

{ 10, 20, 30, 40, 50 }

all, 0

50, 40, 30, 20, 10

all, 1

50, 40, 30, 20

all, 1
sp = all

{ 10, 20, 30, 40, 50 }

, all, 0

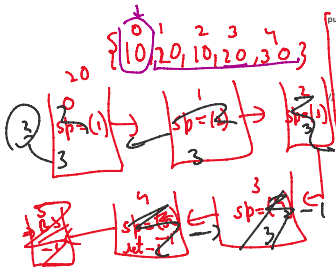
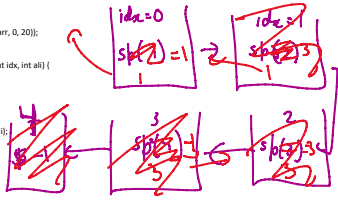
T = all, 1 || F = all, 1

{ 10, 20, 30, 20, 10, 20 }

First Occ

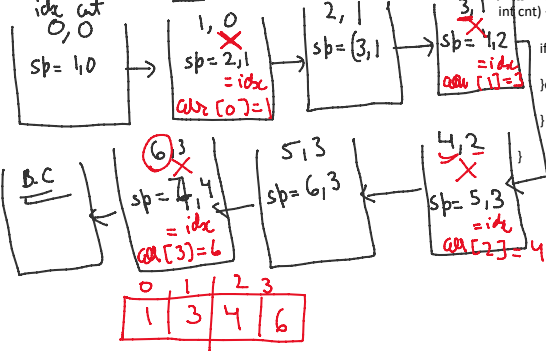
```
int[] arr = {10, 20, 30, 20};
System.out.println(firstOcc(arr, 0, 20));

public static int firstOcc(int[] arr, int idx, int ali) {
    if (idx == arr.length) {
        return -1;
    }
    // BP: arr, 0
    // SP: arr, 1
    int sp = firstOcc(arr, idx + 1, ali);
    if (arr[idx] == ali) {
        return idx;
    }
    return sp;
}
```



```
public static int LastOcc(int[] arr, int idx, int ali) {
    if (idx == arr.length) {
        return -1;
    }
    int sp = LastOcc(arr, idx + 1, ali);
    if (idx > sp && arr[idx] == ali) {
        if (sp != -1 && arr[sp] == ali) {
            return idx;
        }
    }
    return sp;
}
```

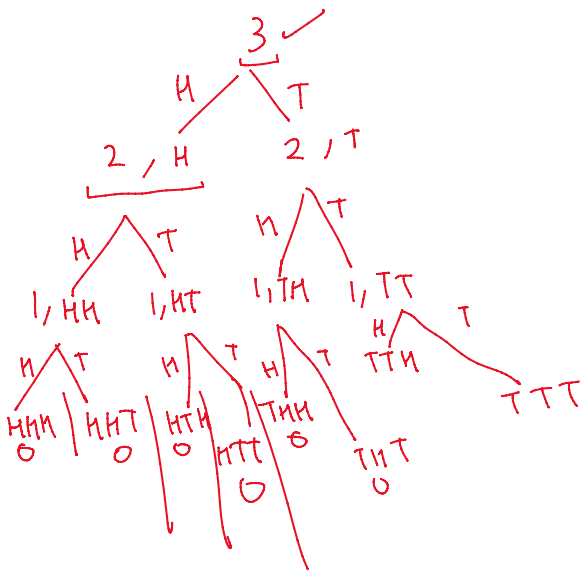
{ 10, 20, 30, 20, 20, 30, 20 }



```
public static int[] allOcc
(int[] arr, int idx, int ali,
int cnt) {
    if (arr[idx] == ali) {
        int[] sp = allOcc(arr, idx + 1, ali, cnt + 1);
    }
    else {
        int[] sp = allOcc(arr, idx + 1, ali, cnt);
    }
}
```

0 1 2 3
1 3 4 6

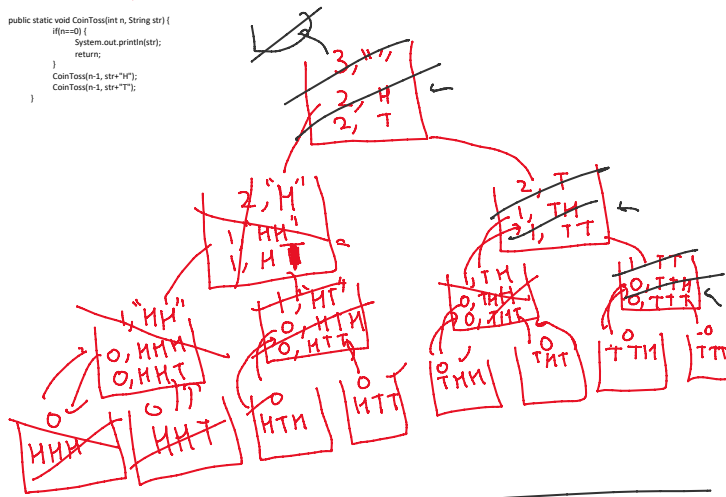
H / 3 ✓
T



```

public static void CoinToss(int n, String str) {
    if(n==0) {
        System.out.println(str);
        return;
    }
    CoinToss(n-1, str+"H");
    CoinToss(n-1, str+"T");
}

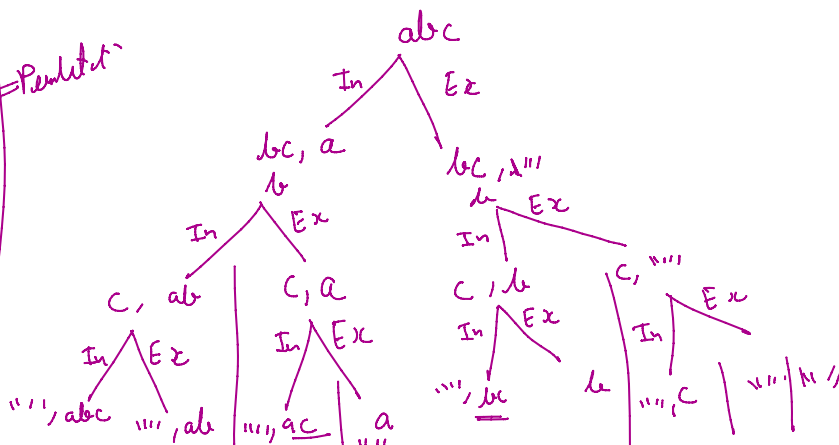
```

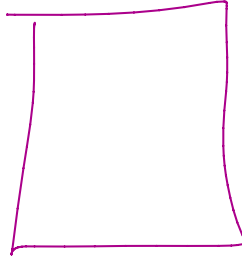


Sub seq	abcd	4	nC_2
" "	ab ac ad	abcd	
2	bc bd	bcd	$4C_3$
$4C_0$	cd	cd	$4C_2$

$$2^4 = 4C_0 + 4C_1 + 4C_2 + 4C_3 + 4C_4$$

- Permutation
- abcd
 - bdc
 - cab
 - adb
 - dcab
 - dbca





"23"