Rich Web Application Technologies

Lab Sheet 1  
Ben Shanahan | C14347291

1.

**HTML:**

|  |
| --- |
| <!DOCTYPE html> |
|  | <html> |
|  | <head> |
|  | <meta charset="utf-8"> |
|  | <meta name="viewport" content="width=device-width"> |
|  | <title>JS Bin</title> |
|  | <style id="jsbin-css"> |
|  | header{ |
|  | font-style:italic; |
|  | } |
|  |  |
|  | #content{ |
|  | border: 1px solid black; |
|  | margin-right: 5px; |
|  | margin-top:10px; |
|  | width: 500px; |
|  | height: 300px; |
|  | float: left; |
|  |  |
|  | } |
|  |  |
|  | #sidebar{ |
|  | border: 1px solid black; |
|  | margin-left: 10px; |
|  | margin-right: 5px; |
|  | margin-top:10px; |
|  | width: 100px; |
|  | float: right; |
|  | } |
|  |  |
|  | footer{ |
|  | clear: left; |
|  | font-weight:bold; |
|  |  |
|  | } |
|  | </style> |
|  | </head> |
|  | <body> |
|  |  |
|  | <header> |
|  | <h1> |
|  | Title |
|  | </h1> |
|  | </header> |
|  | <section id="content"> |
|  | <header> |
|  | Article title |
|  | </header> |
|  | <section> |
|  | <p>Article para1 ...</p> |
|  | </section> |
|  | </section> |
|  | <aside id="sidebar"> |
|  | <header> |
|  | Aside |
|  | </header> |
|  | <ul> |
|  | <li> |
|  | Item 1 |
|  | </li> |
|  | <li> |
|  | Item 2 |
|  | </li> |
|  | </ul> |
|  | </aside> |
|  | <footer> |
|  | <address> |
|  | Kevin St, Dublin 8 |
|  | </address> |
|  | </footer> |
|  |  |
|  |  |
|  |  |
|  |  |
|  | <script id="jsbin-source-css" type="text/css">header{ |
|  | font-style:italic; |
|  | } |
|  |  |
|  | #content{ |
|  | border: 1px solid black; |
|  | margin-right: 5px; |
|  | margin-top:10px; |
|  | width: 500px; |
|  | height: 300px; |
|  | float: left; |
|  |  |
|  | } |
|  |  |
|  | #sidebar{ |
|  | border: 1px solid black; |
|  | margin-left: 10px; |
|  | margin-right: 5px; |
|  | margin-top:10px; |
|  | width: 100px; |
|  | float: right; |
|  | } |
|  |  |
|  | footer{ |
|  | clear: left; |
|  | font-weight:bold; |
|  |  |
|  | } |
|  | </script> |
|  | </body> |
|  | </html> |

**CSS:**

|  |
| --- |
| header{ |
|  | font-style:italic; |
|  | } |
|  |  |
|  | #content{ |
|  | border: 1px solid black; |
|  | margin-right: 5px; |
|  | margin-top:10px; |
|  | width: 500px; |
|  | height: 300px; |
|  | float: left; |
|  |  |
|  | } |
|  |  |
|  | #sidebar{ |
|  | border: 1px solid black; |
|  | margin-left: 10px; |
|  | margin-right: 5px; |
|  | margin-top:10px; |
|  | width: 100px; |
|  | float: right; |
|  | } |
|  |  |
|  | footer{ |
|  | clear: left; |
|  | font-weight:bold; |
|  |  |
|  | } |

2.

