



Punjab Tianjin University of Technology (PTUT)
Department of Software Engineering



PUNJAB TIANJIN UNIVERSITY OF TECHNOLOGY

Name	Muhammad Khubaib
Roll #	23-SET-017
Subject	WEB DEVELOPMENT
Semester	Spring2025 (4th Semester)

LAB MANUALS

Department: Software Engineering Technology



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Department of Software Engineering

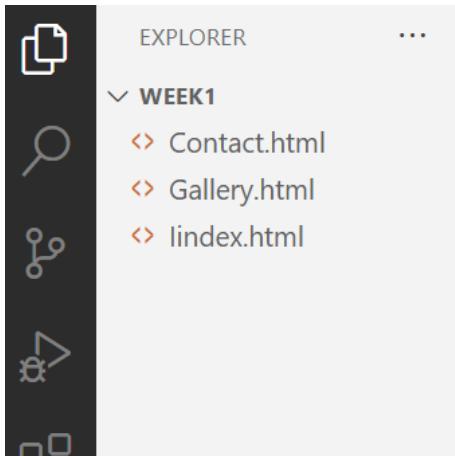
LAB 01

Introduction to HTML

Web Development

Create a simple website home page using HTML.

File structure:



Step1:Code of html of Index.html, Contact.html, Gallery.html.

Index.html:



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```
<div>
<a href="Index.html">Home</a>
<a href="Contact.html">Contact Us</a>
<a href="Gallery.html">Gallery</a>
</div>

<h1>Welcome to Our Website</h1>
<h2>About Us</h2>
<h3>Our Mission</h3>
<h4>Our Vision</h4>
<h5>Team</h5>
<h6>Contact Information</h6>
<br>
<p>Our website is dedicated to providing high-quality content and services to our users.  
We strive to meet your needs and exceed your expectations.</p>
<br>
<p>We believe in transparency, innovation, and commitment to our customers.  
Explore our website to learn more about what we offer.</p>
<br>
<p>Thank you for visiting our website.  
We appreciate your support and look forward to serving you better.</p>
<br>

<ol> Top Feature

<li>Comprehensive Resources</li>
<li>User-Friendly Design</li>
<li>Reliable Support</li>
</ol>
<br>
<ul> Our Service
    <li>Consulting</li>
    <li>Product Development</li>
    <li>Customer Support</li>
</ul>
<table border="1">
    <tr>
        <td>Name</td>
        <td>Muhammad</td>
        <td>Khubaib</td>
    </tr>
    <tr>
        <td>Role</td>
        <td>study</td>
        <td>Web Development</td>
    </tr>
    <tr>
        <td>Email</td>
        <td>23_st_017@gmail.com</td>
        <td>mkhubaib786lhr@gmail.com</td>
    </tr>
</table>
</body>
</html>
```

Gallery.html:

```
<body>
    <div>
        <a href="Index.html">Home</a>
        <a href="Contact.html">Contact Us</a>
        <a href="Gallery.html">Gallery</a>
    </div>
    <h3>Image Gallery</h3>
    <br>

    
    
    
    
    
    
</body>
</html>
```

Contact.html:



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```
<div>
  ...<a href="index.html">Home</a>
  ...<a href="Contact.html">Contact Us</a>
  ...<a href="Gallery.html">Gallery</a>
</div>
<h3> Contact Us</h3>
<form action="" method="get">
  <label for="txtname">
    Name
    <input type="name" placeholder="Your Name" id="txtname">
  </label>
  <br>
  <label for="txtemail">
    Email
    <input type="email" placeholder="Your Email" id="txtemail">
  </label>
  <br>
  <label for="txtfeedback">
    Feedback
    <textarea placeholder="Enter Your Message" id="txtfeedback" ></textarea>
  </label>
  <br>

  <button type="submit">Save</button>
</form>

</body>
</html>
```

Step2:Run on chrome Browser index.html, Contact.html, Gallery.html and Show it.

Index.html:



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[Home](#) [Contact Us](#) [Gallery](#)

Welcome to Our Website

About Us

Our Mission

Our Vision

Team

Contact Information

Our website is dedicated to providing high-quality content and services to our users. We strive to meet your needs and exceed your expectations.

We believe in transparency, innovation, and commitment to our customers. Explore our website to learn more about what we offer.

Thank you for visiting our website. We appreciate your support and look forward to serving you better.

Top Feature

1. Comprehensive Resources
2. User-Friendly Design
3. Reliable Support

Our Service

- Consulting
- Product Development
- Customer Support

Name	Muhammad	Khubaib
Role	study	Web Development
Email	23_st_017@gmail.com	mkhubaib786lhr@gmail.com

Contact.html:

[Home](#) [Contact Us](#) [Gallery](#)

Contact Us

Name	<input type="text" value="Your Name"/>
Email	<input type="text" value="Your Email"/>
Feedback	<input type="text" value="Enter Your Message"/>
<input type="button" value="Save"/>	

Gallery.html:



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[Home](#) [Contact Us](#) [Gallery](#)

Image Gallery





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GENERALIZED LAB RUBRICS

Domain	Component with Taxonomy	Above Expectation (4)	Meeting Expectation (3)	Approaching Expectation (2)	Below Expectation (1)	Used	Weight / 100 (Optional)	Score (1-4)
Psychomotor	Building (Hardware)	Is able to build a given setup neatly and timely using correct hardware components and / or can reorganize / adapt to new / special requirements	Is able to assemble a given setup using correct hardware components after minor revisions	Is only able to copy a given setup using correct hardware components	Is not able to assemble a given setup using correct hardware components	<input type="checkbox"/>		
Cognitive	Recording Measurements (Hardware / Software)	Is able to record accurate measurements all the time	Is able to record accurate measurements most of the time	Is only able to record accurate measurements on some occasions	Is unable to record accurate measurements	<input type="checkbox"/>		
	Investigation (Software)	Is able to formulate /develop theories in addition to evaluating /concluding correctly about investigation parameters by assessing data	Is able to evaluate /conclude correctly about investigation parameters by assessing data	Is partially able to evaluate /conclude correctly about investigation parameters by assessing data	Is unable to comprehend investigation parameters	<input type="checkbox"/>		
	Design / Development of Solution (Hardware / Software)	Is able to design / develop the solution of a given problem and add features to it	Is able to design / develop the solution of a given problem	Is able to partially design / develop the solution of a given problem	Is unable to partially design / develop the solution of a given problem	<input type="checkbox"/>		
	Software Usage (Software)	Is adept in the use of software tool and can access advanced features	Is able to use the software tool effectively by accessing all the required features	Is able to use the software tool but cannot access all the required features	Is unable to use the software tool	<input type="checkbox"/>		
	Programming Language (Software)	Is able to efficiently complete a given task using advanced programming language constructs / methods / commands and/or add features to the original task	Is able to complete a given task using required programming language constructs / methods / commands	Is able to partially complete a given task	Is unable to partially complete a given task	<input type="checkbox"/>		



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	Professional Ethics (PLO8)	Exhibits exemplary professional ethics while writing lab reports and dealing with fellow students, lab staff and instructor all the time	Exhibits professional ethics while writing lab reports and dealing with fellow students, lab staff and instructor all the time	Makes an effort to exhibit professional ethics while writing lab reports and dealing with fellow students, lab staff and instructor all the time	Does not exhibit professional ethics while writing lab reports and dealing with fellow students, lab staff and instructor all the time	<input type="checkbox"/>		
	Contribution (PLO9)	Consistently shows full preparation by completing all agreed tasks and provides additional resources for the group and work quality is excellent	Consistently shows full preparation by completing all agreed tasks and work requires little or no revisions	Shows some preparation which is mostly at superficial level in completing a task and work requires much revisions and editing	Shows very little or no preparation in completing a task and work quality is poor	<input type="checkbox"/>		
	Attitude (PLO9)	Internalized positive behavior and encourages and helps other team members	Consistent positive behavior most of the time towards other team members	Neither helpful nor damaging and shows disinterest in the performance of others	Discouraging behavior towards other team members	<input type="checkbox"/>		
	Report Writing (PLO10)	Report on all relevant sections related to the lab tasks is completed accurately, meeting the requirements, in prescribed time and with good language skills	Report on all relevant sections related to the lab tasks is completed but few deficiencies are present in terms of accuracy / meeting the requirements / prescribed time / good language skills	Report on all relevant sections related to the lab tasks is completed but many deficiencies are present in terms of accuracy / meeting the requirements / prescribed time / good language skills	Report on all relevant sections related to the lab tasks is not completed	<input type="checkbox"/>		
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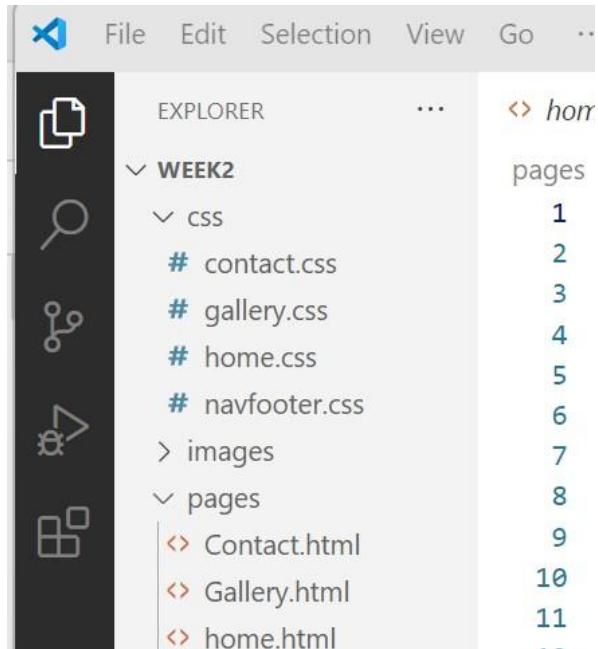
LAB 02

Introduction To CSS

Web Development

Apply CSS styling to the HTML page created in the previous lab.

File Structure:





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home.css X

```
css > # home.css > ...
1  /* Reset default browser styles */
2  * {
3      border: 0;
4      padding: 0;
5      margin: 0;
6      box-sizing: border-box;
7  }
8
9  /* Global styles */
10 body {
11     font-family: Arial, sans-serif;
12     background-color: □#f4f4f4; /* Light grey background */
13     color: ■#333; /* Dark grey text */
14 }
15
16 /* Header */
17 header {
18     background: □#ffffff; /* White background */
19     color: ■#333; /* Dark grey text */
20     padding: 30px 15px;
21     text-align: center;
22     border-bottom: 3px solid □#ddd;
23 }
24
25 header h1 {
26     margin-bottom: 10px;
27     font-size: 32px;
```

Contact.css



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```
# home.css      # contact.css ×

css > # contact.css > ...
1  /* Contact Form Styles */
2  .contact {
3      background-color: □#ffffff;
4      padding: 25px;
5      margin: 20px auto;
6      max-width: 500px;
7      border-radius: 8px;
8      box-shadow: 0 4px 8px □rgba(0, 119, 204, 0.2);
9      border: 1px solid ■#0077cc;
10 }
11
12 .contact h3 {
13     text-align: center;
14     color: ■#0077cc;
15     margin-bottom: 20px;
16     font-size: 24px;
17 }
18
19 .contact form {
20     display: flex;
21     flex-direction: column;
22 }
23
24 .contact label {
25     font-weight: bold;
26     margin-bottom: 5px;
27     display: block;
```

Gallery.css



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```
# gallery.css ×

css > # gallery.css > ...
1  /* Image Gallery Container */
2  .image_container {
3      background-color: white;
4      padding: 20px;
5      margin: 20px auto;
6      max-width: 1200px;
7      display: flex;
8      flex-wrap: wrap; /* Images wrap neatly */
9      justify-content: center; /* Center align images */
10     text-align: center;
11     border-radius: 10px;
12     border: 1px solid #ddd;
13     box-shadow: 0 4px 8px rgba(0, 0, 0, 0.1);
14 }
15
16 .image_container h3 {
17     color: black;
18     margin-bottom: 20px;
19     font-size: 1.8rem;
20     text-align: center;
21     width: 100%;
22 }
23
24 /* Image Styling */
25 .image_container img {
26     width: 150px;
27     height: auto;
28     margin: 10px;
```

Navfooter.css

```
# navfooter.css ×

css > # navfooter.css > ...
1  /* Reset styles */
2  * {
3      border: 0;
4      padding: 0;
5      margin: 0;
6      box-sizing: border-box;
7  }
8
9  /* Body */
10 body {
11     font-family: Arial, sans-serif;
12     line-height: 1.6;
13     color: #333;
14     background-color: #f4f4f4;
15     margin: 0;
16 }
17
18 /* Navbar */
19 .navbar {
20     display: flex;
21     align-items: center;
22     justify-content: space-between;
23     background-color: #ffffff;
24     padding: 15px 30px;
25     border-bottom: 2px solid #0077cc; /* Blue border for modern look */
26     box-shadow: 0 2px 5px rgba(0, 0, 0, 0.1);
27 }
```

**Part2: Project run on browser and show it:
HomePage**



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TechLab

[Home](#) [Contact Us](#) [Gallery](#)

WELCOME TO OUR WEBSITE

Our website is dedicated to providing high-quality content and services to our users. We strive to meet your needs and exceed your expectations.

About Us

Our website is dedicated to providing high-quality content and services to our users. We strive to meet your needs and exceed your expectations.

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Top Features

1. Comprehensive Resources
2. User-Friendly Design

Our Services

- Consulting
- Product Development
- Customer Support

Team Members

Name	Role	Email
Muhammad Khubaib	Student	mkhubaib786lhr@gmail.com
Muhammad Ibrar	Student	ibrar@google.com
Muhammad Wahad	Student	wahad786lhr@gmail.com

GalleryPage



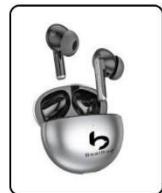
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TechLab

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Image Gallery



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ContactPage

TechLab

[Home](#) [Contact Us](#) [Gallery](#)

Contact Us

Name

Email

Feedback



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LAB 03

Introduction to Bootstrap

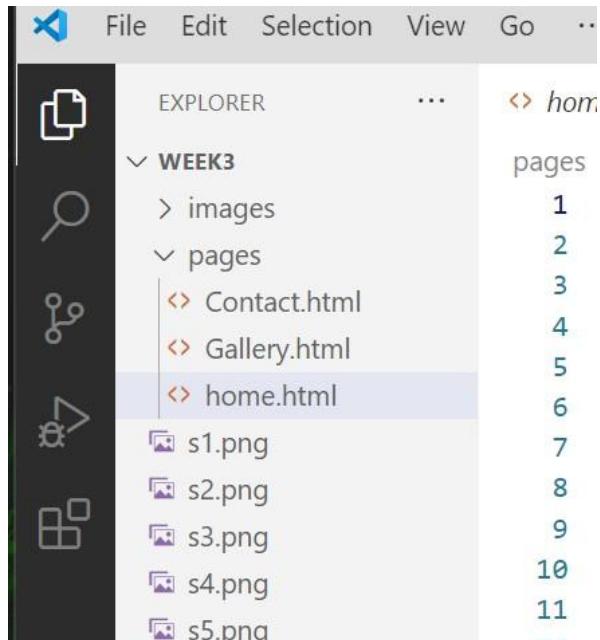
Web Development

Objective:

Make your website responsive using bootstrap.

