An Introduction to STEM Programming with Python 3 – Chapter 1 Variables

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1

In this video we will cover:

1. What is a variable?
2. Valid variable name in Python.
3. Assigning values to variables.
4. Using variables to retrieve values.

What is a variable?

- A variable is a named place in the computer's memory, where:
    - Values can be stored as a program executes
    - Values can change as the program runs
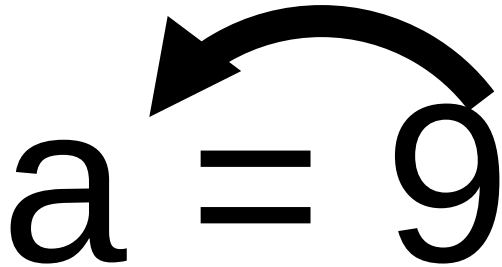- A variable must be assigned a value BEFORE it can be used.

Variable Names

1 Names must start with a letter or an underscore
   (a-z, A-Z, _)

2 Names can only contain letters, numbers, and underscores
   (a-z, A-Z, 1-9, _)

3 Variable names are case sensitive
   (A is not a)

Variable Assignment

1   Variables are created automatically when you assign them a value.

```
variable = literal or expression
```
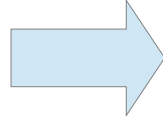
a = 9

Variable = Value

Variable Assignment

```
1  # variable assignment
2  # j.m. reneau
3
4  item = "Blue Plastic Parrot"
5  cost = 3.98
6  quantity = 12
```
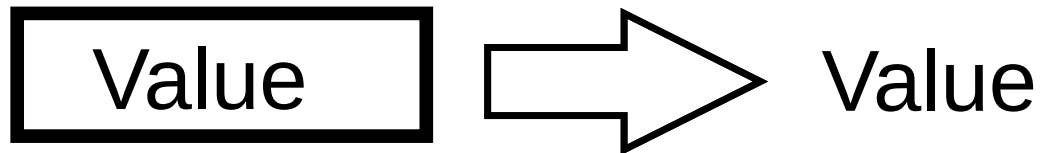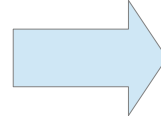
NO OUTPUT

Using Variables

1. Use the variable name just like you would use a literal value

2. You may even use it in an expression that reassigns the same variable.

Variable

| Value |

⟹ Value

Variable Use and Reassignment

```
1  # variable use
2  # j.m. reneau
3
4  item = "Blue Plastic Parrot"
5  cost = 3.90
6  quantity = 12
7
8  extended = cost * quantity
9  print("The extended cost of",
   quantity, item, 'is',
   extended)
10
11 # increase cost by 10%
12 cost = cost * 1.10
13 print("The NEW extended cost
   of", quantity, item, 'is',
   cost*quantity)
```

```
The extended cost of 12 Blue
Plastic Parrot is 46.8
The NEW extended cost of 12
Blue Plastic Parrot is
51.48000000000004
```

Thank you

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