

WORKSHEET 2 PYTHON

Q1 to Q7 have only one correct answer. Choose the correct option to answer your question.

1. Which of the following is not a core datatype in python?

- A) list
- B) struct
- C) tuple
- C) set

Answer

B) struct

2. Which of the following is an invalid variable name in python?

- A) _init_
- B) no_1
- C) 1_no
- D) _1

Answer

B) 1_no

3. Which one of the following is a keyword in python?

- A) in
- B) _init_
- C) on
- D) foo

Answer

B) in

4. In which of the following manner are the operators of the same precedence executed in python?

- A) Left to Right
- B) BODMAS
- C) Right to Left
- D) None of these

Answer

C) Right to Left

5. Arrange the following in decreasing order of the precedence when they appear in an expression in python?

i) Multiplication ii) Division iii) Exponential iv) Parentheses

- A) iii – iv – ii – i
- B) iii – iv – i – ii
- C) iv – iii – ii – i
- D) iii – ii – i – iv

Answer

C) iv – iii – ii – i

6. $(28//6)**3/3\%3 = ?$

- | | |
|--------------|------|
| A) 7.1111... | B) 0 |
| C) 0.3333... | D) 1 |

Answer

C) 0.3333...

7. `a = input("Enter an integer")`. What will be the data type of `a`?

- | | |
|----------|-----------|
| A) int | B) str |
| C) float | D) double |

Answer

B) str

Q8 and Q10 have multiple correct answers. Choose all the correct options to answer your question.

8. Which of the following statements are correct?

- A) Division and multiplication have same precedence in python
- B) Python's operators' precedence is based on PEDMAS
- C) Python's operators' precedence is based on VBODMAS
- D) In case of operators' having the same precedence, the one on the left side is executed first.

Answer

A) Division and multiplication have same precedence in python

B) Python's operators' precedence is based on PEDMAS

9. Which of the following is(are) valid statement(s) in python?

- | | |
|------------------------------------------|----------------------------------------|
| A) <code>abc = 1,000,000</code> | B) <code>a b c = 1000 2000 3000</code> |
| C) <code>a,b,c = 1000, 2000, 3000</code> | D) <code>a_b_c = 1,000,000</code> |

Answer

A) `abc = 1,000,000` ,C) `a,b,c = 1000, 2000, 3000` D) `a_b_c = 1,000,000`

10. Which of the following is not equal to x^{16} in python?

A) x^{**4**4}

B) x^{**16}

C) x^{16}

D) $(x^{**4})^{**4}$

Answer

A) x^{**4**4}

Q11 to Q13 are subjective questions, answer them briefly

11. Differentiate between a list, tuple, set and dictionary.

Ans

LIST:- It is just like dynamic sized array, no need to be homogeneous always which makes it more powerful tool in Python

Characteristics :- list is a datatype available in Python which can be written as a list of comma-separated values(items) between square brackets.

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2) Tuple:- The sequence of value stored in a tuple can be of any type, and they are indexed by integers. although it is not necessary, it is more common to define tuple by closing the sequence of values in parenthesis.

Characteristics:- 1) it is defined under parenthesis().

2) Tuples can store any type of element.

3) Set:- Set is an unordered collection of data type that is utterable, mutable and has no duplicate elements. it is highly optimized method for checking whether a specific element is contained in the set.

Characteristics:- Here the order in which the elements are added into the set is not fixed, it can change frequently.

4) Dictionary :- It is unordered collection of data values, used to store data values like a map, which unlike other data types that hold only single value as an element.

Characteristics:- Keys in a dictionary doesn't allow Polymorphism.

List	Set	Tuple	Dictionary
Lists is mutable	Set is immutable	Tuple is immutable	Values can be any type of object but keys must be immutable
It is ordered collection of items	It is unordered collection of items	It is unordered collection of items	it unordered collection of data
Items in list can be Replaced	Items in set cannot be changed	Items in tuple cannot be changed	Items / new pair of key values can be added
Example:- List = [10, 20, 30]	Example:- Set1 = set(["Hello ", "World"])	Example:- Tuple = (10, 20, 30)	Example:- car = {1:"Hello". 2:"World"}

12. Are strings mutable in python? Suppose you have a string “I+Love+Python”, write a small code to replace ‘+’ with space in python.

Ans:- Strings are array in python, any character in python is string. Strings are immutable just like an array & tuples. Immutability is a clean and efficient.

solution to concurrent access. Having immutable variables means that no matter how many times the method is called with the same variable / value, the output will always be the same.

Immutable strings greatly simplify memory allocation when compared with C strings, you don't guess at a length and over-allocate hoping you over-allocated enough.

The elements of the strings can be accessed by slicing and indexing, elements can be replaced using replace() method, it generates a copy of the string with new replaced items.

Advantage:-

We also knowing that a string is immutable means we can allocate space for it at creation time, nad the storage requirements are fixed and unchanging. String in python are considered as "elemental" as numbers, No amount of activity will change the value 8 to anything else, and in python, no amount of activity will change the value 8 to anything else, and in Python no amount of activity will change the string "eight" to anything else.

```
Example:- In [1]: a = "I+Love+Python"           # defining a
                new_a = a.replace("+"," ")      # replacing + with space(" ")
                new_a                            # printing final output
```

13. What does the function **ord()** do in python? Explain with an example. Also, write down the function for getting the data type of a variable in python.

Ans: - It is inbuilt `Ord()` function in Python, given string of length one, return an integer representing the Unicode code point of the character when the argument is a Unicode object, or the value of the byte when the argument is an 8-bit string

Example:- `Ord("a")` return the integer 97, `Ord("$")` returns 36. This is the inverse of `chr()` for 8 bit strings and of `unricher()` for Unicode objects. If a Unicode argument is given and python was built with UCS2 Unicode, then the character's code point must be in the range `[0...65535]` inclusive.

`Type()` Function :- It is very simple syntax and can be used to find the type of any variable in python be it a collection type variable, a class object variable or a simple string or integer.

syntax: - `type (variable name)` Example : - `a=12` # defining variable a
 `type(a)` # printing type variable

Q14 and Q15 are programming questions. Answer them in Jupyter Notebook.

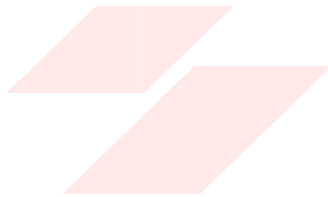
14. Write a python program to solve a quadratic equation of the form $ax^2+bx+c=0$. Where a, b and c are to be taken by user input. Handle the erroneous input, such as 'a' should not be equal to 0.

Answer. Notebook: - Quadratic equation

15. Write a python program to find the sum of first 'n' natural numbers without using any loop. Ask users to input the value of 'n'.

Answer

. Notebook: - Sum of of "n" natural numbers without loop.



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