**HTML:**

|  |
| --- |
| <!DOCTYPE html> |
|  | <html> |
|  | <head> |
|  | <meta charset="utf-8"> |
|  | <meta name="viewport" content="width=device-width"> |
|  | <title>JS Bin</title> |
|  | <style id="jsbin-css"> |
|  | #outer{ |
|  | border: 2px solid black; |
|  | height: 350px; |
|  | width: 430px; |
|  | border-radius: 25px; |
|  | background-color: #f2f2f2; |
|  | } |
|  |  |
|  | #screen{ |
|  | border: 2px solid #cccccc; |
|  | height: 50px; |
|  | width: 90%; |
|  | margin: 0 auto; |
|  | margin-top: 20px; |
|  | border-radius: 10px; |
|  | border-style: inset; |
|  | background-color: white; |
|  | text-align:right; |
|  | color: grey; |
|  |  |
|  | } |
|  |  |
|  | .h1{ |
|  | color: green; |
|  | } |
|  |  |
|  | #buttons{ |
|  | float: center; |
|  | } |
|  |  |
|  | ul li{ |
|  | background: #999999; |
|  | list-style-type: none; |
|  |  |
|  | width: 80px; |
|  | height: 30px; |
|  | border: 2px solid #595959; |
|  | border-radius: 12px; |
|  | border-style: outset; |
|  | text-align: center; |
|  | font-size: 20px; |
|  | display: inline-block; |
|  |  |
|  | } |
|  | </style> |
|  | </head> |
|  | <body> |
|  | <div id=outer> |
|  | <div id=screen> |
|  | <h1>0</h1> |
|  | </div> |
|  | <div id=buttons> |
|  | <ul> |
|  | <li>(</li> |
|  | <li>)</li> |
|  | <li>+</li> |
|  | <li>&#247</li> |
|  | </ul> |
|  |  |
|  | <ul> |
|  | <li>7</li> |
|  | <li>8</li> |
|  | <li>9</li> |
|  | <li>&#215</li> |
|  | </ul> |
|  |  |
|  | <ul> |
|  | <li>4</li> |
|  | <li>5</li> |
|  | <li>6</li> |
|  | <li>-</li> |
|  | </ul> |
|  |  |
|  | <ul> |
|  | <li>1</li> |
|  | <li>2</li> |
|  | <li>3</li> |
|  | <li>+</li> |
|  | </ul> |
|  |  |
|  | <ul> |
|  | <li>0</li> |
|  | <li>.</li> |
|  | <li>C</li> |
|  | <li>=</li> |
|  | </ul> |
|  | </div> |
|  |  |
|  |  |
|  | </div> |
|  |  |
|  |  |
|  | <script id="jsbin-source-css" type="text/css">#outer{ |
|  | border: 2px solid black; |
|  | height: 350px; |
|  | width: 430px; |
|  | border-radius: 25px; |
|  | background-color: #f2f2f2; |
|  | } |
|  |  |
|  | #screen{ |
|  | border: 2px solid #cccccc; |
|  | height: 50px; |
|  | width: 90%; |
|  | margin: 0 auto; |
|  | margin-top: 20px; |
|  | border-radius: 10px; |
|  | border-style: inset; |
|  | background-color: white; |
|  | text-align:right; |
|  | color: grey; |
|  |  |
|  | } |
|  |  |
|  | .h1{ |
|  | color: green; |
|  | } |
|  |  |
|  | #buttons{ |
|  | float: center; |
|  | } |
|  |  |
|  | ul li{ |
|  | background: #999999; |
|  | list-style-type: none; |
|  |  |
|  | width: 80px; |
|  | height: 30px; |
|  | border: 2px solid #595959; |
|  | border-radius: 12px; |
|  | border-style: outset; |
|  | text-align: center; |
|  | font-size: 20px; |
|  | display: inline-block; |
|  |  |
|  | } |
|  | </script> |
|  | </body> |
|  | </html> |

**CSS:**

|  |
| --- |
| #outer{ |
|  | border: 2px solid black; |
|  | height: 350px; |
|  | width: 430px; |
|  | border-radius: 25px; |
|  | background-color: #f2f2f2; |
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|  | height: 50px; |
|  | width: 90%; |
|  | margin: 0 auto; |
|  | margin-top: 20px; |
|  | border-radius: 10px; |
|  | border-style: inset; |
|  | background-color: white; |
|  | text-align:right; |
|  | color: grey; |
|  |  |
|  | } |
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|  | .h1{ |
|  | color: green; |
|  | } |
|  |  |
|  | #buttons{ |
|  | float: center; |
|  | } |
|  |  |
|  | ul li{ |
|  | background: #999999; |
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|  |  |
|  | width: 80px; |
|  | height: 30px; |
|  | border: 2px solid #595959; |
|  | border-radius: 12px; |
|  | border-style: outset; |
|  | text-align: center; |
|  | font-size: 20px; |
|  | display: inline-block; |
|  |  |
|  | } |

3.

