Array (1A)

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Calculating the Mean of n Numbers

The mean of n numbers

$$m = \frac{\sum_{i=0}^{n-1} x_i}{n}$$

$$m = \frac{\sum_{i=0}^{4} x_i}{5} = \frac{(x_0 + x_1 + x_2 + x_3 + x_4)}{5}$$

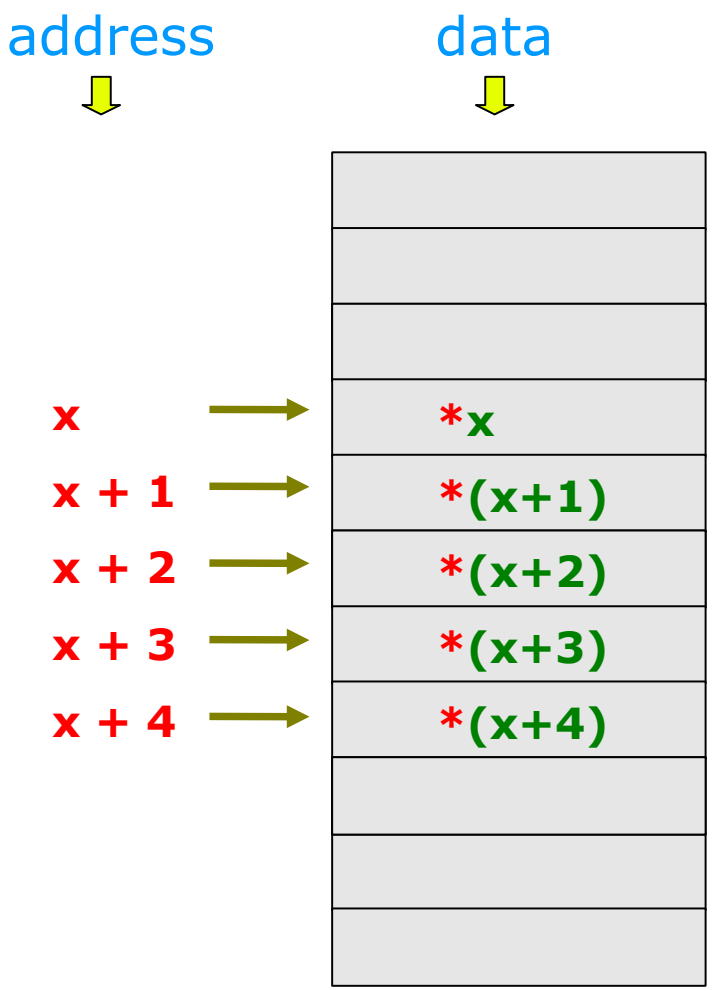
Array and Memory

```
int     x[5];
```

x holds the *starting address*
*of **5** consecutive **int** variables*

10 int variables

index	data
0	x[0]
1	x[1]
2	x[2]
3	x[3]
4	x[4]



