

# **RPG Web Apps with AJAX, JSON, and jQuery**

## **Lab Examples**

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**NOTE: This handout is continually updated. If you would like to receive the most current version, please e-mail jim.cooper@system-method.ca.**

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## Naming Conventions for This Lab

---

You will be assigned a user profile and password to an IBM i. You will also be assigned to a Web server running on the IBM i. Your Web server account will include a folder on the IFS and an application library.

|                             |                                 |
|-----------------------------|---------------------------------|
| <b>User ID:</b>             | ICE2012                         |
| <b>Password:</b>            | ICE2012                         |
| <b>System Name:</b>         |                                 |
| <b>IP address:</b>          | 174.79.32.158<br>216.109.205.62 |
| <b>Port Number:</b>         | 70_____                         |
| <b>IFS folder:</b>          | ICE_____                        |
| <b>Application Library:</b> | ICE_____                        |



# SQLAA01

- Introduction to basic Web page
- XHTML
  - Basic XHTML (HTML5)
  - Cascading Style sheet (CSS)
- No jQuery, JSON, or RPG here



FIGURE A-1 SQLAA01.html web page

---

```
<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="utf-8" />
<title> Appendix A - SQLAA01 </title>
<link type="text/css" rel="stylesheet" href="css/master.css" >
</head>

<body>

<h1> Getting Started </h1>

</body>
</html>
```

FIGURE A-2 HTML for SQLAA01.html

---

# SQLAA02

- Link to jQuery library source file
  - Free download
- Using the **document ready** function
  - jQuery functions available after the Web page has loaded all of its elements

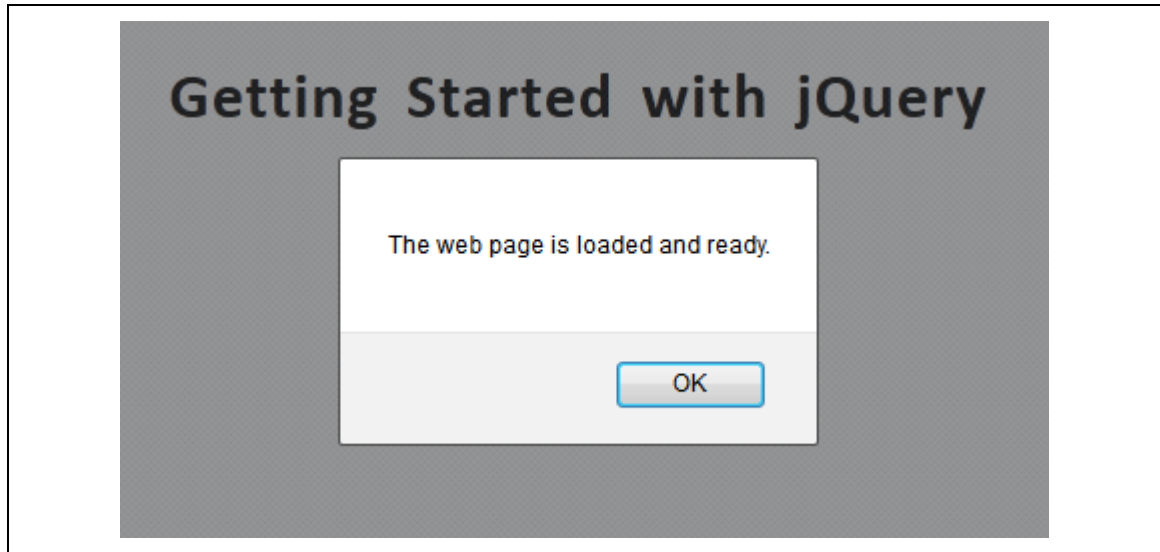


FIGURE A-3 SQLAA02.html web page

```
<!DOCTYPE html>
<html lang="en">
<head>
<title> Appendix A - SQLAA02 </title>
<meta charset="utf-8">
<link type="text/css" href="css/master.css" rel="stylesheet" />
<script type="text/javascript" src="/system/components/jquery/jquery-1-7-1.js">
</script>

<script type="text/javascript">
$(document).ready(function() {
    alert('The web page is loaded and ready.');
```

FIGURE A-4 HTML for SQLAA02.html



# SQLAA03

- Selectors: name, id, and class



FIGURE A-5 SQLAA03.html web page

```
<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="utf-8" />
<title> Appendix A - SQLAA03 </title>
<link type="text/css" rel="stylesheet" href="css/master.css" >
<script type="text/javascript" src="/system/components/jquery/jquery-1-7-1.js"> </script>

<script type="text/javascript">
$(document).ready(function() {
  $('h2').html('Place content into name selector.');
```

```
  $('#divid').html('Place content into id selector.');
```

```
  $('.divclass').html('Place content into class selector.');
```

```
});
</script>
</head>

<body>

<h1> Getting Started </h1>

<h2> This is heading 2 </h2>

<div id="divid"> </div>
<div class="divclass"> </div>

</body>
</html>
```

FIGURE A-6 HTML for SQLAA03.html

# SQLAA04

- Using the jQuery `text` and `html` functions



FIGURE A-7 SQLAA04.html web page

```
<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="utf-8" />
<title> Appendix A - SQLAA04 </title>
<link type="text/css" rel="stylesheet" href="css/master.css" >
<script type="text/javascript" src="/system/components/jquery/jquery-1-7-
1.js"></script>

<script type="text/javascript">
$(document).ready(function() {
    $('#div1').text('The id selector is loaded & ready.');
```

FIGURE A-8 HTML for SQLAA04.html

# SQLAA05

- Using the jQuery **Append** function



FIGURE A-9 SQLAA05.html web page

```
<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="utf-8" />
<title> Appendix A - SQLAA05 </title>
<link type="text/css" rel="stylesheet" href="css/master.css" >
<script type="text/javascript" src="/system/components/jquery/jquery-1-7-1.js"> </script>

<script type="text/javascript">
$(document).ready(function() {
  $('#container1').html(
    '<p> Web content goes here. </p>'
  );

  $('#container1').append(
    '<p> Append more Web content on load. </p>'
  );
});
</script>
</head>

<body>

<h1> Getting Started with jQuery </h1>

<div id="container1"> </div>

</body>
</html>
```

FIGURE A-10 HTML for SQLAA05.html

# SQLAA06

- Using the jQuery **Click** function



FIGURE A-11 SQLAA06.html web page

---

```

<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="utf-8" />
<title> Appendix A - SQLAA06 </title>
<link type="text/css" rel="stylesheet" href="css/master.css" >
<script type="text/javascript" src="/system/components/jquery/jquery-1-7-1.js"> </script>

<script type="text/javascript">
$(document).ready(function() {
    $('#container1').html(
        '<p> Web content goes here. </p>'
    );

    $('#container1').append(
        '<p> Append more Web content on load. </p>'
    );

    $('#btnAppend').click(function() {
        $('#container1').append(
            '<p> Append more Web content when button clicked. </p>'
        );
        $('h1').html('The Append button was clicked. ');
    });
});
</script>
</head>

<body>

<h1> Getting Started with jQuery </h1>

<div id="container1"> </div>

<button type="button" id="btnAppend"> Append Button </button>

</body>
</html>

```

**FIGURE A-12 HTML for SQLAA06.html**

---

# SQLAA07

- Using the jQueryEmpty function

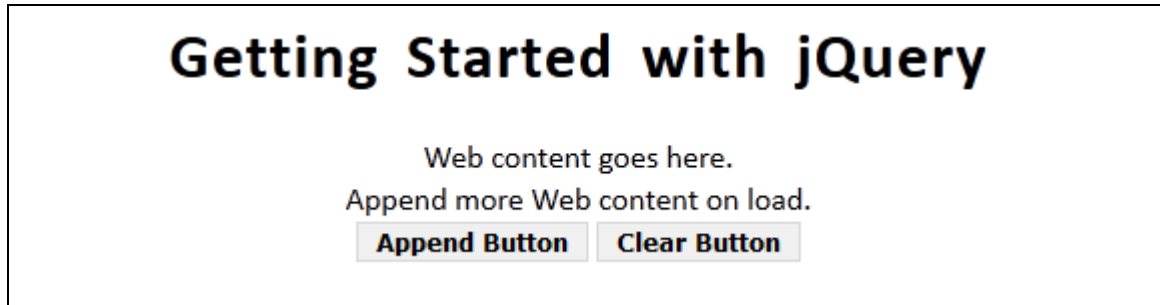


FIGURE A-13 SQLAA07.html web page

---

```

<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="utf-8" />
<title> Appendix A - SQLAA07 </title>
<link type="text/css" rel="stylesheet" href="css/master.css" >
<script type="text/javascript" src="/system/components/jquery/jquery-1-7-1.js"> </script>

<script type="text/javascript">
$(document).ready(function() {
    $('#container1').html(
        '<p> Web content goes here. </p>'
    );

    $('#container1').append(
        '<p> Append more Web content on load. </p>'
    );

    $('#btnAppend').click(function() {
        $('#container1').append(
            '<p> Append more Web content when button clicked. </p>'
        );
        $('#h1').html('The Append button was clicked. ');
    });

    $('#btnClear').click(function() {
        $('#container1').empty();
        $('#h1').html('The Clear button was clicked. ');
    });
});
</script>
</head>

<body>

<h1> Getting Started with jQuery </h1>

<div id="container1"> </div>

<button type="button" id="btnAppend"> Append Button </button>

<button type="button" id="btnClear"> Clear Button </button>

</body>
</html>

