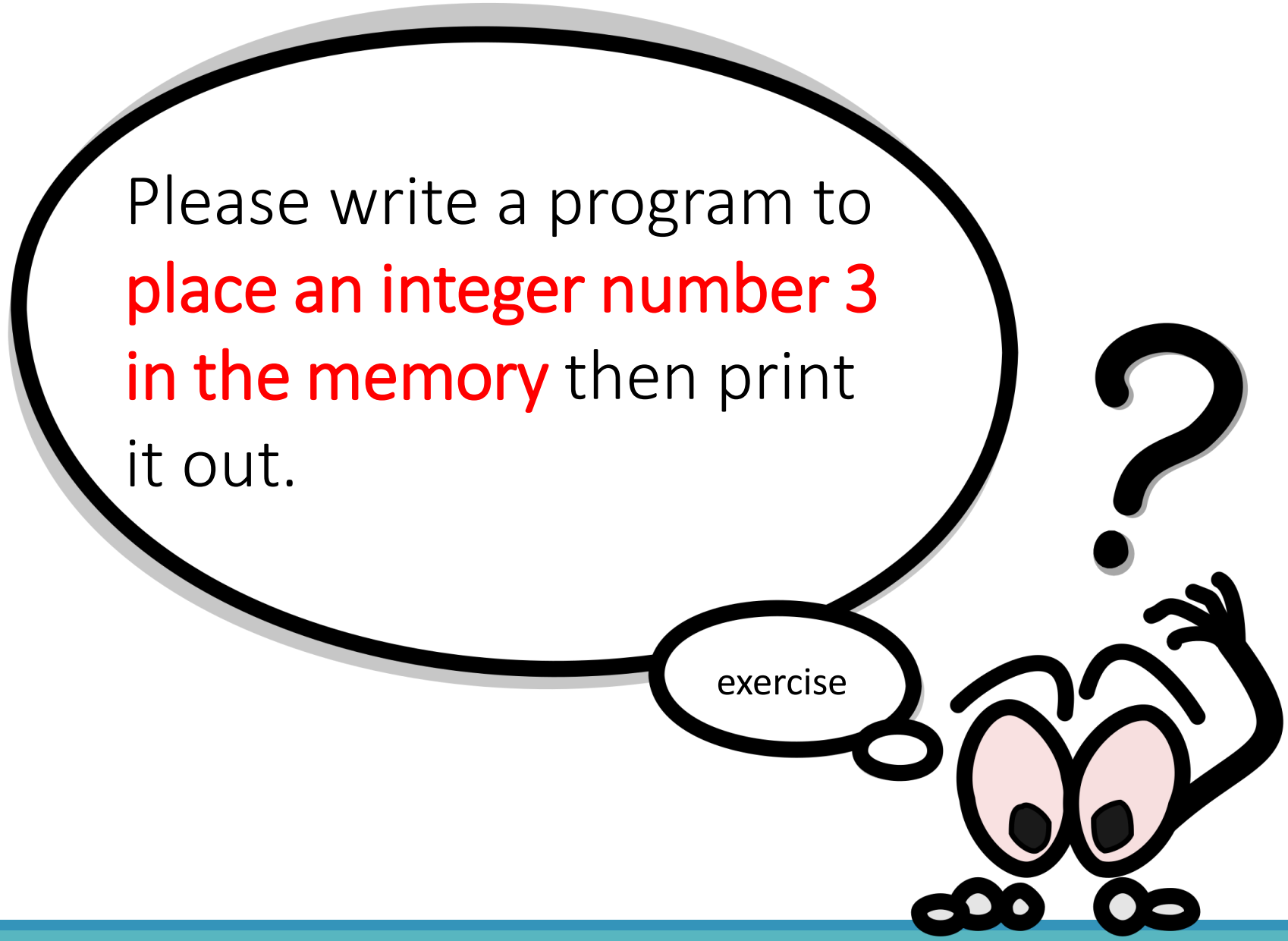
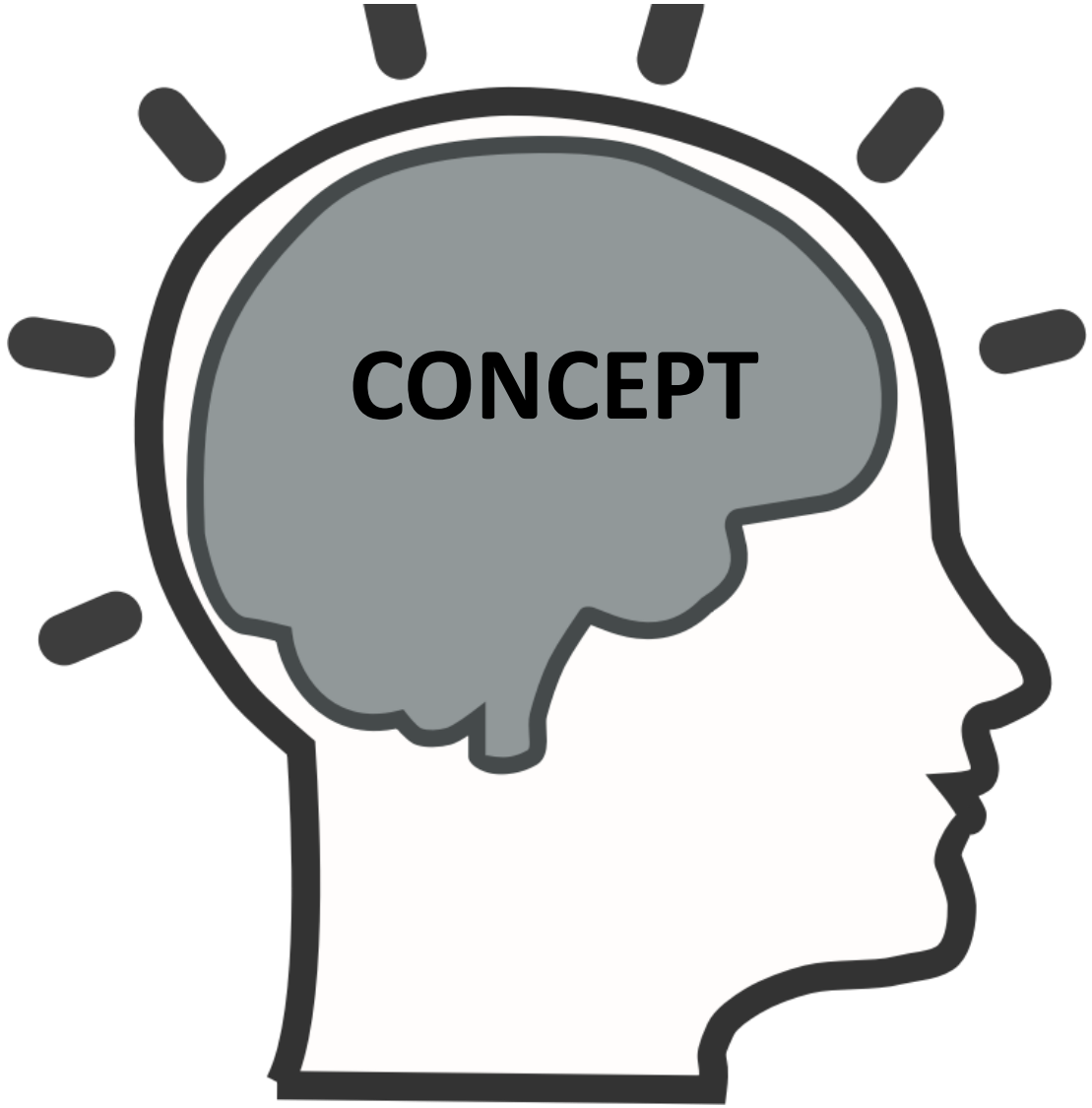
Python

