Bahan Ajar

Chapter 12

Materi Pembelajaran

Matakuliah :

PEMROGRAMAN TERSTRUKTUR

Kode Matakuliah : SKO 21411

Prodi : SISTEM KOMPUTER

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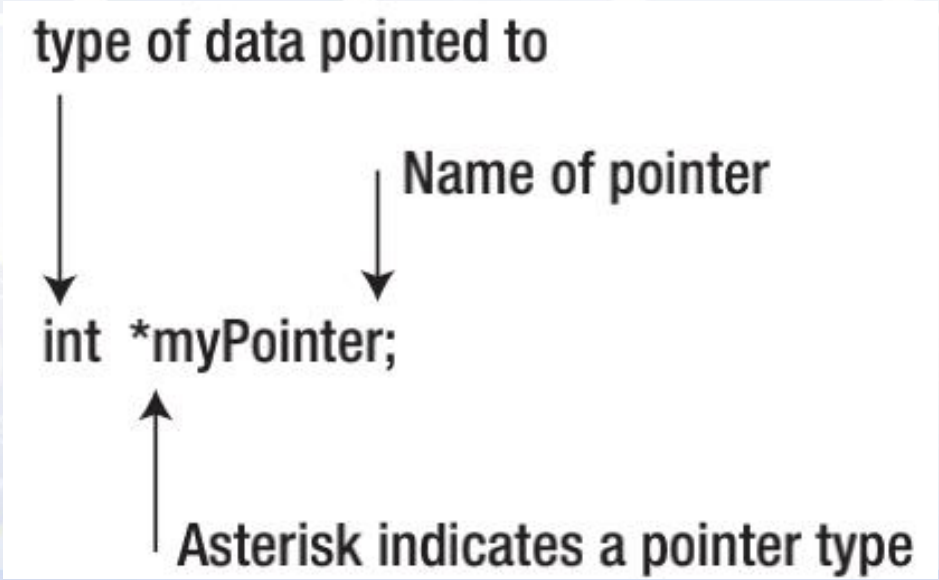
Pointers

One of the most powerful features of C is pointers. Although many of the features of any programming language have the power for you to shoot yourself in the foot, pointers give you the power to blow your entire leg off.



Pointers

Some sample pointer names might be:

ptrMyQuizScores
ptrName
ptrStateCapital
ptrSisters

Pointer Type Specifiers and Pointer Scalars

For example, all of the following are valid pointer definitions:

```
int *ptrSheepCount;
char *ptrFirstName;
long *ptrBigVal;
float *ptrYardsOfCloth;
```

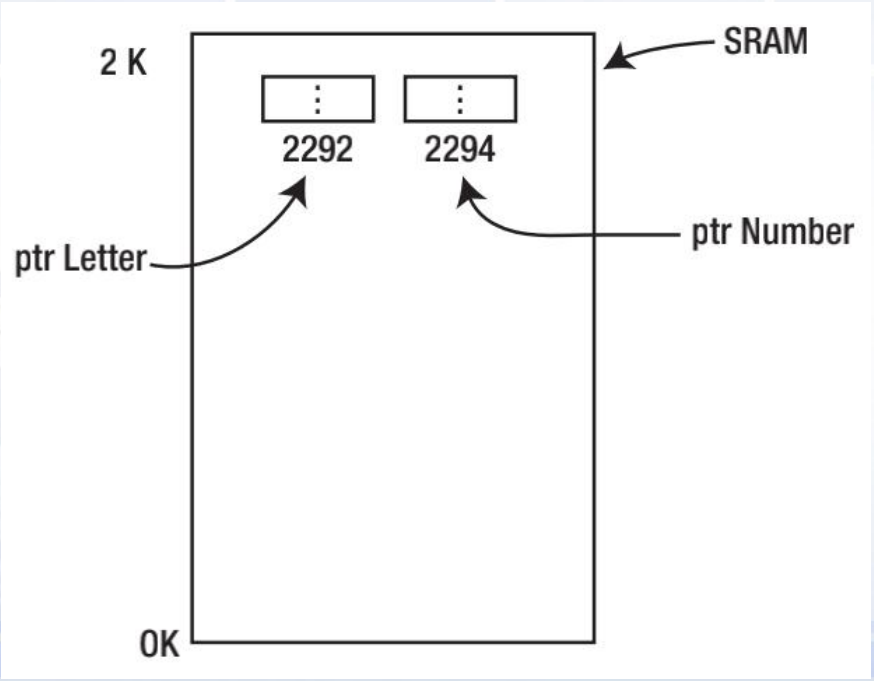
Pointer Scalars

Consider the following two pointer definitions:

```
char *ptrLetter;
int *ptrNumber;
```

Pointer Scalars

Whenever we defined data types before, a char data type used 1 byte and an int used 2 bytes. Yet, the pointer definition shows that each pointer requires the same amount of storage: 2 bytes. Why?



Pointer Initialization

The instant after you define a pointer, you should think of it as being unusable. That is, after the compiler processes the following statement:

```
int *ptrNumber;
```

you have an int pointer that has a garbage rvalue. Suppose the compiler ends up placing the pointer at memory address 2294.

