# WarmFusion

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## Introduction

Most existing web application development languages have syntax similar to C. Learning these languages usually isn't a problem for experienced programmers, however they can often be difficult to pick up for people who only know HTML and have little programming experience.

I propose WarmFusion, a language for developing web applications. It has many similarities with Adobe ColdFusion which was initially released in 1995. The main benefit of WarmFusion over other web application development languages is simplicity and ease of use. In contrast to the C-like syntax of many other languages, WarmFusion has syntax similar to HTML/XML. This allows the language to be learned more easily by people who understand HTML.

## Language Features

All WarmFusion constructs are placed into tags. WarmFusion supports loops by using the wfloop tag. This tag can accommodate "while" and "for" loops with the same tag. Conditional statements are supported by using the wfif tag. Several comparison operators will be available, however they are not represented by <, >, ==, <=, >=, and != as in most other languages. WarmFusion comparison operators are denoted by the following strings: LT, GT, EQ, LTE, GTE and NEQ.

Functions can be declared by using the wffunction tag. Types are not assigned to variables in WarmFusion. The value of a variable or function call can be outputted to the HTML response by placing the statement between # symbols.

## Example

An example of WarmFusion code is shown in the following section. WarmFusion code is mixed in with the HTML code which allows rapid development of simple web applications. The code declares two functions `CalculateAreaOfSquare` and `CalculateDiagonalOfSquare`, both of which take one argument. An example of a comment in WarmFusion is shown in the second function.

An HTML table is printed out and WarmFusion loops through the numbers 1 through 10 to display each row. In the table, there is a conditional statement which highlights a row gray if it is odd. The two functions are called in the loop to create the table of data. As shown, all WarmFusion statements are HTML/XML tags that begin with "wf".

## Example Code

```
<wffunction name="CalculateAreaOfSquare">
      <wfargument name="sideLength" />
      <wfset area = sideLength * sideLength />
      <wfreturn area />
</wffunction>

<wffunction name="CalculateDiagonalOfSquare">
      <wfargument name="sideLength" />
      <!--- Length of a side multiplied by the square root of 2 --->
      <wfset diagonal = sideLength * Sqr(2) />
      <wfreturn diagonal />
</wffunction>

<h1>Square Information:</h1>
<table border="1">
      <tr>
            <th>Side Length</th>
            <th>Area of Square</th>
            <th>Diagonal of Square</th>
      </tr>

      <wfloop index="i" from="1" to="10">
            <wfif i % 2 EQ 1>
                  <wfset rowBgColor = "lightgray" />
            <wfelse>
                  <wfset rowBgColor = "white" />
            </wfif>

            <tr bgcolor="#rowBgColor#">
                  <td>#i#</td>
                  <td>#CalculateAreaOfSquare(i)#</td>
                  <td>#CalculateDiagonalOfSquare(i)#</td>
            </tr>
      </wfloop>
</table>
```

## Output From Example

HTML code would be generated from the previous example.  It would be shown in a web browser as follows:

# Square Information:

| Side Length | Area of Square | Diagonal of Square |
|---|---|---|
| 1 | 1 | 1.41421356237 |
| 2 | 4 | 2.82842712475 |
| 3 | 9 | 4.24264068712 |
| 4 | 16 | 5.65685424949 |
| 5 | 25 | 7.07106781187 |
| 6 | 36 | 8.48528137424 |
| 7 | 49 | 9.89949493661 |
| 8 | 64 | 11.313708499 |
| 9 | 81 | 12.7279220614 |
| 10 | 100 | 14.1421356237 |