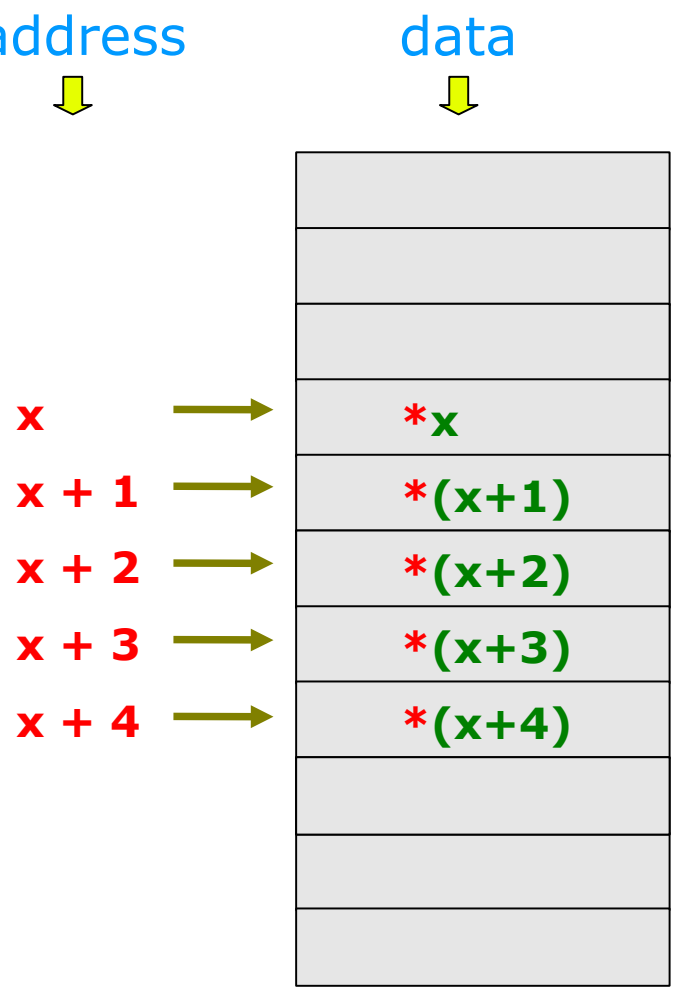
Array and Memory

```
int     x[5];
```

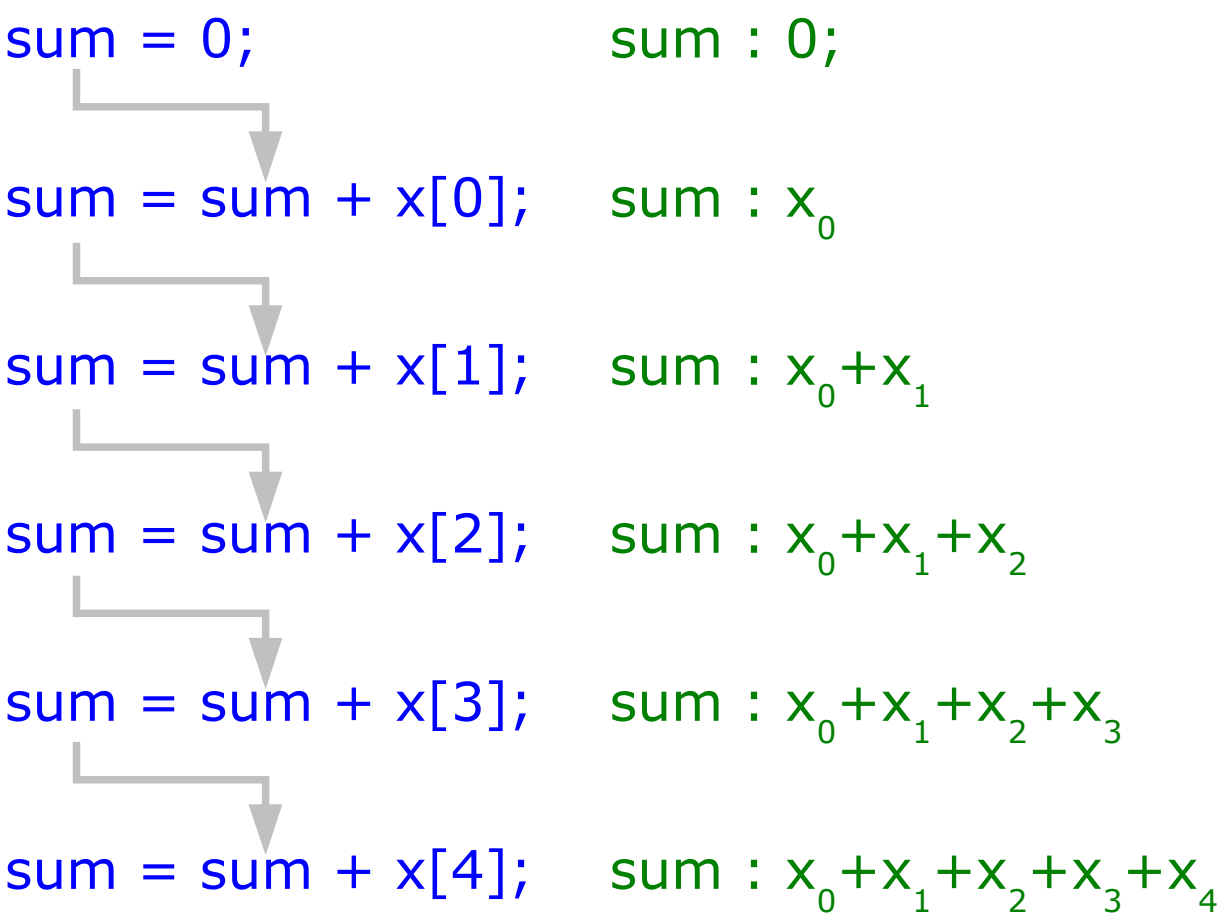
x holds the *starting address*
*of **5** consecutive **int** variables*

