

## 7.14 LAB: Temperature conversion

### Instructor note:

### NOTE:

You probably want to look on MDN for `parseFloat` and for how to detect `NaN`. You *can't* just check to see if the value is equal to `NaN` with `==`.

In this lab you will implement a temperature converter. Five UI elements are declared for you in the template:

Element description	Element's ID
Text input field for Celsius temperature	CInput
Text input field for Fahrenheit temperature	FInput
Button that, when clicked, converts from one temperature to the other	ConvertButton
Div for displaying an error message when temperature cannot be converted	ErrDiv
Image corresponding to the temperature	WeatherImage

### Implement the conversion functions (2 points)

Implement the `ConvertCtoF` and `ConvertFtoC` functions to convert between Celsius and Fahrenheit. `ConvertCtoF` takes a single numerical argument for a temperature in Celsius and returns the temperature in Fahrenheit using the following conversion formula:

$$^{\circ}\text{F} = ^{\circ}\text{C} * 9/5 + 32$$

Similarly, `ConvertFtoC` takes a single numerical argument for a temperature in Fahrenheit and returns the temperature in Celsius using the following conversion formula:

$$^{\circ}\text{C} = (^{\circ}\text{F} - 32) * 5/9$$

### Register conversion button's click event in `bodyLoaded()` (2 points)

When the page loads, the `bodyLoaded` function is called. Implement `bodyLoaded` to register a click event handler for the Convert button (`id="ConvertButton"`). Use `addEventListener()`, not `onclick`.




When the Convert button is pressed, the text box that contains a number should be converted into the opposing temperature. So if a number is in the Celsius text box (`id="CInput"`), the temperature should be converted into Fahrenheit and displayed in the Fahrenheit text box (`id="FInput"`) and vice versa. Use `parseFloat()` to convert from a string to a number and do *not* round the result.

## Ensure that only one text field contains a value (2 points)

Ensure that only one text field contains a value at any moment in time unless the Convert button has been pressed. For example, when the Celsius field has a number and the user enters a Fahrenheit entry, the Celsius field should be cleared as soon as the user begins to type. This will require implementing an `input` event handler for each of the text fields that clears the opposing text field when a change occurs. Register each input event handler in the `bodyLoaded` function. Use `addEventListener()`, not `oninput`.

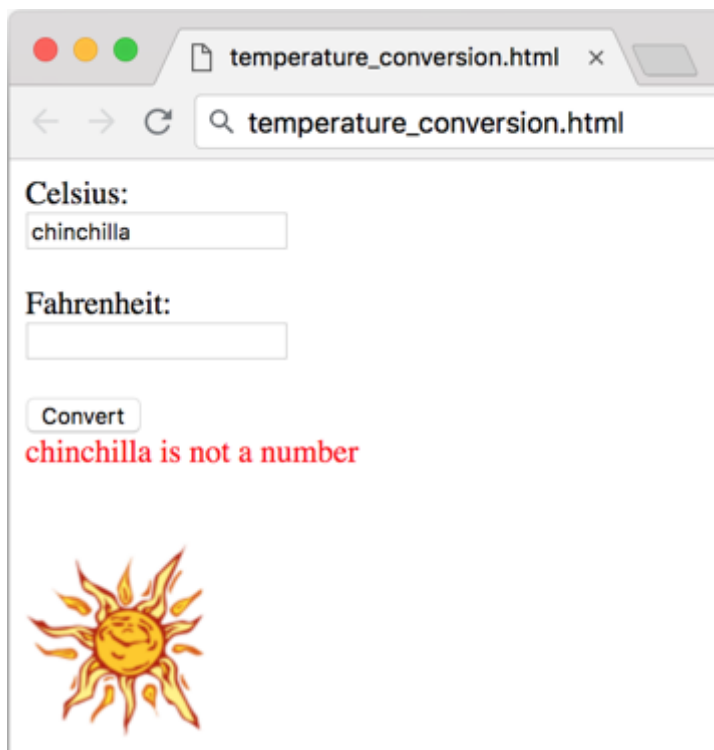
## Change the image to reflect the temperature (2 points)

When the temperature is converted, change the image to reflect the temperature in Fahrenheit. Each image is in the same directory as your `.html` page.

Below 32 F	32 - 50 F	Above 50 F
		
cold.gif	cool.gif	warm.gif

## Handle bad input (2 points)

When `parseFloat()` returns a `NaN` for the temperature to be converted, set `ErrDiv`'s `textContent` to the message: "X is not a number", where X is the string from the text input. When `parseFloat()` returns a valid number, set `ErrDiv`'s `textContent` to an empty string. The image below shows a sample error message.



temperature\_conversion.html x

temperature\_conversion.html


Celsius:

chinchilla

Fahrenheit:

Convert

chinchilla is not a number

**Instructor note:****NOTE (repeating myself):**

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**LAB  
ACTIVITY**

## 7.14.1: LAB: Temperature conversion

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**Submission Instructions**

Downloadable files

index.html

,

index.js

,

cool.gif

,

cold.gif

, and

warm.gif

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Upload your files below by dragging and dropping into the area or choosing a file on your hard drive.

Drag file here

index.js

**index.js****Choose on hard drive.****Submit for grading****Latest submission***No submissions yet***[Feedback?](#)**