

PROGRAMMING IN MATLAB-IF STATEMENTS*

Darryl Morrell

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Abstract

This is a tutorial on using if statements in MATLAB.

1 The If Statement

The **if statement** is one way to make the sequence of computations executed by MATLAB depend on variable values. The if statement has several different forms. The simplest form is

```
if expression
    % MATLAB commands to execute if expression is true
end
```

where **expression** is a logical expression that is either true or false. (Information about logical expressions is available in Programming in MATLAB-Logical Expressions¹.) For example, the following if statement will print "v is negative" if the variable **v** is in fact negative:

```
if v < 0
    disp('v is negative')
end
```

A more complicated form of the if statement is

```
if expression
    % MATLAB commands to execute if expression is true
else
    % MATLAB commands to execute if expression is false
end
```

For example, the following if statement will print "v is negative" if the variable **v** is negative and "v is not negative" if **v** is not negative:

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¹"Programming with M-Files: Logical Expressions" <<http://cnx.org/content/m13357/latest/>>

```
if v < 0
    disp('v is negative')
else
    disp('v is not negative')
end
```

The most general form of the if statement is

```
if expression1
    % MATLAB commands to execute if expression1 is true
elseif expression2
    % MATLAB commands to execute if expression2 is true
elseif expression3
    % MATLAB commands to execute if expression3 is true
    ...
else
    % MATLAB commands to execute if all expressions are false
end
```

The following if statement is an example of this most general statement:

```
if v < 0
    disp('v is negative')
elseif v > 0
    disp('v is positive')
else
    disp('v is zero')
end
```

Note that in all of the examples in this module, the MATLAB commands inside the if statement are indented relative to the `if`, `else`, `elseif`, and `end` statements. This is not required by MATLAB but is common practice and makes the code much more readable.