AP LAB FILE

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CSE

11911013

Experiment 1 - Creating an HTML Web Pages forms

HTML File

```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>Formularz</title>
8        <link rel="Stylesheet" type="text/css" href="styleindex.css">
9
10   </head>
11
12   <body>
13       <div class="wrapper">
14
15           <form action="send.php" method="POST" name="registrationform">
16               <h1>Registration Form</h1>
17               <div class="name">
18                   <input type="text" placeholder="name" name="name" id="name" required>
19               </div>
20               <div class="surname">
21                   <input type="text" placeholder="surname" name="surname" id="surname" required>
22               </div>
23               <div class="position">
24                   <input type="text" placeholder="position" name="position" id="position" required>
25               </div>
26               <div class="mail">
27                   <input type="email" placeholder="mail" name="mail" id="mail" required>
28               </div>
29
30               <input type="submit" value="send">
31           </form>
32       </div>
33   </body>
34
35   </html>
```

CSS File

```css
.agreement {
    text-transform: none;
}

.name>input::placeholder,
.surname>input::placeholder,
.position>input::placeholder,
.mail>input::placeholder {
    text-transform: uppercase;
}

.name>input,
.surname>input,
.position>input,
.mail>input {
    display: block;
    height: 40px;
    line-height: 40px;
    width: 70%;
    margin: 10px auto;
}

.agreement+input {
    display: block;
    margin: 0 auto;
    width: 60%;
    padding: 10px 30px;
    font-size: 16px;
    font-weight: bold;
    text-transform: uppercase;
    letter-spacing: 2px;
    border-radius: 5px;
    border: none;
    box-shadow: none;
    background-color: rgb(19, 141, 211);
    color: white;
    cursor: pointer;
    transition: .3s;
}

.agreement+input:hover {
    background-color: rgb(19, 114, 160);
}
```

```css
* {
    margin: 0;
    padding: 0;
    box-sizing: border-box;
}

body {
    background-color: rgb(19, 141, 211);
}

.wrapper {
    position: absolute;
    top: 50%;
    left: 50%;
    transform: translate(-50%, -50%);
}

form {
    padding: 35px;
    text-transform: uppercase;
    font-family: Arial, Helvetica, sans-serif;
    background-color: white;
    border-radius: 20px;
    color: #999;
}

h1 {
    text-transform: uppercase;
    font-size: 22px;
    margin-bottom: 30px;
    text-align: center;
    color: #444;
}

.name,
.surname,
.position,
.agreement,
.mail {
    display: block;
    width: 100%;
    margin: 10px auto;
}
```

```css
* {
    margin: 0;
    padding: 0;
    box-sizing: border-box;
}

body {
    background-color: rgb(19, 141, 211);
}

.form {
    position: absolute;
    top: 50%;
    left: 50%;
    width: 500px;
    padding: 30px;
    transform: translate(-50%, -50%);
    font-family: Arial, Helvetica, sans-serif;
    background-color: white;
    border-radius: 20px;
    color: #444;
}

h1 {
    text-transform: uppercase;
    font-size: 22px;
    margin-bottom: 30px;
    text-align: center;
}

p {
    margin-bottom: 10px;
}
```

OUTPUT

Experiment 2 - Creating Home Page Using HTML

HTML Files

```
1   <html>
2   <head>
3   <style>
4   h1 {
5       text-shadow: 2px 2px 5px purple;
6   }
7   </style>
8   </head>
9   <body>
10  <h1 style="text-align:center;">Assignment 2</h1>
11  <h1>Submitted To - </h1>
12  <h1>Mr. Md. Arquam</h1>
13  </body>
14  </html>
```

```
1   <html>
2   <head>
3   <style>
4   button
5   {
6   font-size:20px;
7   }
8
9   body  {
10     background-image: url("img.jpg");
11     background-color: #cccccc;
12     background-size: cover;
13  }
14  </style>
15  </head>
16  <body>
17  <center><div>
18  <p><button type="Home">Home</button>
19  <button type="About">About</button>
20  <button type="Admission">Admission</button>
21  <button type="Acadmics">Acadmics</button>
22  <button type="Acadmics">Examination</button>
23  <button type="Acadmics">Placements</button>
24  <button type="Acadmics">Students</button>
25  <button type="Acadmics">Activities</button></p>
26  </div></center>
27  </body>
28  </html>
```

```
1    <html>
2    <head>
3    <style>
4    h1 {
5        text-shadow: 2px 2px 5px purple;
6    }
7    h3
8    {
9    text-shadow: 2px 2px 5px pink;
10   }
11   </style>
12   </head>
13   <body>
14   <h1>Student's Detail</h1>
15   <h3>Name-Anuj</h3>
16   <h3>Class-CSE</h3>
17   <h3>Roll No.-11912013</h3>
18   </body>
19   </html>
```