```

**FIGURE A-14 HTML for SQLAA07.html**

---

# SQLAA08

- Input fields
  - Focus function



FIGURE A-15 SQLAA08.html web page

```
<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="utf-8" />
<title> Appendix A - SQLAA08 </title>
<link type="text/css" rel="stylesheet" href="css/master.css" >
<script type="text/javascript" src="/system/components/jquery/jquery-1-7-1.js"> </script>

<script type="text/javascript">
$(document).ready(function() {
    $('#input[type=text]:first').focus();
    $('#inputField').focus();

    $('#btnSubmit').click(function() {
        $('#h2').text('The Submit button was clicked.');
```

FIGURE A-16 HTML for SQLAA08.html





# SQLAA09

- Keypress function
  - Using the Enter key



FIGURE A-17 SQLAA09.html web page

---

```

<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="utf-8" />
<title> Appendix A - SQLAA09 </title>
<link type="text/css" rel="stylesheet" href="css/master.css" >
<script type="text/javascript" src="/system/components/jquery/jquery-1-7-1.js"> </script>

<script type="text/javascript">
$(document).ready(function() {
    $('input[type=text]:first').focus(); // this or
    $('#inputField').focus(); // this

    $('#btnSubmit').click(function() {
        $('h2').text('The Submit button was clicked.');
```

```

    });

    $('#inputField').keypress(function(event) {
        if ( event.keyCode == 13 ) {
            $('h2').text('The Enter key was pressed.');
```

```

        }
    });
});
</script>
</head>

<body>

<h1> Getting Started with jQuery </h1>
<h2> Action here </h2>

<label for="inputField"> Enter a value. Click the Submit Button or press Enter: </label>
<input type="text" id="inputField" />

<button type="button" id="btnSubmit"> Submit </button>

</body>
</html>

```

**FIGURE A-18 HTML for SQLAA09.html**

---

# SQLAB01

- Introduction to JSON
  - JSON object
  - Assign a JSON object to a variable



FIGURE B-1 SQLAB01.html web page

```
<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="utf-8" />
<title> Appendix B - SQLAB01 </title>
<link type="text/css" rel="stylesheet" href="css/master.css" >
<script type="text/javascript" src="/system/components/jquery/jquery-1-7-1.js"> </script>
<script type="text/javascript">
  $(document).ready(function() {
    employeeList();
  });

  function employeeList() {
    var jsonData =
    {
      "employee_name" : "Janet Programmer"
    };

    $('#container1').html(
      jsonData.employee_name
    );
  }
</script>
</head>

<body>
<h1> Employee List </h1>

<div id="container1" class="center"> </div>

</body>
</html>
```

FIGURE B-2 HTML for SQLAB01.html

# SQLAB02

- JSON array

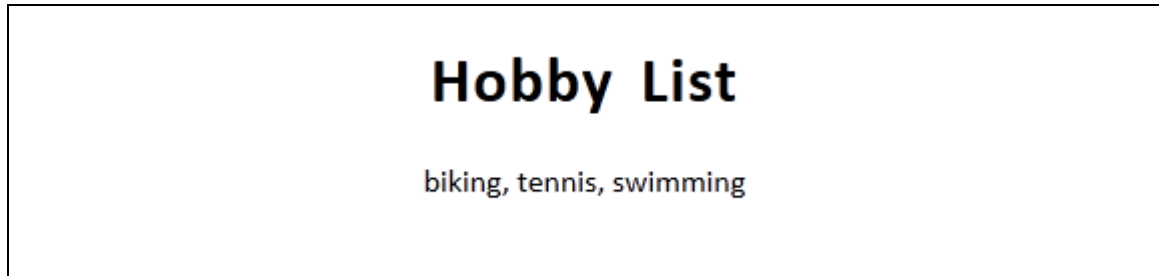


FIGURE B-3 SQLAB02.html web page

```
<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="utf-8" />
<title> Appendix B - SQLAB02 </title>
<link type="text/css" rel="stylesheet" href="css/master.css" >
<script type="text/javascript" src="/system/components/jquery/jquery-1-7-1.js"> </script>
<script type="text/javascript">
    $(document).ready(function() {
        employeeList();
    });

    function employeeList() {
        var jsonData =
        {
            "hobby_list" : [ "biking", "tennis", "swimming" ]
        };

        $('#container1').html(
            jsonData.hobby_list[0] + ', ' +
            jsonData.hobby_list[1] + ', ' +
            jsonData.hobby_list[2]
        );
    }
</script>
</head>

<body>

<h1> Hobby List </h1>

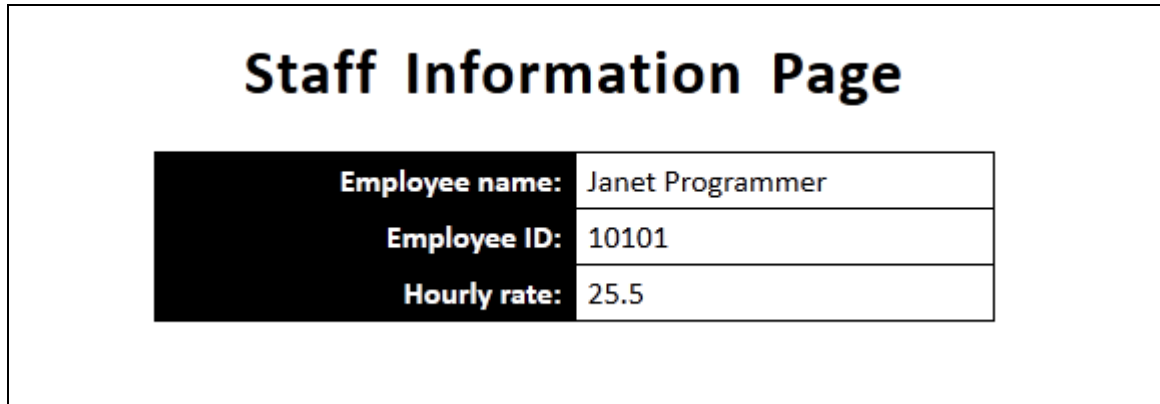
<div id="container1" class="center"> </div>

</body>
</html>
```

FIGURE B-4 HTML for SQLAB02.html

# SQLAB03

- Example of JSON data



The image shows a screenshot of a web page titled "Staff Information Page". The page contains a table with three rows of employee information. The first column of the table is highlighted in black, and the text is white. The second column contains the corresponding values.

| <b>Staff Information Page</b> |                  |
|-------------------------------|------------------|
| <b>Employee name:</b>         | Janet Programmer |
| <b>Employee ID:</b>           | 10101            |
| <b>Hourly rate:</b>           | 25.5             |

FIGURE B-5 SQLAB03.html web page

---

```

<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="utf-8" />
<title> Appendix B - SQLAB03 </title>
<link type="text/css" rel="stylesheet" href="css/master.css" >
<script type="text/javascript" src="/system/components/jquery/jquery-1-7-1.js"> </script>
<script type="text/javascript">
    $(document).ready(function() {
        employeeList();
    });

function employeeList() {
    var jsonData =
    {
        "employee_name" : "Janet Programmer",
        "employee_id" : 10101,
        "hourly_rate" : 25.50
    };

    $('#container1').html(
        '<tr> <th class="right"> Employee name: </th>' +
        '<td class="left">' + jsonData.employee_name + '</td>' +
        '</tr>' +
        '<tr> <th class="right"> Employee ID: </th>' +
        '<td class="left">' + jsonData.employee_id + '</td>' +
        '</tr>' +
        '<tr> <th class="right"> Hourly rate: </th>' +
        '<td class="left">' + jsonData.hourly_rate + '</td>' +
        '</tr>'
    );
}
</script>
</head>

<body>

<h1> Staff Information Page </h1>

<table id="container1" style="width: 25%"> </table>

</body>
</html>

```

**FIGURE B-6** HTML for SQLAB03.html

# SQLAB04

- Example of JSON array of employees

| <b>Staff Information Page</b> |                |
|-------------------------------|----------------|
| <b>Employee name:</b>         | Jennifer Lasky |
| <b>Employee ID:</b>           | 10102          |
| <b>Hourly rate:</b>           | 31.25          |

FIGURE B-7 SQLAB04.html web page

---



```

<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="utf-8" />
<title> Appendix B - SQLAB04 </title>
<link type="text/css" rel="stylesheet" href="css/master.css" >
<script type="text/javascript" src="/system/components/jquery/jquery-1-7-1.js"> </script>
<script type="text/javascript">
    $(document).ready(function() {
        employeeList();
    });

function employeeList() {
    var jsonData =
    {
        "rows" :
        [ {
            "employee_name" : "Janet Programmer",
            "employee_id" : 10101,
            "hourly_rate" : 25.50
        },
        {
            "employee_name" : "Jennifer Lasky",
            "employee_id" : 10102,
            "hourly_rate" : 31.25
        }
        ]
    };

    $('#container1').html(
        '<tr> <th class="right"> Employee name: </th>' +
        '<td class="left">' + jsonData.rows[1].employee_name + '</td>' +
        '</tr>' +
        '<tr> <th class="right"> Employee ID: </th>' +
        '<td class="left">' + jsonData.rows[1].employee_id + '</td>' +
        '</tr>' +
        '<tr> <th class="right"> Hourly rate: </th>' +
        '<td class="left">' + jsonData.rows[1].hourly_rate + '</td>' +
        '</tr>'
    );
}
</script>
</head>

<body>
<h1> Staff Information Page </h1>

<table id="container1" style="width: 25%"> </table>
</body>
</html>

```

**FIGURE B-8** HTML for SQLAB04.html

# SQLAB05

- Looping through a JSON array

| <b>Staff Information Page</b> |                  |                    |                    |
|-------------------------------|------------------|--------------------|--------------------|
| <b>First name</b>             | <b>Last name</b> | <b>Employee ID</b> | <b>Hourly rate</b> |
| Janet                         | Programmer       | 10101              | 25.5               |
| Jennifer                      | Lasky            | 10102              | 31.25              |

