LAB MANUAL

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Course: WEB DEVELOPMENT

Department: TECHNOLOGY (BSIET - 4)

Lab 2

Ex#1

```
<!DOCTYPE html>
 <html>

   <head>
     <title>My first Web Page</title>
   </head>
   <body bgcolor="green">
     <font size="16" color="white" face="Arial">Welcome to AITS, TIRUPATI...</font>
   </body>
   </html>
```

Output

Welcome to AITS, TIRUPATI...

Ex#2

```
<!DOCTYPE html>
 <html>
     <head>
       <title>program 3</title>
     </head>
     <body>
     <center>
       <h1>Basic web design Lab</h1>
     </center>
     <h2 align="left"> Defination</h2>
     <h3 align="left"> Website</h3>
     <h4> heading 4</h4>
     <h5> heading 5</h5>
     <h6> heading 6</h6>
     <p>
       A set of inter connected web pages usually including a home page and many
       other web pages
     </p>
     </body>
     </html>
```

Output

Basic web design Lab

Defination

Website

heading 4

heading 5

heading 6

A set of inter connected web pages usually including a home page and many other web pages

Ex#3

```
<!DOCTYPE html>
  <html>
    <head>
      <title>program 09</title>
    </head>
    <body bgcolor="pink">
      <font color="red"><marquee direction="left">Welcome to AITS
TIRUPATI</marquee></font>

    </body>
  </html>
```

Output

Lab 3

Ex#1

HTML

```
<!DOCTYPE html>
<html>
<head>
<title>Get the country capital</title>
<link href="lab3.css" type="text/css" rel="stylesheet"/>
</head>
<body>
   <img src="web-designing\Lab Manual\istockphoto-1419410282-1024x1024.jpg" alt="">
<div class="form-box">
<font color="white" size="4"><b>Select the country name to find its capital and
continent</b></font><br/><br/>
<br>
<select <input type="text" class="resizedTextbox" id="myedit"/>>
<option>Select Country</option>
<option>Germany</option>
<option>United States of America</option>
<option>India</option>
<option>United Kingdom</option>
<option>France</option>
</select>
</div>
<div id="result"> </div>
</body>
</html>
```
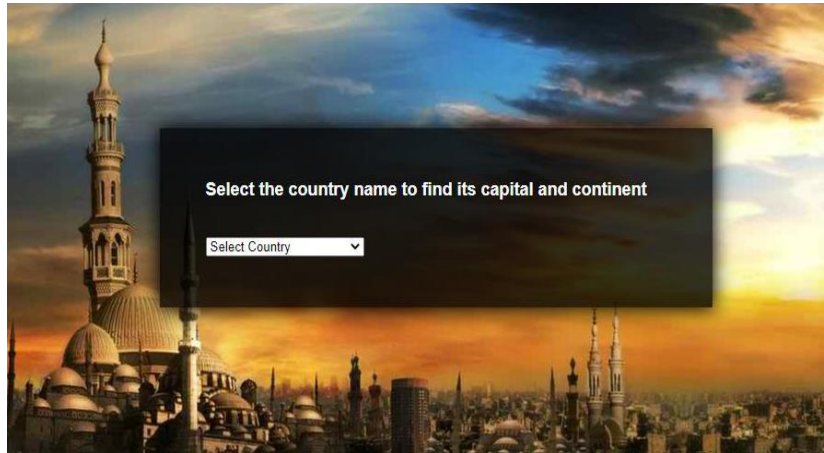
CSS

```
h1{
   text-align:center;
   }
   body{
   background:
   url("web-designing\Lab Manual\istockphoto-1419410282-1024x1024.jpg") no-repeat;
   background-position:center center;
   font-family:sans-serif;
   }
   .form-box{
   width:500px;
   background-color:rgba(0,0,0,0.8);
   margin:12% auto;
   padding:50px;
   color:#fff;
   box-shadow:0 0 20px 2px rgba(0,0,0,20);
   }
```

Output

Ex#2

HTML

```
<!DOCTYPE html>
<html>
<head>
<style type="text/css">
body
{
background-image:url('images/cse.png');
background-repeat:no-repeat;
background-position:center center;
background-attachment:fixed;
background-color:pink;
}
a:link { text-decoration:none;color:orange; }
a:visited { text-decoration:none;color:red; }
a:hover { text-decoration:underline;color:blue; }
a:active { text-decoration:underline;color:purple; }
h3 { color:green; }
.c1{cursor:crosshair}
.c2{cursor:pointer}
.c3{cursor:move}
.c4{cursor:text}
.c5{cursor:wait}
.c6{cursor:help}
</style>
<link rel="stylesheet" type="text/css" href="style.css">
</head>
<body bgcolor="cyan">
<h1 style="color:blue;text-align:center;"> CSS (Inline, Internal and External) </h1>
<p>This Paragraph is a Not Styled</p>
<p class="left">This Paragraph is Styled by class "Left"</p>
<p class="center">This Paragraph is Styled by class "Center"</p>
<p class="right">This Paragraph is Styled by class "Right"</p>
<b>This is normal Bold</b> <br>
<b id="headline">This Bold Text is Styled </b>
<h2><b><a href=" ">This is a link</a></b></h2>
<h3 class="c1">The cursor over this element is plus sign</h3>
```

```html
<h3 class="c2">The cursor over this element is a pointing hand</h3>
<h3 class="c3">The cursor over this element is a grasping hand</h3>
<h3 class="c4">The cursor over this element is a I bar</h3>
<h3 class="c5">The cursor over this element is a wait</h3>
<h3 class="c6">The cursor over this element is a question mark</h3>
</html>
```

