



Fundamental Coding with C

Arrays



Arrays

Arrays are a collection of similar data types that are accessed using a common name.

For example, let's consider a problem, where we want to store and display the ages of 10 students in a school.

We use an array of numbers "Student_ages":

Student_ages

8	12	10	8	9	17	17	11	9	15
---	----	----	---	---	----	----	----	---	----



Arrays

```
int Ar[10];
```

To access an individual element we must apply a subscript to array named **Ar**.

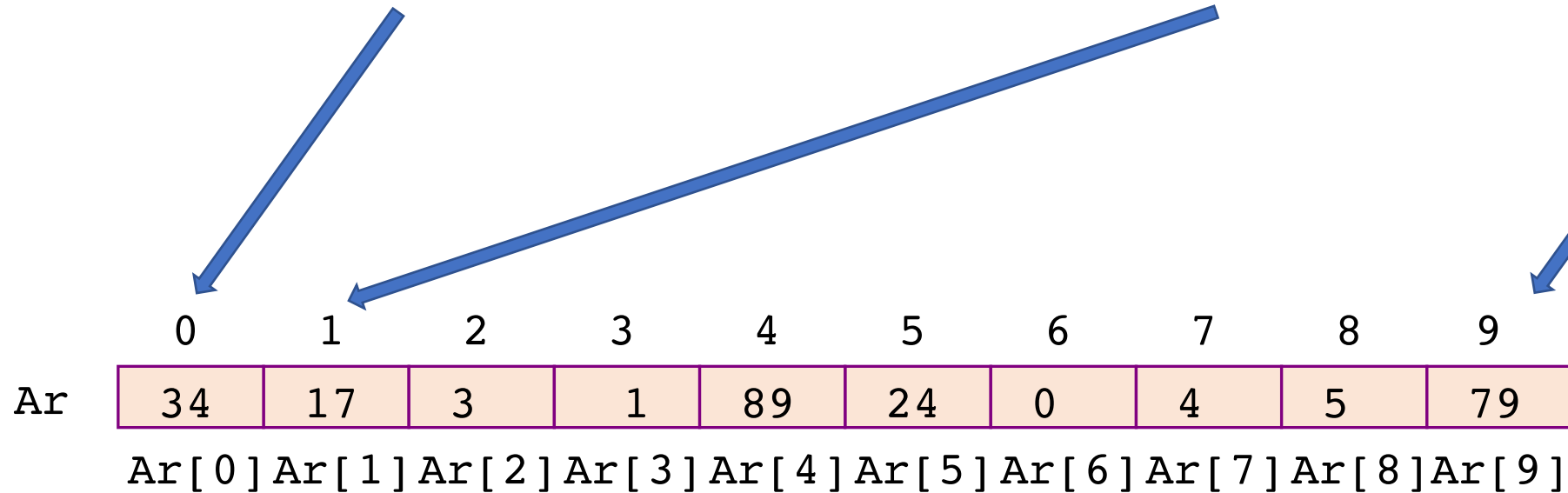
- A subscript is a bracketed expression.
The expression in the brackets is known as the index.
- First element of array has index 0.
Ar[0]
- Second element of array has index 1, and so on.
Ar[1], Ar[2], Ar[3], ...
- Last element has an index one less than the size of the array.
Ar[9]



Arrays

```
int Ar[10];
```

First element of array Ar [0] , Second element of array Ar [1] , Last element Ar [9]





Arrays

Other correct Arrays declarations:

```
int Ar[10] = {34, 17, 3, 1, 89, 24, 0, 4, 5, 79};
```

Ar	34	17	3	1	89	24	0	4	5	79
	Ar[0]	Ar[1]	Ar[2]	Ar[3]	Ar[4]	Ar[5]	Ar[6]	Ar[7]	Ar[8]	Ar[9]

```
int Ar2[] = {34, 17, 3, 1, 89, 24, 0, 4, 5, 79};
```

Ar2	34	17	3	1	89	24	0	4	5	79
	Ar[0]	Ar[1]	Ar[2]	Ar[3]	Ar[4]	Ar[5]	Ar[6]	Ar[7]	Ar[8]	Ar[9]

```
int Ar3[10] = {34, 17, 3, 1};
```

Ar3	34	17	3	1						
	Ar[0]	Ar[1]	Ar[2]	Ar[3]	Ar[4]	Ar[5]	Ar[6]	Ar[7]	Ar[8]	Ar[9]



Arrays

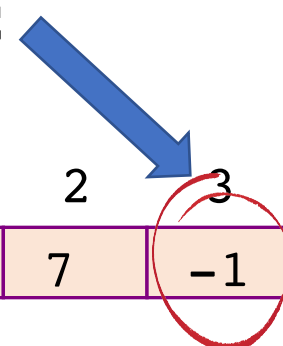
Array element modification:

```
int Ar[10] = {9, 8, 7, 6, 5, 4, 3, 2, 1, 0};
```

	0	1	2	3	4	5	6	7	8	9
Ar	9	8	7	6	5	4	3	2	1	0

```
Ar[3] = -1;
```

	0	1	2	3	4	5	6	7	8	9
Ar	9	8	7	-1	5	4	3	2	1	0





Fundamental
Coding with C

It's time to try

<https://repl.it/languages/c>





Arrays

```
#include<stdio.h>
int main()
{
int array [10]={2,45};
printf("Enter the third element of the array: ");
scanf("%d", &array[2]);
printf("The array is:\n");
printf("The element at index 0 is: %d\n",array[0]);
printf("The element at index 1 is: %d\n",array[1]);
printf("The element at index 2 is: %d\n",array[2]);
printf("The element at index 3 is: %d\n",array[3]);
printf("The element at index 4 is: %d\n",array[4]);
printf("The element at index 5 is: %d\n",array[5]);
printf("The element at index 6 is: %d\n",array[6]);
printf("The element at index 7 is: %d\n",array[7]);
printf("The element at index 8 is: %d\n",array[8]);
printf("The element at index 9 is: %d\n",array[9]);
return 0;
}
```