

Air University Islamabad Department of Computer Science



LAB-3

SUBMITTED 16 February, 2026

Web Technologies Lab - Sir. Mohabbat Ali

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Lab Objectives

After completing this lab, students will be able to: - Understand the basic structure of an HTML document - Integrate Bootstrap into an HTML page - Use Bootstrap grid system and components - Design responsive web pages with minimal custom CSS

LAB ACTIVITY

Internet connection (for Bootstrap CDN)

Activity 1:

Basic Bootstrap Page

Objective

Create a simple web page using Bootstrap.

Problem Statement

Design a webpage with a heading, paragraph, and list using Bootstrap styling.

Solution

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <title>Bootstrap Basics</title>
  <link
href="https://cdn.jsdelivr.net/npm/bootstrap@5.3.2/dist/css/bootstrap.min.css"
rel="stylesheet">
</head>
<body>
  <div class="container mt-4">
    <h1 class="text-primary text-center">Welcome to Bootstrap</h1>
    <p class="lead">This page is styled using Bootstrap classes.</p>
    <h4>My Favorite Subjects</h4>
    <ul class="list-group">
      <li class="list-group-item">Programming Fundamentals</li>
      <li class="list-group-item">Database Systems</li>
      <li class="list-group-item">Web Development</li>
    </ul>
  </div>
</body>
</html>
```

OUTPUT

Welcome to Bootstrap

This page is styled using Bootstrap classes.

My Favorite Subjects

Programming Fundamentals
Database Systems
Web Development

Explanation

- Bootstrap CDN is linked in the <head> section
- Container provides fixed-width responsive layout
- List-group is used for styled lists

Activity 2:

Bootstrap Grid and Card

Objective

Use Bootstrap grid system and card component.

Problem Statement

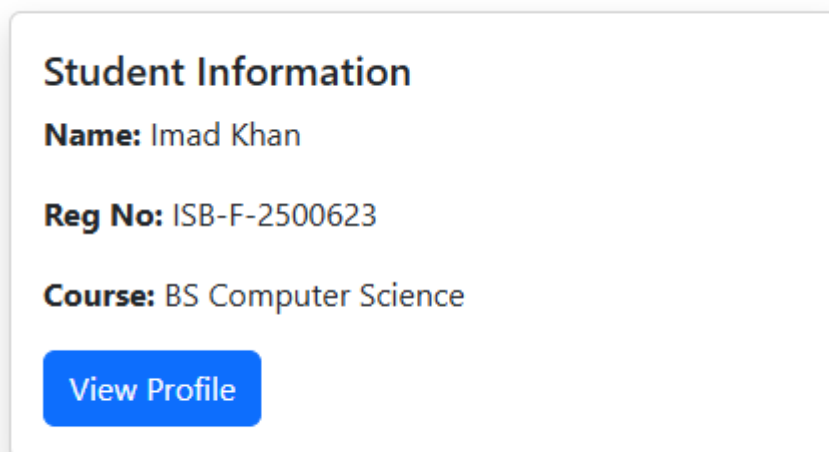
Create a responsive student card using Bootstrap.

Solution:

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <title>Bootstrap Card</title>
  <link
href="https://cdn.jsdelivr.net/npm/bootstrap@5.3.2/dist/css/bootstrap.min.css"
rel="stylesheet">
</head>
<body>
  <div class="container mt-5">
    <div class="row justify-content-center">
      <div class="col-md-4">
        <div class="card shadow">
          <div class="card-body">
            <h5 class="card-title">Student Information</h5>
            <p class="card-text"><strong>Name:</strong> Ali
Ahmed</p>
```

```
                                <p class="card-text"><strong>Reg No:</strong> 21-CS-
001</p>
                                <p class="card-text"><strong>Course:</strong> BS
Computer Science</p>
                                <a href="#" class="btn btn-primary">View Profile</a>
                                </div>
                            </div>
                        </div>
                    </div>
                </div>
            </div>
        </body>
    </html>
```

OUTPUT



Explanation

- row and col-md-4 create responsive layout
- card component displays structured information
- btn btn-primary styles the button

TASK

Task 1

Create a Bootstrap-based webpage that includes:

- Your name as a heading
- A short introduction paragraph
- A Bootstrap-styled list of hobbies

Code:

