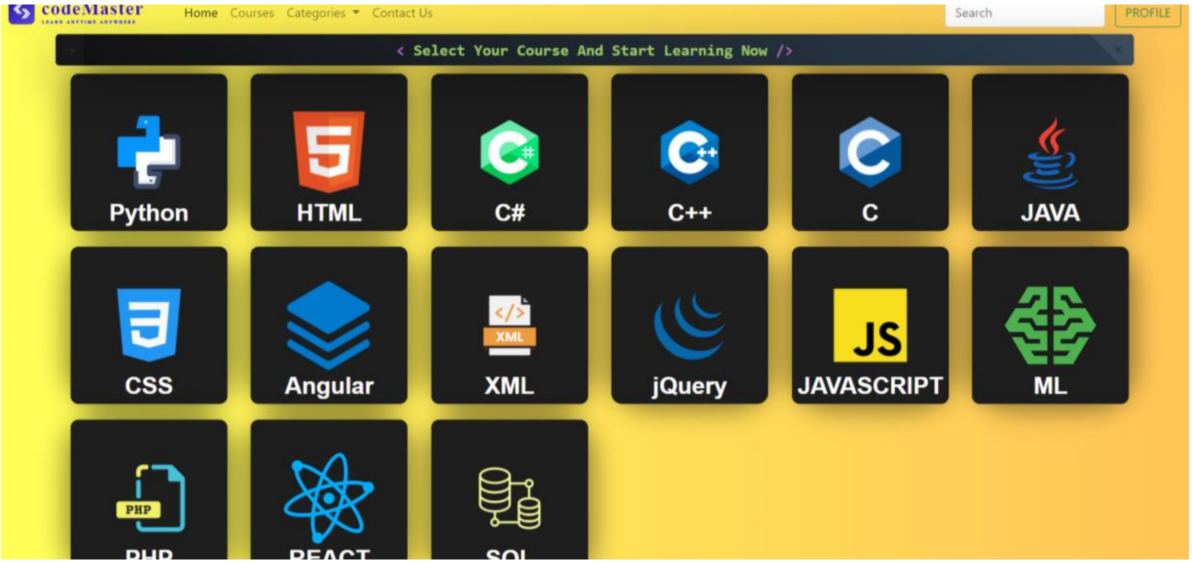
Already have an account?LOGIN

LOGIN FORM



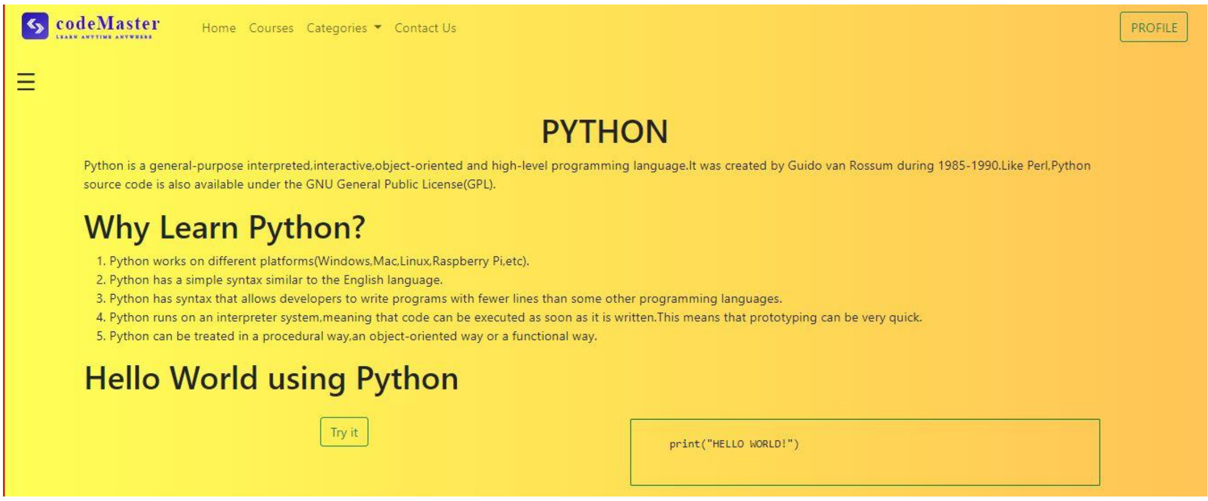
COURSES PAGE

The courses are C, C++, JAVA, PYTHON, HTML, PHP, RUBY, etc…



User can take the following steps:

- Learn every topic given with description and programs.