6.html | 1.html | 4.html | 5.html | index.html | AP.html | UnderstandingJavascript.html | index.html

```
1    <html>
2    <head>
3    </head>
4    <body>
5    <center><img src="SOSOimage.png" height="95%" width="90%"></center>
6    </body>
7    </html>
```

OUTPUT

Experiment 3 - Creating XHTML and CSS and Understanding its use in creating web Pages

HTML Files

AP - Notepad

File Edit Format View Help

```css
.dv{ background-color:Lightgrey;
    margin: 0px 300px 300px 300px;}
    .abc{margin-left: 60px;}
input[type=email]{width:50%;
    margin-left: 60px;
    }
body{background-color:blue}
.ab{text-align: center;
    text-shadow: 5px;
  padding: 2px;
margin: auto;}
```

```html
31    <label class="abc"><b>Gender:</b></label>
32    <input type="radio" name="ab" value="male">Male
33    <input type="radio" name="ab" value="female">Female
34    <input type="radio" name="ab" value="others">Others
35    <br>
36    <br>
37    <br>
38    <br>
39    <label class="abc"><b>Mobile No:</b></label><br>
40    <table width="50%">
41      <th>
42      <select >
43        <option>Select</option>
44        <option>+91</option>
45          <option>+310</option>
46            <option>+55</option>
47              <option>+1</option>
48              <option>+355</option>
49              <option>+2</option>
50    </select></th>
51      <th>
52      <input type="text" placeholder="Enter your Mobile number "></th>
53    </table>
54    </div>
55    <hr>
56    <table width="30%">
57      <th><input type="submit"  value="Register"></th>
58      <th><input type="reset"  value="Clear"></th>
59    </table>
60  </form>
61  </div>
62  </div>
63  </body>
64  </html>
65
```

File   Edit   Search   View   Encoding   Language   Settings   Tools   Macro   Run   Plugins   Window   ?

index.html   body.html   navigation.html   header.html   footer.html   footer.html   nsfg.py   Output.html   6.html   1.html   4.html   5.html   ind

```
1    <!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.1//EN"
2    "http://www.w3.org/TR/xhtml11/DTD/xhtml11.dtd">
3    <html lang="en" dir="ltr">
4      <head>
5        <title>Registration Form</title>
6        <link rel="stylesheet" href="AP.css">
7      </head>
8      <body>
9        <div class="ab">
10   <h1>Create Your Account</h1></div>
11
12        <div>
13          <div class="dv">
14   <form method="post">
15     <table width="50%">
16       <th><label>First Name</label>
17       <input type="text" placeholder="Enter your Firstname here"></th>
18       <th><label for="">Last Name</label>
19       <input type="text" placeholder="Enter your Lastname here"></th>
20     </table>
21     <br>
22     <br>
23     <div>
24       <label class="abc"><b>E-mail:</b></label>
25   <br>
26   <input type="email" placeholder="Enter your email here">
27   <br>
28   <br>
29   <br>
30   <br>
31   <label class="abc"><b>Gender:</b></label>
32   <input type="radio" name="ab" value="male">Male
33   <input type="radio" name="ab" value="female">Female
34   <input type="radio" name="ab" value="others">Others
35   <br>
36   <br>
37   <br>
38   <br>
```
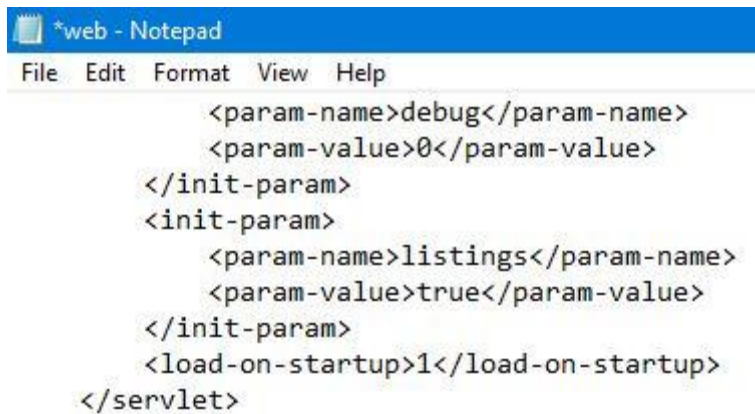
OUTPUT