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>My Bootstrap Page</title>
  <!-- Bootstrap CDN -->
  <link href="https://cdn.jsdelivr.net/npm/bootstrap@5.3.0/dist/css/bootstrap.min.css"
rel="stylesheet">
</head>
<body>
  <div class="container mt-5">
    <!-- Heading with your name -->
    <h1 class="text-primary">John Smith</h1>

    <!-- Introduction paragraph -->
    <p class="lead mt-3">
      Hello! I'm a web developer passionate about creating beautiful and functional websites.
      I enjoy learning new technologies and working on creative projects.
    </p>

    <!-- Bootstrap-styled list of hobbies -->
    <h3 class="mt-4">My Hobbies</h3>
    <ul class="list-group mt-3">
      <li class="list-group-item">Reading books</li>
      <li class="list-group-item">Playing guitar</li>
      <li class="list-group-item">Photography</li>
      <li class="list-group-item">Hiking</li>
      <li class="list-group-item">Coding</li>
    </ul>
  </div>

  <!-- Bootstrap JS Bundle -->
  <script
src="https://cdn.jsdelivr.net/npm/bootstrap@5.3.0/dist/js/bootstrap.bundle.min.js"></script>
</body>
</html>
```

OUTPUT

Imad Khan

Hello! I'm a web developer passionate about creating beautiful and functional websites. I enjoy learning new technologies and working on creative projects.

My Hobbies

Reading books
Playing guitar
Photography
Hiking
Coding

Explanation

This task requires building a simple personal webpage using Bootstrap framework. You'll need to link the Bootstrap CDN in the head section, use a container for proper layout spacing, add a heading tag for your name, write a paragraph with your introduction, and create a list using Bootstrap's list-group classes to display your hobbies with styled formatting. The Bootstrap classes ensure the page is responsive and visually appealing across different screen sizes.

Task 2

Design a responsive page using Bootstrap grid system: - Use at least two columns - Display content side-by-side on large screens - Stack content on small screens

Code:

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-
scale=1.0">
  <title>Responsive Grid Layout</title>
  <!-- Bootstrap CDN -->
  <link
href="https://cdn.jsdelivr.net/npm/bootstrap@5.3.0/dist/css/bootstra
p.min.css" rel="stylesheet">
</head>
<body>
  <div class="container mt-5">
    <h1 class="text-center mb-4">Responsive Grid Layout</h1>

    <div class="row">
      <!-- First Column -->
      <div class="col-lg-6 col-md-6 col-sm-12 mb-3">
        <div class="card">
          <div class="card-body">
            <h3 class="card-title">Column 1</h3>
            <p class="card-text">
              This is the first column. On large
screens, this content appears side-by-side
              with the second column. On small
screens, it stacks on top.
            </p>
          </div>
        </div>
      </div>

      <!-- Second Column -->
      <div class="col-lg-6 col-md-6 col-sm-12 mb-3">
        <div class="card">
          <div class="card-body">
            <h3 class="card-title">Column 2</h3>
            <p class="card-text">
              This is the second column. The Bootstrap
grid system automatically adjusts
              the layout based on screen size for
optimal viewing experience.
            </p>
          </div>
        </div>
      </div>
    </div>
  </div>
</body>
</html>
```

