**ABBOTTABD UNIVERSITY OF SCIENCE AND TECHNOLOGY**

**NAME: SAMIULLAH KHAN**

**ROLL NO: 14799**

**BSCS: 3D**

**SUBJECT: DSA**

**SUBMITTED TO: SIR JAMAL ABDUL AHAD**

**PROJECT:**Text Editor with Undo/Redo Functionality Using stack

**Program**

from flask import Flask, request, jsonify, render\_template\_string

app = Flask(\_\_name\_\_)

# Stacks for undo and redo functionality

undo\_stack = []

redo\_stack = []

# HTML content for the frontend

HTML\_TEMPLATE = """

<!DOCTYPE html>

<html lang="en">

<head>

<meta charset="UTF-8">

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

<title>Text Editor with Undo/Redo</title>

<style>

body {

font-family: Arial, sans-serif;

text-align: center;

margin-top: 50px;

}

.editor {

width: 80%;

height: 300px;

border: 1px solid #ccc;

margin: 20px auto;

padding: 10px;

overflow-y: auto;

background: #f9f9f9;

}

button {

margin: 10px;

padding: 10px 20px;

font-size: 16px;

}

</style>

</head>

<body>

<h1>Text Editor with Undo/Redo</h1>

<div class="editor" contenteditable="true" id="editor"></div>

<div>

<button id="undo">Undo</button>

<button id="redo">Redo</button>

</div>

<script>

const editor = document.getElementById('editor');

const undoBtn = document.getElementById('undo');

const redoBtn = document.getElementById('redo');

// Save the initial state

fetch('/save', {

method: 'POST',

headers: { 'Content-Type': 'application/json' },

body: JSON.stringify({ content: editor.innerHTML })

});

// Save content on input

editor.addEventListener('input', () => {

fetch('/save', {

method: 'POST',

headers: { 'Content-Type': 'application/json' },

body: JSON.stringify({ content: editor.innerHTML })

});

});

// Undo operation

undoBtn.addEventListener('click', () => {

fetch('/undo')

.then(response => response.json())

.then(data => {

editor.innerHTML = data.content;

});

});

// Redo operation

redoBtn.addEventListener('click', () => {

fetch('/redo')

.then(response => response.json())

.then(data => {

editor.innerHTML = data.content;

});

});

// Keyboard shortcuts for undo (Ctrl+Z) and redo (Ctrl+Y)

document.addEventListener('keydown', (e) => {

if (e.ctrlKey && e.key === 'z') {

undoBtn.click();

}

if (e.ctrlKey && e.key === 'y') {

redoBtn.click();

}

});

</script>

</body>

</html>

"""

@app.route('/')

def index():

return render\_template\_string(HTML\_TEMPLATE)

@app.route('/save', methods=['POST'])

def save():

content = request.json.get('content')

undo\_stack.append(content)

redo\_stack.clear() # Clear redo stack when new content is saved

return jsonify({"message": "Content saved successfully"})

@app.route('/undo', methods=['GET'])

def undo():

if len(undo\_stack) > 1:

redo\_stack.append(undo\_stack.pop())

return jsonify({"content": undo\_stack[-1]})

return jsonify({"content": undo\_stack[-1] if undo\_stack else ""})

@app.route('/redo', methods=['GET'])

def redo():

if redo\_stack:

state = redo\_stack.pop()

undo\_stack.append(state)

return jsonify({"content": state})

return jsonify({"content": undo\_stack[-1] if undo\_stack else ""})

if \_\_name\_\_ == '\_\_main\_\_':

app.run(debug=True)