AP Practical File

1- Creating HTML web forms

Code-

```html
<html>

<head>
<style>
@font-face {
    font-family:poppins ;
    src: url(Poppins-Light.ttf);
}
*{margin: 0;
padding: 0;
box-sizing: border-box;
    font-family:poppins ;
}
section{
    position: relative;

min-height: 100vh;
display: flex;
justify-content: center;
align-items: center;
padding: 20px;
background: #fee648;}
section .cont{
    position: relative;
width:800px;
height: 500px;
background: #fff;
box-shadow: o 15px 50px rgba(0,0,0,0.1);
overflow: hidden;
}
.cont .sgnbx{
position:absolute;
top:0;
left:0;
width:100%;
height:100%;
display: flex;
}
.sgnbx .img{position: relative;
width:50%;
height: 100%;
background:#ff0;
transition:0.5s;}
.img img{
    position:absolute;
    top:0;
    left:0;
    width:100%;
    height: 100%;
    object-fit: cover;
}
.form{
    position:relative;
```

```css
        width:50%;
        height:100%;
        background: #fff;
        display: flex;
justify-content: center;
align-items: center;
padding:40px;
transition: 0.5s;
}
.form form h2{
        font-size: 18px;
        font-weight: 600;
        text-transform: uppercase;
        width:100%;
        margin-bottom:10px ;
        letter-spacing: 2px;
        color:#555;
        text-align: center;
}
.form form input{
        position: relative;
        width:100%;
        padding:10px;
        background: #f5f5f5;
        color:#333;
        border:none;
        outline:none;
        box-shadow: none;
        margin:8px 0;
        font-size: 14px;
        letter-spacing: 1px;
        font-weight: 300;

}
.form form input[type="submit"]
{
max-width: 100px;
background:#677eff;
color: #fff;
cursor: pointer;
font-size: 14px;
        letter-spacing: 1px;
        font-weight: 500;
        transition:0.5s;



}
.sup{
        position: relative;
        margin-top: 20px;
        font-size: 12px;
        initial-letter: 1px;
        color:#555;
        text-transform: uppercase;
        font-weight: 300;
}
.sup a{
        font-weight: 600;
        text-decoration: none;
        color:#677eff;
}
section .cont .upbx{pointer-events: none;}
```

```
section .cont.active .upbx{pointer-events:initial;}
section .cont .upbx .form{left:100%}
section .cont.active .upbx .form{left:0;}
section .cont .upbx .img{left:-100%}
section .cont.active .upbx .img{left:0;}
.inbx form{left:0;}
.active .inbx form{left:-100%;}
.inbx .img{left:0;}
.active .inbx .img{left:100%;}
@media (max-width:991px){
section .cont{
    max-width: 400px;
}
section .cont .img{display: none;}
section .cont .sgnbx .form{width: 100%;}
}
</style>
</head>
<body>
<section>
<div class="cont">
<div class="sgnbx inbx">
    <div class="img"><img src="form.jpg"></div>
<div class="form">
    <form>


        <h2>Sign In</h2>
        <input type="text" name=" " placeholder="Username">
        <input type="Password" name=" " placeholder="Password">
        <input type="submit" name=" " value="Login">
    <p class="sup">Don't have an account?<a href="#" onclick="toggleform();">Sign Up.</a></p>
    </form>
</div>
</div>
<div class="sgnbx upbx">
    <div class="form">
    <form>
<h2>Create an Account</h2>
        <input type="text" name=" " placeholder="Username">
        <input type="email" name=" " placeholder="Email Address">
        <input type="Password" name=" " placeholder="Create Password">
        <input type="Password" name=" " placeholder="Confirm Password">
        <input type="submit" name=" " value="Sign Up">
    <p class="sup">Already have an account?<a href="#" onclick="toggleform();">Sign In.</a></p>
    </form>
</div>
<div class="img"><img src="form1.jpg"></div>
</div>
</div>
</section>
<script type="text/javascript">
function toggleform()
{
var cont=document.querySelector('.cont');
cont.classList.toggle('active');
}</script></body></html>
```

