Str = a b c a b c   K = 2
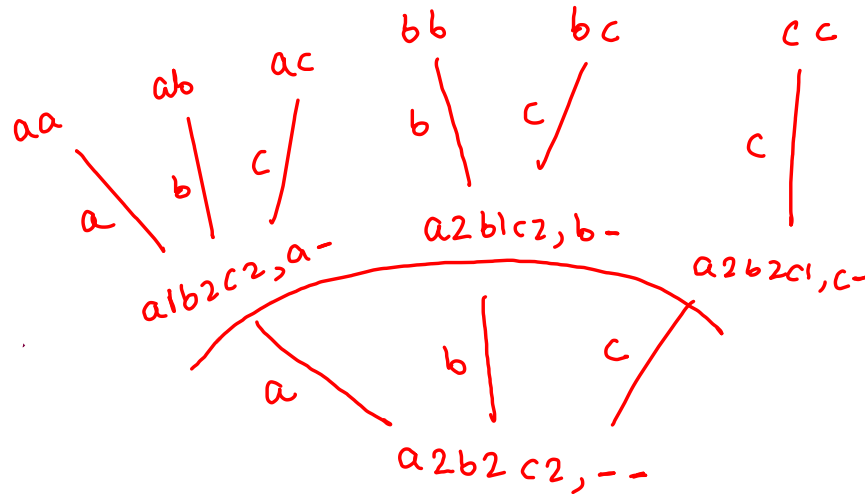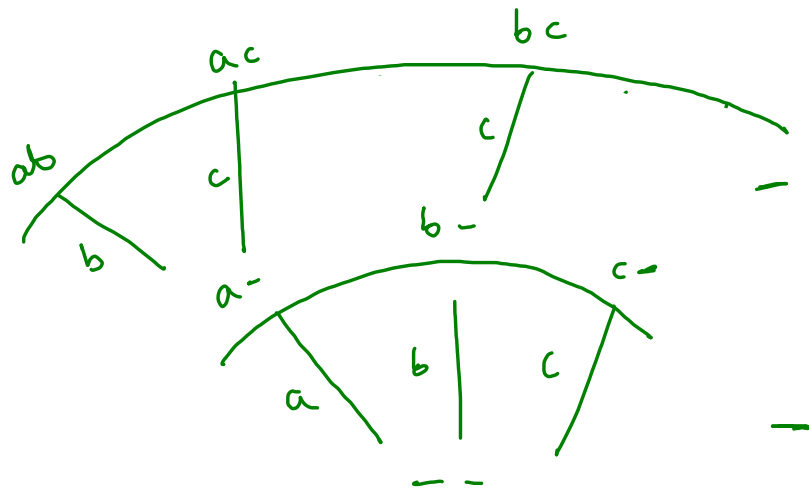
words k selection-2 (distinct) | words k selection-4
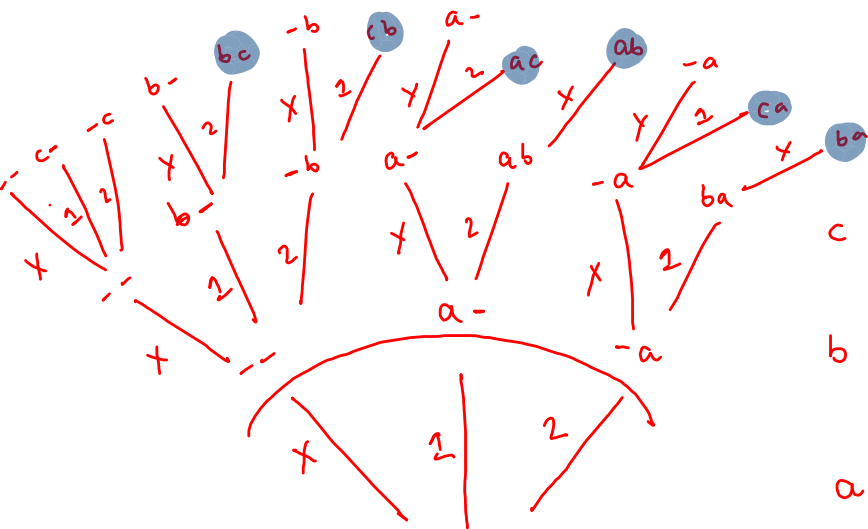
ustr = abc | ustr = abc

