Raj Kumar Goel Institute Of Technology

Department of Information Technology

Experiment :-1

Aim.Write HTML program for designing your institute website. Display departmental information of your institute on the website

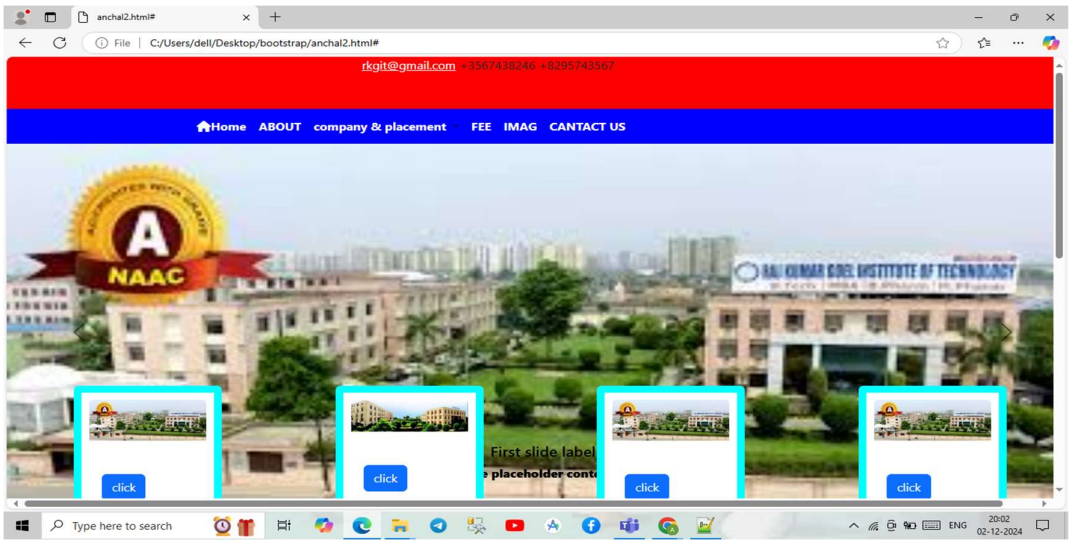
Program:-

```
<html><head>
<link href="css/bootstrap.css" rel="stylesheet"/>
<link href ="css/all.css" rel="stylesheet"/>
<script src="js/bootstrap.js"></script>
<script src="js/bootstrap.bundle.js"></script>
<script src="js/bootstrap.bundle.js"></script>
<body><style>
.op{height:75px;
background:red;}.mycolor
{height:50px;
background:blue;}.slider
{height:300px;
width:1400px;
background:aqua;}
.code{height:700px;
background:light;}
margin:10px auto;
border:10px  solid aqua;
padding:10px;
box-sizing:border-box;}
</style>
<div class="row  op">
<div class="col-sm-4 op">
</div><div class="col-sm-8 op">
<a href="file:///C:/Users/dell/Desktop/bootstrap/anchal.html" target="_blank py-2"class="text-white text-center">rkgit@gmail.com</a>
```

```
          +356743824 +8295743567   </div>
<div class="row mycolor">
<div class="col-sm-2"></div>
<div class="col-sm-8 mycolor">
<nav class="navbar navbar-expand-lg mycolor">
 <div class="container-fluid">
  <div class="collapse navbar-collapse" id="navbarSupportedContent">
   <ul class="navbar-nav me-auto mb-2 mb-lg-0">
    <li class="nav-item" <a class="nav-link active" aria-current="page" href="img/r1"><b class="text-white"><i class="fa-sharp fa-solid fa-house"></i>Home</b></br>  <li class="nav-item">
 <a class="nav-link" href=""><b class="text-white">ABOUT</b>  </li>
    </li>
    <li class="nav-item><a class="nav-link disabled"><b class="text-white">FEE </b></a>
    </li><li class="nav-item">
     <a class="nav-link" href="#"><b class="text-white">IMAG</b></a>
    </li><li class="nav-item">
     <a class="nav-link" href="#"><b class="text-white">CANTACT US<b></a>
<div class="col-sm-2"></div></div>
<div class="row slider ">
<!---star slider----->
<div id="carouselExampleDark" class="carousel carousel-dark slide" data-bs-ride="carousel">
 <div class="carousel-indicators">
  <button type="button" data-bs-target="imag/r1.jpg" data-bs-slide-to="0" class="active" aria-current="true" aria-label="Slide1"></button>
  <button type="button" data-bs-target="#carouselExampleDark" data-bs-slide-to="1" aria-label="Slide 2"></button>
  <button type="button" data-bs-target="#carouselExampleDark" data-bs-slide-to="2" aria-label="Slide 3"></button> </div>
 <div class="carousel-inner">
  <div class="carousel-item active" data-bs-interval="10000">
   <img src="imag/r1.jpg" class="d-block w-100" alt="...">
   <div class="carousel-caption d-none d-md-block">
    <h5>First slide label</h5>
    <p>Some representative placeholder content for the first slide.</p></div>  </div>
```

```
  <div class="carousel-item" data-bs-interval="2000">
    <img src="imag/r2.jpg" class="d-block w-100" alt="...">
    <div class="carousel-caption d-none d-md-block">
      <h5>Second slide label</h5>
      <p>Some representative placeholder content for the second slide.</p></div></div>
  <div class="carousel-item">
    <img src="imag/r1.jpg" class="d-block w-100" alt="...">
    <div class="carousel-caption d-none d-md-block">
      <h5>Third slide label</h5>
      <p>Some representative placeholder content for the third slide.</p>
 <button class="carousel-control-prev" type="button" data-bs-target="#carouselExampleDark" data-bs-slide="prev">
   <span class="carousel-control-prev-icon" aria-hidden="true"></span>
   <span class="visually-hidden">Previous</span>
 </button>
 <button class="carousel-control-next" type="button" data-bs-target="#carouselExampleDark" data-bs-slide="next">
   <span class="carousel-control-next-icon" aria-hidden="true"></span> <span class="visually-hidden">Next</span>
 </button>
</div></div></body></head>
</html>
```