PYTHON

Python is a general-purpose interpreted,interactive,object-oriented and high-level programming language.It was created by Guido van Rossum during 1985-1990.Like Perl,Python source code is also available under the GNU General Public License(GPL).

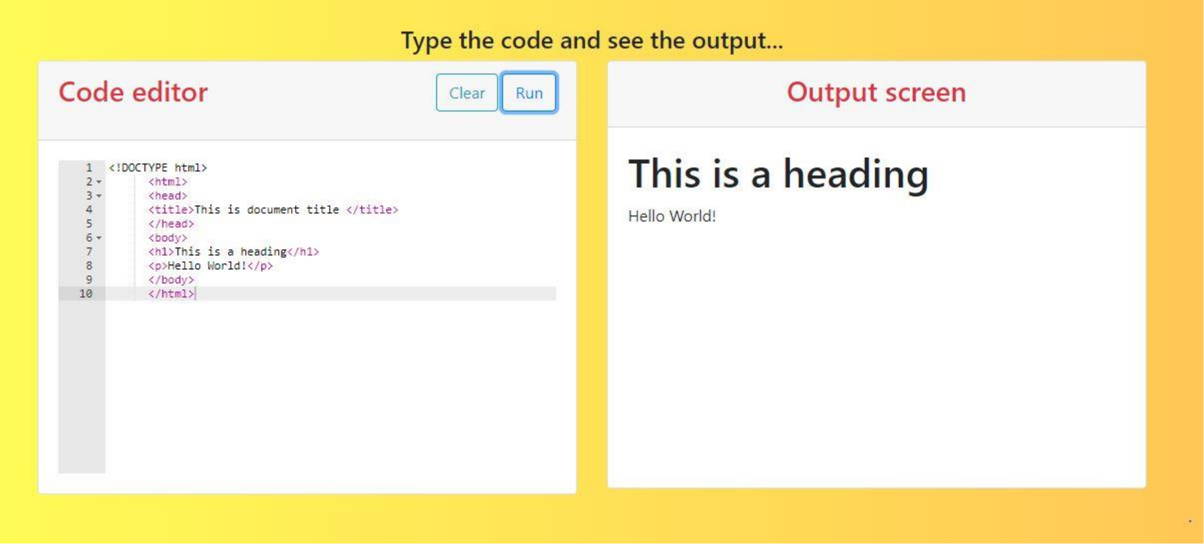
Why Learn Python?

1. Python works on different platforms(Windows,Mac,Linux,Raspberry Pi,etc).
2. Python has a simple syntax similar to the English language.
3. Python has syntax that allows developers to write programs with fewer lines than some other programming languages.
4. Python runs on an interpreter system,meaning that code can be executed as soon as it is written.This means that prototyping can be very quick.
5. Python can be treated in a procedural way,an object-oriented way or a functional way.

Hello World using Python

```
print("HELLO WORLD!")
```

- Quick and easy way to compile programs online. The user-friendly online compilers that allows you to write codes and run it.



Type the code and see the output...

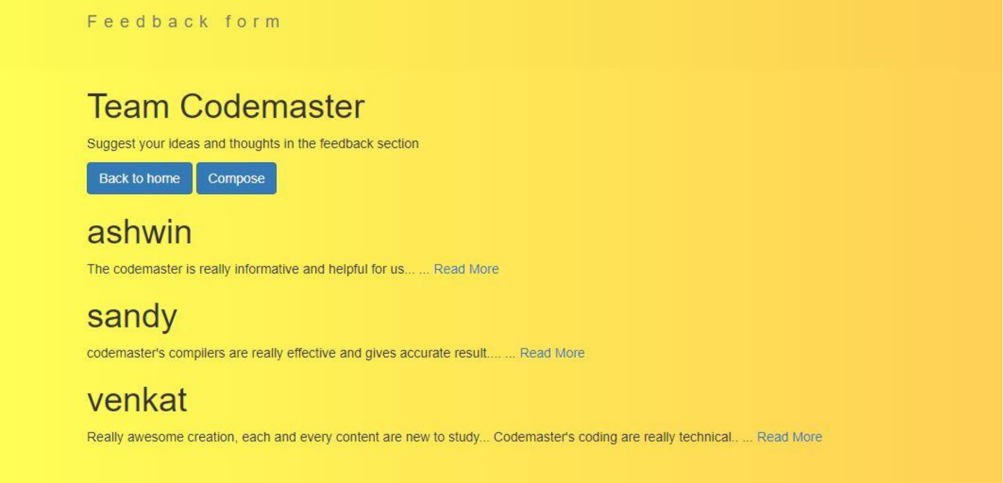
```
<!DOCTYPE html>
      <html>
      <head>
      <title>This is document title </title>
      </head>
      <body>
      <h1>This is a heading</h1>
      <p>Hello World!</p>
      </body>
      </html>
```

This is a heading

Hello World!

