

The background of the image is a wide-angle, aerial photograph of a city at night. The city is densely packed with buildings, their windows and external lights glowing in a warm, golden-yellow hue. These lights reflect off the dark water of a bay or river that cuts through the urban sprawl. The sky above is a deep, dark blue, providing a stark contrast to the bright city below. In the far distance, the faint outlines of mountains or hills are visible under the night sky.

Web Programming

Yuan Wang

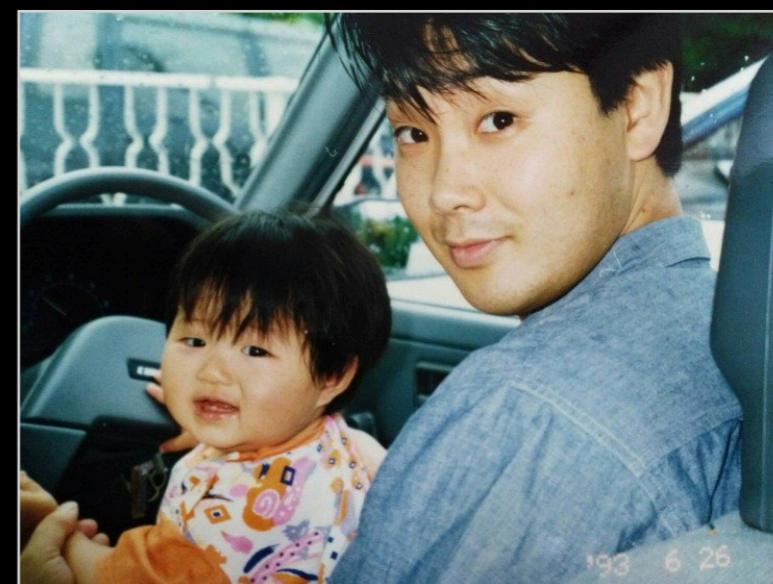
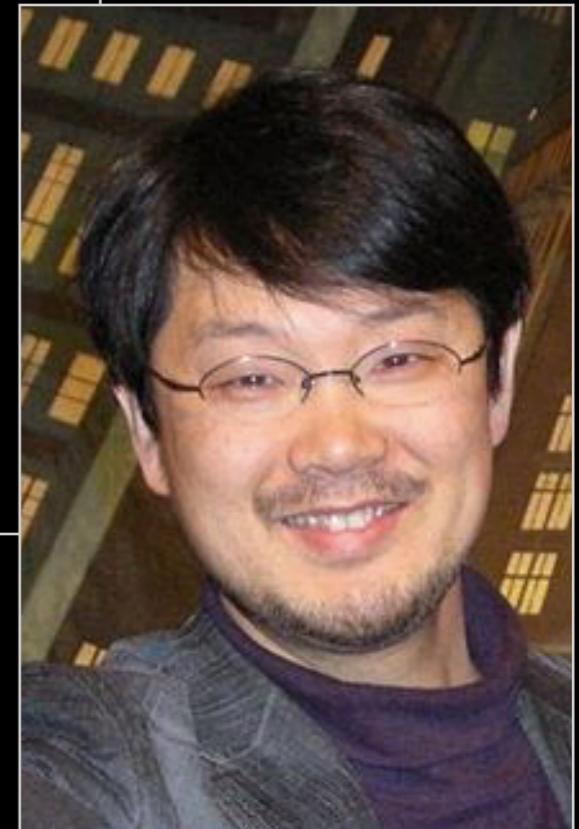
Ruby

Creator: Yukihiro Matsumoto (松本行弘) AKA **Matz**,
created in 1993 in Japan

“genuine object-oriented, easy-to-use scripting language”

Didn't like Perl and Python, so decided to
create his own.

The name “Ruby” was chosen before the language exist.



Ruby - installation

Ruby comes with an
interactive tool

IRB

Official site

<https://www.ruby-lang.org/en/>

Installation

<https://www.ruby-lang.org/en/documentation/installation/>

On MacBook:

\$ brew install ruby

(brew is a program for installing package)

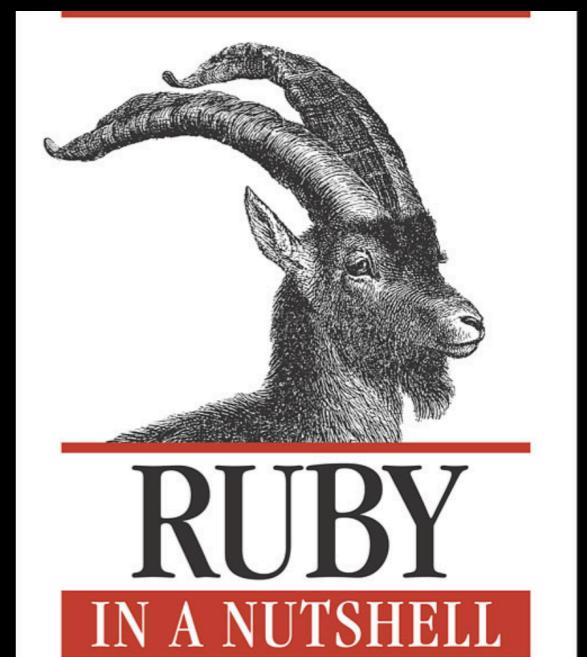
official site

<https://brew.sh/>

to install, the instruction is right
on the web page

For windows:

