Data Types, Theoretical Test

1. How do you declare a string variable in Python?

A: By assigning a number directly to the variable.

B: By enclosing the text in single or double quotes (e.g., name = "Alice").

C: Using a dedicated string data type declaration.

D: Using a container to store string data in your program

Картина, която съдържа текст, Шрифт, екранна снимка, Графика

Описанието е генерирано автоматично2. What is the output of the following code?

A: An error, you cannot modify dictionaries.

B: "apple" (original value)

C: "banana" (modified value)

D: It will print the entire dictionary.

3. How can you check the data type of a variable in Python?

A: By using a specific function to define the data type.

B: There's no way to check the data type in Python.

C: The data type is automatically determined at runtime.

D: By using the type() function

4. What is the difference between mutable and immutable data types in Python?

A: There's no such distinction in Python.

B: Mutable data types can be changed after creation, while immutable ones cannot.

C: Mutable data types are faster for performance reasons.

D: Immutable data types are used for storing user input.

5. How can you convert a string containing comma-separated numbers into a list of integers?

A: There's no built-in way to do this directly.

B: Use a loop to split the string and convert each element to an integer.

C: Use the split() method on the string and then int() on each element to create a list of integers.

D: None of this

6. How can you iterate over elements in a list while modifying them simultaneously?

A: You cannot modify elements while iterating in Python.

B: You need to create a separate loop for modification.

C: Use a for i in range(len(list)) loop to access indices and modify elements.

D: Use a for element in list loop. This iterates directly over the elements, allowing in-place modification.

7. What happens when you try to access an element outside the list's index range?

A: The element is automatically created at that index.

B: The code silently ignores the out-of-range access.

C: You will get an IndexError exception.

D: The program crashes.

8. What is the concept of type hinting in Python, and how is it beneficial?

A: Type hinting is a way to force specific data types during variable declaration (not enforced).

B: Type hinting is a way to provide optional type annotations for variables and function arguments, improving code readability and potential static type checking with external tools.

C: It's a mandatory requirement for Python programs.

D: It allows for faster code execution.

9. How can you deep copy a nested data structure (list of dictionaries) in Python to avoid unintended modifications?

A: Copying the reference is sufficient, as changes won't affect the original.

B: Use a loop to manually copy each element and create a new structure.

C: There's no built-in way to achieve a deep copy.

D: Use the copy module's deepcopy() function to create a new, independent copy of the entire nested structure.

10. How can you convert a string representation of a number (e.g., "123") to an actual integer in Python?

A: number = "123"

B: number = int("123")

C: number = number + 0

D: number = number('123')

11. BONUS QUESTION -> What does the global keyword do in Python, and when should it be used?

A: It creates a new local variable in the current function.

B: It declares that a variable inside a function refers to a global variable defined outside the function.

C: It is used to import all global functions from the Python standard library.

D: It makes all local variables global in scope.

Картина, която съдържа текст, Шрифт, екранна снимка, дизайн

Описанието е генерирано автоматично12. BONUS QUESTION -> What does the global keyword do in Python, and when should it be used?

A: [1] and [2], because lst is initialized as an empty list each time the function is called.

B: [1] and [1, 2], because the default mutable argument lst retains changes across function calls.

C: [1] and an error, as the function does not handle multiple calls properly.

D: An exception is raised due to appending elements inside a function.