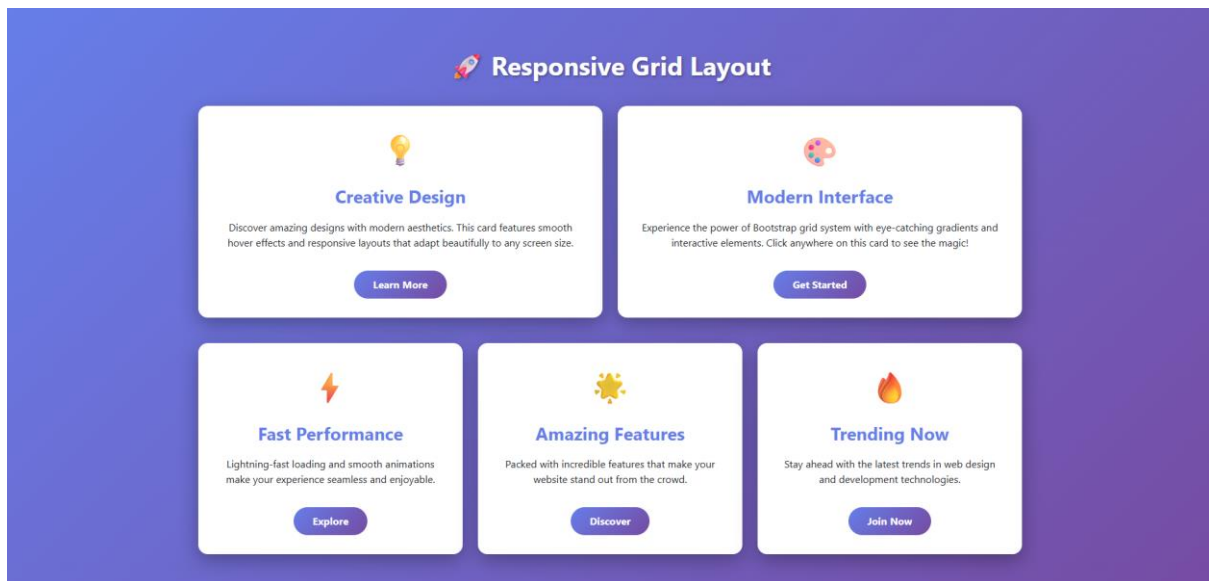
```

        </div>
    </div>
</div>

<!-- Bootstrap JS Bundle -->
<script
src="https://cdn.jsdelivr.net/npm/bootstrap@5.3.0/dist/js/bootstrap.
bundle.min.js"></script>
</body>
</html>

```

OUTPUT



Explanation:

HTML Structure:

- Bootstrap 5 framework with container, rows, and columns
- Five clickable cards with icons, titles, text, and buttons

CSS Styling:

- **Background:** Purple gradient covering full screen
- **Cards:** Rounded corners, shadow effects, clickable cursor
- **Hover Effects:** Cards lift up 10px with increased shadow
- **Buttons:** Gradient style with rounded pill shape, scales up on hover
- **Colors:** Purple theme (#667eea, #764ba2) throughout

Bootstrap Grid:

- `col-lg-6` = 2 columns side-by-side on large screens
- `col-lg-4` = 3 columns side-by-side on large screens
- `col-sm-12` = Full width stacked on small screens

- $g-4$ = spacing between columns

JavaScript:

- `onclick="alert()"` makes entire card clickable with popup message

Responsive:

- Large screens: side-by-side layout
- Small screens: stacked vertically

Task 3

Create a Student Profile Card using Bootstrap that includes: - Student name - Registration number - Course name - Use Bootstrap card and button components.

Code:

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-
scale=1.0">
  <title>Student Profile Card</title>
  <!-- Bootstrap CDN -->
  <link
href="https://cdn.jsdelivr.net/npm/bootstrap@5.3.0/dist/css/bootstra
p.min.css" rel="stylesheet">
  <style>
    body {
      background: linear-gradient(135deg, #6a11cb 0%, #2575fc
100%);
      min-height: 100vh;
      display: flex;
      align-items: center;
      justify-content: center;
      padding: 20px;
    }
    .profile-card {
      border: none;
      border-radius: 20px;
      box-shadow: 0 15px 35px rgba(0,0,0,0.3);
      max-width: 400px;
      overflow: hidden;
    }
    .card-header {
      background: linear-gradient(135deg, #6a11cb 0%, #2575fc
100%);
```

```

        color: white;
        padding: 30px;
        text-align: center;
        border: none;
    }
    .profile-img {
        width: 120px;
        height: 120px;
        border-radius: 50%;
        border: 5px solid white;
        margin: 0 auto;
        background: white;
        display: flex;
        align-items: center;
        justify-content: center;
        font-size: 50px;
    }
    .card-body {
        padding: 30px;
    }
    .info-label {
        font-weight: bold;
        color: #6a11cb;
        margin-bottom: 5px;
    }
    .info-value {
        color: #555;
        margin-bottom: 20px;
        padding: 10px;
        background: #f8f9fa;
        border-radius: 8px;
    }
    .btn-custom {
        background: linear-gradient(135deg, #6a11cb 0%, #2575fc
100%);
        border: none;
        color: white;
        padding: 12px;
        border-radius: 10px;
        font-weight: bold;
        width: 100%;
        transition: transform 0.3s ease;
    }
    .btn-custom:hover {
        transform: scale(1.05);
        color: white;
    }
</style>
</head>
<body>
    <div class="card profile-card">
        <!-- Card Header -->
        <div class="card-header">
            <div class="profile-img">👤🎓</div>
            <h3 class="mt-3 mb-0">Student Profile</h3>

```