Program:-



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Department of Information Technology

Experiment :-2

Aim. Write HTML program to design an entry form for student details/employee information/faculty details.

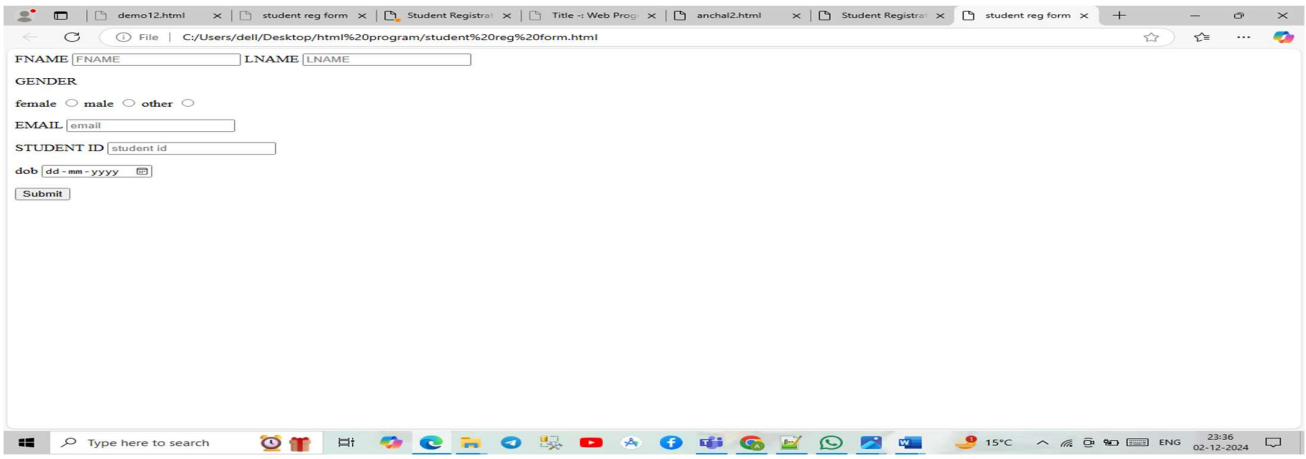
Program:-

```
 <html>
<head>
<title>student reg form</title></head>
<body>
<form>
<label for="FNAME">FNAME</label>
<input type="text" id="text" placeholder="FNAME" required="FNAME"/>
   <label for="LNAME">LNAME</label>
   <input type="text" id="text" placeholder="LNAME" required="LNAME"/><br></br>
<label for="GENDER">GENDER</label><br></br>
<label>female</label>
<input type="radio" id="female" placeholder="female" required="female"/>
<label>male</label>
<input type="radio" id="male" placeholder="male" required="male"/>
<label>other</label>
<input type="radio" id="other" placeholder="other" required="other"/><br></br>
<label for="email">EMAIL</label>
<input type="email" id="email" placeholder="email" required="@gmail.com"/><br></br>
<label for="student id"> STUDENT ID</label>
<input type="student id" id="student id" placeholder="student id" required="student id "/><br></br>
<label for="dob">DOB</label>
<input type="date" id="dob" placeholder="date"required="dob"/><br></br>
<label for="button"></label>
<input type="submit" id="submit" placeholder="submit" required="submit"/>
```