**HTML:**

|  |
| --- |
| <!DOCTYPE html> |
|  | <html> |
|  | <head> |
|  | <meta charset="utf-8"> |
|  | <meta name="viewport" content="width=device-width"> |
|  | <title>JS Bin</title> |
|  | </head> |
|  | <body> |
|  |  |
|  | <script id="jsbin-javascript"> |
|  | var array = []; |
|  |  |
|  | var i; |
|  | for(i=0; i<50; i++) |
|  | { |
|  |  |
|  | var row = document.createElement("DIV"); |
|  | document.body.appendChild(row); |
|  |  |
|  | var j; |
|  | for(j=0; j<101;j++) |
|  | { |
|  | var div = document.createElement("DIV"); |
|  | div.style.width ="8px"; |
|  | div.style.height="8px"; |
|  | div.style.border="1px solid #ffffff"; |
|  |  |
|  | div.style.display ="inline-block"; |
|  |  |
|  |  |
|  | if (i !== 0) { |
|  | var P1, P2, P3; |
|  | if (0 < j && j < 101) { |
|  | P1 = array[j - 1]; |
|  | P2 = array[j]; |
|  | P3 = array[j + 1]; |
|  | } |
|  | else if (j === 0) { |
|  | P1 = array[j + 100]; |
|  | P2 = array[j]; |
|  | P3 = array[j + 1]; |
|  | } |
|  | else if (j === 101) { |
|  | P1 = array[j - 1]; |
|  | P2 = array[j]; |
|  | P3 = array[j - 100]; |
|  | } |
|  |  |
|  | var result = child(P1, P2, P3); |
|  |  |
|  | if (result) { |
|  | div.style.backgroundColor = "#8e4747"; |
|  | } |
|  | else { |
|  | div.style.backgroundColor = "#ffc2a0"; |
|  | } |
|  |  |
|  | row.appendChild(div); |
|  | console.log(array); |
|  |  |
|  | } else { |
|  | var rand = Boolean(Math.round(Math.random())); |
|  | } |
|  |  |
|  | if(rand || result) |
|  | { |
|  | div.style.backgroundColor="#8e4747"; |
|  | } |
|  | else |
|  | { |
|  | div.style.backgroundColor="#ffc2a0"; |
|  | } |
|  |  |
|  | row.appendChild(div); |
|  | var stock; |
|  | if(rand === true) |
|  | { |
|  | stock = 1; |
|  | } |
|  | else |
|  | { |
|  | stock = 0; |
|  | } |
|  |  |
|  | array.push(stock); |
|  |  |
|  | } |
|  | } |
|  |  |
|  | function child(PARENT1, PARENT2, PARENT3) |
|  | { |
|  | if(PARENT1===1&&PARENT2===1&&PARENT3===1|| |
|  | PARENT1===1&&PARENT2===0&&PARENT3===1|| |
|  | PARENT1===1&&PARENT2===0&&PARENT3===0|| |
|  | PARENT1===0&&PARENT2===1&&PARENT3===0|| |
|  | PARENT1===0&&PARENT2===0&&PARENT3===1) |
|  | { |
|  | return true; |
|  |  |
|  | } |
|  | else if(PARENT1===1&&PARENT2===1&&PARENT3===0|| |
|  | PARENT1===0&&PARENT2===1&&PARENT3===1|| |
|  | PARENT1===0&&PARENT2===0&&PARENT3===0) |
|  | { |
|  | return false; |
|  | } |
|  | } |
|  | </script> |
|  |  |
|  |  |
|  |  |
|  | <script id="jsbin-source-javascript" type="text/javascript">var array = []; |
|  |  |
|  | var i; |
|  | for(i=0; i<50; i++) |
|  | { |
|  |  |
|  | var row = document.createElement("DIV"); |
|  | document.body.appendChild(row); |
|  |  |
|  | var j; |
|  | for(j=0; j<101;j++) |
|  | { |
|  | var div = document.createElement("DIV"); |
