HTML

```
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Next Word Predictor with Probability</title>
    <link rel="stylesheet" href="styles.css">
</head>
<body>
    <div class="container">
        <h1>Next Word Predictor with Probability</h1>
        <p>Start typing and see word predictions with likelihood scores:</p>
        <textarea id="text-input" placeholder="Type something here..."></
textarea>
        <div id="predictions-container">
            <p>Suggestions (with probability scores):</p>
            <div class="predictions" id="predictions">
                <!-- Prediction buttons will appear here -->
            </div>
        </div>
        <div class="instructions">
            <p><strong>How to use:</strong> Type a sentence and the app will
suggest possible next words with probability scores. Higher scores indicate
more likely suggestions.</p>
        </div>
    </div>

    <script src="script.js"></script>
</body>
</html>
```

CSS

```
body {
    font-family: Arial, sans-serif;
    max-width: 800px;
    margin: 0 auto;
    padding: 20px;
    background-color: #f5f5f5;
}

h1 {
    color: #333;
    text-align: center;
}

.container {
    background-color: white;
    padding: 20px;
    border-radius: 8px;
    box-shadow: 0 2px 10px rgba(0, 0, 0, 0.1);
}

#text-input {
    width: 100%;
    height: 150px;
    padding: 10px;
    border: 1px solid #ddd;
    border-radius: 4px;
    font-size: 16px;
    margin-bottom: 10px;
    resize: vertical;
}

.predictions {
    display: flex;
    gap: 10px;
    margin-top: 10px;
    flex-wrap: wrap;
}

.prediction-btn {
    padding: 8px 12px;
    background-color: #4CAF50;
    color: white;
    border: none;
    border-radius: 4px;
    cursor: pointer;
    font-size: 14px;
    transition: background-color 0.3s;
    position: relative;
}

.prediction-btn:hover {
    background-color: #45a049;
}

.probability {
    position: absolute;
    top: -8px;
    right: -8px;
    background-color: #ff9800;
    color: white;
    border-radius: 50%;
    width: 20px;
    height: 20px;
    display: flex;
    align-items: center;
    justify-content: center;
    font-size: 10px;
}

.instructions {
    margin-top: 20px;
    padding: 10px;
    background-color: #e9f7ef;
    border-radius: 4px;
    color: #333;
}
```

JS

```
// Enhanced word prediction model with probability scores
const wordPredictions = {
    "hello": { "world": 0.6, "there": 0.3, "how": 0.08, "friend": 0.02 },
    "how": { "are": 0.7, "is": 0.2, "do": 0.07, "can": 0.03 },
    "are": { "you": 0.8, "we": 0.1, "they": 0.07, "there": 0.03 },
    "you": { "doing": 0.5, "know": 0.3, "want": 0.15, "like": 0.05 },
    "i": { "am": 0.6, "love": 0.2, "think": 0.15, "want": 0.05 },
    "the": { "quick": 0.4, "brown": 0.3, "fox": 0.2, "dog": 0.1 },
    "quick": { "brown": 0.7, "response": 0.2, "action": 0.1 },
    "brown": { "fox": 0.8, "dog": 0.15, "bear": 0.05 },
    "fox": { "jumps": 0.7, "runs": 0.2, "walks": 0.1 },
    "jumps": { "over": 0.9, "high": 0.05, "quickly": 0.05 },
    "over": { "the": 0.8, "me": 0.1, "you": 0.1 },
    "lazy": { "dog": 0.9, "cat": 0.1 },
    "dog": { "barks": 0.6, "runs": 0.3, "sleeps": 0.1 },
    "this": { "is": 0.8, "was": 0.15, "has": 0.05 },
    "is": { "a": 0.6, "the": 0.3, "not": 0.1 },
    "a": { "simple": 0.5, "quick": 0.3, "test": 0.2 },
    "good": { "morning": 0.7, "afternoon": 0.2, "evening": 0.1 },
    "happy": { "birthday": 0.8, "new": 0.15, "to": 0.05 },
    "thank": { "you": 0.95, "god": 0.05 }
};

// Common words fallback with probabilities
const commonWords = {
    "the": 0.2,
    "and": 0.15,
    "that": 0.1,
    "for": 0.1,
    "to": 0.15,
    "in": 0.1,
    "it": 0.1,
    "is": 0.1
};

const textInput = document.getElementById('text-input');
const predictionsDiv = document.getElementById('predictions');

textInput.addEventListener('input', updatePredictions);

function updatePredictions() {
    const text = textInput.value.trim();
    const words = text.split(/\s+/);
    const lastWord = words[words.length - 1].toLowerCase();

    // Clear previous predictions
    predictionsDiv.innerHTML = '';

    // Get predictions for the last word
    let predictions = [];

    if (wordPredictions[lastWord]) {
        // Convert the prediction object to an array and sort by probability
        predictions = Object.entries(wordPredictions[lastWord])
            .map(([word, prob]) => ({ word, prob }))
            .sort((a, b) => b.prob - a.prob);
    } else if (text.length > 0) {
        // If no predictions, show common words
        predictions = Object.entries(commonWords)
            .map(([word, prob]) => ({ word, prob }))
            .sort((a, b) => b.prob - a.prob);
    }

    // Create prediction buttons
    predictions.slice(0, 8).forEach(({word, prob}) => {
        const button = document.createElement('button');
        button.className = 'prediction-btn';
        button.textContent = word;

        // Add probability badge
        const probBadge = document.createElement('span');
        probBadge.className = 'probability';
        probBadge.textContent = Math.round(prob * 100);
        button.appendChild(probBadge);

        button.addEventListener('click', () => {
            // Add the prediction to the text
            if (text.length === 0 || textInput.value.endsWith(' ')) {
                textInput.value += word + ' ';
            } else {
                textInput.value += ' ' + word + ' ';
            }
            textInput.focus();
            updatePredictions();
        });
        predictionsDiv.appendChild(button);
    });
}
```