Nagar Yuwak Shikshan Sanstha's
Yeshwantrao Chavan College of Engineering
(An Autonomous Institution affiliated to Rashtrasant Tukadoji Maharaj Nagpur University)
Hingna Road, Wanadongri, Nagpur - 441 110
NAAC A++
Ph.: 07104-237919, 234623, 329249, 329250 Fax: 07104-232376, Website: www.ycce.edu

Department of Computer Technology

Vision of the Department

To be a well-known centre for pursuing computer education through innovative pedagogy, value-based education and industry collaboration.

Mission of the Department

To establish learning ambience for ushering in computer engineering professionals in core and multidisciplinary area by developing Problem-solving skills through emerging technologies.

Session 2025-2026

Vision: Dream of where you want.	Mission: Means to achieve Vision

Program Educational Objectives of the program (PEO): (broad statements that describe the professional and career accomplishments)

PEO1	Preparation	P: Preparation	Pep-CL abbreviation pronounce as Pep-si-lL easy to recall
PEO2	Core Competence	E: Environment (Learning Environment)	
PEO3	Breadth	P: Professionalism	
PEO4	Professionalism	C: Core Competence	
PEO5	Learning Environment	L: Breadth (Learning in diverse areas)	

Program Outcomes (PO): (statements that describe what a student should be able to do and know by the end of a program)

Keywords of POs:

Engineering knowledge, Problem analysis, Design/development of solutions, Conduct Investigations of Complex Problems, Engineering Tool Usage, The Engineer and The World, Ethics, Individual and Collaborative Team work, Communication, Project Management and Finance, Life-Long Learning

PSO Keywords: Cutting edge technologies, Research

"I am an engineer, and I know how to apply engineering knowledge to investigate, analyse and design solutions to complex problems using tools for entire world following all ethics in a collaborative way with proper management skills throughout my life." *to contribute to the development of cutting-edge technologies and Research*.

Integrity: I will adhere to the Laboratory Code of Conduct and ethics in its entirety.

Name and Signature of Student and Date
(Signature and Date in Handwritten)

Nagar Yuwak Shikshan Sanstha's
Yeshwantrao Chavan College of Engineering
(An Autonomous Institution affiliated to Rashtrasant Tukadoji Maharaj Nagpur University)

Hingna Road, Wanadongri, Nagpur - 441 110

NAAC A++

Ph.: 07104-237919, 234623, 329249, 329250 Fax: 07104-232376, Website: www.ycce.edu

Department of Computer Technology

Vision of the Department

To be a well-known centre for pursuing computer education through innovative pedagogy, value-based education and industry collaboration.

Mission of the Department

To establish learning ambience for ushering in computer engineering professionals in core and multidisciplinary area by developing Problem-solving skills through emerging technologies.

Session	2025-26 (ODD)	Course Name	Web Technology Lab
Semester	3	Course Code	23CT1301
Roll No	B-173	Name of Student	Vedant H. Kapgate

Practical Number	**5**
Course Outcome	1. Understand various internet technologies. 2. Design the web pages using HTML and CSS. 3. Implement the XML technology to store the data. 4. Develop the interactive web pages using JavaScript.
Aim	[A] Introduction to XML. Program to demonstrate the use of External and Internal DTD. (Write an XML file which will display the employee information which includes the following: 1) Employee ID 2) Name of Employee 3) Department of Employee 4) Designation of Employee 5) Email of Employee 6) Salary of Employee [B] Create XML for employee information and access second employee's data using DOM.
Problem Definition	A] To create XML documents for storing structured data. First, demonstrate the use of **Internal and External DTD** through an XML file containing employee information (ID, Name, Department, Designation, Email, Salary). B] design an XML file for employee information and use **DOM parsing** to access and display the data of the **second employee**.
Theory (100 words)	XML (Extensible Markup Language) is a platform-independent, self-descriptive language used to store and transport structured data. It allows defining custom tags that represent data meaningfully. To ensure data integrity, XML documents can be validated using DTD (Document Type Definition), which specifies the structure and rules for elements and attributes. An Internal DTD is written within the XML file itself, while an External DTD is defined separately and referenced by the XML document, improving reusability. XML data can be parsed and manipulated using DOM (Document Object Model), which represents data as a tree structure. DOM parsing allows