Make tables and navbar in your website.

File Structure:



**Step1: Make the same labsecond in bootstrap good way three page
Home.html, Gallery.html, Contact.html.**

Home.html



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Welcome < home.html >

```
pages > < home.html > ...
1  <!DOCTYPE html>
2  <html lang="en">
3  <head>
4      <meta charset="UTF-8">
5      <meta name="viewport" content="width=device-width, initial-scale=1.0">
6      <title>Home</title>
7      <!-- Bootstrap CSS -->
8      <link href="https://cdn.jsdelivr.net/npm/bootstrap@5.3.2/dist/css/bootstrap.min.css" rel="stylesheet">
9  </head>
10 <body class="bg-light">
11
12     <!-- Navbar -->
13     <nav class="navbar navbar-expand-lg navbar-dark bg-primary shadow-sm">
14         <div class="container">
15             <a class="navbar-brand fw-bold text-white" href="#">TechLab</a>
16             <button class="navbar-toggler" type="button" data-bs-toggle="collapse" data-bs-target="#navbarNav">
17                 <span class="navbar-toggler-icon"></span>
18             </button>
19             <div class="collapse navbar-collapse" id="navbarNav">
20                 <ul class="navbar-nav ms-auto">
21                     <li class="nav-item"><a class="nav-link active text-white" href="home.html">Home</a></li>
22                     <li class="nav-item"><a class="nav-link text-white" href="Contact.html">Contact Us</a></li>
23                     <li class="nav-item"><a class="nav-link text-white" href="Gallery.html">Gallery</a></li>
24                 </ul>
25             </div>
26         </div>
27     </nav>
```

Gallery.html

< Gallery.html >

```
pages > < Gallery.html > ...
1  <!DOCTYPE html>
2  <html lang="en">
3  <head>
4      <meta charset="UTF-8">
5      <meta name="viewport" content="width=device-width, initial-scale=1.0">
6      <title>Home</title>
7      <!-- Bootstrap CSS -->
8      <link href="https://cdn.jsdelivr.net/npm/bootstrap@5.3.2/dist/css/bootstrap.min.css" rel="stylesheet">
9
10     <style>
11         .card-img-top {
12             height: 200px; /* Fixed height for all images */
13             object-fit: cover; /* Ensures images maintain aspect ratio */
14         }
15     </style>
16  </head>
17 <body class="bg-light">
18
19     <!-- Navbar -->
20     <nav class="navbar navbar-expand-lg navbar-dark bg-primary shadow-sm">
21         <div class="container">
22             <a class="navbar-brand fw-bold text-white" href="#">TechLab</a>
23             <button class="navbar-toggler" type="button" data-bs-toggle="collapse" data-bs-target="#navbarNav">
24                 <span class="navbar-toggler-icon"></span>
25             </button>
26             <div class="collapse navbar-collapse" id="navbarNav">
27                 <ul class="navbar-nav ms-auto">
```

Contact.html



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```
<> Contact.html <>
pages > <> Contact.html > ...
1  <!DOCTYPE html>
2  <html lang="en">
3  <head>
4      <meta charset="UTF-8">
5      <meta name="viewport" content="width=device-width, initial-scale=1.0">
6      <title>Contact Us</title>
7      <!-- Bootstrap CSS -->
8      <link href="https://cdn.jsdelivr.net/npm/bootstrap@5.3.2/dist/css/bootstrap.min.css" rel="stylesheet">
9  </head>
10 <body class="bg-light">
11
12     <!-- Navbar -->
13     <nav class="navbar navbar-expand-lg navbar-dark bg-primary shadow">
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24                 </ul>
25             </div>
26         </div>
</body>
```

Step2: Run the project on web browser and Show it:
Home

Welcome to TechLab
We provide high-quality content and services tailored for you.
Get in Touch

About Us
We believe in innovation, transparency, and customer satisfaction.



Punjab Tianjin University of Technology (PTUT)

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Top Features

1. Comprehensive Resources
2. User-Friendly Design
3. Reliable Support

Our Services

- Consulting
- Product Development
- Customer Support

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Contact

TechLab

Home Contact Us Gallery

Contact Us

Name

Email

Message

Submit

Gallery

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Home Contact Us Gallery

Featured Items



Item One

Description of the first item.

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Item Two

Description of the second item.

[Learn More](#)



Item Three

Description of the third item.

[Learn More](#)



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Item Four

Description of the fourth item.

[Learn More](#)



Item Five

Description of the fifth item.

[Learn More](#)



Item Six

Description of the sixth item.

[Learn More](#)



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GENERALIZED LAB RUBRICS

Domain	Component with Taxonomy	Above Expectation (4)	Meeting Expectation (3)	Approaching Expectation (2)	Below Expectation (1)	Used	Weight / 100 (Optional)	Score (1-4)
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	Report Writing (PLO10)	Report on all relevant sections related to the lab tasks is completed accurately, meeting the requirements, in prescribed time and with good language skills	Report on all relevant sections related to the lab tasks is completed but few deficiencies are present in terms of accuracy / meeting the requirements / prescribed time / good language skills	Report on all relevant sections related to the lab tasks is completed but many deficiencies are present in terms of accuracy / meeting the requirements / prescribed time / good language skills	Report on all relevant sections related to the lab tasks is not completed	<input type="checkbox"/>		
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Department of Software Engineering

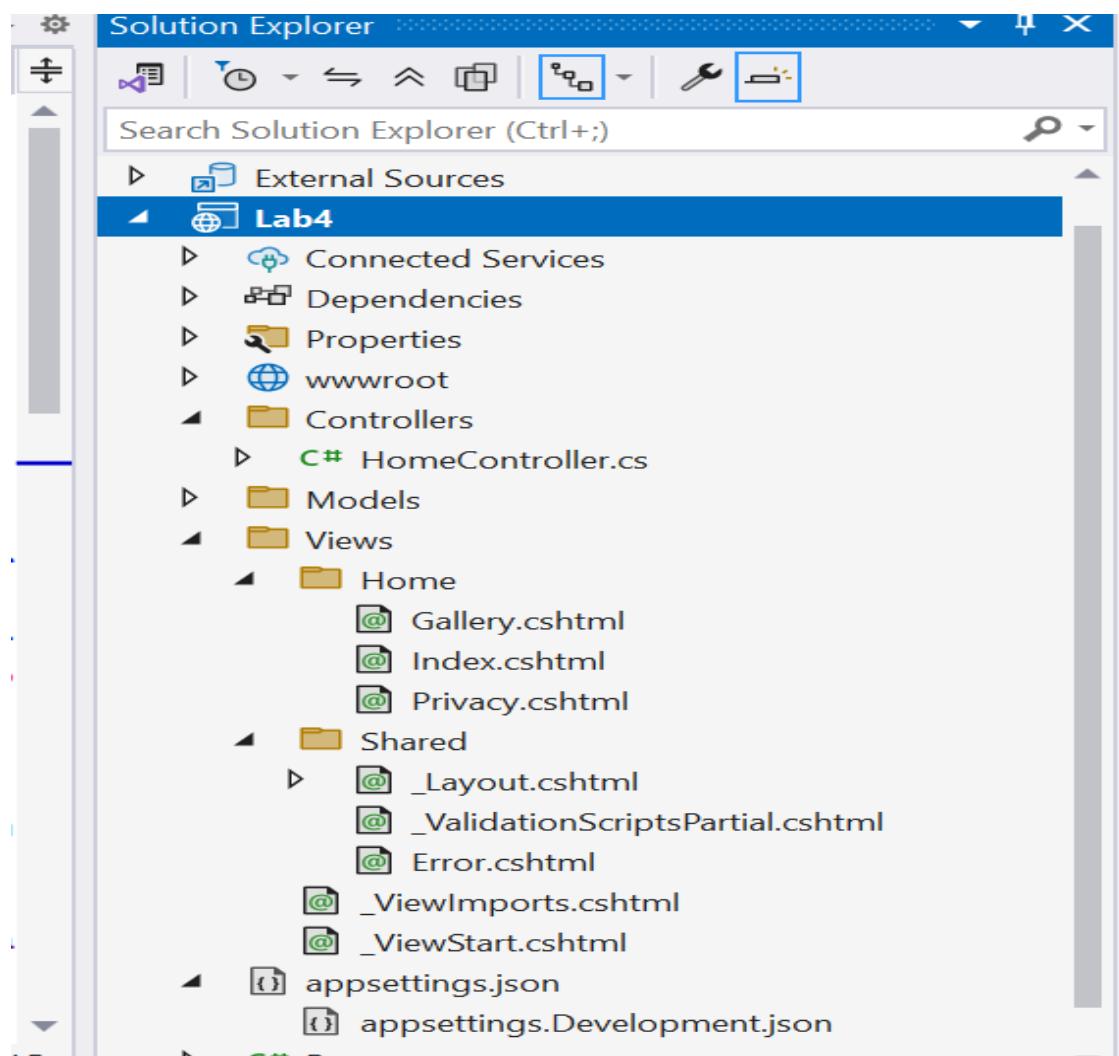
LAB 04

Introduction to .Net core MVC design pattern

Convert your HTML website into .net core MVC.

Web Development

File Structure:



In the Home Controller define Action of three file Index.cshtml, Contact.cshtml, Privacy.cshtml.



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```
HomeController.cs
private readonly ILogger<HomeController> _logger;
public HomeController(ILogger<HomeController> logger)
{
    _logger = logger;
}
public IActionResult Index()
{
    return View();
}
public IActionResult Privacy()
{
    return View();
}
public IActionResult Gallery()
{
    return View();
}
[ResponseCache(Duration = 0, Location = ResponseCacheLocation.None, NoStore = true)]
```

Index.cshtml for home page:

```
Index.cshtml
@{
    ViewData["Title"] = "Home Page";
}


# Welcome to Our Website



## About Us



### Our Mission



#### Our Vision



##### Team



###### Contact Information



Our website is dedicated to providing high-quality content and services to our users.  

        We strive to meet your needs and exceed your expectations.



We believe in transparency, innovation, and commitment to our customers.  

        Explore our website to learn more about what we offer.



Thank you for visiting our website.  

        We appreciate your support and look forward to serving you better.


```

Gallery.cshtml for Gallery page:



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```
_Layout.cshtml  Gallery.cshtml  Privacy.cshtml  Index.cshtml  HomeController.cs
Lab4
1  

2      

### Image Gallery


3      

4          

5              
6


7          

8              
9


10         

11             
12


13         

14             
15


16         

17             
18


19         

20             
21


22


23


24 
```

Privacy.cshtml for Contact page:

```
_Layout.cshtml  Gallery.cshtml  Privacy.cshtml  Index.cshtml  HomeController.cs
Lab4
1  

2      

### Contact Us


3      
4          

5              <label for="txtname" class="form-label">Name</label>
6              <input type="text" class="form-control" id="txtname" placeholder="Your Name">
7


8          

9              <label for="txtemail" class="form-label">Email</label>
10             <input type="email" class="form-control" id="txtemail" placeholder="Your Email">
11


12         

13             <label for="txtfeedback" class="form-label">Feedback</label>
14             <textarea class="form-control" id="txtfeedback" rows="4" placeholder="Enter Your Message"></textarea>
15


16         <button type="submit" class="btn btn-primary w-100">Save</button>
17     
18


19 
```

Layout.cshtml for Navbar and Footer:



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The screenshot shows the Visual Studio code editor with the file "Layout.cshtml" open. The code defines a navigation bar (navbar) with a brand name "Lab4", a toggle button, and three menu items: "Home", "Privacy", and "Gallery". The "Gallery" item is currently selected.

