

Class Assessment-1

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

1) List:- 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 value together.

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

2) Tuples:- Just like, tuple also contain a set of objects in an ordered manner. These objects are kept separated by comma.
e.g. tuple = (1, 2, 3, 4, 5) print(tuple).

Describe the purpose of the set data type in python provide an example used to store multiple items.

3) Set are used to store multiple items in a single variable

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

e.g. set = {"apple", "banana", "cherry"}
print(set)

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

int:- 1) Integers are whole numbers both positive and

represent real numbers and can have fraction.

2) they are represented as float in python and adhere to the IEEE 754 standard for floating point arithmetic.

How does the dictionary data type in python differ from list & tuples? provide an example of addition 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 dict uses the key and value pairs.

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) Programmers can understand what is done without having to read the details of the impleting.
- 3) Also, it is a common practice together online documentation automatically from docstring.

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

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

Differentiate between the == operator in python provide and 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 value python equality operators (==) are employed.

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 same variable.
- 2) In the case where the variable and the value are string, this operator perform this operator + string concatenation instead of addition.

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 a value exist in a sequence like list, tuple or string.

e.g. list - [1, 2, 3, 4]
pair (1 in list)

Q10. Explain the concept of the ternary operators in python. Provide an ex scenario it where it can be employed.

- 1/2
1) The ternary operator in python is one like shorthand for an if-else statement.
2) It allows you to quick test a condition & returns a value based on whether the condition is true or false.
e.g. $x = 10$

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

Q11. What is the purpose of the if statement in python provide an example demonstrating the use of an if statement.

- 1) The if statement allows you to execute a block of code if a certain condition is true.

1/2
2) If the condition is true code block intended below the statement will be executed.

Q12) Describe the difference between while and for loops available in python give example for both loop type.

- 1) In python there are two types of loops available which are for loop & while loop.

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2) In python a 'for loop' is used to iterate over a sequence of items such as a my tuple is string or range the loop will execute block of statement.

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.
```

- 1) Discuss the role 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.

1/2 → 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 above

→ Python enables an else clause at the end of
① 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.

①