

Experiment: Develop a Simple Game Using jQuery

Aim

To design and develop a simple interactive game using **jQuery** that demonstrates event handling, animations, DOM manipulation, and user interaction.

Software & Hardware Requirements

- HTML5
 - CSS3
 - jQuery Library
 - Web Browser (Chrome/Firefox)
 - Code Editor (VS Code / Notepad++)
 - System with minimum 4GB RAM
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Theory

jQuery is a lightweight JavaScript library that simplifies tasks such as: - DOM manipulation - Animations - Event handling - AJAX calls

In this experiment, we will build a simple game called “**Catch the Box**”, where the player must click moving boxes within a time limit.

Algorithm

1. Create an HTML page containing the game area and score display.
 2. Import the jQuery library.
 3. Use CSS to design the game area and target box.
 4. Use jQuery to animate the box randomly within the game area.
 5. Add a click event to increase the player's score.
 6. Implement a timer using `setInterval()`.
 7. When time ends, stop animations and show final score.
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Program

1. HTML (game.html)

```
<!DOCTYPE html>
<html>
<head>
    <title>jQuery Simple Game</title>
    <link rel="stylesheet" href="style.css">
    <script src="https://code.jquery.com/jquery-3.6.0.min.js"></script>
    <script src="game.js"></script>
</head>
<body>
    <h2>Catch the Box Game</h2>
    <p>Time Left: <span id="time">20</span> seconds</p>
    <p>Score: <span id="score">0</span></p>

    <div id="gameArea">
        <div id="box"></div>
    </div>
</body>
</html>
```

2. CSS (style.css)

```
body {
    font-family: Arial;
    text-align: center;
}

#gameArea {
    width: 500px;
    height: 400px;
    border: 2px solid black;
    margin: auto;
    position: relative;
    background-color: #f7f7f7;
}

#box {
    width: 50px;
    height: 50px;
    background-color: red;
    position: absolute;
    border-radius: 10px;
    cursor: pointer;
}
```

3. jQuery Script (game.js)

```
$(document).ready(function () {
    let score = 0;
    let timeLeft = 20;

    // Move box randomly
    function moveBox() {
        let x = Math.random() * 450; // gameArea width - box width
        let y = Math.random() * 350; // gameArea height - box height

        $("#box").animate({ left: x, top: y }, 300);
    }

    // Box click: increase score
    $("#box").click(function () {
        score++;
        $("#score").text(score);
        moveBox();
    });

    // Timer countdown
    let timer = setInterval(function () {
        timeLeft--;
        $("#time").text(timeLeft);

        if (timeLeft <= 0) {
            clearInterval(timer);
            $("#box").hide();
            alert("Game Over! Your Score: " + score);
        }
    }, 1000);

    // Start movement
    moveBox();
});
```

Output

- A game window appears with a moving red box.
 - Player clicks the box to earn points.
 - Score increases on each successful click.
 - Timer counts down from 20 seconds.
 - After time expires, the game ends and shows the final score.
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Result

Thus, a simple and interactive jQuery-based game was successfully developed that demonstrates animations, event handling, and DOM manipulation using the jQuery framework.