

**St. Francis Institute of Technology**  
**Borivli (West), Mumbai-400103**  
**Department of Information Technology**

**Experiment – 15**

**1. Aim: To implement dynamic website using alternative paradigm**

**2. Objective:** After performing the experiment, the students will be able to understand and implement–

- Design static website using HTML, CSS as client side programming
- Use JavaScript as server side programming

**3. Lab objective mapped:** To understand and implement alternative programming paradigm (PSO2) (PO1)

**4. Prerequisite: Basics of HTML scripting language**

**5. Requirements:** The following are the requirements –

- Notepad
- Web-browser (Preferred is Chrome)
- SQL

**6. Pre-Experiment Theory:**

In this part students need to write important characteristics

Characteristics of HTML:

1. It is the language which can be easily understood and can be modified
2. Effective presentations can be made with the HTML with the help of its all formatting tags.
3. It provides the more flexible way to design web pages along with the text.
4. Links can also be added to the web pages so it helps the readers to browse the information of their interest.
5. You can display HTML documents on any platforms such as Macintosh, Windows and Linux etc

**Characteristics of CSS:**

1. CSS saves time – You can write CSS once and then reuse the same sheet in multiple HTML pages. You can define a style for each HTML element and apply it to as many Web pages as you want.
2. Pages load faster – If you are using CSS, you do not need to write HTML tag attributes every time. Just write one CSS rule of a tag and apply it to all the occurrences of that tag. So less code means faster download times.
3. Easy maintenance – To make a global change, simply change the style, and all elements in all the web pages will be updated automatically.
4. Superior styles to HTML – CSS has a much wider array of attributes than HTML, so you can give a far better look to your HTML page in comparison to HTML attributes.
5. Multiple Device Compatibility – Style sheets allow content to be optimized for more than one type of device. By using the same HTML document, different versions of a website can be presented for handheld devices such as PDAs and cell phones or for printing.

## 7. Laboratory Exercise

### A. Program Code

Design a website to take inputs from the client and store the inputs in database

#### 1. login.html

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>LOGIN</title>
  <link rel="stylesheet"
href="https://cdn.jsdelivr.net/npm/bootstrap@4.5.3/dist/css/bootstrap.min.css"
integrity="sha384-TX8t27EcRE3e/ihU7zmQxVncDAy5uIKz4rEkgIXeMed4M0jlfIDPvg6uqKI2xXr
2" crossorigin="anonymous">
</head>
<body>

  <div class="row">
    <aside class="col-sm-4"></aside>
    <aside class="col-sm-4">
      <div class="card" style="margin-top: 30%;">
        <article class="card-body">
          <h4 class="card-title text-center mb-4 mt-1">Login</h4>
          <hr>
          <form action="auth" method="POST">
            <div class="form-group">
              <label>User Name</label>
              <input type="text" class="form-control" id="exampleInputEmail1"
aria-describedby="emailHelp" name="username" placeholder="Enter User Name">
            </div>
            <div class="form-group">
              <label>Password</label>
              <input type="password" class="form-control"
id="exampleInputPassword1" name="password" placeholder="Enter Password">
            </div>
            <div class="form-group">
              <button type="submit" class="btn btn-primary
btn-block">Submit</button>
            </div>
            <div class="form-group">
```

```

        <a href="/register" class="form-text text-muted">Click here
to create Account</a>
    </div>
</form>
</article>
</div>
</aside>
</div>

<script src="https://code.jquery.com/jquery-3.5.1.slim.min.js"
integrity="sha384-DfXdz2htPH0lsSSs5nCTpuj/zy4C+OGpamoFVy38MVBnE+IbbVYUew+OrCXaRkf
j" crossorigin="anonymous"></script>
<script
src="https://cdn.jsdelivr.net/npm/bootstrap@4.5.3/dist/js/bootstrap.bundle.min.js
"
integrity="sha384-ho+j7jyWK8fNQe+A12Hb8AhRq26LrZ/JpcUGGOn+Y7RsweNrtN/tE3MoK7ZeZDy
x" crossorigin="anonymous"></script>
</body>
</html>

```

## 2. register.html

```

<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Register</title>
    <link rel="stylesheet"
href="https://cdn.jsdelivr.net/npm/bootstrap@4.5.3/dist/css/bootstrap.min.css"
integrity="sha384-TX8t27EcRE3e/ihU7zmQxVncDAy5uIKz4rEkGIXeMed4M0jl1fIDPvg6uqKI2xXr
2" crossorigin="anonymous">
</head>
<body>
    <div class="row">
        <aside class="col-sm-4"></aside>
        <aside class="col-sm-4">
            <div class="card" style="margin-top: 10%;">
                <article class="card-body">
                    <h4 class="card-title text-center mb-4 mt-1">Register</h4>
                    <hr>
                    <form action="update" method="POST">
                        <div class="form-group">
                            <label>Email address</label>

```

