

23/9/23

(8)

Insertion Sort

APCO-
Date: 2/5/24

ignore $\leftarrow 4 \times 4 \mid 3 \mid 2 \mid 1$
karo

arranging
Cards

I

(S-1) \rightarrow 4 se phle dekho or dekho
4 ko kha arrange kru

(S-2) \rightarrow 5 ke aage 2 5 ke aage
kro or 4 ki jagah 5
daldo

II

$\leftarrow 4 \times 5 \mid 3 \mid 2 \mid 1$

$\leftarrow 3 \mid 4 \mid 5 \mid 2 \mid 1$

$\Rightarrow 3 \mid 4 \mid 5 \mid 2 \mid 1$

III

$\rightarrow 2 \mid 3 \mid 4 \mid 5 \mid 1$

$2 \mid 3 \mid 4 \mid 5 \mid 1$

IV

$\rightarrow 1 \mid 2 \mid 3 \mid 4 \mid 5$

$1 \mid 2 \mid 3 \mid 4 \mid 5$

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RV-Run

$i = 1 \text{ to } n$

$j = i - 1$, $\text{key} = v[i]$
 $\text{while } (j \geq 0 \text{ \& \& } v[j] > \text{key})$
 $v[j+1] = v[j]$
 $j--$

$v[j+1] = \text{key}$

$i = 2$, $4 | 5 | 3 | 2 | 1$, $\text{key} = v[2] = 3$, $j = 1$
 $j \geq 0 \text{ \& \& } 5 > 3$
 $v[2] = 5$

$j = 0 \rightarrow 4 > 3 \rightarrow \text{True}$

$v[j+1] = v[j] (4)$

$j-- // \rightarrow -1 \rightarrow \text{out of loop}$

$v[j+1] (0) = 3$

$3 | 4 | 5 | 2 | 1$ \rightarrow Key save

$3 | 4 | 5 | 5 | 1 \rightarrow 3 | 4 | 4 | 5 | 1$

$2 | 3 | 4 | 5 | 1 \leftarrow 3 | 3 | 4 | 5 | 1$

Alas At Last $\rightarrow 1 | 2 | 3 | 4 | 5$