COMPUTING AND DIGITAL LITERACY

Variables

Difficulty level: Easy

Computing and Digital Literacy

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Overview of the concept

This is how a program remembers a value and uses it later, like your score in a game or the total in a shopping cart, so it does not have to ask you for it every time. A variable is a named box where the program stores a value, and it can read that value back whenever it needs it. When the value changes, the program updates the box, and every later use sees the new value. That is how a game keeps your score, a cart keeps your total, and any program remembers what has happened so far.



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Worked examples

EXAMPLE 1

Q How do you create a variable called score starting at 0, then add 10 to it?

SOLUTION

score = 0

score = score + 10

Now score holds 10.

Create the variable with a name and a starting value: score = 0

Add 10 by writing score = score + 10, which reads the old value, adds 10, and stores the result.

Read score again and it now holds 10, not 0.

EXAMPLE 2

Q How do you store the name Sam in a variable and print it?

SOLUTION

name = "Sam"

print(name)

Output: Sam

Store the text in a variable: name = "Sam". The quotes mark it as text.

Ask the program to print the variable, not the word name: print(name).

The output shows Sam, the value stored inside name.

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Practice questions

1 lives = 3; lives = lives + 2. What does lives hold now?

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2 What does 'score = score + 10' do if score holds 5?

A. It makes score hold 15

B. It makes score hold 5

C. It makes score hold 10

D. It prints 15

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3 points = 20; points = points + 5. What does points hold now?

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4 coins = 3; coins = coins + 2; coins = coins + 4. What does coins hold now?

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5 name = 'Maya'; print(name). What prints?

A. Maya

B. name

C. print(name)

D. Nothing at all

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name = 'Maya'; name = 'Lee'; print(name). What prints?

A Maya

B Lee

C name

D Nothing at all

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7

score = 10; bonus = score; What does bonus hold?

A 10

B score

C 0

D Nothing at all

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8 What does print(score) show?

- A The value stored in score
- B The word score
- C The number 10
- D Nothing at all

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9 What is a variable?

- A A named place that stores a value a program can read and change
- B A number that never changes
- C A command that prints text
- D A mistake in the code

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Why give a variable a clear name?

A. So anyone reading the code knows what it holds

B. So the program runs faster

C. So the variable can hold more

D. So the name prints on the screen

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ANSWER KEY

1. 5

2. It makes score hold 15

3. 25

4. 9

5. Maya

6. Lee

7. 10

8. The value stored in score

9. A named place that stores a value a program can read and change

10. So anyone reading the code knows what it holds

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