



## Project 2

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# Temperature Conversion

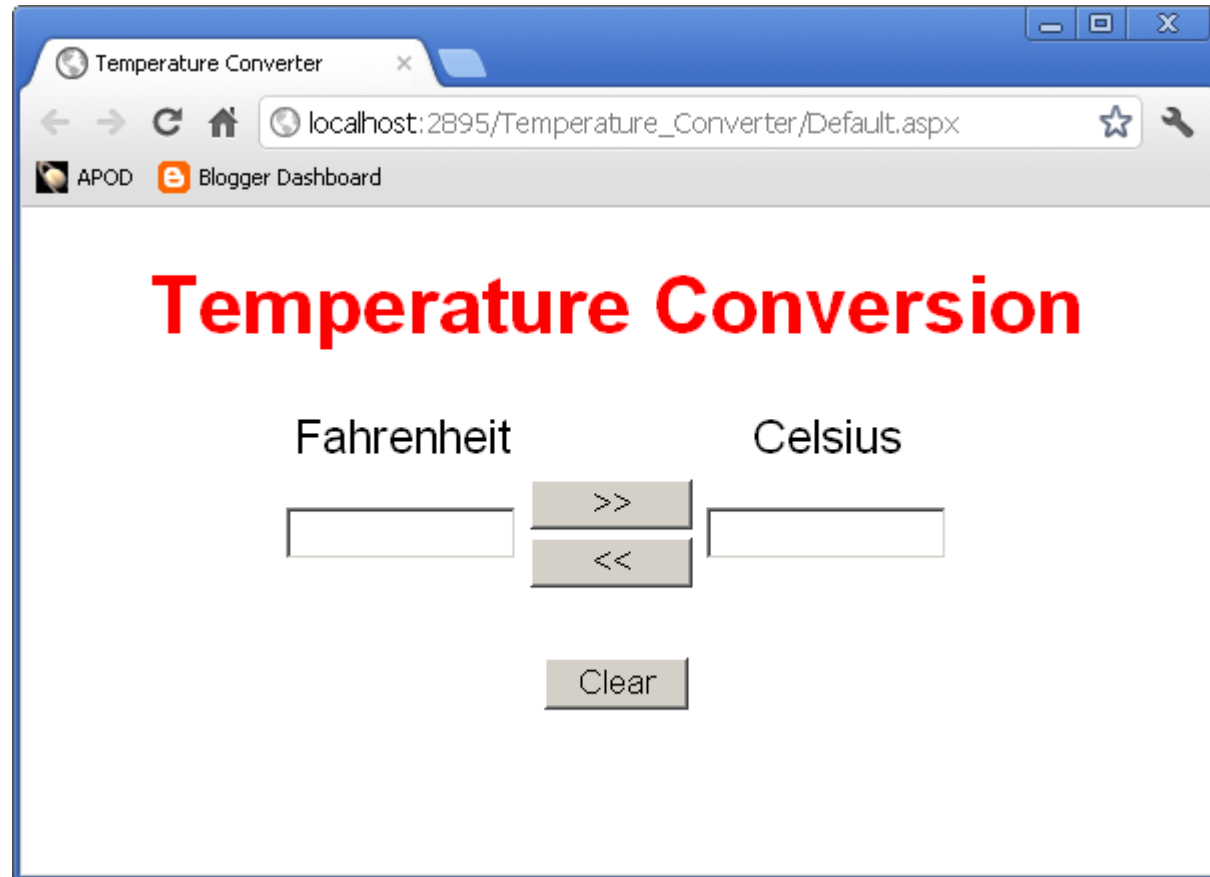


## Project 2

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- Write an ASPX web forms app to convert temperatures from Fahrenheit to Celsius and from Celsius to Fahrenheit.
- The web form should be similar to that shown on the next slide.

# The Web Form



The screenshot shows a web browser window titled "Temperature Converter". The address bar displays "localhost:2895/Temperature\_Converter/Default.aspx". Below the address bar, there are two bookmarks: "APOD" and "Blogger Dashboard". The main content area of the browser displays the title "Temperature Conversion" in large red text. Below the title, there are two input fields labeled "Fahrenheit" and "Celsius". Between these fields are two buttons: ">>" and "<<". Below these buttons is a "Clear" button.