Output-
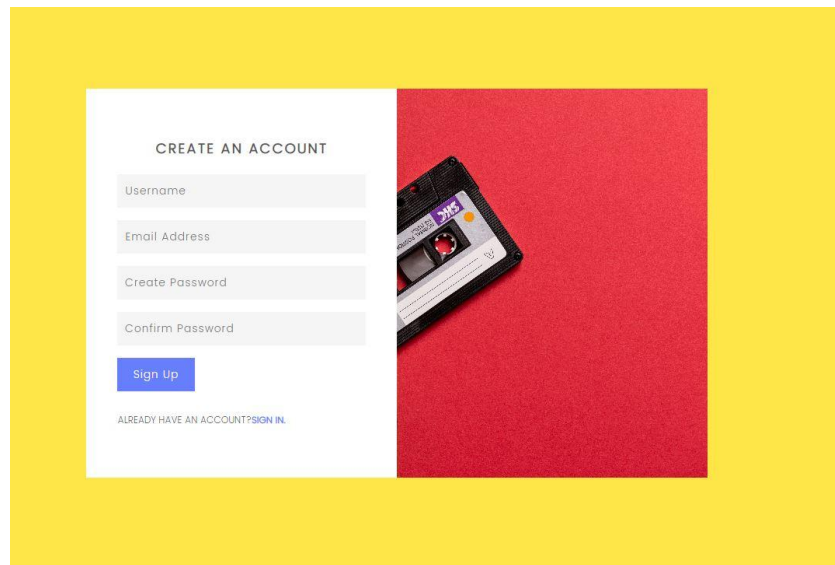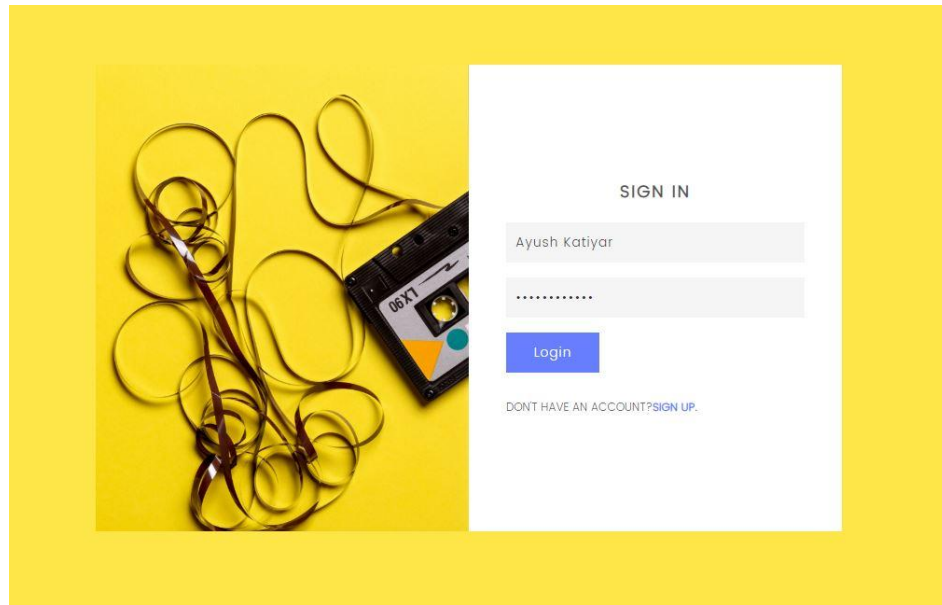
2-HTML Homepage