</form></body>

</html>

Output:-



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Experiment :-3

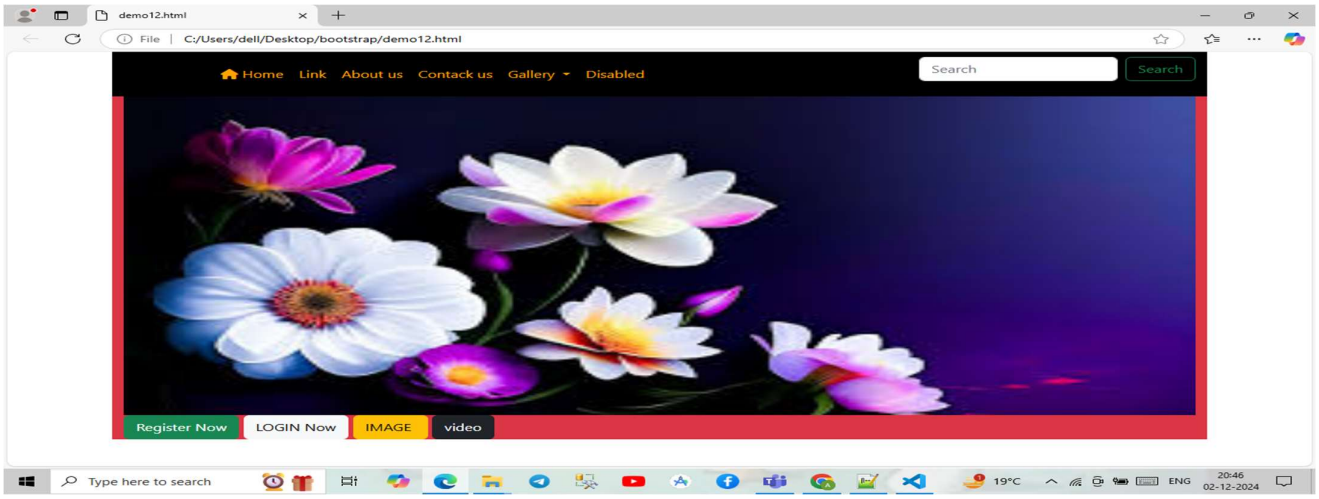
Aim. Develop a responsive website using CSS and HTML. Website may be for tutorial/blogs/commercial website

Program:-

```
<html><head>
<link href="css/bootstrap.css" rel="stylesheet"/>
<link href ="css/all.css" rel="stylesheet"/>
<script src="js/bootstrap.js"></script>
<script src="js/bootstrap.bundle.js"></script>
<style>
.h{min-height:500px;}
.mytxtclr{color:#0078d7;}
.bg-myclr{background:black;}
</style></head>
<body>
<div class="container h bg-danger">
<div class="row menu">
<div class="col-sm-12 px-0">
<!--start menu-->
<nav class="navbar navbar-expand-lg bg-myclr"id="menu">
 <div class="container-fluid">
  <a class="navbar-brand" href="#"><b  class="text-mycolor">Techpile</a></b>
  <button class="navbar-toggler" type="button" data-bs-toggle="collapse" data-bs-target="#navbarSupportedContent" aria-controls="navbarSupportedContent" aria-expanded="false" aria-label="Toggle navigation">
    <span class="navbar-toggler-icon"></span></button>
  <div class="collapse navbar-collapse" id="navbarSupportedContent">
   <ul class="navbar-nav me-auto mb-2 mb-lg-0"> <li class="nav-item">
      <a class="nav-link active" aria-current="page" href="#"><i class="fa-solid fa-house"></i> Home</a>
     </li><li class="nav-item">   <a class="nav-link" href="#">Link </a>
```

```
 <li class="nav-item"><a class="nav-link" href="#">About us </a><li class="nav-item">
      <a class="nav-link" href="#">Contack us </a>  </li><li class="nav-item dropdown">
      <a class="nav-link dropdown-toggle" href="#" role="button" data-bs-toggle="dropdown" aria-expanded="false"> Gallery </a><form class="d-flex" role="search">
     <input class="form-control me-2" type="search" placeholder="Search" aria-label="Search">
     <button class="btn btn-outline-success" type="submit">Search</button>
    </form>
</div>
 </div>
</nav>
<!--end menu-->
</div>
</div>
<div class="row">
<div class="col-sm-12">
<div id="carouselExampleSlidesOnly" class="carousel slide" data-bs-ride="carousel">
<div class="carousel-inner">
  <div class="carousel-item active"><img src="imag/w1.jpg" class="d-block w-100 h-500" height="500px" alt="...">
  </div><div class="carousel-item">  <img src="imag/w1.jpg" class="d-block w-100" alt="..."> </div>
  <div class="carousel-item"><img src="imag/w1.jpg" class="d-block w-100" alt="..."></div>
</div></div>
</div><div class="col-sm-6">
<input type="submit" class="btn btn-success" value="Register Now"/>
<input type="submit" class="btn btn-light" value="LOGIN Now"/>
<input type="submit" class="btn btn-warning" value="IMAGE "/>
<input type="submit" class="btn btn-dark" value="video"/></div>
</div>
</div>
</body>
</html>
```