CSS

```css
p.left
{
text-align:left;
color:blue;
font-family:Cambria;
font-size:large;
text-indent:20px;
}
p.center
{
text-align:center;
text-decoration:underline;
text-transform:uppercase;
letter-spacing:-3px;
word-spacing:20px;
font-size:larger;
}
p.right
{
text-align:right;
color:red;
font-family:Tahoma;
font-size:15pt;
text-decoration:overline;
font-style:italic;
}
b#headline
{
color:orange;
font-size:22px;
font-family:arial;
text-decoration:underline;
}
```
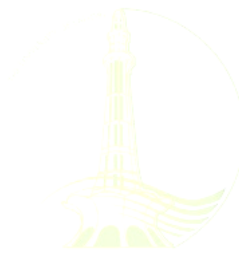
Output

CSS (Inline, Internal and External)

This Paragraph is a Not Styled

This Paragraph is Styled by class "Left"

This Paragraph is Styled by class "Center"

This Paragraph is Styled by class "Right"

This is normal Bold
This Bold Text is Styled

This is a link

The cursor over this element is plus sign

The cursor over this element is a pointing hand

The cursor over this element is a grasping hand

The cursor over this element is a I bar

The cursor over this element is a wait

The cursor over this element is a question mark

Lab 4
Table

Ex#1

```html
<!DOCTYPE html>
<html>
  <head>
    <title>forms and and and tables</title>
  </head>
  <body>
    <table border="10" cellspacing="5" cellpadding="5" align="center">
      <caption><h4><b><u>Sales Figures</u></b></h4></caption>
      <tr><th></th><th>2019</th><th>2020</th></tr>
      <tr><td>Jan</td><td>10%</td><td>12%</td></tr>
      <tr><td>Feb</td><td>14%</td><td>17%</td></tr>
      </table>
  </body>
</html>
```

Output

Sales Figures

	2019	2020
Jan	10%	12%
Feb	14%	17%

Ex#2

```html
<!DOCTYPE html>
<html>
  <head>
    <title>forms and and and tables</title>
  </head>
  <body>
    <table border="1" >
      <tr>
       <th>Name</th>
       <th>Age</th>
       <th>Country</th>
      </tr>
      <tr>
       <td>Harry Depp</td>
       <td>28</td>
       <td>Britain</td>
      </tr>
      <tr>
       <td>John Smith</td>
       <td>35</td>
       <td>USA</td>
      </tr>
      <tr>
```

```
        <td>Ram Krishna</td>
        <td>19</td>
        <td>Nepal</td>
      </tr>
    </table>
  </body>
</html>
```

Output

Name	Age	Country
Harry Depp	28	Britain
John Smith	35	USA
Ram Krishna	19	Nepal

Form

Ex#1

```
<!DOCTYPE html>
<html>
  <head>
    <title>forms and and and tables</title>
  </head>
  <body>
    <form method="post" action="ex10.php">
      First Name: <input type="text" name="fname"><br>
      Last Name: <input type="text" name="lname"><p>
      <input type="submit" value="Click here">
      <input type="reset" value="Clear All">
      </form>
  </body>
</html>
```

Output

First Name: Bilal

Last Name: Asif

"Click   "Clear

Ex#2

```
<!DOCTYPE html>
<html>
  <head>
    <title>forms and and and tables</title>
  </head>
  <body>
    <form method="post" action="ex10.php">
      Select your Gender:<p>
```

```
<input type="radio" name="gender" value="male">Male<br>
<input type="radio" name="gender" value="female">Female</p>
<input type="submit" value="Click here">
<input type="reset" value="Clear All">
</form>
  </body>
</html>
```

Output

Select your Gender:

○ Male
◉ Female

[Click here] [Clear All]

Lab # 05

Ex#1

```
<!DOCTYPE html>
<html>
<head>
        <title>gfg</title>
<style type=text/css>

p{
background-color:rgb(255, 0, 0);
margin: 10px;
}

div
{
color: rgb(6, 240, 26);
background-color:blue;
margin: 2px;
font-size: 25px;
}
</style>

</head>

<body>
<div > div tag </div>
<div > div tag </div>
<div > div tag </div>
<div > div tag </div>

</body>
</html>
```

Output
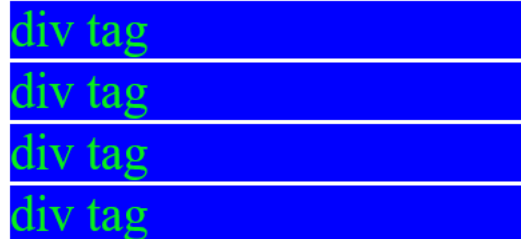
Ex#2

```
<!DOCTYPE html>
<html>
<head>
        <title>gfg</title>
        <style type=text/css>
                p{
                color: rgb(0, 0, 0);
                background-color: yellow;
                width: 400px;
                }
                h1
                {
                color: rgb(0, 0, 0);
```

```
            background-color: goldenrod;
            width: 400px;
            }
            h2
            {
            color: rgb(0, 0, 0);
            background-color: red;
            width: 400px;
            }
        </style>
</head>
<body>
        <h1>GeeksforGeeks</h1>
        <p>How many times were you frustrated while looking out
        for a good collection of programming/algorithm/interview
        questions? What did you expect and what did you get?
        This portal has been created to provide well written,
        well thought and well-explained solutions for selected
        questions.
        </p>
        <h2>GeeksforGeeks</h2>
        <p>GCET is an entrance test for the extensive classroom
        program by GeeksforGeeks to build and enhance Data
        Structures and Algorithm concepts, mentored by Sandeep
        Jain (Founder & CEO, GeeksforGeeks).He has 7 years of
        teaching experience and 6 years of industry experience.
        </p>
</body>
</html>
```