Experiment 4 - Setting up and configuration of Apache Tomcat Server


```
    *web - Notepad
File  Edit  Format  View  Help
              <param-name>debug</param-name>
              <param-value>0</param-value>
        </init-param>
        <init-param>
              <param-name>listings</param-name>
              <param-value>true</param-value>
        </init-param>
        <load-on-startup>1</load-on-startup>
    </servlet>
```
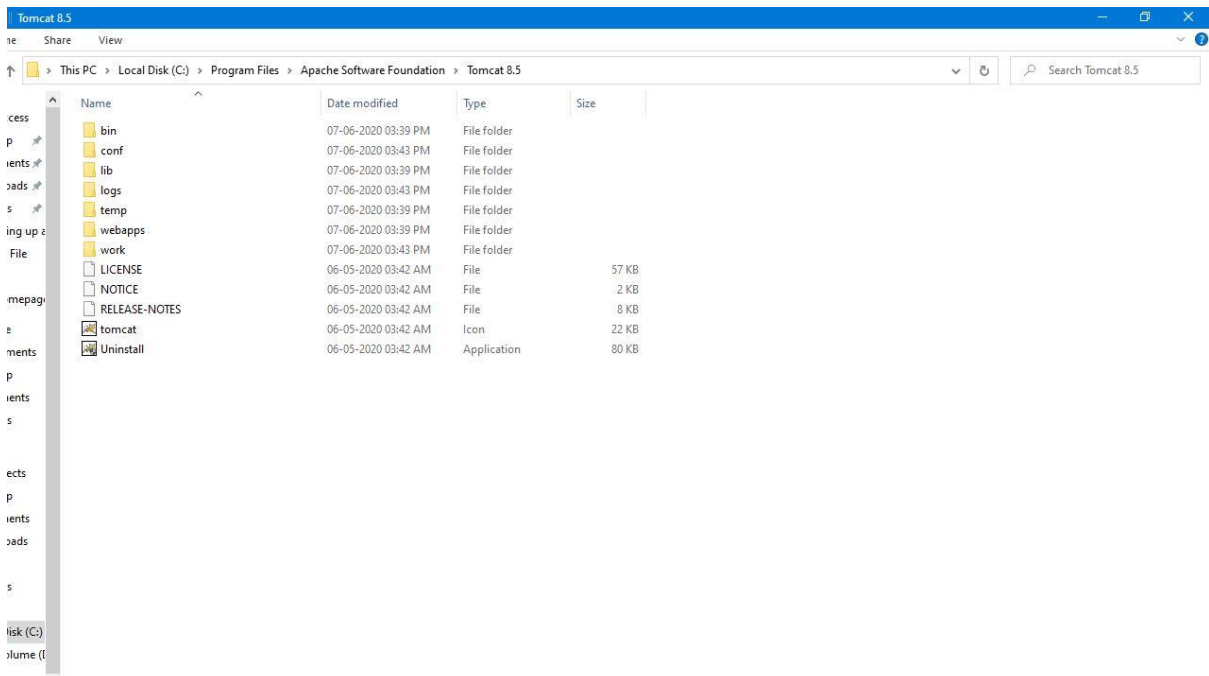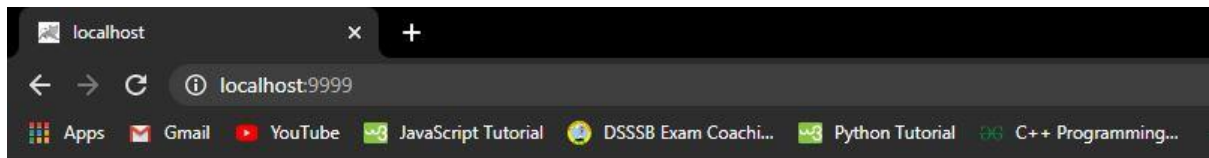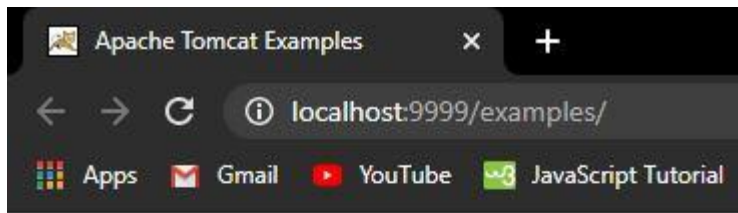
This site can't be reached

localhost refused to connect.