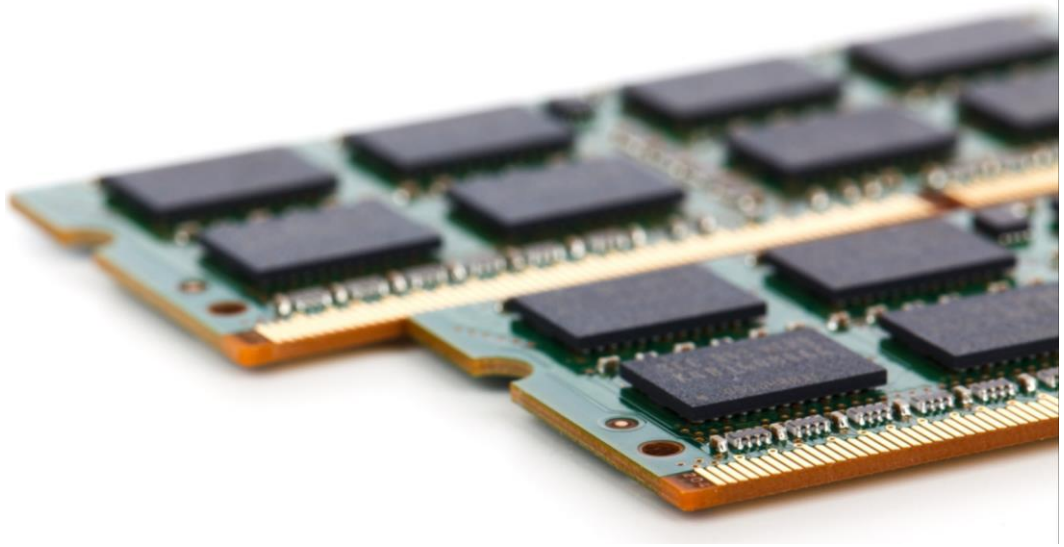
Home of data

Please write a program to **place an integer number 3 in the memory** then print it out.





