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**Algorithm 1** insertionsort

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1: function INSERTIONSORT( $A, n$ )
2:   for  $i = 2$  to  $n$  do
3:      $key = A[i]$ 
4:                                      $\triangleright$  Insert  $A[i]$  into the sorted subarray  $A[1 : i - 1]$ 
5:      $j = i - 1$ 
6:     while  $j > 0$  and  $A[j] > key$  do
7:        $A[j + 1] = A[j]$ 
8:        $j = j - 1$ 
9:     end while
10:     $A[j + 1] = key$ 
11:  end for
12: end function
```

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