Try:

- Checking the connection
- Checking the proxy and the firewall

ERR_CONNECTION_REFUSED

Reload

```
<!-- A "Connector" represents an endpoint by which requests are received
     and responses are returned. Documentation at :
     Java HTTP Connector: /docs/config/http.html
     Java AJP  Connector: /docs/config/ajp.html
     APR (HTTP/AJP) Connector: /docs/apr.html
     Define a non-SSL/TLS HTTP/1.1 Connector on port 9999
-->
<Connector port="9999" protocol="HTTP/1.1"
           connectionTimeout="20000"
           redirectPort="8443" />
<!-- A "Connector" using the shared thread pool-->
<!--
<Connector executor="tomcatThreadPool"
           port="9999" protocol="HTTP/1.1"
           connectionTimeout="20000"
           redirectPort="8443" />
-->
```

```
<!-- The contents of this file will be loaded for each web application -->
<Context reloadable="true">

    <!-- Default set of monitored resources. If one of these changes, the    -->
    <!-- web application will be reloaded.                                    -->
    <WatchedResource>WEB-INF/web.xml</WatchedResource>
```


Experiment 5 - Understanding modification of Web.XML

The web.xml Deployment Descriptor file describes how to deploy a web application in a servlet container such as Tomcat.

This file is required for every application you deploy on Tomcat. You will find one in the jsp-examples, servlet-examples and ROOT applications provided on a new Tomcat website, and every web application example you download, including inside WAR files.

The location of the file is always the same: application root/WEB-INF/web.xml

At minimum, the file needs to contain an XML descriptor and an opening and closing <web-app> tag.
Open the configuration file "web.xml". We shall enable the directory listing by changing "listings" from
"false" to "true" for the "default" servlet.
<param-value>**true**</param-value> like:


```
            <param-name>debug</param-name>
            <param-value>0</param-value>
        </init-param>
        <init-param>
            <param-name>listings</param-name>
            <param-value>true</param-value>
        </init-param>
        <load-on-startup>1</load-on-startup>
    </servlet>
```