Code-

```html
<html>
<head>

    <style>
        body{margin:0;
        padding: 0;
```

```css
        font-family: century gothic;}
        header{
background-image:linear-gradient(rgba(0,0,0,0.5),rgba(0,0,0,0.5)), url(homepage.jpg);
height: 100vh;
background-size: cover;
        background-position: center;}
ul{list-style-type: none;
position: relative;
right:15px;}
li{
    float:right;
    display: inline-block;
}
a{

    display:block;
    margin: 20px 5px;
    padding:10px 20px;
    text-decoration: none;
    color: white;
transition:0.2s ease;
text-transform: uppercase;
border: 1px solid white;}
a:hover{
    background-color:white;
    color:rgba(0, 0, 0, 1);
font-weight:400;
font-size: 20px;
}
.logo img{float:left;
width:150px;
height:auto;
transition:0.2s ease;
}
.logo img:hover{width:200px;
height:auto;}

.title{
    position:absolute;
    top:50%;
    left:50%;
    transform:translate(-50%,-50%);
}
.title h1{color:rgb(248, 248, 248);

font-size: 70px;
}
.button{position:absolute;
    top:60%;
    left:50%;
    transform:translate(-50%,-50%);
    display: flex;
    }


    </style>
</head>
<body>
<header>
<div class="main">
    <div class="logo">
        <img src="logo.png">
    </div>
<ul>
<li><a href="#">Home</a></li>
```
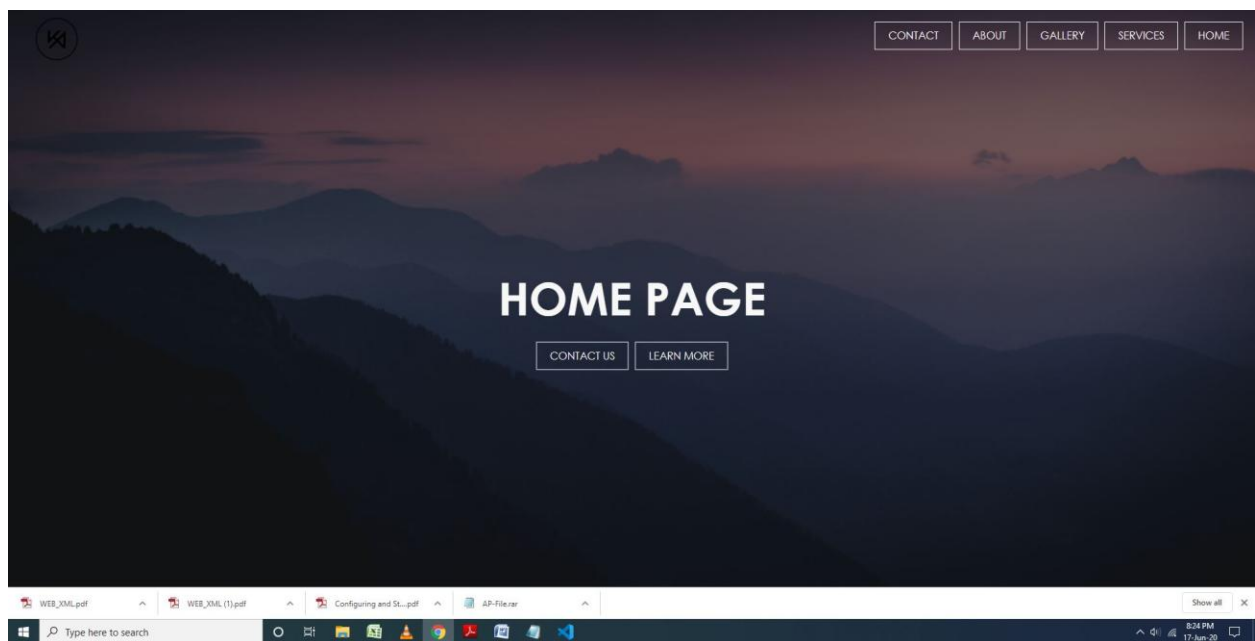
```
<li><a href="#">Services</a></li>
<li><a href="#">Gallery</a></li>
<li><a href="#">About</a></li>
<li><a href="#">Contact</a></li>
</ul>


</div>
<div class="title">
    <h1>HOME PAGE</h1>
</div>
<div class="button">
    <a href="#" class="btn">CONTACT US </a>
    <a href="#" class="btn">LEARN MORE</a>
</div>
</header>

</body>


</html>
```

Output-

3-XHTML and CSS

Code-

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
"http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
<html xmlns="http://www.w3.org/1999/xhtml" xml:lang="en" lang="en">
  <head>
    <title>Form Styling</title>
    <link
      href="https://fonts.googleapis.com/css?family=Raleway"
      rel="stylesheet"
    />
    <style>
      * {
        box-sizing: border-box;
        margin: 0;
        padding: 0;
      }

      body {
        font-family: consolas, sans-serif;
        background: #20b13f;
        color: rgb(195, 0, 255);
        line-height: 1.8;
      }

      a {
        text-decoration: none;
      }

      #container {
        margin: auto;
        max-width: 400px;
        padding: 20px;
      }

      .form-wrap {
        background: white;
        padding: 15px 25px;
        color: #333;
      }

      .form-wrap h1,
      .form-wrap p {
        text-align: center;
      }

      .form-wrap .form-group {
        margin-top: 15px;
      }

      .form-wrap .form-group label {
        display: block;
        color: #666;
      }

      .form-wrap .form-group input {
        width: 100%;
        padding: 10px;
```

```css
      border: #ddd 1px solid;
      border-radius: 5px;
    }

    .form-wrap button {
      display: block;
      width: 100%;
      padding: 10px;
      margin-top: 20px;
      background-attachment: #e21575;
      color: rgb(49, 8, 77);
      cursor: pointer;
    }

