

This pdf depicts the Dry Run of the pythonic implementation

## Implementation (Insertion Sort)

Simply see the code implementation for the better understanding

0	1	2	3	4		
9	5	1	4	3		$i = 1 \text{ to } 4$
↑	↑	↑	↑	↑	$i = 1$	$\text{key} = 5$ <span style="color: blue;">Key = arr[i]</span>
J	i					$J = 0$ <span style="color: green;">True</span>

0	1
5	9

while True  $J \geq 0$  and  $\text{key} < \text{arr}[J]$

$\text{arr}[J+1] = \text{arr}[J]$

$J = -1$   $\Leftarrow J = J - 1$

$\text{arr}[J+1] = \text{key}$

0	1	2
9	5	1

$i = 2$

$\text{key} = 1$  True  $1 < 5$

$J = 1$  True  $1 < 9$

True  $J \geq 0$  and  $\text{key} < \text{arr}[J]$

$\text{arr}[J+1] = \text{arr}[J]$

$J = J - 1$

while

0	1	2
1	5	9

$\text{arr}[J+1] = \text{key}$