Chapter 3 Assignment

Started: Sep 19 at 8:02pm

Quiz Instructions

Please read Chapter 3 and view the chapter 3 videos and/or the video summary and answer these ten multiple choice questions. It's due Sunday evening

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Question 1 — 10 pts

Using Big-O Notation, what is the worst case running time of the following code fragment:

```
def alg(thisIsAList):
    n = len(thisIsAList)
    a = [0] * n
    for j in range(n):
        a[j] = sum(thisIsAList[0:j+1]) / j
```

- ○ $O(n^3)$
- ○ $O(n^2)$
- ○ O(n log n)
- ○ None of the above
- ○ O(log n)
- ○ O(1)
- ○ O(2)
- ○ O(n)

Question 2

10 pts

What is the order of growth worst case running time of the following code fragment:

```
for i in range(n):
    for j in range(n):
        sum+=1
```

- Constant
- I don't know
- Linearithmic
- Cubic
- Linear
- logarithmic
- Exponential
- Quadratic

Question 3

10 pts

What is the order of growth worst case running time of the following code fragment:

```
for i in range(n):
   for j in range(n):
       for k in range(n):
           sum+=1
```

- Linearithmic
- Constant
- logarithmic

- ◯ Cubic
- ◯ Exponential
- ◯ Linear
- ◯ I don't know
- ◯ Quadratic

Question 4 — 10 pts

Using Big-O Notation, what is the worst case running time of the following task:

- Calculate the mode (most frequent) value in an array of sorted numbers

- ◯ O(1)
- ◯ O(log n)
- ◯ O(2)
- ◯ $O(n^3)$
- ◯ None of the above
- ◯ $O(n^2)$
- ◯ O(n)
- ◯ O(n log n)

Question 5 — 10 pts

Using Big-O Notation, what is the worst case running time of the following code fragment:

```
for j in range(n):
    for k in range(k):
        k = j + k
```

- ○ O(n log n)
- ○ O(2)
- ○ None of the above
- ○ $O(n^2)$
- ○ O(1)
- ○ O(log n)
- ○ O(n)
- ○ $O(n^3)$

Question 6

10 pts

Using Big-O Notation, what is the worst case running time of the following code fragment:

```
def alg(thisIsAList):
    n = len(thisIsAList)
    a = [0] * n
    total = 0
    for j in range(n):
        total = total+ thisIsAList[j]
        a[j] = total / (j+1)
```

- ◯ None of the above
- ◯ O(1)
- ◯ O(2)
- ◯ O(n log n)
- ◯ O(log n)
- ◯ $O(n^3)$
- ◯ $O(n^2)$
- ◯ O(n)

Question 7

10 pts

Using Big-O Notation, what is the worst case running time of the following code fragment:

```
for i in range(n):
    for j in range(n)
        for k in range(5):
            sum+=1
```

- ◯ O(n log n)
- ◯ None of the above
- ◯ O(log n)
- ◯ $O(n^3)$
- ◯ O(n)

- ○ O(1)
- ○ $O(n^2)$
- ○ O(2)

Question 8

10 pts

Using Big-O Notation, what is the worst case running time of the following code fragment:

```
k = 1

while k < N:

    k = k * 2
```

- ○ O(log n)
- ○ O(2)
- ○ None of the above
- ○ $O(n^2)$
- ○ O(n log n)
- ○ $O(n^3)$
- ○ O(1)
- ○ O(n)

Question 9

10 pts

Using Big-O Notation, what is the worst case running time of the following code fragment:

```
def alg(thisIsAList):
    n = len(thisIsAList)
    count= 0
    for i in range(n):
        for j in range(i+1, n):
            for k in range(j+1, n):
                if thisIsAlist[i] + thisIsAlist[j] + thisIsAlist[k]  == 0:
                count += 1
    return count
```

- ○ None of the above
- ○ O(n)
- ○ O(1)
- ○ $O(n^2)$
- ○ $O(n^3)$
- ○ O(2)
- ○ O(log n)
- ○ O(n log n)

Question 10 — 10 pts

What is the order of growth worst case running time of the following code fragment:

```
for i in range(n):
    sum+=1
```

- ◯ I don’t know
- ◯ Cubic
- ◯ Linear
- ◯ Linearithmic
- ◯ logarithmic
- ◯ Exponential
- ◯ Constant
- ◯ Quadratic

Saving... Submit Quiz