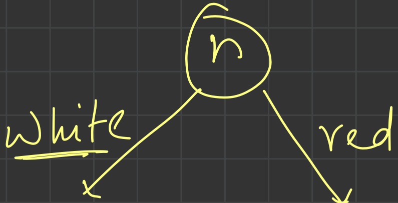
Codeforces

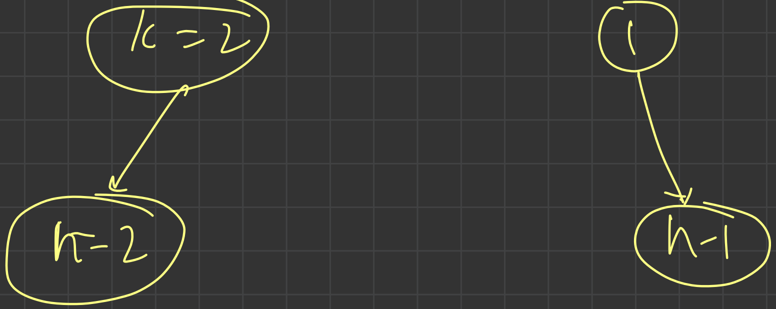
Flowers

Monster can eat red flowers

Marmot can eat white flowers (only k-at a time)

n-flowers





Marmot has two choices

① eat a red flower ⇒ n-1 flowers remain

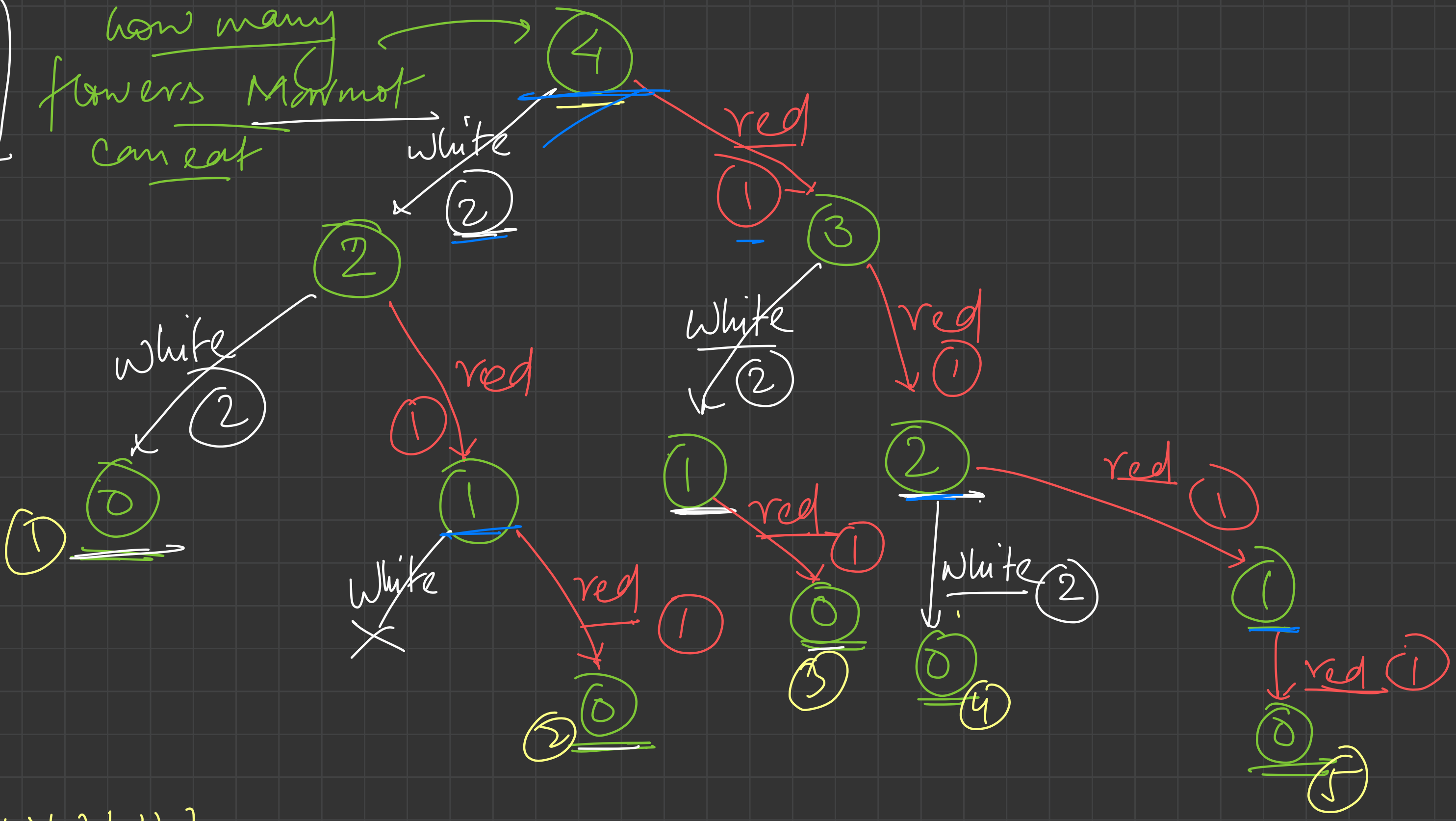
② eat k-white flowers

↳ n-k flowers

n = 4

k = 2

how many flowers Marmot can eat



① WWWW

② WWRR

③ RWWR

④ RRWW

