

Array (1A)

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Calculating the Mean of n Numbers

*The mean of **n** numbers*

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

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

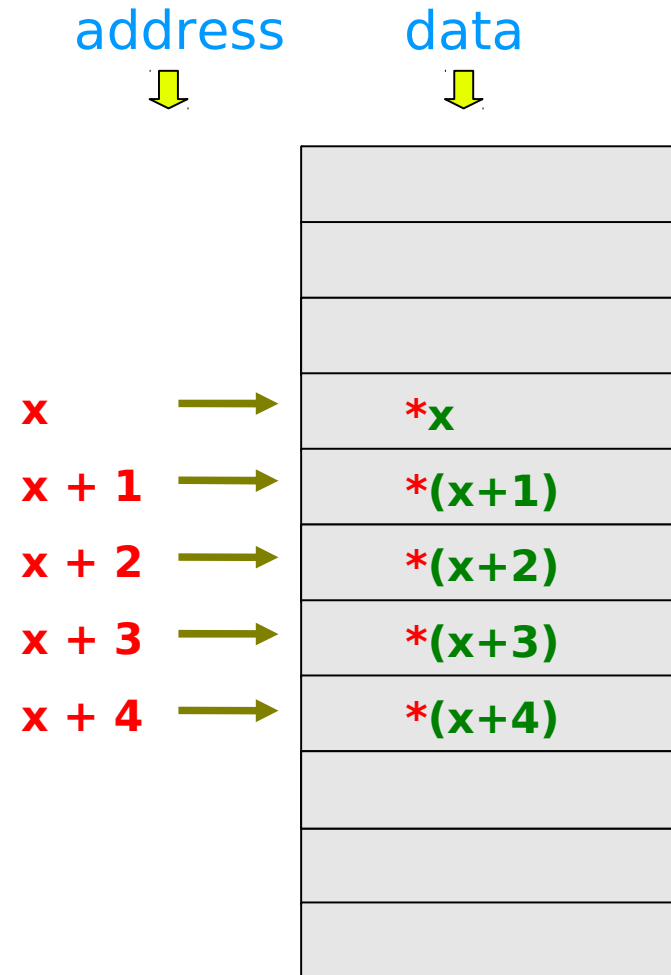
Array and Memory

```
int      x[10];
```