Output

Ex#3

```
<!DOCTYPE html>
<html>
<head>
        <title>gfg</title>
```

```
<style type=text/css>
        .leftdiv
        {
        float: left;
        }
        .middlediv
        {
        float: left;
        background-color:gray
        }
        .rightdiv
        {
        float: left;
        }
        div{
        padding : 1%;
        color: rgb(0, 0, 0);
        background-color: whitesmoke;
        width: 30%;
        border: solid black;
        }
</style>
</head>
<body>
        <div class="leftdiv">
                <h1>GeeksforGeeks</h1>
                <p>How many times were you frustrated while looking out
                for a good collection of programming/algorithm/interview
                questions? What did you expect and what did you get?
                This portal has been created to provide well written,
                well thought and well-explained solutions for selected
                questions.
        </p>
                <h2>GeeksforGeeks</h2>
                <p>GCET is an entrance test for the extensive classroom
                programme by GeeksforGeeks to build and enhance Data
                Structures and Algorithm concepts, mentored by Sandeep
                Jain (Founder & CEO, GeeksforGeeks).He has 7 years of
                teaching experience and 6 years of industry experience.
        </p>
        </div>
        <div class="middlediv">
                <h1>GeeksforGeeks</h1>
                <p>How many times were you frustrated while looking out
                for a good collection of programming/algorithm/interview
                questions? What did you expect and what did you get?
                This portal has been created to provide well written,
                well thought and well-explained solutions for selected
                questions.
                </p>
                <h2>GeeksforGeeks</h2>
                <p>GCET is an entrance test for the extensive classroom
                programme by GeeksforGeeks to build and enhance Data
                Structures and Algorithm concepts, mentored by Sandeep
                Jain (Founder & CEO, GeeksforGeeks).He has 7 years of
                teaching experience and 6 years of industry experience.
                </p>
```

```
        </div>
        <div class="rightdiv">
                <h1>GeeksforGeeks</h1>
                <p>How many times were you frustrated while looking out
                for a good collection of programming/algorithm/interview
                questions? What did you expect and what did you get?
                This portal has been created to provide well written,
                well thought and well-explained solutions for selected
                questions.
                </p>
                <h2>GeeksforGeeks</h2>
                <p>How many times were you frustrated while looking out
                for a good collection of programming/algorithm/interview
                questions? What did you expect and what did you get?
                This portal has been created to provide well written,
                well thought and well-explained solutions for selected
                questions.
                </p>
        </div>
</body>
</html>
```

Output

Ex#3

```
<!DOCTYPE html>
<html>
<head>
        <title>gfg</title>
        <style type=text/css>
                p{
                background-color:gray;
                margin: 10px;
                }


                div
                {
                color: rgb(242, 3, 3);
                background-color:aqua;
                margin: 2px;
                font-size: 25px;
                }
                span
                {
                color: black;
                background-color: gray;
                margin: 5px;
```

```
                    font-size: 25px;
                    }
         </style>
</head>
<body>
         <div > div tag </div>
         <div > div tag </div>
         <div > div tag </div>
         <div > div tag </div>
         <span>span-tag</span>
         <span>span-tag</span>
         <span>span-tag</span>
         <span>span-tag</span>
</body>
</html>
```

Output

Ex#4

```
<!DOCTYPE html>
<html>
<head>
<style>
body {
  background-color: rgb(26, 177, 215);
}

h1 {
  color: maroon;
  margin-left: 40px;
}
</style>
</head>
<body>

<h1>This is a heading</h1>
<p>This is a paragraph.</p>

</body>
</html>
```

Output

Ex#5

```
<!DOCTYPE html>
<html>
```

```html
<head>
        <title>Internal CSS</title>
        <style>
                .main {
                        text-align: center;
                }

                .GFG {
                        color: #009900;
                        font-size: 50px;
                        font-weight: bold;
                }

                .geeks {
                        font-style: bold;
                        font-size: 20px;
                }
        </style>
</head>

<body>
        <div class="main">
                <div class="GFG">GeeksForGeeks</div>

                <div class="geeks">
                        A computer science portal for geeks
                </div>
        </div>
</body>
</html>
```

Output

Lab # 06

Ex#1

HTML

```
<!DOCTYPE html>
<html>
<head>
 <link rel="stylesheet" href="lab6.css">
</head>
<body>

<h1>This is a Heading</h1>
<p>This is a Paragraph</p>

</body>
</html>
```

CSS

```
body{
background-color: rgba(38, 123, 134, 0.272);
}
h1 {
  color: blue;
}
p {
color: rgb(255, 0, 0);
}
```

Output

Ex#2

HTML

```
<!DOCTYPE html>
 <html>
   <head>
     <link rel="stylesheet" href="lab6.css">
   </head>
   <body>
      <h1>BILAL Asif</h1>
   </body>
</html>
```

CSS

```
body {
  background-color: rgb(113, 232, 216);
}
h1 {
 color: navy;
 margin-left: 30px;
}
```

Output

<div style="background-color:#6ee6cf; text-align:center; padding:30px;">
BILAL Asif
</div>

Ex#3
HTML

```
<!DOCTYPE html>
<html>
<head>
  <link rel="stylesheet" type="text/css" href="lab6.css">
</head>
<body>
  <h1>Welcome to Example Website</h1>
  <p>This is an example paragraph.</p>
</body>
</html>
```

CSS

```
body {
  font-family: Arial, sans-serif;
  background-color: #f2f2f2;
  color: #333;
}

h1 {
  color: #ff0000;
  text-align: center;
}

p {
  font-size: 16px;}
```

Output

Welcome to Example Website

This is an example paragraph.