Temperature Converter

localhost:2895/Temperature\_Converter/Default.aspx

APOD Blogger Dashboard

## Temperature Conversion

Fahrenheit Celsius

>>

<<

Clear



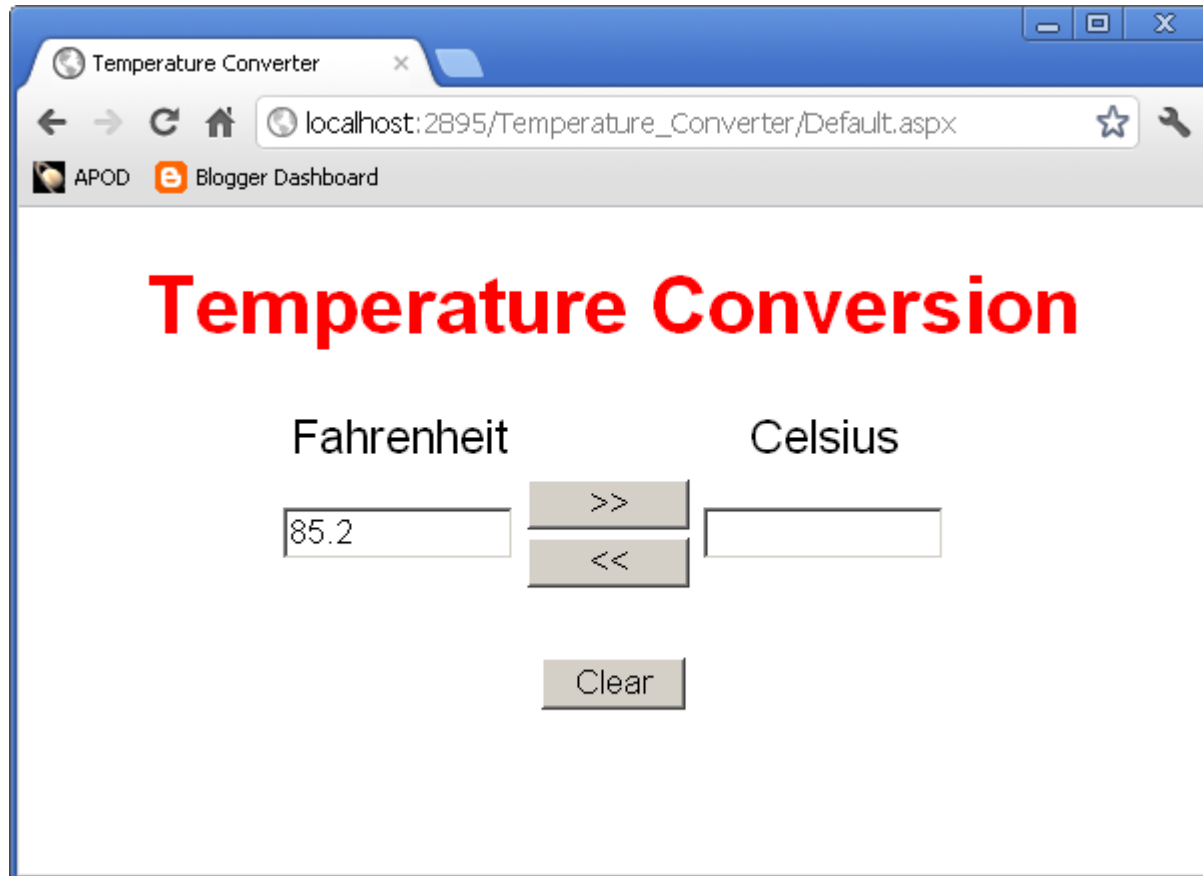
# Functional Requirements

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- The user can enter a decimal number into either TextBox and click the corresponding “Convert” button.
- The app does the conversion and displays the result in the other TextBox.
- The user must then click the Clear button before doing anything else.

# Example

User enters 85.2 into the Fahrenheit input box.

