

Matlab Basic Array Manipulations

Operation	Matlab		
Define an Array	<pre>>> A=[1 -1;1 2] A = 1 -1 1 2</pre>		<pre>>> B=[2 4;-3 -1] B = 2 4 -3 -1</pre>
Get Single Element from Array	<pre>>> A(1,2) ans = -1</pre>		
Get a single column or row from array	<pre>>> A(:,1) ans = 1 1</pre>	<pre>>> A(2,:) ans = 1 2</pre>	
Identity Array	<pre>>> I=eye(2) I = 1 0 0 1</pre>		
Row Vector	<pre>>> rv=[1 2 3 5] rv = 1 2 3 5</pre>		
Column Vector (' is transpose)	<pre>>> cv=[pi; 2.718; 2^3] cv = 3.1416 2.7180 8.0000</pre>	<pre>>> cv=[pi 2.718 2^3]' cv = 3.1416 2.7180 8.0000</pre>	
Addition	<pre>>> C=A+B C = 3 3 -2 1</pre>		
Multiplication	<pre>>> D=A*B D = 5 5 -4 2</pre>		
Inverse	<pre>>> E=inv(A) E = 0.6667 0.3333 -0.3333 0.3333</pre>	<pre>>> A*E ans = 1.0000 0 0.0000 1.0000</pre>	
Element by Element Multiplication	<pre>>> F=A.*B F = 2 -4 -3 -2</pre>		
Sum along a dimension (row or column)	<pre>>> sum(A) ans = 2 0</pre>	<pre>>> sum(A,1) ans = 2 0</pre>	<pre>>> sum(A,2) ans = -1 3</pre>
Size of array	<pre>>> size(A) ans = 2 2</pre>	<pre>>> size(rv) ans = 1 4</pre>	<pre>>> length(rv) ans = 4</pre>
Initialize vector	<pre>>> t=0:0.8:7 t = 0 0.800 1.600 2.400 3.200 4.000 4.800 5.600 6.400</pre>		
Plot	<pre>>> plot(t,sin(t))</pre>		
Other elementary matrix operations	<pre>>> help elmat (zeros, ones, cumsum, diff, ...)</pre>		