Output:-


demo12.html
File | C:/Users/dell/Desktop/bootstrap/demo12.html
Home
Link
About us
Contack us
Gallery
Disabled
Search
Search
Register Now
LOGIN Now
IMAGE
video
Type here to search
19°C
ENG
20:46
02-12-2024

Raj Kumar Goel Institute Of Technology

Department of Information Technology

Experiment :-4

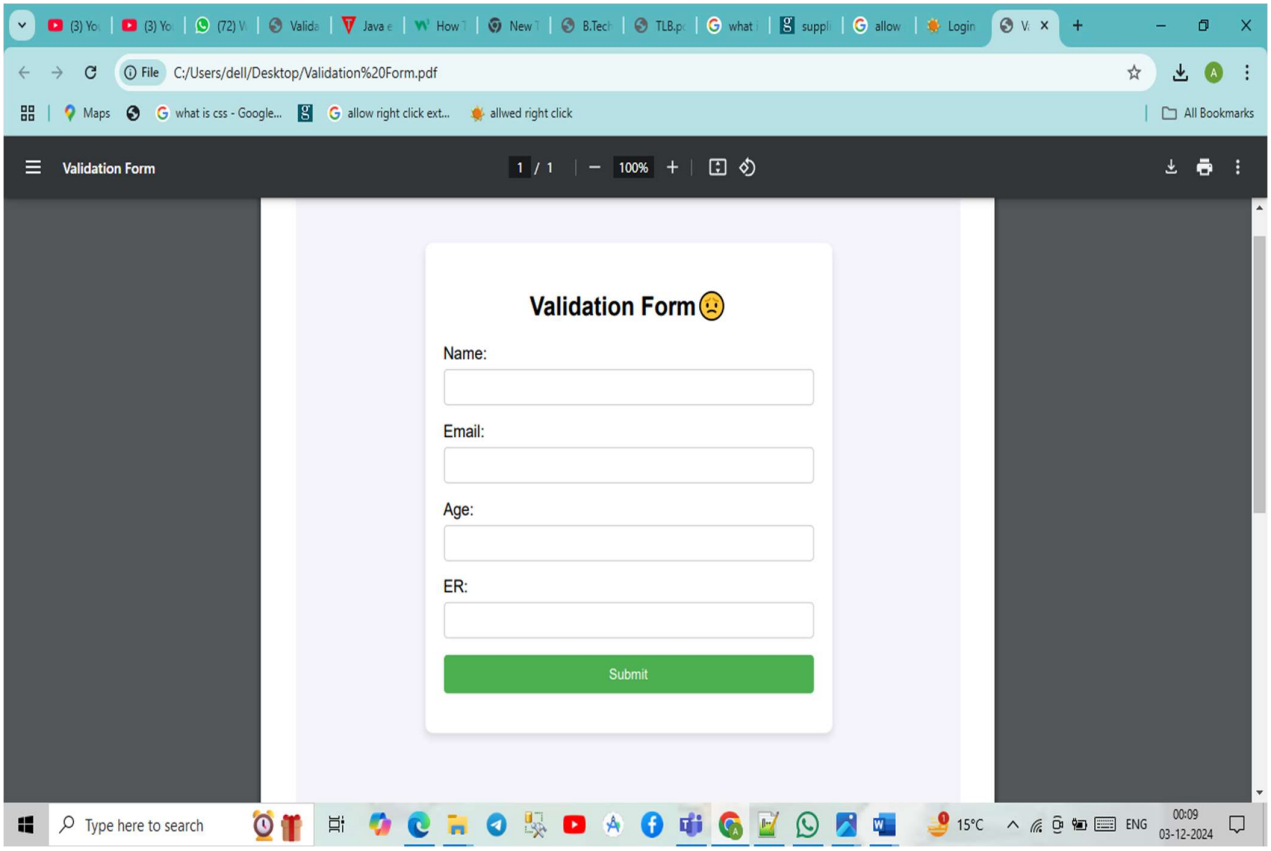
Aim. Write programs using HTML and Java Script for validation of input data.