Lab # 07

Ex#1

```
<!DOCTYPE html>
<html>
<head>
   <title>Internal CSS Example</title>
   <style>
     h1 {
        color: rgb(255, 0, 0);
        font-size: 24px;
     }
   </style>
</head>
<body>
   <h1>This is a Heading</h1>
</body>
</html>
```

Output

This is a Heading

Ex#2

```
<!DOCTYPE html>
<html>
<head>
   <title>Internal CSS Example</title>
   <style>
     h1 {
        color: rgb(0, 0, 0);
        font-size: 24px;
     }

     p {
        color: rgb(255, 0, 0);
        font-size: 16px;
     }
   </style>
</head>
<body>
   <h1>This is a Heading</h1>
   <p>This is a paragraph.</p>
</body>
</html>
```

Output

This is a Heading

This is a paragraph.

Ex#3

```
<!DOCTYPE html>
<html>
<head>
   <title>Internal CSS Example</title>
   <style>
```

```
    .highlight {
        background-color: yellow;
        font-weight: bold;
    }

    #special {
        color: red;
        text-decoration: underline;
    }
  </style>
</head>
<body>
  <h1 class="highlight">This is a Heading</h1>
  <p>This is a <span id="special">special</span> paragraph.</p>
</body>
</html>
```

Output

This is a Heading

This is a <u>special</u> paragraph.

Ex#4

```
<!DOCTYPE html>
<html>
<head>
<style>
body {
    background-color: linen;
}
h1 {
    color: Red;
    margin-left: 80px;
}
</style>
</head>
<body>
<h1>The internal style sheet is applied on this heading.</h1>
<p>This paragraph will not be affected.</p>
</body>
</html>
```

Output

The internal style sheet is applied on this heading.

This paragraph will not be affected.

Lab # 08

Ex#1

```html
<!DOCTYPE html>
<html>
<head>
  <title>Grid Layout Example</title>
  <style>
    .container {
       display: grid;
       grid-template-columns: 1fr 1fr 1fr;
       grid-gap: 10px;
    }

    .item {
       background-color: #eaeaea;
       padding: 20px;
       text-align: center;
    }
  </style>
</head>
<body>
  <div class="container">
    <div class="item">Item 1</div>
    <div class="item">Item 2</div>
    <div class="item">Item 3</div>
  </div>
</body>
</html>
```

Output

Item 1	Item 2	Item 3

Ex#2

```html
<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="UTF-8" />
<meta http-equiv="X-UA-Compatible" content="IE=edge" />
<meta name="viewport" content="width=device-width, initial-scale=1.0" />
<meta property="og:title" content="Our Menu" />
<meta property="og:type" content="website" />
<meta property="og:image" content="logo.png" />
<meta property="og:url" content="https://littlelemon/" />
<meta
property="og:description"
content="Little Lemon is a family-owned Mediterranean restaurant, focused on traditional recipes
served with a modern twist."
/>
<meta property="og:locale" content="en_US" />
<meta property="og:site_name" content="Little Lemon" />
<meta
name="author"
content="Little Lemon is owned by two Italian brothers, Mario and Adrian"
/>
<link rel="stylesheet" href="styles.css" />
```

```html
<title>Little Lemon</title>
</head>
<body>
<header>
<img src="Asset 16@4x.png" alt="Little Lemon Logo" />
</header>
<nav class="nav" style="list-style: none">
<ul>
<li><a href="index.html">Home</a></li>
<li><a href="index.html">Menu</a></li>
<li><a href="index.html">Book</a></li>
<li><a href="index.html">About</a></li>
</ul>
</nav>
<main>
<section class="banner">
<article>
<h1 class="trans">30% Off This Weekend</h1>
</article>
</section>
<section class="parent">
<article class="card">
<h1>Our New Menu</h1>
<br /><img src="menu.jpg" alt="" class="img" />
<br />
<p>
Based in Chicago, Illinois, Little Lemon is a family-owned
Mediterranean restaurant, focused on traditional recipes served with
a modern twist. The chefs draw inspiration from Italian, Greek, and
Turkish culture and have a menu of 12-15 items that they rotate
seasonally.
</p>
</article>
<article class="card">
<h1>Book a Table</h1>
<br /><img src="reservetable.jpeg" alt="" class="img" />
<br />
<p>
Based in Chicago, Illinois, Little Lemon is a family-owned
Mediterranean restaurant, focused on traditional recipes served with
a modern twist. The chefs draw inspiration from Italian, Greek, and
Turkish culture and have a menu of 12-15 items that they rotate
seasonally.
</p>
</article>
<article class="card">
<h1>Opening Hours</h1>
<br /><img src="openinghours.jpeg" alt="" class="img" />
<br />
<p>
Based in Chicago, Illinois, Little Lemon is a family-owned
Mediterranean restaurant, focused on traditional recipes served with
a modern twist. The chefs draw inspiration from Italian, Greek, and
Turkish culture and have a menu of 12-15 items that they rotate
seasonally.
</p>
</article>
```
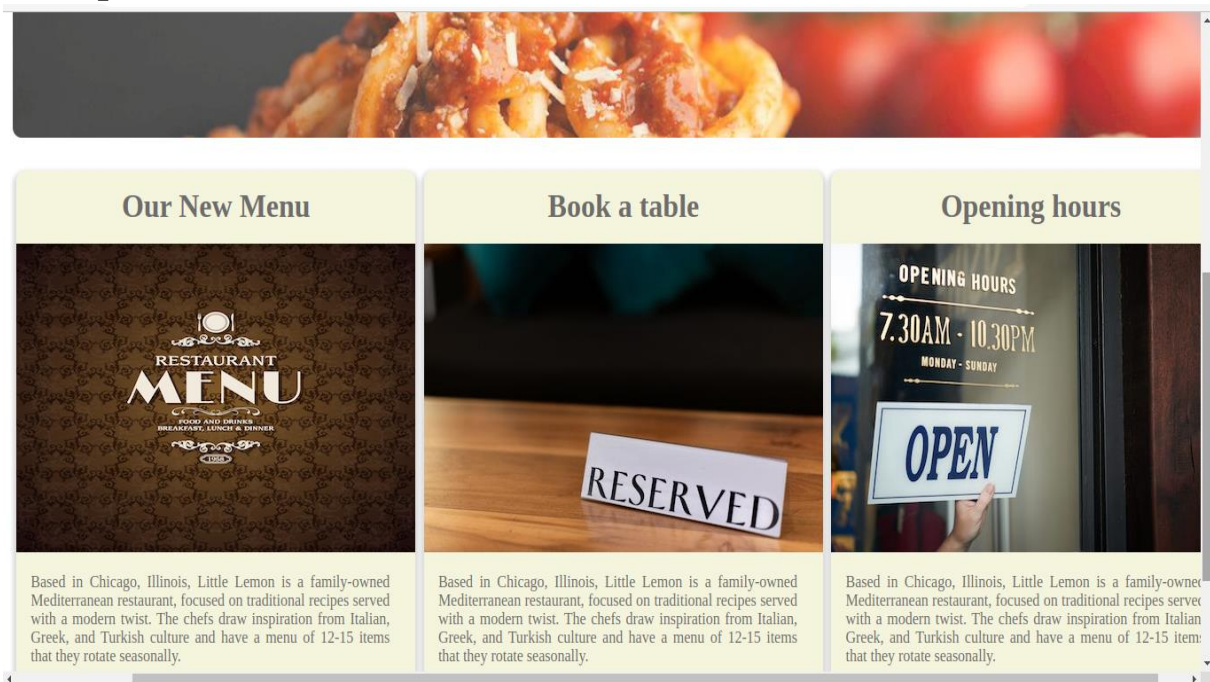
```
</section>
</main>


<footer>
<div class="imgcard"><img src="Asset 9@4x.png" alt="" /></div>
<div class="copyrights"><p>&copy; Copyrights Little Lemon</p></div>
</footer>
</body>
</html>
```