```
7 <link rel="stylesheet" href("~/lib/bootstrap/dist/css/bootstrap.min.css" />
8 <link rel="stylesheet" href("~/css/site.css" asp-append-version="true" />
9 <link rel="stylesheet" href "~/Lab4.styles.css" asp-append-version="true" />
10 </head>
11 <body>
12 <header>
13 <nav class="navbar navbar-expand-sm navbar-toggleable-sm navbar-light bg-white border-bottom bo>
14 <div class="container-fluid">
15 <a class="navbar-brand" asp-area="" asp-controller="Home" asp-action="Index">Lab4</a>
16 <button class="navbar-toggler" type="button" data-bs-toggle="collapse" data-bs-target=".nba">
17 &nbsp;<span class="navbar-toggler-icon"></span>
18 </button>
19 <div class="navbar-collapse collapse d-sm-inline-flex justify-content-between">
20 <ul class="navbar-nav flex-grow-1">
21 <li class="nav-item">
22 <a class="nav-link text-dark" asp-area="" asp-controller="Home" asp-action="Index">Home</a>
23 </li>
24 <li class="nav-item">
25 <a class="nav-link text-dark" asp-area="" asp-controller="Home" asp-action="Privacy">Contact</a>
26 </li>
27 <li class="nav-item">
28 <a class="nav-link text-dark" asp-area="" asp-controller="Home" asp-action="Gallery">Gallery</a>
29 </li>
30 </ul>
31 </div>
32 </div>
33 </nav>
```

OUTPUT OF Home page:



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Department of Software Engineering

Lab4 Home Contact Gallery

Welcome to Our Website

[About Us](#)

[Our Mission](#)

[Our Vision](#)

[Team](#)

[Contact Information](#)

Our website is dedicated to providing high-quality content and services to our users. We strive to meet your needs and exceed your expectations.

We believe in transparency, innovation, and commitment to our customers. Explore our website to learn more about what we offer.

Thank you for visiting our website. We appreciate your support and look forward to serving you better.

Top Features

1. Comprehensive Resources
2. User-Friendly Design
3. Reliable Support

Our Services

- Consulting
Product Development
Customer Support

Team Information

Name	Muhammad	Khubaib
Role	Study	Web Development
Email	23_st_017@gmail.com	mkhubaib786lhr@gmail.com

OUTPUT OF Contact Page:



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Department of Software Engineering

Lab4 Home Contact Gallery

Contact Us

Name

Your Name

Email

Your Email

Feedback

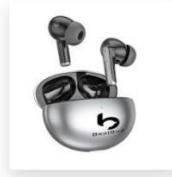
Enter Your Message

Save

OUTPUT OF Gallery Page:

Lab4 Home Contact Gallery

Image Gallery



© 2025 - Lab4 - [Privacy](#)



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Department of Software Engineering

GENERALIZED LAB RUBRICS

Domain	Component with Taxonomy	Above Expectation (4)	Meeting Expectation (3)	Approaching Expectation (2)	Below Expectation (1)	Used	Weight / 100 (Optional)	Score (1-4)
Psychomotor	Building (Hardware)	Is able to build a given setup neatly and timely using correct hardware components and / or can reorganize / adapt to new / special requirements	Is able to assemble a given setup using correct hardware components after minor revisions	Is only able to copy a given setup using correct hardware components	Is not able to assemble a given setup using correct hardware components	<input type="checkbox"/>		
Cognitive	Recording Measurements (Hardware / Software)	Is able to record accurate measurements all the time	Is able to record accurate measurements most of the time	Is only able to record accurate measurements on some occasions	Is unable to record accurate measurements	<input type="checkbox"/>		
	Investigation (Software)	Is able to formulate /develop theories in addition to evaluating /concluding correctly about investigation parameters by assessing data	Is able to evaluate /conclude correctly about investigation parameters by assessing data	Is partially able to evaluate /conclude correctly about investigation parameters by assessing data	Is unable to comprehend investigation parameters	<input type="checkbox"/>		
	Design / Development of Solution (Hardware / Software)	Is able to design / develop the solution of a given problem and add features to it	Is able to design / develop the solution of a given problem	Is able to partially design / develop the solution of a given problem	Is unable to partially design / develop the solution of a given problem	<input type="checkbox"/>		
	Software Usage (Software)	Is adept in the use of software tool and can access advanced features	Is able to use the software tool effectively by accessing all the required features	Is able to use the software tool but cannot access all the required features	Is unable to use the software tool	<input type="checkbox"/>		
	Programming Language (Software)	Is able to efficiently complete a given task using advanced programming language constructs / methods / commands and/or add features to the original task	Is able to complete a given task using required programming language constructs / methods / commands	Is able to partially complete a given task	Is unable to partially complete a given task	<input type="checkbox"/>		



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Department of Software Engineering

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LAB 05

Implement and run Add CRUD operations into your website

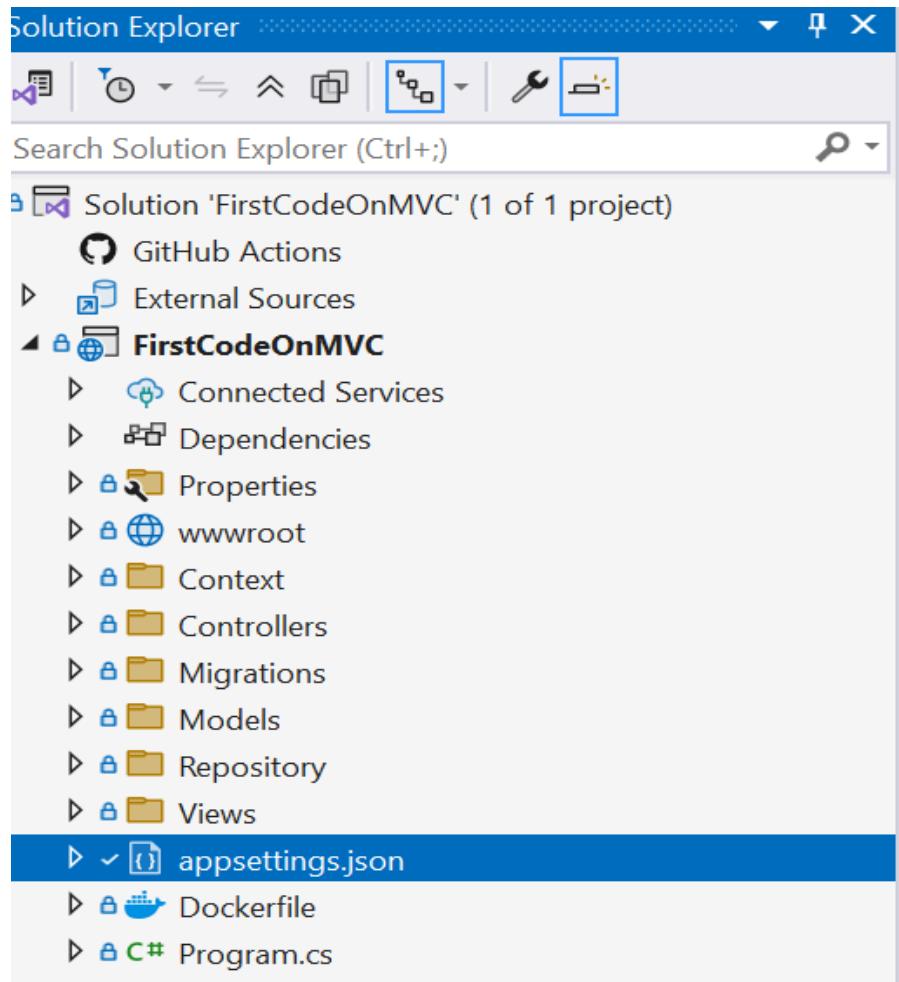
by using Asp.net core mvc.

Web Development

Step1:

Create the application name as Employee Management.

File Structure of Employee Management System:



Display file :



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Model CODE:

```
namespace FirstCodeOnMVC.Models
{
    public class Employee
    {
        public int Id { get; set; }
        public string Name { get; set; }
        public int Salary { get; set; }
        public string City { get; set; }
    }
}
```

Controller:

```
using System.Diagnostics;
using FirstCodeOnMVC.Models;
using Microsoft.AspNetCore.Mvc;

namespace FirstCodeOnMVC.Controllers
{
    public class HomeController : Controller
    {
        private readonly ILogger<HomeController> _logger;

        public HomeController(ILogger<HomeController> logger)
        {
            _logger = logger;
        }

        public IActionResult Index()
        {
            return View();
        }

        public IActionResult Privacy()
        {
            return View();
        }

        [ResponseCache(Duration = 0, Location = ResponseCacheLocation.None, NoStore = true)]
        public IActionResult Error()
        {
            return View(new ErrorViewModel { RequestId = Activity.Current?.Id ?? 
HttpContext.TraceIdentifier });
        }
    }
}
```

Program.cs

```
using FirstCodeOnMVC.Context;
using FirstCodeOnMVC.Repository;
using Microsoft.EntityFrameworkCore;
```



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```
var builder = WebApplication.CreateBuilder(args);

// Add services to the container.
builder.Services.AddControllersWithViews();
builder.Services.AddScoped<IEmployeeRepository, SqlEmployeeRepository>();
builder.Services.AddScoped<EmployeeDbContext, EmployeeDbContext>();

builder.Services.AddDbContext<EmployeeDbContext>(options =>
    options.UseSqlServer(builder.Configuration.GetConnectionString("DefaultConnection")));

var app = builder.Build();

// Configure the HTTP request pipeline.
if (!app.Environment.IsDevelopment())
{
    app.UseExceptionHandler("/Home/Error");
    // The default HSTS value is 30 days. You may want to change this for production scenarios, see
    // https://aka.ms/aspnetcore-hsts.
    app.UseHsts();
}

app.UseHttpsRedirection();
app.UseStaticFiles();

app.UseRouting();
app.UseAuthorization();
app.MapControllerRoute(
    name: "default",
    pattern: "{controller=Employee}/{action=Index}/{id?}");
app.Run();
```

View:



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:CodeOnMVC Home Privacy

Index

[Create New](#)

#	Name	Salary	City	
1	Ibrar	230000	Lahore	Edit Details
2	Khubaib	344000	Malisi	Edit Details
3	Hamad	23435	Okara	Edit Details

2025 – FirstCodeOnMVC – [Privacy](#)

Create:

FirstCodeOnMVC Home Privacy

Create

Employee

Id

Name

Salary

City

[Back to List](#)

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Update/Edit:



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FirstCodeOnMVC Home Privacy

Edit

Employee

Id

1

Name

Ibrar

Salary

230000

City

Lahore

Save

[Back to List](#)

© 2025 - FirstCodeOnMVC - [Privacy](#)

Delete

FirstCodeOnMVC Home Privacy

Delete

Are you sure you want to delete this?

Employee

Id 1

Name Ibrar

Salary 230000

City Lahore

Delete

| [Back to List](#)

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FirstCodeOnMVC

[Home](#) [Privacy](#)

Details

Employee

Id	1
Name	Ibrar
Salary	230000
City	Lahore

[Edit](#) | [Back to List](#)



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	Lab Task Management (PLO11)	Manages tasks well within given timeframe	Manages tasks within given timeframe	Manages tasks in an extended timeframe	Does not manage tasks even in extended timeframes	<input type="checkbox"/>		



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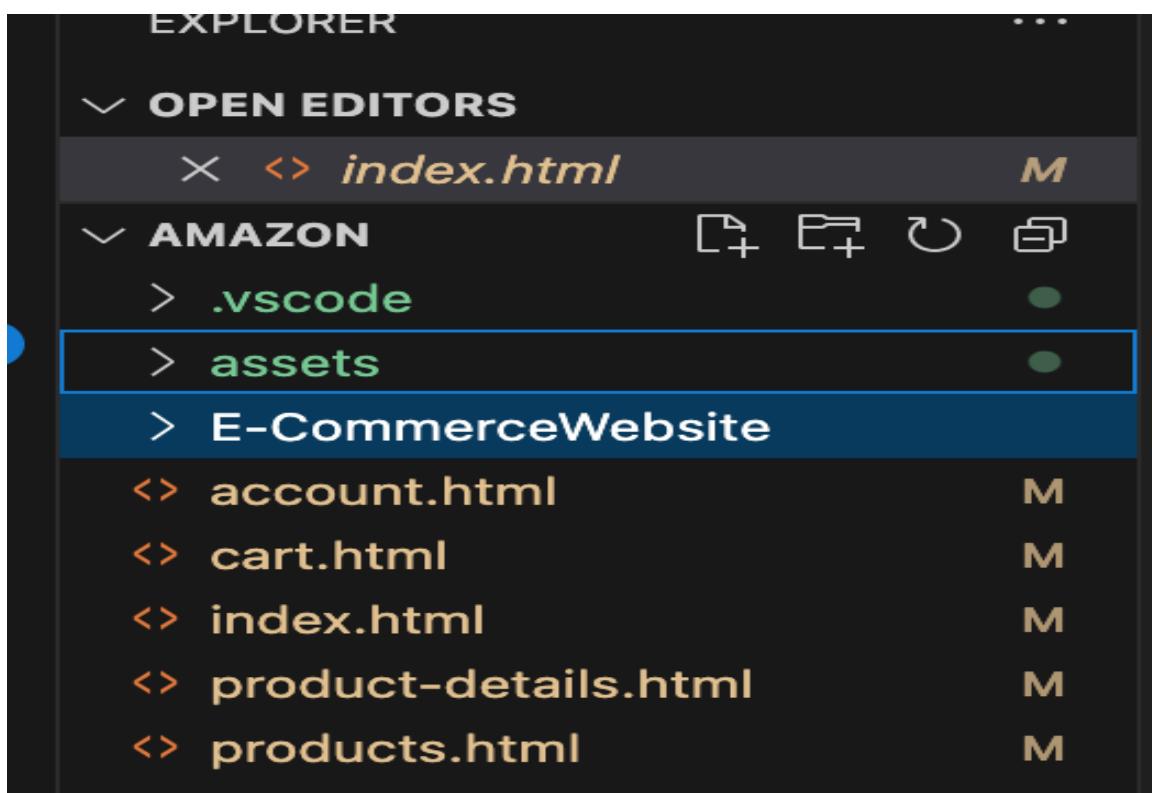
LAB 06

Project: Create a simple front-end website using the technologies learned in previous labs.