Program:-

```
<html lang="en">
  <head>  <title> Validation Form</title>
<style>
body { font-family: Arial, sans-serif;
margin: 20px;
padding: 20px;
background-color: #f4f4f9; }
.container {
max-width: 400px;
margin: auto;
background-color: #fff;
padding: 20px;
border-radius: 8px;
box-shadow: 0 4px 8px rgba(0, 0, 0, 0.1); }
.form-group .success {
color: green;
font-size: 12px; }  </style></head>
<body> <div class="container">
<h2>Validation Form</h2> <form id="myForm" onsubmit="return validateForm()">
<div class="form-group">
<label for="name">Name:</label>
<input type="text" id="name" name="name">
<div id="nameError" class="error"></div>
</div> <div class="form-group">
<label for="email">Email:</label>
<input type="email" id="email" name="email">
<div id="emailError" class="error"></div> </div><div class="form-group">
```

```
            <label for="age">Age:</label>
            <input type="number" id="age" name="age">
            <div id="ageError" class="error">
</div> </div>
          <div class="form-group">
            <label for="er">ER:</label>
            <input type="number" id="er" name="er">
            <div id="erError" class="error"></div>
 <button type="submit">Submit</button>
    </form>
</div>
<script>
     function validateForm{  document.getElementById("nameError").textContent = "";
        document.getElementById("emailError").textContent = "";
        document.getElementById("ageError").textContent = "";
        document.getElementById("er").textContent = ""
        ;var name = document.getElementById("name").value;
        var email = document.getElementById("email").value;
        var age = document.getElementById("age").value;
        var age = document.getElementById("er").value; var valid = true;
       if (name === "") {  document.getElementById("nameError").textContent = "Name is required!";
           valid = false}; var emailPattern = /^[a-zA-Z0-9._-]+@[a-zA-Z0-9.-]+\.[a-zA-Z]{2,6}$/;
        if (!emailPattern.test(email)) {
       document.getElementById("emailError").textContent = "Please enter a valid email address!";
           valid = false; } if (isNaN(age) || age < 18) {
           document.getElementById("ageError").textContent = "Age must be a number and at least 18!";
           valid = false;}    return valid;
    }
</script>
</body>
</html>
```

Output:-


C:/Users/dell/Desktop/Validation%20Form.pdf
Validation Form
1 / 1
100%
Validation Form
Name:
Email:
Age:
ER:
Submit
Type here to search
15°C
ENG
00:09
03-12-2024

