

Lec05 IAM550 D. Cramer 9/10/2019 conditional statements, loops

Conditional statements:

- Only execute code when a logical condition is met (i.e., $x < 5$)
- Types:
 - **if <condition>; elseif <condition>;... else; end**
<https://www.mathworks.com/help/matlab/ref/if.html>
 - **switch <expression>; case <value>;... otherwise; end**
<https://www.mathworks.com/help/matlab/ref/switch.html>
- Logical expressions (conditions)
 - zero(0): false, non-zero(usually 1): true (like “pi”, “true” and “false”)
 - Relational operators: <, <=, >, >=, ==, ~=
 - functions: lt(a,b), le, gt, ge, eq, ne, (arrays: isequal, isequaln)
 - Logical operators: ~, &, |
 - functions: not, and, or, **xor** (arrays: all, any, islogical)
- Examples
- Indentation
- Note: case {<value>,<value2>...} allows multiple values

Loops:

- Why loops? Computers are good at repeated calculations. They would be pretty useless otherwise.
- Types:
 - **for <variable>=<array>, end** (loop through list)
<https://www.mathworks.com/help/matlab/ref/for.html>
 - **while <condition>, end** (loop while condition is met)
<https://www.mathworks.com/help/matlab/ref/while.html>
- Examples
- Short-circuiting loops
 - **break**: exit loop
 - **continue**: start next loop iteration
- Examples