**Q8: Dictionary Implementation with Hashing**: Create a **dictionary** where words are stored using a **hash table**. Implement efficient lookup, insertion, and deletion operations using custom **hash functions**.

<!DOCTYPE html>

<html lang="en">

<head>

<meta charset="UTF-8">

<meta name="viewport" content="width=device-width, initial-scale=1.0">

<title>Dictionary - Hashing</title>

<style>

body { font-family: Arial, sans-serif; padding: 20px; }

input, button { padding: 10px; margin: 5px; }

pre { background-color: #f5f5f5; padding: 10px; }

</style>

</head>

<body>

<h1>Dictionary Implementation</h1>

<label for="word">Word:</label>

<input type="text" id="word" />

<label for="meaning">Meaning:</label>

<input type="text" id="meaning" />

<button onclick="addWord()">Add Word</button>

<button onclick="searchWord()">Search Word</button>

<h2>Dictionary Content:</h2>

<pre id="dictionaryContent"></pre>

<script>

class Dictionary {

constructor(size) {

this.size = size;

this.table = new Array(size);

}

// Hash function

hash(key) {

let hash = 0;

for (let i = 0; i < key.length; i++) {

hash = (hash + key.charCodeAt(i)) % this.size;

}

return hash;

}

add(word, meaning) {

const index = this.hash(word);

if (!this.table[index]) {

this.table[index] = [];

}

this.table[index].push([word, meaning]);

}

search(word) {

const index = this.hash(word);

const bucket = this.table[index];

if (bucket) {

for (let i = 0; i < bucket.length; i++) {

if (bucket[i][0] === word) {

return bucket[i][1];

}

}

}

return null;

}

}

const dictionary = new Dictionary(10);

function addWord() {

const word = document.getElementById('word').value;

const meaning = document.getElementById('meaning').value;

dictionary.add(word, meaning);

updateDictionaryContent();

}

function searchWord() {

const word = document.getElementById('word').value;

const meaning = dictionary.search(word);

alert(meaning !== null ? `Meaning: ${meaning}` : 'Word not found');

}

function updateDictionaryContent() {

const dictionaryContent = JSON.stringify(dictionary.table, null, 2);

document.getElementById('dictionaryContent').innerText = dictionaryContent;

}

</script>

</body>

</html>