۱-Can a Python list hold a mixture of integers and strings ؟ yes

2. What happens if you attempt to access an element of a list using a negative index? With the help of the negative index in Python, we can access the elements of a list from the bottom.

3. What Python statement produces a list containing the values 45, −3, 16 and 8, in that order?

List =[45,-3, 16, 8]

4. Given the statement

Lst= [10,-4,11,29]

(a) What expression represents the very first element of lst? lst[0]
(b) What expression represents the very last element of lst? Lst[3]
(c) What is lst[0]? 10
(d) What is lst[3]? 29
(e) What is lst[1]? -4
(f) What is lst[-1]? 29
(g) What is lst[-4]? 10
(h) Is the expression lst[3.0] legal or illegal? illegal

5. Given the statements

lst = [3, 0, 1, 5, 2]

x = 2

evaluate the following expressions:

(a) lst[0]? 3
(b) lst[3]? 5
(c) lst[x]? 1
(d) lst[-x]? 5
(e) lst[x + 1]? 5
(f) lst[x] + 1? 2
(g) lst[lst[x]]? 0
(h) lst[lst[lst[x]]]? 3

6. What function returns the number of elements in a list? Function len for example list = ['a','b','c']

len(list)

7. What expression represents the empty list? a = []

8. Given the list

lst = [20, 1, -34, 40, -8, 60, 1, 3]

evaluate the following expressions:

(a) lst ? [20, 1, -34, 40, -8, 60, 1, 3]

(b) lst[0:3] ? [20, 1, -34]

(c) lst[4:8] ? [-8,60,1,3]

(d) lst[4:33] ? [-8,60,1,3]

(e) lst[-5:-3] ? [40,-8]

(f) lst[-22:3] ? [20,1,-34]

(g) lst[4:] ? [-8,60,1,3]

(h) lst[:] ? [20, 1, -34, 40, -8, 60, 1, 3]

(i) lst[:4] ? [20, 1,-34,40]

(j) lst[1:5] ? [1,-34,40,-8]

(k) -34 in lst ? True

(l) -34 not in lst ? False

(m) len(lst) ? 8

9. An assignment statement containing the expression a[m:n] on the left side and a list on the right side can modify list a. Complete the following table by supplying the m and n values in the slice assignment statement needed to produce the indicated list from the given original list.

Original List	target List	Slice indices m n
[2, 4, 6, 8, 10]	[2, 4, 6, 8, 10, 12, 14, 16, 18, 20]	A [0 :5]
[2, 4, 6, 8, 10]	[-10, -8, -6, -4, -2, 0, 2, 4, 6, 8, 10]	A[6:11]
[2, 4, 6, 8, 10]	[2, 3, 4, 5, 6, 7, 8, 10]	A[0:7:2]+A[7:]
[2, 4, 6, 8, 10]	[2, 4, 6, 'a', 'b', 'c', 8, 10]	A[0:3] +A [6:]
[2, 4, 6, 8, 10]	[2, 4, 6, 8, 10]	A[0:5]
[2, 4, 6, 8, 10]	[]	Impossible but a[0:4]+[8,10] = [2,4 ,6,8,10]
[2, 4, 6, 8, 10]	[10, 8, 6, 4, 2]	[::-1]
[2, 4, 6, 8, 10]	[2, 4, 6]	[0:3]
[2, 4, 6, 8, 10]	[6, 8, 10]	[2:5]
[2, 4, 6, 8, 10]	[2, 10]	[0:5:3]
[2, 4, 6, 8, 10]	[4, 6, 8]	[1:4]

10. Write the list represented by each of the following expressions.

(a) [8] * 4 = [8,8,8,8]

(b) 6 * [2, 7] = [2,7,2,7,2,7,2,7,2,7,2,7]

(c) [1, 2, 3] + ['a', 'b', 'c', 'd'] = [1,2,3,'a','b', 'c','d']

(d) 3 * [1, 2] + [4, 2] = [1,2,1,2,1,2,4,2]

(e) 3 * ([1, 2] + [4, 2]) = [1,2,4,2,1,2,4,2,1,2,4,2]

11. Write the list represented by each of the following list comprehension expressions.

(a) [x + 1 for x in [2, 4, 6, 8]] = [3,5,7,9]

(b) [10*x for x in range(5, 10)] = [50, 60,70,80,90]

(c) [x for x in range(10, 21) if x % 3 == 0] = [12,15,18]

(d) [(x, y) for x in range(3) for y in range(4)] = [(0,0) , (0,1) , (0, 2) , (0 , 3) , (1,0) ,(1,1), (1, 2) , (1, 3) , (2,0) ,(2,1) , (2, 2), (2, 3)]

(e) [(x, y) for x in range(3) for y in range(4) if (x + y) % 2 == 0] = [(0,0), (0, 2) ,(1,1) , (1, 3), (2,0), (2,2)]

12. Provide a list comprehension expression for each of the following lists.

(a) [1, 4, 9, 16, 25] = [x ** 2 for x in range (1,6)]

(b) [0.25, 0.5, 0.75, 1.0, 1.25. 1.5] = [x/4 for x in range(1,7)]

(c) [('a', 0), ('a', 1), ('a', 2), ('b', 0), ('b', 1), ('b', 2)] = [(x, y) for x in ['a', 'b']for y in [0,1,2]]

13. If lst is a list, what expression indicates whether or not x is a member of lst?

X in lst (show existence)

X not in lst (show not existence)

14. What does reversed do?

reverse() function is used to reverse the order of objects in a list data structure in place.