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| **Session** | **2024-25 (ODD)** | **Course Name** | **Web Technology Lab** |
| **Semester** | **3** | **Course Code** | **23CT1301** |
| **Roll No** | **64** | **Name of Student** | **Prem Nandurkar** |

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| Practical Number | 4 |
| 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 | Write a web technology program in JSON to store information related to  programming books along with edition and author name. |
| Problem Definition | The program aims to store programming book details like language, author, and edition in JSON and display them on a webpage using HTML, JavaScript, and CSS. |
| Theory  (100 words) | JSON (JavaScript Object Notation) is a lightweight, text-based format used to store and exchange data between applications. It is widely used because of its simplicity, readability, and  compatibility with most programming languages. In web  technology, JSON is often used to represent structured data like book records, user profiles, or product details. In this program, information related to programming books such as language,  author, and edition is stored in JSON format. Using JavaScript, the data is dynamically accessed and displayed on a webpage.  CSS is applied to improve presentation, ensuring the output is organized, colorful, and user-friendly. |
| Procedure and Execution  (100 Words) | Step for Implementation:   1. Create HTML File   Start with a basic HTML structure (<!DOCTYPE html>, <html>, <head>, <body>).  Add a <title> and link CSS styles if needed.   1. Write JSON Data   Inside a <script> tag, create a JSON array of objects.  Each object should contain details like "language", "author", and "edition".   1. Access JSON Data with JavaScript   Use JavaScript to loop through the JSON array. Extract values of language, author, and edition for each book.   1. Display Data on Webpage |

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|  | Insert the extracted data into HTML elements (like a table or div cards) using DOM manipulation (innerHTML).   1. Apply CSS Styling   Use CSS to add colors, borders, background, and text formatting.  Improve readability with proper alignment and spacing.   1. Run and Test the Program   Open the HTML file in a browser.  Verify that all book details are displayed correctly and styling is applied. |
| Code:  <!DOCTYPE html>  <html lang="en">  <head>  <meta charset="UTF-8">  <title>Programming Books</title>  <style> body { font-family: Arial, sans-serif;  background: #f4f4f4; padding: 20px;  } h1 { text-align: center;  color: #333;  }  .book { background: white; padding: 15px; margin: 10px 0; border-radius: 8px; box-shadow: 0 2px 5px rgba(0,0,0,0.1);  }  .title {  font-size: 1.2em; font-weight: bold;  color: #2c3e50;  }  .author {  color: #555;  }  .edition {  color: #888;  }  </style>  </head>  <body> |

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|  | <h1>Programming Books</h1>  <div id="book-list"></div>    <script> // JSON Data const data = {  "programming\_books": [  {  "title": "Clean Code",  "author": "Robert C. Martin",  "edition": "1st"  }, {  "title": "Introduction to Algorithms",  "author": "Thomas H. Cormen, Charles E. Leiserson,  Ronald L. Rivest, Clifford Stein",  "edition": "3rd"  }, {  "title": "The Pragmatic Programmer",  "author": "Andrew Hunt, David Thomas",  "edition": "20th Anniversary Edition"  }, {  "title": "Design Patterns: Elements of Reusable  Object-Oriented Software",  "author": "Erich Gamma, Richard Helm, Ralph Johnson,  John Vlissides",  "edition": "1st"  }  ]  };    // Display Data in HTML  const bookList = document.getElementById("book-list");    data.programming\_books.forEach(book => { const bookDiv = document.createElement("div"); bookDiv.classList.add("book");    bookDiv.innerHTML = `  <div class="title">${book.title}</div>  <div class="author">Author(s): ${book.author}</div> <div class="edition">Edition: ${book.edition}</div>  `;    bookList.appendChild(bookDiv);  });  </script> |
|  | </body>  </html> |
| Output: |
| Output Analysis | The program stores book details in JSON format and displays them on a webpage using JavaScript. The output shows programming languages, authors, and editions in a structured format. With CSS styling, the data is presented clearly and attractively. |
| Link of student Github profile where lab assignment has been uploaded | https://github.com/Prem-Nandurkar |
| Conclusion | The program shows how JSON stores book data and how JavaScript with CSS displays it clearly on a webpage. |
| Plag Report  (Similarity index <  12%) | 11℅ |
| Date | 18/08/2025 |