Web Development

Website Name: Amazon

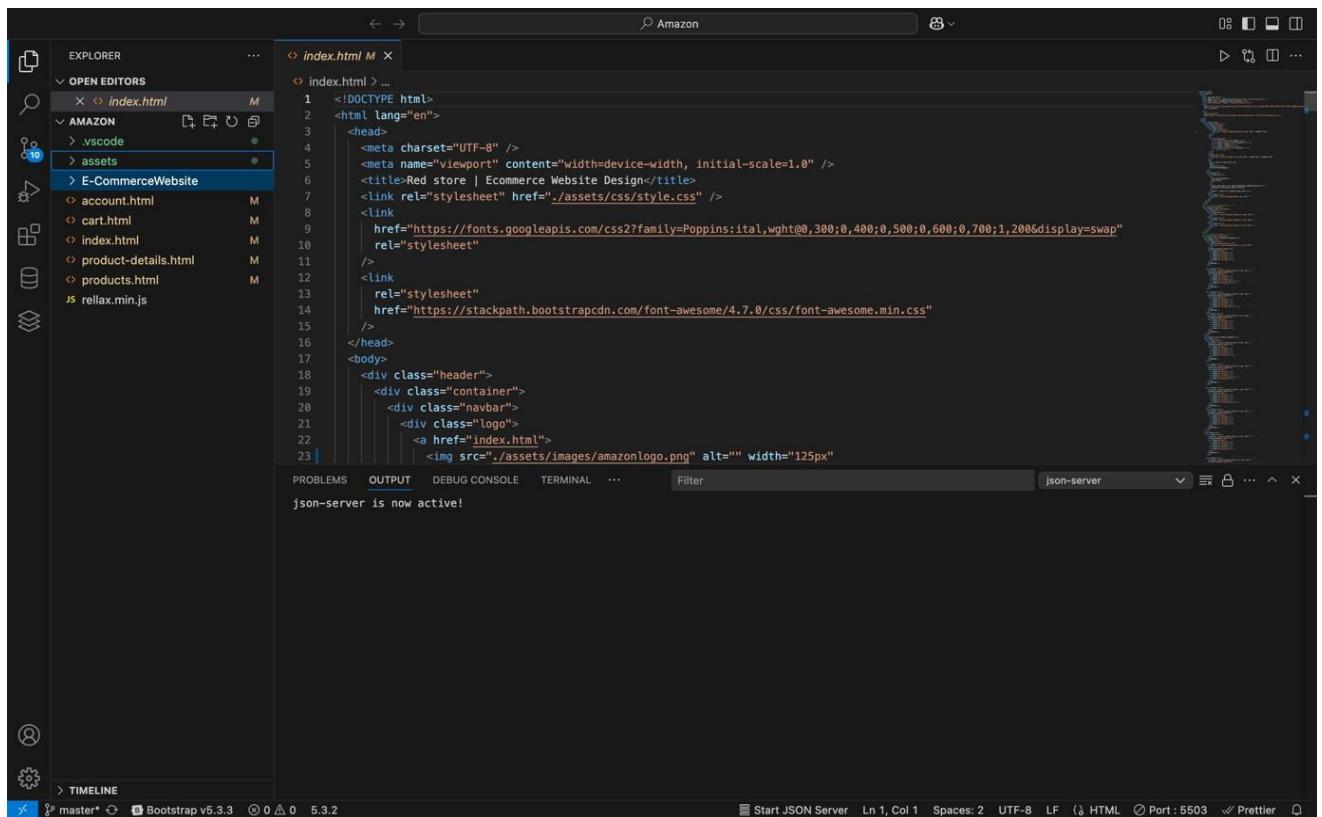
File Structure :



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CODE OF Index.html:

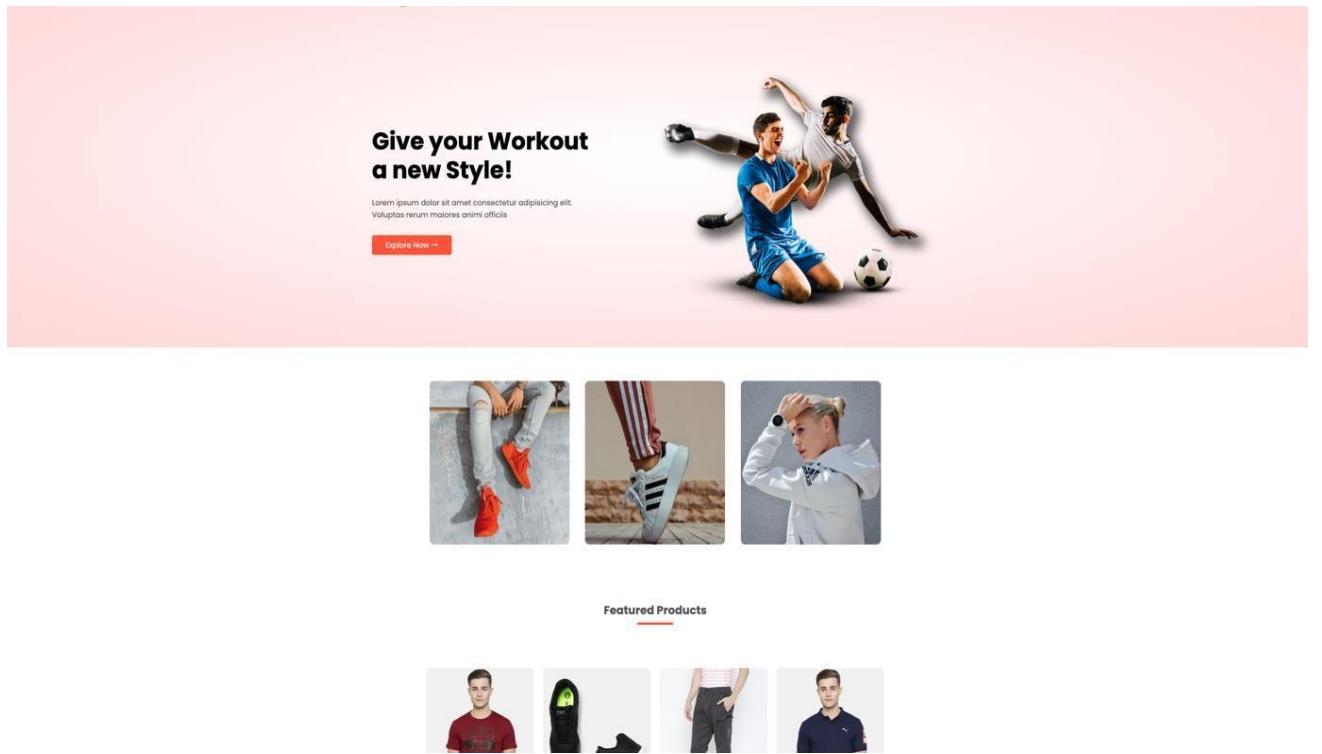


The screenshot shows the Visual Studio Code interface with the 'index.html' file open in the editor. The code is an HTML document for an E-commerce website. It includes meta tags for character encoding and viewport, a title ('Red store | Ecommerce Website Design'), and links to external CSS and font files. The body contains a header section with a logo image. The bottom status bar shows the file is on 'master*' branch, using 'Bootstrap v5.3.3', and has 5.3.2 changes.

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8" />
    <meta name="viewport" content="width=device-width, initial-scale=1.0" />
    <title>Red store | Ecommerce Website Design</title>
    <link rel="stylesheet" href="./assets/css/style.css" />
    <link href="https://fonts.googleapis.com/css2?family=Poppins:ital,wght@0,300;0,400;0,500;0,600;0,700;1,200&display=swap" rel="stylesheet"
    <link rel="stylesheet"
        href="https://stackpath.bootstrapcdn.com/font-awesome/4.7.0/css/font-awesome.min.css" />
</head>
<body>
    <div class="header">
        <div class="container">
            <div class="navbar">
                <div class="logo">
                    <a href="index.html">
                        
                    </a>
                </div>
            </div>
        </div>
    </div>
</body>

```

OUTPUT:



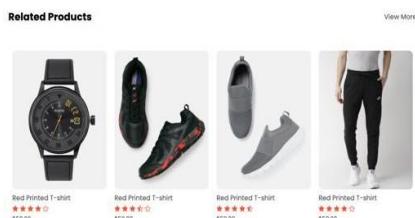
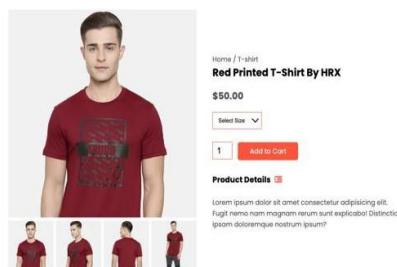
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CODE OF Product Details:

```
<!-- product-details.html M -->
<!-- product-details.html > ...
1   <!DOCTYPE html>
2   <html lang="en">
3
4     <head>
5       <meta charset="UTF-8" />
6       <meta name="viewport" content="width=device-width, initial-scale=1.0" />
7       <title>All Products - Red store</title>
8       <link rel="stylesheet" href="/assets/css/style.css" />
9       <link
10          href="https://fonts.googleapis.com/css2?family=Poppins:ital,wght@0,300;0,400;0,500;0,600;0,700;1,200&display=swap"
11          rel="stylesheet" />
12       <link rel="stylesheet" href="https://stackpath.bootstrapcdn.com/font-awesome/4.7.0/css/font-awesome.min.css" />
13     </head>
14
15   <body>
16     <div class="container">
17       <div class="navbar">
18         <div class="logo">
19           <a href="index.html">
20             </a>
21         </div>
22         <nav>
23           <ul id="MenuItems">
24             <li><a href="index.html">Home</a></li>
25             <li><a href="products.html">Products</a></li>
26             <li><a href="#">About</a></li>
27             <li><a href="#">Contact</a></li>
28             <li><a href="#">Account</a></li>
29             <!-- T0Do: 22:20 -->
30           </ul>
31         </nav>
32         <a href="cart.html"></a>
33         
34       </div>
35     </div>
36
37     <!-- Single Products Detail -->
38     <div class="small-container single-product">
39       <div class="row">
40         <div class="col-2">
41           
42         <div class="small-img-row">
```

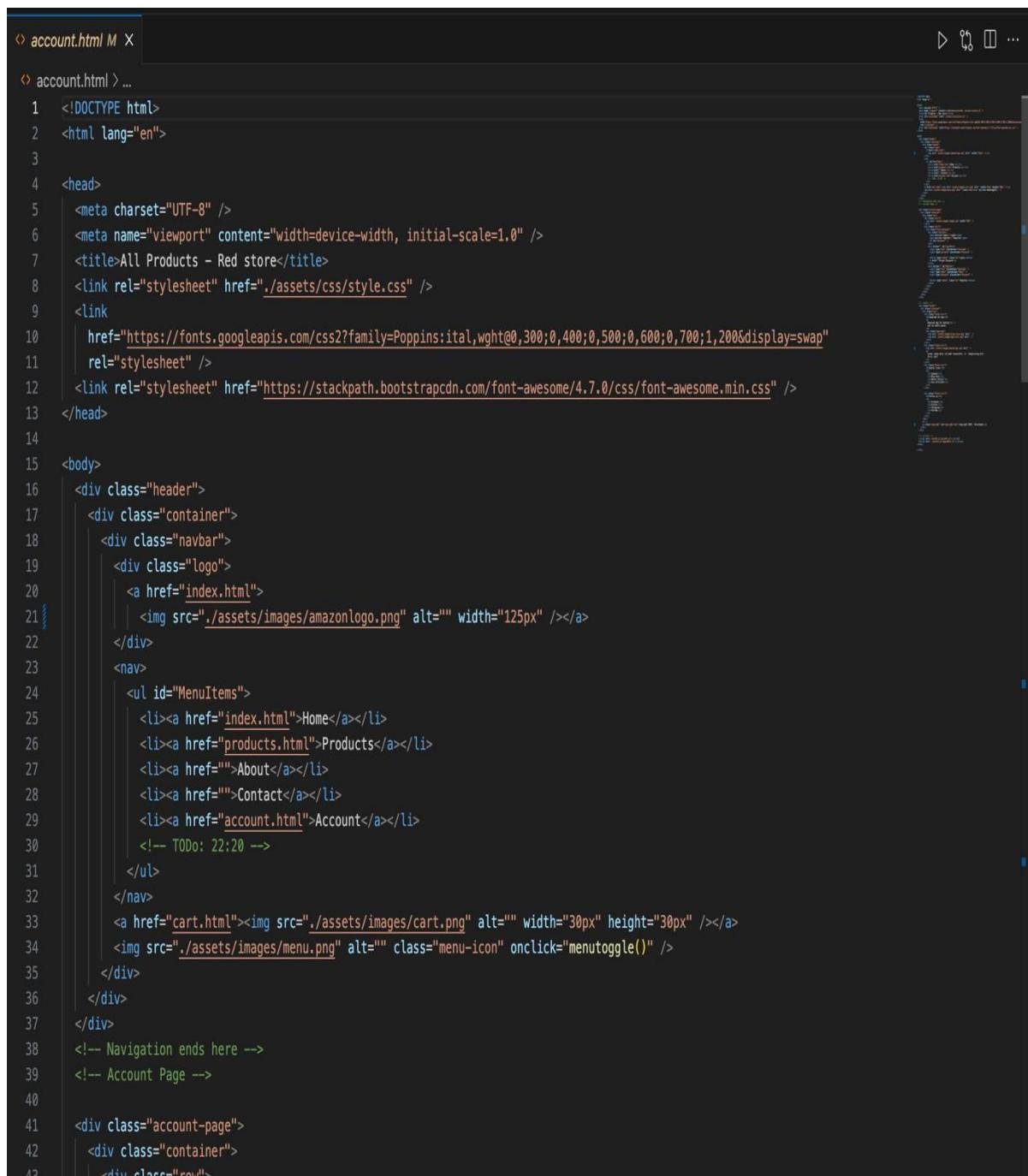
OUTPUT:



Account-Details:

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Department of Software Engineering



The screenshot shows a code editor window with the file "account.html" open. The code is written in HTML and includes CSS and JavaScript imports. The editor has a dark theme with syntax highlighting. The code defines a header with a logo and a menu, and an account page section.

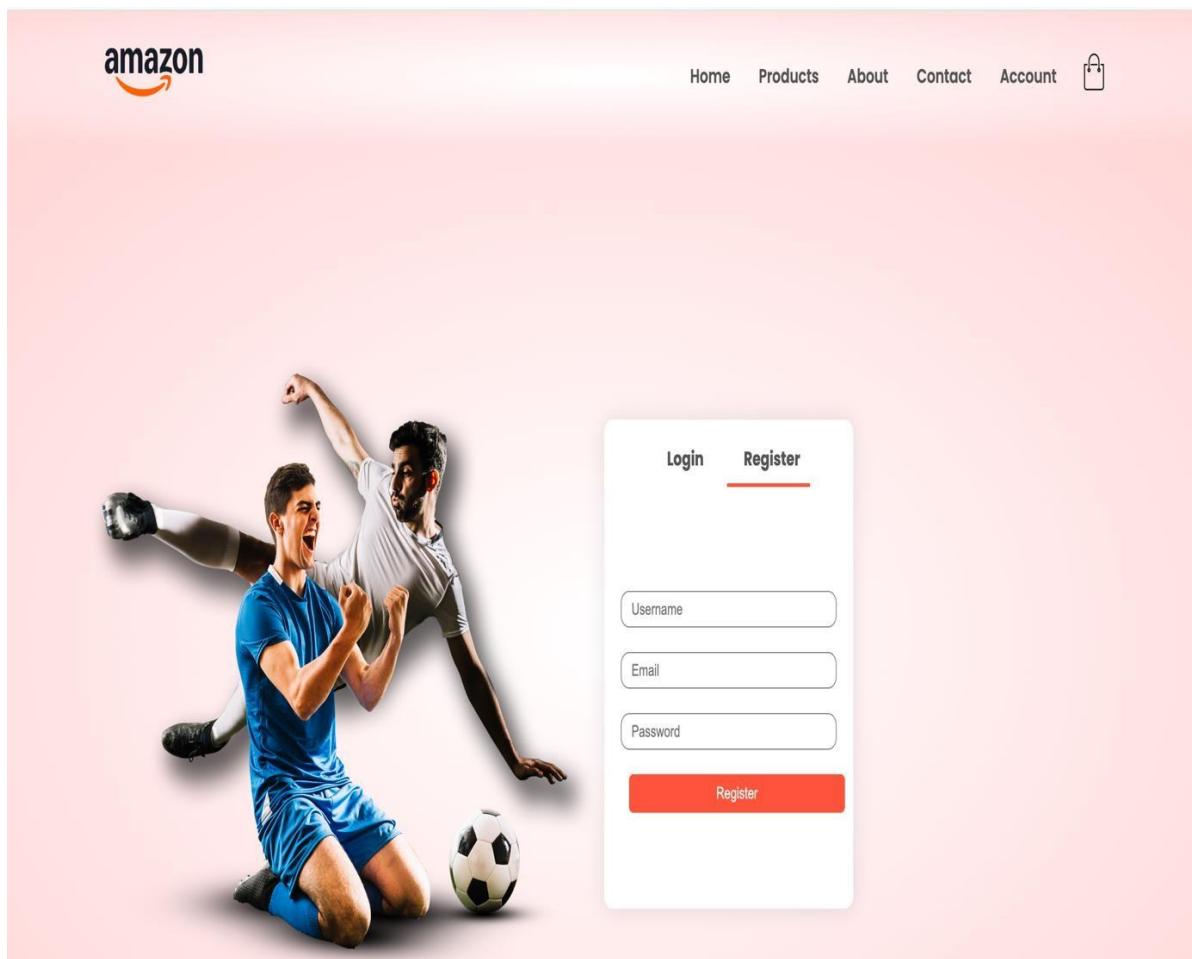
```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8" />
    <meta name="viewport" content="width=device-width, initial-scale=1.0" />
    <title>All Products - Red store</title>
    <link rel="stylesheet" href="./assets/css/style.css" />
    <link href="https://fonts.googleapis.com/css2?family=Poppins:ital,wght@0,300;0,400;0,500;0,600;0,700;1,200&display=swap" rel="stylesheet" />
    <link rel="stylesheet" href="https://stackpath.bootstrapcdn.com/font-awesome/4.7.0/css/font-awesome.min.css" />
</head>

