1. Portfolio HTML

code1 = r"""File: portfolio.html

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <title>My Personal Portfolio</title>
</head>
<body>
    <header>
        <h1>Bhushan Chaturbhuj</h1>
        <p>Student | Web Developer | Tech Enthusiast</p>
        <nav>
            <a href="#about">About</a> |
            <a href="#skills">Skills</a> |
            <a href="#projects">Projects</a> |
            <a href="#contact">Contact</a>
        </nav>
        <hr>
    </header>

    <section id="about">
        <h2>About Me</h2>
        <p>
            I am a passionate web developer and student, interested in
            HTML, CSS, JavaScript, and modern web technologies.
        </p>
        <img src="profile.jpg" alt="My Photo" width="150" height="150">
    </section>

    <section id="skills">
        <h2>My Skills</h2>
        <ul>
            <li>HTML5 &amp; CSS3</li>
            <li>JavaScript &amp; AngularJS</li>
            <li>PHP &amp; MySQL</li>
            <li>Basic Data Analysis with Python</li>
        </ul>

        <h3>Technical Skills (Table)</h3>
        <table border="1" cellpadding="5" cellspacing="0">
            <thead>
                <tr>
                    <th>Skill</th>
```

```html
                    <th>Level</th>
                    <th>Experience (Years)</th>
                </tr>
            </thead>
            <tbody>
                <tr>
                    <td>HTML &amp; CSS</td>
                    <td>Advanced</td>
                    <td>2</td>
                </tr>
                <tr>
                    <td>JavaScript</td>
                    <td>Intermediate</td>
                    <td>1</td>
                </tr>
                <tr>
                    <td>PHP</td>
                    <td>Intermediate</td>
                    <td>1</td>
                </tr>
            </tbody>
        </table>
    </section>

    <section id="projects">
        <h2>Projects</h2>
        <ol>
            <li>
                <strong>College Website</strong> –
                A multi-page website for my college department.
            </li>
            <li>
                <strong>Portfolio Website</strong> –
                A responsive personal portfolio using HTML, CSS and JS.
            </li>
        </ol>

        <p>
            Check my work on
            <a href="https://github.com/" target="_blank">GitHub</a>.
        </p>
    </section>

    <section id="contact">
        <h2>Contact Me</h2>
        <form action="#" method="post">
            <label for="name">Name:</label><br>
            <input id="name" name="name" type="text" required><br><br>
```

```html
        <label for="email">Email:</label><br>
        <input id="email" name="email" type="email" required><br><br>

        <label for="message">Message:</label><br>
        <textarea id="message" name="message" rows="4" cols="30"
required></textarea><br><br>

        <input type="submit" value="Send Message">
      </form>
    </section>

    <footer>
      <hr>
      <p>&copy; 2025 Bhushan Chaturbhuj. All Rights Reserved.</p>
      <a href="#top">Back to top</a>
    </footer>
</body>
</html>"""
```

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2. Multi-page site


```css
code2 = r"""File: style.css

body {
    font-family: Arial, sans-serif;
    margin: 0;
    padding: 0;
}

header, footer {
    background-color: #004080;
    color: white;
    padding: 15px;
    text-align: center;
}

nav a {
    color: white;
    margin: 0 10px;
    text-decoration: none;
}

nav a:hover {
    text-decoration: underline;
}
```

```css
.container {
    width: 80%;
    margin: 20px auto;
}

h1, h2 {
    color: #004080;
}

.department-info {
    display: flex;
    gap: 20px;
}

.sidebar {
    width: 25%;
}

.content {
    width: 75%;
}

.card {
    border: 1px solid #ddd;
    padding: 10px;
    margin-bottom: 10px;
}
```

File: index.html

```html
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <title>Computer Science Department</title>
    <link rel="stylesheet" href="style.css">
    <style>
      /* Internal CSS example */
      .highlight {
         background-color: #fffae6;
         border-left: 4px solid #ffcc00;
         padding: 10px;
      }
    </style>
</head>
<body>
<header>
```

