KEY IN-CLASS STUDENT ACTIVITY 4.4: ACCESS DATA ACCESS BY USING JAVASCRIPT

Lesson Objective 4.4:

Access data access by using JavaScript.

Resources, software, and additional files needed for this lesson:

1. Microsoft® Expression® Web 4 (preferred) or Notepad++.

Guiding questions:

1. **Considering that HTTP is a stateless protocol, how is JavaScript used to dynamically send and receive data?** JavaScript communicates through the Internet to the server to send/receive data. Currently, it uses AJAX to complete this task, but HTML5 introduces many new options, including JSON for transmitting, receiving, and parsing objects.
2. **What is a JSON object and how is it used?** JSON stands for JavaScript Object Notation, and it is used to store and exchange text information. It is similar to XML, but faster and easier to parse.
3. **How are indexed databases created and used with JavaScript?** An indexed database is an object database that uses key-value data management to create, save, and retrieve information. It uses transactional databases to store keys and their corresponding values. The developer can use the key to navigate and sort the records. These databases can be stored on the client side, providing direct access by JavaScript.

Student activity:

Directions to the student:

Read the following scenario and follow the steps in the Content section to create a one-page website. Have a peer review the site, and then verify your answers with the instructor.

Scenario:

Alistair Speirs is the webmaster for Contoso, Ltd. His company provides applications for smartphones and tablets. He has been working on an application that allows the user to create a shopping list that includes item names, quantity, and price. He is aware that HTML5 is introducing many options for accessing data more quickly by using the client machine.

To set up a prototype, Alistair decides to use JavaScript Object Notation (JSON) objects to hold the shopping list in an external JavaScript file. He will then write a JavaScript function to display the list on a web page. This approach allows Alistair to create an application quickly that can be used by others for input.

Content:

1. Create an HTML page to display an array of JSON objects. Each JSON object represents an item in a shopping list; each item has a name, quantity, and price.
2. Add a button to the HTML page to show the next item on the shopping list (similar to the demonstration project shown in class).
3. Create a separate JavaScript file that includes the function for displaying each item in the list on the page.
4. Test the page.

Answers will vary. The following is sample code.

JavaScript File:

```
var count = 0;
function nextItem()
{
var txt =' { "shoppingList":['+
'{  "itemName":"Apples",   "quantity":"16", "price":1.29},'+
'{  "itemName":"cereal",   "quantity":"2", "price":2.29}, '+
'{  "itemName":"milk",   "quantity":"1", "price":3.29}, '+
'{  "itemName":"bread",   "quantity":"2", "price":1.39}, '+
'{  "itemName":"cheese",   "quantity":"1", "price":2.49}]}';
var obj=eval("("+txt+")");
document.getElementById("item").innerHTML=obj.shoppingList[count].itemName;
document.getElementById("qty").innerHTML=obj.shoppingList[count].quantity;
document.getElementById("cost").innerHTML=obj.shoppingList[count].price;

if(count<4)

   count++;
else
   count=0;
}
```

HTML file:

```
<!DOCTYPE HTML>
<HTML>
<head>
<title>Using JSON</title>
</head>
<body>
<h2>Traverse Shopping List</h2>
<p>
Item Name: <span id="item"></span><br />
Quantity: <span id="qty"></span><br />
Price: <span id="cost"></span><br />

</p>
<input type="button" value="Next Shopping List Item" onclick="nextItem()">
<script type="text/javascript" src="shoppingList.js">
</script>

</body>
</html>
```