Output

Lab # 09

Ex#1

```
<!DOCTYPE html>
<html>
   <head>
      lab9
   </head>
   <body>
      <script>
         if (condition) {
// code to execute if the condition is true
} else {
// code to execute if the condition is false
}
      </script>
   </body>
</html>
```

```
<!DOCTYPE html>
<html>
    <head>
        lab9
    </head>
    <body>
        <script>
            if (condition) {
// code to execute if the condition is true
} else {
// code to execute if the condition is false
}
        </script>
    </body>
</html>
```

Ex#2

```
<!DOCTYPE html>
<html>
   <head>
      lab9
   </head>
   <body>
      <script>
      switch (expression) {
case value1:
  // code to execute if expression matches value1
  break;
case value2:
  // code to execute if expression matches value2
  break;
default:
  // code to execute if expression doesn't match any case
  break;
}
      </script>
   </body>
</html>
```

```
<!DOCTYPE html>
<html>
    <head>
```

```
        lab9
    </head>
    <body>
        <script>
        switch (expression) {
 case value1:
    // code to execute if expression matches value1
    break;
 case value2:
    // code to execute if expression matches value2
    break;
 default:
    // code to execute if expression doesn't match any case
    break;
}
        </script>
    </body>
</html>
```

Ex#3

```
<!DOCTYPE html>
<html>
   <head>
      lab9
   </head>
   <body>
     <script>
     for (initialization; condition; increment/decrement) {
 // code to be executed in each iteration
}
     </script>
   </body>
</html>
```

```
<!DOCTYPE html>
<html>
    <head>
        lab9
    </head>
    <body>
        <script>
        for (initialization; condition; increment/decrement) {
  // code to be executed in each iteration
}
        </script>
    </body>
</html>
```

Ex#4

```
<!DOCTYPE html>
<html>
   <head>
      lab9
   </head>
   <body>
     <script>
     while (condition) {
 // code to be executed as long as the condition is true
}
     </script>
   </body>
</html>
```

```html
<!DOCTYPE html>
<html>
    <head>
        lab9
    </head>
    <body>
        <script>
    while (condition) {
  // code to be executed as long as the condition is true
}
        </script>
    </body>
</html>
```

Ex#5

```html
<!DOCTYPE html>
<html>
   <head>
      lab9
   </head>
   <body>
      <script>
   do {
 // code to be executed at least once
} while (condition);
      </script>
   </body>
</html>
```

```html
<!DOCTYPE html>
<html>
    <head>
        lab9
    </head>
    <body>
        <script>
    do {
  // code to be executed at least once
} while (condition);
        </script>
    </body>
</html>
```

Ex#6

```javascript
let num = 10;

if (num > 0) {
  console.log("Number is positive.");
} else if (num < 0) {
  console.log("Number is negative.");
} else {
  console.log("Number is zero.");
}
```

Output
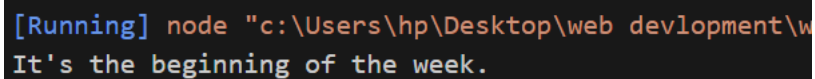
```
 [Running] node "c:\Users\hp\Desktop\web devlopment\web-designing\Lab Manual\lab9.js"
 Number is positive.
```

