Matlab CheatSheet

Note if you want to learn more just search up on the Matlab Documentation!

Clear command window and clear workspace variables

```
clc
clearvars
```

View Workspace variables

```
whos
```

Use up arrow + enter to access previous commands

To change background color go to preferences and then colors

Arrays and Matrices

```
x=1:10
```

Produces an array with values ranging from 1 through 10, x= 1 2 3 10

```
x'
```

Defined as x transpose. Will change from x from a 1 row 10 columns array to a one column ten row array.

Linspace function

```
z=linspace(0,100)
```

Creates 100 evenly spaced values between 0 and 100

```
z=linspace(0,10,6)
```

Creates 6 evenly spaced values between 0 and 10

```
A=[1 2 3 4]
```

Creates an array with values 1 2 3 4

```
A=[1 2;3 4;88 99]
```

Creates a Matrix a 2x2 matrix note: use ; for a new row

```
A*A'
```

Matrix Multiplication matrix A is being multiplied by A transpose, which follows the rules of Linear Alegbra.

Element Wise Operations

```
a=1:10
a.^2
```

The dot before an operation symbolises element-wise operations, in this case each element of array a is sqaured.

Other matrice creation functions

```
A=ones(3,2)
B=zeros(2)
C=eye(3)
```

The first function creates a 3x2 matrice A filled with 1's, and the second function creates a 2x2 matrice B filled with 0's. The third function creates an identity matrix of 3x3 dimensions.

More Creation Options?!

```
a=0:2:10
```

Think of this as start at 0 jump by 2 and end at 10

(The output would be a= 0 2 4 6 8 10).

The Index

```
A=[2 3 4.2; 8 9 0]
```

To get 9 which is in the second row and second column:

```
A(2,2)
```

This might be annoying for programmers who have used other languages as Matlab indexing starts from 1 not 0 !

```
A(end)
```

Grabs the last value in the matrix, useful for very large Matrices.

```
A(1,1)=11
```

Changes the first value to 11.

Plotting

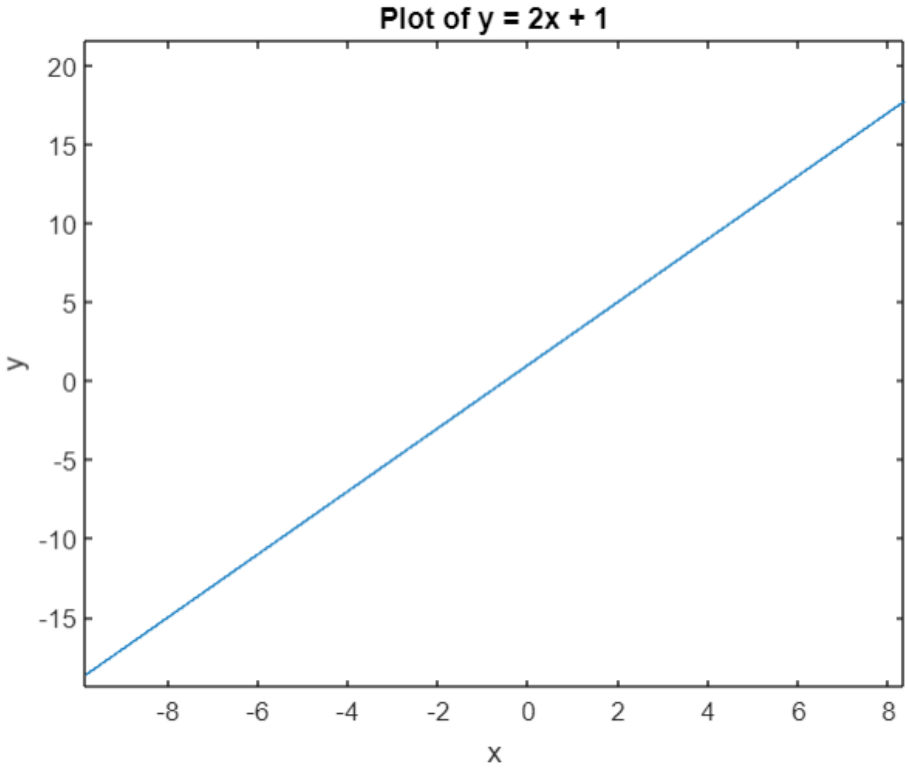
```
% Define the values for m and b
m = 2;  % Slope
b = 1;  % Y-intercept

% Generate x values
x = -10:0.1:10;  % Creating a range of x values from -10 to 10 with a step size of 0.1

% Calculate corresponding y values
y = m * x + b;

% Plot the equation
plot(x,y);

xlabel('x');
ylabel('y');
title('Plot of y = 2x + 1');
```



Getting help with Matlab

```
help plot % help followed by function name
```

Will give a description with all parameters and about the function itself

You can also go on matlab documentation and search for functions you need!