

Class assessment - 1

(29/30)

Q. 1 Explain the difference between a list and a tuple in python. Provide an example for each.

→ 1) Lists:- A list is one of the major python data structures used to contain a set of things called items. Like arrays, list to tuple python helps keep similar types of data values together, condensing them code together.

e.g. list = [1, 2, 3, 4]

print(list)

①

2) Tuples:- Just like, tuples also contain a set of objects in an ordered manner. These objects are kept separated by commas.

e.g. tuple = (1, 2, 3, 4)

print(tuple)

Q. 2 Describe the purpose of the set data type in python provide an example to illustrate its use.

→ 1) Set are used to store multiple items in a single variable.

2) set is one of 4 built-in data types in python used to store collection of data, the others are list, tuple, and dictionary

e.g. -

set = {"apple", "banana", "cherry"}

print(set)

Q. 3 What is the key difference between float and and an integer data type in python? Give an example where using a float would be more appropriate.

- Integers:-
1) Integers are whole numbers, both positive and negative without fractions.
2) Integers are immutable, so once created their value cannot be changed.

①

- Floating-Point :-
1) Floating-point numbers represent real numbers and can have fractions.
2) they are represented as float in python and adhere to the IEEE 754 standard for floating point arithmetic.

- 4) How does the dictionary data type in python differ from list and tuple? Provide an example of a dictionary and explain its structure.

- 1) Tuples are unordered
2) Dictionaries are ordered.
3) The list and tuple can be created by using the elements without any defining the key whereas the dictionary uses the key and value pairs.

e.g.

d = {'a': 10, 'b': 20, 'c': 30}

print(d)

print(type(d))

Q5

- What is doc string and use of this string in python?
1) A python docstring is a string used to document a python module, class, function or method.

2) Programmer can understand what is done without having to read the details of the implementation.

② ~~Also, it is a common practice to generate online documentation automatically from docstring.~~

6) Explain the purpose of the // operator in python provide an example to illustrate.

→ It provides the quotient's floor value, which is obtained by dividing the two operands.

7) Differentiate between the == is operator in python provide an example to demonstrate their usage.

→ 1) When comparing objects in python identity operator is frequently used in context where the equality operator == should be.

2) To compare object based on their values python equality operators (=) are employed.

8) What is the use of += operator in python? provide an example demonstrate its functionality.

→ 1) The plus-equals operator += provides a convenient way to add value to an existing variable and assign the new value back to the same variable.

2) In the case where the variable and the value are string, this operator perform

this operator performs string concatenation instead of addition.

Q. 9 Discuss the role of the in operator in python. provide an example of how it can be used.

- 1) The 'in' operator in python is used to check if a value exist in a sequence like a list, tuple or str.
2) e.g.

list = [1, 2, 3, 4]

print(1 in list)

In this example, we have a list of numbers and we're using 'in' operator to check if the number 1 is in this list.

Q. 10 Explain is the concept of the ternary operator in python. provide an ex. scenario in which it can be employed.

- 1) The ternary operator in python is a one line shorthand for an if-else statement.
2) It allows you to quickly test a condition and returns a value based on whether that condition is true or false.

e.g.

x = 10

print('Even' if x%2 == 0 else 'Odd')

Q.11 What is the purpose of the if statement in python? Provide an example demonstrating the use of an if statements:-

- 1) The if statement allows you to execute a block of code if a certain condition is true.
2) If the condition is true, the code block indented below the if statement will be executed.

e.g.

```
num = 5  
if num > 0  
    print("the num is positive.")
```

12) Describe the difference between while and for loops in python. Give an example for each loop type.

- 1) In python there are two types of loops available which are 'for loop' and 'while loop'.
2) In python a 'for loop' is used to iterate over a sequence of items such as a python tuple, list, string or range. The loop will execute a block of statements.
3) While loop is used to repeatedly execute a block of statement while a condition is true.

1/2

13) Explain the significance of break statement in python. Provide a scenario where using break is appropriate.

→ 1) The break statement terminates the execution of the nearest enclosing do, for, switch for while statement in which it appears.

2) Control passes to the statement that follows the terminated.

e.g.:

```
for i in range(10):  
    print(i)  
    if i == 2:  
        break.
```

14) Discuss the significance of the continue statement in python.

→ 1) The continue statement in python is used to skip the remaining code inside a loop for the current iteration only.

2) When the continue statement is executed in the loop, the code inside the loop following the continue statement will be skipped for the current iteration.

15) How does the else clause in a loop contributes to the control flow in python? provide an example illustrating the use of else clause in a loop.

→ 1) Python enables an else clause at the end of a for loop.

2) The else part is executed if the loops terminates naturally.

3) In the above, the for loop is executed first.

4) After that, the else part is executed.