<https://rubyinstaller.org/>



Program = Data + Algorithm

Data - different types of values

Values are stored in variables

assign variable
value

mybox = 3

variable
value

variable
name



Assign this variable to other variable:
other = mybox

There are different types of values,
they are different sizes

example: 4, “love”, 5.92



They are also
defined
differently
internally



```
variable_name = [ 4, "love", 5.92 ]
```

Some variables hold
multiple values

Use index to locate:

variable_name[0]
is 4

variable_name[1]
is "love"

variable_name[2]
is 5.92



Function in Maths

$$y = f(x)$$

Output Function Input

```
def f_name (x)
    x = x*10
    return x
end
```

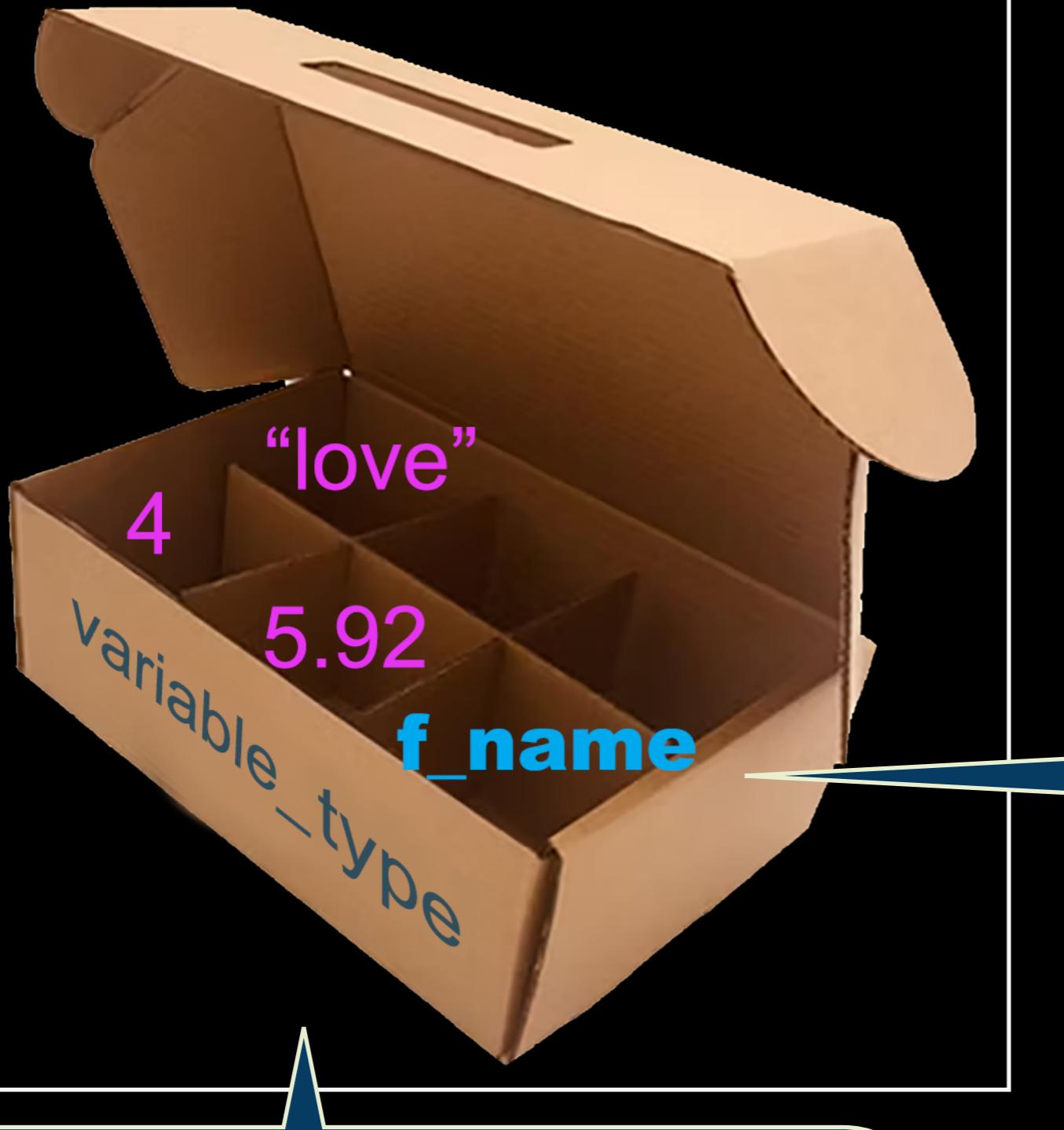
Function is similar to math function.
It has name, input, output.
And its “Function” is
defined by code

```
# this is my program
def f_name (x)
    x = x*10
    return x
end
print f_name
```

