CS240 ASSIGNMENT 1:

Implement a system call

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Goal:

Implement a system call, `getmemusage()`, which returns the number of pages allocated in kernel.

Results:

```
$ gmutest
Kernel pages allocated: 277
```

Methods:

1. Add a counter `pagenum` to record the pages allocated in the kernel.
    a. Initiate `pagenum` to `0` in file *kalloc.c*.
    b. Modify `kalloc` and `kfree` function in *kalloc.c* file to record the paged used via `pagenum`.
    c. Modify `pagenum` `extern` in *defs.h* file, thus callable by `getmemusage()`.
2. Implement a system call `getmemusage()` to return the `pagenum` value.
    a. Define system call id for `getmemusage` in file *syscall.h*.
    b. Make `sys_getmemusage()` external and add system call matching in file *syscall.c*.
    c. Add assembly code for system call `getmemusage` in file *usys.S*.
    d. Add system call `getmemusage()` function in *sysproc.c* file.
3. Add a user program `gmutest` to call `getmemusage()`.
    a. Declare system call `getmemusage()` in file *user.h*.
    b. Add file *gmutest.c* to write a new user program `gmutest`.
    c. Modify *Makefile* to compile `gmutest`.