FIGURE B-9 SQLAB05.html web page

```

<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="utf-8" />
<title> Appendix B - SQLAB05 </title>
<link type="text/css" rel="stylesheet" href="css/master.css" >
<script type="text/javascript" src="/system/components/jquery/jquery-1-7-1.js"> </script>
<script type="text/javascript">
    $(document).ready(function() {
        employeeList();
    });
    function employeeList() {
        var jsonData =
            {
                "rows":
                    [
                        {
                            "first_name" : "Janet",
                            "last_name" : "Programmer",
                            "employee_id" : 10101,
                            "hourly_rate" : 25.50
                        },
                        {
                            "first_name" : "Jennifer",
                            "last_name" : "Lasky",
                            "employee_id" : 10102,
                            "hourly_rate" : 31.25
                        }
                    ]
            };

        $('#container1').html(
            '<tr> <th class="left"> First name </th>' +
            '<th class="left"> Last name </th>' +
            '<th class="center"> Employee ID </th>' +
            '<th class="center"> Hourly rate </th>' +
            '</tr>'
        );

        $.each(jsonData.rows, function(index,value) {
            $('#container1').append(
                '<tr> <td class="left">' + value.first_name + '</td>' +
                '<td class="left">' + value.last_name + '</td>' +
                '<td class="center">' + value.employee_id + '</td>' +
                '<td class="center">' + value.hourly_rate + '</td>' +
                '</tr>'
            );
        });
    }
</script>
</head>
<body>
<h1> Staff Information Page </h1>
<table id="container1" style="width: 40%"> </table>
</body>
</html>

```

FIGURE B-10 HTML for SQLAB05.html

# SQLAB06

- Complete JSON example

| Customer Information     |                    |
|--------------------------|--------------------|
| <b>Customer name:</b>    | Sharon Customer    |
| <b>Office extension:</b> | 1234               |
| <b>Address:</b>          | 123 Main Street    |
| <b>City:</b>             | Toronto            |
| <b>State:</b>            | ON                 |
| <b>Postal code:</b>      | N6D 1J7            |
| <b>Office:</b>           | 416-555-1234       |
| <b>Mobile:</b>           | 489-555-7654       |
| <b>Fax:</b>              | 416-555-9987       |
| <b>Customer status:</b>  | Customer is active |

FIGURE B-11 SQLAB06.html web page

```

<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="utf-8" />
<title> Appendix B - SQLAB06 </title>
<link type="text/css" rel="stylesheet" href="css/master.css" >
<script type="text/javascript" src="/system/components/jquery/jquery-1-7-1.js"> </script>
<script type="text/javascript">
    $(document).ready(function() {
        customerList();
    });

function customerList() {
    var jsonData =
    {
        "customer_name"    : "Sharon Customer",
        "office_extension" : 1234,
        "active_status"   : true,
        "address" :
        {
            "street_address" : "123 Main Street",
            "city"           : "Toronto",
            "state_prov"     : "ON",
            "postal_code"   : "N6D 1J7"
        },
        "contact_numbers":
        [
            {
                "type" : "Office",
                "number" : "416-555-1234"
            },
            {
                "type" : "Mobile",
                "number" : "489-555-7654"
            },
            {
                "type" : "Fax",
                "number" : "416-555-9987"
            }
        ]
    };

    var v_customer_status = " ";
    if ( jsonData.active_status == true ) {
        v_active_status = "Customer is active";
    } else {
        v_active_status = "Customer is inactive";
    }

    $('#container1').html(
        '<tr> <th class="right"> Customer name:                </th>' +
        '<td class="left">' + jsonData.customer_name                + '</td>' +
        '</tr>' +
        '<tr> <th class="right"> Office extension:                </th>' +
        '<td class="left">' + jsonData.office_extension                + '</td>' +
        '</tr>' +
        '<tr> <th class="right"> Address:                </th>' +
        '<td class="left">' + jsonData.address.street_address        + '</td>' +
        '</tr>' +
        '<tr> <th class="right"> City:                </th>' +

```

```

        '<td class="left">' + jsonData.address.city          + '</td>' +
    '</tr>'
    '<tr> <th class="right"> State:                        </th>' +
        '<td class="left">' + jsonData.address.state_prov  + '</td>' +
    '</tr>'
    '<tr> <th class="right"> Postal code:                  </th>' +
        '<td class="left">' + jsonData.address.postal_code  + '</td>' +
    '</tr>'
    '<tr> <th class="right">' + jsonData.contact_numbers[0].type + ':' + '</th>' +
        '<td class="left">' + jsonData.contact_numbers[0].number + '</td>' +
    '</tr>'
    '<tr> <th class="right">' + jsonData.contact_numbers[1].type + ':' + '</th>' +
        '<td class="left">' + jsonData.contact_numbers[1].number + '</td>' +
    '</tr>'
    '<tr> <th class="right">' + jsonData.contact_numbers[2].type + ':' + '</th>' +
        '<td class="left">' + jsonData.contact_numbers[2].number + '</td>' +
    '</tr>'
    '<tr> <th class="right"> Customer status:                </th>' +
        '<td class="left">' + v_active_status                + '</td>' +
    '</tr>'
    );
}
</script>
</head>

<body>

<h1> Customer Information </h1>

<table id="container1" style="width: 25%"> </table>

</body>
</html>

```

**FIGURE B-12** HTML for SQLAB06.html

---

# SQL1102

- RPG build JSON data
- Empty container



FIGURE 11-4 SQL1102.html web page

---

```

<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="utf-8" />
<title> Chapter 11 - SQL1102 </title>
<link type="text/css" rel="stylesheet" href="css/master.css" >
<script type="text/javascript" src="/system/components/jquery/jquery-1-7-1.js"> </script>
<script type="text/javascript">
    $(document).ready(function()
    {
        buildTemps();
    });

    function buildTemps()
    {
        $.ajax({
            url: "SQL1102.rpgle",
            success: processData,
            error: errorAlert
        });
    }

    function processData(jsonData)
    {
        $('#container1').empty();
        $('#container1').html(
            jsonData.rows[0].fah + ' degrees Fahrenheit = ' +
            jsonData.rows[0].cel + ' degrees Celsius'
        );
    }

    function errorAlert(ehr, reason, ex) {
        alert("Request was not successful: " + reason + ex);
    }
</script>
</head>

<body>
<h1> Convert Fahrenheit to Celsius </h1>

<div id="container1"> </div>
</body>
</html>

```

**FIGURE 11-5** HTML for SQL1102

---



```

<%@ language="RPGLE" %>
<%
  H decredit('0.')
  D TotalRows      S          10U 0 inz
  D RowStr         S          4096 inz varying
  D JsonData       S          4096 inz varying
  D Fahrenheit     S           5I 0 inz
  D Celsius        S           5I 0 inz

  /free
  SetContentType('application/json; charset=utf-8');

  Fahrenheit = 212;
  Celsius = (Fahrenheit -32) * 5 / 9;

  TotalRows = 1;
  RowStr =
    '{+
      "fah":' + encodeJsonStr(%Char(Fahrenheit)) + ', +
      "cel":' + encodeJsonStr(%Char(Celsius)) +
    }';

  JsonData = '{ "totalRows": ' + %Char(TotalRows) + ', +
              "rows": [' + RowStr + ' ] }';

  ResponseWrite(JsonData);

  *INLR = *ON;
  Return;
/end-free
%>