Experiment 6 - Creating Web Sites Using PHP

PHP Files


```php
<?php

    session_start();
    $conn =  mysqli_connect("localhost","root","","db");
    if(!$conn)
    {
        die("Connection failed" .mysqli_connect_error());
    }
    $username = $_POST['restroid'];
    $password = $_POST['password'];
    $button = $_POST['btn'];
    $check = "SELECT * FROM restro WHERE Username = '$username' AND Password = '$password'";
        $qu = mysqli_query($conn,$check);
    $rows = mysqli_num_rows($qu);
    $name = mysqli_fetch_assoc($qu);
?>
<?php
    if($rows>0){
        $_SESSION['ifLogin'] = "true";    // Setting the Restaurant's login Session Variable
        $_SESSION['restroId'] = $username;     // Setting the Restaurant's Id Session Variable
        $_SESSION['restroName'] = $name['RestroName'];  // Setting the Restaurant's Name Session Variable
?>
<html>

<body>
<script>
    alert("Login Successfull!!");
    window.location.href = "restro1.php";    //Redirecting to Restaurant's main page
</script>
<?php }
    else{
        $_SESSION['ifLogin'] = "false";     //Setting the Restaurant's login Session Variable to be False
    ?>
<script>
alert('Wrong Credential!!');
window.location.href = "restro1.php"
</script>
<?php
    }
    ?>
    </body>
    </html>
```

```html
<body>
    <nav class="navbar navbar-expand-lg navbar-light bg-info">
        <a class="navbar-brand" href="#">FoodShala</a>
        <button class="navbar-toggler" type="button" data-toggle="collapse" data-target="#navbarSupportedContent" aria-controls="navbarSupportedContent" aria-expanded="false" ar
    <span class="navbar-toggler-icon"></span>
    </button>

        <div class="collapse navbar-collapse" id="navbarSupportedContent">
            <ul class="navbar-nav mr-auto">
                <li class="nav-item active">
                    <a class="nav-link" href="#">Home <span class="sr-only">(current)</span></a>
                </li>
            </ul>
        </div>
    </nav>
    <div class="front1">
    <h1 class="label">
        Welcome To FoodShala, You want to
    </h1>

        <form action="user.php" method="GET">

            <button type="submit" class="btn btn-primary">Order Food</button>
        </form>
        <form action="restro1.php" method="GET">
            <button type="submit" class="btn btn-primary">Manage Your Restaurant</button>
        </form>
    </div>
</body>

</html>
```

```html
<html1>

<head>

    <title>FoodShala</title>

    <link rel="stylesheet" href="https://maxcdn.bootstrapcdn.com/bootstrap/4.0.0/css/bootstrap.min.css" integrity="sha384-Gn5384xqQ1aoWXA+058RXPxPg6fy4IWvTNh0E263XmFcJlSAwiGgFAW/d
    <style>
        .label {
            align-content: center;
            color: white;
            align-content: center;
        }

        body {
            background-image: url('images/lily.jpg');
            background-repeat: no-repeat;
            background-attachment: fixed;
            background-position: center;
            background-size: cover;
        }

        .front1{
            margin: auto;
            width: 50%;
            padding: 10px;
            text-align: center;
            margin-top: 200px;
        }

    </style>
</head>

<body>
    <nav class="navbar navbar-expand-lg navbar-light bg-info">
        <a class="navbar-brand" href="#">FoodShala</a>
        <button class="navbar-toggler" type="button" data-toggle="collapse" data-target="#navbarSupportedContent" aria-controls="navbarSupportedContent" aria-expanded="false" aria
    <span class="navbar-toggler-icon"></span>
    </button>

        <div class="collapse navbar-collapse" id="navbarSupportedContent">
            <ul class="navbar-nav mr-auto">
                <li class="nav-item active">
```

OUTPUT

FoodShala   Home

Order Food

Manage Your Restaurant

Warning: mysqli_connect(): (HY000/1049): Unknown database 'db' in **C:** line **3**

Warning: mysqli_query() expects parameter 1 to be mysqli, bool given in   on line **5**

FoodShala   Home   Menu   Signup   Login

Warning: mysqli_fetch_assoc() expects param   **\FoodDeliveryApp-master\user.php**on line **197**

SignUp ✕

First Name

First Name

Last Name

Last Name

UserName

Your UserName

Email

Your Email

Password

Password

Your Food Preference

Veg/Non-Veg

SignUp

Experiment 7 - Understanding JavaScript

Java Script File

```
1    <!DOCTYPE html>
2    □<html>
3    □<head>
4        <title>Regular Expression</title>
5        <center>
6        <script type="text/javascript">
7            function validate()
8            {
9                var username=document.getElementById("uname").value;
10               var regx=/A00/;
11               if(regx.test(username))
12               {
13                   alert("valid username");
14               }
15               else
16               {
17                   alert("Invalid username");
18               }
19           }
20       </script>
21       </center>
22   </head>
23   <body>
24   □<form action="message.html">
25       <input type="text" id="uname" placeholder="username"/>
26       <button onclick="validate()">Submit</button>
27   </form>
28
29   </body>
30   </html>
31
```

OUTPUT
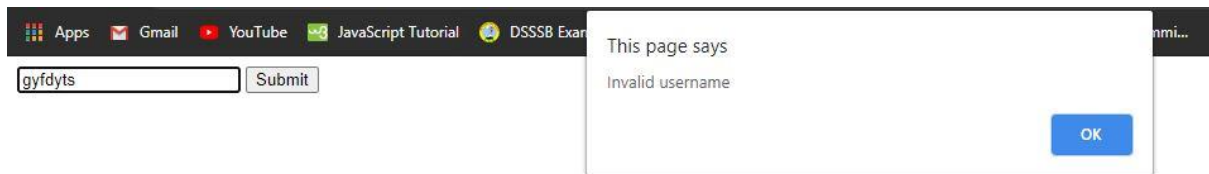
Experiment 8 - Creating a Web Page with back end in PHP and Front end in JavaScript and hosting it on Apache Tomcat Server