10 int variables

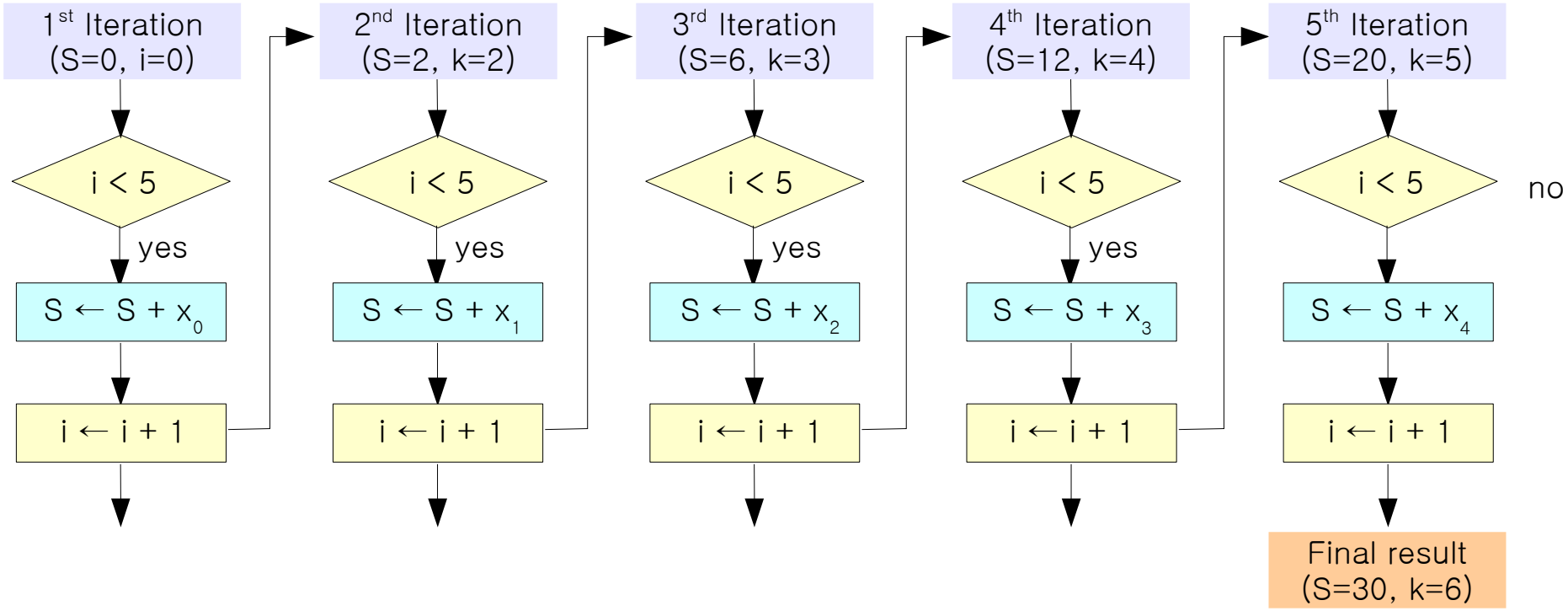
index	data	address
x[0] = 80	80	*(x+0) = 80
x[1] = 90	90	*(x+1) = 90
x[2] = 40	40	*(x+2) = 40
x[3] = 70	70	*(x+3) = 70
x[4] = 60	60	*(x+4) = 60