FEEDBACK FORM

Users can also share their thoughts about improving our website by leaving their suggestions in the feedback form.



Team Codemaster

Suggest your ideas and thoughts in the feedback section

ashwin

The codemaster is really informative and helpful for us... ... Read More

sandy

codemaster's compilers are really effective and gives accurate result.... ... Read More

venkat

Really awesome creation, each and every content are new to study... Codemaster's coding are really technical.. ... Read More

3.3. DATABASE DESIGN

A database is the structured collection of data. It may be anything from simple online shopping to a picture gallery collection, user’s data and many more information on the available internet. To add, access and process data stored in the computer level side we need some database management system either a relational or non-relational database management.

Codemaster has been made with the help of non-relational database called **mongoDB** to store and retrieve the data given by the users during their login or signup scenarios.

To reduce the use of large number of codes given by the mongoDB to connect it with the various modules to store any data, the project has been designed and implemented for using the framework of the mongoDB.

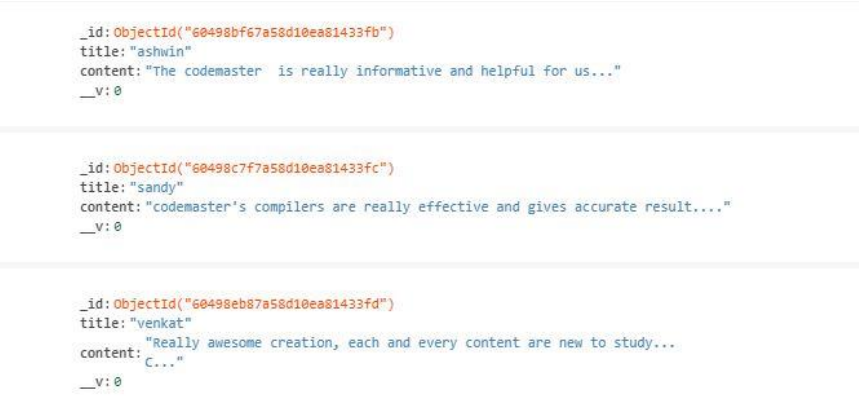
The login, register and feedback forms use the full functionality of the mongoDB to handle the contents of the project.

The login form at first checks whether the user exists or not if not a alert is thrown for the user to register.

Two users cannot have the same user name as the program and its model prevents the new user from using the existing username given by the previous user.

.The information given in the page by the users such as name ,phone number and many more are provided with validation so that they may not end adding unwanted stuffs that are irrelevant to both their profile and the content storage space.

USERS FEEDBACK IN MongoDB



```
_id: ObjectId("60498bf67a58d10ea81433fb")
title: "ashwin"
content: "The codemaster  is really informative and helpful for us..."
__v: 0

_id: ObjectId("60498c7f7a58d10ea81433fc")
title: "sandy"
content: "codemaster's compilers are really effective and gives accurate result...."
__v: 0

_id: ObjectId("60498eb87a58d10ea81433fd")
title: "venkat"
content: "Really awesome creation, each and every content are new to study...
         c..."
__v: 0
```

4. SYSTEM TESTING AND IMPLEMENTATION

4.1 SYSTEM TESTING

TESTING DEFINITON

The process or method of finding error/s in a software application or program so that the application functions according to the end user's requirement is called software testing.

TESTING OBJECTIVE

The objective of testing an application is to test the application for all possible errors and find a way to eliminate it.

TYPES OF TESTING

1.Unit testing:

Unit testing involves the design of test cases that validate that the internal program logic is functioning properly, and that program inputs produce valid outputs. All decision branches and internal code flow should be validated. It is the testing of individual software units of the application. It is done after the completion of an individual unit before integration. This is a structural testing, that relies on knowledge of its construction and is invasive. Unit tests perform basic tests at component level and test a specific business process, application, and/or system configuration. Unit tests ensure that each unique path of a business process performs accurately to the documented specifications and contains clearly defined inputs and expected results.