⑤ RRRR

① Subsequences

② Permutation

Subsequence : array → delete some value

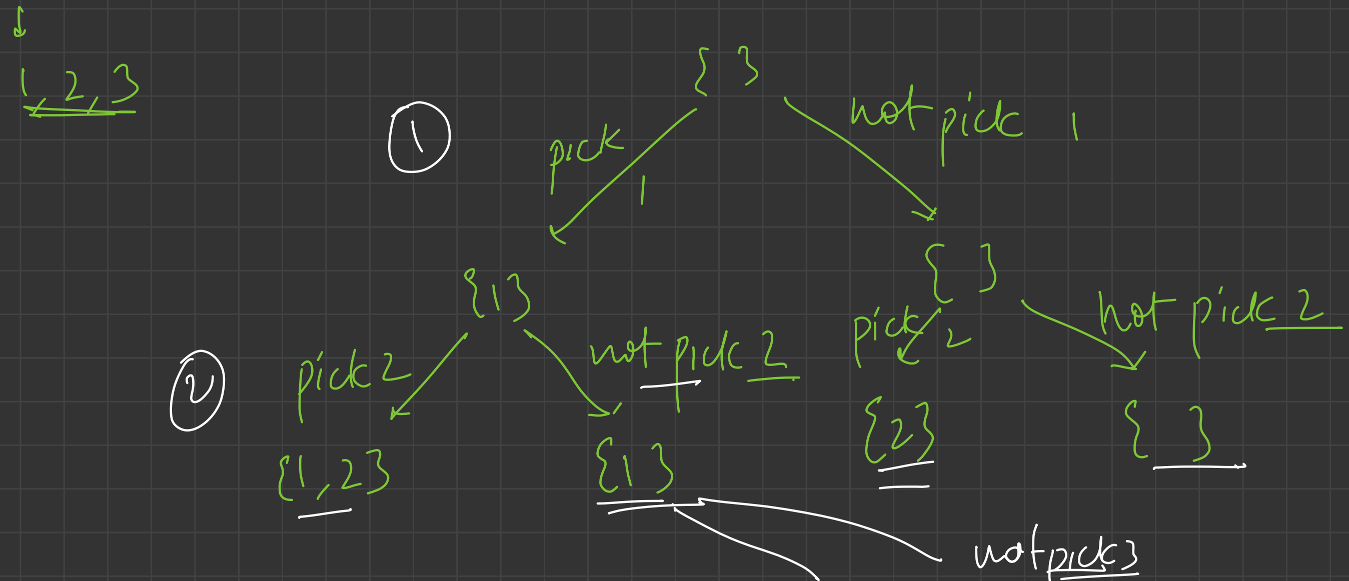
arr → 1 ~~2~~ 3 ~~4~~ ~~5~~

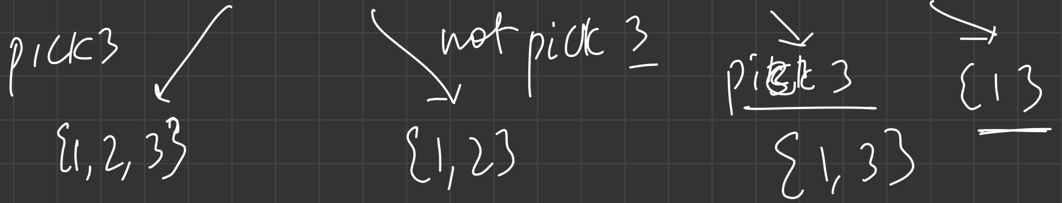
1 3

1 2 5

① pick i-th element as the part of current sub sequence

② do not pick i-th element as part of current subsequence





Permutation

{1, 2, 3}

✓ 1 2 3

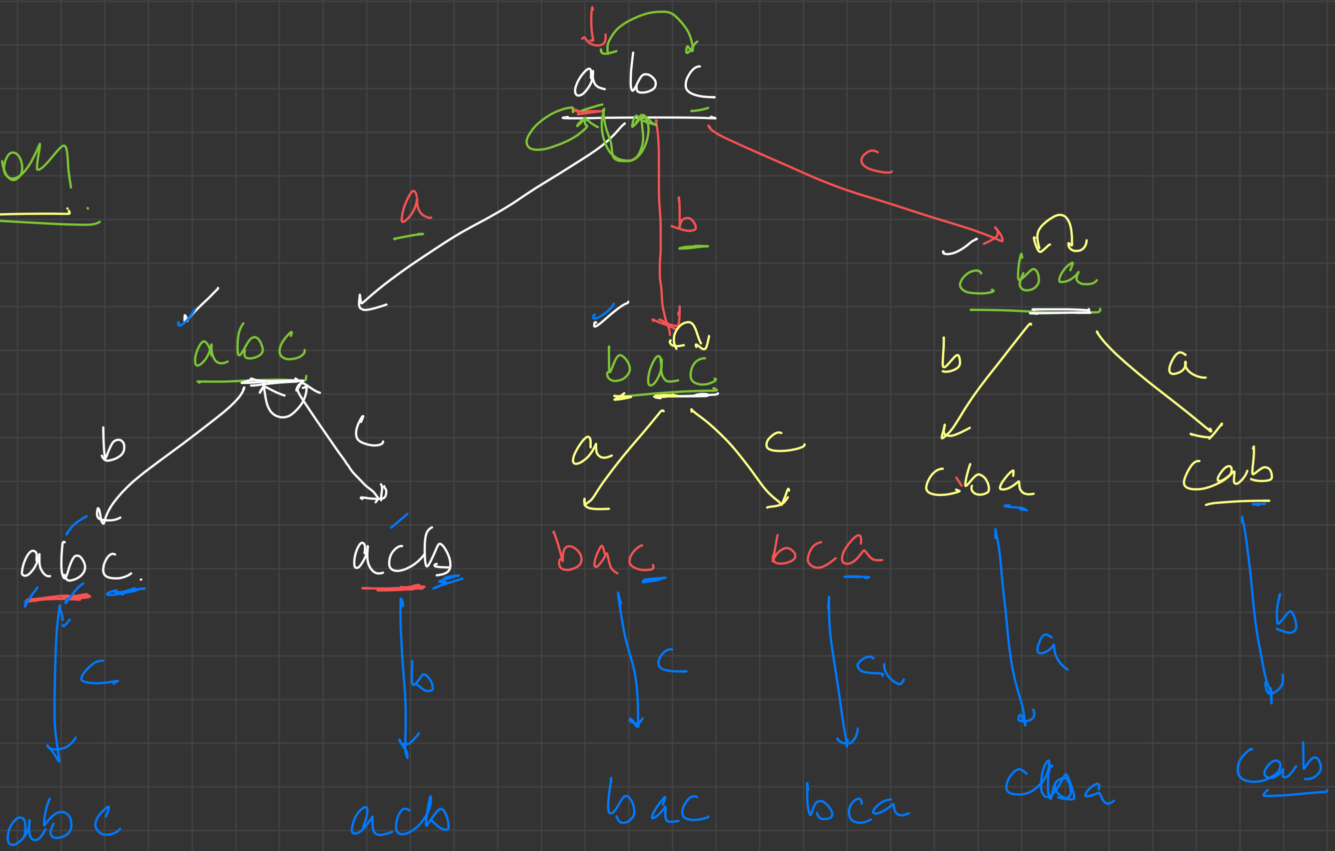
1 3 2

✓ 2 1 3

2 3 1