    .form-wrap button:hover {
      background: #b5d4d2;
    }

    .form-wrap .bottom-text {
      font-size: 13px;
      margin-top: 20px;
    }

    footer {
      text-align: center;
      margin-top: 10px;
    }

    footer a {
      color: #00ffbf;
    }
  </style>
</head>
<body>
  <div id="container">
    <div class="form-wrap">
      <h1>Sign Up</h1>
      <p>It's free and only takes a minute</p>
      <form>
        <div class="form-group">
          <label for="first-name">First Name</label>
          <input type="text" name="firstName" id="first-name" />
        </div>
        <div class="form-group">
          <label for="last-name">Last Name</label>
          <input type="text" name="lastName" id="last-name" />
        </div>
        <div class="form-group">
          <label for="email">Email</label>
          <input type="email" name="email" id="email" />
        </div>
        <div class="form-group">
          <label for="password">Password</label>
          <input type="password" name="password" id="password" />
        </div>
        <div class="form-group">
          <label for="password2">Confirm Password</label>
          <input type="password" name="pasword2" id="password2" />
        </div>
        <button type="submit" class="btn">Sign Up</button>
        <p class="bottom-text">
          By clicking the Sign Up button, you agree to our
          <a href="#">Terms and Conditions</a> and
```
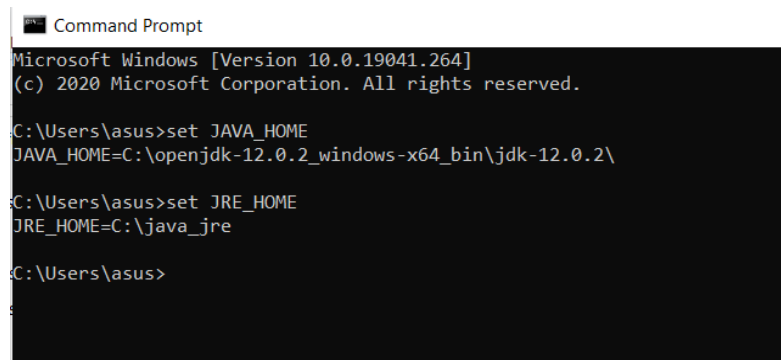
```
        <a href="#">Privacy Policy</a>
      </p>
    </form>
  </div>
  <footer>
    <p>Already have an account? <a href="#">Login Here</a></p>
  </footer>
  </div>
 </body>
</html>
```

Output-

4-Configuring and Starting Apache Tomcat server-

- **Downloading Tomcat Server**

1. Download the apache-tomcat 9.0.36 zip for required windows 32-bits or 64-bits zip file.(https://tomcat.apache.org/download-90.cgi)
2. Unzip the file in c:// for ease of use.

- Check for the following in tomcat folder:
    - i.   bin
    - ii.   logs
    - iii. webapps
    - iv.   work
    - v.   temp
    - vi.   conf
    - vii. lib

3. Install the java jdk and jre packages according to the system configuration.
4. Create environment variable JAVA_HOME and provide variable path the java jdk (path).
5. Create environment variable JRE_HOME and provide variable path the java jre (path).
6. Check if the environment variable is set in command prompt:

- set JAVA_HOME will return the variable path
- set JRE_HOME will return the variable path if set.
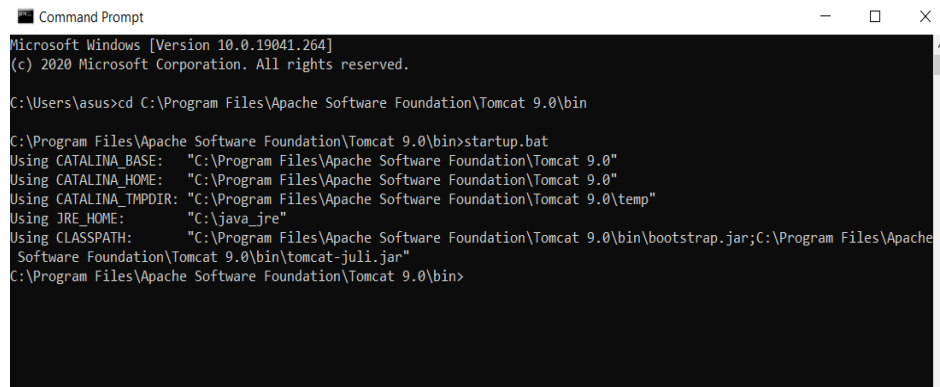
- **Configuring Apache tomcat:**

1. Open the conf folder in tomcat directory.
2. "conf\web.xml"; Enabling a Directory Listing Open the configuration file "web.xml". We shall enable the directory listing by changing "listings" from "false" to "true" for the "default" servlet. true like:
3. "conf\server.xml file"; set the TCP Port Number <Connector port="9999" protocol="HTTP/1.1" Like -> You can set the port between 1024 and
4.
5. "conf\context.xml"; Enabling Automatic Reload In that we set reloadable="true" to the element to enable automatic reload after code changes. Add reloadable="true" as in the following: ...... Like

6. (Optional) "conf\tomcat-users.xml" It is used to manage Tomcat by adding the highlighted lines, inside the elements. In that we can add a password and username as an optional step.

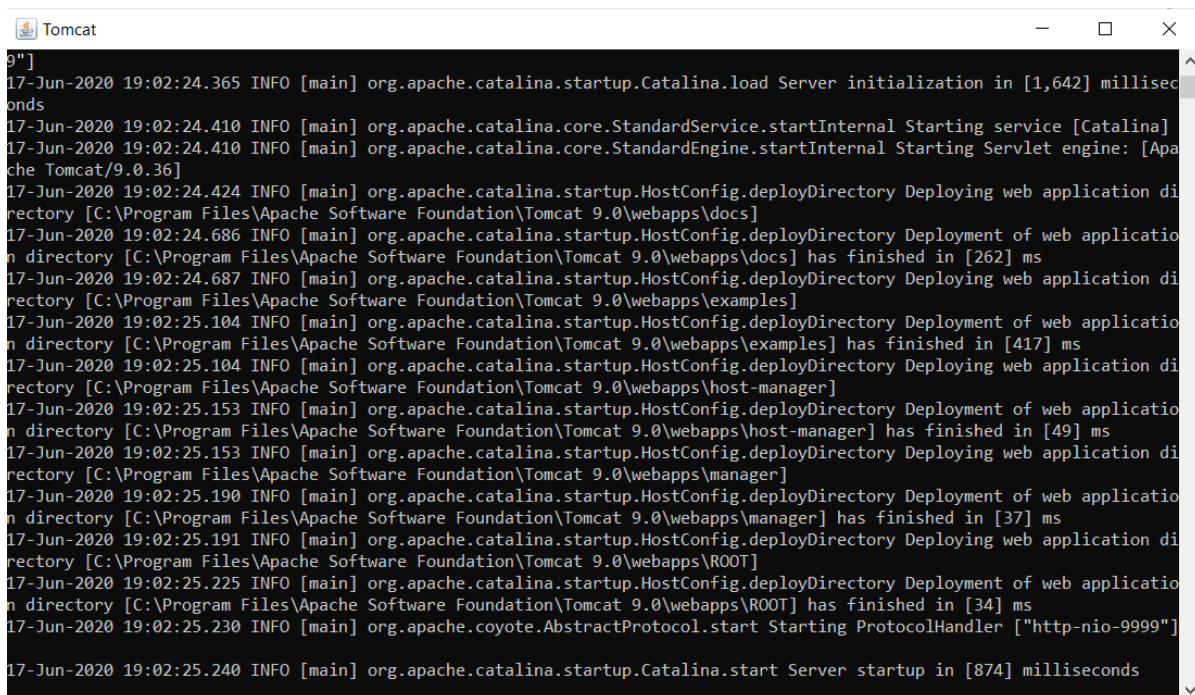7. Your Apache Tomcat Server is now configured.

- **Start Server**

1. Launch in command prompt by changing the directory(cd) to tomcat bin folder where all executable files exist. cd C:\Users\HP\apache-tomcat-9.0.36-windows-x64\apache-tomcat-9.0.36\bin

2. Now add command (startup.bat) opens the tomcat server in another command window.

3. Check for the port in tomcat window is set to 9999.

- **Access the Server:**
    i. Open a browser then enter the URL "http://localhost:9999" to access the Tomcat server's welcome page.
    ii. Now try the URL http://localhost:9999/examples to view JSP and servlet examples.
    iii. To shutdown the server use shutdown.bat in command prompt or simply apply ctrl+c in tomcat window.
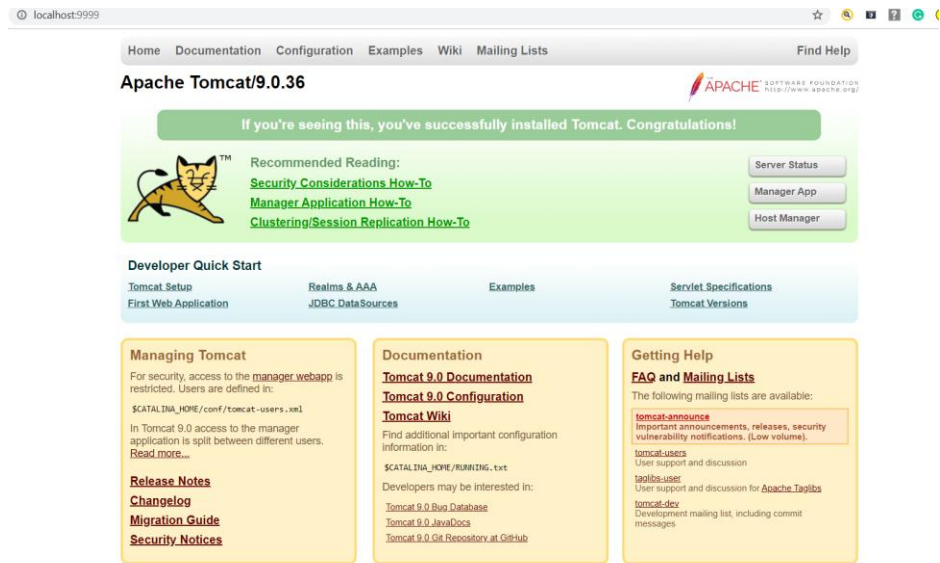
5- Undersatanding Modification Of Web.XML

1. What is the Default Servlet ?

The default servlet is the servlet which serves static resources as well as serves the directory listings (if directory listings are enabled). It is declared globally in $CATALINA_BASE/conf/web.xml.

2. What is Web XML?

The web .xml file is the deployment descriptor for a Servlet-based Java web application (which most Java web apps are). Among other things, it declares which Servlets exist and which URLs they handle. The part you cite defines a Servlet Filter. Servlet filters can do all kinds of preprocessing on requests.

3. Why we use web .xml?

Generally speaking, this is the configuration file of web applications in java. It instructs the servlet container (tomcat for ex.) which classes to load, what parameters to set in the context, and how to intercept requests coming from browsers. There you specify:

- what servlets (and filters) you want to use and what URLs you want to map them to
- listeners - classes that are notified when some events happen (context starts, session created, etc)
- configuration parameters (context-params)
- error pages, welcome files
- security constraints In servlet 3.0 many of the web.xml parts are optional. These configurations can be done via annotations (@WebServlet, @WebListener).

4. How to modify web.xml to enable https?

To modify the web.xml file to enable HTTPS

1. Open the web.xml file usually located in the $CATALINA_HOME/webapps/moab/WEB-INF/ directory.
2. Add a section to cause all pages to be hosted with HTTPS.

Code:

```
<web-app>
 ...
   <security-constraint>
   <web-resource-collection>
     <web-resource-name>Viewpoint Secure URLs</web-resource-name>
     <url-pattern>/*</url-pattern>
   </web-resource-collection>
   <user-data-constraint>
     <transport-guarantee>CONFIDENTIAL</transport-guarantee>
   </user-data-constraint>
   </security-constraint>
</web-app>
```

Property	Description
Debug	Debugging level. It is not very useful unless you are a tomcat developer. As of this writing, useful values are 0, 1, 11, 1000.
Listings	If no welcome file is present, can a directory listing be shown? value may be true or false [false] Welcome files are part of the servlet api. WARNING: Listings of directories containing many entries are expensive. Multiple requests for large directory listings can consume significant proportions of server resources.
Precompressed	If a precompressed version of a file exists (a file with .br or .gz appended to the file name located alongside the original file), Tomcat will serve the precompressed file if the user agent supports the matching content encoding (br or gzip) and this option is enabled. [false] The precompressed file with the with .br or .gz extension will be accessible if requested directly so if the original resource is protected with a security constraint, the precompressed versions must be similarly protected. It is also possible to configure the list of precompressed formats. The syntax is comma separated list of [content-encoding]=[file-extension] pairs. For example: br=.br,gzip=.gz,bzip2=.bz2. If multiple formats are specified, the client supports more than one and the client does not express a preference, the order of the list of formats will be treated as the server preference order and used to select the format returned.
ReadmeFile	If a directory listing is presented, a readme file may also be presented with the listing. This file is inserted as is so it may contain HTML.
GlobalXsltFile	If you wish to customize your directory listing, you can use an XSL transformation. This value is a relative file name (to either $CATALINA_BASE/conf/ or $CATALINA_HOME/conf/) which will be used for all directory listings. This can be overridden per context and/or per directory. See contextXsltFile and localXsltFile below. The format of the xml is shown below.
contextXsltFile	You may also customize your directory listing by context by configuring contextXsltFile. This must be a context relative path (e.g.: /path/to/context.xslt) to a file with a .xsl or .xslt extension. This overrides globalXsltFile. If this value is present but a file does not exist, then globalXsltFile will be used. If globalXsltFile does not exist, then the default directory listing will be shown.
LocalXsltFile	You may also customize your directory listing by directory by configuring localXsltFile. This must be a file in the directory where the listing will take place to with a .xsl or .xslt extension. This overrides globalXsltFile and contextXsltFile. If this value is present but a file does not exist, then contextXsltFile will be used. If contextXsltFile does not exist, then globalXsltFile will be used. If globalXsltFile does not

Property	Description
	exist, then the default directory listing will be shown.
Input	Input buffer size (in bytes) when reading resources to be served. [2048]
Output	Output buffer size (in bytes) when writing resources to be served. [2048]
Readonly	Is this context "read only", so HTTP commands like PUT and DELETE are rejected? [true]
FileEncoding	File encoding to be used when reading static resources. [platform default]
UseBomIfPResent	If a static file contains a byte order mark (BOM), should this be used to determine the file encoding in preference to fileEncoding. [true]
SendfileSize	If the connector used supports sendfile, this represents the minimal file size in KB for which sendfile will be used. Use a negative value to always disable sendfile.
UseAcceptRanges	If true, the Accept-Ranges header will be set when appropriate for the response.[true]
ShowServerInfo	Should server information be presented in the response sent to clients when directory listing is enabled. [true]
SortListings	Should the server sort the listings in a directory. [false]
sortDirectoriesFirst	Should the server list all directories before all files. [false]
AllowPartialPut	Should the server treat an HTTP PUT request with a Range header as a partial PUT? Note that RFC 7233 clarified that Range headers are only valid for GET requests. [true]

6-Creating Website using PHP

Code-

websitewithphp.html