Nagar Yuwak Shikshan Sanstha's
Yeshwantrao Chavan College of Engineering
(An Autonomous Institution affiliated to Rashtrasant Tukadoji Maharaj Nagpur University)
Hingna Road, Wanadongri, Nagpur - 441 110
NAAC A++
Ph.: 07104-237919, 234623, 329249, 329250 Fax: 07104-232376, Website: www.ycce.edu
Department of Computer Technology
Vision of the Department
To be a well-known centre for pursuing computer education through innovative pedagogy, value-based education and industry collaboration.
Mission of the Department
To establish learning ambience for ushering in computer engineering professionals in core and multidisciplinary area by developing Problem-solving skills through emerging technologies.

	programmers to access, update, and display specific parts of the XML, making it highly useful in web applications and data exchange systems.

Procedure and Execution
 	
(100 Words)
	Step for Implementation:
	[A] Internal & External DTD
	  1. **Create XML with Internal DTD** → save as P5A.xml.
	  2. **Create External DTD** → save rules in P5B.dtd.
	  3. **Create XML referring to External DTD** → save as P5B.xml.
	  4. Open XML files in any browser / XML editor to validate.
	[B] HTML Display (optional third file)
	  1. Save P5C.html in same folder as employees.xml.
	  2. Use JavaScript fetch + DOMParser to read XML.
	  3. Show employees in a table, highlight the **second employee**.
	  4. Run with a **local server** (e.g., VS Code Live Server).

	Code: P5A.xml (Internal XML)

```xml
P5A.xml
1   <?xml version='1.0' encoding='UTF-8'?>
2   <!DOCTYPE employees [
3       <!ELEMENT employees (employee+)>
4       <!ELEMENT employee (id,name,dept,email, salary, designation)>
5       <!ELEMENT id (#PCDATA)>
6       <!ELEMENT name (#PCDATA)>
7       <!ELEMENT dept (#PCDATA)>
8       <!ELEMENT email (#PCDATA)>
9       <!ELEMENT salary (#PCDATA)>
10      <!ELEMENT designation (#PCDATA)>
11  ]>
12  <employees>
13      <employee>
14      <id>101</id>
15      <name>ABC</name>
16      <dept>DEV</dept>
17      <email>abc@abc.com</email>
18      <salary>100000</salary>
19      <designation>J.Dev.</designation>
20      </employee>
21      <employee>
22      <id>301</id>
23      <name>XYZ</name>
24      <dept>MARKETING</dept>
25      <email>xyz@abc.com</email>
26      <salary>150000</salary>
27      <designation>Manager</designation>
28      </employee>
29  </employees>
```

Nagar Yuwak Shikshan Sanstha's

Yeshwantrao Chavan College of Engineering

(An Autonomous Institution affiliated to Rashtrasant Tukadoji Maharaj Nagpur University)

Hingna Road, Wanadongri, Nagpur - 441 110

NAAC A++

Ph.: 07104-237919, 234623, 329249, 329250 Fax: 07104-232376, Website: www.ycce.edu

Department of Computer Technology

Vision of the Department

To be a well-known centre for pursuing computer education through innovative pedagogy, value-based education and industry collaboration.

Mission of the Department

To establish learning ambience for ushering in computer engineering professionals in core and multidisciplinary area by developing Problem-solving skills through emerging technologies.