ababcc   K = 2

words   k   arrangement   1 (distinct)   works   k   arrangements   3

usti = abc

bc   -b   cb   a-
ac   ab   -a
ca   ba

b-   x   2   x   2   y   y   1
-c   x   2   -b   a-   ab   y   x
-c   x   2   1   2   x   -a   ba   2
b-   y   2   y   2   x   1
x   2   1   a-   -a
x   1
c
b
a- -a
a
1   2   2
x

a1 -> x   a1 -> U   c
a2 -> U   a2 -> X   c
b
a-   -a   b-   ba   -b   ab   a-
x   1   2   x   2   1   x   2   aa   y   ab   -a
b-   -b   a-   ab   -a   x
x   2   2   ab   ba   x   ba   a
x   1   2   2   x   1
a-   -a
1   2
x
c
b
a

a2x - - - a2U
a1U   a1x
a-   a-
-a   -a

—

$a1 \rightarrow X$

$a2 \rightarrow \cup$

$a1 \rightarrow \cup$
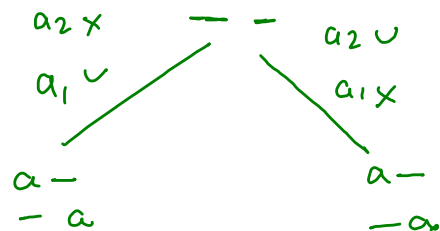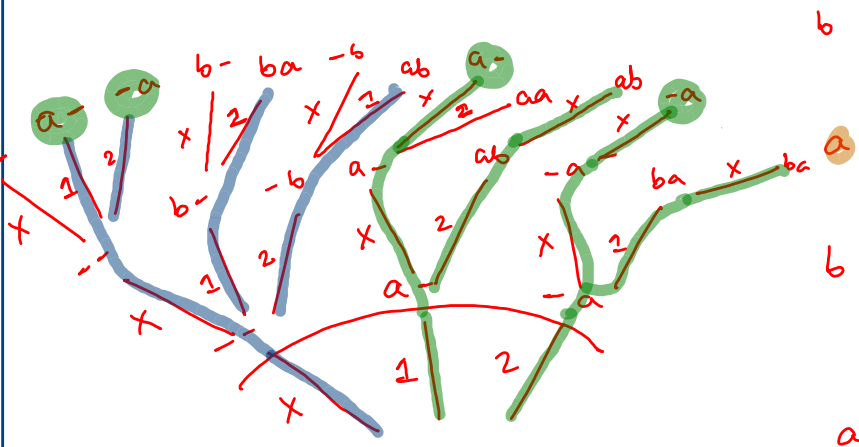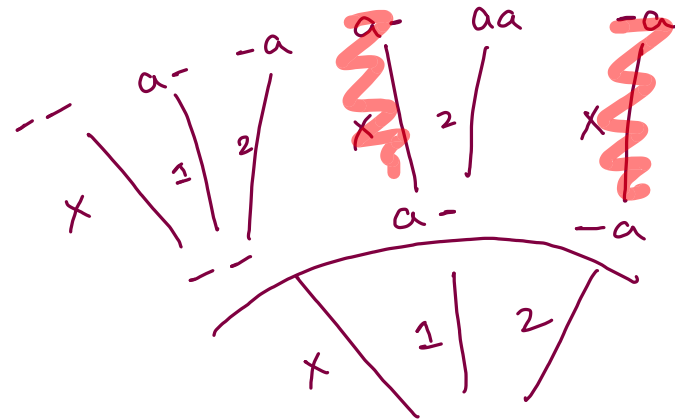
$a2 \rightarrow X$

↳ at each, correct detect
and discard   b

(i) last occurence

(ii) don't give no call to
     next same char in
     answer.