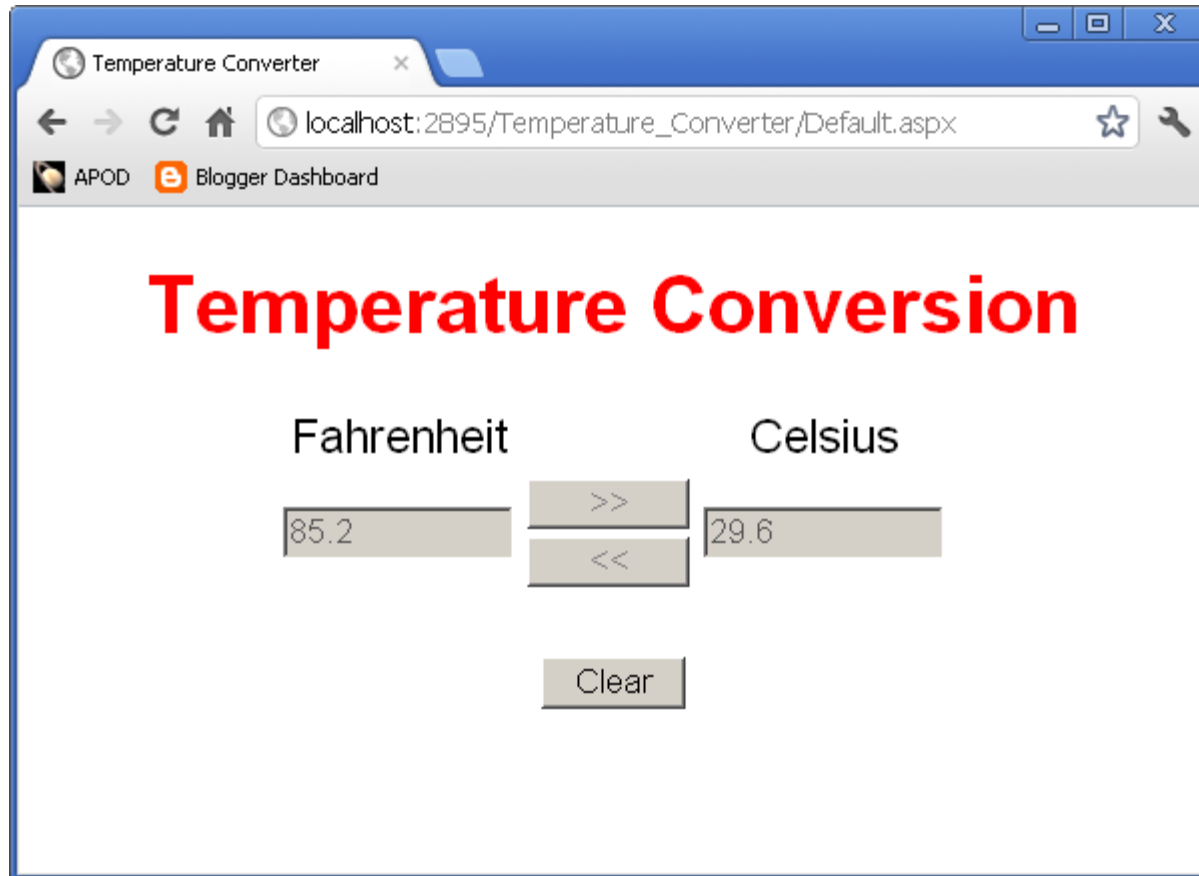


The screenshot shows a web browser window titled "Temperature Converter". The address bar displays "localhost:2895/Temperature\_Converter/Default.aspx". Below the browser window, the application interface is visible. It features the title "Temperature Conversion" in large red text. Underneath, there are two columns: "Fahrenheit" and "Celsius". In the "Fahrenheit" column, there is an input box containing the text "85.2". In the "Celsius" column, there is an empty input box. Between the two input boxes are two buttons: ">>" and "<<". Below these buttons is a "Clear" button. The ">>" button is highlighted with a grey border.

User then clicks the >> button.

# Example

App displays the corresponding Celsius temperature.

