

Q1. Is an assignment operator like += only for show? Is it possible that it would lead to faster results at the runtime?

Answer: $a=a+1$ evaluates to finding a , adding 1 to it. Then storing the value again in variable a . This expression makes finding memory holder of a twice. But $a+=1$ simply means value of a is to be incremented by 1. As memory address has to be identified once, $+=$ leads to faster operation.

Q2. What is the smallest number of statements you'd have to write in most programming languages to replace the Python expression $a, b = a + b, a$?

Answer: Minimum number of lines required to write above code in language other than Python will be 4, two for assigning initial values for a and b , and two for reassignment i.e. $a=a+b$ and $b=a$.

Q3. In Python, what is the most effective way to set a list of 100 integers to 0?

Answer : `list_zero=[0]*100`

Q4. What is the most effective way to initialise a list of 99 integers that repeats the sequence 1, 2, 3? If necessary, show step-by-step instructions on how to accomplish this.

Answer : `list_repeat= [1,2,3]*33`

Q5. If you're using IDLE to run a Python application, explain how to print a multidimensional list as efficiently?

Answer: Consider `List1` is variable for multidimensional list

```
for i in range(len(List1)) :  
    for j in range(len(a[List1[i]])) :  
        print(a[i][j], end=" ")  
    print()
```

Q6. Is it possible to use list comprehension with a string? If so, how can you go about doing it?

Answer : List comprehension with string is possible. E.g.

`list_com= [a for a in "string to comprehend"]`

Q7. From the command line, how do you get support with a user-written Python programme? Is this possible from inside IDLE?

Answer: **Get support with a user-written Python Programme**

Start a command prompt or terminal window. If the current working directory is the same as the location in which you saved the file, you can simply specify the filename as a command-line argument to the Python interpreter.

Get support with a User-written Python Program from IDLE:

You can also create script files and run them in IDLE. From the Shell window menu, select **File** → **New File**. That should open an additional editing window. Type in the code to be executed. From the menu in that window, select **File** → **Save** or **File** → **Save As...** and save the file to disk. Then select **Run** → **Run Module**. The output should appear back in the interpreter

Q8. Functions are said to be "first-class objects" in Python but not in most other languages, such as C++ or Java. What can you do in Python with a function (callable object) that you can't do in C or C++?

Answer:

A function is an instance of the Object type.

You can store the function in a variable.

You can pass the function as a parameter to another function.

You can return the function from a function.

You can store them in data structures such as hash tables, lists,

Q9. How do you distinguish between a wrapper, a wrapped feature, and a decorator?

Answer : Wrappers around the function are also known as decorators.

Q10. If a function is a generator function, what does it return?

Answer : Generator functions are a special kind of function that return a lazy_iterator. These are objects that you can loop over like a list. However, unlike lists, lazy iterators do not store their contents in memory.

Q11. What is the one improvement that must be made to a function in order for it to become a generator function in the Python language?

Answer : Generator is written as a normal function but uses yield keyword to return values instead of return.

Q12. Identify at least one benefit of generators.

Answer : Return sends a specified value back to its caller whereas **Yield** can produce a sequence of values. We should use generator when we want to iterate over a sequence, but don't want to store the entire sequence in memory.