K^n

K = 2   abacc

a — (1)
b — (0)
c — (-1)

c

c

a

b

a

Tree labels (as drawn):

c- —c   a- ac
        x 2
c- 2
   1 2
--
x   a- -a

                 b-   -b   ab   aa
                   x 2 x 1 2

                              a- ab   -a   ba
        --   b- -b   x 2   x   1
     1   2   x
  x   a-
          --   2
       x   1   -a
                    2   2
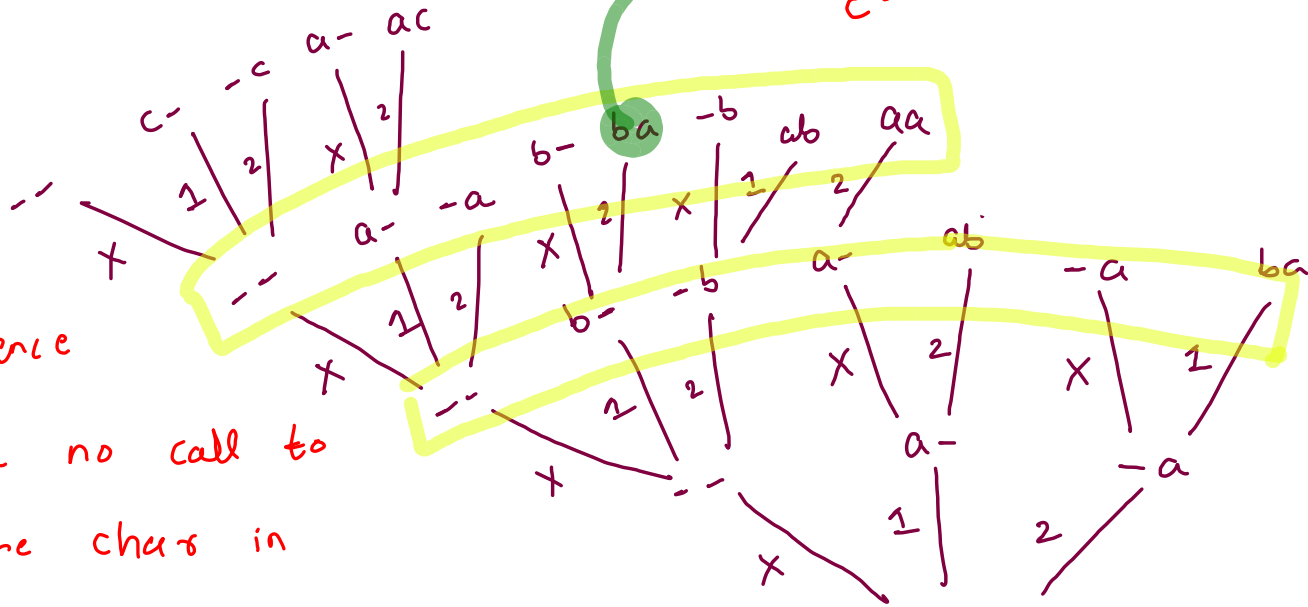
(i) last occurence

(ii) don't give no call to

next same char in

answer.

str = a b c a b c

words & arrangemen 2 (distinct)	words & arrangement 4

Left side (green):

ustr = abc , k = 2

ab
b

ac
c

ba
a

bc
c

ca
a

cb
b

a -

b -

c -

a

b

c

—

—

Right side (red):