2.Integration testing:

Integration tests are designed to test integrated software components to determine if they actually run as one program. Testing is event driven and is more concerned with the basic outcome of screens or fields. Integration tests demonstrate that although the components were individually satisfaction, as shown by successfully unit testing, the combination of components is correct and consistent. Integration testing is specifically aimed at exposing the problems that arise from the combination of components.

3.Functional test:

Functional tests provide systematic demonstrations that functions tested are available as specified by the business and technical requirements, system documentation, and user manuals.

Functional testing is centered on the following items:

Valid Input : identified classes of valid input must be accepted.
Invalid Input : identified classes of invalid input must be rejected.
Functions : identified functions must be exercised.
Output : identified classes of application outputs must be exercised.
Systems/Procedures: interfacing systems or procedures must be invoked.

Organization and preparation of functional tests is focused on requirements, key functions, or special test cases. In addition, systematic coverage pertaining to identify Business process flows; data fields, predefined processes, and successive processes must be considered for testing. Before functional testing is complete, additional tests are identified and the effective value of current tests is determined.

4.System testing:

System testing ensures that the entire integrated software system meets requirements. It tests a configuration to ensure known and predictable results. An example of system testing is the configuration-oriented system integration test. System testing is based on process descriptions and flows, emphasizing pre-driven process links and integration points

5.White Box Testing:

White Box Testing is a testing in which in which the software tester has knowledge of the inner workings, structure and language of the software, or at least its purpose. It is purpose. It is used to test areas that cannot be reached from a black box level.

6.Black Box Testing:

Black Box Testing is testing the software without any knowledge of the inner workings, structure or language of the module being tested. Black box tests, as most other kinds of tests, must be written from a definitive source document, such as specification or requirements document, such as specification or requirements document. It is a testing in which the software under test is treated, as a black box .you cannot "see" into it. The test provides inputs and responds to outputs without considering how the software works.

7. Unit Testing:

Unit testing is usually conducted as part of a combined code and unit test phase of the software lifecycle, although it is not uncommon for coding and unit testing to be conducted as two distinct phases.

8.Acceptance Testing:

User Acceptance Testing is a critical phase of any project and requires significant participation by the end user.

Test strategy and approach

Field testing will be performed manually and functional tests will be written in detail.

Test objectives

- All field entries must work properly.
- Pages must be activated from the identified link.
- The entry screen, messages and responses must not be delayed.

Features to be tested

- Verify that the entries are of the correct format
- No duplicate entries should be allowed
- All links should take the user to the correct page.

Test Results:

All the test cases mentioned above passed successfully. No defects encountered.

4.2 SYSTEM IMPLEMENTATION

Implementation is the stage in the project where theoretical design is turned into a working system and is giving confidence on the new system for the user that it will work efficiently and effectively. It involves careful planning, investigation of the current system and its constraints on implementation, design of methods to achieve the changeover, an evaluation of change over methods. Apart from planning major task of preparing the implementation are education and training users. The implementation process begins with preparing a plan for the implementation of the system.

According to this plan the activities are to be carried out, discussion made regarding the equipment and resources and the additional equipment has to be acquired to implement the new system. In network backup system no additional resources are needed. Implementation is the final and the most important phase. The most critical stage in achieving a successful new system is giving the users confidence that the new system will work and be effective. The system can be implemented only after thorough testing is done and if it is found to be working according to the specification. This method also offers the greatest security since the old system can take over if the errors are found or inability to handle certain type of transactions while using the new system. As the part of system testing, we execute the program with the intent of finding errors and missing operations and also a complete verification to determine whether the objective are met and the user requirements are satisfied. The ultimate aim is quality assurance.

5.CONCLUSION AND FUTURE ENHANCEMENT

5.1. CONCLUSION

This website will be helpful for students or beginners who are willing to learn basic programming concepts as well as for programmers who would like to enhance their knowledge from intermediate to advanced. They are also exposed to several compilation platforms. Therefore, they can execute and learn coding more efficiently.

5.2. FUTURE ENHANCEMENT

- We will keep on adding the current languages up to date.
- Conduct more mock tests and quiz.
- Register form will be designed for new user to create their profile and get updates and alerts like newsletter or quiz session timings.

6.REFERENCES

- https://www.w3schools.com
- https://stackoverflow.com
- https://www.javatpoint.com
- https://www.tutorialspoint.com