```html
<!DOCTYPE html>
<html lang="en" dir="ltr">
  <head>
    <meta charset="utf-8">
    <title></title>
  </head>
  <body>
    <h2>Registration Form</h2>

            <form action="formphp.php" method="POST">

            First name:
            <input type="text" name="firstname">
```

```
            <br> Last name:
            <input type="text" name="lastname">

            <br> Agree to Terms of Service:
            <input type="checkbox" name="agree">
            <br>

            <input type="hidden" name="form_submitted" value="1" />

            <input type="submit" value="Submit" >

        </form>
    </body>
</html>
```

formphp.php

```php
<?php
if(isset($_POST["form_submitted"]))
{
        if(!isset($_POST["agree"]))
        echo "You haven't agreed to the terms and services";
        else
        echo "Thank You !<br>".$_POST["firstname"]." ".$_POST["lastname"]." you have been successfully registered
";
}
?>
```

Output-

Registration Form

First name: Ayush
Last name: Katiyar
Agree to Terms of Service: ☑
Submit

Thank You !
Ayush Katiyar you have been successfully registered

7-Understanding Javascript(Calculator)

Code-

```html
<html>
<head>
<style>
    @font-face {
    font-family:poppins ;
    src: url(Poppins-Light.ttf);
}
*{

    margin:0;
    padding:0;
font-family: poppins;
box-sizing: border-box;
}
body{
    display:flex;
    justify-content: center;
    align-items: center;
    min-height: 100vh;
    background:#091921;
}
.calculator{
position: relative;
display:grid;

}
.value{
grid-column:span 4 ;
height:100px;
text-align: right;
border: none;
outline: none;
padding:10px;
font-size: 18px;



}
.calculator span{
    display:grid;
    width:60px;
    height:60px;
    color:#fff;
    background:#0c2835;
    place-items: center;
    border:1px solid rgba(0,0,0,0.1);
    transition:0.1s;
}
.calculator span:active{
    background:#74ff3b;
    color:#111;
}
span.clear{

    grid-column:span 2 ;
    width:120px;
    background:#ff3077
```

```
}
span.plus{

grid-row:span 2 ;
height:120px;
}
span.equal{
background: #03b1ff;

}
    </style>
</head>
<body>



    <form class="calculator" name="calc">
<input class="value" type="text" readonly="" name="txt">
<span class="num clear" onclick="document.calc.txt.value =''">c</span>
<span class="num" onclick="document.calc.txt.value +='/'">/</span>
<span class="num" onclick="document.calc.txt.value +='*'">*</span>
<span class="num" onclick="document.calc.txt.value +='7'">7</span>
<span class="num" onclick="document.calc.txt.value +='8'">8</span>
<span class="num" onclick="document.calc.txt.value +='9'">9</span>
<span class="num" onclick="document.calc.txt.value +='-'">-</span>
<span class="num" onclick="document.calc.txt.value +='4'">4</span>
<span class="num" onclick="document.calc.txt.value +='5'">5</span>
<span class="num" onclick="document.calc.txt.value +='6'">6</span>
<span class="num plus" onclick="document.calc.txt.value +='+'">+</span>
<span class="num" onclick="document.calc.txt.value +='3'">3</span>
<span class="num" onclick="document.calc.txt.value +='2'">2</span>
<span class="num" onclick="document.calc.txt.value +='1'">1</span>
<span class="num" onclick="document.calc.txt.value +='0'">0</span>
<span class="num" onclick="document.calc.txt.value +='00'">00</span>
<span class="num" onclick="document.calc.txt.value +='.'">.</span>
<span class="num equal" onclick="document.calc.txt.value = eval(calc.txt.value)">=</span>



    </form>
</body>
</html>
```
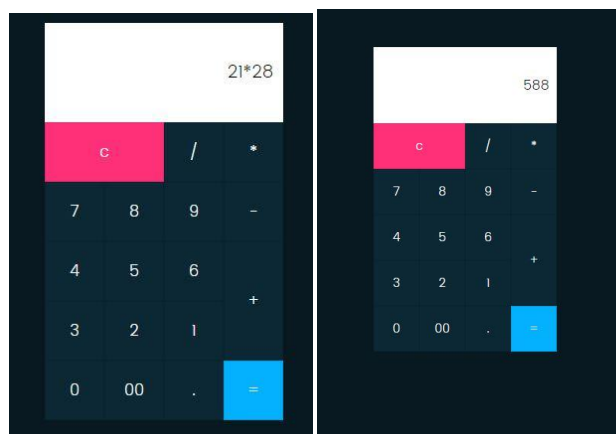
Output-

8-Website using Java script as front end and PHP as back end –

Code-

Frontend.html

```html
<!doctype html>
<html lang="en">
<head>
  <title>Hello, world!</title>
  <!-- Required meta tags -->
  <meta charset="utf-8">
  <meta name="viewport" content="width=device-width, initial-scale=1, shrink-to-fit=no">