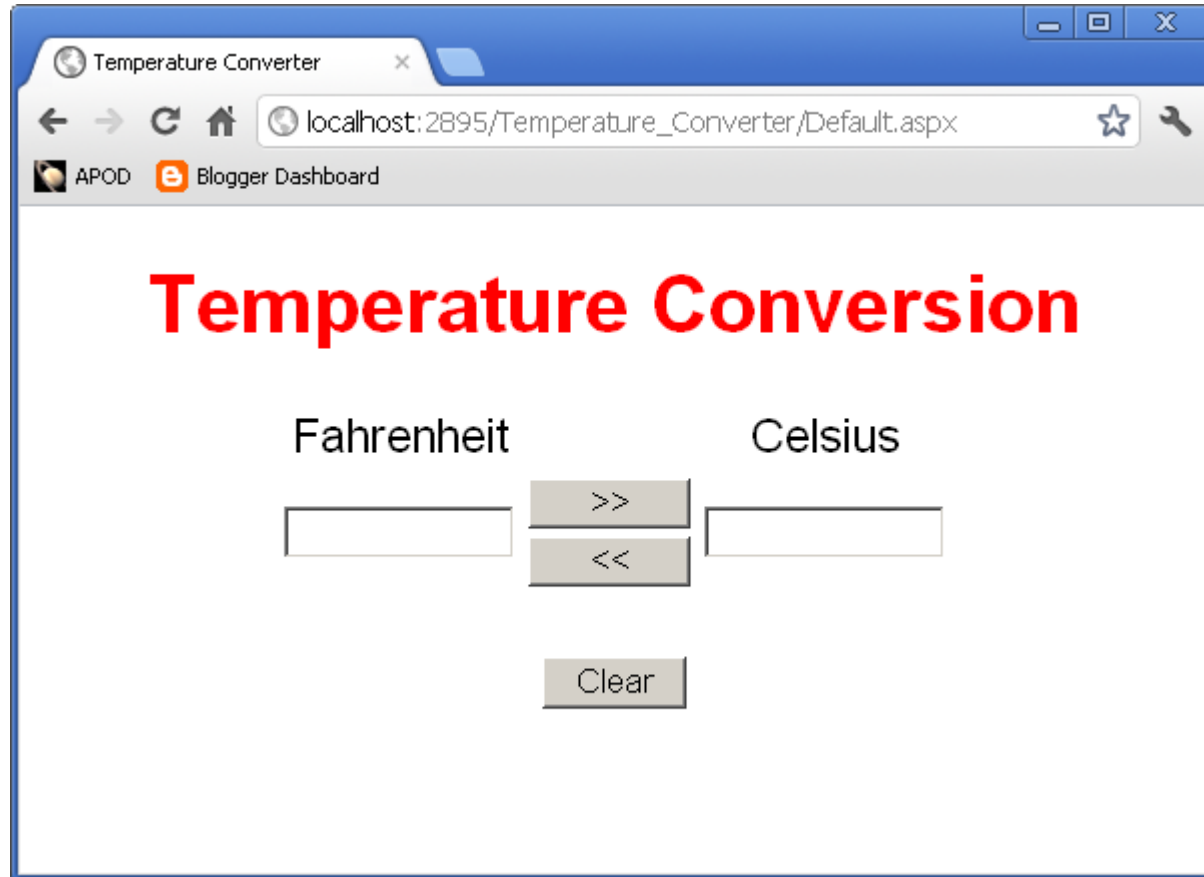


The screenshot shows a web browser window titled "Temperature Converter". The address bar displays "localhost:2895/Temperature\_Converter/Default.aspx". Below the address bar, there are two bookmarks: "APOD" and "Blogger Dashboard". The main content area of the browser displays the title "Temperature Conversion" in large red text. Below the title, there are two columns: "Fahrenheit" and "Celsius". Under "Fahrenheit", there is a text input box containing the value "85.2". Under "Celsius", there is a text input box containing the value "29.6". Between the two input boxes, there are two buttons: ">>" (top) and "<<" (bottom). Below these buttons, there is a "Clear" button. The browser window has standard Windows-style window controls (minimize, maximize, close) in the top right corner.

Convert buttons and input boxes are now disabled until user clicks Clear.

# Example

User clicks Clear and app returns to initial state.



The screenshot shows a web browser window titled "Temperature Converter". The address bar displays "localhost:2895/Temperature\_Converter/Default.aspx". Below the browser window, the application interface is visible. It features the title "Temperature Conversion" in large red text. Underneath, there are two labels: "Fahrenheit" and "Celsius". Each label is positioned above an empty text input field. Between these two input fields are two buttons: the top one is labeled ">>" and the bottom one is labeled "<<". Below the input fields and conversion buttons is a single button labeled "Clear".



## Initial State

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- All buttons are enabled.
- Both TextBoxes are empty but enabled.
- User can enter text into either TextBox.
- After entering text into either TextBox
  - User can change contents of either TextBox.





# Convert Buttons

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- When the user clicks a “convert” button (<< or >>)
  - If the corresponding input is valid
    - Do the conversion.
    - Put the output into the other TextBox
    - Disable both Convert buttons.
    - Disable both TextBoxes.
  - If the input is not valid
    - Display an error message.
    - Disable both Convert buttons.
    - Disable both TextBoxes.