✓ 3 1 2

3 2 1



Smart Keypad

0 → ' '

1 → . + @ $

2 → abc

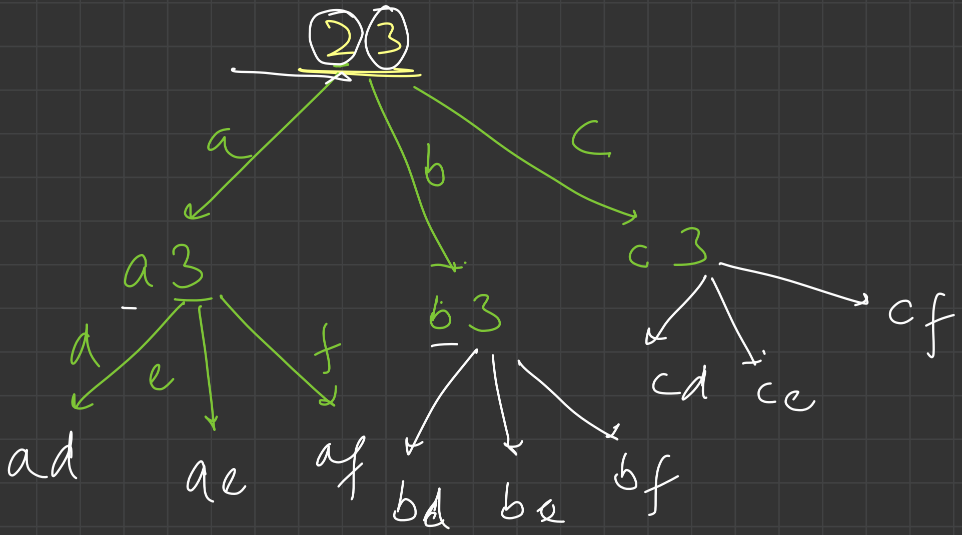
3 → def

4 → ghi

'

'

!



```
void printCombinations(string &s, string &output, int i){
    //base case...
    if(i == s.length()){
        cout<<output<<endl;
        return;
    }

    //work
    int digit = s[i] - '0';
    for (int j = 0; j < table[digit].size(); ++j){
        char x = table[digit][j];
        //recursive case
        output.push_back(x);
        printCombinations(s, output, i+1);
        output.pop_back();
    }
}
```

②

→ 2

→ a

S = "23"

i = 0

output

b

i = 0

"abc"

table[2]

x

i = 1

"def"

table[3]

x

i = 2

print & return

ad ✓

ae ✓

af ✓

bd

be

bf

cd

ce

cf

c → ~~pop~~

b

all possibilities

Q. Given input a string S,

and two characters C and D.

Replace all occurrence of C with D.