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Vellore Institute of Technology
(Deemed to be University under section 3 of UGC Act, 1956)

**SCHOOL OF COMPUTER SCIENCE ENGINEERING
AND INFORMATION SYSTEMS**

WINTER SEMESTER 2024-2025

PMCA601P – FULL STACK WEB DEVELOPMENT LAB

AKB_FS PAT – 2

SUBMITTED ON: 07 – OCT - 2025

SUBMITTED BY-

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PROGRAM: MCA

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Q1. Develop a Banking Portal using a Node.js application. The script maintains a JSON array for user details and account details. User Details consist of key-value pairs for UserID, Password, Account Type, and Role. The Role can be Customer or Bank Staff. Account Details include Account Number, Account Type, Balance, Branch, and Customer Name. Write a Node.js script to:

- a) Authenticate the credentials data <User ID, Password, Role> supplied through an HTML form.
- b) On a successful login as a Customer, display the account details along with the balance in an HTML table view.

CODE:**Bank_server.js:**

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

const bodyParser = require('body-parser');

const path = require('path');

const app = express();

app.use(bodyParser.urlencoded({ extended: true }));

app.use(express.static('public')); // Serve HTML files

// Hardcoded User and Account Data

const users = [

  { userID: "cust123", password: "pass123", accountType: "Savings", role: "Customer" },

  { userID: "staff001", password: "admin123", accountType: "Admin", role: "Bank Staff" }

];

const accounts = [
```

```
{ accountNumber: "123456789", accountType: "Savings", balance: 5000, branch: "Main  
Branch", customerName: "John Doe", userID: "cust123" }  
];
```

```
// Route: Serve Login Page
```

```
app.get('/', (req, res) => {  
  res.send(`  
    <html>  
  
    <head><title>Banking Portal - Login</title></head>  
  
    <body>  
  
      <h2>Banking Portal - Login</h2>  
  
      <form action="/login" method="POST">  
  
        <label>User ID:</label>  
  
        <input type="text" name="userID" required><br><br>  
  
        <label>Password:</label>  
  
        <input type="password" name="password" required><br><br>  
  
        <label>Role:</label>  
  
        <select name="role" required>  
          <option value="Customer">Customer</option>  
          <option value="Bank Staff">Bank Staff</option>  
        </select><br><br>  
  
        <button type="submit">Login</button>
```

```
        </form>

    </body>

</html>

`);

});

// Route: Handle Login Request

app.post('/login', (req, res) => {

    const { userID, password, role } = req.body;

    // Validate User

    const user = users.find(u => u.userID === userID && u.password === password && u.role
    === role);

    if (!user) {

        return res.send('<h3>Invalid Credentials. <a href="/">Try Again</a></h3>');

    }

    if (role === "Customer") {

        // Find Customer's Account

        const account = accounts.find(a => a.userID === userID);

        if (!account) {

            return res.send('<h3>No Account Found. <a href="/">Go Back</a></h3>');

        }

    }

});
```

```
// Send Account Details Page

res.send(`

    <html>

    <head><title>Account Details</title></head>

    <body>

        <h2>Welcome, ${account.customerName}</h2>

        <table border="1">

            <tr><th>Account    Number</th><th>Account
Type</th><th>Balance</th><th>Branch</th></tr>

            <tr>

                <td>${account.accountNumber}</td>

                <td>${account.accountType}</td>

                <td>${account.balance}</td>

                <td>${account.branch}</td>

            </tr>

        </table>

        <br><a href="/">Logout</a>

    </body>

    </html>

`);

} else {

    res.send('<h3>Bank Staff Portal is under development. <a href="/">Go Back</a></h3>');

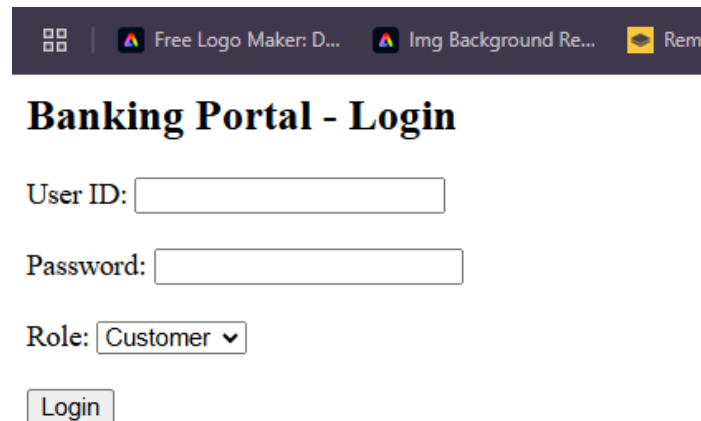
}

});
```

```
// Start Server
```

```
app.listen(3000, () => {  
  
    console.log('Server running at http://localhost:3000');  
  
