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Assessment Report

Week 2 Coachable Quiz

Shiva

shivajreddy@outlook.com

Joined on February 25, 2023
Completed in 1 hours and 16 minutes

Scores

Scores	Average 79%	Qualifying 70%	Final 93%
Coding challenges × 50%			100%
Multiple choice × 50%			85%
Open-ended			N/A

Cheating	
Copy/Paste	No
Plagiarism	No
Leaving tab	

Skill ratings

Learn more abo

Python3
Advanced

Data Structures
Beginner

Algorithms
Beginner

Scorecard

Algorithm skills	Code quality	Python3 skills	Recor
☆☆☆☆☆	☆☆☆☆☆	☆☆☆☆☆	

Private notes to share with your team...

Challenge solutions

Exp

Week 2 Coding Quiz A
United States Video 1 — Python3

Week 2 Coding Quiz B
United States Video 1 — Python3

Week 2 Coding Quiz C

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1. What is printed?

```
lst = []
lst.append(0)
lst.extend([1])
lst.remove(0)
print(lst)
```

✔ [1]

2. Which of the following data types is not hashable?

✔ Lists

3. What does Python print here?

```
city_to_state_map = {}
city_to_state_map["San Diego"] = "California"
city_to_state_map["Boise"] = "Idaho"
print(city_to_state_map["San Diego"])
print(city_to_state_map["San Francisco"])
```

✔ CaliforniaError

4. What is the issue here?

```
cities_to_state_map = {}
cities_to_state_map[["San Diego", "San Francisco"]] = "California"
```

✔ Syntax error because lists are not Hashable

5. What is the purpose of the init() in a class?

✔ Create a new object and specify its initial attributes

6. Which ones are the class attribute? instance attribute?

```
class Human:
  scientific_name = "Homo Sapiens"
  def __init__(self, height, age):
    self.height = height
    self.age = age
```

✔ class: scientific_name, instance: height, age

7. What is printed?

```
a = [1, 2, 3]
b = a
b.append(2)
print(a)
```

✔ [1, 2, 3, 2]

8. What is printed here?

```
a = 2
b = a
b = 1
print(a)
```

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```
return a
```

✔ Returns the length of the linked list

10. What is happening in this code? Assume that a linked list is created where head points to the first element of the li

```
while head.next:
  head = head.next
  print(head)
```

✔ Prints out everything in the list except the first element

11. What is happening in this code? Assume that a linked list is created where head points to the first element of the lir

```
while head.next:
  print(head)
  head = head.next
```

× Prints out everything in the list

12. What will be printed in the console?

```
def foo(a):
  print(a)
  a += 1

b = 2
print(foo(b))
print(b)
```

✔ 2None2

13. What is the main difference between a Stack and Queue?

✔ Stack is last in first out, Queue is first in first out

14. What is the runtime here? Assuming N is the size of the input `lst`

```
def foo(lst):
  for i in range(10):
    lst.append(i)
```

✔ O(1)

15. What is the runtime here? Assuming N is the size of the input

```
def foo(lst):
  new_list = []
  for x in lst:
      new_list.append(x)

  while new_list:
     new_list.pop(0)
```

× O(N)

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17. Which of the following statements is true about the following Python code?

```
class Node:
    def __init__(self, value):
        self.value = value
        self.next = None

# Create three nodes with values 1, 2, and 3
node1 = Node(1)
node2 = Node(2)
node3 = Node(3)
node4 = node1
node1.next = node2
node2.next = node3
node3.next = node4


def print_list(node):
   cur = node
   while cur is not None:
       print(cur.value)

print_list(node1)
```

But there is an error and the code above does not print the list (1,2,3,4)

What is the problem?

✔ There will be an infinite loop

18. If a function is O(3 * N^2 + N), what would the runtime simplify as?

✔ O(N^2)

19. Is there a problem with this code? What is the value of b at the end?

```
def foo(a):
  a = 2
b = 1
foo(b)
```

✔ No; b = 1

20. Is there a problem with this code?

```
def foo(a):
  a = 2
b = 1
foo(b)
print(a)
```

✔ Yes, the variable a is only accessible within the function scope

21. What is the output of the below code snippet?