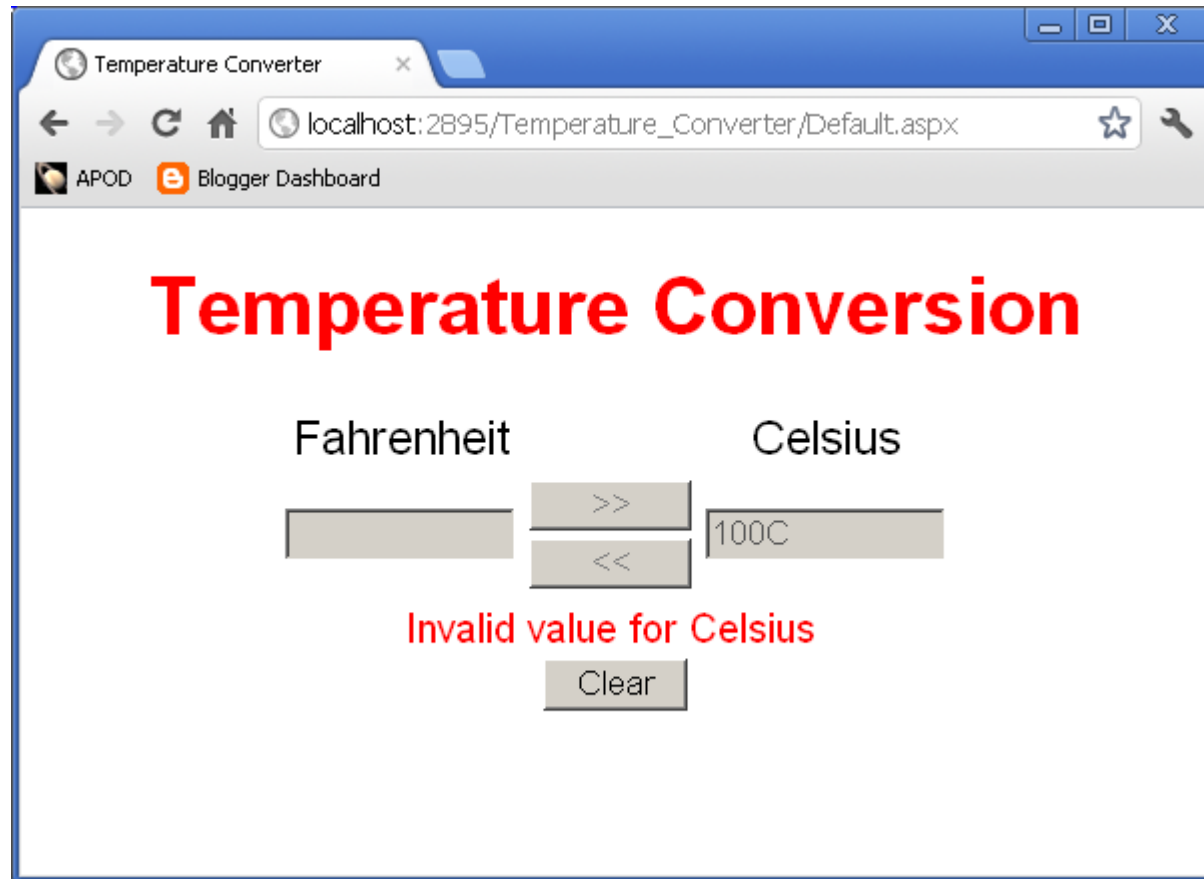
# The Clear Button

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- The Clear button should always be enabled.
- When the user clicks the “Clear” button
  - Revert to the initial state
    - Clear both TextBoxes.
    - Enable both TextBoxes.
    - Clear the Error Message.
    - Enable both “Convert” buttons.

# Error Example

User enters 100C as Celsius input and clicks <<.



The screenshot shows a web browser window titled "Temperature Converter" with the address bar displaying "localhost:2895/Temperature\_Converter/Default.aspx". The page content includes the title "Temperature Conversion" in large red font. Below the title, there are two input fields labeled "Fahrenheit" and "Celsius". The "Celsius" field contains the text "100C". Between the fields are two buttons: ">>" and "<<". Below these buttons, a red error message "Invalid value for Celsius" is displayed. At the bottom, there is a "Clear" button.

App displays error message and disables both inputs and both Convert buttons.

User must click Clear in order to continue.