x holds *address*
to **10** consecutive **int** variables

10 int variables

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



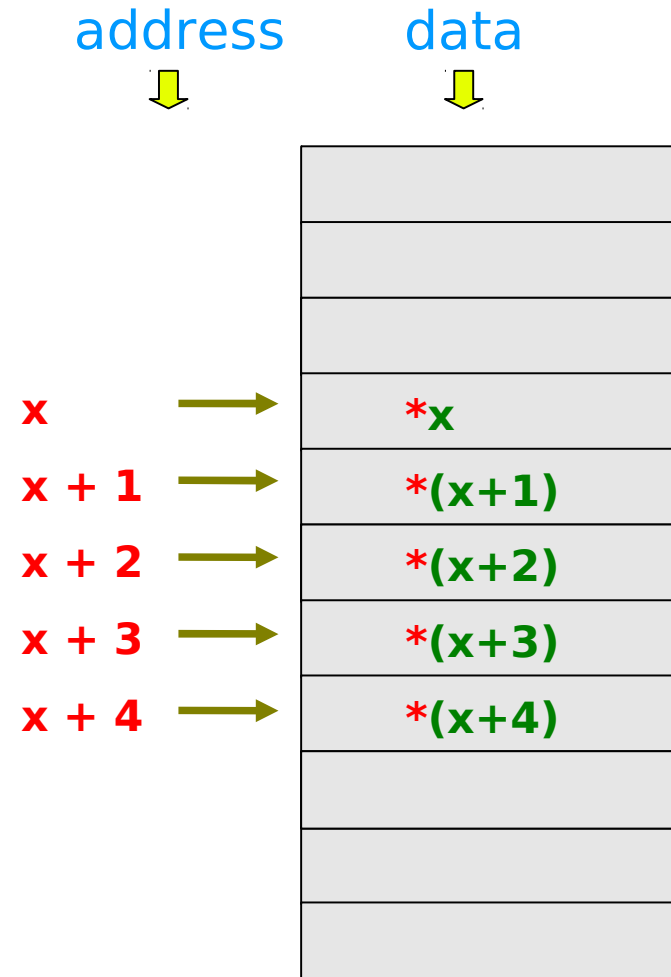
Array and Memory

```
int      x[10];
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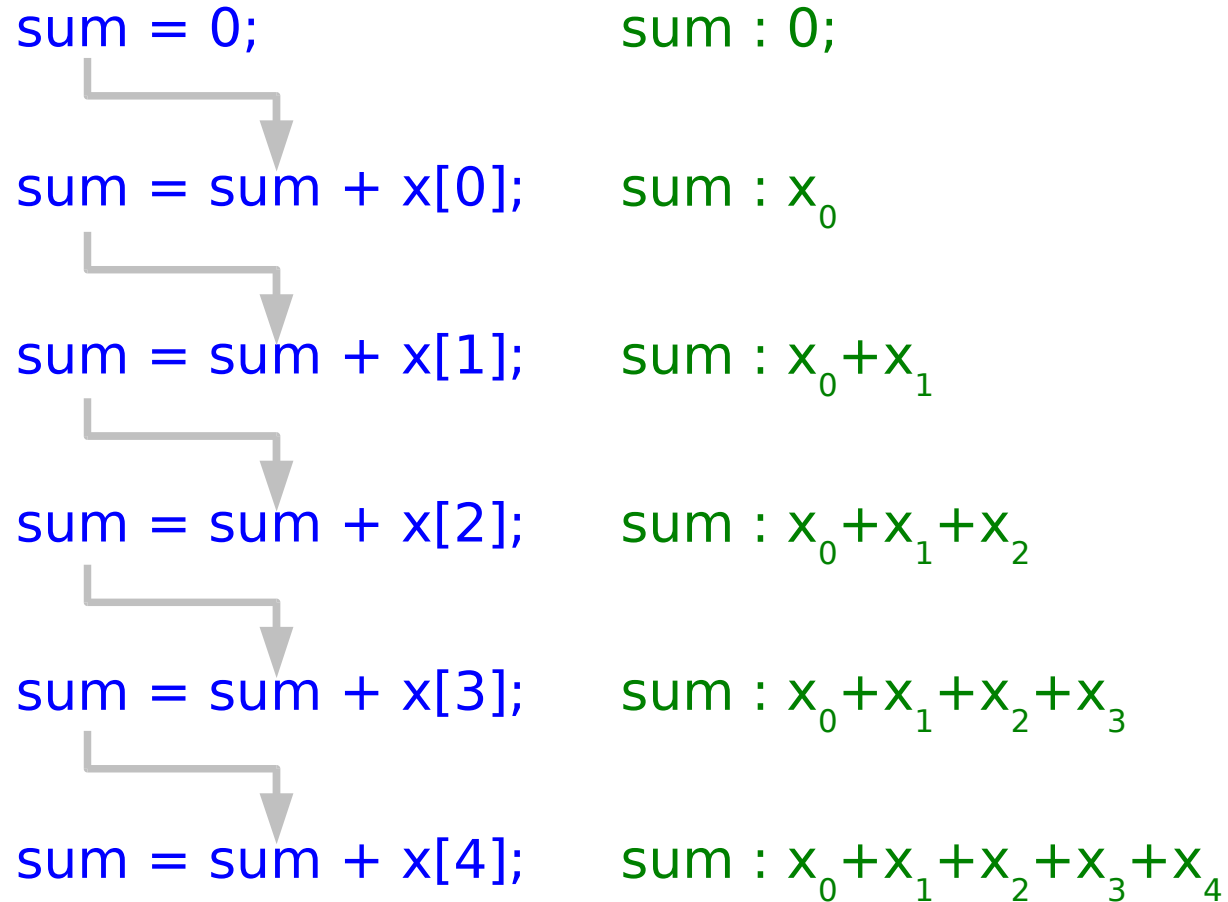
x holds address
to **10** consecutive **int** variables

10 int variables

