

* Insertion sort

[5 | 2, 3, 1, 4]
i

[2, 5, 3, 1, 4]
j | j | j | j | j
0
-1+1

[2, , 5, 1, 4]
j | j | j | j | j

1 2 3 4 5
[5, 2, 3, 1, 4]
j | j | j | j | j

key = ~~2~~ 3

j = j - 1

arr[j+1] = arr[j]

while (j >= 0 && arr[j] > key) {
arr[j+1] = arr[j]
j--
}

arr[j+1] = key

key = ~~2~~ 3 1 4

for (i = 1; i < arr.length; i++) {

key = arr[i]

j = i - 1

while (j >= 0 && arr[j] > key) {

arr[j+1] = arr[j]

j--

}

arr[j+1] = key

}

* Right rotation

[1, 2, 3, 4, 5] → 5

k=1 = [5, 1, 2, 3, 4]

k=2 = [4, 5, 1, 2, 3]

k=3 = [3, 4, 5, 1, 2]

k=4 = [2, 3, 4, 5, 1]

→ k=5 = [1, 2, 3, 4, 5]

k=1

k % 5

7 % 5

(2)

$k=4 = [4, 1, 2, 3, 4]$
 $\rightarrow k=5 = [1, 2, 3, 4, 5]$
 $k=6 = [5, 1, 2, 3, 4]$
 $k=7 = [4, 5, 1, 2, 3]$

$[x, \cancel{1}, \cancel{2}, \cancel{3}, \textcircled{5}]$
 $\begin{matrix} j & j & j & j & j \\ \downarrow & & & & \\ j & & & & \end{matrix}$

$$\text{key} = \text{arr}[n-1]$$

$[j-1] = \text{key}$

$[1, 2, 3, 4, 5]$
 $\begin{matrix} \uparrow & \uparrow & \uparrow & \uparrow & \uparrow \\ 0 & 1 & 2 & 3 & 4 \end{matrix}$

$n = 5$
 $\text{key} = 5$
 $\text{int } i;$
 $\text{for}(\text{ } i = n-1; i > 0; i--)$
 $\text{arr}[i] = \text{arr}[i-1]$
 $\}$
 $\text{arr}[i] = \text{key}$