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strdup() and strndup() functions in C/C++



The **strdup()** and **strndup()** functions are used to duplicate a string.

strdup() :

Syntax : *char *strdup(const char *s);*

This function returns a pointer to a null-terminated byte string, which is a duplicate of the string pointed to by *s*. The memory obtained is done dynamically using [malloc](#) and hence it can be freed using [free\(\)](#).

It returns a pointer to the duplicated string *s*.

Below is the C implementation to show the use of strdup() function in C:

C

```
// C program to demonstrate strdup()
#include<stdio.h>
#include<string.h>

int main()
{
    char source[] = "GeeksForGeeks";

    // A copy of source is created dynamically
    // and pointer to copy is returned.
    char* target = strdup(source);

    printf("%s", target);
    return 0;
}
```

Output:

GeeksForGeeks

strndup() :

syntax: *char *strndup(const char *s, size_t n);*

This function is similar to strdup(), but copies at most **n** bytes.

Note: If **s** is longer than **n**, then only **n** bytes are copied, and a NULL ('\0') is added at the end.

Below is the C implementation to show the use of strndup() function in C:

C

```
// C program to demonstrate strndup()
#include<stdio.h>
#include<string.h>

int main()
{
    char source[] = "GeeksForGeeks";

    // 5 bytes of source are copied to a new memory
    // allocated dynamically and pointer to copied
    // memory is returned.
    char* target = strndup(source, 5);

    printf("%s", target);
    return 0;
}
```

Output:

Geeks

Let us see the differences in a tabular form -:

	strdup()	strndup()
1.	It is used to return a pointer to a null-terminated byte string,	It is used to return a pointer to a null-terminated byte string
2.	Its syntax is -: char * strdup(const char *str1);	Its syntax is -: char *strndup(const char *str, size_t size);
3.	It is defined in <string.h> header file	It is defined in <string.h> header file
4.	It only take one parameter that is pointer to the null-terminated byte string to duplicate	It takes two parameters that are -: 1.pointer to the null-terminated byte string to duplicate 2. max number of bytes to copy from str
5.	Its return value is pointer to the newly allocated string.	It returns a null pointer if an error occurred.

Reference: [Linux man\(7\)](#).

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