COMPUTING AND DIGITAL LITERACY

Functions

Difficulty level: Intermediate

Computing and Digital Literacy

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Overview of the concept

This is how a program reuses the same job, like a button that adds an item to a cart every time you tap it, without rewriting the code. A function is a named chunk of work a program can call whenever it needs it, so the same job is written once and used a hundred times. Every app you use is full of them, from a button that adds to a cart to a search box that filters a list, and knowing how they work is the first step to building anything of your own.



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Worked examples

EXAMPLE 1

Q You define double(n) to return 2 × n. What does print(double(7)) show?

SOLUTION

def double(n):

return 2 * n

print(double(7)) -> Output: 14

Define the function once: def double(n) names it double and names its input n.

Inside, return 2 * n sends the result back to the caller.

Call it with 7: double(7) works out 2 * 7 = 14 and print shows 14.

EXAMPLE 2

Q Using the same double function, what do print(double(3)) and print(double(10)) show?

SOLUTION

print(double(3)) -> 6

print(double(10)) -> 20

Same definition, two different inputs, two answers.

Call double(3): 2 * 3 = 6, so 6 prints.

Call double(10): 2 * 10 = 20, so 20 prints.

Nothing was rewritten: the one definition served both calls.

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Practice questions

1. def double(n): return 2 * n. What does double(7) give?

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2. def triple(n): return 3 * n. What does triple(4) give?

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3. def add_one(n): return n + 1. What does add_one(9) give?

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4 **def square(n): return n * n. What does square(5) give?**

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5 **def double(n): return 2 * n. What does double(double(3)) give?**

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6 **def double(n): return 2 * n. double(n) gives 20. What is n?**

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7 def triple(n): return 3 * n. What do print(triple(2)) and print(triple(5)) show?

- A 6 and 15
- B 6 and 10
- C 15 and 6
- D 10 and 15

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8 def greet(name): return 'Hello, ' + name. What do print(greet('Ana')) and print(greet('Ben')) show?

- A Hello, Ana and Hello, Ben
- B Hello, Ben and Hello, Ana
- C Hello Ana and Hello Ben
- D Ana and Ben

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9 What is a function?

- A. A named block of code that performs one job and can be reused
- B. A single line of code that runs once
- C. A variable that stores a number
- D. A comment that explains the code

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10 Why use a function instead of copying code?

- A. So the job is written once, stays consistent, and is easy to fix
- B. So the program runs without any input
- C. So the code uses more memory
- D. So each copy can be written differently

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ANSWER KEY

1. 14

2. 12

3. 10

4. 25

5. 12

6. 10

7. 6 and 15

8. Hello, Ana and Hello, Ben

9. A named block of code that performs one job and can be reused

10. So the job is written once, stays consistent, and is easy to fix

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