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Experiment :-5

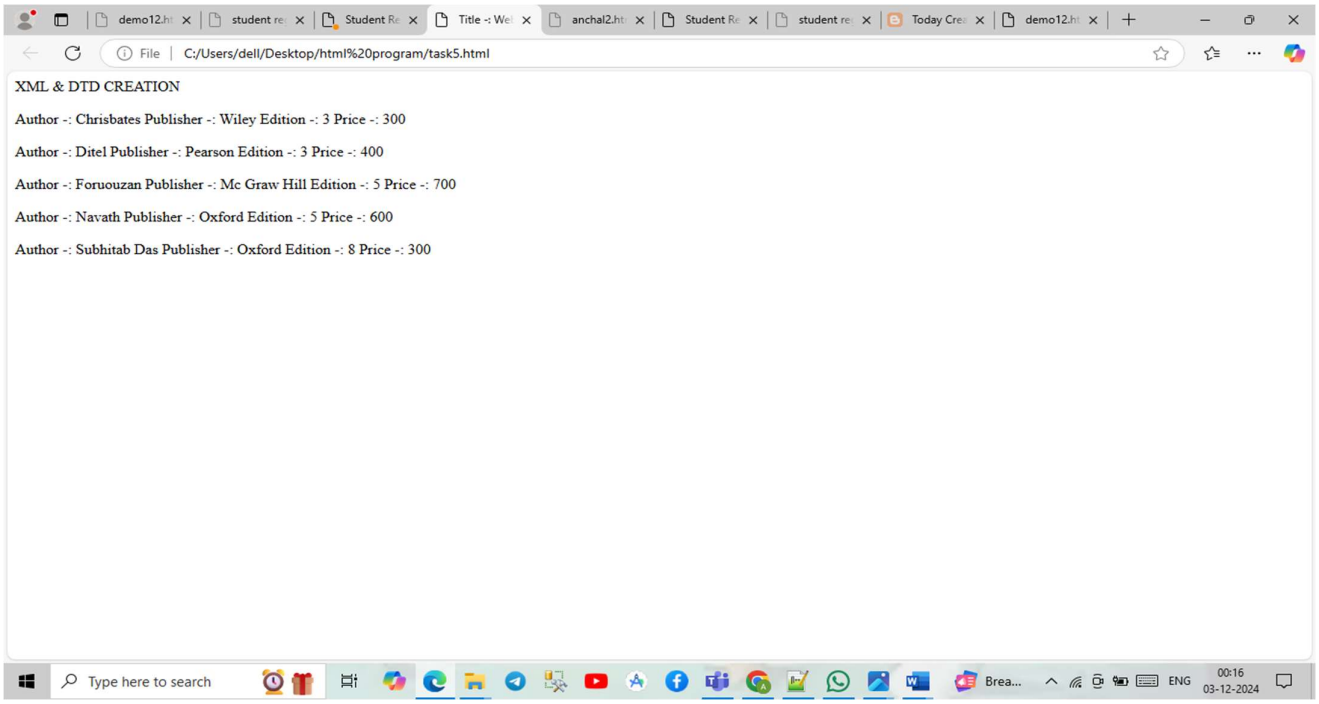
Aim. Write a program in XML for creation of DTD, which specifies set of rules. Create a style sheet in CSS/ XSL & display the document in internet explorer.

Program:-

```
<?xml version="1.0" encoding="UTF-8"?>
<?xml-stylesheet type="text/css" href="Rule.css"?>
<books> <heading>XML & DTD CREATION<br></br>
    <book> <title>Title -: Web Programming</title>
        <author>Author -: Chrisbates</author>
        <publisher>Publisher -: Wiley</publisher>
        <edition>Edition -: 3</edition>
        <price> Price -: 300</price> </book> <br></br>
    <book> <title>Title -: Internet world-wide-web</title>
        <author>Author -: Ditel</author>
        <publisher>Publisher -: Pearson</publisher>
        <edition>Edition -: 3</edition>
        <price>Price -: 400</price>
    </book> <br></br>
    <book> <title>Title -: Computer Networks</title>
        <author>Author -: Foruouzan</author>
        <publisher>Publisher -: Mc Graw Hill</publisher>
        <edition>Edition -: 5</edition>
        <price>Price -: 700</price>
    </book> <br></br>
    <book> <title>Title -: DBMS Concepts</title>
        <author>Author -: Navath</author>
        <publisher>Publisher -: Oxford</publisher>
        <edition>Edition -: 5</edition>
        <price>Price -: 600</price>
    </book> <br></br>
```

```
        <book> <title>Title -: Linux Programming</title>
                <author>Author -: Subhitab Das</author>
                <publisher>Publisher -: Oxford</publisher>
                <edition>Edition -: 8</edition>
                <price>Price -: 300</price>
        </book>
</books>
</heading>
```

Output:-



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Experiment :-6

Aim. Create a Java Bean for Employee information (EmpID, Name, Salary, Designation and Department).

