

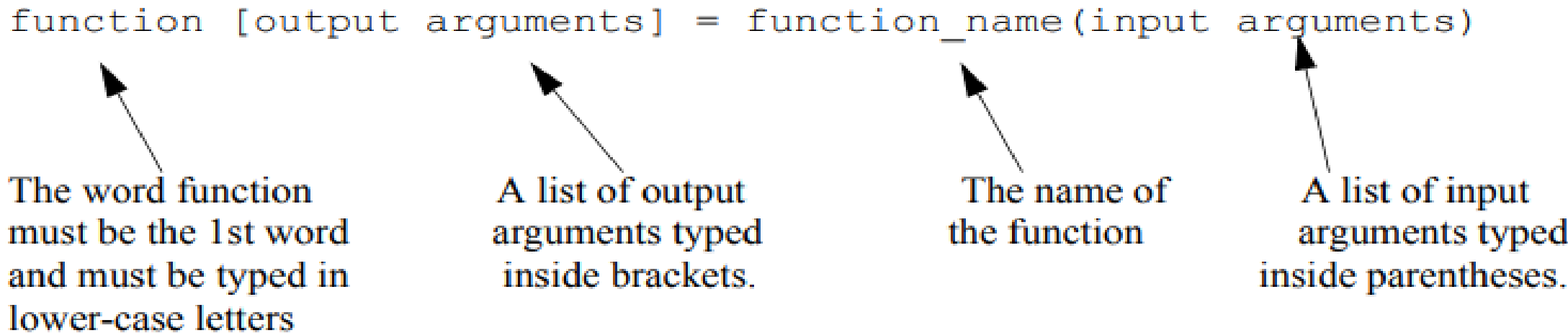
FUNCTIONS IN MATLAB & PYTHON

ECC 811 – SOFTWARE ENGINEERING

Saturday, July 5, 2025

FUNCTION IN MATLAB

```
function [output arguments] = function_name(input arguments)
```



The word `function` must be the 1st word and must be typed in lower-case letters

A list of output arguments typed inside brackets.

The name of the function

A list of input arguments typed inside parentheses.

EXAMPLE 1

Code:

```
function h = height(g, v, time)
h = v * time - g * time * time * 0.5;
```

How to call function:

```
h = v * time - g * time * time * 0.5;
```

FUNCTION IN MATLAB-EXAMPLE 2

Note:

Output Arguments

Function

```
function [mpay, tpay] = loan(amount, rate, years)
% loan calculates monthly and total payment of loan.
% input arguments:
% amount = loan amount in $
% rate = annual interest rate in percent
% years = number of years
% output arguments:
% mpay = monthly payment
% tpay = total payment
```

definition line

The H1 line

Help text

```
format bank
ratem=rate * 0.01 / 12;
a = 1 + ratem;
b = (a^(years*12) - 1)/ratem;
mpay = amount*a^(years*12) / (a*b);
tpay=mpay*years*12;
```

Function body

output arguments

Assignment of
Values to

FUNCTION IN PYTHON

A Function in Fortran or Python is used to utilize the code in more than one place in a program. It is also called method or procedures.

Example:

```
def height(g, v, time):
```

```
    h= v *time - g*time*0.5
```

```
    return h;
```

```
# returns height a ball reaches when subject to
```

```
#constant gravitational acceleration.
```

```
# Arguments
```

```
# g - gravitational acceleration
```

```
# v - initial velocity
```

```
# time - time at which height is desired
```

```
y = height(2.0, 3.0, 5.0)
```

```
print('answer = ', y)
```