

INSERTION SORT ALGORITHM

- ▶ `// Sort an arr[] of size n`
- ▶ `insertionSort(arr, n)`
- ▶ Loop from $i = 1$ to $n-1$.
- ▶a) Pick element `arr[i]` and insert it into sorted sequence `arr[0...i-1]`

INSERTION SORT EXAMPLE

12, 11, 13, 5, 6

Let us loop for $i = 1$ (second element of the array) to 5 (Size of input array)

$i = 1$. Since 11 is smaller than 12, move 12 and insert 11 before 12

11, 12, 13, 5, 6

$i = 2$. 13 will remain at its position as all elements in $A[0..i-1]$ are smaller than 13

11, 12, 13, 5, 6

$i = 3$. 5 will move to the beginning and all other elements from 11 to 13 will move one position ahead of their current position.

5, 11, 12, 13, 6

$i = 4$. 6 will move to position after 5, and elements from 11 to 13 will move one position ahead of their current position.

5, 6, 11, 12, 13