```

</div>

<!-- Card Body -->
<div class="card-body">
  <!-- Student Name -->
  <div class="info-label">Student Name:</div>
  <div class="info-value">Ahmed Ali Khan</div>

  <!-- Registration Number -->
  <div class="info-label">Registration Number:</div>
  <div class="info-value">2024-CS-001</div>

  <!-- Course Name -->
  <div class="info-label">Course Name:</div>
  <div class="info-value">Bachelor of Computer
Science</div>

  <!-- Buttons -->
  <button class="btn btn-custom mt-3">View
Details</button>
  <button class="btn btn-outline-primary mt-2 w-100">Edit
Profile</button>
</div>
</div>

<!-- Bootstrap JS Bundle -->
<script
src="https://cdn.jsdelivr.net/npm/bootstrap@5.3.0/dist/js/bootstrap.
bundle.min.js"></script>
</body>
</html>

```

Explanation:

- **Card Component:** Uses Bootstrap `card`, `card-header`, and `card-body` for structure
- **Student Info:** Displays name, registration number, and course name in styled sections
- **Profile Icon:** Student emoji (👤🎓) represents profile picture
- **Buttons:** Two Bootstrap buttons - primary gradient and outlined style
- **Styling:** Blue gradient background, rounded corners, shadow effects
- **Responsive:** Centers card on screen, adapts to all device sizes
- **Layout:** Clean, organized information with labels and values

Task 3

Create a Student Profile Card using Bootstrap that includes: - Student name - Registration number - Course name - Use Bootstrap card and button components.

Code:

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>Student ID Card</title>
  <!-- Bootstrap CDN -->
  <link
href="https://cdn.jsdelivr.net/npm/bootstrap@5.3.0/dist/css/bootstrap.min.c
ss" rel="stylesheet">
  <style>
    body {
      background: #e8eef3;
      min-height: 100vh;
      display: flex;
      align-items: center;
      justify-content: center;
      padding: 20px;
    }
    .id-card {
      width: 450px;
      background: white;
      border-radius: 15px;
      overflow: hidden;
      box-shadow: 0 10px 30px rgba(0,0,0,0.2);
      border: 3px solid #1e3a8a;
      display: flex;
    }
    .side-strip {
      width: 60px;
      background: #1e3a8a;
      display: flex;
      align-items: center;
      justify-content: center;
      color: white;
      font-weight: bold;
      font-size: 16px;
      writing-mode: vertical-rl;
      text-orientation: mixed;
      letter-spacing: 2px;
    }
    .card-content {
      flex: 1;
      padding: 30px;
    }
    .university-name {
      text-align: center;
      font-size: 24px;
      font-weight: bold;
      color: #1e3a8a;
    }
```

```

        margin-bottom: 10px;
        padding-bottom: 15px;
        border-bottom: 3px solid #333;
    }
    .student-info {
        display: flex;
        justify-content: space-between;
        align-items: center;
        margin-top: 20px;
    }
    .info-section {
        flex: 1;
    }
    .student-name {
        font-size: 28px;
        font-weight: bold;
        color: #1e3a8a;
        margin-bottom: 10px;
    }
    .student-details {
        font-size: 15px;
        color: #333;
        line-height: 1.8;
    }
    .profile-pic {
        width: 100px;
        height: 100px;
        border-radius: 50%;
        border: 3px solid #1e3a8a;
        overflow: hidden;
        background: #e0e7ff;
        display: flex;
        align-items: center;
        justify-content: center;
        font-size: 60px;
        margin-left: 20px;
    }
}
</style>
</head>
<body>
    <div class="id-card">
        <!-- Side Strip -->
        <div class="side-strip">
            Evening Shift
        </div>

        <!-- Card Content -->
        <div class="card-content">
            <!-- University Name -->
            <div class="university-name">
                Air University Islamabad
            </div>

            <!-- Student Information -->
            <div class="student-info">
                <div class="info-section">
                    <div class="student-name">Imad Khan</div>
                    <div class="student-details">
                        <div><strong>ISB-F-2500623</strong></div>
                        <div><strong>ADSCS-F-25-A-1280</strong></div>
                    </div>
                </div>
            </div>
        </div>
    </div>