```

        <input type="email" class="form-control"
id="exampleInputEmail1" aria-describedby="emailHelp" name="email"
placeholder="Enter User Email">
    </div>
    <div class="form-group">
        <label>User Name</label>
        <input type="text" class="form-control"
id="exampleInputEmail1" aria-describedby="emailHelp" name="username"
placeholder="Enter User Name">
    </div>
    <div class="form-group">
        <label>Password</label>
        <input type="password" class="form-control"
id="exampleInputPassword1" name="password" placeholder="Enter Password">
    </div>
    <div class="form-group">
        <label>Confirm Password</label>
        <input type="password" class="form-control"
id="exampleInputPassword1" name="password1" placeholder="Confirm Password">
    </div>
    <div class="form-group">
        <button type="submit" class="btn btn-primary btn-block">
Register </button>
    </div>
    <div class="form-group">
        <a href="/" class="form-text text-muted">Already have an
Account? Click here to Login</a>
    </div>
</form>
</article>
</div>
</aside>
</div>

<script src="https://code.jquery.com/jquery-3.5.1.slim.min.js"
integrity="sha384-DfXdz2htPH0lsSSs5nCTpuj/zy4C+OGpamoFVy38MVBnE+IbbVYUew+OrCXaRkf
j" crossorigin="anonymous"></script>
<script
src="https://cdn.jsdelivr.net/npm/bootstrap@4.5.3/dist/js/bootstrap.bundle.min.js"
integrity="sha384-ho+j7jyWK8fNQe+A12Hb8AhRq26LrZ/JpcUGGOn+Y7RsweNrtN/tE3MoK7ZeZDY
x" crossorigin="anonymous"></script>
</body>
</html>

```

### 3. home.html

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>Home</title>
  <link rel="stylesheet"
href="https://maxcdn.bootstrapcdn.com/bootstrap/4.0.0/css/bootstrap.min.css"
integrity="sha384-Gn5384xqQ1aoWXA+058RXPxPg6fy4IWvTNh0E263XmFcJlSAwiGgFAW/dAiS6JX
m" crossorigin="anonymous">
  <style>
    body, html {
      height: 100%;
    }
    .hero-image {
      background-image: linear-gradient(rgba(0, 0, 0, 0.4), rgba(0, 0, 0,
0.4)), url("Hero.jpg");
      height: 100%;
      background-position: center;
      background-repeat: no-repeat;
      background-size: cover;
      position: relative;
    }
    .hero-text {
      text-align: left;
      position: absolute;
      top: 50%;
      left: 25%;
      transform: translate(-50%, -50%);
      color: white;
    }
  </style>
</head>
<body >
  <div class="hero-image">
    <div class="hero-text">
      <h1 style="font-size: 40px;">Welcome to the Cat Lovers Club!</h1>
      <p style="font-size: large;">This page is created by Yash Mahajan
      <br>From St. Francis Institute Of Technology
      <br>Of class SE INFT B Roll Number 04
      <br>For PCPF Experiment 15
```

```

    </p>
    <p>Lorem ipsum, dolor sit amet consectetur adipisicing elit.
      <br> Quasi ab incidunt perferendis illo laudantium tempore
      <br> sequi quae inventore consequuntur distinctio culpa omnis
      <br> quos deserunt dolore quis, neque animi qui. Architecto.</p>
  </div>
</div>

<script src="https://code.jquery.com/jquery-3.5.1.slim.min.js"
integrity="sha384-DfXdz2htPH0lsSSs5nCTpuj/zy4C+OGpamoFVy38MVBnE+IbbVYUew+OrCXaRkf
j" crossorigin="anonymous"></script>
<script
src="https://cdn.jsdelivr.net/npm/bootstrap@4.5.3/dist/js/bootstrap.bundle.min.js
"
integrity="sha384-ho+j7jyWK8fNQe+A12Hb8AhRq26LrZ/JpcUGGOn+Y7RsweNrtN/tE3MoK7ZeZDy
x" crossorigin="anonymous"></script>
</body>
</html>

```

#### 4. app.js

```

//Importing all packages
const mysql = require('mysql');
const express = require('express');
const session = require('express-session');
const bodyParser = require('body-parser');
const bcrypt = require('bcrypt');
//Creating an express app
const app = express();
app.use(session({
  secret: 'secret',
  resave: true,
  saveUninitialized: true
}));
//To display static elements like css and images
app.use( express.static( "Resources" ) );
//To parse incoming request
app.use(bodyParser.urlencoded({extended : true}));
app.use(bodyParser.json());
//connection to database
const connection = mysql.createConnection({
  host      : 'localhost',
  user      : 'root',
  password  : 'root',
  database  : 'pcpf',