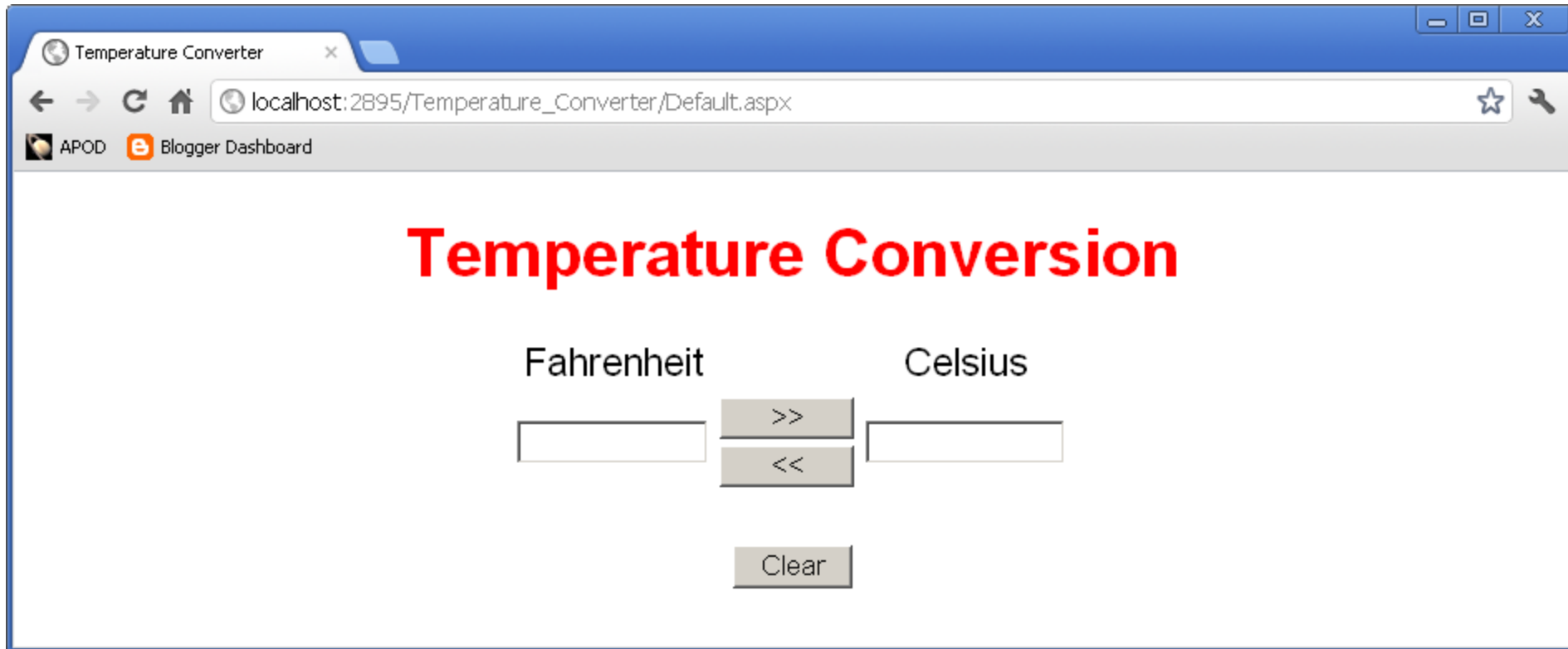


# Specifications

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- Use the .NET Decimal type for all numerical values and arithmetic operations.
  - See Chapter 5 of textbook.
- Show conversion results with one decimal place.
- Avoid throwing an exception on invalid input.
- Page contents should stay centered (left to right) if page is resized.

# Wider Page



The screenshot shows a web browser window with the title "Temperature Converter". The address bar displays "localhost:2895/Temperature\_Converter/Default.aspx". The browser's toolbar includes navigation buttons (back, forward, refresh, home) and a search bar. Below the address bar, there are links for "APOD" and "Blogger Dashboard". The main content area features the title "Temperature Conversion" in large red text. Below this, there are two input fields labeled "Fahrenheit" and "Celsius". Between these fields are two buttons: ">>" and "<<". Below the input fields is a "Clear" button.