|  | div.style.width ="8px"; |
|  | div.style.height="8px"; |
|  | div.style.border="1px solid #ffffff"; |
|  |  |
|  | div.style.display ="inline-block"; |
|  |  |
|  |  |
|  | if (i !== 0) { |
|  | var P1, P2, P3; |
|  | if (0 < j && j < 101) { |
|  | P1 = array[j - 1]; |
|  | P2 = array[j]; |
|  | P3 = array[j + 1]; |
|  | } |
|  | else if (j === 0) { |
|  | P1 = array[j + 100]; |
|  | P2 = array[j]; |
|  | P3 = array[j + 1]; |
|  | } |
|  | else if (j === 101) { |
|  | P1 = array[j - 1]; |
|  | P2 = array[j]; |
|  | P3 = array[j - 100]; |
|  | } |
|  |  |
|  | var result = child(P1, P2, P3); |
|  |  |
|  | if (result) { |
|  | div.style.backgroundColor = "#8e4747"; |
|  | } |
|  | else { |
|  | div.style.backgroundColor = "#ffc2a0"; |
|  | } |
|  |  |
|  | row.appendChild(div); |
|  | console.log(array); |
|  |  |
|  | } else { |
|  | var rand = Boolean(Math.round(Math.random())); |
|  | } |
|  |  |
|  | if(rand || result) |
|  | { |
|  | div.style.backgroundColor="#8e4747"; |
|  | } |
|  | else |
|  | { |
|  | div.style.backgroundColor="#ffc2a0"; |
|  | } |
|  |  |
|  | row.appendChild(div); |
|  | var stock; |
|  | if(rand === true) |
|  | { |
|  | stock = 1; |
|  | } |
|  | else |
|  | { |
|  | stock = 0; |
|  | } |
|  |  |
|  | array.push(stock); |
|  |  |
|  | } |
|  | } |
|  |  |
|  | function child(PARENT1, PARENT2, PARENT3) |
|  | { |
|  | if(PARENT1===1&&PARENT2===1&&PARENT3===1|| |
|  | PARENT1===1&&PARENT2===0&&PARENT3===1|| |
|  | PARENT1===1&&PARENT2===0&&PARENT3===0|| |
|  | PARENT1===0&&PARENT2===1&&PARENT3===0|| |
|  | PARENT1===0&&PARENT2===0&&PARENT3===1) |
|  | { |
|  | return true; |
|  |  |
|  | } |
|  | else if(PARENT1===1&&PARENT2===1&&PARENT3===0|| |
|  | PARENT1===0&&PARENT2===1&&PARENT3===1|| |
|  | PARENT1===0&&PARENT2===0&&PARENT3===0) |
|  | { |
|  | return false; |
|  | } |
|  | } |
|  |  |
|  |  |
|  |  |
|  |  |
|  | </script></body> |
|  | </html> |

4.

a. Rich Web Development, compared to traditional Web Development, is different in the sense that Rich Web Development has to deal with developing Web Applications rather than developing Websites that are just displaying information and media. Examples of Rich Web Applications include sites such as Facebook or Amazon as they don’t just display information but dynamically generate their content depending on the user’s input.

b. The Document Object Model is model structure API which can be used in any coding language to structure the code and is the structuring used in HTML and is like a tree model where nodes split from the top down into smaller nodes. For example *<html>* to *<body>* to *<div>.* Using a DOM API the user can manipulate, change, add and delete a linked HTML & CSS through Javascript.