Experiment #	<TO BE FILLED BY STUDENT>	Student ID	<TO BE FILLED BY STUDENT>
Date	<TO BE FILLED BY STUDENT>	Student Name	<TO BE FILLED BY STUDENT>

Experiment Title: Java Script BOM: Write a program to build puzzle game make use of BOmObjects

Aim/Objective

To develop a simple puzzle game using JavaScript by utilizing Browser Object Model (BOM) objects such as window, document, navigator, screen, setTimeout, and setInterval to enhance interactivity and control browser-based functionalities.

Description:

This activity focuses on learning and applying JavaScript DOM events by handling different tasks in a structured format. Each task includes a dedicated HTML section, corresponding JavaScript logic, and specific CSS styling, all separated clearly using comment blocks in their respective files. This approach promotes clean code organization and modular development.

Prerequisites:

- Basic understanding of HTML, CSS, and JavaScript.
- Familiarity with DOM (Document Object Model) concepts and structure.
- Knowledge of common JavaScript events (e.g., click, input, mouseover, keydown).
- Ability to link external CSS and JS files to an HTML document.
- Experience using browser developer tools for debugging and inspecting elements.

Pre-Lab: Before starting the lab activity, students should:

- Revise the concept of the Browser Object Model (BOM) and its key objects like window, navigator, screen, location, and history.
- Understand the usage of timing functions such as setTimeout() and setInterval() for controlling time-based events.
- Review basic JavaScript DOM manipulation techniques to update game elements dynamically.
- Prepare a basic project structure with index.html, styles.css, and script.js files linked correctly.
- Plan the layout of the puzzle game, including game board, start/reset buttons, and a timer section.

In-Lab: During the lab session, students will:

- Design a basic puzzle layout (e.g., a sliding tile puzzle or number shuffle) in index.html using divs or buttons to represent game pieces.
- Style the puzzle grid and pieces in styles.css to create a visually appealing game board.
- Write JavaScript code in script.js to handle puzzle logic such as shuffling, swapping tiles, and checking for the win condition.
- Use BOM objects like:
    - window.alert() to show instructions or winning messages,
    - setInterval() to implement a game timer,
    - setTimeout() to introduce delays (e.g., showing a hint or auto-reset),
    - navigator.userAgent to display user browser info (optional for bonus).

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- Add interactivity using event listeners for player moves and buttons like Start, Shuffle, or Reset.
- Test the puzzle game to ensure the logic works correctly and all BOM features are functioning as intended.
- Document the code with comments explaining how BOM objects are being used.

Procedure/Program:

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Data and Results:

Analysis and Inferences:

Experiment #	<TO BE FILLED BY STUDENT>	Student ID	<TO BE FILLED BY STUDENT>
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Sample viva voce questions:

1. **What is the Browser Object Model (BOM), and how is it different from the DOM?**

2. **Which BOM methods did you use in your puzzle game, and what were their purposes?**

3. **How does setInterval() differ from setTimeout(), and where did you use them in your game?**

4. **Explain how you used window.alert() or window.confirm() in your project.**

5. **Can you list some properties of the navigator and screen objects that can be used to enhance user experience?**

Evaluator Remark (if Any):	**Marks Secured:_____out of 50**
	Signature of the Evaluator with Date