Temperature Converter

localhost:2895/Temperature\_Converter/Default.aspx

APOD Blogger Dashboard

## Temperature Conversion

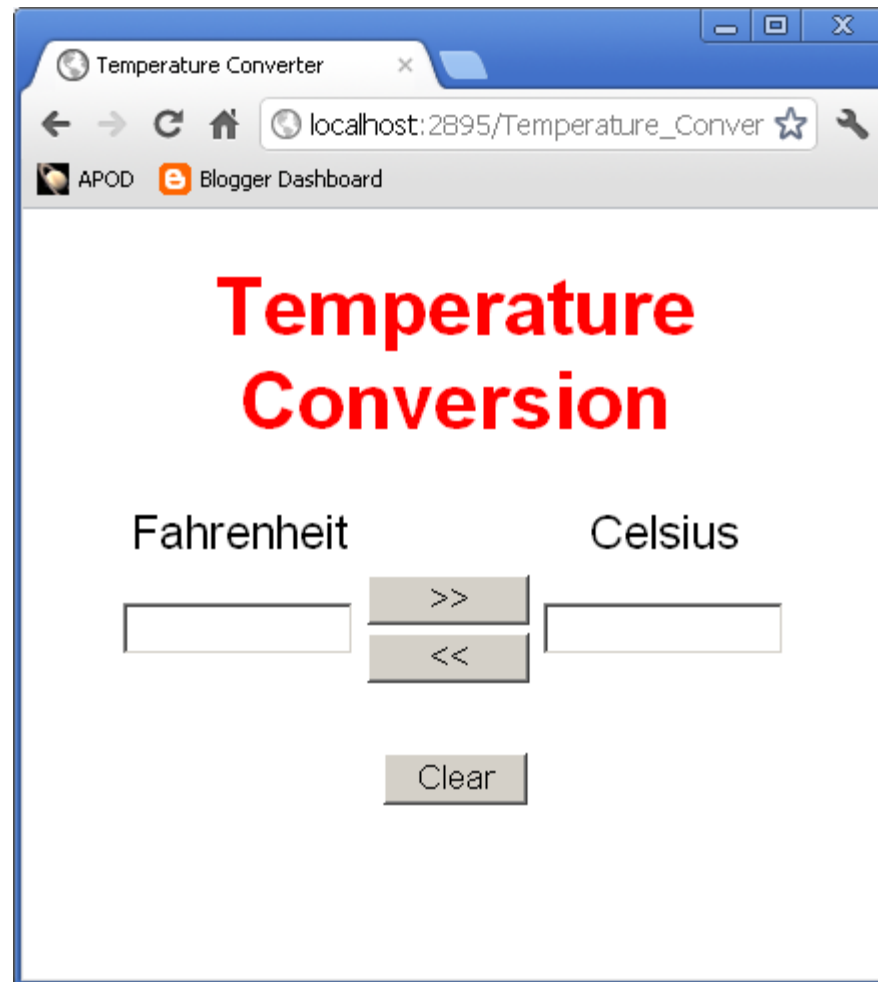
Fahrenheit Celsius

>>

<<

Clear

# Narrow Page



The screenshot shows a web browser window with a single tab titled "Temperature Converter". The address bar displays "localhost:2895/Temperature\_Conver" with a star icon for bookmarks and a magnifying glass for search. Below the address bar, there are two bookmarks: "APOD" and "Blogger Dashboard". The main content area of the browser displays a web page with the title "Temperature Conversion" in large red text. Below the title, there are two labels: "Fahrenheit" and "Celsius". Under "Fahrenheit" is a text input field. To the right of this field are two buttons: ">>" and "<<". To the right of these buttons is a text input field under the "Celsius" label. Below these input fields and buttons is a "Clear" button.

Temperature Converter

localhost:2895/Temperature\_Conver

APOD Blogger Dashboard

## Temperature Conversion

Fahrenheit Celsius

>> <<

Clear



## Hints and Tips

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- All .NET numeric types have a TryParse method and a ToString method.
  - Look these up if you are not familiar with them. They will be useful for this project.
- You may use an HTML table to control layout.
  - The buttons will need to be in a table inside a cell of an outer table.
- Use CSS to control layout if you prefer.



# Submission

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- Project is due by 11:59 PM, Sunday Sept. 21.
  - No late submissions will be accepted.
- You may work as a pair, or in a group of three.
  - OK to work along if you prefer.
- Deliverables:
  - Default.aspx
  - Default.aspx.cs
- Zip the files and submit the .zip folder using the Canvas Assignment for this class.
- If you work as a pair or a group, submit only one copy of the files.
  - One member submits the files.
  - All members submit a comment identifying who they worked with.