aa
a

ab
b

ac
c

ba
a

bb
b

bc
c

ca
a

cb
b

cc
c

a1b2c2, a

a2b1c2, b

a2b2c1, c

a

b

c

a2 b2 c2

—

abac   K = 3

aab   aac   aba   abc   aca   acb   baa   bac   bra   caa   cab   cba

b   c   a   c   a   b   a   c   a   a   b   a

blcl, aa   alcl, ab   albl, ac   alcl, ba   a2, bc   albl, ca   a2, cb

a   b   c   a   c   a   b

albici, a   a2cl, b   a2 bl, c

a   b   c

a2 bl cl
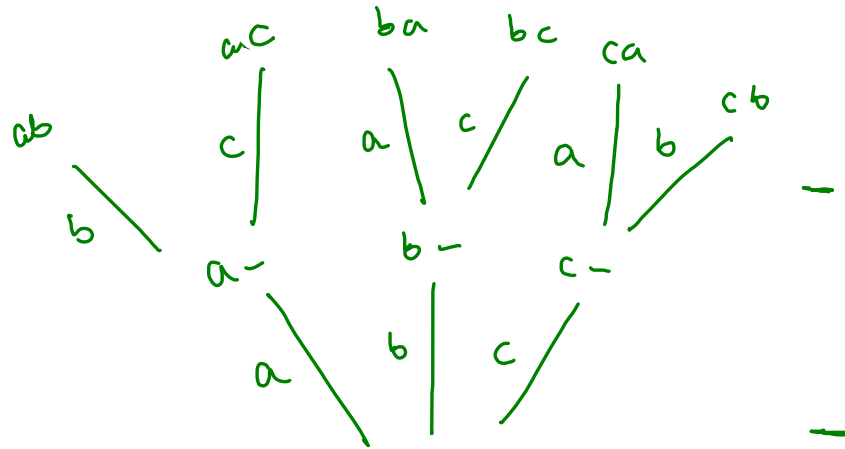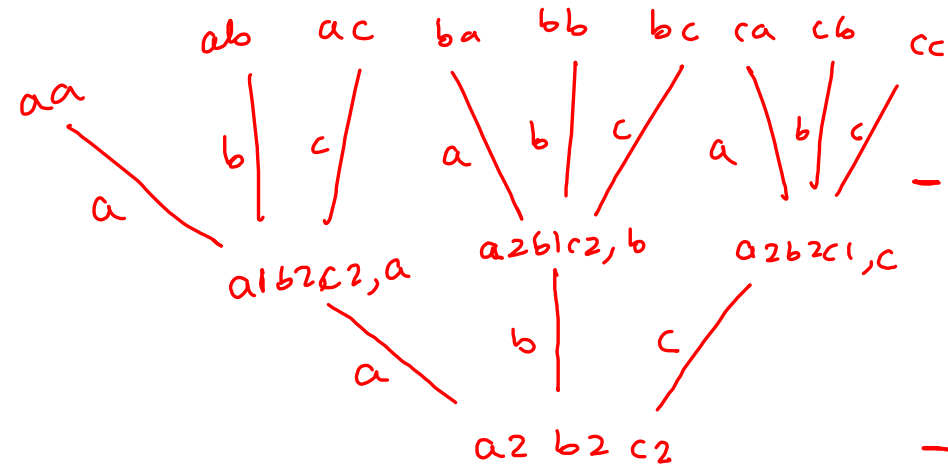
coins = [2, 3, 5, 7]

amt = 10

(each coin can
be used once)

target sum subset

0,235

0,37

5,23   3,25   8,2   2,35   7,3   5,5   10,-   7

0,235

8,2   7,3   10,-   5

5,23

8,2   10,-   3

10   2

Coins = [2, 3, 5]

amt = 7

infinite supply

```java
public static void coinChange(int[] coins, int rem_tar,int lci, String asf) {
    if(rem_tar < 0) {
        return;
    }

    if(rem_tar == 0) {
        System.out.println(asf + ".");
        return;
    }

    for(int i = lci; i < coins.length;i++) {
        coinChange(coins,rem_tar-coins[i],i,asf + coins[i] + "-");
    }
}
```

-2 -4

-2 -2 -3

0,223

1,222

2,23

0,25

1,33

-1

2 3 5 3 5 3 5 3 5

2 2 3

2 5

2 3,22 2,23

2 3 5

3 5

2 3 5,2 4,3 2,5

2 3 5

7, .

(rem_tar, asf)

CCP1
one coin

coins =   [2, 3, 5, 7, 10]

target = 10

2 3 5   3 7
2 5 3   7 3
3 2 5   10.
3 5 2
5 2 3
5 3 2

0,235

0,2S3

0,37

0,10

infinite
supply

coins = [2, 3, 5]

amt = 7

0, 322

0, 232

0, 223

1, 222

2, 32   1, 33   0, 52

3, 22   2, 23   0, 25

5, 2   4, 3   2, 5

7, .