```
def foo(a):
  a = 5
a = 3
foo(a)
print(a)
```

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```
a = 3
foo(a)
```

✔ 5

23. What is the output of the below code snippet?

```
def foo(a):
  a = 5
a = 3
print(foo(a))
```

✔ None

24. What is the output of the following code block?

```
def foo(a):
  a.append(3)
a = [1, 2]
foo(a)
print(a)
```

✔ [1, 2, 3]

25. What is the output of the following code block?

```
def foo(a):
  b = [1, 3, 5]
  a.append(3)
b = [2, 4, 6]
foo(b)
print(b)
```

✔ [2, 4, 6, 3]

26. A double-ended queue (aka "deque") is a generalization of a stack and a queue. That is, it supports memory efficier and pops from either side of the deque with the same O(1) performance in either direction.

What would be a valid reason for choosing a stack or queue over a deque?

× None of the other answers is correct

27. A double-ended queue (aka "deque") is a generalization of a stack and a queue. That is, it supports memory efficier and pops from either side of the deque with the same O(1) performance in either direction.

The basic API is as follows:
pop() returns and removes the rightmost item
popleft() returns and removes the leftmost item
append() adds a new entry to the deque to the right side
appendleft() adds a new entry to the deque to the left side

What is the output of the following code block?

```
from collections import deque

d = deque()
d.append('a')
d.appendleft('b')
d.append('c')
```

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Join documentation: https://python-reference.readthedocs.io/en/latest/docs/str/join.html

```
class ListNode(object):
  def __init__(self, val=0, next=None):
          self.val = val
          self.next = next

def f(a, b):
  c = 0
  p1, p2 = a, b
  d = ListNode(None)
  cur = d
  while p1 or p2:
    v1 = 0 if p1 is None else p1.val
    v2 = 0 if p2 is None else p2.val
    v = v1 + v2 + c
    n = ListNode(v % 10)
    c = v // 10
    cur.next = n
    cur = cur.next
    if p1:
      p1 = p1.next
    if p2:
      p2 = p2.next
    if c != 0:
      cur.next = ListNode(c)
  return d.next

def print_list(l):
  sb = []
  cur = l
  while cur:
    sb.append(str(cur.val))
    cur = cur.next
  print(' -> '.join(sb))

a = ListNode(4, ListNode(3, ListNode(3)))
b = ListNode(5, ListNode(6, ListNode(4)))

print_list(f(a, b))
```

× Adds up 433 and 564 and prints out the resultant linked list representation (9 -> 9 -> 7)

29. What is the runtime of this code?

```
def foo(n: int):
    while n > 0:
        print(n)
        n = n // 2
```

✔ O(log n)

30. What is the runtime of this code?

```
def foo(lst: list[int], target: int):
  lo = 0
  hi = len(lst)
  ans = -1
  while lo <= hi:
    mid = lo + (hi - lo) // 2
    if target == lst[mid]:
      return mid
    elif target > lst[mid]:
      lo = mid + 1
    else:
      hi = mid - 1
  print(ans)
```

✔ O(Log N)

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× O(N^2)

32. What is the runtime of this code?

```
def foo(m: list[int], n: list[int]):
  ans = 0
  for a in m:
      for b in n[0:2]:
        ans += a + b
  return ans
```

✔ O(M)

33. What is the runtime of this code?

```
def foo(m: list[int], n: list[int]):
  ans = 0
  for a in m[0:1000]:
      for b in n[0:1000]:
        ans += a + b
  return ans
```

✔ O(1)

34. How much larger is 2^56 than 2^51? Don't use a calculator.

✔ 32

35. What is the equivalent to 2^3 = 8

✔ log(8) / log(2) = 3

36. In computer science, when you see log without the base specified, What is the base?

✔ 2

37. Estimate log(30) / log(2)

✔ Between 4 and 5

38. What is the worst-case runtime of binary search for a list of length N?

✔ Log(N)

39. How many linked list pointers do you need to implement a stack?

✔ 1

40. How many linked list pointers do you need to implement a queue?

× 1

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