P5B.xml (External XML)

```xml
P5B.xml
1    <?xml version='1.0' encoding='UTF-8'?>
2    <?xml-stylesheet type='text/css' href='main.css'?>
3    <!DOCTYPE employees SYSTEM 'P5B.dtd'>
4    <employees>
5        <employee>
6        <id>101</id>
7        <name>ABC</name>
8        <dept>DEV</dept>
9        <email>abc@abc.com</email>
10       <salary>100000</salary>
11       <designation>J.Dev.</designation>
12       </employee>
13       <employee>
14       <id>301</id>
15       <name>XYZ</name>
16       <dept>MARKETING</dept>
17       <email>xyz@abc.com</email>
18       <salary>150000</salary>
19       <designation>Manager</designation>
20       </employee>
21   </employees>
22
```

P5B.dtd (External xml structure file)

```dtd
P5B.dtd
1    <!ELEMENT employees (employee+)>
2    <!ELEMENT employee (id,name,dept,email, salary, designation)>
3    <!ELEMENT id (#PCDATA)>
4    <!ELEMENT name (#PCDATA)>
5    <!ELEMENT dept (#PCDATA)>
6    <!ELEMENT email (#PCDATA)>
7    <!ELEMENT salary (#PCDATA)>
8    <!ELEMENT designation (#PCDATA)>
```

Nagar Yuwak Shikshan Sanstha's
Yeshwantrao Chavan College of Engineering
(An Autonomous Institution affiliated to Rashtrasant Tukadoji Maharaj Nagpur University)
Hingna Road, Wanadongri, Nagpur - 441 110
NAAC A++
Ph.: 07104-237919, 234623, 329249, 329250 Fax: 07104-232376, Website: www.ycce.edu
Department of Computer Technology

Vision of the Department
To be a well-known centre for pursuing computer education through innovative pedagogy, value-based education and industry collaboration.
Mission of the Department
To establish learning ambience for ushering in computer engineering professionals in core and multidisciplinary area by developing Problem-solving skills through emerging technologies.

P5C.html (Display 2ⁿᵈ Employee information)

P5C.html > html > body > script > getEmployee

```html
1  <!DOCTYPE html>
2  <html lang="en">
3  <head>
4      <meta charset="UTF-8">
5      <meta name="viewport" content="width=device-width, initial-scale=1.0">
6      <title>Document</title>
7  </head>
8  <body>
9      <h1>Employee Info</h1>
0      <button onclick="getEmployee(2)">Search for employee 2</button>
1      <div id="op" ></div>
2      <script>
3          function loadXml() {
4                  let str = `<?xml version='1.0' encoding='UTF-8'?>
5  <!DOCTYPE employees [
6      <!ELEMENT employees (employee+)>
7      <!ELEMENT employee (id,name,dept,email, salary, designation)>
8      <!ELEMENT id (#PCDATA)>
9      <!ELEMENT name (#PCDATA)>
0      <!ELEMENT dept (#PCDATA)>
1      <!ELEMENT email (#PCDATA)>
2      <!ELEMENT salary (#PCDATA)>
3      <!ELEMENT designation (#PCDATA)>
4  ]>
5  <employees>
6      <employee>
7      <id>101</id>
8      <name>ABC</name>
9      <dept>DEV</dept>
0      <email>abc@abc.com</email>
1      <salary>100000</salary>
2      <designation>J.Dev.</designation>
3      </employee>
4      <employee>
5      <id>301</id>
6      <name>XYZ</name>
7      <dept>MARKETING</dept>
8      <email>xyz@abc.com</email>
9      <salary>150000</salary>
0      <designation>Manager</designation>
1      </employee>
2  </employees>
```

Nagar Yuwak Shikshan Sanstha's

Yeshwantrao Chavan College of Engineering

(An Autonomous Institution affiliated to Rashtrasant Tukadoji Maharaj Nagpur University)

Hingna Road, Wanadongri, Nagpur - 441 110

NAAC A++

Ph.: 07104-237919, 234623, 329249, 329250 Fax: 07104-232376, Website: www.ycce.edu
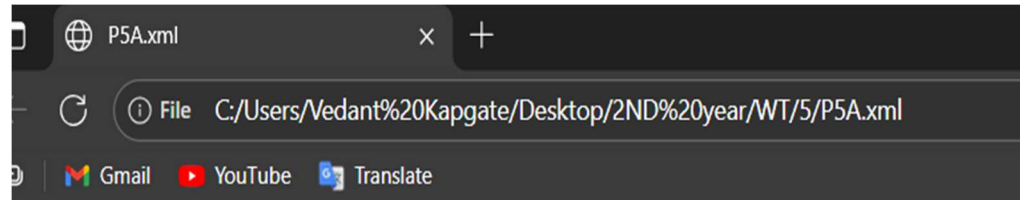
Department of Computer Technology

Vision of the Department

To be a well-known centre for pursuing computer education through innovative pedagogy, value-based education and industry collaboration.