```

FIGURE 11-6 RPGLE for SQL1102

# SQL1103

- Build JSON array in RPG program
- Loop through JSON data sent from RPG program

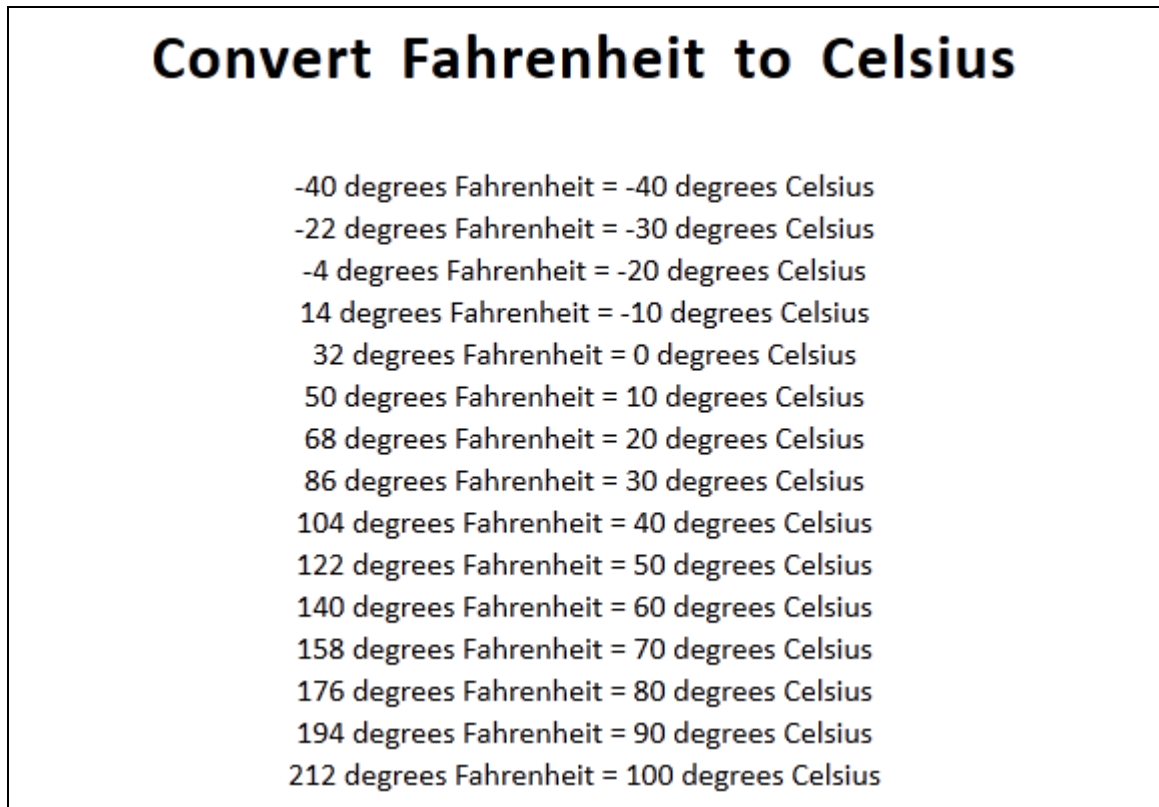


FIGURE 11-7 SQL1103.html web page

```

<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="utf-8" />
<title> Chapter 11 - SQL1103 </title>
<link type="text/css" rel="stylesheet" href="css/master.css" >
<script type="text/javascript" src="/system/components/jquery/jquery-1-7-1.js"> </script>
<script type="text/javascript">
    $(document).ready(function()
    {
        buildTemps();
    });

    function buildTemps()
    {
        $.ajax({
            url: "SQL1103.rpgle",
            success: processData,
            error: errorAlert
        });
    }

    function processData(jsonData)
    {
        $('#container1').empty();

        $.each(jsonData.rows, function(i, value) {
            $('#container1').append(
                value.fah + ' degrees Fahrenheit = ' +
                value.cel + ' degrees Celsius' + '<br />'
            );
        });

    }

    function errorAlert(ehr, reason, ex) {
        alert("Request was not successful: " + reason + ex);
    }
</script>
</head>

<body>
<h1> Convert Fahrenheit to Celsius </h1>

<div id="container1" style="width: 25%"> </div>
</body>
</html>

```

**FIGURE 11-8** HTML for SQL1103

```

<%@ language="RPGLE" %>
<%
  H decredit('0.')
  D TotalRows      S           10U 0 inz
  D RowStr         S           4096  inz varying
  D JsonData       S           4096  inz varying
  D Comma          S           1     inz varying
  D StartFah      S           5I 0  Inz
  D EndFah        S           5I 0  Inz
  D Increment     S           5I 0  Inz
  D Fahrenheit    S           5I 0  inz
  D Celsius       S           5I 0  inz

  /free
  SetContentType('application/json; charset=utf-8');

  StartFah = -40;
  EndFah = 212;
  Increment = 18;

  For Fahrenheit = StartFah to EndFah by Increment;
    TotalRows += 1;
    Celsius = (Fahrenheit -32) * 5 / 9;
    RowStr = RowStr + Comma +
      '{+
        "fah":' + encodeJsonStr(%Char(Fahrenheit)) + ', +
        "cel":' + encodeJsonStr(%Char(Celsius)) +
      }';

    Comma = ',';
  EndFor;

  JsonData = '{ "totalRows": ' + %Char(TotalRows) + ', +
    "rows": [' + RowStr + ' ] }';
  ResponseWrite(JsonData);
  *INLR = *ON;

  *INLR = *ON;
  Return;
/end-free
%>

```

**FIGURE 11-9** RPGLE for SQL1103

# SQL1104

- Building an HTML table from theJSON data

**Convert Fahrenheit to Celsius**

| Fahrenheit | Celsius |
|------------|---------|
| -40        | -40     |
| -22        | -30     |
| -4         | -20     |
| 14         | -10     |
| 32         | 0       |
| 50         | 10      |
| 68         | 20      |
| 86         | 30      |
| 104        | 40      |
| 122        | 50      |
| 140        | 60      |
| 158        | 70      |
| 176        | 80      |
| 194        | 90      |
| 212        | 100     |

FIGURE 11-10 SQL1104.html web page

---

```

<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="utf-8" />
<title> Chapter 11 - SQL1104 </title>
<link type="text/css" rel="stylesheet" href="css/master.css" >
<link rel="stylesheet" type="text/css" href="css/rowColors.css" />
<script type="text/javascript" src="/system/components/jquery/jquery-1-7-1.js"> </script>
<script type="text/javascript">
    $(document).ready(function() {
        buildTemps();
    });

    function buildTemps()
    {
        $.ajax({
            url: "SQL1104.rpgle",
            success: processData,
            error: errorAlert
        });
    }

    function processData(jsonData)
    {
        $('#container1').empty();
        $('#container1').html(
            '<tr> <th class="center"> Fahrenheit </th>' +
            '<th class="center"> Celsius </th>' +
            '</tr>'

        );

        $.each(jsonData.rows, function(i, value) {
            $('#container1').append(
                '<tr> <td class="center">' + value.fah + '</td>' +
                '<td class="center">' + value.cel + '</td>' +
                '</tr>'

            );
        });
    }

    function errorAlert(ehr, reason, ex) {
        alert("Request was not successful: " + reason + ex);
    }
</script>
</head>

<body>
<h1> Convert Fahrenheit to Celsius </h1>

<table id="container1" style="width: 15%" class="rowColor"> </table>
</body>
</html>

```

**FIGURE 11-11** HTML for SQL1104

```

<%@ language="RPGLE" %>
<%
  H decedit('0.')
  D TotalRows      S              10U 0 inz
  D RowStr         S             4096  inz varying
  D JsonData       S             4096  inz varying
  D Comma          S              1    inz varying
  D StartFah      S              5I 0  Inz
  D EndFah        S              5I 0  Inz
  D Increment     S              5I 0  Inz
  D Fahrenheit    S              5I 0  inz
  D Celsius       S              5I 0  inz

  /free
  SetContentType('application/json; charset=utf-8');

  StartFah = -40;
  EndFah = 212;
  Increment = 18;

  For Fahrenheit = StartFah to EndFah by Increment;
    TotalRows += 1;
    Celsius = (Fahrenheit -32) * 5 / 9;
    RowStr = RowStr + Comma +
      '{+
        "fah":"' + encodeJsonStr(%Char(Fahrenheit)) + ', ' +
        "cel":"' + encodeJsonStr(%Char(Celsius)) +
      '}'';

    Comma = ',';
  EndFor;

  JsonData = '{ "totalRows": ' + %Char(TotalRows) + ', ' +
    "rows": [' + RowStr + ' ] }';
  ResponseWrite(JsonData);
  *INLR = *ON;

  *INLR = *ON;
  Return;
/end-free
%>

```

**FIGURE 11-12** RPGLE for SQL1104

# SQL1105

- Input parameters
- Passing parameters on AJAX call to RPG program

## Convert Fahrenheit to Celsius

Start Fahrenheit:  End Fahrenheit:  Increment:

| Fahrenheit | Celsius |
|------------|---------|
| -40        | -40     |
| -22        | -30     |
| -4         | -20     |
| 14         | -10     |
| 32         | 0       |
| 50         | 10      |
| 68         | 20      |
| 86         | 30      |
| 104        | 40      |
| 122        | 50      |
| 140        | 60      |
| 158        | 70      |
| 176        | 80      |
| 194        | 90      |
| 212        | 100     |

FIGURE 11-13 SQL1105.html web page



```

<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="utf-8" />
<title> Chapter 11 - SQL1105 </title>
<link type="text/css" rel="stylesheet" href="css/master.css" >
<link rel="stylesheet" type="text/css" href="css/rowColors.css" />
<script type="text/javascript" src="/system/components/jquery/jquery-1-7-1.js"> </script>
<script type="text/javascript">
    $(document).ready(function() {
        $('#input[type=text]:first').focus();

        $("#btnConvert").click(buildTemps);
    });

    function buildTemps()
    {
        var parms = {
            startFah: $("#startfah").val(),
            endFah:   $("#endfah").val(),
            increment: $("#increment").val()
        }

        $.ajax({
            url: "SQL1105.rpgle",
            data: parms,
            success: processData,
            error: errorAlert
        });
    }

    function processData(jsonData)
    {
        $('#container1').empty();
        $('#container1').html(
            '<tr> <th class="center"> Fahrenheit </th>' +
            '<th class="center"> Celsius </th>' +
            '</tr>'
        );

        $.each(jsonData.rows, function(i, value) {
            $('#container1').append(
                '<tr> <td class="center">' + value.fah + '</td>' +
                '<td class="center">' + value.cel + '</td>' +
                '</tr>'
            );
        });
    }

    function errorAlert(ehr, reason, ex) {
        alert("Request was not successful: " + reason + ex);
    }
</script>
</head>
<body>

```

```
<h1> Convert Fahrenheit to Celsius </h1>

<label for="startfah"> Start Fahrenheit: </label>
<input type="text" id="startfah" maxlength="3" />

<label for="endfah"> End Fahrenheit: </label>
<input type="text" id="endfah"    maxlength="3" />

<label for="increment"> Increment: </label>
<input type="text" id="increment" maxlength="3" />

<button type="button" id="btnConvert"> Convert </button>

<table id="container1" style="width: 15%" class="rowColor"> </table>

</body>
</html>
```