PHP File

```
        </select>
            <br><br>
        <label for="stream"><span class="mand">*</span>Branch </label>
        <input type="text" id="stream" name="stream" required>
              
                            <br>
                            <br>
        <label for="sem"><span class="mand">*</span>Semester: </label>
        <input type="number" id="sem" max="8" min="1" value="3" required><br><br>
        <label for="contact"><span class="mand">*</span>Contact Number:</label>
                    <input type="number"  id="con"  required><br><br>
        <label for="skill"><span class="mand">*</span>Your Skills: </label>
        <textarea id="skill" rows="7" cols="70" placeholder="Tell us your Skills in programming!">
        </textarea><br><br>
        <input type="checkbox" id="check">
        <label for="check">Check if you want us to keep you updated.</label>
        <br><br>
        <p style="text-align: left; color: blue;">Fields marked with * sign are mandatory.</p>
        <br>

        <input type="submit" id="btn" value="Register"  onmouseout="offconf();"><br>
        <p id="conf"> </p>
    </form>
    <div id="after">
    <?php



echo "<h1> ".$name."</h1>";
echo "<h3>You are pursuing ".$course." in ".$stream." at ".$institution."</h3>";
echo "<h3>E-mail: ".$email."</h3>";
?>
</div>

    </body>
</html>
```

```
        function marq()
        {
            return ((new Date().getDate()).toString());
        }

    </script>
  </head>

  <body style="background-color:red">
      <h1>Registration Form</h1>

      <?php
$name = $email = $gender = $comment = $website = "";

if ($_SERVER["REQUEST_METHOD"] == "POST") {
  $name = test_input($_POST["name"]);
  $email = test_input($_POST["email"]);
  $institution = test_input($_POST["institution"]);
  $course = test_input($_POST["course"]);
  $stream = test_input($_POST["stream"]);
}

function test_input($data) {
  $data = trim($data);
  $data = stripslashes($data);
  $data = htmlspecialchars($data);
  return $data;
}
?>

      <form  method="post" action="#after" id="form_box">

        <label for="name"><span class="mand">*</span>Name: </label>
        <input type="text" id="name"   name="name" required><br><br>

        <label for="email"><span class="mand">*</span>Email-Id: </label>
        <input type="email" id="email" name="email"  required><br><br>

        <label for="institution"><span class="mand">*</span>Institution: </label>
        <input type="text" id="institution" name="institution" required><br><br>

        <label for="dob"><span class="mand">*</span>Date of birth: </label>
        <input type="date"  id="dob" name="dob" required><br><br>

        <label for="course"><span class="mand">*</span>Course </label>
        <select id="course" name="course" required>
            <option value="B.Tech">B.Tech</option>
            <option value="M.Tech">M.Tech</option>
            <option value="PhD">PhD</option>
```

```
                         {
             e.preventDefault();
             alert("you must enter your name");
         }
    var fieldValue=document.getElementById("email").value;
        if(fieldValue==null || fieldValue== "")
         {
             e.preventDefault();
             alert("you must enter your email address");
         }
    var fieldValue=document.getElementById("institution").value;
        if(fieldValue==null || fieldValue== "")
         {
             e.preventDefault();
             alert("you must enter your institution name");
         }

    var fieldValue=document.getElementById("stream").value;
        if(fieldValue==null || fieldValue== "")
         {
             e.preventDefault();
             alert("you must enter your stream");
         }
    var n=document.getElementById("sem").value;
        if(!isNaN(parseFloat(n)) && isFinite(n))
            {e.preventDefault();
            alert("you must enter your semester"); }
    var fieldValue=document.getElementById("con").value;
        if(fieldValue==null || fieldValue== "")
         {
             e.preventDefault();
             alert("you must enter your contact no.");
         }


     }


    function offconf()
    {
        document.getElementById("conf").innerHTML=" ";


    }
```