Computing the sum of n numbers (1)



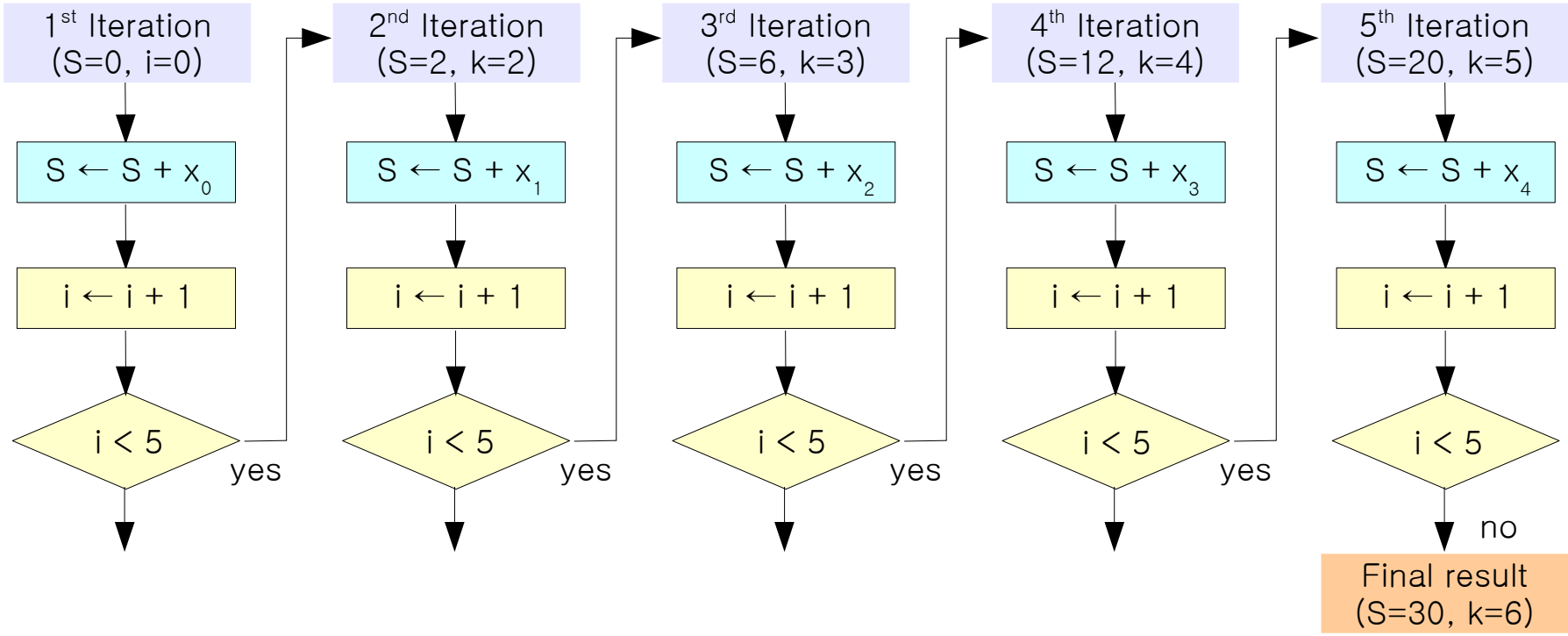
Computing the sum of n numbers (2)



$a_1 = 2$,
$a_2 = 4$,
$a_3 = 6$,
$a_4 = 8$,
$a_5 = 10$

	A	B				
K	1	1	2	3	4	5
A_k		2	4	6	8	10
S	0	2	6	12	20	30

Computing the sum of n numbers (3)



$a_1 = 2$,
$a_2 = 4$,
$a_3 = 6$,
$a_4 = 8$,
$a_5 = 10$

	A	B				
K	1	1	2	3	4	5
A_K		2	4	6	8	10
S	0	2	6	12	20	30

References

[1] Essential C, Nick Parlante
[2] Efficient C Programming, Mark A. Weiss
[3] C A Reference Manual, Samuel P. Harbison & Guy L. Steele Jr.
[4] C Language Express, I. K. Chun