Mission of the Department

To establish learning ambience for ushering in computer engineering professionals in core and multidisciplinary area by developing Problem-solving skills through emerging technologies.

```
> P5C.html > ⬡ html > ⬡ body > ⬡ script > ⬡ getEmployee
2   <html lang="en">
8   <body>
12      <script>
13          function loadXml() {
43  `
44                  const parser = new DOMParser()
45                  return parser.parseFromString(str, 'application/xml')
46
47          }
48
49          function getEmployee(x) {
50              xml = loadXml()
51              const emp = xml.getElementsByTagName('employee');
52
53              if (emp.length > x && x > 0) {
54                  alert(`${x}th employee doesnt exist`)
55                  return
56              }
57              console.log(emp[0])
58              x--;
59              const id = emp[x].getElementsByTagName("id")[0].textContent;
60              const name = emp[x].getElementsByTagName("name")[0].textContent;
61              const salary = emp[x].getElementsByTagName("salary")[0].textContent;
62              const desig = emp[x].getElementsByTagName("designation")[0].textContent;
63              const dept = emp[x].getElementsByTagName("dept")[0].textContent;
64              const email = emp[x].getElementsByTagName("email")[0].textContent;
65
66              document.getElementById('op').innerHTML = `
67              <div>
68                  <div>id: ${id} </div>
69                  <div>name: ${name} </div>
70                  <div>salary: ${salary} </div>
71                  <div>desig: ${desig} </div>
72                  <div>dept: ${dept} </div>
73                  <div>email: ${email} </div>
74              </div>
75              `
76          }
77
78      </script>
79  </body>
80  </html>
```

Nagar Yuwak Shikshan Sanstha's
Yeshwantrao Chavan College of Engineering
(An Autonomous Institution affiliated to Rashtrasant Tukadoji Maharaj Nagpur University)
Hingna Road, Wanadongri, Nagpur - 441 110
NAAC A++
Ph.: 07104-237919, 234623, 329249, 329250 Fax: 07104-232376, Website: www.ycce.edu
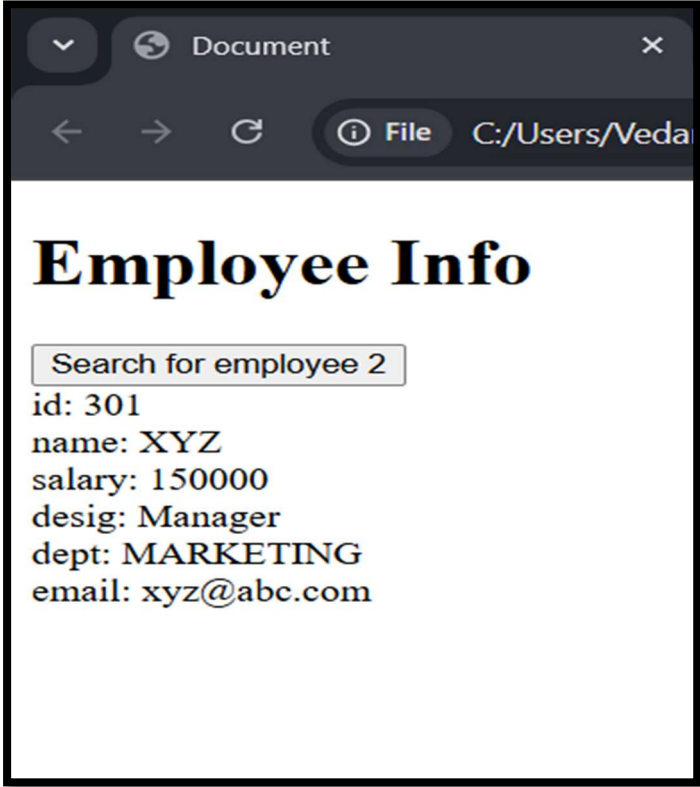## Department of Computer Technology

Vision of the Department

To be a well-known centre for pursuing computer education through innovative pedagogy, value-based education and industry collaboration.