**FIGURE 11-14** HTML for SQL1105

---

```

<%@ language="RPGLE" %>
<%
  H decredit('0.')
  D TotalRows      S              10U 0 inz
  D RowStr         S             4096  inz varying
  D JsonData       S             4096  inz varying
  D Comma          S              1    inz varying
  D StartFah       S              5I 0  inz
  D EndFah         S              5I 0  inz
  D Increment      S              5I 0  inz
  D Fahrenheit     S              5I 0  inz
  D Celsius        S              5I 0  inz

  /free
  SetContentType('application/json; charset=utf-8');

  getParms();

  For Fahrenheit = StartFah to EndFah by Increment;
    TotalRows += 1;
    Celsius = (Fahrenheit -32) * 5 / 9;
    RowStr = RowStr + Comma +
      '{+
        "fah":' + encodeJsonStr(%Char(Fahrenheit)) + ', +
        "cel":' + encodeJsonStr(%Char(Celsius))    +
      }';

    Comma = ',';
  EndFor;

  JsonData = '{ "totalRows": ' + %Char(TotalRows) + ', +
              "rows": [' + RowStr + ' ] }';
  ResponseWrite(JsonData);
  *INLR = *ON;

  Return;
/end-free

P getParms      B
/free
  StartFah = reqNum('startFah');
  EndFah = reqNum('endFah');
  Increment = reqNum('increment');
/end-free
P getParms      E
%>

```

FIGURE 11-15 RPGLE for SQL1105



# SQL1201

- AJAX
- Retrieving JSON data from an RPG program
- Formatting numeric data

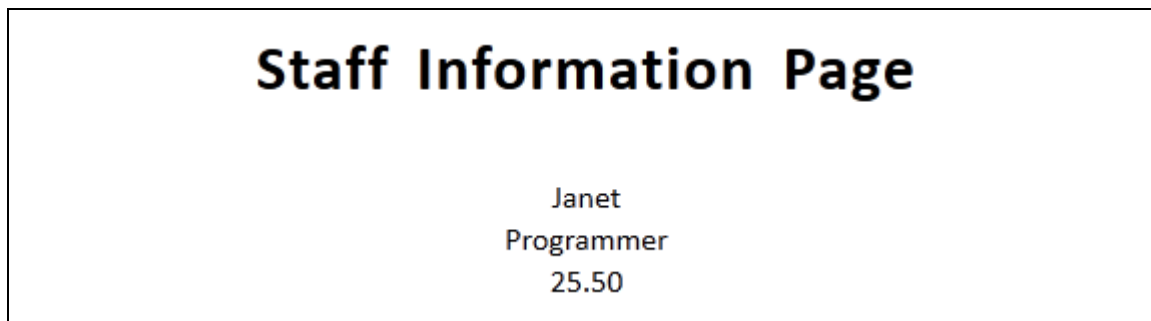


FIGURE 12-1 SQL1201.html web page

---

```

<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="utf-8" />
<title> Chapter 12 - SQL1201 </title>
<link type="text/css" rel="stylesheet" href="css/master.css" >
<script type="text/javascript" src="/system/components/jquery/jquery-1-7-1.js"> </script>
<script type="text/javascript">
    $(document).ready(function()
    {
        buildList();
    });

    function buildList()
    {
        $.ajax({
            url: "SQL1201.rpgle",
            success: processData,
            error: errorAlert
        });
    }

    function processData(jsonData)
    {
        $('#container1').empty();
        $('#container1').html(
            jsonData.rows[0].first_name + '<br />' +
            jsonData.rows[0].last_name + '<br />' +
            jsonData.rows[0].hourly_rate.toFixed(2)
        );
    }

    function errorAlert(ehr, reason, ex) {
        alert("Request was not successful: " + reason + ex);
    }
</script>
</head>

<body>
<h1> Staff Information Page </h1>

<div id="container1" style="width: 25%"> </div>
</body>
</html>

```

**FIGURE 12-2** HTML for SQL1201

---

```

<%@ language="SQLRPGLE" %>
<%
  H decredit('0.')
  D SearchValue      S              10I 0 inz
  D TotalRows       S              5U 0 inz
  D RowStr           S             4096  inz varying
  D JsonData         S             4096  inz varying
  D FirstName        S              20A  inz varying
  D LastName         S              20A  inz varying
  D HourlyRate       S              5P 2 inz
/free
  SetContentType('application/json; charset=utf-8');

  FirstName = 'Janet';
  LastName = 'Programmer';
  HourlyRate = 25.50;

  TotalRows = 1;
  RowStr =
    '{+
      "first_name":"' + encodeJsonStr(FirstName)          + '", +
      "last_name":"' + encodeJsonStr(LastName)            + '", +
      "hourly_rate":"' + encodeJsonStr(%Char(HourlyRate)) +
    }';
  JsonData = '{ "totalRows": ' + %Char(TotalRows) + ', +
              "rows": [' + RowStr + ' ] }';
  ResponseWrite(JsonData);

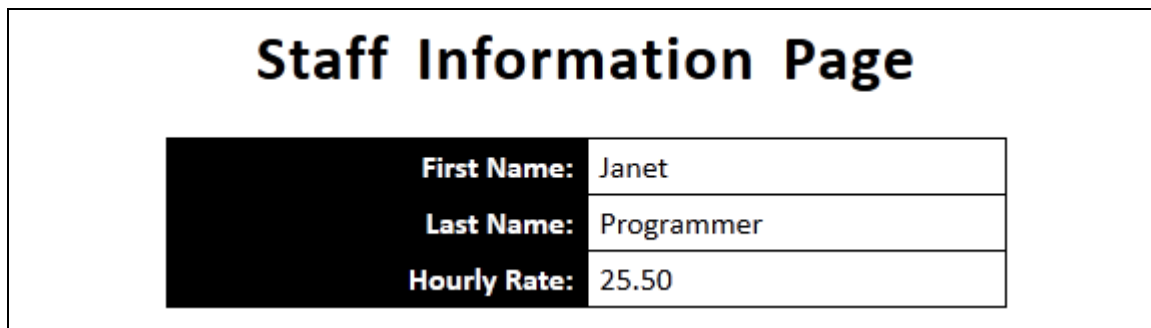
  *INLR = *ON;
  Return;
/end-free
%>

```

FIGURE 12-3 RPGLE for SQL1201

# SQL1202

- Build an HTML table from JSON data



The image shows a screenshot of a web page titled "Staff Information Page". The page contains a table with three rows of data. The first column of the table is highlighted in black. The data in the table is as follows:

| <b>First Name:</b>  | Janet      |
|---------------------|------------|
| <b>Last Name:</b>   | Programmer |
| <b>Hourly Rate:</b> | 25.50      |

FIGURE 12-4 SQL1202.html web page

---



```

<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="utf-8" />
<title> Chapter 12 - SQL1201 </title>
<link type="text/css" rel="stylesheet" href="css/master.css" >
<script type="text/javascript" src="/system/components/jquery/jquery-1-7-1.js"> </script>
<script type="text/javascript">
    $(document).ready(function()
    {
        buildList();
    });

    function buildList()
    {
        $.ajax({
            url: "SQL1202.rpgle",
            success: processData,
            error: errorAlert
        });
    }

    function processData(jsonData)
    {
        $('#container1').empty();
        $('#container1').html(
            '<tr> <th class="right"> First Name: </th>' +
            '<td class="left">' + jsonData.rows[0].first_name + '</td>' +
            '</tr>' +
            '<tr> <th class="right"> Last Name: </th>' +
            '<td class="left">' + jsonData.rows[0].last_name + '</td>' +
            '</tr>' +
            '<tr> <th class="right"> Hourly Rate: </th>' +
            '<td class="left">' + jsonData.rows[0].hourly_rate.toFixed(2) + '</td>' +
            '</tr>'
        );
    }

    function errorAlert(ehr, reason, ex) {
        alert("Request was not successful: " + reason + ex);
    }
</script>
</head>

<body>
<h1> Staff Information Page </h1>

<table id="container1" style="width: 25%"> </table>
</body>
</html>

```

FIGURE 12-5 HTML for SQL1202

```

<%@ language="SQLRPGLE" %>
<%
  H decedit('0.')
  D SearchValue      S              10I 0 inz
  D TotalRows        S              5U 0 inz
  D RowStr            S             4096  inz varying
  D JsonData          S             4096  inz varying
  D FirstName         S              20A  inz varying
  D LastName          S              20A  inz varying
  D HourlyRate        S              5P 2 inz
/free
  SetContentType('application/json; charset=utf-8');

  FirstName = 'Janet';
  LastName = 'Programmer';
  HourlyRate = 25.50;

  TotalRows = 1;
  RowStr =
    '{+
      "first_name":"' + encodeJsonStr(FirstName)      + '" , +
      "last_name":"' + encodeJsonStr(LastName)        + '" , +
      "hourly_rate":"' + encodeJsonStr(%Char(HourlyRate)) +
    }';
  JsonData = '{ "totalRows": ' + %Char(TotalRows) + ', +
              "rows": [' + RowStr + ' ] }';
  ResponseWrite(JsonData);

  *INLR = *ON;
  Return;
/end-free
%>

```

**FIGURE 12-6** RPGLE for SQL1202

# SQL1203

- Embedded SQL
- Search

| Staff Information Page |            |
|------------------------|------------|
| <b>First Name:</b>     | Janet      |
| <b>Last Name:</b>      | Programmer |
| <b>Hourly Rate:</b>    | 25.50      |