<body>
    <div class="header">
        <div class="container">
            <div class="navbar">
                <div class="logo">
                    <a href="index.html">
                        
                    </a>
                </div>
                <nav>
                    <ul id="MenuItems">
                        <li><a href="index.html">Home</a></li>
                        <li><a href="products.html">Products</a></li>
                        <li><a href="#">About</a></li>
                        <li><a href="#">Contact</a></li>
                        <li><a href="account.html">Account</a></li>
                        <!-- TODO: 22:20 -->
                    </ul>
                </nav>
                <a href="cart.html"></a>
                
            </div>
        </div>
    </div>
    <!-- Navigation ends here -->
    <!-- Account Page -->
    <div class="account-page">
        <div class="container">
            <div class="row">
```

OUTPUT:

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GENERALIZED LAB RUBRICS

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Domain	Component with Taxonomy	Above Expectation (4)	Meeting Expectation (3)	Approaching Expectation (2)	Below Expectation (1)	Used	Weight / 100 (Optional)	Score (1–4)
Psychomotor	Building (Hardware)	Is able to build a given setup neatly and timely using correct hardware components and / or can reorganize / adapt to new / special requirements	Is able to assemble a given setup using correct hardware components after minor revisions	Is only able to copy a given setup using correct hardware components	Is not able to assemble a given setup using correct hardware components	<input type="checkbox"/>		
Cognitive	Recording Measurements (Hardware / Software)	Is able to record accurate measurements all the time	Is able to record accurate measurements most of the time	Is only able to record accurate measurements on some occasions	Is unable to record accurate measurements	<input type="checkbox"/>		
	Investigation (Software)	Is able to formulate /develop theories in addition to evaluating /concluding correctly about investigation parameters by assessing data	Is able to evaluate /conclude correctly about investigation parameters by assessing data	Is partially able to evaluate /conclude correctly about investigation parameters by assessing data	Is unable to comprehend investigation parameters	<input type="checkbox"/>		
	Design / Development of Solution (Hardware / Software)	Is able to design / develop the solution of a given problem and add features to it	Is able to design / develop the solution of a given problem	Is able to partially design / develop the solution of a given problem	Is unable to partially design / develop the solution of a given problem	<input type="checkbox"/>		
	Software Usage (Software)	Is adept in the use of software tool and can access advanced features	Is able to use the software tool effectively by accessing all the required features	Is able to use the software tool but cannot access all the required features	Is unable to use the software tool	<input type="checkbox"/>		
	Programming Language (Software)	Is able to efficiently complete a given task using advanced programming language constructs / methods / commands and/or add features to the original task	Is able to complete a given task using required programming language constructs / methods / commands	Is able to partially complete a given task	Is unable to partially complete a given task	<input type="checkbox"/>		

GENERALIZED LAB RUBRICS

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	Professional Ethics (PLO8)	Exhibits exemplary professional ethics while writing lab reports and dealing with fellow students, lab staff and instructor all the time	Exhibits professional ethics while writing lab reports and dealing with fellow students, lab staff and instructor all the time	Makes an effort to exhibit professional ethics while writing lab reports and dealing with fellow students, lab staff and instructor all the time	Does not exhibit professional ethics while writing lab reports and dealing with fellow students, lab staff and instructor all the time	<input type="checkbox"/>		
	Contribution (PLO9)	Consistently shows full preparation by completing all agreed tasks and provides additional resources for the group and work quality is excellent	Consistently shows full preparation by completing all agreed tasks and work requires little or no revisions	Shows some preparation which is mostly at superficial level in completing a task and work requires much revisions and editing	Shows very little or no preparation in completing a task and work quality is poor	<input type="checkbox"/>		
	Attitude (PLO9)	Internalized positive behavior and encourages and helps other team members	Consistent positive behavior most of the time towards other team members	Neither helpful nor damaging and shows disinterest in the performance of others	Discouraging behavior towards other team members	<input type="checkbox"/>		
	Report Writing (PLO10)	Report on all relevant sections related to the lab tasks is completed accurately, meeting the requirements, in prescribed time and with good language skills	Report on all relevant sections related to the lab tasks is completed but few deficiencies are present in terms of accuracy / meeting the requirements / prescribed time / good language skills	Report on all relevant sections related to the lab tasks is completed but many deficiencies are present in terms of accuracy / meeting the requirements / prescribed time / good language skills	Report on all relevant sections related to the lab tasks is not completed	<input type="checkbox"/>		
	Lab Task Management (PLO11)	Manages tasks well within given timeframe	Manages tasks within given timeframe	Manages tasks in an extended timeframe	Does not manage tasks even in extended timeframes	<input type="checkbox"/>		



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LAB 07

Introduction to JavaScript and MERN (Mongo dB, express.js, React.js and Node.js).

Download and install Node.js

Web Development

- I am creating a basic API (backend) using:
- Node.js: JavaScript runtime.
- Express.js: Web framework to handle routes and HTTP methods.
- Router: Helps manage code in small files.
- Users API: Returns a list of users or a single user by ID.

Step1: Install Node.js and verified.

```
Microsoft Windows [Version 10.0.26100.3775]
(c) Microsoft Corporation. All rights reserved.

C:\Users\Muhammad Khubaib>node -v
v22.14.0

C:\Users\Muhammad Khubaib>npm -v
10.9.2
```

Step 2: Create Project Folder

```
PROBLEMS    OUTPUT    DEBUG CONSOLE    TERMINAL    PORTS

● PS C:\Users\Muhammad Khubaib\OneDrive\Desktop\lab7> mkdir my-api-lab

Directory: C:\Users\Muhammad Khubaib\OneDrive\Desktop\lab7

Mode          LastWriteTime           Length Name
----          -----           -
d----- 4/24/2025 6:43 PM           0 my-api-lab
```

Step 2: Initialize Node Project



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```
PS C:\Users\Muhammad Khubaib\OneDrive\Desktop\lab7\my-api-lab> npm init -y
● >>
Wrote to C:\Users\Muhammad Khubaib\OneDrive\Desktop\lab7\my-api-lab\package.json:

{
  "name": "my-api-lab",
  "version": "1.0.0",
  "main": "index.js",
  "scripts": {
    "test": "echo \\"$Error: no test specified\\" && exit 1"
  },
  "keywords": [],
  "author": "",
  "license": "ISC",
  "description": ""
}
```

- It will create package.json.

Step 3: Install Express

```
PS C:\Users\Muhammad Khubaib\OneDrive\Desktop\lab7\my-api-lab> npm install express
>>

added 66 packages, and audited 67 packages in 15s

14 packages are looking for funding
  run `npm fund` for details

found 0 vulnerabilities
○ PS C:\Users\Muhammad Khubaib\OneDrive\Desktop\lab7\my-api-lab> []
```

Step 4: Create Folder and Files.

- **Create Folder for Routes.**

```
PS C:\Users\Muhammad Khubaib\OneDrive\Desktop\lab7\my-api-lab> mkdir routes
● >>
```

```
Directory: C:\Users\Muhammad Khubaib\OneDrive\Desktop\lab7\my-api-lab
```

Mode	LastWriteTime	Length	Name
----	-----	-----	
d----	4/24/2025 6:51 PM		routes



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- **Create khubaib.js File in Router Folder.**

```
PS C:\Users\Muhammad Khubaib\OneDrive\Desktop\lab7\my-api-lab\routes> notepad khubaib.js
○ PS C:\Users\Muhammad Khubaib\OneDrive\Desktop\lab7\my-api-lab\routes> [ ]
```

- **Create server.js Go back to main folder and add server.js**

```
● PS C:\Users\Muhammad Khubaib\OneDrive\Desktop\lab7\my-api-lab> notepad server.js
○ PS C:\Users\Muhammad Khubaib\OneDrive\Desktop\lab7\my-api-lab> [ ]
```

Step 5: Add "type": "module" to package.json.

```
1  {
2   "name": "my-api-lab",
3   "version": "1.0.0",
4   "type": "module",
5   "main": "index.js",
6   "scripts": {
7     "test": "echo \\\"Error: no test specified\\\" && exit 1"
8   },
9   "keywords": [],
10  "author": "",
11  "license": "ISC",
12  "description": "",
13  "dependencies": {
14    "express": "^5.1.0"
15  }
16}
17
```



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Step6: Write Code Now

y-api-lab > routes > khubaib.js

```
1 import { Router } from "express";
2
3 const router = Router()
4 let u = [
5   { id: 7, name: "Muhammad Usman", age: 30},
6   { id: 7, name: "Muhammad Ibrar", age: 10},
7   { id: 12, name: Muhammad Hamad", age: 18)
8 }
9 // Route to get all users
10 router.get('/users'), res,s) => {
11   const id = req.params.id;
12   res.json(users);
13 }
14 // Route to get a single user by ID
15 router.get('/:id') as namc_s) {
16   const user = users.find(u => uid ==id)
17   if user = user.senn({message: "User nt found'`})
18 }
23 export default router
```

Server.js:



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```
my-api-lab > JS server.js > ...
1 import express from "express";
2 import usersRouter from "./routes/khubaib.js";
3
4 const app = express();
5
6 app.use(express.json());
7
8 // Test route
9 app.get('/', (req, res) => {
10 | res.send("Hello World1234567");
11 });
12
13 // Use the router
14 app.use('/api/users', usersRouter);
15
16 // Start the server
17 app.listen(3000, () => {
18 | console.log("Server is running on port 3000");
19 });
20
```

Step 7: Run Your Project:

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

- PS C:\Users\Muhammad Khubaib\OneDrive\Desktop\lab7> cd my-api-lab
- PS C:\Users\Muhammad Khubaib\OneDrive\Desktop\lab7\my-api-lab> node server.js
>>
Server is running on port 3000
[]

All Users Check:



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→ ⏪ ⓘ localhost:3000/api/users

y-print

```
"id": 1,  
"name": Muhammad Khubaib",  
"age": 20
```

```
"id": 2,  
"name": Muhammad Ibrar",  
"age": 20
```

```
"id": 3,  
"name": Muhammad Hamad",  
"age": 18
```

BYID CHECK:

Pretty-print

```
{  
  "id": 1,  
  "name": "Muhammad Khubaib",  
  "age": 20  
}
```



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GENERALIZED LAB RUBRICS

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Psychomotor	Building Hardware)	s able to build a given setup neatly and timely using correct hardware components and / or can reorganize / adapt to new / special requirements	s able to assemble a given setup using correct hardware components after minor revisions	s only able to copy a given setup using correct hardware components	s not able to assemble a given setup using correct hardware components	<input type="checkbox"/>	
Cognitive	Recording Measurements	s able to record accurate	s able to record accurate	s only able to record accurate	s unable to record accurate	<input type="checkbox"/>	



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Hardware / Software)	measurements all the time	measurements most of the time	measurements on some occasions	measurements			
Investigation Software)	s able to formulate develop theories in addition to valuating concluding correctly about investigation parameters by ssessing data	s able to evaluate conclude correctly about investigation parameters by ssessing data	s partially able to valuate conclude correctly about investigation parameters by ssessing data	s unable to comprehend investigation parameters	<input type="checkbox"/>		
Design / Development of Solution Hardware / Software)	s able to design / develop the olution of a given problem and add eatures to it	s able to design / develop the olution of a given problem	s able to partially design / develop he solution of a given problem	s unable to partially design / develop the olution of a given problem	<input type="checkbox"/>		
Software Usage Software)	s adept in the use f software tool and an access dvanced features	s able to use the oftware tool effectively by ccessing all the quired features	s able to use the oftware tool but annot access all he required eatures	s unable to use he software tool	<input type="checkbox"/>		
Programming Language Software)	s able to efficiently complete a given ask using dvanced programming language onstructs / methods / ommands and/or dd features to the original task	s able to complete a given ask using quired programming language onstructs / methods / ommands	s able to partially complete a given ask	s unable to partially complete a given task	<input type="checkbox"/>		

GENERALIZED LAB RUBRICS

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Affective	Safety Instructions (PLO6)	Assesses and omplies with all EHS instructions while in lab	Assesses and omplies with most EHS instructions while in lab	Assesses and omplies with some EHS instructions while in lab	Assesses and omplies with few EHS instructions in lab	<input type="checkbox"/>	
	Professional Ethics (PLO8)	Exhibits exemplary rofessional ethics while writing lab eports and dealing with fellow students, lab staff and	Exhibits professional thics while writing lab reports and ealing with fellow tudents, lab staff and	Makes an effort to xhibit professional thics while writing lab reports and ealing with fellow tudents, lab staff and	Does not exhibit rofessional ethics while writing lab eports and dealing with fellow tudents, lab staff	<input type="checkbox"/>	



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		Instructor all the time	Instructor all the time	Instructor all the time	Not instructor all the time			
Contribution (PLO9)	Consistently shows full preparation by completing all agreed tasks and provides additional resources for the group and work quality is excellent	Consistently shows full preparation by completing all agreed tasks and work requires little or no revisions	Shows some preparation which is mostly at superficial level in completing a task and work requires much revisions and editing	Shows very little or no preparation in completing a task and work quality is poor	<input type="checkbox"/>			
Attitude (PLO9)	Internalized positive behavior and encourages and helps other team members	Consistent positive behavior most of the time towards other team members	Neither helpful nor inspiring and shows disinterest in the performance of others	Discouraging behavior towards other team members	<input type="checkbox"/>			
Report Writing (PLO10)	Report on all relevant sections related to the lab tasks is completed accurately, meeting the requirements, in prescribed time and with good language skills	Report on all relevant sections related to the lab tasks is completed but few deficiencies are present in terms of accuracy / meeting the requirements / prescribed time / good language skills	Report on all relevant sections related to the lab tasks is completed but many deficiencies are present in terms of accuracy / meeting the requirements / prescribed time / good language skills	Report on all relevant sections related to the lab tasks is not completed	<input type="checkbox"/>			
Lab Task Management (PLO11)	Manages tasks well within given timeframe	Manages tasks within given timeframe	Manages tasks in an extended timeframe	Does not manage tasks even in extended timeframes	<input type="checkbox"/>			



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LAB 08

Create a CRUD operation using Node.js and Express.js

Web Development

SOLUTION

Router:

