

e-Lecture on C Programming

for

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Paper code: 201

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Strings in C

- Strings are defined as an array of characters. The difference between a character array and a string is the string is terminated with a special character '\0'.
- we usually process strings sequentially character by character from start to end.
- 'C' provides standard library <string.h> that contains many functions which can be used to perform complicated string operations easily.
- The general syntax for declaring a variable as a string is as follows

```
char string_variable_name [array_size];
```

The classic string declaration can be done as follow:

```
char string_variable_name [array_size] = "string";
```

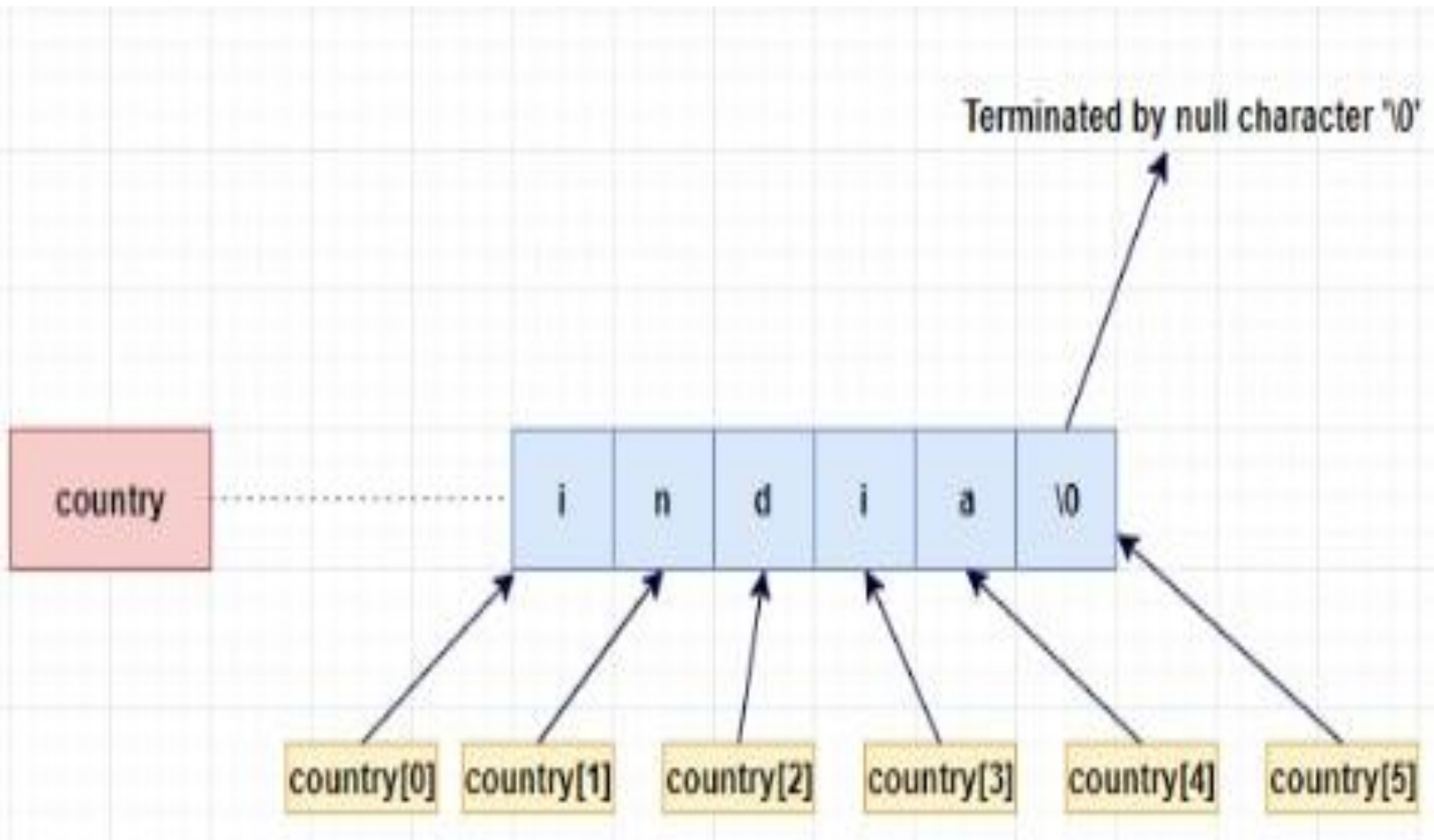
String Size

The size of an array must be defined while declaring a string variable because it used to calculate how many characters are going to be stored inside the string variable. Some valid examples of string declaration are as follows:

```
char first_name[15];
```

```
char last_name[15];
```

Pictorial Representation



String Initialization

How to initialize strings?

You can initialize strings in a number of ways.

```
char c[] = "abcd";  
  
char c[50] = "abcd";  
  
char c[] = {'a', 'b', 'c', 'd', '\\0'};  
  
char c[5] = {'a', 'b', 'c', 'd', '\\0'};
```

c[0]	c[1]	c[2]	c[3]	c[4]
a	b	c	d	\\0

Let's take another example:

```
char c[5] = "abcde";
```

Here, we are trying to assign 6 characters (the last character is `'\\0'`) to a `char` array having 5 characters. This is bad and you should never do this.

String Example

Example 1: scanf() to read a string

```
#include <stdio.h>
int main()
{
    char name[20];
    printf("Enter name: ");
    scanf("%s", name);
    printf("Your name is %s.", name);
    return 0;
}
```

Output

```
Enter name: Dennis Ritchie
Your name is Dennis.
```