FIGURE 12-7 SQL1203.html web page

---

```

<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="utf-8" />
<title> Chapter 12 - SQL1201 </title>
<link type="text/css" rel="stylesheet" href="css/master.css" >
<script type="text/javascript" src="/system/components/jquery/jquery-1-7-1.js"> </script>
<script type="text/javascript">
    $(document).ready(function()
    {
        buildList();
    });

    function buildList()
    {
        $.ajax({
            url: "SQL1203.rpgle",
            success: processData,
            error: errorAlert
        });
    }

    function processData(jsonData)
    {
        $('#container1').empty();
        $('#container1').html(
            '<tr> <th class="right"> First Name:                </th>' +
            '<td class="left">' + jsonData.rows[0].first_name + '</td>' +
            '</tr>' +
            '<tr> <th class="right"> Last Name:                    </th>' +
            '<td class="left">' + jsonData.rows[0].last_name + '</td>' +
            '</tr>' +
            '<tr> <th class="right"> Hourly Rate:                  </th>' +
            '<td class="left">' + jsonData.rows[0].hourly_rate.toFixed(2) + '</td>' +
            '</tr>'
        );
    }

    function errorAlert(ehr, reason, ex) {
        alert("Request was not successful: " + reason + ex);
    }
</script>
</head>

<body>
<h1> Staff Information Page </h1>

<table id="container1" style="width: 25%"> </table>
</body>
</html>

```

**FIGURE 12-8** HTML for SQL1203

```
<%@ language="SQLRPGLE" %>
```

```
<%
```

```
  H decedit('0.')
```

```
  D SearchValue      S              10I 0 inz
```

```
  D TotalRows       S              5U 0 inz
```

```
  D RowStr          S             4096  inz varying
```

```
  D JsonData       S             4096  inz varying
```

```
  D FirstName      S              20A  inz varying
```

```
  D LastName       S              20A  inz varying
```

```
  D HourlyRate     S              5P 2  inz
```

```
  /free
```

```
    SetContentType('application/json; charset=utf-8');
```

```
    SearchValue = 10101;
```

```
    EXEC SQL
```

```
    SELECT  first_name, last_name, hourly_rate
```

```
           INTO :FirstName, :LastName, :HourlyRate
```

```
           FROM employees
```

```
           WHERE employee_id = :SearchValue;
```

```
    TotalRows = 1;
```

```
    RowStr =
```

```
      '{+
```

```
        "first_name":"' + encodeJsonStr(FirstName)      + '" , +
```

```
        "last_name":"' + encodeJsonStr(LastName)        + '" , +
```

```
        "hourly_rate":"' + encodeJsonStr(%Char(HourlyRate)) +
```

```
      '}';
```

```
    JsonData = '{ "totalRows": ' + %Char(TotalRows) + ', +
```

```
                 "rows": [' + RowStr + ' ] }';
```

```
    ResponseWrite(JsonData);
```

```
    *INLR = *ON;
```

```
    Return;
```

```
  /end-free
```

```
%>
```

FIGURE 12-9 RPGLE for SQL1203

# SQL1204

- Input Field
- Sending parameters to RPG program
- Retrieving parameter values in RPG program

## Staff Information Page

Employee ID:

|                     |            |
|---------------------|------------|
| <b>First Name:</b>  | Janet      |
| <b>Last Name:</b>   | Programmer |
| <b>Hourly Rate:</b> | 25.50      |

FIGURE 12-10 SQL1204.html web page

---

```

<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="utf-8" />
<title> Chapter 12 - SQL1202 </title>
<link type="text/css" rel="stylesheet" href="css/master.css" >
<script type="text/javascript" src="/system/components/jquery/jquery-1-7-1.js"> </script>
<script type="text/javascript">
$(document).ready(function() {
    $("input[type=text]:first").focus();

    $("#btnSearch").click(buildList);
});

function buildList()
{
    var parms = {
        empid: $("input#empid").val()
    }

    $.ajax({
        url: "SQL1204.rpgle",
        data: parms,
        success: processData,
        error: errorAlert
    });
}

function processData(jsonData)
{
    $('#container1').empty();
    $('#container1').html(
        '<tr> <th class="right"> First Name: </th>' +
        '<td class="left">' + jsonData.rows[0].first_name + '</td>' +
        '</tr>' +
        '<tr> <th class="right"> Last Name: </th>' +
        '<td class="left">' + jsonData.rows[0].last_name + '</td>' +
        '</tr>' +
        '<tr> <th class="right"> Hourly Rate: </th>' +
        '<td class="left">' + jsonData.rows[0].hourly_rate.toFixed(2) + '</td>' +
        '</tr>'
    );
}

function errorAlert(ehr, reason, ex) {
    alert("Request was not successful: " + reason + ex);
}
</script>
</head>

<body>
<h1> Staff Information Page </h1>

<label for="empid"> Employee ID: </label>
<input type="text" id="empid" maxlength="5" />

<button type="button" id="btnSearch" > Search </button>

```

```

<table id="container1" style="width: 25%"> </table>
</body>
</html>

```

FIGURE 12-11 HTML for SQL1204

```

<%@ language="SQLRPGLE" %>
<%
  H decredit('0.')
  D SearchValue      S              10I 0 inz
  D TotalRows        S              5U 0 inz
  D RowStr            S              4096  inz varying
  D JsonData          S              4096  inz varying
  D FirstName         S              20A   inz varying
  D LastName          S              20A   inz varying
  D HourlyRate        S              5P 2  inz

  /free
  SetContentType('application/json; charset=utf-8');

  SearchValue = reqNum('empid');

  EXEC SQL
  SELECT  first_name, last_name, hourly_rate
  INTO    :FirstName, :LastName, :HourlyRate
  FROM    employees
  WHERE   employee_id = :SearchValue;

  TotalRows = 1;

  RowStr =
  '{+
  "first_name":"' + encodeJsonStr(FirstName)      + '", +
  "last_name":"' + encodeJsonStr(LastName)        + '", +
  "hourly_rate":"' + encodeJsonStr(%Char(HourlyRate)) +
  '}';

  JsonData = '{ "totalRows": ' + %Char(TotalRows) + ', +
  "rows": [' + RowStr + ' ] }';
  ResponseWrite(JsonData);

  *INLR = *ON;
  Return;
/end-free
%>

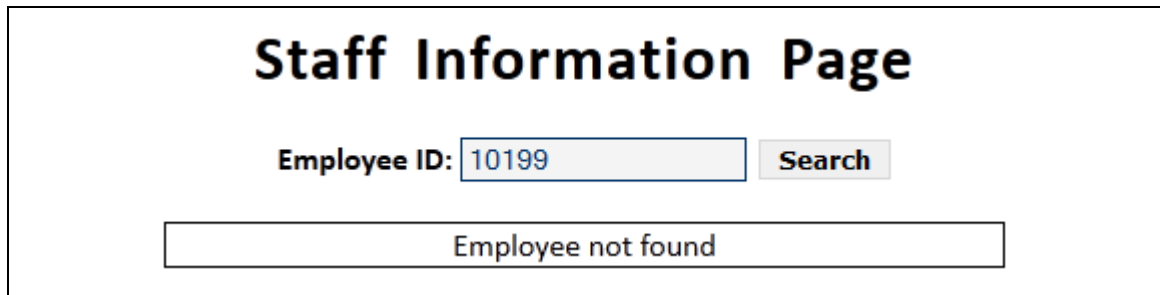
```

FIGURE 12-12 RPGLE for SQL1204



# SQL1205

- Error message – Row Not Found



**Staff Information Page**

Employee ID:

FIGURE 12-13 SQL1205.html web page

---

```

<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="utf-8" />
<title> Chapter 12 - SQL1205 </title>
<link type="text/css" rel="stylesheet" href="css/master.css" >
<script type="text/javascript" src="/system/components/jquery/jquery-1-7-1.js"> </script>
<script type="text/javascript">
$(document).ready(function() {
    $("input[type=text]:first").focus();

    $("#btnSearch").click(buildList);
});

function buildList()
{
    var parms = {
        empid: $("input#empid").val()
    }

    $.ajax({
        url: "SQL1205.rpgle",
        data: parms,
        success: processData,
        error: errorAlert
    });
}

function processData(jsonData)
{
    $('#container1').empty();

    if ( jsonData.totalRows == 0 ) {
        $("#container1").html('Employee not found');
    } else {
        $('#container1').html(
            '<tr> <th class="right"> First Name: </th>' +
            '<td class="left">' + jsonData.rows[0].first_name + '</td>' +
            '</tr>' +
            '<tr> <th class="right"> Last Name: </th>' +
            '<td class="left">' + jsonData.rows[0].last_name + '</td>' +
            '</tr>' +
            '<tr> <th class="right"> Hourly Rate: </th>' +
            '<td class="left">' + jsonData.rows[0].hourly_rate.toFixed(2) + '</td>' +
            '</tr>'
        );
    }
}

function errorAlert(ehr, reason, ex) {
    alert("Request was not successful: " + reason + ex);
}
</script>
</head>

<body>
<h1> Staff Information Page </h1>

<label for="empid"> Employee ID: </label>

```

```

<input type="text" id="empid" maxlength="5" />

<button type="button" id="btnSearch" > Search </button>

<table id="container1" style="width: 25%"> </table>
</body>
</html>

```

FIGURE 12-14 HTML for SQL1205

```

<%@ language="SQLRPGLE" %>
<%
  H decedit('0.')
  D SearchValue      S              10I 0 inz
  D TotalRows       S              5U 0 inz
  D RowStr          S              4096  inz varying
  D JsonData        S              4096  inz varying
  D FirstName       S              20A   inz varying
  D LastName        S              20A   inz varying
  D HourlyRate      S              5P 2  inz
  D SUCCESSFUL      C              Const('00000')

  /free
  SetContentType('application/json; charset=utf-8');

  SearchValue = reqNum('empid');

  EXEC SQL
  SELECT  first_name, last_name, hourly_rate
  INTO    :FirstName, :LastName, :HourlyRate
  FROM    employees
  WHERE   employee_id = :SearchValue;

If SQLSTATE = SUCCESSFUL;

  TotalRows = 1;
  RowStr =
  '{+
  "first_name":"' + encodeJsonStr(FirstName)      + '" , +
  "last_name":"' + encodeJsonStr(LastName)        + '" , +
  "hourly_rate":"' + encodeJsonStr(%Char(HourlyRate)) +
  '}';
  EndIf;

  JsonData = '{ "totalRows": ' + %Char(TotalRows) + ', +
  "rows": [' + RowStr + ' ] }';
  ResponseWrite(JsonData);

  *INLR = *ON;
  Return;
/end-free
%>