```html
    <h1>Computer Science Department</h1>
    <nav>
      <a href="index.html">Home</a>
      <a href="about.html">About Department</a>
      <a href="faculty.html">Faculty</a>
    </nav>
</header>

<div class="container">
    <h2>Welcome to the Department</h2>
    <p class="highlight">
      Our department focuses on quality education, innovation, and research in the field of
Computer Science.
    </p>
    <div class="department-info">
      <div class="sidebar">
        <h3>Quick Links</h3>
        <ul>
          <li><a href="about.html">Vision &amp; Mission</a></li>
          <li><a href="faculty.html">Faculty List</a></li>
        </ul>
      </div>
      <div class="content">
        <h3>Programs Offered</h3>
        <ul>
          <li>B.Sc. Computer Science</li>
          <li>BCA</li>
          <li>M.Sc. Computer Science</li>
        </ul>
      </div>
    </div>
</div>

<footer>
    <p>&copy; 2025 Computer Science Department</p>
</footer>
</body>
</html>
```

File: about.html

```html
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <title>About Department</title>
    <link rel="stylesheet" href="style.css">
```

```html
</head>
<body>
<header>
    <h1>Computer Science Department</h1>
    <nav>
        <a href="index.html">Home</a>
        <a href="about.html">About Department</a>
        <a href="faculty.html">Faculty</a>
    </nav>
</header>

<div class="container">
    <h2>About the Department</h2>
    <p>
        The department aims to produce skilled professionals and researchers in the field of computer science.
    </p>
    <h3>Vision</h3>
    <p>To be a center of excellence in computer science education and research.</p>

    <h3>Mission</h3>
    <ul>
        <li>To provide strong theoretical and practical knowledge.</li>
        <li>To encourage innovation and entrepreneurship.</li>
        <li>To promote industry–academia interaction.</li>
    </ul>
</div>

<footer>
    <p>&copy; 2025 Computer Science Department</p>
</footer>
</body>
</html>
```

File: faculty.html

```html
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <title>Faculty</title>
    <link rel="stylesheet" href="style.css">
</head>
<body>
<header>
    <h1>Computer Science Department</h1>
    <nav>
```

```
        <a href="index.html">Home</a>
        <a href="about.html">About Department</a>
        <a href="faculty.html">Faculty</a>
    </nav>
</header>

<div class="container">
    <h2>Faculty Members</h2>
    <div class="card">
        <h3>Dr. Ajay Patil</h3>
        <p>Head of Department (HOD)</p>
        <p>Specialization: Artificial Intelligence</p>
    </div>
    <div class="card">
        <h3>Prof. Atharva Dhawale</h3>
        <p>Assistant Professor</p>
        <p>Specialization: Web Technologies</p>
    </div>
</div>

<footer>
    <p>&copy; 2025 Computer Science Department</p>
</footer>
</body>
</html>"""
```

━---

3. XML + XSD

```
code3 = r"""File: bookstore.xml

<?xml version="1.0" encoding="UTF-8"?>
<bookstore xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
       xsi:noNamespaceSchemaLocation="bookstore.xsd">
    <book id="b1">
        <title>Learning HTML</title>
        <author>John Smith</author>
        <price>399.50</price>
        <genre>Programming</genre>
    </book>
    <book id="b2">
        <title>Mastering XML</title>
        <author>Mary Johnson</author>
        <price>450.00</price>
        <genre>Technology</genre>
    </book>
</bookstore>
```

```
-----------------------------------------------
File: bookstore.xsd

<?xml version="1.0" encoding="UTF-8"?>
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema">

