C Program to Access Array Elements Using Pointer

Access Array Elements Using Pointers

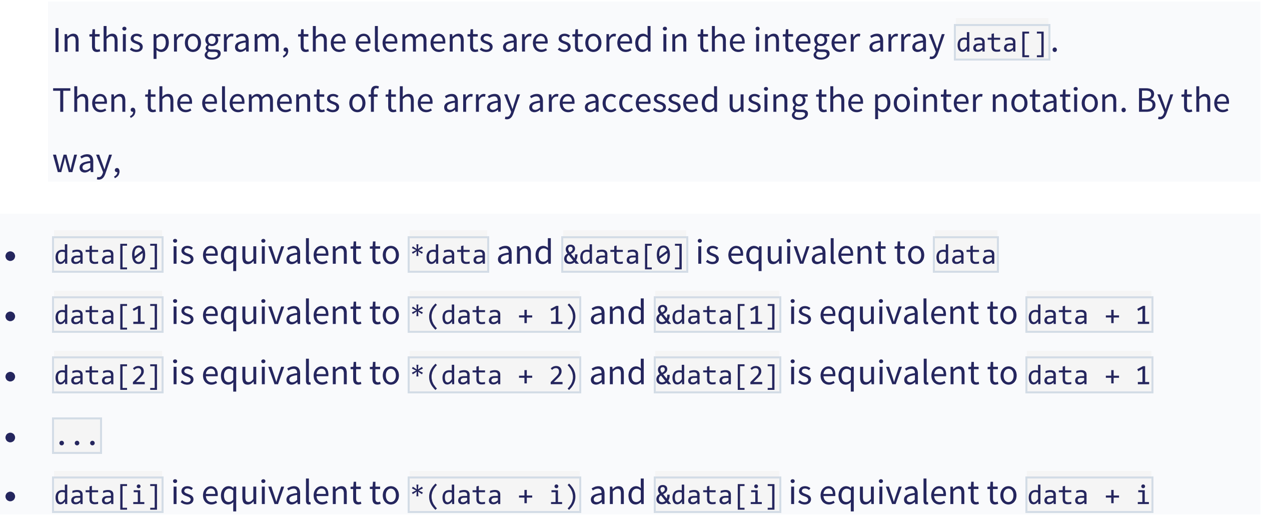
```c
#include <stdio.h>
int main() {
    int data[5];

    printf("Enter elements: ");
    for (int i = 0; i < 5; ++i)
        scanf("%d", data + i);

    printf("You entered: \n");
    for (int i = 0; i < 5; ++i)
        printf("%d\n", *(data + i));
    return 0;
}
```

Output

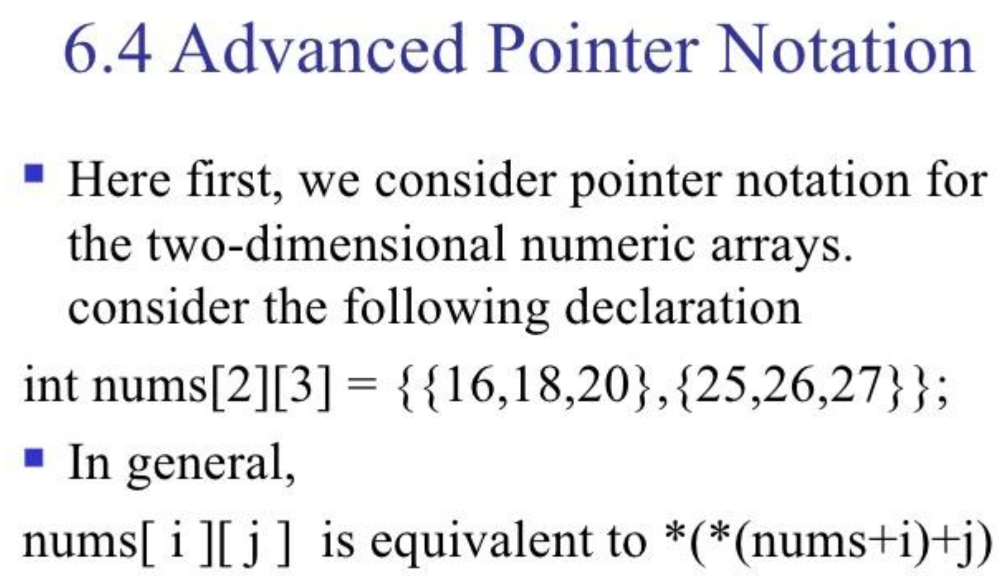
```
Enter elements: 1
2
3
5
4
You entered:
1
2
3
5
4
```



In this program, the elements are stored in the integer array `data[]`.

Then, the elements of the array are accessed using the pointer notation. By the way,

- `data[0]` is equivalent to `*data` and `&data[0]` is equivalent to `data`
- `data[1]` is equivalent to `*(data + 1)` and `&data[1]` is equivalent to `data + 1`
- `data[2]` is equivalent to `*(data + 2)` and `&data[2]` is equivalent to `data + 1`
- `...`
- `data[i]` is equivalent to `*(data + i)` and `&data[i]` is equivalent to `data + i`



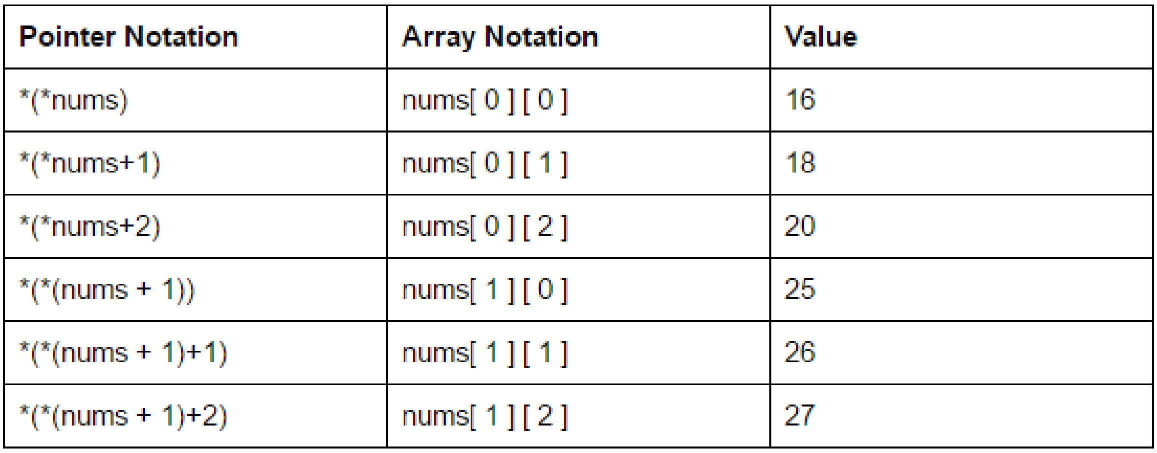
6.4 Advanced Pointer Notation

- Here first, we consider pointer notation for the two-dimensional numeric arrays. consider the following declaration

int nums[2][3] = {{16,18,20},{25,26,27}};

- In general,

nums[i][j] is equivalent to *(*(nums+i)+j)



Pointer Notation	**Array Notation**	**Value**
*(*nums)	nums[0] [0]	16
*(*nums+1)	nums[0] [1]	18
*(*nums+2)	nums[0] [2]	20
((nums + 1))	nums[1] [0]	25
((nums + 1)+1)	nums[1] [1]	26
((nums + 1)+2)	nums[1] [2]	27