Using a Pointer

suppose you have the following three statements in a program:

```
int a;
int b = 5;
a = b;
```

```
int number = 5;
int *ptrNumber;
ptrNumber = &number;
```

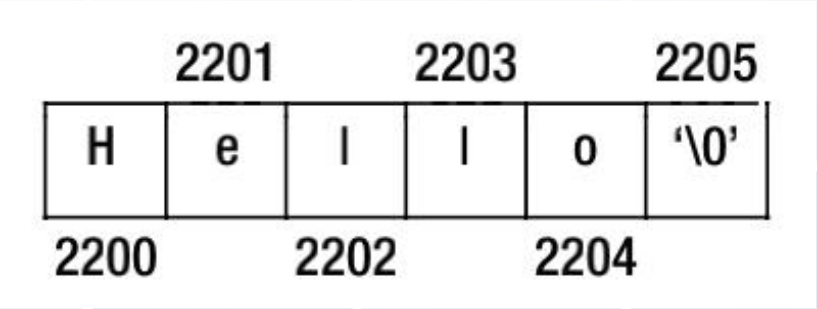
The purpose of the address of operator (&) is to tell the compiler

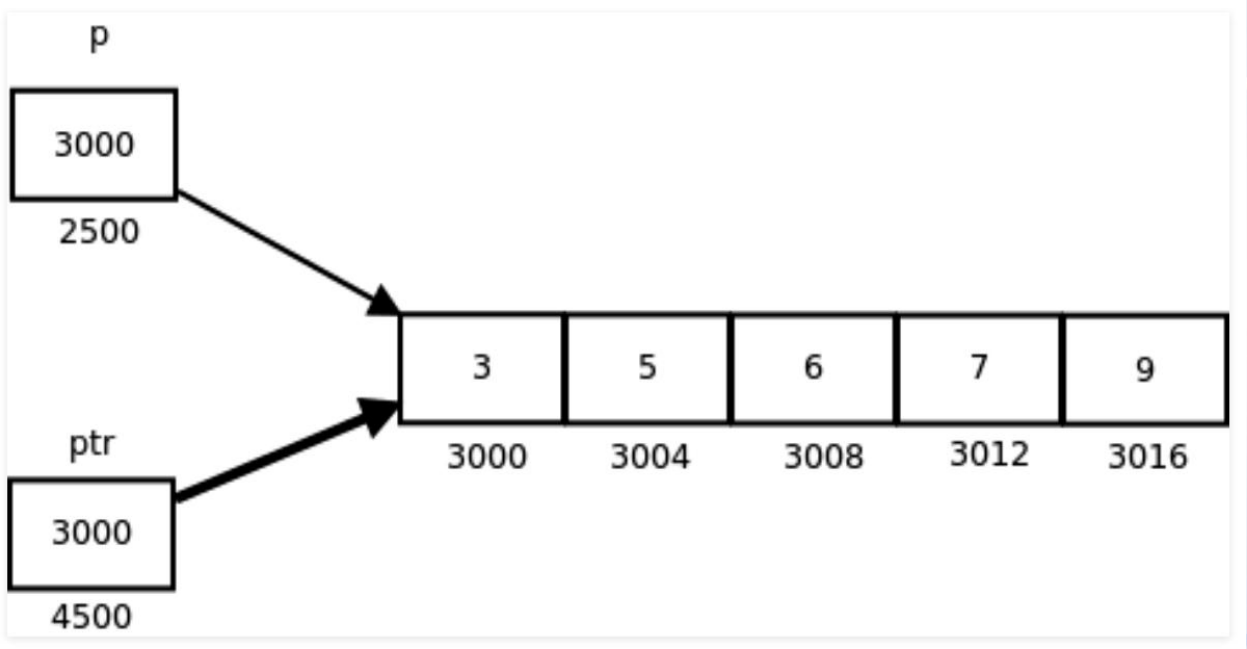
The Indirection Operator (*)

If you wish to use a pointer to change the rvalue of the variable it points to, then you use the indirection operator. The syntax is:

*variableID = expression1;
For example:
*ptrNumber = 10;

Pointers and Arrays



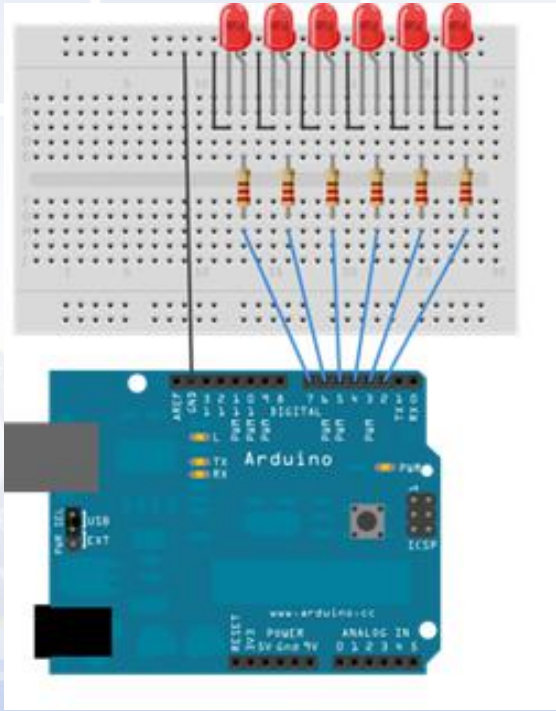


Tugas Mandiri (teori):

1. What does the address of operator do? Give an example
2. What is the indirection operator (*) and what is its purpose? Give an example of how it might be used
3. Suppose you needed to pass the value of the fifth element of an int array named values to a function named func(). How would you write the code?

Tugas Mandiri (prakt):

Lakukan perakitan skema rangkaian LED di proteus seperti gambar berikut dan perintah Array untuk menghidupkan LED.



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