```

```

        </div>

        <!-- Profile Picture -->
        <div class="profile-pic">
            <img alt="Profile Picture Placeholder" data-bbox="322 141 366 156" />
        </div>
    </div>
</div>

<!-- Bootstrap JS Bundle -->
<script
src="https://cdn.jsdelivr.net/npm/bootstrap@5.3.0/dist/js/bootstrap.bundle.
min.js"></script>
</body>
</html>

```

OUTPUT



Explanation:

- **Layout:** Uses flexbox with side strip and main content area
- **Side Strip:** Blue vertical bar with "Evening Shift" text written vertically
- **University Header:** Centered title with bottom border line
- **Student Info:** Name displayed large and bold, registration numbers below
- **Profile Picture:** Circular image placeholder on the right side
- **Colors:** Navy blue (#1e3a8a) matching the original design
- **Border:** 3px blue border around entire card with rounded corners
- **Responsive:** Card stays centered on all screen sizes

Task 4

Create your own Curriculum Vitae (CV) using Bootstrap.

Your CV should include:

- Full name as a main heading
- Contact information
- Education details
- Skills section using Bootstrap badges or list groups
- Short personal profile

Use Bootstrap to:

- Create a clean and responsive layout
- Apply appropriate colors and spacing
- Use cards, grid, and typography utilities

Code:

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>Imad Khan - CV</title>
  <!-- Bootstrap CDN -->
  <link
href="https://cdn.jsdelivr.net/npm/bootstrap@5.3.0/dist/css/bootstrap.min.c
ss" rel="stylesheet">
  <style>
    body {
      background: linear-gradient(135deg, #8e9eab 0%, #eef2f3 100%);
      min-height: 100vh;
      padding: 40px 20px;
      font-family: 'Segoe UI', Tahoma, Geneva, Verdana, sans-serif;
    }
    .cv-container {
      max-width: 900px;
      margin: 0 auto;
      background: #e8e8e8;
      padding: 40px;
      border-radius: 15px;
      box-shadow: 0 20px 60px rgba(0,0,0,0.3);
    }
    .cv-content {
      background: white;
      border-radius: 10px;
      overflow: hidden;
      box-shadow: 0 5px 15px rgba(0,0,0,0.1);
      display: flex;
    }
    .left-sidebar {
      width: 280px;
```

```
        background: #d5d5d5;
        padding: 30px 20px;
    }
    .profile-img {
        width: 120px;
        height: 120px;
        border-radius: 10px;
        background: white;
        display: flex;
        align-items: center;
        justify-content: center;
        font-size: 70px;
        margin: 0 auto 15px;
        border: 3px solid #999;
    }
    .profile-name {
        text-align: center;
        font-size: 20px;
        font-weight: bold;
        color: #333;
        margin-bottom: 5px;
    }
    .profile-title {
        text-align: center;
        font-size: 14px;
        color: #666;
        font-style: italic;
        margin-bottom: 30px;
    }
    .section-title {
        font-size: 14px;
        font-weight: bold;
        color: #333;
        text-transform: uppercase;
        margin-bottom: 15px;
        padding-bottom: 10px;
        border-bottom: 2px solid #999;
        letter-spacing: 1px;
    }
    .contact-item {
        margin-bottom: 15px;
    }
    .contact-label {
        font-size: 12px;
        font-weight: bold;
        color: #333;
        margin-bottom: 3px;
    }
    .contact-value {
        font-size: 12px;
        color: #555;
    }
    .professional-item {
        font-size: 12px;
        color: #333;
        margin-bottom: 10px;
        line-height: 1.6;
    }
    .language-item {
        font-size: 13px;
        color: #333;
    }
```