A program

Program = data + algorithm

Execute the function
by name



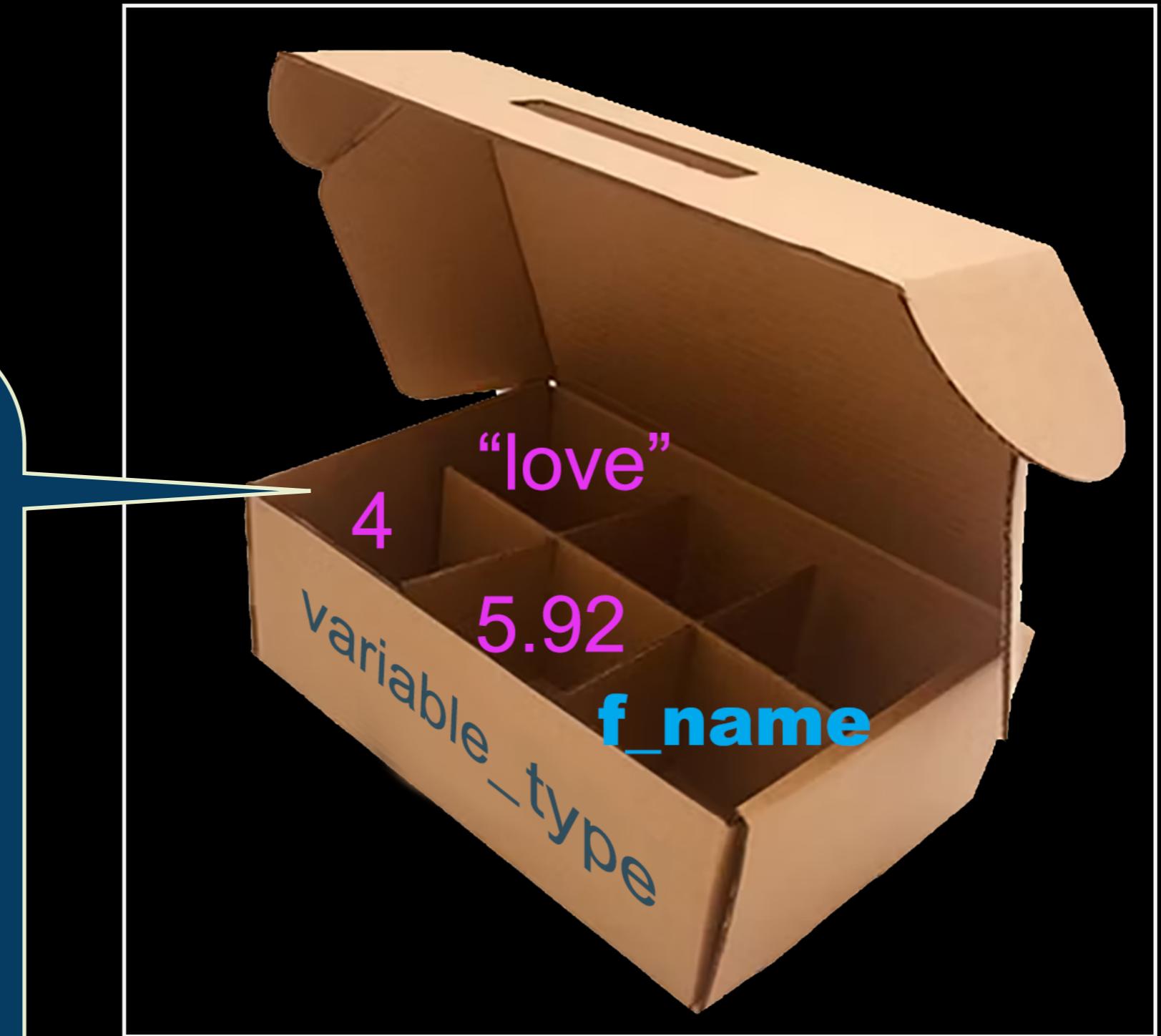
To execute,
define a variable called `variable_name`
of this type, then use this `variable_name`:
`variable_name.f_name`

`variable_name = variable_type.new`

In Ruby
a function is called
a **method**

Sometimes,
function is defined
inside **variable type**

All these values belong to different types.
There are build-in functions defined for these different types.
You can execute them the same way as using variable_name



For example:

"love".length

length
ss a build-in
function for
string type

Ruby - installation

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interactive tool

IRB

There are two ways to use Ruby

Use IRB to check code execution.
type `irb` in terminal:

```
$ irb
irb(main):001> 3+4
=> 7
irb(main):002>
```

Create a Ruby program
`(myprog.rb)`, then
execute in terminal:

```
$ ruby myprog.rb
```