    <xs:element name="bookstore">
        <xs:complexType>
            <xs:sequence>
                <xs:element name="book" maxOccurs="unbounded">
                    <xs:complexType>
                        <xs:sequence>
                            <xs:element name="title" type="xs:string"/>
                            <xs:element name="author" type="xs:string"/>
                            <xs:element name="price" type="xs:decimal"/>
                            <xs:element name="genre" type="xs:string"/>
                        </xs:sequence>
                        <xs:attribute name="id" type="xs:string" use="required"/>
                    </xs:complexType>
                </xs:element>
            </xs:sequence>
        </xs:complexType>
    </xs:element>

</xs:schema>"""
```
━---

4. Students XML + XSLT

```
code4 = r"""File: students.xml

<?xml version="1.0" encoding="UTF-8"?>
<?xml-stylesheet type="text/xsl" href="students.xsl"?>
<students>
    <student roll="1">
        <name>Rahul Sharma</name>
        <course>MCA</course>
        <marks>85</marks>
    </student>
    <student roll="2">
        <name>Priya Patil</name>
        <course>MCA</course>
        <marks>92</marks>
    </student>
</students>


-----------------------------------------------
```

File: students.xsl

```xml
<?xml version="1.0" encoding="UTF-8"?>
<xsl:stylesheet version="1.0"
         xmlns:xsl="http://www.w3.org/1999/XSL/Transform">
   <xsl:template match="/">
      <html>
      <head>
         <title>Student Records</title>
      </head>
      <body>
         <h2>Student Records</h2>
         <table border="1" cellpadding="5" cellspacing="0">
            <tr>
               <th>Roll No</th>
               <th>Name</th>
               <th>Course</th>
               <th>Marks</th>
            </tr>
            <xsl:for-each select="students/student">
               <tr>
                  <td><xsl:value-of select="@roll"/></td>
                  <td><xsl:value-of select="name"/></td>
                  <td><xsl:value-of select="course"/></td>
                  <td><xsl:value-of select="marks"/></td>
               </tr>
            </xsl:for-each>
         </table>
      </body>
      </html>
   </xsl:template>
</xsl:stylesheet>"""
```

━--

5. JS greeting

code5 = r"""File: js_greeting.html

```html
<!DOCTYPE html>
<html lang="en">
<head>
   <meta charset="UTF-8">
   <title>Greeting Program</title>
   <script>
      function greetUser() {
         var name = document.getElementById("name").value.trim();
         var age = document.getElementById("age").value.trim();
```

```javascript
        var result = document.getElementById("result");

        if (name === "" || age === "") {
            alert("Please enter both name and age.");
            return;
        }

        age = parseInt(age);
        if (isNaN(age) || age <= 0) {
            alert("Please enter a valid positive age.");
            return;
        }

        var msg = "Hello " + name + "! ";
        if (age >= 18) {
            msg += "You are an adult.";
        } else {
            msg += "You are a minor.";
        }

        // Loop example: count letters in name
        var count = 0;
        for (var i = 0; i < name.length; i++) {
            if (name[i] !== " ") {
                count++;
            }
        }
        msg += " Your name has " + count + " characters (excluding spaces).";

        result.textContent = msg;
    }
    </script>
</head>
<body>
    <h2>Greeting Program</h2>
    <label for="name">Name:</label>
    <input id="name" type="text"><br><br>

    <label for="age">Age:</label>
    <input id="age" type="text"><br><br>

    <button onclick="greetUser()">Greet</button>

    <p id="result"></p>
</body>
</html>"""
```

---

6. JS form validation

code6 = r"""File: form_validation.html