The data placed in the memory



Place	Storage
The First Storage	3

Program Code

- a = 3 # comment 1,common2：please read the description in the next page.
- print(a) # comment3 ： please read the description in the page after the next page.

Comment 1：How to use =

Input	Interpret	Execute (Result)
• a = 3 • The 「＝」here does not mean equal. • It means **assignment**.	• Move the content on the right to the left can be decoded as "**get**".	• "a" gets 3

Comment 2 : a=3

Code definition

It means applying to the computer for a space to store the data.

A stands for the home of the data，which so called “variable”.

3 is the data stored in the cabinet

cabinet	Stored data
a	3

How to name home of the data

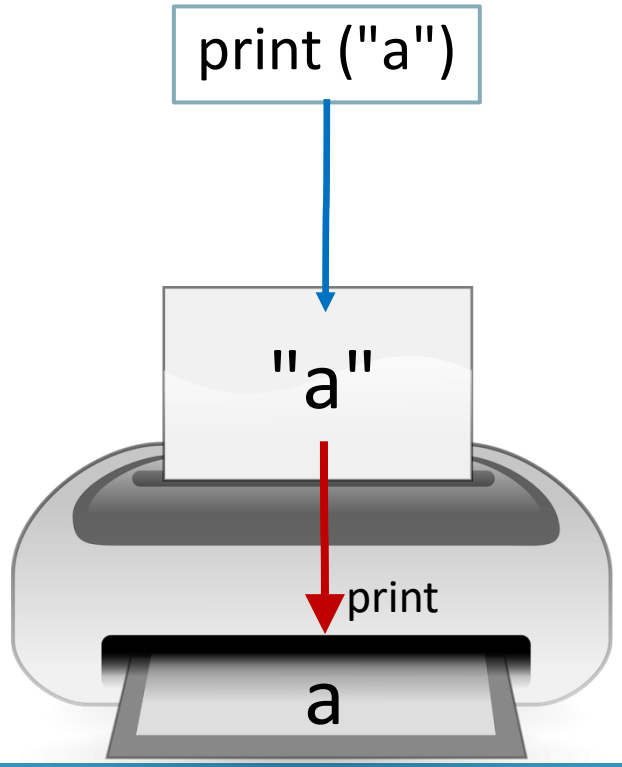
- Home of data: **Variable**
- Basically, you can name whatever you want
  - It could be a single alphabet：a、b、c
  - Or multiple alphabet combination：aaa、bbb ccc
  - Can also combined with numbers：number1、number2
- Example：
  a = 3;
  num = 3.6
  num1 = 45.888
  num2 = 150

Data Type

- a=3
- 3 is the content of the data
- Data can be divided into different types(data types)，such as integer、float and string ,etc.

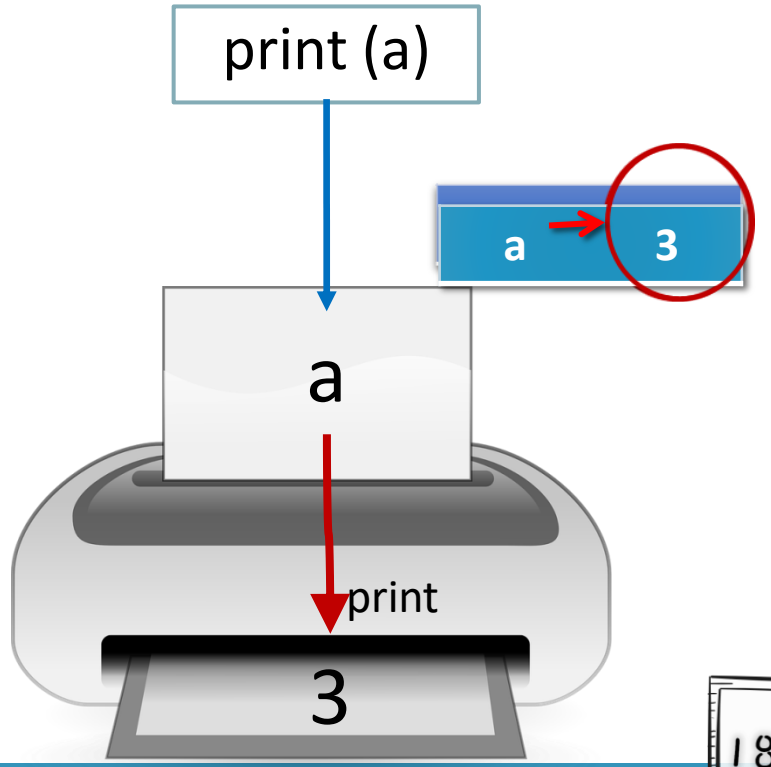
Comment 3 ： Data output

•The words in double quotes will be printed out as normal string



Those that are not enclosed in double quotation marks will be regarded as variables. The program will first find the value stored in the variable, then print out the stored value found

a=3
print(a)