Mission of the Department

To establish learning ambience for ushering in computer engineering professionals in core and multidisciplinary area by developing Problem-solving skills through emerging technologies.

Main.css

P5A.xml   P5B.xml   # *main.css*   ✕

main.css

```css
1    employees {
2        display: block;
3        font-family: 'Courier New', Courier, monospace
4        padding: 10px;
5    }
6
7    employee {
8        display: block;
9        border: 1px solid gray;
10       margin: 5px;
11       padding: 8px;
12       background-color: brown;
13   }
14
15   id, name, dept, email,salary,designation {
16       font-weight: bold;
17       display: block;
18       color: bisque;
19   }
```

Nagar Yuwak Shikshan Sanstha's
Yeshwantrao Chavan College of Engineering
(An Autonomous Institution affiliated to Rashtrasant Tukadoji Maharaj Nagpur University)
Hingna Road, Wanadongri, Nagpur - 441 110
NAAC A++
Ph.: 07104-237919, 234623, 329249, 329250 Fax: 07104-232376, Website: www.ycce.edu
Department of Computer Technology
Vision of the Department
To be a well-known centre for pursuing computer education through innovative pedagogy, value-based education and industry collaboration.
Mission of the Department
To establish learning ambience for ushering in computer engineering professionals in core and multidisciplinary area by developing Problem-solving skills through emerging technologies.

Output:

Nagar Yuwak Shikshan Sanstha's
Yeshwantrao Chavan College of Engineering
(An Autonomous Institution affiliated to Rashtrasant Tukadoji Maharaj Nagpur University)
Hingna Road, Wanadongri, Nagpur - 441 110
NAAC A++
Ph.: 07104-237919, 234623, 329249, 329250 Fax: 07104-232376, Website: www.ycce.edu
Department of Computer Technology
Vision of the Department
To be a well-known centre for pursuing computer education through innovative pedagogy, value-based education and industry collaboration.
Mission of the Department
To establish learning ambience for ushering in computer engineering professionals in core and multidisciplinary area by developing Problem-solving skills through emerging technologies.

Output Analysis	1. The internal DTD (P5A.xml) validates the structure of employee data within the XML itself. 2. The external DTD (P5B.dtd and P5B.xml) separates rules from data, making the XML reusable and more maintainable. 3. The DOM-based HTML file (P5C.html) demonstrates how XML data can be parsed and dynamically displayed on a webpage, ensuring interaction with structured data. 4. The second employee's information is correctly accessed and displayed, showing that DOM parsing was implemented successfully.
Link of student Github profile where lab	**https://github.com/vedant0517/Web-Technology-SEC-B-173**

Nagar Yuwak Shikshan Sanstha's

Yeshwantrao Chavan College of Engineering

(An Autonomous Institution affiliated to Rashtrasant Tukadoji Maharaj Nagpur University)

Hingna Road, Wanadongri, Nagpur - 441 110

NAAC A++

Ph.: 07104-237919, 234623, 329249, 329250 Fax: 07104-232376, Website: www.ycce.edu

Department of Computer Technology

Vision of the Department

To be a well-known centre for pursuing computer education through innovative pedagogy, value-based education and industry collaboration.

Mission of the Department

To establish learning ambience for ushering in computer engineering professionals in core and multidisciplinary area by developing Problem-solving skills through emerging technologies.

assignment has been uploaded	
Conclusion	The experiment successfully demonstrated the use of **XML with both internal and external DTDs** for structured data storage and validation. Additionally, the use of **DOM parsing in HTML** showcased how XML data can be accessed, manipulated, and presented in a user-friendly manner. This exercise helped in understanding the role of XML in data representation, validation, and its integration with web technologies for interactive applications.
Plag Report (Similarity index < 12%)	
Date	02/09/2025