```html
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <title>Form Validation</title>
    <script>
        function showDateTime() {
            var now = new Date();
            document.getElementById("datetime").textContent = now.toString();
        }

        function toUpperCaseName() {
            var nameField = document.getElementById("name");
            nameField.value = nameField.value.toUpperCase();
        }

        function validateForm(event) {
            event.preventDefault();

            var name = document.getElementById("name").value.trim();
            var email = document.getElementById("email").value.trim();
            var msg = document.getElementById("message").value.trim();

            if (name === "" || email === "" || msg === "") {
                alert("All fields are required.");
                return false;
            }

            if (email.indexOf("@") === -1 || email.indexOf(".") === -1) {
                alert("Please enter a valid email.");
                return false;
            }

            alert("Form submitted successfully!");
            return true;
        }

        window.onload = function () {
            showDateTime();
            document.getElementById("contactForm").onsubmit = validateForm;
            document.getElementById("name").onblur = toUpperCaseName;
        }
    </script>
</head>
```

```html
<body>
    <h2>Contact Form with Validation</h2>
    <p>Current Date and Time: <span id="datetime"></span></p>

    <form id="contactForm">
        <label for="name">Name:</label><br>
        <input id="name" type="text"><br><br>

        <label for="email">Email:</label><br>
        <input id="email" type="text"><br><br>

        <label for="message">Message:</label><br>
        <textarea id="message" rows="4" cols="30"></textarea><br><br>

        <input type="submit" value="Submit">
    </form>
</body>
</html>"""
```

━--

7. AngularJS student list

code7 = r"""File: angular_students_list.html

```html
<!DOCTYPE html>
<html lang="en" ng-app="studentApp">
<head>
    <meta charset="UTF-8">
    <title>AngularJS Student List</title>
    <script src="https://ajax.googleapis.com/ajax/libs/angularjs/1.8.2/angular.min.js"></script>
    <script>
        var app = angular.module("studentApp", []);
        app.controller("studentCtrl", function($scope) {
            $scope.students = [
                {name: "Rahul", subject: "Maths", marks: 85},
                {name: "Priya", subject: "Science", marks: 92},
                {name: "Amit", subject: "English", marks: 75}
            ];
            $scope.orderField = "name";
        });
    </script>
</head>
<body ng-controller="studentCtrl">
    <h2>Student Marks (AngularJS)</h2>

    <p>Order by:
        <select ng-model="orderField">
```

```html
        <option value="name">Name</option>
        <option value="marks">Marks</option>
      </select>
    </p>

    <table border="1" cellpadding="5" cellspacing="0">
      <tr>
        <th>Name</th>
        <th>Subject</th>
        <th>Marks</th>
      </tr>
      <tr ng-repeat="s in students | orderBy:orderField">
        <td>{{ s.name }}</td>
        <td>{{ s.subject }}</td>
        <td>{{ s.marks }}</td>
      </tr>
    </table>
</body>
</html>"""
```

━---

8. AngularJS form

```html
code8 = r"""File: angular_form.html

<!DOCTYPE html>
<html lang="en" ng-app="formApp">
<head>
    <meta charset="UTF-8">
    <title>AngularJS Form</title>
    <script src="https://ajax.googleapis.com/ajax/libs/angularjs/1.8.2/angular.min.js"></script>
    <script>
      var app = angular.module("formApp", []);
      app.controller("formCtrl", function($scope) {
        $scope.user = {};
        $scope.users = [];

        $scope.submitForm = function(form) {
          if (form.$valid) {
            $scope.users.push({
              name: $scope.user.name,
              email: $scope.user.email,
              course: $scope.user.course
            });
            $scope.user = {};
            form.$setPristine();
            form.$setUntouched();
```

```html
            }
        };
    });
    </script>
</head>
<body ng-controller="formCtrl">
    <h2>AngularJS User Form</h2>

    <form name="userForm" ng-submit="submitForm(userForm)" novalidate>
        <label>Name:</label><br>
        <input type="text" name="name" ng-model="user.name" required>
        <span ng-show="userForm.name.$touched && userForm.name.$invalid">
            Name is required.
        </span>
        <br><br>

        <label>Email:</label><br>
        <input type="email" name="email" ng-model="user.email" required>
        <span ng-show="userForm.email.$touched && userForm.email.$invalid">
            Valid email is required.
        </span>
        <br><br>

