Quiz 5: Dynamic Programming

Due Dec 1, 2022 at 4:30pm **Points** 10 **Questions** 3
Available Dec 1, 2022 at 8am - Dec 1, 2022 at 4:30pm 8 hours and 30 minutes
Time Limit 20 Minutes

This quiz is no longer available as the course has been concluded.

Attempt History

	Attempt	Time	Score
LATEST	Attempt 1	17 minutes	8 out of 10

Correct answers are no longer available.

Score for this quiz: **8** out of 10
Submitted Dec 1, 2022 at 8:19am
This attempt took 17 minutes.

Question 1 — 5 / 5 pts

Alice is a kindergarten teacher. She wants to give some candies to the children in her class. All the children sit in a line and each of them has a rating score according to his or her performance in the class. Alice wants to give at least **TWO** candies to each child. If two children sit next to each other, then the one with the higher rating must get more candies (if the ratings are the same then the children can get the same number of candies or a different number). Alice wants to minimize the total number of candies she must buy.

Performance	2	1	5	4	1	7	8	3	1
Candies	a1		a2			a3	a4	a5	

Complete the whole table but give answers for a1 through a5 only.

a1 = 3

a2 = 4

a3 = 3

a4 = 4

a5 = 3

Answer 1:

3

Answer 2:

4

Answer 3:

3

Answer 4:

4

Answer 5:

3

Question 2

2 / 2 pts

If there are **n** children in the class, what is the run time to determine how many candies each child should receive?

theta (n)

Answer 1:

Theta

Answer 2:

n

Partial

Question 3

1 / 3 pts

Fill in the blanks in the code. Write your answers **without any spaces** in them!

```
# Make a forward pass, looking for children who should receive
# more candies than the one to their left.
for i in range(n-1):
    if P[ i+1 ] > P[ i ]:
        C[ i+1 ] = _____c1_____ # What code is needed here?
# Make a reverse pass, looking for children who should receive
# more candies than the one to their right.
for i in range(n-1, 0, -1):
    if P[ i-1 ] > P[ i ] and C[ i-1 ] <= C[ i ]:
        _____c2_____ = _____c3_____ # What code is needed here?
```

c1 = C[i]

c2 = C[i - 1]

c3 = C[i]

Answer 1:

C[i]

Answer 2:

C[i - 1]

Answer 3:

C[i]

Quiz Score: **8** out of 10