

Python Data Structure

Score: 14/14

1. What does the 'len()' function do in Python?

Returns the total number of integers in a list

Returns the total number of items in an object

Returns the sum of all elements in a list

Returns the average of all elements in a list

Explanation

The 'len()' function in Python returns the number of items in an object. For example, if used on a string, it will return the number of characters in the string.



2. Which of the following methods is used to convert a string to lowercase in Python?

toUpperCase()

casefold()

Explanation

The 'lower()' method in Python is used to convert a string to lowercase. For example, 'Hello' becomes 'hello' after using this method.



3. What is the result of the expression $4 * 3 + 2 ** 2$?

Explanation

The exponentiation (**) operator has higher precedence than the multiplication (*) operator. So, the expression is solved as $4 * 3 + 2 ** 2 = 4 * 3 + 4 = 12 + 4 = 16$.



4. Which of the following is not a valid method for a Python string object?

split()

replace()

upper()

pick()

Explanation

The 'pick()' method is not a valid method for a Python string object. The other options are valid string methods.



5. What will be the output of the following code: x = [1, 2, 3] y = x y.append(4) print(x)

[1, 2, 3]

[1, 2, 3, 4]

[1, 2, 3, 3]

[1, 2, 4]

Explanation

In Python, when a list is assigned to another variable, it creates a reference to the original list, not a new list. So, when 'y' is modified, 'x' is also modified because both point to the same list. Therefore, the output will be [1, 2, 3, 4].



6. What is the difference between a list and a tuple in Python?

A list can store different types of elements, but a tuple cannot

A list is ordered, but a tuple is unordered

A list is mutable, but a tuple is immutable

A list has a fixed size, but a tuple can grow or shrink

Explanation

The main difference between a list and a tuple in Python is that a list is mutable (can be changed), whereas a tuple is immutable (cannot be changed). This means that the elements of a list can be modified after it is created, while the elements of a tuple cannot be modified after it is created.



7. In Python, which of the following data types is used to store a collection of data that is



unordered and unindexed?**Explanation**

In Python, a set is used to store a collection of unique elements that is unordered and unindexed. The elements in a set are not stored in any particular order, and there are no duplicate elements in a set.

**8. Which of the following is used to access the value of a dictionary given its key in Python?**

Explanation

In Python, the square brackets (`[]`) are used to access the value of a dictionary given its key. For example, if the dictionary is `'my_dict'` and we want to access the value associated with the key `'name'`, we would use `'my_dict['name']`.



9. What will be the output of the following code:

```
my_dict = {'a': 1, 'b': 2, 'c': 3} print('b' in my_dict)
```

Explanation

The `'in'` operator in Python is used to check if a key exists in a dictionary. In this code, `'print('b' in my_dict)'` will output `True` because the key `'b'` exists in the dictionary `'my_dict'`.



10. Which data structure in Python is used to map keys to values?



Dictionary

Explanation

A dictionary in Python is used to map keys to values. It is a collection of key-value pairs, where each key is associated with a value.



11. What does the following code do in Python:
`my_set = {1, 2, 3, 4, 5} my_set.add(6)`

Adds multiple elements to the set

Adds an element to the end of the set

Adds a single element to the set

Removes an element from the set

Explanation

In Python, the 'add()' method is used to add a single element to a set. When the code 'my_set.add(6)' is executed, the element 6 will be added to the set 'my_set'.



12. Which of the following is an example of a valid Python tuple?

[1, 2, 3]

(1, 2, 3)

{1, 2, 3}

1, 2, 3

Explanation

A tuple in Python is defined using parentheses (). For example, '(1, 2, 3)' is a valid tuple containing three elements.



13. Which of the following is the correct way to declare an empty dictionary in Python?

my_dict = dict()

my_dict = {}

my_dict = [[]]

my_dict = ()

Explanation

The correct way to declare an empty dictionary in Python is by using empty curly braces `{}`. For example, `'my_dict = {}'` creates an empty dictionary named `'my_dict'`.



14. What will be the result of the following expression in Python: `'hello' + 'world'`?

`'helloworld'`

`'hello world'`

Error

`'hello' 'world'`

Explanation

The `'+'` operator when used with strings in Python concatenates them. So, the expression `'hello' + 'world'` will result in `'helloworld'`.