Ex#7

```
let day = "Monday";

switch (day) {
  case "Monday":
    console.log("It's the beginning of the week.");
    break;
  case "Friday":
    console.log("It's the end of the week.");
    break;
  default:
    console.log("It's another day of the week.");
    break;
}
```
Output
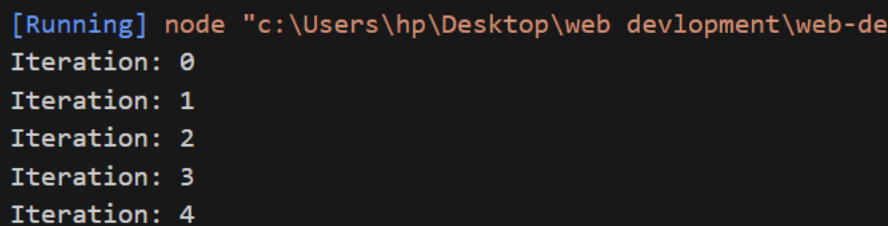
```
[Running] node "c:\Users\hp\Desktop\web devlopment\w
It's the beginning of the week.
```

Ex#8

```
for (let i = 0; i < 5; i++) {
  console.log("Iteration:", i);
}
```
Output

```
[Running] node "c:\Users\hp\Desktop\web devlopment\web-de
Iteration: 0
Iteration: 1
Iteration: 2
Iteration: 3
Iteration: 4
```

Ex#9

```
let count = 0;

while (count < 5) {
  console.log("Count:", count);
  count++;
}
```
Output

```
Count: 0
Count: 1
Count: 2
Count: 3
Count: 4

[Done] exited with code=0 in 12.273 seconds
```

Ex#10

```
let x = 0;

do {
  console.log("Value of x:", x);
  x++;
} while (x < 3);
```

Output
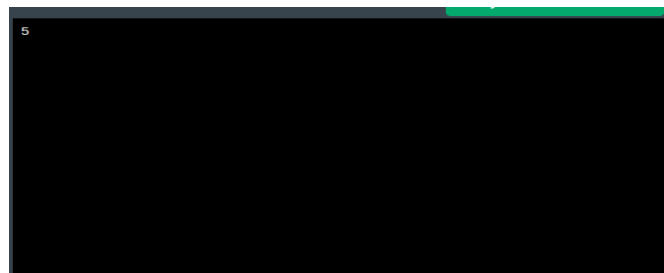
Lab # 10

Ex#1

```
let person = {
  name: "John",
  age: 30,
  profession: "Web Developer"
};
console.log(person.name);
console.log(person.age);
console.log(person.profession);
public class Main {
  int x = 5;

  public static void main(String[] args) {
    Main myObj = new Main();
    System.out.println(myObj.x);
  }
}
```
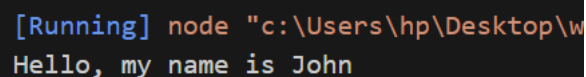
Output

Ex#2

```
let person = {
  name: "John",
  age: 30,
  profession: "Web Developer",
  sayHello: function() {
    console.log("Hello, my name is " + this.name);
  }
};

person.sayHello();
```

Output

Ex#3

```
class Person {
  constructor(name, age, profession) {
    this.name = name;
```

```
    this.age = age;
    this.profession = profession;
  }

  sayHello() {
    console.log("Hello, my name is " + this.name);
  }
}
let person1 = new Person("John", 30, "Web Developer");
let person2 = new Person("Jane", 25, "Designer");
person1.sayHello();
person2.sayHello();
```

Output

```
[Running] node "c:\Users\hp\Desktop\w
Hello, my name is John
Hello, my name is Jane
```

Ex#4

```
class Shape {
  constructor(color) {
    this.color = color;
  }
  draw() {
    console.log("Drawing a shape.");
  }
}
class Circle extends Shape {
  constructor(color, radius) {
    super(color);
    this.radius = radius;
  }
  draw() {
    console.log("Drawing a circle with radius " + this.radius);
  }
}
let circle = new Circle("red", 5);
circle.draw();
```

Output

```
[Running] node "c:\Users\hp\Desktop\web de
Drawing a circle with radius 5
```

Lab # 11

Ex#1

```
let fruits = ["apple", "banana", "orange"];

console.log(fruits[0]);

fruits.push("grape");
console.log(fruits);

fruits.pop();
console.log(fruits);
```

Output

```
[Running] node "c:\Users\hp\Desktop\web devlo
apple
[ 'apple', 'banana', 'orange', 'grape' ]
[ 'apple', 'banana', 'orange' ]
```

Ex#2

```
let person = {
  name: "John",
  age: 30,
  profession: "Web Developer",
  sayHello: function() {
    console.log("Hello, my name is " + this.name);
  }
};

console.log(person.name);

person.sayHello();
person.location = "New York";
console.log(person);
delete person.age;
console.log(person);
```
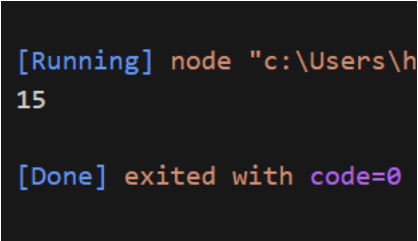
Output

```
[Running] node "c:\Users\hp\Desktop\web d
John
Hello, my name is John
{
  name: 'John',
  age: 30,
  profession: 'Web Developer',
  sayHello: [Function: sayHello],
  location: 'New York'
}
{
  name: 'John',
  profession: 'Web Developer',
  sayHello: [Function: sayHello],
  location: 'New York'
}
```

Ex#3

```
function addNumbers(num1, num2) {
  return num1 + num2;
 }

 let sum = addNumbers(5, 10);
 console.log(sum);
```

Output

```
[Running] node "c:\Users\h
15

[Done] exited with code=0
```

Ex#4

```
<!DOCTYPE html>
<html>
<body>
<h1>JavaScript Arrays</h1>
<h2>The join() Method</h2>

<p>The join() method joins array elements into a string.</p>
<p>It this example we have used " * " as a separator between the elements:</p>

<p id="demo"></p>

<script>
const fruits = ["Banana", "Orange", "Apple", "Mango"];
document.getElementById("demo").innerHTML = fruits.join(" * ");
</script>

</body>
</html>
```

Output

JavaScript Arrays

The join() Method

The join() method joins array elements into a string.

