

$$\begin{array}{ccccc} & & 3 & 5 & 2 \\ 1 & 4 & 2 & 5 & 3 \\ & & k & \uparrow & \uparrow \\ & & & & 2 \\ & & & & \uparrow \\ 1 & 4 & 3 & 2 & 5 \end{array}$$

Logic Breakdown

- first we find pair $[k], [k+1]$ s.t. (rightmost) $[k] < [k+1]$.
- Rightmost as we are searching for next lesser perm.
- Once also pair is ^{not} found \Rightarrow current perm is largest lexicographically. Hence next " will simply be reverse (of current perm)
- Ex: $4\ 3\ 2 \rightarrow 1\ 2\ 3\ 4$
 current next
- else:
 - Now we will find for ~~next~~ smallest largest no. than $[k]$
 - This will again be and from indices $[k+1, \text{end of list}]$
 - coz perms are in order (are ordered)
- Now swap $[k]$ & $[l]$
- Now current $[k]$ is correct but $[k+1:]$ is incorrect
- However key observation shows that ~~rev~~ $[k+1:]$ will give the ans.

Ex: $1\ 4\ 2\ 5\ 3 \rightarrow 1\ 4\ 3\ 5\ 2$
 k l k
 next perm $\rightarrow 1\ 4\ 3\ 2\ 5$