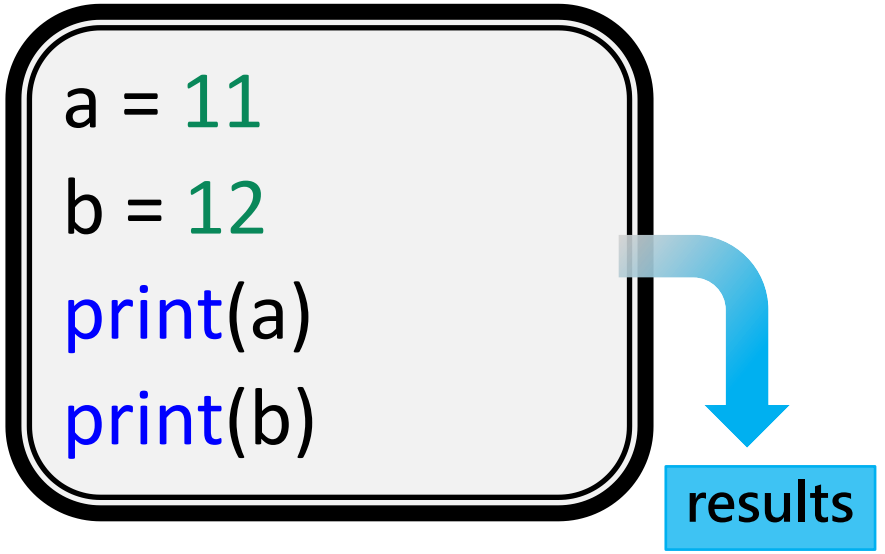
Python

Extended concepts

Concept 1 ：
Input and Output of two variables

To print a variable, write a print

- 1 row for 1 variable
- 2 rows for 2 variables
- 5 rows for 5 variables
- 10 rows for 10 variables



Concept 2 :

In addition to the content of output variables, other descriptions are added

```
a=11
b=12
print(“There are {0} dogs“ .format(a))
print(“There are {0} cats". format(b))
```

the 0th variable that refers to a in the format

Concept 3：
Mutiple variables will be printed out in the same row

```
a = 11
b = 12
print("{0}\n{1}".format(a, b))
```

It indicates that output will wrap.

Results

```
11
12
```

- Add a number in the braces, which means it corresponds to the variable in format()
- Note: Numbers start from 0 !
  - 0 corresponds to the first variable of the format
  - 1 corresponds to the second variable of the format

Concept 4：
Output variables on the same line, and add other instructions

```
a=11
b=12
print( "There are {0} dogs and {1} cats".format(a,b))
```

Results

There are 11 dogs and 12 cats .

5: How to deal with decimals?

Yes, there are different data type.

Integer V.S Decimals

- int:
  - int stands for “integer”
  - Integers are numbers without floats

- decimals (float):
  - Numbers with decimal points are floats

- 3.1415
- 21323.2323
- 233.54
- 87.45
- 999.444
- 99.00

Program Code

- int (Integer):

```
a=11
print("{0}".format(a))
```

11

- float (decimal):

```
a=11.11
print("{0}".format(a))
```

11.11

Codes are all the same？？？

Python format will automatically adjust the output format according to the variable value

But

How to control output decimal format ?

Variety of decimal places

- a=10.100000
- print(“{0}”.format(a)) #delete the decimal point of “a” then print it out.
- print(“{0:f}” .format(a)) #Preset 6 digits after the decimal point
- print(“{0:.2f}” .format(a)) #point as many digits as you want after the decimal point

```
a=10.100000
b=10.22
print("num1={0}".format(a))
print("num2={0:f}".format(a))
print("num3={0:.2f}".format(a))
print("num1={0}".format(b))
print("num2={0:f}".format(b))
print("num3={0:.2f}".format(b))
```

```
[Python_3_6]$ python3 -d main.py | tee  main.py.err
num1=10.1
num2=10.100000
num3=10.10
num1=10.22
num2=10.220000
num3=10.22
[Python_3_6]$
```