```

```

    port : 3306
  });
  //Generate salt for hashing
  const salt = bcrypt.genSaltSync(10);
  //GET request for login page
  app.get('/', function(_request, response) {
    response.sendFile(__dirname + '/Resources/login.html');
  });
  //GET request for registration page
  app.get('/register', function(_request, response){
    response.sendFile(__dirname + '/Resources/register.html');
  });
  //GET request for home page
  app.get('/home', function(request, response) {
    //If logged in then display home page
    if (request.session.loggedin) {
      response.sendFile(__dirname + '/Resources/home.html');
    }
    else {
      response.send('Please login to view this page!');
    }
  });
  //POST Response to login of user
  app.post('/auth', function(request, response) {
    const username = request.body.username;
    const password = request.body.password;
    if (username && password) {
      connection.query('SELECT username,password FROM customer WHERE username = ?',[username, password], function(error, results, _fields) {
        if (error) {
          console.log(error);
          response.send(error);
        }
        else {
          if (results.length > 0) {
            //Comparing password with hashed password
            const isValidPass = bcrypt.compareSync(password,
results[0].password);
            if (isValidPass) {
              request.session.loggedin = true;
              //request.session.username = username;
              response.redirect('/home');
            }
            else {

```

```

        response.send('Incorrect Username and/or Password!');
    }
}
response.end();
}
}
);
} else {
    response.send('Please enter Username and Password!');
    response.end();
}
});
//POST response for registration of user
app.post('/update', function(request, response){
    const email = request.body.email;
    const username = request.body.username;
    const password = request.body.password;
    const password1 = request.body.password1;
    if (email && username && password && password1) {
        if (password == password1) {
            //Hashing the password before inserting into database
            const encryptedPassword = bcrypt.hashSync(password, salt)
            connection.query('INSERT INTO customer VALUES (?, ?, ?)',
[username, email, encryptedPassword], function(error, _results, _fields){
                if (error) {
                    console.log(error);
                    response.send(error);
                }
                else{
                    response.redirect('/');
                    response.end();
                }
            });
        }
        else{
            response.send('Please Confirm your password!');
            response.end();
        }
    }
    else {
        response.send('Please enter all the details');
        response.end();
    }
});

```



```
//Starting Express server at port 3000
app.listen(3000, function() {
  console.log("Server is running on port 3000")
});
```

## 5. package.json

```
{
  "name": "experiment15",
  "version": "1.0.0",
  "description": "Express_Server",
  "main": "app.js",
  "scripts": {
    "test": "echo \"Error: no test specified\" && exit 1"
  },
  "author": "YashM",
  "license": "ISC",
  "dependencies": {
    "bcrypt": "^5.0.0",
    "body-parser": "^1.19.0",
    "express": "^4.17.1",
    "express-session": "^1.17.1",
    "mysql": "^2.18.1",
    "path": "^0.12.7"
  }
}
```

## 6. Database Queries:-

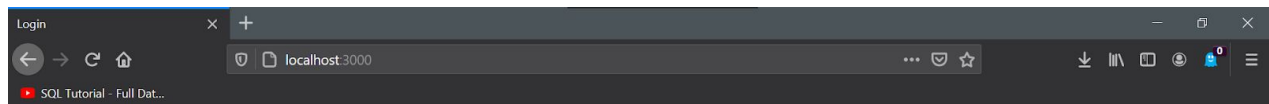
```
create database pcpf;
use pcpf;
CREATE TABLE customer(
  username VARCHAR(50),
  email_id VARCHAR(50) NOT NULL UNIQUE,
  password VARCHAR(250) NOT NULL,
  PRIMARY KEY(username)
);
SELECT * FROM CUSTOMER;
```

## 1. Starting the server

```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL

D:\College\PCPF\Scripting Languages\Experiments\Experiment15>nodemon app.js
[nodemon] 2.0.6
[nodemon] to restart at any time, enter `rs`
[nodemon] watching path(s): *.*
[nodemon] watching extensions: js,mjs,json
[nodemon] starting `node app.js`
Server is running on port 3000
█
```