```
import express from 'express';
import mongoose from 'mongoose';
import Recipe from '../models/recipe.js';

const router = express.Router();

// Create a new recipe
router.post('/', async (req, res) => {
    try {
        const recipe = new Recipe(req.body);
        await recipe.save();
        res.status(201).send(recipe);
    } catch (error) {
        res.status(400).send(error);
    }
});

// Read all recipes
router.get('/', async (req, res) => {
    try {
        const recipes = await Recipe.find();
        res.status(200).send(recipes);
    } catch (error) {
        res.status(500).send(error);
    }
});

router.get('/page/:pageNumber', async (req, res) => {
    const page = parseInt(req.params.pageNumber, 10);
    const limit = 5; // Number of recipes per page
    const skip = (page - 1) * limit;

    try {
        const recipes = await Recipe.find().skip(skip).limit(limit);
        res.status(200).send(recipes);
    } catch (error) {
        res.status(500).send(error);
    }
});
```



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```
        res.status(200).send(recipes);
    } catch (error) {
        res.status(500).send(error);
    }
});

router.get('/last-page', async (req, res) => {
    const limit = 5; // Number of recipes per page

    try {
        const count = await Recipe.countDocuments();
        const lastPage = Math.ceil(count / limit);
        res.status(200).send({ lastPage });
    } catch (error) {
        res.status(500).send(error);
    }
});
router.get('/:id', async (req, res) => {
    try {
        const recipe = await Recipe.findById(req.params.id);
        if (!recipe) {
            return res.status(404).send();
        }
        res.status(200).send(recipe);
    } catch (error) {
        res.status(500).send(error);
    }
});
// Update a recipe by ID
router.put('/:id', async (req, res) => {
    try {
        const recipe = await Recipe.findByIdAndUpdate(req.params.id,
req.body, { new: true, runValidators: true });
        if (!recipe) {
            return res.status(404).send();
        }
        res.status(200).send(recipe);
    } catch (error) {
        res.status(400).send(error);
    }
});
// Delete a recipe by ID
router.delete('/:id', async (req, res) => {
    try {
```



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```
const recipe = await Recipe.findByIdAndDelete(req.params.id);
if (!recipe) {
    return res.status(404).send();
}
res.status(200).send(recipe);
} catch (error) {
    res.status(500).send(error);
}
});

export default router;
```

Recipes.js:

```
import mongoose from 'mongoose';
const Schema = mongoose.Schema;
const recipeSchema = new Schema({
    title: {
        type: String,
        required: true
    },
    ingredients: {
        type: String,
        required: true
    },
    instructions: {
        type: String,
        required: true
    },
    createdAt: {
        type: Date,
        default: Date.now
    }
});

const Recipe = mongoose.model('Recipe', recipeSchema);
export default Recipe;
```



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Cognitive	Recording Measurements (Hardware / Software)	Is able to record accurate measurements all the time	Is able to record accurate measurements most of the time	Is only able to record accurate measurements on some occasions	Is unable to record accurate measurements	<input type="checkbox"/>		
	Investigation (Software)	Is able to formulate /develop theories in addition to evaluating /concluding correctly about investigation parameters by assessing data	Is able to evaluate /conclude correctly about investigation parameters by assessing data	Is partially able to evaluate /conclude correctly about investigation parameters by assessing data	Is unable to comprehend investigation parameters	<input type="checkbox"/>		
	Design / Development of Solution (Hardware / Software)	Is able to design / develop the solution of a given problem and add features to it	Is able to design / develop the solution of a given problem	Is able to partially design / develop the solution of a given problem	Is unable to partially design / develop the solution of a given problem	<input type="checkbox"/>		
	Software Usage (Software)	Is adept in the use of software tool and can access advanced features	Is able to use the software tool effectively by accessing all the required features	Is able to use the software tool but cannot access all the required features	Is unable to use the software tool	<input type="checkbox"/>		
	Programming Language (Software)	Is able to efficiently complete a given task using advanced programming language constructs / methods / commands and/or add features to the original task	Is able to complete a given task using required programming language constructs / methods / commands	Is able to partially complete a given task	Is unable to partially complete a given task	<input type="checkbox"/>		



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	Contribution (PLO9)	Consistently shows full preparation by completing all agreed tasks and provides additional resources for the group and work quality is excellent	Consistently shows full preparation by completing all agreed tasks and work requires little or no revisions	Shows some preparation which is mostly at superficial level in completing a task and work requires much revisions and editing	Shows very little or no preparation in completing a task and work quality is poor	<input type="checkbox"/>		
	Attitude (PLO9)	Internalized positive behavior and encourages and helps other team members	Consistent positive behavior most of the time towards other team members	Neither helpful nor damaging and shows disinterest in the performance of others	Discouraging behavior towards other team members	<input type="checkbox"/>		
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	Lab Task Management (PLO11)	Manages tasks well within given timeframe	Manages tasks within given timeframe	Manages tasks in an extended timeframe	Does not manage tasks even in extended timeframes	<input type="checkbox"/>		



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LAB 09

Introduction to Mongo db.

Create an account in Mongo db and attached it to your website.

Web Development:

For Using MONGODB firstly I creted account on there website:

<https://cloud.mongodb.com>

The screenshot shows the MongoDB Atlas web interface. At the top, there's a navigation bar with 'Atlas' (highlighted in green), a dropdown for 'Muhammad...', 'Access Manager', and 'Billing'. On the right are links for 'All Clusters', 'Get Help', and a user profile for 'Muhammad'. Below the navigation is a header with 'Project 0', 'Data Services' (which is underlined in green), and 'Charts'. A sidebar on the left lists 'Overview', 'DATABASE' (with 'Clusters' listed), 'SERVICES' (with 'Atlas Search' and 'Stream Processing'), 'Triggers', 'Migration', 'Data Federation', 'SECURITY' (with 'Quickstart'), and 'Featured Resources' for 'JAVASCRIPT / NODE.JS' and 'Connect to your data with Node.js / JavaScript'. The main content area is titled 'Overview' and shows a large green progress bar at the top with the message 'We are deploying your changes (current action: creating a plan)'. Below the bar, a yellow warning box says 'Your organization does not have a designated security contact. Add an Atlas Security Contact in [Organization Settings](#) to receive security-related notifications.' It also shows 'MUHAMMAD'S ORG - 2025-05-03 > PROJECT 0'. Under 'Clusters', there's a section for 'Cluster0' with 'Create cluster' and '...' buttons, and 'Connect' and 'Edit configuration' buttons below it.



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Now I will create a cluster and add the connection string into my code in the .env file of node.js

Connect to Cluster0

1 Set up connection security 2 Choose a connection method 3 Connect

! Current IP Address not added. You will not be able to connect to databases from this address.

Add Current IP Address Do not show me again

Connect to your application

Drivers Access your Atlas data using MongoDB's native drivers (e.g. Node.js, Go, etc.) >

Access your data through tools

Compass Explore, modify, and visualize your data with MongoDB's GUI >

Shell Quickly add & update data using MongoDB's Javascript command-line interface >

MongoDB for VS Code Work with your data in MongoDB directly from your VS Code environment >

Atlas SQL Easily connect SQL tools to Atlas for data analysis and visualization >

Go Back Close



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We also have to add my ip address in the account so we can access it later.

1 Set up connection security 2 Choose a connection method 3 Connect

Connecting with MongoDB Driver

1. Select your driver and version

Driver *
Node.js

Version *
5.0 or later

[View MongoDB Nolee.js Driver Installation Instructions](#)

2. Add your connection string into your application code

Run via command line

```
npm install mongodb
```

3. Add connection string to your application code

```
mongodb+srv://<username>:<password>@cluster0.gfhgx.mongodb
```

Replace <password> with the password for the 23-ST-012 user. Leave any optional parameters unchanged.

RESOURCES

Add your connection string into your application code	MongoDB Node.js Quick Start
Access your Database Users	MongoDB Starter Sample App
Go to Review security settings	Troubleshoot Connection



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This is the connection string I have to add to my project to connect to mongoDB.

```
backend > .env
1 PORT=5000
2 MONGODB_URI="mongodb+srv://23st016:Alicization@1@cluster0.yhfg9zt.mongodb.net
3/?retryWrites=true&w=majority&appName=Cluster0"
4
```

Note that it is the same file I have used in the previous lab



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Psychomotor	Building (Hardware)	Is able to build a given setup neatly and timely using correct hardware components and / or can reorganize / adapt to new / special requirements	Is able to assemble a given setup using correct hardware components after minor revisions	Is only able to copy a given setup using correct hardware components	Is not able to assemble a given setup using correct hardware components	<input type="checkbox"/>		
Cognitive	Recording Measurements (Hardware / Software)	Is able to record accurate measurements all the time	Is able to record accurate measurements most of the time	Is only able to record accurate measurements on some occasions	Is unable to record accurate measurements	<input type="checkbox"/>		
	Investigation (Software)	Is able to formulate /develop theories in addition to evaluating /concluding correctly about investigation parameters by assessing data	Is able to evaluate /conclude correctly about investigation parameters by assessing data	Is partially able to evaluate /conclude correctly about investigation parameters by assessing data	Is unable to comprehend investigation parameters	<input type="checkbox"/>		
	Design / Development of Solution (Hardware / Software)	Is able to design / develop the solution of a given problem and add features to it	Is able to design / develop the solution of a given problem	Is able to partially design / develop the solution of a given problem	Is unable to partially design / develop the solution of a given problem	<input type="checkbox"/>		
	Software Usage (Software)	Is adept in the use of software tool and can access advanced features	Is able to use the software tool effectively by accessing all the required features	Is able to use the software tool but cannot access all the required features	Is unable to use the software tool	<input type="checkbox"/>		
	Programming Language (Software)	Is able to efficiently complete a given task using advanced programming language constructs / methods / commands and/or add features to the original task	Is able to complete a given task using required programming language constructs / methods / commands	Is able to partially complete a given task	Is unable to partially complete a given task	<input type="checkbox"/>		



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GENERALIZED LAB RUBRICS

Domain	Component with Taxonomy	Above Expectation (4)	Meeting Expectation (3)	Approaching Expectation (2)	Below Expectation (1)	Used	Weight / 100 (Optional)	Score (1-4)
Affective	Safety Instructions (PLO6)	Assesses and complies with all EHS instructions while in lab	Assesses and complies with most EHS instructions while in lab	Assesses and complies with some EHS instructions while in lab	Assesses and complies with few EHS instructions in lab	<input type="checkbox"/>		
	Professional Ethics (PLO8)	Exhibits exemplary professional ethics while writing lab reports and dealing with fellow students, lab staff and instructor all the time	Exhibits professional ethics while writing lab reports and dealing with fellow students, lab staff and instructor all the time	Makes an effort to exhibit professional ethics while writing lab reports and dealing with fellow students, lab staff and instructor all the time	Does not exhibit professional ethics while writing lab reports and dealing with fellow students, lab staff and instructor all the time	<input type="checkbox"/>		
	Contribution (PLO9)	Consistently shows full preparation by completing all agreed tasks and provides additional resources for the group and work quality is excellent	Consistently shows full preparation by completing all agreed tasks and work requires little or no revisions	Shows some preparation which is mostly at superficial level in completing a task and work requires much revisions and editing	Shows very little or no preparation in completing a task and work quality is poor	<input type="checkbox"/>		
	Attitude (PLO9)	Internalized positive behavior and encourages and helps other team members	Consistent positive behavior most of the time towards other team members	Neither helpful nor damaging and shows disinterest in the performance of others	Discouraging behavior towards other team members	<input type="checkbox"/>		
	Report Writing (PLO10)	Report on all relevant sections related to the lab tasks is completed accurately, meeting the requirements, in prescribed time and with good language skills	Report on all relevant sections related to the lab tasks is completed but few deficiencies are present in terms of accuracy / meeting the requirements / prescribed time / good language skills	Report on all relevant sections related to the lab tasks is completed but many deficiencies are present in terms of accuracy / meeting the requirements / prescribed time / good language skills	Report on all relevant sections related to the lab tasks is not completed	<input type="checkbox"/>		
	Lab Task Management (PLO11)	Manages tasks well within given timeframe	Manages tasks within given timeframe	Manages tasks in an extended timeframe	Does not manage tasks even in extended	<input type="checkbox"/>		



Punjab Tianjin University of Technology (PTUT)
Department of Software Engineering

					timeframes				
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Punjab Tianjin University of Technology
Department of Software Engineering
LAB 10

Introduction to React.js

Convert your Lab 2 website into React.js

Web Development

I have converted the Lab2 in react.

CODE of **index.jsx**:

