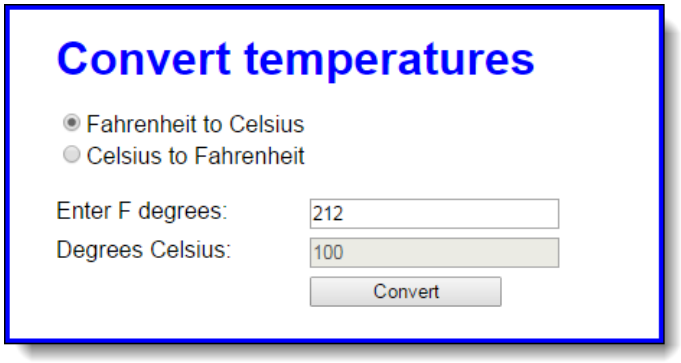
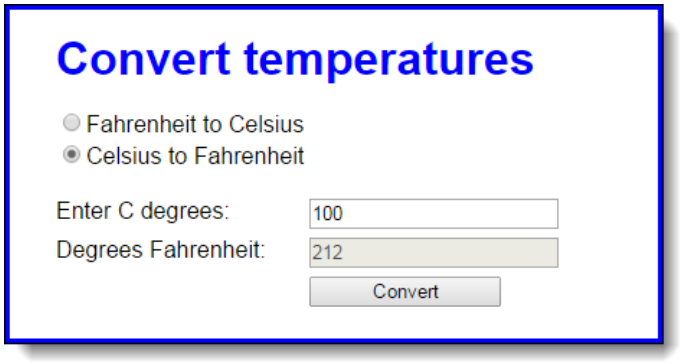
Lab 3-1 Develop the Temperature Converter

In this exercise, you'll use radio buttons to determine whether the conversion is from Fahrenheit to Celsius or vice versa. You'll also modify the DOM so the labels change when a radio button is clicked. When the application starts, it will look like this:



When the user clicks on the second radio button, the labels will change so the interface will look like this:



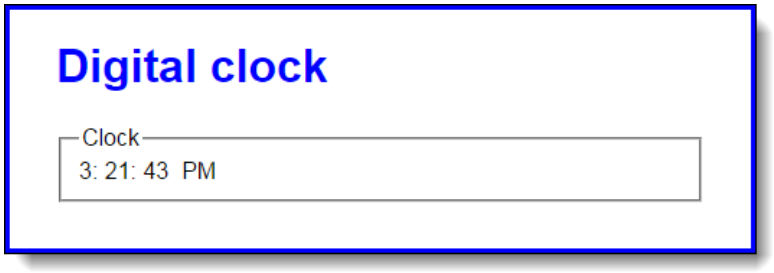
1. Start with the files in the convert_temps folder:
2. Note that the JavaScript file has some starting JavaScript code, including the $ function, a clearTextBoxes() function, and an onload event handler that attaches three event handlers named convertTemp(), toCelsius(), and toFahrenheit().
3. Code the toFahrenheit() function that is executed when the user clicks on the second radio button. It should change the text in the labels for the text boxes so they read as in the second interface above. It should also call the clearTextBoxes() function to clear the text boxes.
4. Code the toCelsuis() function that is executed when the user clicks on the first radio button. It should change the text in the labels for the text boxes so they read as in the first interface above. It should also call the clearTextBoxes() function to clear the text boxes.
5. Code the convertTemp() function without any data validation. It should calculate the temperature based on which button is checked. To convert

Fahrenheit to Celsius, first subtract 32 from the Fahrenheit temperature, and then multiply that result by 5/9. To convert Celsius to Fahrenheit, first multiply Celsius by 9/5, and then add 32. The result in either case should be rounded to zero decimal places.

6. Add data validation to the convertTemp() function. The only test is whether the entry is a valid number. If it isn't, this message should be displayed in a dialog box: "You must enter a valid number for degrees."
7. Add any finishing touches to the application like moving the focus to the first text box whenever that's appropriate.

Lab 3-2 Develop the Clock application

In this exercise, you'll create an application that displays the current time in hours, minutes, and seconds. The display should use a 12-hour clock and indicate whether it's AM or PM. The application looks like this:



Note: The hours value for midnight is 0.

1. Start with the files in the clock folder
2. In the JavaScript file, note that four functions are supplied. The $ function. The start of a displayCurrentTime() function. The padSingleDigit() function that adds a leading zero to single digits. And the start of an onload event handler.
3. In the displayCurrentTime() function, add code that uses the Date object to determine the current hour, minute, and second. (Note: you may need to look up a documentation for the JavaScript Date object online). Convert these values to a 12- hour clock, determine the AM/PM value, and display these values in the appropriate span tags using the padSingleDigit() function as needed.
4. In the onload event handler, code a timer that calls the displayCurrentTime() function at 1 second intervals. Also, make sure that the current time shows as soon as the page loads.