Our previous lessons have shown us how to manipulate data and repeat things. However, the programs we have written so far always do the same things, regardless of what data they’re given. We want programs to make choices based on the values they are manipulating.

The tool that MATLAB gives us for doing this is called a conditional statement, and it looks like this:

num = 37;

if num > 100

disp('greater');

else

disp('not greater');

end

disp('done');

**The second line of this code uses the keyword if to tell MATLAB that we want to make a choice. If the test that follows is true, the body of the if (i.e., the lines between if and else) are executed. If the test is false, the body of the else (i.e., the lines between else and end) are executed instead. Only one or the other is ever executed.**

**Conditional statements don’t have to have an else block. If there isn’t one, MATLAB simply doesn’t do anything if the test is false:**

num = 53

disp('before conditional...')

if num > 100:

print '53 is greater than 100'

end

disp('...after conditional')

Demo script to illustrate use of conditionals

if num > 0

sign\_of\_num = 1;

elseif num ==0

sign\_of\_num = 0;

else

sign\_of\_num = -1;

end

disp(strcat('Sign of num = ',num2str(sign\_of\_num)))

**One important thing to notice is the use of the double equals sign == which tests for equality rather than assigning a zero to the variable num. So in this test we want to check if num is equal to zero, and not assign zero to the variable num.**

**We can also combine tests using && (and) and || (or). && will only be true if the two statements tested are both true.**

if ((1 > 0) && (-1 > 0))

disp('both parts are true');

else

disp('one part is not true');

end

|| is true if either test is true:

if (1 < 0) || (3 < 4)

disp('at least one part is true');

end