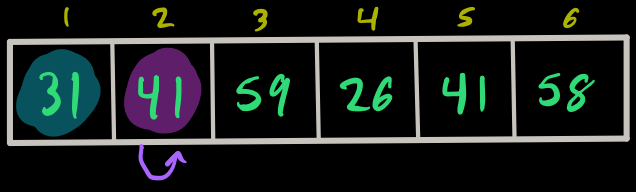
2.1-1) Insertion Sort!

- key
- values compared to key

1-based indexing like the book

$A = [31, 41, 59, 26, 41, 58]$

a)



key = 41

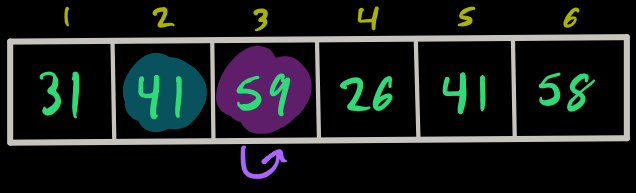
i = 1

A[i] := 31

conditions: $i > 0$ (T) and $A[i] > key$ (F)

A[2] = 41

b)



key = 59

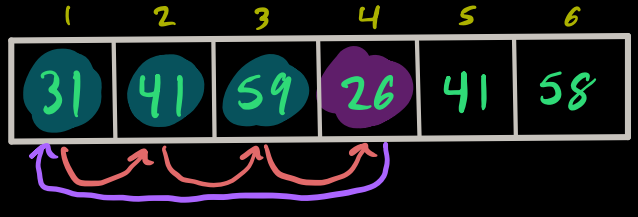
i = 2

A[i] := 41

conditions: $i > 0$ (T) and $A[i] > key$ (F)

A[3] = 59

c)



key = 26

i = 3

A[i] := 59

conditions: $i > 0$ (T) and $A[i] > key$ (T)

A[4] = 59

i = 2

A[i] := 41

conditions: $i > 0$ (T) and $A[i] > key$ (T)

A[3] = 41

i = 1

A[i] := 31

conditions: $i > 0$ (T) and $A[i] > key$ (T)

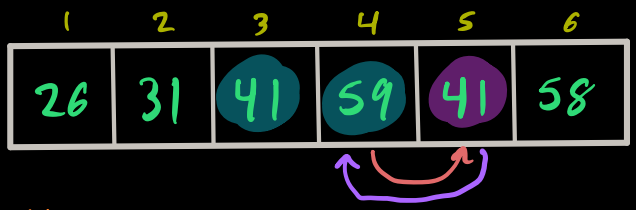
A[2] = 31

i = 0

conditions: $i>0$ (F) and $A[i]>key$

$A[1]=26$

d)



$key=41$

$i=4$ $\quad A[i]:=59$

conditions: $i>0$ (T) and $A[i]>key$ (T)

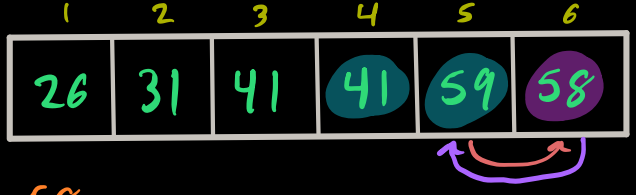
$A[5]=59$

$i=3$ $\quad A[i]:=41$

conditions: $i>0$ (T) and $A[i]>key$ (F)

$A[4]=41$

e)



$key=58$

$i=5$ $\quad A[i]:=59$

conditions: $i>0$ (T) and $A[i]>key$ (T)

$A[6]=59$

$i=4$ $\quad A[i]:=41$

conditions: $i>0$ (T) and $A[i]>key$ (F)

$A[5]=58$

$$A=[26,31,41,41,58,59]$$