});
```

Op:



Banking Portal - Login

User ID:

Password:

Role:

Q2. Write appropriate jQuery script for below requirements: a) When the change button is clicked, replace all occurrences of the word Blue to the text in the input field, e.g., Purple. b) Click 'Count Words' button to display count of number of words in paragraph highlighted in brown color using Alert box. c) Click 'Count Occurrence of word NEVER' button to count and display number of occurrences of the word "never" in paragraph highlighted in brown color using alert box.

blue is a color that many people love. It is never dull and never boring. The sky is often blue, and the ocean too. Never underestimate the beauty of blue.



CODE:

Index.html:

```
<!DOCTYPE html>
```

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

```
<head>
```

```
<meta charset="UTF-8">
```

```
<meta name="viewport" content="width=device-width, initial-scale=1.0">

<title>jQuery Text Manipulation</title>

<script src="https://code.jquery.com/jquery-3.6.0.min.js"></script>

<style>

    p { color: brown; font-size: 18px; }

</style>

</head>

<body>


    <p id="text">blue is a color that many people love. It is never dull and never boring. The
sky is often blue, and the ocean too. Never underestimate the beauty of blue.</p>


    <input type="text" id="replaceWord" placeholder="Enter replacement text">

    <button id="changeBtn">Change</button>

    <button id="countWordsBtn">Count Words</button>

    <button id="countNeverBtn">Count Occurrence of word NEVER</button>


    <script>

        $(document).ready(function() {

            // a) Replace "Blue" with input value

            $("#changeBtn").click(function() {

                let newWord = $("#replaceWord").val();

                if (newWord.trim() !== "") {

                    let text = $("#text").html();
```

```
        let updatedText = text.replace(/blue/gi, newWord);  
        $("#text").html(updatedText);  
    }  
});
```

// b) Count words in paragraph

```
$("#countWordsBtn").click(function() {  
    let text = $("#text").text();  
    let wordCount = text.trim().split(/\s+/).length;  
    alert("Total words: " + wordCount);  
});
```

// c) Count occurrences of "Never" (case insensitive)

```
$("#countNeverBtn").click(function() {  
    let text = $("#text").text().toLowerCase();  
    let count = (text.match(/\bnever\b/g) || []).length;  
    alert("Occurrences of 'never': " + count);  
});
```

```
});
```

```
</script>
```

```
</body>
```

```
</html>
```


Q3. Write a jQuery program to implement the following interactive features on an HTML page: i) Hide a paragraph upon clicking a button. ii) Toggle the visibility of an image when another button is clicked. iii) Change the background color of all <div> elements to yellow on mouse hover and revert it when the mouse leaves. iv) Animate the width of a <div> to 300px over 2 seconds when a button is clicked. v) Show an alert displaying the content of an input field when a button is clicked.

CODE:**INDEX.HTML:**

```
<!DOCTYPE html>

<html lang="en">

<head>

  <meta charset="UTF-8">

  <meta name="viewport" content="width=device-width, initial-scale=1.0">

  <title>jQuery Interactive Features</title>

  <script src="https://code.jquery.com/jquery-3.6.0.min.js"></script>

  <style>

    p { font-size: 18px; color: brown; }

    img { width: 200px; display: block; margin: 10px 0; }

    .box { width: 200px; height: 100px; background-color: lightgray; margin: 10px 0; text-align: center; line-height: 100px; }

  </style>

</head>

<body>

  <p id="paragraph">This is a sample paragraph. Click the button below to hide it.</p>

  <button id="hidePara">Hide Paragraph</button>
```

```
<br><br>
```

```
<button id="toggleImage">Toggle Image</button>
```

```

```

```
<br><br>
```

```
<div class="box">Hover over me</div>
```

```
<br><br>
```

```
<button id="animateDiv">Animate Width</button>
```

```
<div id="animatedDiv" class="box">Animated Box</div>
```

```
<br><br>
```

```
<input type="text" id="inputField" placeholder="Enter some text">
```

```
<button id="showAlert">Show Alert</button>
```

```
<script>
```

```
$(document).ready(function() {
```

```
    // i) Hide paragraph when button is clicked
```

```
    $("#hidePara").click(function() {
```

```
$("#paragraph").hide();

});

// ii) Toggle visibility of image

$("#toggleImage").click(function() {

    $("#image").toggle();

});

// iii) Change background color of div on hover

$(".box").hover(

    function() { $(this).css("background-color", "yellow"); },

    function() { $(this).css("background-color", "lightgray"); }

);

// iv) Animate width of div to 300px over 2 seconds

$("#animateDiv").click(function() {

    $("#animatedDiv").animate({ width: "300px" }, 2000);

});

// v) Show alert with input field content

$("#showAlert").click(function() {

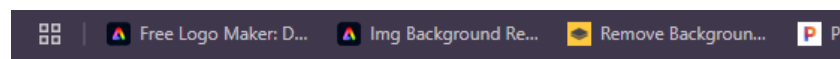
    let text = $("#inputField").val();

    alert("Input field contains: " + text);

});
```

```
});  
</script>  
</body>  
</html>
```


OP:



This is a sample paragraph. Click the button below to hide it.

Hide Paragraph

Toggle Image

 Sample Image

Hover over me

Animate Width

Animated Box

Enter some text

Show Alert