

EN 1 Python reference sheet

www.ece.tufts.edu/en/1EK
r2023.09.27

```
print("hello, world!") # This is a comment
```

Text after a '#' symbol is ignored, useful for explanatory notes

```
help(ITEM) Print information about how to use an object or library
```

Operators

```
3 + 3
```

```
import math
```

```
5 * (2 + 1)
```

```
math.sqrt(2)
```

Multiplication takes precedence over addition, use parenthesis to force an order.

******, **/**, **//**, **%** Exponentiation, division, remainder (mod)

Defining a function

```
def FUNCTIONNAME(PARAMETERS):  
    # indented block  
    return VALUE
```

Example:

```
def fToC(degreesF):  
    degreesC = (degreesF - 32) / 9 * 5  
    return degreesC
```

Control flow

```
if CONDITION:  
    # Stuff to do if CONDITION is true  
else:  
    # Stuff to do if CONDITION is false
```

```
while CONDITION:  
    # Repeat this as long as CONDITION is true
```

Assigning and using variables

```
x = 3    x "gets" the value 3
```

```
x = x + 2
```

```
print(x)
```

Calling a function

```
FUNCTIONNAME(PARAMETERS)
```

```
roomTemp = fToC(72)  
print(f"Room temp is {roomTemp}")
```

Conditions

>, **<**, **>=**, **<=**, **==**, **!=**

Use **and** and **or** to combine conditions.

MicroPython libraries

```
from machine import Pin
led = Pin(PIN_NUMBER, Pin.OUT)
led.on() # Set pin "high" (3.3V)
led.off() # set pin "low" (0V)

switch = Pin(PIN_NUMBER, Pin.IN, Pin.PULL_UP)
s = switch.value() # Read the voltage of the pin
```

```
from time import sleep
sleep(1) # Pause for 1 second

from time import sleep_us
sleep_us(10) # Pause for 10 microseconds
```