  <!-- Bootstrap CSS -->
  <link rel="stylesheet" href="https://maxcdn.bootstrapcdn.com/bootstrap/4.0.0-
beta.2/css/bootstrap.min.css" integrity="sha384-
PsH8R72JQ3SOdhVi3uxftmaW6Vc51MKb0q5P2rRUpPvrszuE4W1povHYgTpBfshb" crossorigin="anonymous">
</head>
<body>
  <div class="container">
    <div class="row">
      <div class="col-md-6 mx-auto">
        <h1>User Form</h1>
        <form name="myform" action="welcome.php" onsubmit="return validate()" method="POST">
          <div class="form-group">
            <label>Name</label>
            <input type="text" class="form-control" id="name" placeholder="Name" name="name">
            <div class="invalid-feedback">
              Name must be between 2 and 10 characters
            </div>
          </div>
          <div class="form-group">
            <label>Zipcode</label>
            <input type="text" class="form-control" id="zip" placeholder="Zipcode" name="zipcode">
            <div class="invalid-feedback">
              Enter a valid zipcode
            </div>
          </div>
          <div class="form-group">
            <label>Email</label>
            <input type="text" class="form-control" id="email" placeholder="Email" name="email">
            <div class="invalid-feedback">
              Enter a valid email
            </div>
          </div>
          <div class="form-group">
            <label>Phone Number</label>
            <input type="text" class="form-control" id="phone" placeholder="Phone Number" name="phoneNumber">
            <div class="invalid-feedback">
              Enter a valid phone
            </div>
          </div>
          <input type="submit" value="Submit" class="btn btn-primary btn-block">
        </form>
      </div>
    </div>
  </div>
```

```html
    <!-- Optional JavaScript -->
    <!-- jQuery first, then Popper.js, then Bootstrap JS -->
    <script src="https://code.jquery.com/jquery-3.2.1.slim.min.js" integrity="sha384-
KJ3o2DKtIkvYIK3UENzmM7KCkRr/rE9/Qpg6aAZGJwFDMVNA/GpGFF93hXpG5KkN" crossorigin="anonymous"></script>
    <script src="https://cdnjs.cloudflare.com/ajax/libs/popper.js/1.12.3/umd/popper.min.js" integrity="sha384-
vFJXuSJphROIrBnz7yo7oB41mKfc8JzQZiCq4NCceLEaO4IHwicKwpJf9c9IpFgh" crossorigin="anonymous"></script>
    <script src="https://maxcdn.bootstrapcdn.com/bootstrap/4.0.0-beta.2/js/bootstrap.min.js" integrity="sha384-
alpBpkh1PFOepccYVYDB4do5UnbKysX5WZXm3XxPqe5iKTfUKjNkCk9SaVuEZflJ" crossorigin="anonymous"></script>
    <script src="app.js"></script>
</body>
</html>
```

app.js

```js
// Form Blur Event Listeners
document.getElementById('name').addEventListener('blur', validateName);
document.getElementById('zip').addEventListener('blur', validateZip);
document.getElementById('email').addEventListener('blur', validateEmail);
document.getElementById('phone').addEventListener('blur', validatePhone);

function validateName() {
const name = document.getElementById('name');
const re = /^[a-zA-Z]{2,10}$/;

if(!re.test(name.value)){
  name.classList.add('is-invalid');
} else {
  name.classList.remove('is-invalid');
}
}

function validateZip() {
const zip = document.getElementById('zip');
const re = /^[0-9]{5}(-[0-9]{4})?$/;

if(!re.test(zip.value)){
  zip.classList.add('is-invalid');
} else {
  zip.classList.remove('is-invalid');
}
}

function validateEmail() {
const email = document.getElementById('email');
const re = /^([a-zA-Z0-9_\-\.]+)@([a-zA-Z0-9_\-\.]+)\.([a-zA-Z]{2,5})$/;

if(!re.test(email.value)){
  email.classList.add('is-invalid');
} else {
  email.classList.remove('is-invalid');
}
}

function validatePhone() {
const phone = document.getElementById('phone');
const re = /^\(?\d{3}\)?[-. ]?\d{3}[-. ]?\d{4}$/;

if(!re.test(phone.value)){
  phone.classList.add('is-invalid');
} else {
```

```
    phone.classList.remove('is-invalid');
}
}
```

Welcome.php

```php
<h1>Welcome</h1>
Name : <?php echo $_POST["name"]; ?><br>
ZipCode : <?php echo $_POST["zicode"]; ?><br>
Email : <?php echo $_POST["email"]; ?><br>
Mobile : <?php echo $_POST["phoneNumber"]; ?><br>
```

Output-

User Form

Name

ayush katiyar

Name must be between 2 and 10 characters

Zipcode

243009

Enter a valid zipcode

Email

official@gmail.com

Phone Number

1234567890

Submit