```

FIGURE 12-15 RPGLE for SQL1205



# SQL1206

- SQL JOIN

**Staff Information Page**

Employee ID:

|                     |                  |
|---------------------|------------------|
| <b>Store:</b>       | Toronto Downtown |
| <b>First Name:</b>  | Janet            |
| <b>Last Name:</b>   | Programmer       |
| <b>Hourly Rate:</b> | 25.50            |

FIGURE 12-16 SQL1206.html web page

---

```

<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="utf-8" />
<title> Chapter 12 - SQL1206 </title>
<link type="text/css" rel="stylesheet" href="css/master.css" >
<script type="text/javascript" src="/system/components/jquery/jquery-1-7-1.js"> </script>
<script type="text/javascript">
$(document).ready(function() {
    $("input[type=text]:first").focus();

    $("#btnSearch").click(buildList);
});

function buildList()
{
    var parms = {
        empid: $("input#empid").val()
    }

    $.ajax({
        url: "SQL1206.rpgle",
        data: parms,
        success: processData,
        error: errorAlert
    });
}

function processData(jsonData)
{
    $('#container1').empty();
    if ( jsonData.totalRows == 0 ) {
        $("#container1").html('Employee not found');
    } else {
        $('#container1').html(
            '<tr> <th class="right"> Store:      </th>' +
                '<td class="left">' + jsonData.rows[0].store_name + '</td>' +
            '</tr>' +
            '<tr> <th class="right"> First Name:      </th>' +
                '<td class="left">' + jsonData.rows[0].first_name + '</td>' +
            '</tr>' +
            '<tr> <th class="right"> Last Name:      </th>' +
                '<td class="left">' + jsonData.rows[0].last_name + '</td>' +
            '</tr>' +
            '<tr> <th class="right"> Hourly Rate:      </th>' +
                '<td class="left">' + jsonData.rows[0].hourly_rate.toFixed(2) + '</td>' +
            '</tr>'
        );
    }
}

function errorAlert(ehr, reason, ex) {
    alert("Request was not successful: " + reason + ex);
}
</script>
</head>

<body>
<h1> Staff Information Page </h1>

```

```

<label for="empid"> Employee ID: </label>
<input type="text" id="empid" maxlength="5" />

<button type="button" id="btnSearch" > Search </button>

<table id="container1" style="width: 25%"> </table>
</body>
</html>

```

FIGURE 12-17 HTML for SQL1206

```

<%@ language="SQLRPGLE" %>
<%
    H decredit('0.')
    D SearchValue      S              10I 0 inz
    D TotalRows       S              5U 0 inz
    D RowStr           S              4096  inz varying
    D JsonData        S              4096  inz varying
    D FirstName       S              20A   inz varying
    D LastName        S              20A   inz varying
    D HourlyRate      S              5P 2  inz
    D StoreName       S              20A   inz varying
    D SUCCESSFUL      C              Const('00000')

    /free
    SetContentType('application/json; charset=utf-8');

    SearchValue = reqNum('empid');

    EXEC SQL
    SELECT  first_name, last_name, hourly_rate, store_name
    INTO    :FirstName, :LastName, :HourlyRate, :StoreName
    FROM    employees e JOIN stores s
    ON      e.store_id = s.store_id
    WHERE   employee_id = :SearchValue;

    If SQLSTATE = SUCCESSFUL;
    TotalRows = 1;
    RowStr =
    '{+
      "first_name": "' + encodeJsonStr(FirstName)           + '", +
      "last_name": "' + encodeJsonStr(LastName)             + '", +
      "hourly_rate": ' + encodeJsonStr(%Char(HourlyRate)) + ', +
      "store_name": "' + encodeJsonStr(StoreName)           + '" +
    }';
    EndIf;

    JsonData = '{ "totalRows": ' + %Char(TotalRows) + ', +
      "rows": [' + RowStr + ' ] }';
    ResponseWrite(JsonData);

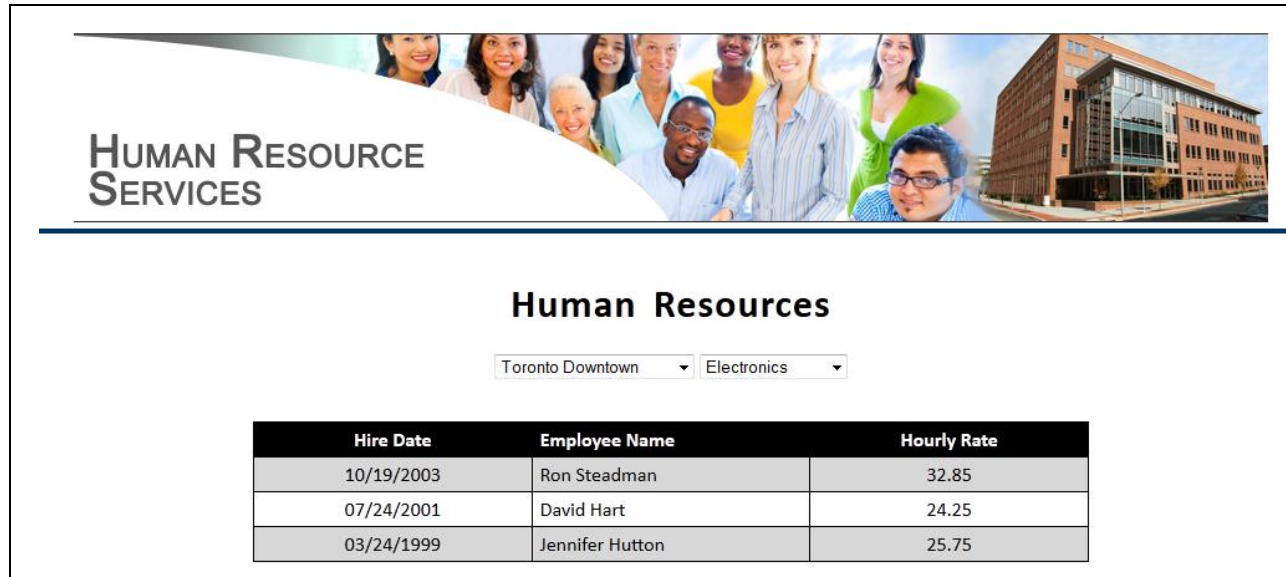
    *INLR = *ON;
    Return;
/end-free
%>

```

FIGURE 12-18 RPGLE for SQL1206

# SQL1207

- Using a Cursor
- Building dropdown lists



The screenshot shows a web page for 'Human Resource SERVICES'. The header features a banner with a group of diverse people and a building. Below the banner, the title 'Human Resources' is centered. Underneath the title are two dropdown menus: 'Toronto Downtown' and 'Electronics'. Below the dropdowns is a table with three columns: 'Hire Date', 'Employee Name', and 'Hourly Rate'. The table contains three rows of data.

| Hire Date  | Employee Name   | Hourly Rate |
|------------|-----------------|-------------|
| 10/19/2003 | Ron Steadman    | 32.85       |
| 07/24/2001 | David Hart      | 24.25       |
| 03/24/1999 | Jennifer Hutton | 25.75       |

FIGURE 12-19 SQL1207.html web page



```

!DOCTYPE html>
<html lang="en">
<head>
<meta charset="utf-8" />
<title> Chapter 12 - SQL1207 </title>
<link type="text/css" rel="stylesheet" href="css/master.css" >
<link href="css/rowColors.css" type="text/css" rel="stylesheet" />
<script type="text/javascript" src="/system/components/jquery/jquery-1-7-1.js"> </script>
<script type="text/javascript" src="/Scripts/getStores.js"> </script>
<script type="text/javascript" src="/Scripts/getDepts.js"> </script>
<script type="text/javascript">
$(document).ready(function() {
    getStores();
    getDepts();

    $("#storeList, #deptList").change(buildEmployeeList);
});

function buildEmployeeList() {
    var parms = {
        store: $("#storeList").val(),
        dept : $("#deptList").val()
    }

    $.ajax({
        url: "SQL1207.rpgle",
        data: parms,
        success: processData,
        error: errorAlert
    });
}

function processData(jsonData)
{
    if ( jsonData.totalRows == 0 ) {
        $('#container1').html(('No Employees found'));
    } else {
        $('#container1').html(
            '<tr> <th class="center"> Hire Date </th>' +
            '<th class="left"> Employee Name </th>' +
            '<th class="center"> Hourly Rate </th>' +
            '</tr>'
        );

        $.each(jsonData.rows, function(index, value) {
            $('#container1').append(
                '<tr> <td class="center">' + value.hire_date + '</td>' +
                '<td class="left">' + value.full_name + '</td>' +
                '<td class="center">' + value.hourly_rate.toFixed(2) + '</td>' +
                '</tr>'
            );
        });
    }
}

function errorAlert(ehr, reason, ex) {

```

```

    alert("Request was not successful: " + reason + ex);
}
</script>
</head>

<body>
<div id="logo">  </div>
<h1> Human Resources </h1>

<select id="storeList"> </select>

<select id="deptList"> </select>

<table id="container1" style="width: 40%" class="rowColor"> </table>

</body>
</html>

