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Q1] Explain the difference between a list and a tuple in python. provide an example for each.

Ans. **List :-**
    • list is defined in a square bracket '[ ]'.
    • list is collection of integer values. List is mutable.
    • In list we can store no. of elements in one list.
    for ex. L = [1, 2, 3, 4, 5]

② ex. L1 = [1, 2, 3, 4, 5]
      print [L1]

o/p = [1, 2, 3, 4, 5]

Tuple :-
    • Tuple is defined in a round bracket or parenthesis '( )'
    • Tuple is collection of different data types. like int, float, string, etc. Tuple is immutable.
    for ex. T = (1, 2.5, 'xyz')
        print (T)

o/p = 1, 2.5 xyz

Q2] Describe the purpose of the set data type in python. provide an example to illustrate its use.

Ans.- set :-
- Set is a data type in python 3.
- Set is collection of values.
- The purpose of set is to remove duplicate values from the set.

for ex.   a = { 1, 2, 3, 3, 4, 5, 6, 6, 6, 7 }
           print (a)

o/p 1, 2, 3, 4, 5, 6, 7

In the above example set will remove all duplicate values from the set - a.

Q3] what is the key difference between a float and an integer data type in python? Give an example where using a float would be more appropriate?

→   float :- float data type is in decimal value.
- It is a numeric data type.
- float used when precision required in mathematical calculations.
- float can be positive or negative.

Q3]

Integer:- . An integer is an numeric
          data type represents
whole numbers .
   • Integer can be positive or negative.
   • Integer is commonly used for
     counting , indexing , and
performing arithmetic operations.

for ex.   a = [1, 2, 3, 4]
           b = [1.5, 2.50, 2.5, 3.40]
           print (a)
           print (b)

```
O/P   1 2 3 4
      1.5  2.5  2.5  3.4
```

Q4]
Ans.   dictionary :-
            In the dictionary data type
we can store the values like
name, age of the person. and
we can make dictionary .

    for ex.
            a = { "name" : "xyz", "age" : 20}
            print (a)

```
olp {'name': 'xyz'   age : 20 }
```

In list and tuple we can
store the information like list
of different integers and in
tuple we can store the different
datatypes -

The difference in dictionary and list, tuple is in dictionary we store data properly. and we can give label also for the data.

Q 5]

Ans. A python doc string is a string used to document or python module, class, function or method.

① • It is common practice to generate online (html) documentation automatically from docstring.

Q6]

Ans. '//' :- The purpose of ('//') this operater to perform floor division.

• Symbol for floor division is (//)

• It can be used to divide two numbers and get the result in which the quotient is rounded down the ~~hea~~ nearset integer value

②

Ex. $a = 20$
       $b = 3$
       result = $a // b$
       print (result)

o/p   6

Q7]

Ans. The 'is' operator checks if two objects have the same identity. otherwise the '==' operator checks the two objects have the same value.

Ex. a = [1, 2, 3]
b = [1, 2, 3]
print (a == b)
print (a is b)

O/p   True
      False.

Q8]

Ans. The += operator is used to arithmetical operation used in code. it used for integer, float it defined the elements are equal and also add the elements if A and B values fistly add A and B and the checks if is equal or not.

Q9]

Ans   The 'in' operator in python
is straight forward to use it
checks wheather a value exists
in a sequence (such as a list,
tuple or string) and returns a
Boolean value: True, if the value
is in the sequence and False if
its not.
②

EX
        num = [1, 2, 3, 4, 5]
        print (3 in num)

        | o/p True. |

Q10)

Ans   A ternary operator is a conditional
operator in programming that takes
three operands and evaluates an
expression based on a condition.

        EX   a = 5
                msg = 'Hello' if a > 0 else
                        'Goodbye'
①   print (msg)

        | o/p Hello |

Q117

Ans.   The if statement is a conditional statement.

• In python it is used to determine wheather a block of code will be execute.

Syntax

```
if condition:
    # executive block of code.
```

②

Ex.
```
a = 10
b = 20
if a > b:
print ("a is greater")
```

Q12

Ans.   while is used to check condition at list once.

- while and for both are used for looping statement

- for loop can't check the condition firstly.

r3)

ns.   Break   statement   is   used   to
break   the   loop   for   a   value.

)14]

ins.   Continue   statement   is   used   to
continue   a   value   after   breaking
the   loop.
     It   helps   to   continue   a   loop -

Q15]

ANS.   else   clause   is   very   helpful   for
the   coding.
     If   and   else   there   are
two   condition.
    . when   if   condition   goes   to
false   then   loop   goes   to   the
else   condition.