It this example we have used " * " as a separator between the elements:

Banana * Orange * Apple * Mango

Ex#5

```html
<!DOCTYPE html>
<html>
<body>

<h2>JavaScript Objects</h2>
<p>Creating an object:</p>

<p id="demo"></p>

<script>
let person = {
  firstName : "John",
  lastName  : "Doe",
  age     : 50,
  eyeColor  : "blue"
};

document.getElementById("demo").innerHTML = person.firstName + " " + person.lastName;
</script>

</body>
</html>
```

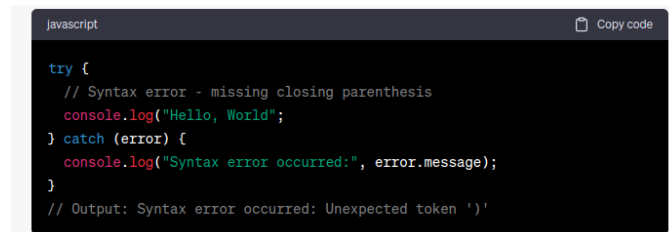**Output**

JavaScript Objects

Creating an object:

John Doe

Lab # 12

Ex#1

```javascript
try {
 // Syntax error - missing closing parenthesis
 console.log("Hello, World";
} catch (error) {
 console.log("Syntax error occurred:", error.message);
}
```
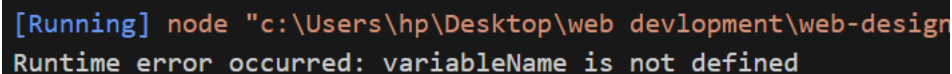
Output

```javascript
try {
  // Syntax error - missing closing parenthesis
  console.log("Hello, World";
} catch (error) {
  console.log("Syntax error occurred:", error.message);
}
// Output: Syntax error occurred: Unexpected token ')'
```

Ex#2

```javascript
try {
   console.log(variableName);
 } catch (error) {
   console.log("Runtime error occurred:", error.message);
 }
```
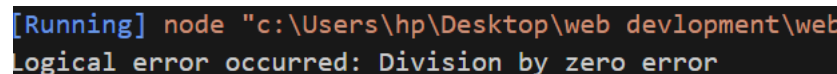
Output

```
[Running] node "c:\Users\hp\Desktop\web devlopment\web-design
Runtime error occurred: variableName is not defined
```

Ex#3

```javascript
try {
  let num1 = 10;
  let num2 = 0;

  if (num2 === 0) {
   throw new Error("Division by zero error");
  }

  let result = num1 / num2;
  console.log("Result:", result);
} catch (error) {
  console.log("Logical error occurred:", error.message);
}
```
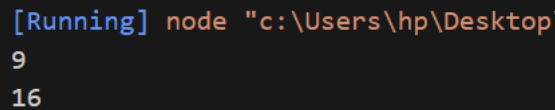
Output

```
[Running] node "c:\Users\hp\Desktop\web devlopment\web
Logical error occurred: Division by zero error
```

Lab # 13

Ex#1

```
function square(x) {
  return x * x;
}

console.log(square(3));
console.log(square(4));
```
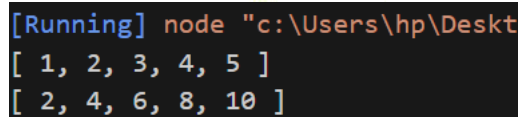
Output

```
[Running] node "c:\Users\hp\Desktop
9
16
```

Ex#2

```
let numbers = [1, 2, 3, 4, 5];
let doubledNumbers = numbers.map(function(num) {
 return num * 2;
});

console.log(numbers);
console.log(doubledNumbers);
```
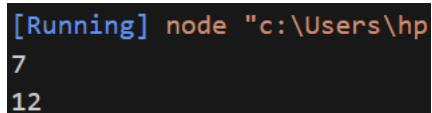
Output

```
[Running] node "c:\Users\hp\Deskt
[ 1, 2, 3, 4, 5 ]
[ 2, 4, 6, 8, 10 ]
```

Ex#3

```
function doOperation(x, y, operation) {
  return operation(x, y);
}
  function add(x, y) {
  return x + y;
}

function multiply(x, y) {
  return x * y;
}

console.log(doOperation(3, 4, add));
console.log

(doOperation(3, 4, multiply));
```

Output

```
[Running] node "c:\Users\hp
7
12
```

Ex#4

```
function square(x) {
  return x * x;
}

function addTwo(x) {
  return x + 2;
}

let squareAndAddTwo = function(x) {
  return addTwo(square(x));
};

console.log(squareAndAddTwo(3));
```

Output


```
[Running] node "c:\Users\hp\Desktop\we
11
```

Lab # 14

Example 1:

```
1. function showName()
2.        let name - "GeeksforGeeks";
3.   showname()
4. console.log(name);
5.
```

Output:

Uncaught ReferenceError: showname is not defined at
<anonymous>:4:1

Example 2:

```
function showName
let name = "GeeksforGeeks";
console.log(name);
showName();
```

Output:

GeeksforGeeks

Example 3:

```
function fun() {
    let a = 10;
    console.log(a);
}
console.log(a);
```