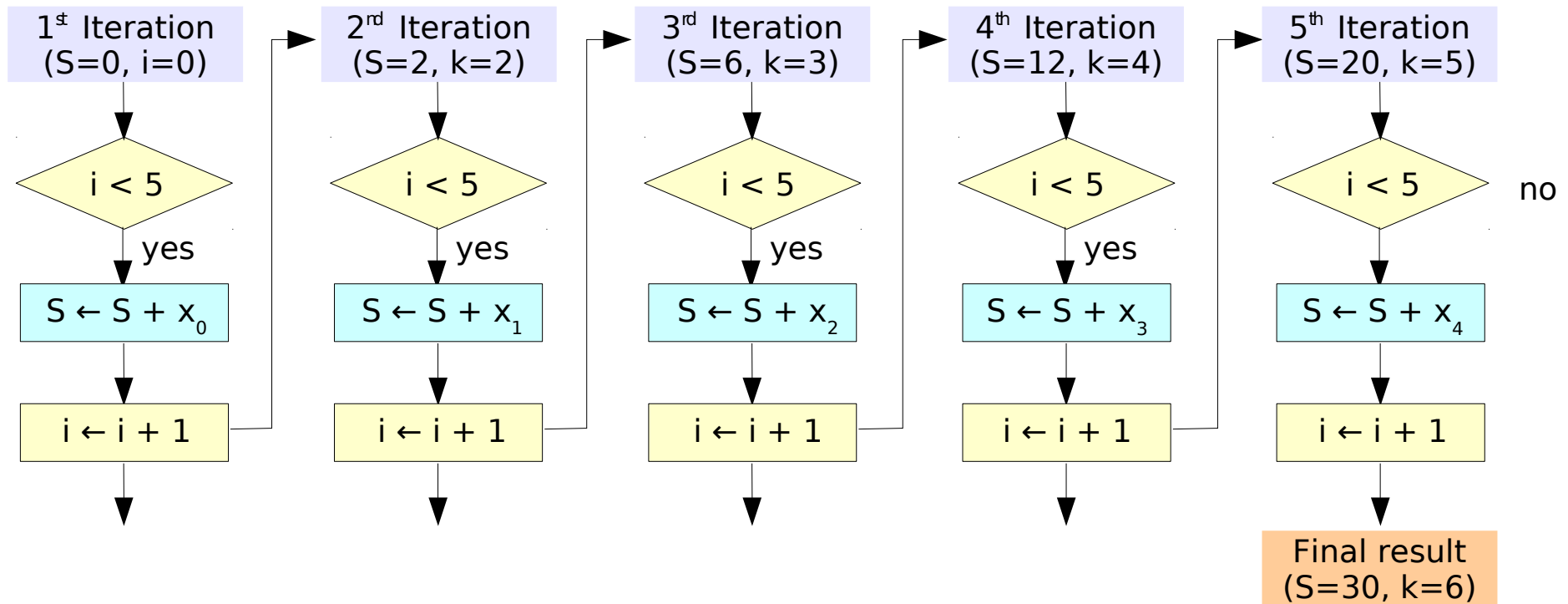
$x[0] = 80$	80	$*(x+0) = 80$
$x[1] = 90$	90	$*(x+1) = 90$
$x[2] = 40$	40	$*(x+2) = 40$
$x[3] = 70$	70	$*(x+3) = 70$
$x[4] = 60$	60	$*(x+4) = 60$



Computing the sum of n numbers (1)



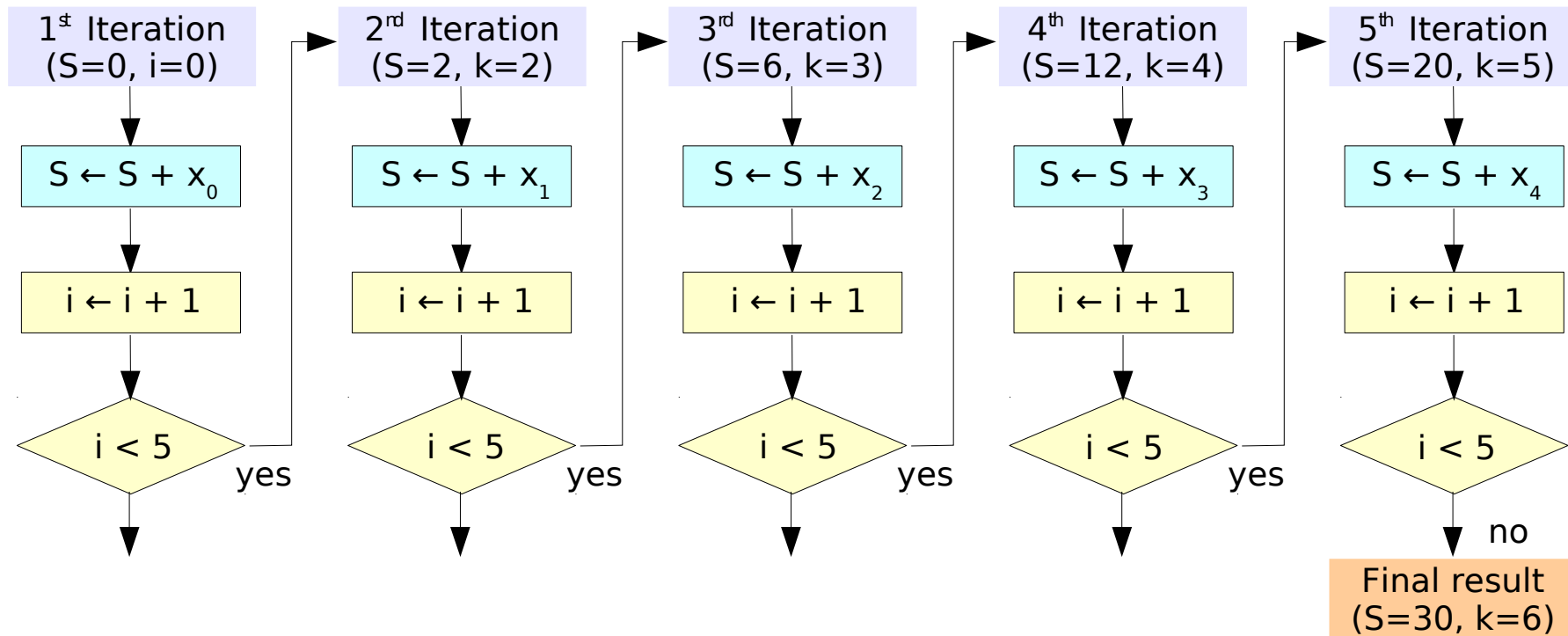
Computing the sum of n numbers (2)



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

	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