```html
<!DOCTYPE html>
<html>
<head>
    <title>Pong</title>
    <style>
        #game {
            width: 600px;
            height: 400px;
            border: 1px solid black;
            position: relative;
        }

        .paddle {
            width: 10px;
            height: 50px;
            background-color: black;
            position: absolute;
        }

        #paddle1 {
            left: 0;
        }

        #paddle2 {
            right: 0;
        }

        .ball {
            width: 10px;
            height: 10px;
            background-color: black;
            border-radius: 50%;
            position: absolute;
        }
    </style>
</head>
<body>
    <div id="game">
        <div id="paddle1" class="paddle"></div>
        <div id="paddle2" class="paddle"></div>
        <div id="ball" class="ball"></div>
    </div>

    <script>
        let ball_x = 300;
        let ball_y = 200;
        let ball_dx = 5;
        let ball_dy = 5;
        let paddle1_y = 175;
        let paddle2_y = 175;
```

```
        function update() {
            ball_x += ball_dx;
            ball_y += ball_dy;

            // Ball collision with walls
            if (ball_y <= 0 || ball_y >= 390) {
                ball_dy = -ball_dy;
            }

            // Ball collision with paddles
            if ((ball_x <= 10 && paddle1_y <= ball_y && ball_y <= paddle1_y + 50) ||
                (ball_x >= 590 && paddle2_y <= ball_y && ball_y <= paddle2_y + 50))
{
                ball_dx = -ball_dx;
            }

            // AI paddle movement
            if (ball_y > paddle1_y + 25) {
                paddle1_y += 5;
            } else if (ball_y < paddle1_y + 25) {
                paddle1_y -= 5;
            }

            if (ball_y > paddle2_y + 25) {
                paddle2_y += 5;
            } else if (ball_y < paddle2_y + 25) {
                paddle2_y -= 5;
            }

            // Keep paddles within bounds
            paddle1_y = Math.max(0, Math.min(350, paddle1_y));
            paddle2_y = Math.max(0, Math.min(350, paddle2_y));

            // Update positions on the screen
            document.getElementById('ball').style.left = ball_x + 'px';
            document.getElementById('ball').style.top = ball_y + 'px';
            document.getElementById('paddle1').style.top = paddle1_y + 'px';
            document.getElementById('paddle2').style.top = paddle2_y + 'px';
        }

        setInterval(update, 30); // Update game state every 30 milliseconds
    </script>
</body>
</html>
```