

## PART II

1. Assign operator

2.  $\Theta(1)$  Double Linked List has  $\Theta(1)$  in odd and last.

3.  $\Theta(1)$ . No loop, no input  $n$ .

4. DLL get method can take  $\Theta(n)$ . Show Furniture is  $\Theta(n*m)$ .

so,  $\Theta(n*m)$

5.  $\Theta(n)$ . If index is not head or tail DLL get() method may take  $\Theta(n)$  time.

So  $\Theta(n)$ .

6.  $\Theta(1)$  time. Arraylist add method takes amortized constant time.

7. first\_supply(Furniture) method takes  $\Theta(n)$  time.

first\_supply(Color & Furniture) method takes  $\Theta(n*m)$  time

So,  $3\Theta(n*m) + 2\Theta(n) = \Theta(n*m)$

8.  $\Theta(n*m)$  time. Hybridlist get method may take  $\Theta(n)$  time, in loop condition

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10.  $\Theta(1)$ . No input

11.  $\Theta(n) + \Theta(m)$  time.  $n$  is model count,  $m$  is color count. Linear time.

12.  $\Theta(n*m)$  time. May take infinite time because of the loop that doesn't end until correct input.

13.  $\Theta(n)$  time. HybridList add method is constant.  $n$  is model-count

14.  $\Theta(1)$  time. add(), addLast() methods takes constant time.

15.  $\Theta(1)$  time. login() method takes constant time.

16.  $\Theta(1)$  time. id-check() method takes constant time.

17. Normally  $\Theta(n^2)$  time. But since DLL use iterator, get method takes constant time, so  $\Theta(n)$ .

18.  $\Theta(1)$  time. Arraylist get method takes constant time.

19.  $\Theta(1)$  time. Arraylist get method takes constant time.

20.  $\Theta(n)$  time. Show branches takes  $\Theta(n)$  time, there is no other function that has quadratic growth.

21.  $\Theta(1)$  time. No input

22.  $\Theta(n \cdot m)$  time. Calls show-furniture() in both cases.

23.  $\Theta(n \cdot m)$  time. Customer-menu takes  $\Theta(n \cdot m)$  time

24.  $\Theta(1)$  time. No input.