

Variables

A **variable** is a data element that has its own name.

Variables are used to work with data that can change.



Brain
storm



Defining a variable

If you want to use a variable in your program, you need to:

- create a variable by giving it a **name**;
- set the variable's **value**.

Example:

name → `hours` = `6` ← *value*
`minutes = 42`

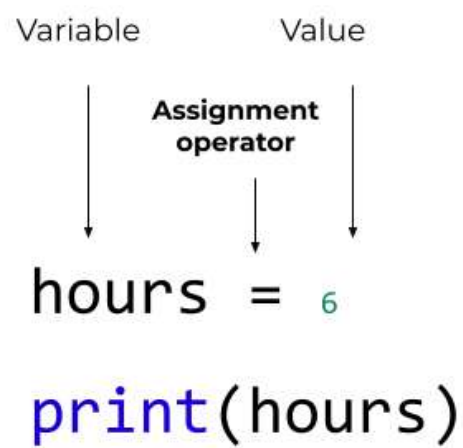
```
print('According to statistics, in 2019, an Internet user  
      spent', hours, 'hours', minutes,  
      'minutes online every day')
```



Brain
storm

Assignment operator

To set a variable's value, you need to use the assignment operator.



The program will print:
6



Brain
storm

Variable names

Compare some variable names, effective and not so much.

<i>Ineffective</i> name	Why?
<code>a = 56</code> <code>num = 1.34</code>	Other programmers will not understand what this variable stands for.
<code>number_of_students_at_school = 1108</code>	The name is too long. It is not convenient to use.

<i>Effective</i> name	Why?
<code>surname = 'Ivanov'</code> <code>ticket_price = 1999</code> <code>amount_students = 826</code>	The name explains the variable's purpose. Your fellow programmers will be able to read your program and understand the essence of it quickly.



Brain
storm

Data types

The data hidden behind variable names can be of different types. We know three:

- **integer** numbers,
- **decimal** fractions,
- **string** data type.

Numeric type		String type
144	<u>Integer</u> number (int)	'Ivan' (str)
48.3	Decimal fraction (float)	'256' (str)
(2*11)	<u>Integer</u> number (int)	'15.05.2007' (str)
(4*8.2)	Decimal fraction (float)	'Data received' (str)



Brain
storm

Working with numeric variables

Example. The following program calculates an employee's salary for a certain period.

An employer using it decided to trick one of their employees and **change the daily pay**. What will the program print?

```
daily_salary = 1000
days = 22
daily_salary = 500
total = daily_salary*days
print(total)
```



11000



Brain
storm

The input() function

`input()` is a function to input data from the keyboard.

```
result = input('Phrase')
```

↑
The result of the algorithm's execution:
a variable.

↑
The algorithm reading data.

↑
A hint for users.



Brainstorm