```
        margin-bottom: 8px;
    }
    .right-content {
        flex: 1;
        padding: 40px;
    }
    .main-name {
        font-size: 36px;
        font-weight: bold;
        color: #2c3e50;
        margin-bottom: 30px;
    }
    .content-section {
        margin-bottom: 35px;
    }
    .content-section-title {
        font-size: 16px;
        font-weight: bold;
        color: #2c3e50;
        text-transform: uppercase;
        margin-bottom: 15px;
        padding-bottom: 10px;
        border-bottom: 2px solid #333;
        letter-spacing: 1px;
    }
    .profile-text {
        font-size: 14px;
        color: #555;
        line-height: 1.8;
        text-align: justify;
    }
    .education-item {
        margin-bottom: 15px;
    }
    .education-year {
        font-size: 13px;
        color: #666;
        font-style: italic;
        margin-bottom: 5px;
    }
    .education-institution {
        font-size: 15px;
        font-weight: bold;
        color: #2c3e50;
        margin-bottom: 5px;
    }
    .education-detail {
        font-size: 13px;
        color: #666;
    }
    .skills-list {
        list-style: none;
        padding: 0;
    }
    .skills-list li {
        font-size: 14px;
        color: #333;
        margin-bottom: 8px;
        padding-left: 20px;
        position: relative;
    }
}
```

```

        .skills-list li:before {
            content: "•";
            position: absolute;
            left: 0;
            color: #2c3e50;
            font-weight: bold;
            font-size: 18px;
        }
    </style>
</head>
<body>
    <div class="cv-container">
        <div class="cv-content">
            <!-- Left Sidebar -->
            <div class="left-sidebar">
                <!-- Profile Picture -->
                <div class="profile-img">
                    
                </div>
                <div class="profile-name">Imad Khan</div>
                <div class="profile-title">Student</div>

                <!-- Contact Section -->
                <div class="section-title">CONTACT</div>
                <div class="contact-item">
                    <div class="contact-label">Phone</div>
                    <div class="contact-value">+92-345-9010015</div>
                </div>
                <div class="contact-item">
                    <div class="contact-label">Address</div>
                    <div class="contact-value">Islamabad</div>
                </div>
                <div class="contact-item">
                    <div class="contact-label">Email</div>
                    <div class="contact-value">capkhan.vx@gmail.com</div>
                </div>

                <!-- Professional Section -->
                <div class="section-title mt-4">PROFESSIONAL</div>
                <ul class="list-unstyled">
                    <li class="professional-item">• Passionate front-end
developer.</li>
                    <li class="professional-item">• Strong skills in HTML,
CSS, JavaScript, React.</li>
                    <li class="professional-item">• Quick learner and team
player.</li>
                    <li class="professional-item">• Excellent communication
skills.</li>
                </ul>

                <!-- Language Section -->
                <div class="section-title mt-4">LANGUAGE</div>
                <div class="language-item">English</div>
                <div class="language-item">Urdu</div>
                <div class="language-item">Pashto</div>
            </div>

            <!-- Right Content -->
            <div class="right-content">
                <!-- Main Name -->
                <h1 class="main-name">Imad Khan</h1>
            </div>
        </div>
    </div>
</body>
</html>

```

```

        <!-- Profile Section -->
        <div class="content-section">
            <div class="content-section-title">PROFILE</div>
            <p class="profile-text">
                A motivated and detail-oriented student currently
pursuing studies at Air University Islamabad,
                with a passion for front-end development and web
technologies. Eager to apply knowledge and grow
                skills through real-world projects and
collaboration.
            </p>
        </div>

