

Re: will I get Memory leak..

Source: http://coding.derkeiler.com/Archive/C_CPP/comp.lang.c/2007-11/msg02067.html

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 - *Date:* Wed, 14 Nov 2007 13:11:23 GMT
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I strongly recommend re-reading Richard Bos' response, but from your comments about it I thought you might benefit from a response that more directly addresses your questions.

gNash wrote:

Hi all,

```
void main()
{
char *fp;
fp=malloc(26);
strcpy(fp,"ABCDEFGHIJKLMNOPQRSTUVWXYZ");
fp[10]='\0';
free(fp);
}
```

Please refer the program for my questions..

1. Can any one tell me if would i assign '\0' at middle of dynamically assigned memory area will i get memory leak.. ??

Writing a null character into dynamically allocated memory will not, in itself, cause a memory leak.

The problem with your code, on the other hand, is that your call to `strcpy()` writes a null character to `fp[26]`, which is one position past the end of the allocated memory. As a result of that error, the behavior of your entire program is undefined, which means that anything could go wrong. A memory leak is very definitely a possibility from making that kind of mistake, but most of the other possible consequences of that mistake are much worse than memory leaks.

- 2 . Will "free()" delete all the memory which allocated by dynamically even NULL values has been added in middle of that.??

Your code wrote one null value at a position one past the end of the allocated memory, and a second null character at the beginning of the allocation. It didn't write any null characters into the middle of the allocation. Calling `free()` does not delete memory.

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Writing null characters into the allocated memory has no affect on the behavior of free(), regardless of where you write them, so long as it is inside the allocation. Because of your mistake, the call to free() could do anything, including sending insulting e-mail to your mother. However, if you hadn't written a null character one past the end of the allocated memory, the behavior of free() would have been to deallocate the memory, making it available for further allocation.

3. How let i know that will i get memory leak in a program?? any compiler option are there ?? Can i use splint tool ?

Memory leaks occur at run time, not at compile time. Compilers can't catch memory leaks, though some of the better ones can catch some of the mistakes that result in memory leaks.

There are compilers that provide options that provide run-time help with leak detection. There are debugging versions of the malloc() family of functions. There are tools which run your program inside an environment that allows you to monitor memory allocations and detect links. However, in order to recommend an appropriate tool, we need to know what compiler and operating system you're using.