## 2. Login Page



### Login

User Name

Enter User Name

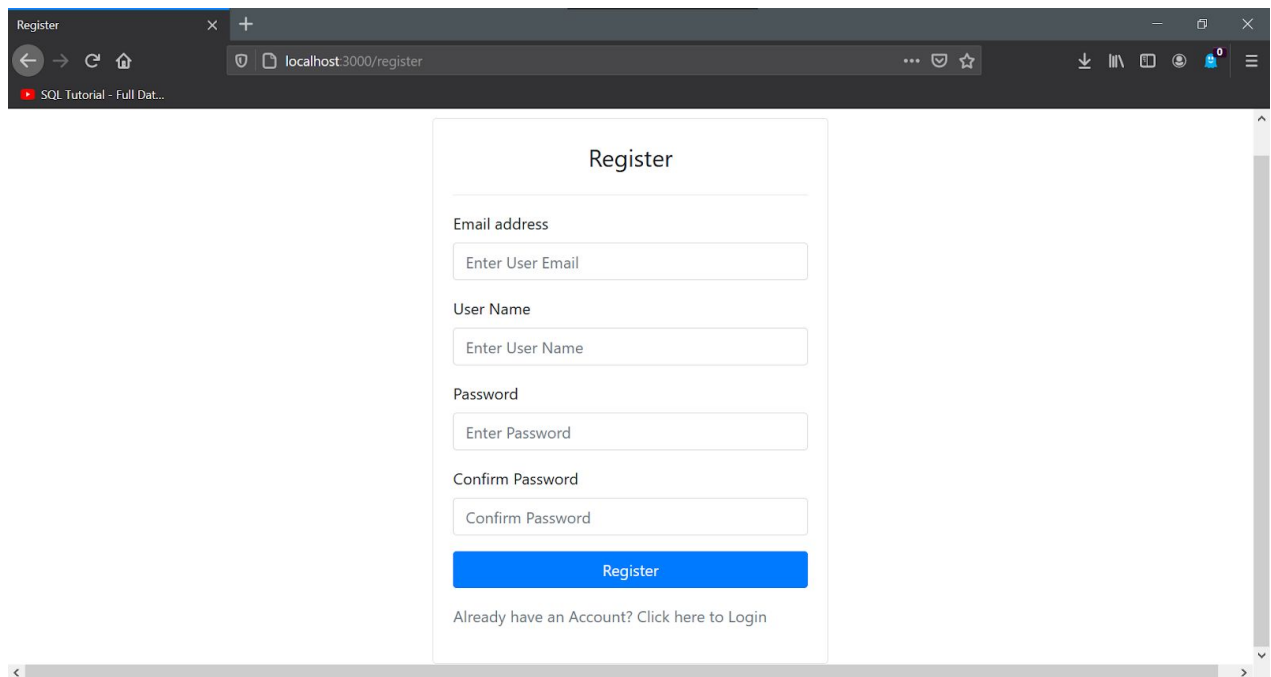
Password

Enter Password

Submit

[Click here to create Account](#)

