If-Else Statement

Created by Math Works for Structural Dynamics

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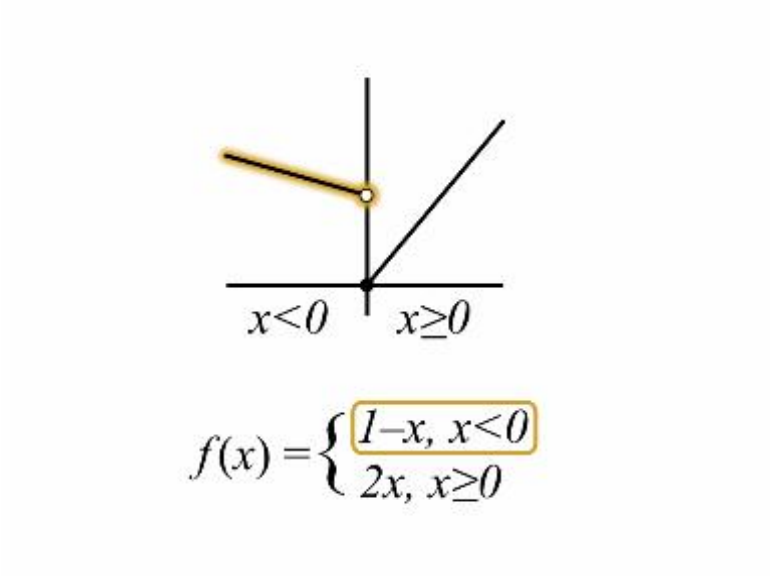

Sometimes when programming in MATLAB we may want to perform different calculations based upon some condition, for instance consider the piecewise function shown when X is greater than or equal to 0 the function is calculated as 2 times X otherwise it is calculated as 1-x.

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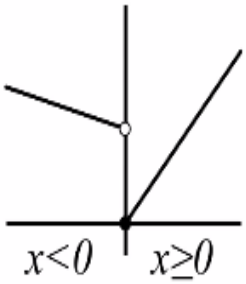
```
if x<0
    f = 1-x
else
    f = 2*x
end
```



$$f(x) = \begin{cases} 1-x, & x<0 \\ 2x, & x\geq 0 \end{cases}$$

To calculate the value of F in MATLAB we can use an if statement to arrive at the correct value of F based upon the condition set for X, here the calculation f = 1 – x occurs only when X is less than zero note that in an if statement the condition should always evaluate to a logical scalar either true or false also the if keyword should always have a corresponding end keyword which denotes the end of the statement.

A single if statement can contain one line of code or many lines of code to calculate the other part of the piecewise function we can use and if-else statement as shown, anytime the if condition is false the code in the else block will be executed, now we have a snippet of code which calculates the piecewise function for any value of x.

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