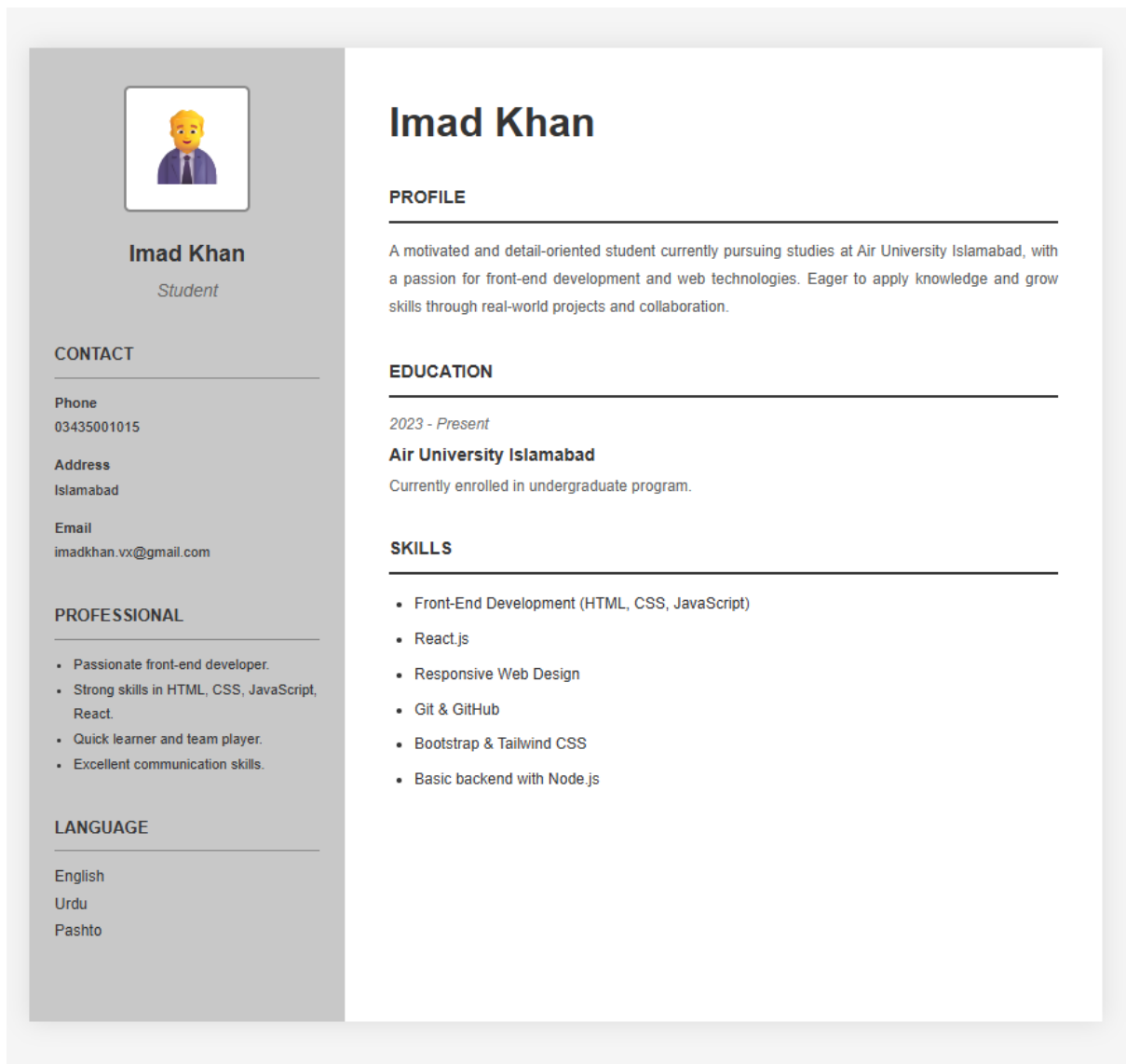
        <!-- Education Section -->
        <div class="content-section">
            <div class="content-section-title">EDUCATION</div>
            <div class="education-item">
                <div class="education-year">2023 - Present</div>
                <div class="education-institution">Air University
Islamabad</div>
                <div class="education-detail">Currently enrolled in
undergraduate program.</div>
            </div>
        </div>

        <!-- Skills Section -->
        <div class="content-section">
            <div class="content-section-title">SKILLS</div>
            <ul class="skills-list">
                <li>Front-End Development (HTML, CSS,
JavaScript)</li>
                <li>React.js</li>
                <li>Responsive Web Design</li>
                <li>Git & GitHub</li>
                <li>Bootstrap & Tailwind CSS</li>
                <li>Basic backend with Node.js</li>
            </ul>
        </div>
    </div>
</div>

<!-- Bootstrap JS Bundle -->
<script
src="https://cdn.jsdelivr.net/npm/bootstrap@5.3.0/dist/js/bootstrap.bundle.
min.js"></script>
</body>
</html>

```

OUTPUT



Explanation:

Layout:

- Two-column design: gray sidebar (left) + white content area (right)
- Flexbox layout for responsive structure

Left Sidebar:

- Profile picture with circular border
- Contact details (phone, address, email)
- Professional summary points
- Language skills

Right Content:

- Large name heading at top
- Profile section with personal description
- Education timeline with year and institution
- Skills list with bullet points

Styling:

- Gray gradient background
- White content card with shadow
- Section titles with underline borders
- Clean typography and spacing
- Professional color scheme (gray, black, white)

Bootstrap Features:

- Responsive grid system
- Typography utilities
- List styling
- Card components
- Spacing classes (mb, mt, padding)

---END---