Output:

```
[Running] node "c:\Users\Mg\Desktop\Lab Manual Web\FILE.JS"
c:\Users\Mg\Desktop\Lab Manual Web\FILE.JS:5
console.log(a);
            |   |      ^

ReferenceError: a is not defined
```

Example 4:

```
let a = 10;

function fun() {
    let a = 20;
    console.log(a);
}
console.log(a);
```

Output:

```
[Running] node "c:\Users\Mg\Desktop\Lab Manual Web\FILE.JS"
10
```

Example 1:

```
let paintColor = 'red'
const paint = (() => {
    return {
        changeColorToBlue: () => {
            paintcolor: 'Blue';
             return paintColor;
        },
        changeColorToGreen: () => {
            paintColor: 'Green';
            return paintColor;
        }
    }
})();
console .log(
    paint.changeColorToBlue()
)
```

Output:

```
[Running] node "c:\Users\Mg\Desktop\Lab Manual Web\FILE.JS"
red
```

3. Hoisting

Example 1:

```
function cowSays(sound) {
    console.log(sound);
}
cowSays('moo');
```

Output:

```
[Running] node "c:\Users\Mg\Desktop\Lab Manual Web\FILE.JS"
moo
```

Example 2:

```
let a = 5;
console.log(a);
```

Output:

```
[Running] node "c:\Users\Mg\Desktop\Lab Manual Web\FILE.JS"
5
```

Output

```
a = 5;
console.log(a);
let a;
```

Output

```
[Running] node "c:\Users\Mg\Desktop\Lab Manual Web\FILE.JS"
5
```

4. Closures

Example 1:

```
const first = () => {
    const greet = 'Hi';
    const second = () => {
        const name = 'john';
        console.log(greet);
    }
    return second;
}
const newFunc = first();
newFunc();
```
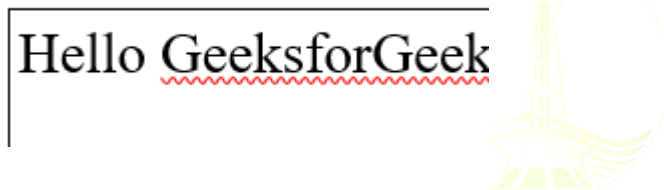
Output:

```
[Running] node "c:\Users\Mg\Desktop\Lab Manual Web\FILE.JS"
Hi
```

5. Callbacks

Example 1:

```
Const greeting = (name) => {
    console.log('Hello' + name);
}

const processUserName = (callback) => {
    name = 'GeeksforGeeks';
    callback(name);
}
processUserName(greeting);
```

Output:

Hello GeeksforGeek

6. Promises

Example 1:

```
const promise = new Promise((resolve, reject) => {
    isNameExist = true;
    if (isNameExist) {
        resolve("User name exist")
    } else {
        reject("error")
    }
})
promise.then(result => console.log(result)).catch(() => {
        console.log('error!')
        })
```

Output:

```
[Running] node "c:\Users\Mg\Desktop\Lab Manual Web\FILE.JS"
User name exist
```

7. Async & Await
Example 1:

```javascript
const showPosts = async () => {
    try {
        const response = await
fetch('https://jsonplaceholder.typicode.com/posts');
        const posts = await response.json();
        console.log(posts);
    } catch (error) {
        console.error('Error fetching posts:', error);
    }
}

showPosts();
```

Output:

```
[Running] node "c:\Users\Mg\Desktop\Lab Manual Web\FILE.JS"
[
  {
    userId: 1,
    id: 1,
    title: 'sunt aut facere repellat provident occaecati excepturi optio reprehenderit'
    body: 'quia et suscipit\n' +
      'suscipit recusandae consequuntur expedita et cum\n' +
      'reprehenderit molestiae ut ut quas totam\n' +
      'nostrum rerum est autem sunt rem eveniet architecto'
  },
  {
    userId: 1,
    id: 2,
    title: 'qui est esse',
    body: 'est rerum tempore vitae\n' +
      'sequi sint nihil reprehenderit dolor beatae ea dolores neque\n' +
      'fugiat blanditiis voluptate porro vel nihil molestiae ut reiciendis\n' +
      'qui aperiam non debitis possimus qui neque nisi nulla'
  },
  {
```

LAB 16

1. Unit Testing with Jest:
Example 1:

```
function sum(a, b) {
    return a + b;
}

// Test case using Jest
let test('Adds two numbers correctly', () => {
  expect(sum(2, 3)).toBe(5);
  expect(sum(0, 0)).toBe(0);
  expect(sum(-5, 5)).toBe(0);
});
```

Output:

```
PASS  your-test-file.test.js
  ✓ Adds two numbers correctly (x ms)


Test Suites: 1 passed, 1 total
Tests:       1 passed, 1 total
```

2. Integration Testing with Mocha and Chai:
Example 1:

```
class Calculator {
    add(a, b) {
      return a + b;
    }

    subtract(a, b) {
      return a - b;
    }
}

module.exports = Calculator;

// test-calculator.js
const assert = require('chai').assert;
const Calculator = require('./calculator'); // Assuming your
Calculator class is in the same directory
```

```javascript
describe('Calculator', () => {
  let calculator;

  beforeEach(() => {
    calculator = new Calculator();
  });

  it('should add two numbers correctly', () => {
    assert.equal(calculator.add(2, 3), 5);
    assert.equal(calculator.add(-5, 5), 0);
  });

  it('should subtract two numbers correctly', () => {
    assert.equal(calculator.subtract(5, 3), 2);
    assert.equal(calculator.subtract(10, 5), 5);
  });
});
```

Output:

```
Calculator
  ✓ should add two numbers correctly
  ✓ should subtract two numbers correctly


2 passing (x ms)
```