socrative

MergeSort PRQ Score:

1. What is **concatenation (□□□□□□□□□□)**?

(A) An agricultural process

(B) Growing cats

(C) Finding square root of a number

(D) Combining two lists into one
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2. If **al = [1, 2, 3]** and **bl = [4, 5, 6]**, what is the code to generate a ***new list*** that contains **[1, 2, 3, 4, 5, 6]**?

(A) al + bl

(B) bl + al

(C) al.extend(bl)

(D) al.append(bl)

3. If **al = [4, 5, 6]** and **bl = [1, 2, 3]**, what is the code to generate ***a new list*** that contains **[1, 2, 3, 4, 5, 6]**?

(A) al + bl

(B) bl + al

(C) al.extend(bl)

(D) al.append(bl)

4. If **al = [1, 2, 3]** and **bl = [4, 5, 6]**, what is the code to modify **al** to contain **[1, 2, 3, 4, 5, 6]**?

(A) al + bl

(B) bl + al

(C) al.extend(bl)

(D) al.append(bl)

5. If **al = [4, 5, 6]** and **bl = [1, 2, 3]**, what is the code to modify **bl** to contain **[1, 2, 3, 4, 5, 6]**?

(A) al + bl

(B) bl + al

(C) bl.extend(al)

(D) al.append(bl)

6. If **al = [4, 5, 6]** and **bl = [1, 2, 3] and cl = [0],**
what is the code to *merge* al and bl (in that order) into cl?

A) cl = cl + al + bl

B) cl += al + bl

C) cl.extend(al)
cl.extend(bl)

7. The default parameter value for the list method **.pop()** is **-1**.

A) True

B) False

8. If **al = [1, 2, 3]** and **cl = [ ],**
The code
smallest = al.pop(0)
cl.append(smallest)
smallest = al.pop(0)
cl.append(smallest)

will result in

A) **al = [3] and cl = [1, 2]**

B) **al = [3] and cl = [2, 2]**

C) **al = [1, 2, 3] and cl[1, 2]**

D) al = [] and cl = [1, 2, 3]

9. If **al = [1, 2, 3]** and cl = [ ], to make
cl = [1, 2] and **al = [3]**, what is the right code?

A) cl = al.pop(0)
cl = al.pop()

B) cl = al.pop(0)
cl = al.pop(1)

C) cl += [al.pop(0)]
cl += [al.pop(0)]

D) cl += [al.pop(1)]
cl += [al.pop(2)]

10. Write a program to demonstrate ternary operator in Python.
Use the ternary operator to assign the minimum of variable **a** and variable **b** to variable **c**.

11. list **al = [1, 2]** and **bl = [3, 4].**
What is the code to print the first elements of both al and bl?

A) print(1, 3)

B) print(al[1], bl[1])

C) print(al, bl)

D) print(al[0], bl[0])

12. **The integer 100 has to be added as the last element of list al.**
Which code will is correct?

A) al.**append**(100)

B) al.**insert**(-1, 100)

C)
```
al_len = len(al)
al.insert(al_len-1, 100)
```

D) al.**extend**([100])

13. **If al = [1, 3, 5] and bl = [2, 4, 6],**
what is the code to extract al and bl into cl so that
cl = [1, 2, 3, 4, 5, 6]?

A) cl = cl + al + bl

B)
```
while al and bl:
cl = al.pop(0)
cl = bl.pop(0)
```

C)
```
#----- start --------
while len(al) != 0 and len(bl) != 0:
cl.insert(-1, al.pop(0))
cl.insert(-1, bl.pop(0))
#----- end --------
```

D)
```
#----- start --------
while al and bl:
cl.append(al.pop(0))
cl.append(bl.pop(0))
#----- end --------
```

14. Extract the minimum of the first elements that occur in the list al and bl and put it at the tail of the list cl

A) **cl** = (al if al[0] < bl[0] else bl).pop(0)

B) **cl** = (al if al[0] < bl[0] else bl).pop(1)

C)
```
# ------ start --------
if al[0] < bl[0]:
cl.append( al[0] )
al.pop(0)
else:
cl.append( bl[0] )
bl.pop(0)
# ------ end --------
```

D)
```
# ------ start --------
candidate = (al if al[0] < bl[0] else bl).pop(0)
c.append(candidate)
# ------ end --------
```

E) All of the above

15. Write code that creates a list cl by merging numbers in sorted list al and sorted list bl in ascending order.
Print the newly formed list cl.

Clue: Combine answers from previous two questions.

16. Write a merge function which accepts two sorted lists A and B as parameters.
It should return a list that is a merge of the elements of A and B so that they are in ascending order.

17. Modify the code provided in #16 (above) to avoid use of pop(0) which is expensive (i.e. takes too much time).
Instead refactor the code to use pop(), which is relatively less expensive.