**Recursion**:

1. Euler for recursion: https://www.youtube.com/watch?v=R7qja\_gZrvI

left print -> Left call -> print -> Right call

2. Use Faith and Expectation

Faith is if run(n) will do its job, than run(n-1) will do its job automatically and than add a base case

* **Differnece between Flood fill and Maze Path**  is :

In maze path - you move in specific direction, but in flood fill you can move in **any direction** to reach from one point to other, so you have to manage the **visited cells**(mark them as true before loop and mark them as false after loop ends) in flood fill to avoid crossing the same cell.

* **Combination**- hamesha forward move karna hota

**Arrangement/Permutation**- direction backward kar sakte ho beech mai

E..g say string is **abcde …**you haveto find combination so possible combination can be :

ab, abc, abce -- these are all combinations because we are moving in same direction

**Another example:**

Permutation of two things from three given things a, b, c is ab, ba, bc, cb, ac, ca

Combination of two things from three given things a, b, c is ab, bc, ca

**If the order is important**, **then the problem is related to permutation**, and the possible number of samples will be, XY, YX, YZ, ZY, XZ, ZX. In this case, XY is distinct from the sample YX, YZ is distinct from the sample ZY and XZ is distinct from the sample ZX.

If the order is unnecessary, then the question is relevant to the combination, and the possible samples will be XY, YZ and ZX.

**Point:** Permutations are always more than Combinations

However, abec, abdc - are arrangements (not combinations) because they are not forward looking in 1 direction