AP LAB 1 - Notepad

File Edit Format View Help

```
        font-family: Comic Sans MS;
}
input:link,
input:visited{
    border: 1px solid white;
}
input:hover,
input:active{
    border: 1px solid rgb(131, 0, 0);
}
#btn{
    border: 2px solid rgb(500, 0, 0);
    z-index: 9999;
    padding: 5px 5px;
    border-radius: 5px;
    transition: background-color 0.2s, color 0.2s;
}
#btn:hover,
#btn:active{
    background-color: rgb(900, 29, 29);
    color: white;
    border: 2px solid rgb(131, 0, 0);
    border-radius: 5px;
    padding: 5px 5px;
    cursor: pointer;

}

textarea:link,
textarea:visited{
    border: 1px solid white;
}
textarea:hover,
textarea:active{
    border: 1px solid rgb(131, 0, 0);
}
</style>
<script type="text/javascript">



var formExample = document.getElementById("form_box");
 formExample.submit();

document.getElementById("form_box").onsubmit = function(e){
    var fieldValue=document.getElementById("name").value;
        if(fieldValue==null || fieldValue== "")
```

```
<!DOCTYPE html>
<html>
    <head>
        <title>Registeration Form</title>
        <style type="text/css">
        *{
            box-sizing: border-box;
            text-align: center;
            font-family:  Comic Sans MS;
        }
        body{
            background-color: rgb(50, 68, 68);
            background-attachment: fixed;
            background-position: center;
            background-size: cover;
            /* background-repeat:round; */

        }
        h1{
            color: white;
            background-color: rgb(500, 29, 29);
            font-family: Comic Sans MS;
        }
        #form_box{
            margin-left: 10%;
            margin-right: 10%;
            padding: 5% 10%;

            text-align: left;
            border: 2px solid rgb(63, 7, 7);
            border-radius: 5px;
            background-color: white;
            z-index: 999;
            font-family:  Comic Sans MS;
        }
        .mand{
            color: rgb(500, 0, 0);
        }
        h6{
            color: white;

            z-index: 2;
            font-family: Comic Sans MS;
        }
        input:link,
        input:visited{
            border: 1px solid white;
        }
```

OUTPUT

Experiment 9 - Writing and Understanding Program in Python

Python File


```
In [7]: import pandas as pd
        import numpy as np
        import matplotlib.pyplot as plt
        %matplotlib inline

In [9]: def maths(a,b):
            k=a+b
            return k

        print('The addition of two numbers is ',maths(2,3))

        The addition of two numbers is  5
```

Experiment 10 - Use python Libraries like Math's statistics to create program for Scientific Computations

Python File

```python
In [10]:  import pandas as pd
          import numpy as np
          import matplotlib.pyplot as plt
          import seaborn as sns
          %matplotlib inline
          from sklearn.datasets import load_iris
          a=load_iris()
          a
```

```
Out[10]:  {'data': array([[5.1, 3.5, 1.4, 0.2],
                 [4.9, 3. , 1.4, 0.2],
                 [4.7, 3.2, 1.3, 0.2],
                 [4.6, 3.1, 1.5, 0.2],
                 [5. , 3.6, 1.4, 0.2],
                 [5.4, 3.9, 1.7, 0.4],
                 [4.6, 3.4, 1.4, 0.3],
                 [5. , 3.4, 1.5, 0.2],
                 [4.4, 2.9, 1.4, 0.2],
                 [4.9, 3.1, 1.5, 0.1],
                 [5.4, 3.7, 1.5, 0.2],
                 [4.8, 3.4, 1.6, 0.2],
                 [4.8, 3. , 1.4, 0.1],
                 [4.3, 3. , 1.1, 0.1],
                 [5.8, 4. , 1.2, 0.2],
                 [5.7, 4.4, 1.5, 0.4],
                 [5.4, 3.9, 1.3, 0.4],
                 [5.1, 3.5, 1.4, 0.3],
                 [5.7, 3.8, 1.7, 0.3],
                 [5.1, 3.8, 1.5, 0.3],
```

```python
In [11]:  a.data
```

```
Out[11]:  array([[5.1, 3.5, 1.4, 0.2],
                 [4.9, 3. , 1.4, 0.2],
                 [4.7, 3.2, 1.3, 0.2],
                 [4.6, 3.1, 1.5, 0.2],
```

```python
In [20]:  df['Target']=a.target
          df
```

