

CS 321, Assignment 3

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1

a

$a^*(ba^*ba^*)^*$

b

b^*a^*

c

$b^*a^*((ab)b^*a^*(ab))^*b^*a^*$

d

This was a particularly tricky one. You need to handle all even numbered cases, and the case that you start with an a or b, then have a ton of stuff in the middle, then an a at the end. Here is my long regex to handle this problem. I use line breaks whenever there is an 'or' for ease of reading:

$(aa)^*(bb)^* +$
 $((ab)(ab))^* +$
 $((ab)(ba))^* +$
 $((ba)(ab))^* +$
 $((ba)(ba))^* +$
 $a((aa)^*(bb)^*((ab)(ab))^*((ab)(ba))^*((ba)(ab))^*((ba)(ba))^*)a +$
 $b((aa)^*(bb)^*((ab)(ab))^*((ab)(ba))^*((ba)(ab))^*((ba)(ba))^*)b$

2

3

4