Program:-

```
package JavaTpoint.JavaObjectToJSON;

class EmployeeDetails {

 int emp_id, salary;

String name, address, department, email;

public int getEmp_id() {

   return emp_id;

} public void setEmp_id(int emp_id) {

   this.emp_id = emp_id;  }

public int getSalary() {

   return salary;  }

public void setSalary(int salary) {

   this.salary = salary; }

public String getName() {

   return name;  }

public void setName(String name) {

   this.name = name;  }

public String getAddress() {

   return address;  }

public void setAddress(String address) {

   this.address = address;  }

public String getDepartment() {

   return department;  }

public void setDepartment(String department) {

   this.department = department; }

public String getEmail() {

   return email;  }
```

```
public void setEmail(String email) {

   this.email = email;  }

 @Override

public String toString() {

   return "Employee [emp_id = " + emp_id + ", salary = " + salary + ", name = " + name + ", address = "
 + address  + ", department = " + department + ", email = " + email + "]";  } }

public class Employee{   public static void main(String args[]) {   EmployeeDetails emp = new Em
ployeeDetails();   emp.setEmp_id(101);

      emp.setName("Emma Wats emp.setDepartment("IT");

      emp.setSalary(15000); emp.setAddress("New Delhi");

      emp.setEmail("Emmawatson123@gmail.com");

      System.out.println(emp);

    int sal = emp.getSalary(); int increment = 0
; if ((sal >=1000) && (sal <=1500))    {increment += (sal * 2)/100;

         sal = sal+increment;  emp.setSalary(sal);

         System.out.println("\n Salary is incremented \n");

         System.out.println(emp);

   }else if ((sal >=1500) && (sal <=20000)){

         //incrementing salary 5%

         increment += (sal * 5)/100;

         sal = sal+increment;

         emp.setSalary(sal);

         System.out.println("\n Salary is incremented \n");

         System.out.println(emp);

      }else {

         System.out.println("\n Salary is not incremented \n");

         System.out.println(emp);  } }}
```

Output:-

Employee [emp_id = 101, salary = 15000, name = Emma Watson, address = New Delhi, department = IT, email = Emmawatson123@gmail.com]

Salary is incremented

Employee [emp_id = 101, salary = 15750, name = Emma Watson, address = New Delhi, department = IT, email = Emmawatson123@gmail.com]

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Experiment :-7

Aim. Develop a script that uses MongoDB's aggregation framework to perform operations like grouping, filtering, and sorting. For instance, aggregate user data to find the average age of users in different cities.

Program:-

```
const { MongoClient } = require('mongodb');

async function runAggregation() {
 const uri = 'mongodb://localhost:27017';
 const dbName = 'yourDatabaseName';
 const collectionName = 'users';
const client = new MongoClient(uri, { useNewUrlParser: true, useUnifiedTopology: true });
 try {  await client.connect();
  console.log('Connected to MongoDB');
  const db = client.db(dbName);
  const collection = db.collection(collectionName);
  const pipeline = [{ $group:
{
      _id: "$city", // Group by city
      averageAge: { $avg: "$age" },  // Calculate the average age of users
      userCount: { $sum: 1 },       // Count the number of users per city  } },
  { $match: {
      userCount: { $gt: 5 }}}
       {  $sort: { averageAge: -1 } {
   $project: {
_id: 0,   city: "$_id";averageAge: 1,userCount: 1
}}];
  const result = await collection.aggregate(pipeline).toArray(
```

```
console.log('Aggregation Result:', result } catch (error) {
   console.error('Error during aggregation:', error);
 }
finally { await client.close();}}runAggregation();
```

Output:-

```
"city": "New York",
"averageAge": 32,
"userCount": 15  },
{ "city": "Los Angeles",
"averageAge": 29,
"userCount": 1  },
{"city": "Chicago",
"averageAge": 27,
"userCount": 8}]
```

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Experiment :-8

Aim. Assume four users user1, user2, user3 and user4 having the passwords pwd1, pwd2, pwd3 and pwd4 respectively. Write a servlet for doing the following: 1. Create a Cookie and add these four user id's and passwords to this Cookie. 2. Read the user id and passwords entered in the Login form and authenticate with the values available in the cookies

