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[How to manage lifetime of CString in a Vec?](#)

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Is there a better or more idiomatic way to handle the lifetime of a `CString` in a `Vec` other than using `into_raw()`?

Here's my code:

```
// This fails because the CString gets dropped and then what is pointed to is invalid and invalidates required_layers
let required_layers: Vec<*const c_char> = vec!(  
    CString::new("VK_LAYER_LUNARG_standard_validation").expect("CString err A").as_ptr(),  
)  
  
// This works because ss0 stays alive, but is going to be error-prone as dropping ss0 somewhere invalidates required_layers
let ss0 = CString::new("VK_LAYER_LUNARG_standard_validation").expect("CString err A");  
let required_layers: Vec<*const c_char> = vec!(  
    ss0.as_ptr(),  
)  
  
// This works, but now requires from_raw() to retake ownership to avoid leaks
let required_layers: Vec<*const c_char> = vec!(  
    CString::new("VK_LAYER_LUNARG_standard_validation").expect("CString err A").into_raw(),  
)
```

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You can just store the actual `CString` objects:

```
let a = vec![  
    CString::new("VK_LAYER_LUNARG_standard_validation").expect("CString err A")  
];
```

And if what you actually need is a contiguous array of pointers, perhaps for passing to a C function that is expecting that sort of thing, you can create a second vector holding the pointers from the strings in the first.

```
let b: Vec<*const c_char> = a.iter().map(|cstr| {  
    cstr.as_ptr()  
}).collect();
```

The first vector will outlive the second, and it will properly drop the contained `CString` objects when it is dropped itself.

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[edited Sep 8, 2019 at 6:33](#)

answered Sep 8, 2019 at 6:16

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jdkramhoft

[jdkramhoft](#) Over a year ago

How come "the first vector will outlive the second" ? I would have thought this was like the second example in the question (b would be invalidated if a is dropped)
-- is this not possible?

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