

# Syntax comparison between Fortran, Matlab, and C/C++

## Variables

Fortran	Matlab	C/C++
integer i		int i;
real x		float x;
double precision x, y		double x, y;
logical flag		bool flag;
character str(25)		char str[25];

## Operators

	Fortran	Matlab	C/C++
Exponent	x**y	x^y	pow(x, y)
Std Math	* / + -	* / + -	* / + -
Equals	== .eq.	==	==
Not Equal	/= .ne.	~=	!=
Less/Greater than	< .lt. > .gt.	< >	< >
Less/Greater than or equal to	<= .le. >= .ge.	<= >=	<= >=
Logical not	.not.	not	!
Logical and	.and.	and	&&
Logical or	.or.	or	
Binary and			&
Binary or			
Increment			++
Decrement			--
Conditional			(?:)

## Control Flow

Fortran	Matlab	C/C++
<pre>function myFunction(arg)   . . .   myFunction = ans end</pre>	<pre>function ans = myFunction(arg)   . . . end</pre>	<pre>int myFunction(double arg) {   . . .   return ans; }</pre>
<pre>if (i == 0) then   . . . else if (i &gt; 10) then   . . . else   . . . end if</pre>	<pre>if i == 0   . . . elseif i &gt; 10   . . . else   . . . end</pre>	<pre>if (i == 0) {   . . . } else if (i &gt; 10) {   . . . } else {   . . . }</pre>
<pre>integer i, n do i = 0, n-1   . . . end do</pre>	<pre>for i = 0:n   . . .   continue % skip to next   break % exit loop end</pre>	<pre>for (int i = 0; i &lt; n; i++) {   . . .   continue; //skip to next   break; //exit loop }</pre>
<pre>do   if (i &gt;= n) exit   . . . end do</pre>	<pre>while i &lt; n   . . . end</pre>	<pre>while (i &lt; n) {   . . . }</pre>