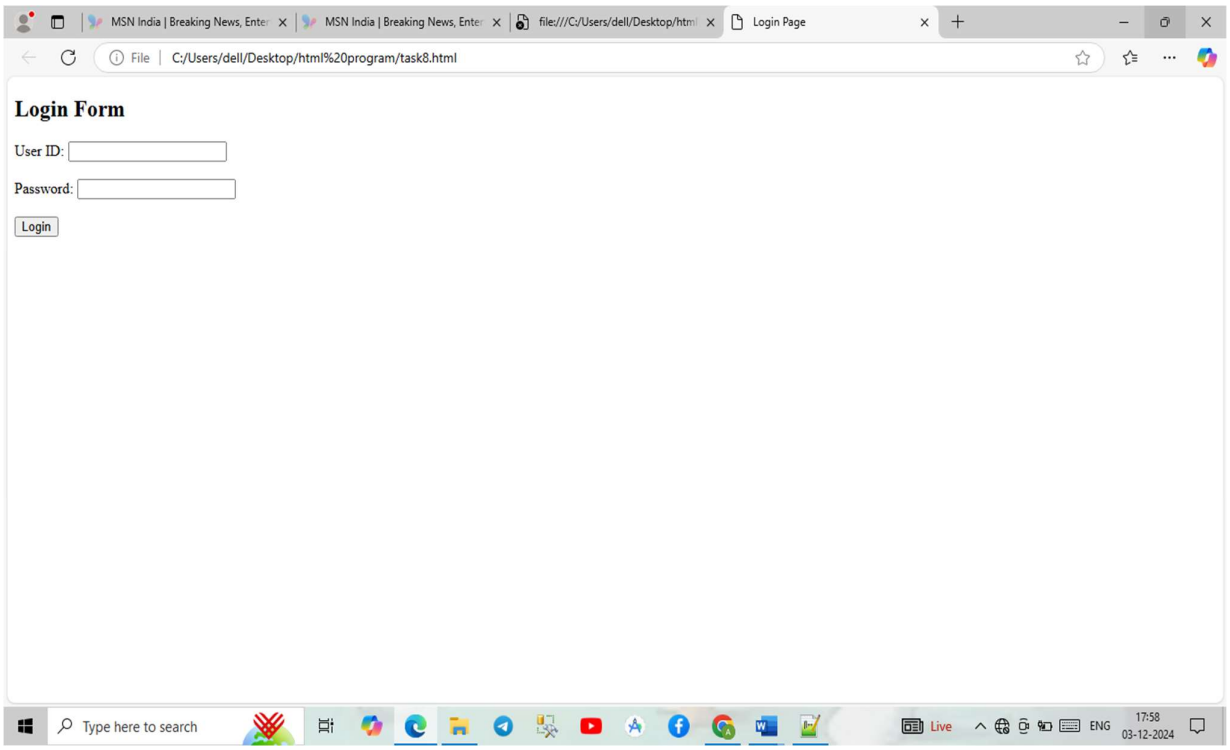
Program:-

```
<html lang="en">
<head>
<meta charset="UTF-8">
<meta name="viewport" content="width=device-width, initial-scale=1.0">
<title>Login Page</title>
<script type="text/javascript">
function validateLoginForm() {
var userId = document.getElementById("userId").value;
var password = document.getElementById("password").value;
if (userId === "" || password === "") {
alert("Please enter both User ID and Password.");
return false;
}
return true;
}
</script>
</head>
<body>
<h2>Login Form</h2>
<form id="loginForm" action="loginServlet" method="POST" onsubmit="return validateLoginForm()">
<label for="userId">User ID:</label>
<input type="text" id="userId" name="userId" required><br><br>
<label for="password">Password:</label>
```

```
<input type="password" id="password" name="password" required><br><br>

<input type="submit" value="Login">
</form>
<script type="text/javascript">
</script>
</body>
</html>
```

Output:-



Raj Kumar Goel Institute Of Technology

Department of Information Technology

Experiment :-9

Aim. Build a command-line utility using Node.js that performs a specific task, such as converting text to uppercase, calculating the factorial of a number, or generating random passwords.

Program:-

```
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>password</title>
  <style>
    body {
      font-family: Arial, sans-serif;
      padding: 20px;
      background-color: #f7f7f7;} </style>
</head>
<body>  <h2>password</h2>
 <div class="container"><div>
      <label for="option">Choose an option:</label>
      <select id="option">
        <option value="uppercase">Convert Text to Uppercase</option>
        <option value="factorial">Calculate Factorial</option>
        <option value="password">Generate Random Password</option>
      </select>
    </div> <div id="inputArea">   </div>
<button id="submitBtn">Submit</button>
<div class="result" id="result"></div></div>
 <script>
    document.getElementById('option').addEventListener('change', updateForm)updateForm()
function updateForm() {
```

```
        const selectedOption = document.getElementById('option').value;
        const inputArea = document.getElementById('inputArea');  inputArea.innerHTML = '';
  if (selectedOption === 'uppercase') {
            inputArea.innerHTML = `
              <label for="textInput">Enter text:</label>
              <input type="text" id="textInput" placeholder="Enter text to convert to uppercase" require;
        } else if (selectedOption === 'factorial') {
            inputArea.innerHTML = `
              <label for="numInput">Enter a number:</label>
              <input type="number" id="numInput" placeholder="Enter a number" required;
        } else if (selectedOption === 'password') {
            inputArea.innerHTML = `
              <label for="passwordLength">Enter password length:</label>
              <input type="number" id="passwordLength" placeholder="Enter the length of the password"
required>`; }}
    </script></body>
</html>
```

Output:-