Out[20]:

	sepal length (cm)	sepal width (cm)	petal length (cm)	petal width (cm)	Target
0	5.1	3.5	1.4	0.2	0
1	4.9	3.0	1.4	0.2	0
2	4.7	3.2	1.3	0.2	0
3	4.6	3.1	1.5	0.2	0
4	5.0	3.6	1.4	0.2	0
...	...	...	...	...	...
145	6.7	3.0	5.2	2.3	2
146	6.3	2.5	5.0	1.9	2
147	6.5	3.0	5.2	2.0	2
148	6.2	3.4	5.4	2.3	2
149	5.9	3.0	5.1	1.8	2

150 rows × 5 columns

```python
In [22]:  X=df.drop('Target',axis='columns')
          X
```

Out[22]:

	sepal length (cm)	sepal width (cm)	petal length (cm)	petal width (cm)
0	5.1	3.5	1.4	0.2
1	4.9	3.0	1.4	0.2
2	4.7	3.2	1.3	0.2
3	4.6	3.1	1.5	0.2
4	5.0	3.6	1.4	0.2

```python
In [19]:  df=pd.DataFrame(data=a.data,columns=a.feature_names)
          df
```

Out[19]:

	sepal length (cm)	sepal width (cm)	petal length (cm)	petal width (cm)
0	5.1	3.5	1.4	0.2
1	4.9	3.0	1.4	0.2
2	4.7	3.2	1.3	0.2
3	4.6	3.1	1.5	0.2
4	5.0	3.6	1.4	0.2
...	...	...	...	...
145	6.7	3.0	5.2	2.3
146	6.3	2.5	5.0	1.9
147	6.5	3.0	5.2	2.0
148	6.2	3.4	5.4	2.3
149	5.9	3.0	5.1	1.8

150 rows × 4 columns

```python
In [20]:  df['Target']=a.target
          df
```
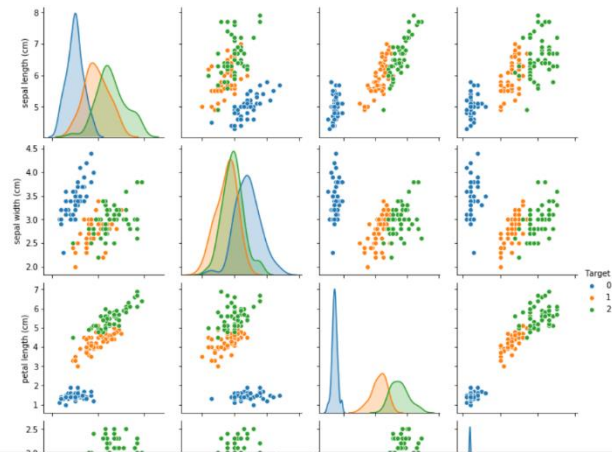
Out[20]:

	sepal length (cm)	sepal width (cm)	petal length (cm)	petal width (cm)	Target
0	5.1	3.5	1.4	0.2	0
1	4.9	3.0	1.4	0.2	0
2	4.7	3.2	1.3	0.2	0
3	4.6	3.1	1.5	0.2	0
4	5.0	3.6	1.4	0.2	0

```
In [12]:  ▶| a.keys()

  Out[12]: dict_keys(['data', 'target', 'target_names', 'DESCR', 'feature_names', 'filename'])

In [13]:  ▶| a.target

  Out[13]: array([0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0,
          0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0,
          0, 0, 0, 0, 0, 0, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1,
          1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1,
          1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 2, 2, 2, 2, 2, 2, 2, 2, 2,
          2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2,
          2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2,
          2, 2, 2])

In [14]:  ▶| a.target_names

  Out[14]: array(['setosa', 'versicolor', 'virginica'], dtype='<U10')

In [15]:  ▶| a.feature_names

  Out[15]: ['sepal length (cm)',
           'sepal width (cm)',
           'petal length (cm)',
           'petal width (cm)']

In [16]:  ▶| print(a.DESCR)

          .. _iris_dataset:

          Iris plants dataset
          --------------------

          **Data Set Characteristics:**

              :Number of Instances: 150 (50 in each of three classes)
              :Number of Attributes: 4 numeric, predictive attributes and the class
```

```
In [24]:  ▶| sns.pairplot(df,hue='Target')

  Out[24]: <seaborn.axisgrid.PairGrid at 0x2d8174fafc8>
```


OUTPUT

In [24]:   ▶ `sns.pairplot(df,hue='Target')`

Out[24]:   `<seaborn.axisgrid.PairGrid at 0x2d8174fafc8>`