```

**FIGURE 12-20 HTML for SQL1207**

```

<%@ language="RPGLE" %>
<%
    D startRow      C              1
    D maxRows      C              -1
    D sqlCmd       S              8192  varying

    /free

    SetContentType('application/json; charset=utf-8');

    sqlCmd = ( '
        SELECT store_id, store_name
        FROM stores
        ORDER BY store_name
        FOR READ ONLY
    ');

    SQL_Execute(
        I_EXTJSMETA:
        sqlCmd:
        maxRows:
        startRow
    );

    *INLR = *ON;
    return;
%>

```

**FIGURE 12-21 RPGLE for getStores**

```

<%@ language="SQLRPGLE" %>
<%
    H decEdit('0.') datFmt(*USA)

    D TotalRows      S              10U 0 inz
    D RowStr         S              4096 inz varying
    D Comma         S                1  inz varying
    D JsonData      S              4096 inz varying
    D FirstName     S               20A  inz varying
    D LastName      S               20A  inz varying
    D FullName      S               40A  inz varying
    D HireDate      S                D   inz
    D HourlyRate    S               5P 2 inz
    D StoreID       S                5I 0
    D DeptID        S                5I 0
    D MoreRows      S                N   Inz('1')
    D YES           C                Const('1')
    D NO            C                Const('0')

/free
    SetContentType('application/json; charset=utf-8');

    getParms();
    DeclareCursor();
    BuildJson();

    *INLR = *ON;
    Return;
/end-free

//-----
P DeclareCursor    B
/free
EXEC SQL
    DECLARE      EmpCursor CURSOR FOR
    SELECT      first_name, last_name, hire_date, hourly_rate
    FROM        employees
    WHERE       store_id = :StoreID AND department_id = :DeptID
    ORDER BY   hire_date DESC, last_name, first_name
    FOR READ ONLY;
/end-free
P DeclareCursor    E

//-----
P BuildJson        B
/free
EXEC SQL OPEN EmpCursor;

Clear TotalRows;
FetchNext();
DoW (MoreRows = YES);
    TotalRows += 1;
    FullName = %Trim(FirstName) + ' ' + %Trim(LastName);
    RowStr = RowStr + Comma +
        '{+
        "hire_date":"' + encodeJsonStr(%Char(HireDate)) + '", +
        "full_name":"' + encodeJsonStr(FullName) + '", +
        "hourly_rate":"' + encodeJsonStr(%Char(HourlyRate)) +
        '}'';

```

```

        Comma = ',';
        FetchNext();
    Enddo;

    JsonData = '{ "totalRows": ' + %Char(TotalRows) + ', +
                "rows": [' + RowStr + ' ] }';
    ResponseWrite(JsonData);

    EXEC SQL CLOSE EmpCursor;
/end-free
P BuildJson          E

//-----
P FetchNext          B
/free
EXEC SQL
    FETCH NEXT
    FROM EmpCursor
    INTO :FirstName, :LastName, :HireDate, :HourlyRate;
MonitorSQL();
/end-free
P FetchNext          E

//-----
P GetParms           B
/free
    StoreID = reqNum('store');
    DeptID  = reqNum('dept');
/end-free
P getParms           E

//-----
P MonitorSQL         B
D SQL_STATE_OK      C          Const('00000')
D SQL_NO_ROW        C          Const('02000')

/free
    Select;
        When SQLSTATE = SQL_STATE_OK;

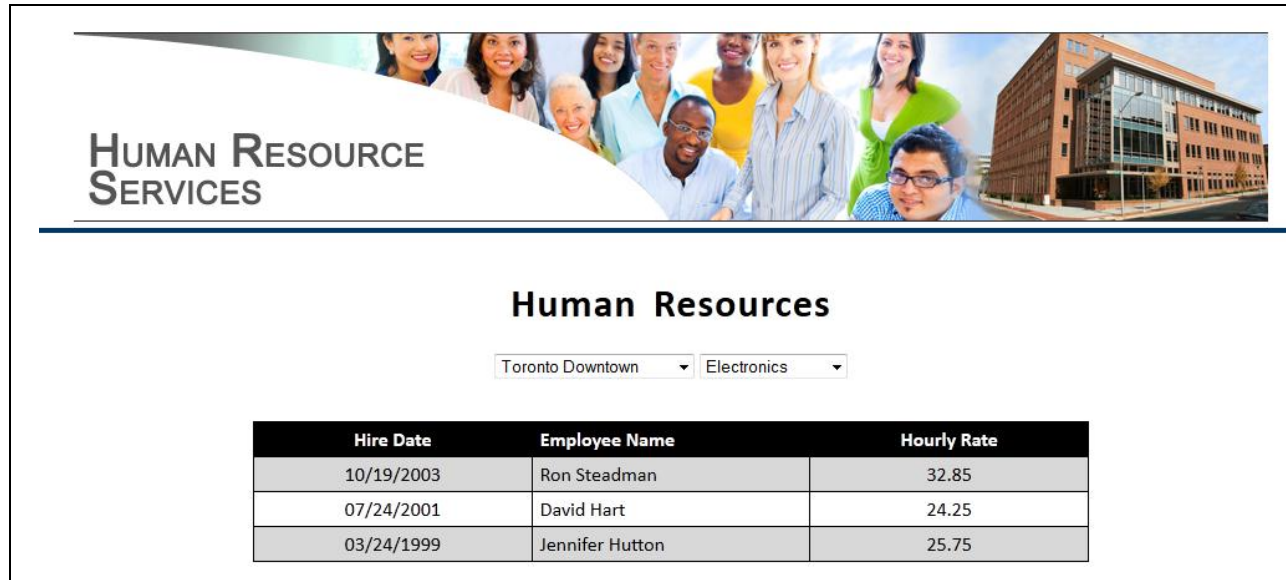
        When SQLSTATE = SQL_NO_ROW;
            MoreRows = NO;
    EndSL;
/end-free
P MonitorSQL         E
%>

```

FIGURE 12-22 RPGLE for SQL1207

# SQL1208

- IceBreak I\_EXTJSMETA procedure



The screenshot shows a web page for 'Human Resources'. At the top, there is a banner image featuring a diverse group of smiling people and a modern office building. Below the banner, the text 'HUMAN RESOURCE SERVICES' is displayed in a large, bold, sans-serif font. Underneath this, the title 'Human Resources' is centered. Two dropdown menus are positioned below the title, with the first set to 'Toronto Downtown' and the second to 'Electronics'. A table with three columns is displayed below the dropdowns. The columns are labeled 'Hire Date', 'Employee Name', and 'Hourly Rate'. The table contains three rows of data.

| Hire Date  | Employee Name   | Hourly Rate |
|------------|-----------------|-------------|
| 10/19/2003 | Ron Steadman    | 32.85       |
| 07/24/2001 | David Hart      | 24.25       |
| 03/24/1999 | Jennifer Hutton | 25.75       |

FIGURE 12-23 SQL1208.html web page

```

<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="utf-8" />
<title> Chapter 12 - SQL1208 </title>
<link type="text/css" rel="stylesheet" href="css/master.css" >
<link href="css/rowColors.css" type="text/css" rel="stylesheet" />
<script type="text/javascript" src="/system/components/jquery/jquery-1-7-1.js"> </script>
<script type="text/javascript" src="/Scripts/getStores.js"> </script>
<script type="text/javascript" src="/Scripts/getDepts.js"> </script>
<script type="text/javascript">
$(document).ready(function() {
    getStores();
    getDepts();

    $("#storeList, #deptList").change(buildEmployeeList);
});

function buildEmployeeList() {
    var parms = {
        store: $("#storeList").val(),
        dept : $("#deptList").val()
    }

    $.ajax({
        url: "SQL1208.rpgle",
        data: parms,
        success: processData,
        error: errorAlert
    });
}

function processData(jsonData)
{
    if ( jsonData.totalRows == 0 ) {
        $('#container1').html(('No Employees found'));
    } else {
        $('#container1').html(
            '<tr> <th class="center"> Hire Date </th>' +
            '<th class="left"> Employee Name </th>' +
            '<th class="center"> Hourly Rate </th>' +
            '</tr>'
        );

        $.each(jsonData.rows, function(index, value) {
            $('#container1').append(
                '<tr> <td class="center">' + value.HIRE_DATE + '</td>' +
                '<td class="left">' + value.FULLNAME + '</td>' +
                '<td class="center">' + value.HOURLY_RATE.toFixed(2) + '</td>' +
                '</tr>'
            );
        });
    }
}

function errorAlert(ehr, reason, ex) {
    alert("Request was not successful: " + reason + ex);
}
</script>

```

```
</head>

<body>
<div id="logo">  </div>
<h1> Human Resources </h1>

<select id="storeList"> </select>

<select id="deptList"> </select>

<table id="container1" style="width: 40%" class="rowColor"> </table>

</body>
</html>
```

**FIGURE 12-24** HTML for SQL1208

---

```

<%@ language="RPGLE" %>
<%
  H decredit('0.')
  D StartRow      C              1
  D MaxRows       C              999
  D SqlCmd        S              8192  varying
  D Dept          S              32    varying
  D Store         S              32    varying

  /free

  SetContentType('application/json; charset=utf-8');

  store = reqStr('store');
  dept  = reqStr('dept');

  SqlCmd = ( '
    SELECT hire_date,
           first_name || last_name AS fullname,
           employeeid,
           hourly_rate
    FROM employees
    WHERE store_id = ' + store + '
           AND department_id = ' + dept + '
    ORDER BY hire_date DESC, last_name, first_name
    FOR READ ONLY
  ');

  SQL_Execute(
    I_EXTJSMETA:
    Sqlcmd:
    maxRows:
    startRow
  );

  *INLR = *ON;
  Return;
%>

```

FIGURE 12-25 RPGLE for SQL1208