        <label>Course:</label><br>
        <select name="course" ng-model="user.course" required>
            <option value="">--Select--</option>
            <option>MCA</option>
            <option>BCA</option>
            <option>BSc CS</option>
        </select>
        <span ng-show="userForm.course.$touched && userForm.course.$invalid">
            Course is required.
        </span>
        <br><br>

        <button type="submit">Add User</button>
    </form>

    <h3>Entered Users</h3>
    <table border="1" cellpadding="5" cellspacing="0" ng-show="users.length > 0">
        <tr>
            <th>Name</th>
            <th>Email</th>
            <th>Course</th>
        </tr>
        <tr ng-repeat="u in users">
            <td>{{ u.name }}</td>
            <td>{{ u.email }}</td>
```

```
            <td>{{ u.course }}</td>
        </tr>
    </table>
</body>
</html>"""
```

—--

9. PHP array

```
code9 = r"""File: array_form.php

<?php
$result = "";
$sorted = "";
$countMsg = "";

if ($_SERVER["REQUEST_METHOD"] == "POST") {
    $namesString = $_POST["names"]; // comma separated values
    $namesArray = explode(",", $namesString);

    // Trim spaces
    foreach ($namesArray as &$n) {
        $n = trim($n);
    }

    $result = "Original Array: " . implode(" | ", $namesArray);

    // Count elements
    $countMsg = "Total elements: " . count($namesArray);

    // Sort array
    $sortedArray = $namesArray;
    sort($sortedArray);
    $sorted = "Sorted Array: " . implode(" | ", $sortedArray);
}
?>
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <title>PHP Array Functions</title>
</head>
<body>
    <h2>PHP Array Example</h2>
    <form method="post">
        <label>Enter names (comma separated):</label><br>
        <input type="text" name="names" size="50"><br><br>
```

```
            <input type="submit" value="Submit">
        </form>

        <h3>Result:</h3>
        <p><?php echo $result; ?></p>
        <p><?php echo $countMsg; ?></p>
        <p><?php echo $sorted; ?></p>
</body>
</html>"""
```

━---

10. PHP login

```
code10 = r"""File: login.php

<?php
session_start();

$message = "";

if ($_SERVER["REQUEST_METHOD"] == "POST") {
    $username = $_POST["username"];
    $password = $_POST["password"];

    // Hard-coded username and password
    $validUser = "admin";
    $validPass = "12345";

    if ($username == $validUser && $password == $validPass) {
        $_SESSION["user"] = $username;

        // Set cookie for remembering user
        setcookie("last_login_user", $username, time() + 3600, "/");

        header("Location: welcome.php");
        exit();
    } else {
        $message = "Invalid username or password.";
    }
}
?>
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <title>Login</title>
</head>
```

```
<body>
    <h2>Login Page</h2>
    <form method="post" action="login.php">
        <label>Username:</label><br>
        <input type="text" name="username"><br><br>

        <label>Password:</label><br>
        <input type="password" name="password"><br><br>

        <input type="submit" value="Login">
    </form>

    <p style="color:red;"><?php echo $message; ?></p>

    <?php
    if (isset($_COOKIE["last_login_user"])) {
        echo "<p>Last logged in user: " . htmlspecialchars($_COOKIE["last_login_user"]) .
"</p>";
    }
    ?>
</body>
</html>


------------------------------------------------
File: welcome.php

<?php
session_start();
if (!isset($_SESSION["user"])) {
    header("Location: login.php");
    exit();
}
?>
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <title>Welcome</title>
</head>
<body>
    <h2>Welcome Page</h2>
    <p>
        Welcome, <?php echo htmlspecialchars($_SESSION["user"]); ?>!
        You have successfully logged in.
    </p>
    <p><a href="logout.php">Logout</a></p>
</body>
</html>
```

File: logout.php

```php
<?php
session_start();
session_unset();
session_destroy();
header("Location: login.php");
exit();
?>"""
```