```
import React from 'react';
import './index.css'; // Assuming you have the same stylesheet

const App = () => {
  return (
    <div>
      <meta charset="UTF-8" />
      <meta name="viewport" content="width=device-width, initial-scale=1.0" />
      <title>Document</title>

      <a href="index.html">Home</a>
      <a href="contact.html">Contact Us</a>
      <a href="gallery.html">Gallery</a>

      <center>
        <h1>Welcome to Hanad's Website</h1>
        <h2>About Us</h2>
        <h3>Our Mission</h3>
        <h4>Our Vision</h4>
        <h4>Team</h4>
        <h4>Contact Information</h4>
      </center>
      <p>
        Our website dedicated to providing high-quality content and services to our users. We save to meet your needs and exceed your expectations. Thanks you for visiting, we appreciate your support and look forward to serving you better.
      </p>

      <ul>
        <li>Top Feature</li>
        <li>Comprehensive Resource</li>
      </ul>
    </div>
  );
}

export default App;
```



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```
<li>User-Friendly Design</li>
<li>Reliable Support</li>
</ul>

<ul>
<li>Our Service</li>
<li>Consulting</li>
<li>Training</li>
<li>Product Development</li>
<li>Customer Support</li>
</ul>

<table border="1">
<tr>
<td><b>Name</b></td>
<td>Muhammad Hanad</td>
<td>Umair</td>
<td>Sainan</td>
</tr>
<tr>
<td><b>Role</b></td>
<td>CEO</td>
<td>Worker</td>
<td>Worker</td>
</tr>
<tr>
<td><b>E-mail</b></td>
<td>hanadmuhamed395@gmail.com</td>
<td>example@gmail.com</td>
<td>umair@gmail.com</td>
</tr>
</table>
</div>
);

};

export default App;
```

CODE of Home.jsx

```
import styled, { createGlobalStyle } from 'styled-components';

// Global styles
```



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```
export const GlobalStyle = createGlobalStyle`  
body {  
  margin: 0;  
  padding: 0;  
  font-family: 'Poppins', sans-serif;  
  background: linear-gradient(135deg, #ffffff, #e0e7ff);  
  color: #333;  
  line-height: 1.6;  
}  
;  
  
// Navigation component  
export const Navigation = styled.nav`  
background: linear-gradient(90deg, #000000, #000000);  
padding: 15px;  
text-align: center;  
box-shadow: 0.4px 8px rgba(0, 0, 0, 0.1);  
  
a {  
  text-decoration: none;  
  color: white;  
  margin: 0.15px;  
  font-size: 1.2rem;  
  font-weight: bold;  
  text-transform: uppercase;  
  padding: 8px 12px;  
  border-radius: 5px;  
  transition: background-color 0.3s, transform 0.3s;  
  
  &:hover {  
    background-color: rgba(255, 255, 255, 0.2);  
    transform: scale(1.1);  
  }  
}  
;  
  
// Headings component  
export const Heading = styled.h1`  
color: #000000;  
text-transform: uppercase;  
margin: 20px 0;  
text-align: center;  
font-weight: bold;  
font-size: 3rem;  
border-bottom: 4px solid #020202;  
display: inline-block;  
padding-bottom: 10px;
```



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```
/* Shared styles for h2, h3, h4 */
&&& {
    font-size: 1.8rem;
    margin-top: 15px;
    letter-spacing: 1px;
    border-bottom: none;
}
`;

// Paragraph component
export const Paragraph = styled.p`
    width: 90%;
    max-width: 800px;
    margin: 20px auto;
    font-size: 1.2rem;
    padding: 15px;
    background: #ffffff;
    border-left: 6px solid #000000;
    border-radius: 10px;
    box-shadow: 0 5px 15px rgba(0, 0, 0, 0.2);
    line-height: 1.8;
`;
`;
```

CODE of Contact.jsx:

```
import React, { useState } from 'react';
import { Link } from 'react-router-dom';

const Contact = () => {
    const [formData, setFormData] = useState({
        fullName: '',
        password: '',
        email: '',
        maritalStatus: '',
        subjects: [],
        feedback: ''
    });

    const handleInputChange = (e) => {
        const { name, value, type, checked } = e.target;

        if (type === 'checkbox') {
            setFormData(prev => ({
                ...prev,
                subjects: checked
                ? [...prev.subjects, value]
                : prev.subjects
            }));
        }
    };
`;
```



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```
: prev.subjects.filter(subject => subject !== value)
});
} else {
  setFormData(prev => ({
    ...prev,
    [name]: value
  }));
}
};

const handleSubmit = (e) => {
  e.preventDefault();
  // Handle form submission here
  console.log(formData);
};

return (
  <div className="contact-container">
    <nav>
      <Link to="/">Home</Link>
      <Link to="/contact">Contact Us</Link>
      <Link to="/gallery">Gallery</Link>
    </nav>

    <h1>Contact Us</h1>

    <form onSubmit={handleSubmit}>
      <div className="form-group">
        <label>
          Full Name:
          <input
            type="text"
            name="fullName"
            placeholder="Username"
            value={formData.fullName}
            onChange={handleInputChange}
          />
        </label>
      </div>

      <div className="form-group">
        <label>
          Password:
          <input
            type="password"
            name="password"
            placeholder="Password"
            value={formData.password}
          />
        </label>
      </div>
    </form>
  </div>
)
```



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```
        onChange={handleInputChange}
      />
    </label>
  </div>

  <div className="form-group">
    <label>
      E-mail:
      <input
        type="email"
        name="email"
        placeholder="Email"
        value={formData.email}
        onChange={handleInputChange}
      />
    </label>
  </div>
  <div className="form-group">
    <fieldset>
      <legend>Marital Status:</legend>

      <label>
        <input
          type="radio"
          name="maritalStatus"
          value="married"
          checked={formData.maritalStatus === 'married'}
          onChange={handleInputChange}
        />
        Married
      </label>
      <label>
        <input
          type="radio"
          name="maritalStatus"
          value="single"
          checked={formData.maritalStatus === 'single'}
          onChange={handleInputChange}
        />
        Single
      </label>
    </fieldset>
  </div>

  <div className="form-group">
    <fieldset>
      <legend>Subjects:</legend>
      {[ 'math', 'physic', 'chemistry', 'urdu' ].map(subject => (

```



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```
<label key={subject}>
  <input
    type="checkbox"
    name="subjects"
    value={subject}
    checked={formData.subjects.includes(subject)}
    onChange={handleInputChange}
  />
  {subject.charAt(0).toUpperCase() + subject.slice(1)}
</label>
))}
```

```
</fieldset>
</div>
<div className="form-group">
  <label>
    Feedback:
    <textarea
      name="feedback"
      value={formData.feedback}
      onChange={handleInputChange}
      placeholder="Enter your feedback here...">
    />
  </label>
</div>
  <button type="submit">Submit</button>
</form>
</div>
);
};

export default Contact;
```



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Output:

OUR SERVICE

- Constituting
- Product Development
- Cumstor Support

Name	Muhammad Hamad	Umair	salman
Role	CEO	Worker	Worker
E-mail	hammadnadeem359@gmail.com	example@gmail.com	umair@gmail.com

CONTACT INFORMATION

Our Website dedicated to providing high-quality content and services to our users. We save to meet your needs and enceeil your expectanoc Wir believe in mansparency, innovation, and commitment as our custumum. Explore our website to learn more about shut we offen Thank you for visiting website, We apprestare your support and look forward to serving you better.

TOP FEATURE

1. Comprehensive Resource
2. User-Friendly Design
3. Reliable Support

[Home](#) [Contact Us](#) [Gallery](#)

CONTACT US

Full Name

username

Password

password



Punjab Tianjin University of Technology Department of Software Engineering

GENERALIZED LAB RUBRICS

Domain	Component with Taxonomy	Above Expectation (4)	Meeting Expectation (3)	Approaching Expectation (2)	Below Expectation (1)	Used	Weight / 100 (Optional)	Score (1-4)
Psychomotor	Building (Hardware)	Is able to build a given setup neatly and timely using correct hardware components and / or can reorganize / adapt to new / special requirements	Is able to assemble a given setup using correct hardware components after minor revisions	Is only able to copy a given setup using correct hardware components	Is not able to assemble a given setup using correct hardware components	<input type="checkbox"/>		
Cognitive	Recording Measurements (Hardware / Software)	Is able to record accurate measurements all the time	Is able to record accurate measurements most of the time	Is only able to record accurate measurements on some occasions	Is unable to record accurate measurements	<input type="checkbox"/>		
	Investigation (Software)	Is able to formulate /develop theories in addition to evaluating /concluding correctly about investigation parameters by assessing data	Is able to evaluate /conclude correctly about investigation parameters by assessing data	Is partially able to evaluate /conclude correctly about investigation parameters by assessing data	Is unable to comprehend investigation parameters	<input type="checkbox"/>		
	Design / Development of Solution (Hardware / Software)	Is able to design / develop the solution of a given problem and add features to it	Is able to design / develop the solution of a given problem	Is able to partially design / develop the solution of a given problem	Is unable to partially design / develop the solution of a given problem	<input type="checkbox"/>		
	Software Usage (Software)	Is adept in the use of software tool and can access advanced features	Is able to use the software tool effectively by accessing all the required features	Is able to use the software tool but cannot access all the required features	Is unable to use the software tool	<input type="checkbox"/>		
	Programming Language (Software)	Is able to efficiently complete a given task using advanced programming language constructs / methods / commands and/or add features to the original task	Is able to complete a given task using required programming language constructs / methods / commands	Is able to partially complete a given task	Is unable to partially complete a given task	<input type="checkbox"/>		



Punjab Tianjin University of Technology

Department of Software Engineering

GENERALIZED LAB RUBRICS

Domain	Component with Taxonomy	Above Expectation (4)	Meeting Expectation (3)	Approaching Expectation (2)	Below Expectation (1)	Used	Weight / 100 (Optional)	Score (1-4)
Affective	Safety Instructions (PLO6)	Assesses and complies with all EHS instructions while in lab	Assesses and complies with most EHS instructions while in lab	Assesses and complies with some EHS instructions while in lab	Assesses and complies with few EHS instructions in lab	<input type="checkbox"/>		
	Professional Ethics (PLO8)	Exhibits exemplary professional ethics while writing lab reports and dealing with fellow students, lab staff and instructor all the time	Exhibits professional ethics while writing lab reports and dealing with fellow students, lab staff and instructor all the time	Makes an effort to exhibit professional ethics while writing lab reports and dealing with fellow students, lab staff and instructor all the time	Does not exhibit professional ethics while writing lab reports and dealing with fellow students, lab staff and instructor all the time	<input type="checkbox"/>		
	Contribution (PLO9)	Consistently shows full preparation by completing all agreed tasks and provides additional resources for the group and work quality is excellent	Consistently shows full preparation by completing all agreed tasks and work requires little or no revisions	Shows some preparation which is mostly at superficial level in completing a task and work requires much revisions and editing	Shows very little or no preparation in completing a task and work quality is poor	<input type="checkbox"/>		
	Attitude (PLO9)	Internalized positive behavior and encourages and helps other team members	Consistent positive behavior most of the time towards other team members	Neither helpful nor damaging and shows disinterest in the performance of others	Discouraging behavior towards other team members	<input type="checkbox"/>		
	Report Writing (PLO10)	Report on all relevant sections related to the lab tasks is completed accurately, meeting the requirements, in prescribed time and with good language skills	Report on all relevant sections related to the lab tasks is completed but few deficiencies are present in terms of accuracy / meeting the requirements / prescribed time / good language skills	Report on all relevant sections related to the lab tasks is completed but many deficiencies are present in terms of accuracy / meeting the requirements / prescribed time / good language skills	Report on all relevant sections related to the lab tasks is not completed	<input type="checkbox"/>		
	Lab Task Management (PLO11)	Manages tasks well within given timeframe	Manages tasks within given timeframe	Manages tasks in an extended timeframe	Does not manage tasks even in extended	<input type="checkbox"/>		



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					timeframes				
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LAB 11

Project:

Create a React based frontend website for your previous project you submitted.

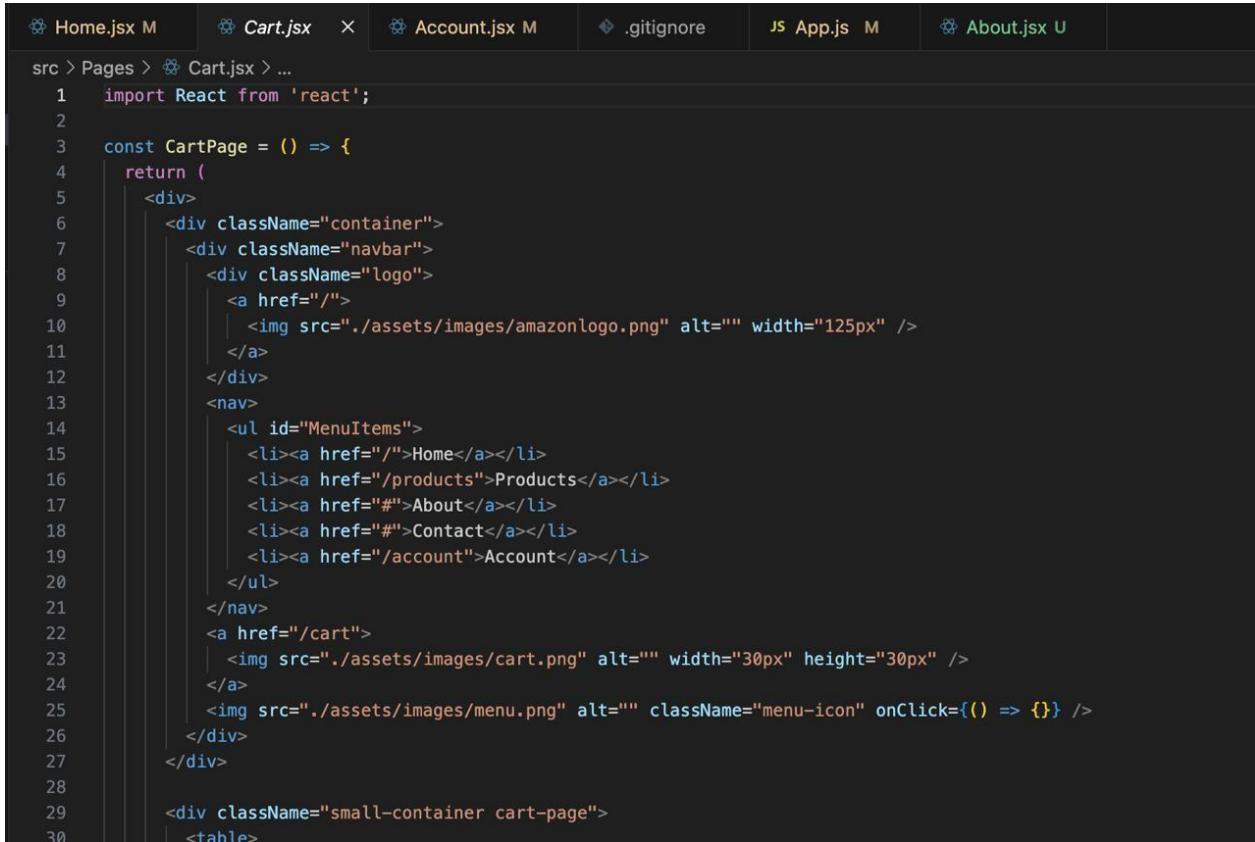
Web Development

Solution of lab 11:

For this project I have converted me previous frontend project into react.js app.

This is a big project with long line of codes so I will only add some Code screenshots of the project And output output screenshots also.I will show my whole project code in class during evaluation.

CODE:



```
src > Pages > Cart.jsx ...
1  import React from 'react';
2
3  const CartPage = () => {
4    return (
5      <div>
6        <div className="container">
7          <div className="navbar">
8            <div className="logo">
9              <a href="/">
10                
11              </a>
12            </div>
13            <nav>
14              <ul id="MenuItems">
15                <li><a href="/">Home</a></li>
16                <li><a href="/products">Products</a></li>
17                <li><a href="#">About</a></li>
18                <li><a href="#">Contact</a></li>
19                <li><a href="/account">Account</a></li>
20              </ul>
21            </nav>
22            <a href="/cart">
23              
24            </a>
25             {}} />
26          </div>
27        </div>
28      <div className="small-container cart-page">
29        <table>
```



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```
src > Pages > Cart.jsx > CartPage
1 import React from 'react';
2
3 const CartPage = () => {
4   return (
5     <div>
6       <div className="container">
7         <div className="navbar">
8           <div className="logo">
9             <a href="/">
10               
11             </a>
12           </div>
13         <nav>
14           <ul id="MenuItems">
15             <li><a href="/">Home</a></li>
16             <li><a href="/products">Products</a></li>
17             <li><a href="#">About</a></li>
18             <li><a href="#">Contact</a></li>
19             <li><a href="/account">Account</a></li>
20           </ul>
21         </nav>
22         <a href="/cart">
23           
24         </a>
25          {}} />
26       </div>
27     </div>
28
29     <div className="small-container cart-page">
30       <table>
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS POLYGLOT NOTEBOOK NUGET

```
❶ Home.jsx M ❷ Cart.jsx ❸ Brands.jsx X ❹ Account.jsx M ❺ .gitignore ❻ App.js M ❼ About.jsx U
```

```
src > Components > Brands.jsx > ...
1 import React from "react";
2
3 // Import images using correct relative path
4 import godrejLogo from '../Assets/images/logo-godrej.png';
5 import oppoLogo from '../Assets/images/logo-oppo.png';
6 import paypalLogo from '../Assets/images/logo-paypal.png';
7 import philipsLogo from '../Assets/images/logo-phillips.png';
8 import cocaColaLogo from '../Assets/images/logo-coca-cola.png';
9
10 const Brands = () => {
11   // Brand data with imported images
12   const brands = [
13     { img: godrejLogo, alt: "Godrej" },
14     { img: oppoLogo, alt: "Oppo" },
15     { img: paypalLogo, alt: "PayPal" },
16     { img: philipsLogo, alt: "Philips" },
17     { img: cocaColaLogo, alt: "Coca Cola" }
18   ];
19
20   return (
21     <div className="brands">
22       <div className="small-container">
23         <div className="row">
24           {brands.map((brand, Home) => (
25             <div className="col-5" key={Home}>
26               <img
27                 src={brand.img}
28                 alt={brand.alt}
29                 className="brand-logo"
```



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```
src > Pages > Product.jsx ...
1 import React from "react";
2 import product1 from "../Assets/images/product-1.jpg";
3 import product2 from "../Assets/images/product-2.jpg";
4 import product3 from "../Assets/images/product-3.jpg";
5 import product4 from "../Assets/images/product-4.jpg";
6 import product5 from "../Assets/images/product-5.jpg";
7 import product6 from "../Assets/images/product-6.jpg";
8 import product7 from "../Assets/images/product-7.jpg";
9 import product8 from "../Assets/images/product-8.jpg";
10 import product9 from "../Assets/images/product-9.jpg";
11 import product10 from "../Assets/images/product-10.jpg";
12 import product11 from "../Assets/images/product-11.jpg";
13 import product12 from "../Assets/images/product-12.jpg";
14 import amazonLogo from "../Assets/images/amazonlogo.png";
15 import playStore from "../Assets/images/play-store.png";
16 import appStore from "../Assets/images/app-store.png";
17 import cartIcon from "../Assets/images/cart.png";
18 import menuIcon from "../Assets/images/menu.png";
19
20 const products = [
21   { img: product1, title: "Red Printed T-shirt", rating: ["fa-star", "fa-star", "fa-star", "fa-star", "fa-star-o"], price: "$50.00" },
22   { img: product2, title: "Red Printed T-shirt", rating: ["fa-star", "fa-star", "fa-star", "fa-star-half-o", "fa-star-o"], price: "$50.00" },
23   { img: product3, title: "Red Printed T-shirt", rating: ["fa-star", "fa-star", "fa-star", "fa-star", "fa-star-half-o"], price: "$50.00" },
24   { img: product4, title: "Red Printed T-shirt", rating: ["fa-star", "fa-star", "fa-star", "fa-star", "fa-star-o"], price: "$50.00" },
25   { img: product5, title: "Red Printed T-shirt", rating: ["fa-star", "fa-star", "fa-star", "fa-star", "fa-star-o"], price: "$50.00" },
26   { img: product6, title: "Red Printed T-shirt", rating: ["fa-star", "fa-star", "fa-star", "fa-star-half-o", "fa-star-o"], price: "$50.00" },
27   { img: product7, title: "Red Printed T-shirt", rating: ["fa-star", "fa-star", "fa-star", "fa-star-half-o"], price: "$50.00" },
28   { img: product8, title: "Red Printed T-shirt", rating: ["fa-star", "fa-star", "fa-star", "fa-star", "fa-star-o"], price: "$50.00" },
29   { img: product9, title: "Red Printed T-shirt", rating: ["fa-star", "fa-star", "fa-star", "fa-star", "fa-star-o"], price: "$50.00" },
30   { img: product10, title: "Red Printed T-shirt", rating: ["fa-star", "fa-star", "fa-star", "fa-star-half-o", "fa-star-o"], price: "$50.00" }
```

```
src > Pages > Product-Details.jsx ...
1 import React from 'react';
2
3 const SingleProduct = () => {
4   const similarProducts = [
5     { id: 9, img: './assets/images/product-9.jpg', title: 'Red Printed T-shirt', price: '$50.00', rating: [1,1,1,1,0] },
6     { id: 10, img: './assets/images/product-10.jpg', title: 'Red Printed T-shirt', price: '$50.00', rating: [1,1,1,0.5,0] },
7     { id: 11, img: './assets/images/product-11.jpg', title: 'Red Printed T-shirt', price: '$50.00', rating: [1,1,1,1,0.5] },
8     { id: 12, img: './assets/images/product-12.jpg', title: 'Red Printed T-shirt', price: '$50.00', rating: [1,1,1,1,0] },
9   ];
10
11   return (
12     <div>
13       <div className="container">
14         <div className="navbar">
15           <div className="logo">
16             <a href="/">
17               
18             </a>
19           </div>
20           <nav>
21             <ul id="MenuItems">
22               <li><a href="/">Home</a></li>
23               <li><a href="/products">Products</a></li>
24               <li><a href="#">About</a></li>
25               <li><a href="#">Contact</a></li>
26               <li><a href="/account">Account</a></li>
27             </ul>
28           </nav>
29           <a href="/cart">
29             
29           </a>
30         </div>
31       </div>
32     </div>
33   );
34 }
35
36 export default SingleProduct;
```



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```
❶ Home.jsx M ❷ Cart.jsx ❸ Product-Details.jsx ❹ Account.jsx M ❺ .gitignore
src > Pages > ❻ About.jsx > [?] default
  2   import '../Assets/css/style.css'
  3   import Header from '../Components/Header';
  4   import FeaturedProducts from '../Components/FeaturedProducts';
  5   import Offer from '../Components/Offer';
  6   import Testimonial from '../Components/Testimonial';
  7   import Brands from '../Components/Brands';
  8   import Footer from '../Components/Footer';
  9   import Products from './Product';
 10
 11  const About = () => {
 12    return (
 13      <div>
 14        <Header />
 15        <FeaturedProducts />
 16        <Offer />
 17        <Testimonial />
 18        <Brands />
 19        <Footer />
 20      </div>
 21    );
 22  };
 23
 24  export default About;
 25
 26
```



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OUTPUT OF CODE(PROJECT):

The screenshot shows a web browser window with multiple tabs open. The active tab displays a website with a pink header containing the Amazon logo and navigation links for Home, Products, About, Contact, and Account. Below the header, there is a large image of two soccer players in action. One player is in a blue jersey and shorts, and the other is in a white jersey and shorts. They appear to be celebrating or cheering. Overlaid on this image is the text "Give your Workout a new Style!". At the bottom left of the page, there is a red button with the text "Explore Now →". The browser's address bar shows the URL "127.0.0.1:5501/index.html".



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Featured Products



Latest Products



Amazon Home Products About Contact Account

All Products



1 2 3 ...



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The banner features the Amazon logo at the top left. At the top right, there is a navigation bar with links for Home, Products, About, Contact, Account, and a lock icon. A prominent white registration form is overlaid on the center of the banner. The form has tabs for 'Login' and 'Register', with 'Register' being active. It contains three input fields: 'Username', 'Email', and 'Password', followed by a red 'Register' button. The background of the banner shows two soccer players in mid-air, one in blue and one in grey, competing for a ball.

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GENERALIZED LAB RUBRICS

Domain	Component with Taxonomy	Above Expectation (4)	Meeting Expectation (3)	Approaching Expectation (2)	Below Expectation (1)	Used	Weight / 100 (Optional)	Score (1-4)
Psychomotor	Building (Hardware)	Is able to build a given setup neatly and timely using correct hardware components and / or can reorganize / adapt to new / special requirements	Is able to assemble a given setup using correct hardware components after minor revisions	Is only able to copy a given setup using correct hardware components	Is not able to assemble a given setup using correct hardware components	<input type="checkbox"/>		
Cognitive	Recording Measurements (Hardware / Software)	Is able to record accurate measurements all the time	Is able to record accurate measurements most of the time	Is only able to record accurate measurements on some occasions	Is unable to record accurate measurements	<input type="checkbox"/>		
	Investigation (Software)	Is able to formulate /develop theories in addition to evaluating /concluding correctly about investigation parameters by assessing data	Is able to evaluate /conclude correctly about investigation parameters by assessing data	Is partially able to evaluate /conclude correctly about investigation parameters by assessing data	Is unable to comprehend investigation parameters	<input type="checkbox"/>		
	Design / Development of Solution (Hardware / Software)	Is able to design / develop the solution of a given problem and add features to it	Is able to design / develop the solution of a given problem	Is able to partially design / develop the solution of a given problem	Is unable to partially design / develop the solution of a given problem	<input type="checkbox"/>		
	Software Usage (Software)	Is adept in the use of software tool and can access advanced features	Is able to use the software tool effectively by accessing all the required features	Is able to use the software tool but cannot access all the required features	Is unable to use the software tool	<input type="checkbox"/>		
	Programming Language (Software)	Is able to efficiently complete a given task using advanced programming language constructs / methods / commands and/or add features to the original task	Is able to complete a given task using required programming language constructs / methods / commands	Is able to partially complete a given task	Is unable to partially complete a given task	<input type="checkbox"/>		

GENERALIZED LAB RUBRICS



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Domain	Component with Taxonomy	Above Expectation (4)	Meeting Expectation (3)	Approaching Expectation (2)	Below Expectation (1)	Used	Weight / 100 (Optional)	Score (1–4)
Affective	Safety Instructions (PLO6)	Assesses and complies with all EHS instructions while in lab	Assesses and complies with most EHS instructions while in lab	Assesses and complies with some EHS instructions while in lab	Assesses and complies with few EHS instructions in lab	<input type="checkbox"/>		
	Professional Ethics (PLO8)	Exhibits exemplary professional ethics while writing lab reports and dealing with fellow students, lab staff and instructor all the time	Exhibits professional ethics while writing lab reports and dealing with fellow students, lab staff and instructor all the time	Makes an effort to exhibit professional ethics while writing lab reports and dealing with fellow students, lab staff and instructor all the time	Does not exhibit professional ethics while writing lab reports and dealing with fellow students, lab staff and instructor all the time	<input type="checkbox"/>		
	Contribution (PLO9)	Consistently shows full preparation by completing all agreed tasks and provides additional resources for the group and work quality is excellent	Consistently shows full preparation by completing all agreed tasks and work requires little or no revisions	Shows some preparation which is mostly at superficial level in completing a task and work requires much revisions and editing	Shows very little or no preparation in completing a task and work quality is poor	<input type="checkbox"/>		
	Attitude (PLO9)	Internalized positive behavior and encourages and helps other team members	Consistent positive behavior most of the time towards other team members	Neither helpful nor damaging and shows disinterest in the performance of others	Discouraging behavior towards other team members	<input type="checkbox"/>		
	Report Writing (PLO10)	Report on all relevant sections related to the lab tasks is completed accurately, meeting the requirements, in prescribed time and with good language skills	Report on all relevant sections related to the lab tasks is completed but few deficiencies are present in terms of accuracy / meeting the requirements / prescribed time / good language skills	Report on all relevant sections related to the lab tasks is completed but many deficiencies are present in terms of accuracy / meeting the requirements / prescribed time / good language skills	Report on all relevant sections related to the lab tasks is not completed	<input type="checkbox"/>		
	Lab Task Management (PLO11)	Manages tasks well within given timeframe	Manages tasks within given timeframe	Manages tasks in an extended timeframe	Does not manage tasks even in extended timeframes	<input type="checkbox"/>		