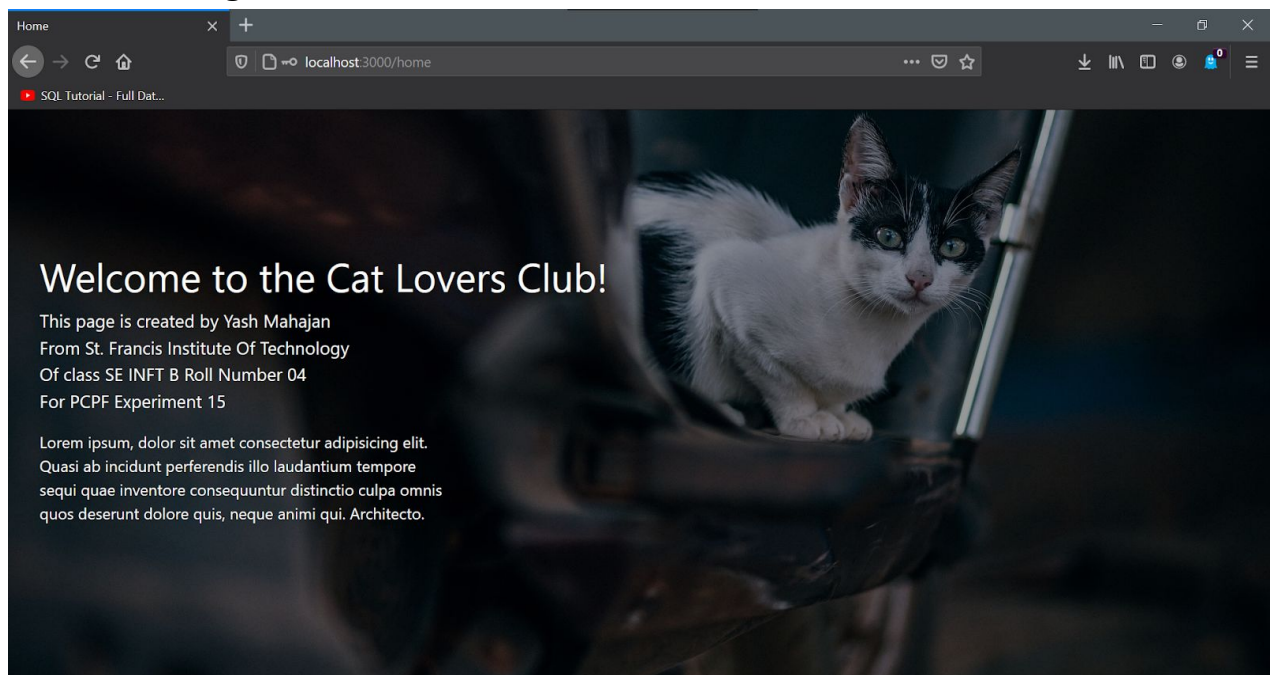
### 3. Registration page



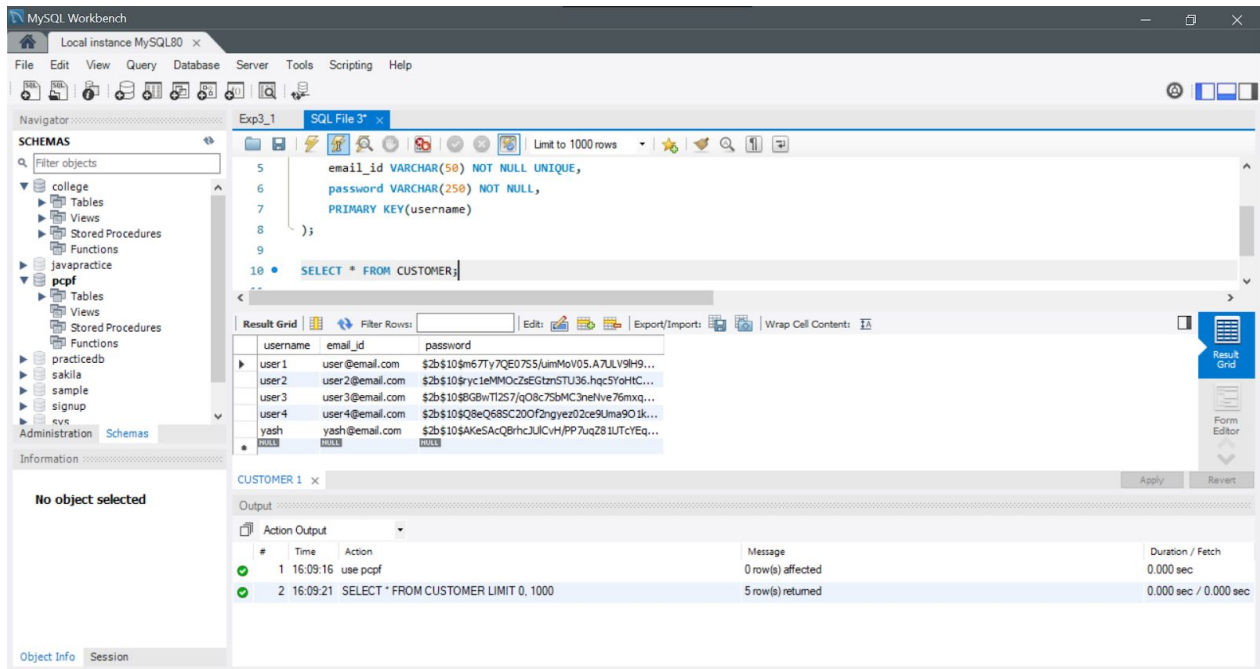
The screenshot shows a web browser window with the address bar displaying "localhost:3000/register". The page title is "Register". The form contains the following elements:

- Email address**: A text input field with the placeholder "Enter User Email".
- User Name**: A text input field with the placeholder "Enter User Name".
- Password**: A text input field with the placeholder "Enter Password".
- Confirm Password**: A text input field with the placeholder "Confirm Password".
- Register**: A blue button.
- Already have an Account? Click here to Login**: A text link.

### 4. Home Page



## 5. Database



## 8. Post Experimental Exercise

Nil

### A. References:

- [1] <https://www.npmjs.com/package/express>
- [2] <https://www.npmjs.com/package/mysql>
- [3] <https://www.npmjs.com/package/bcrypt>
- [4] <https://developer.mozilla.org/en-US/docs/Web/Reference>
- [5] <https://getbootstrap.com/>