

MATLAB to Python cheatsheet

Getting started

What do we need ?

Some Python libraries installed to start:

- NumPy
- SciPy
- Matplotlib
- SymPy

Important

The general structure of these notes is:

```
% Some MATLAB code
x = 10;
disp(x);

# followed by a equivalent/similar Python code
x = 10
print(x)
```

Language fundamentals

Variables

Assign variables:

```
% Assign variables
a = 10;

# Assign variables
a = 10
```

Multi assign:

```
% Unsupported

# Multi assign
a, b, c = 10, 20, 30
# a = 10
# b = 20
# c = 30
```

Arithmetic operators

```
% MATLAB
a = 10;
b = 20;
a + b; % Addition
a - b; % Subtraction
a * b; % Multiplication
a / b; % Division

# Python
a , b = 10, 20
a + b # Addition
a - b # Subtraction
a * b # Multiplication
a / b # Division
```

Relational operators

```
a == b % Equal
a > b % Greater than
a < b % Less than
a >= b % Greater than or equal
a <= b % Less than or equal
a ~= b % Not equal

a == b # Equal
a > b # Greater than
a < b # Less than
a >= b # Greater than or equal
a <= b # Less than or equal
a != b # Not equal
```

Logical operators

```
a && b % Short-circuit logical AND
a || b % Short-circuit logical OR
a & b % Element-wise logical AND
a | b % Element-wise logical OR
xor(a, b) % Logical EXCLUSIVE OR
~a % Logical NOT

a and b # Short-circuit logical AND
a or b # Short-circuit logical OR
a and b # Element-wise logical AND
a or b # Element-wise logical OR
```

```
a ^ b      # Logical EXCLUSIVE OR
not a      # Logical NOT
```

Reference

Bla bla