CSC 4421
F17
Memory

Swapping (1)

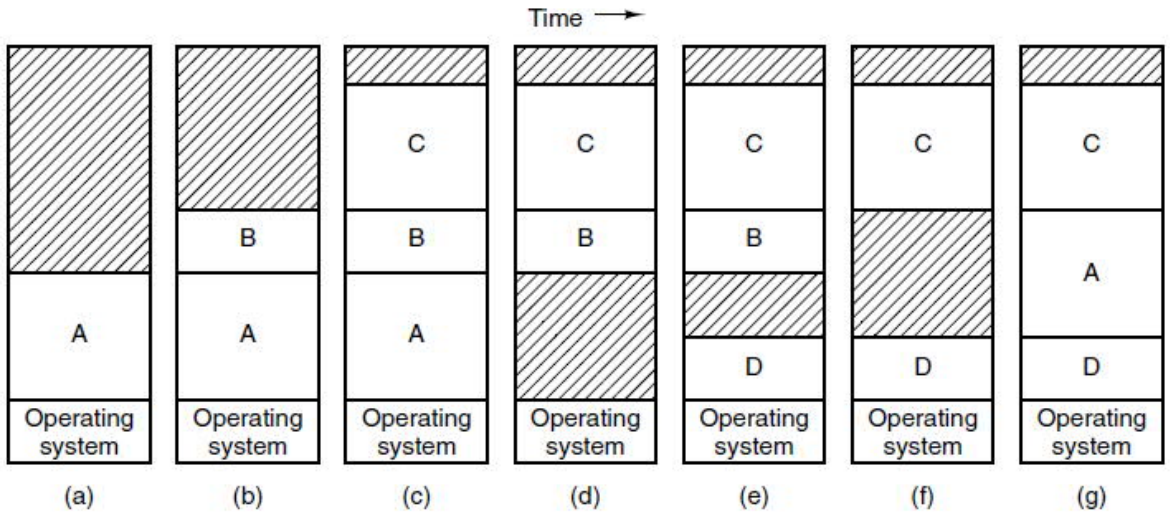


Figure 3-4. Memory allocation changes as processes come into memory and leave it. The shaded regions are unused memory

Swapping (2)

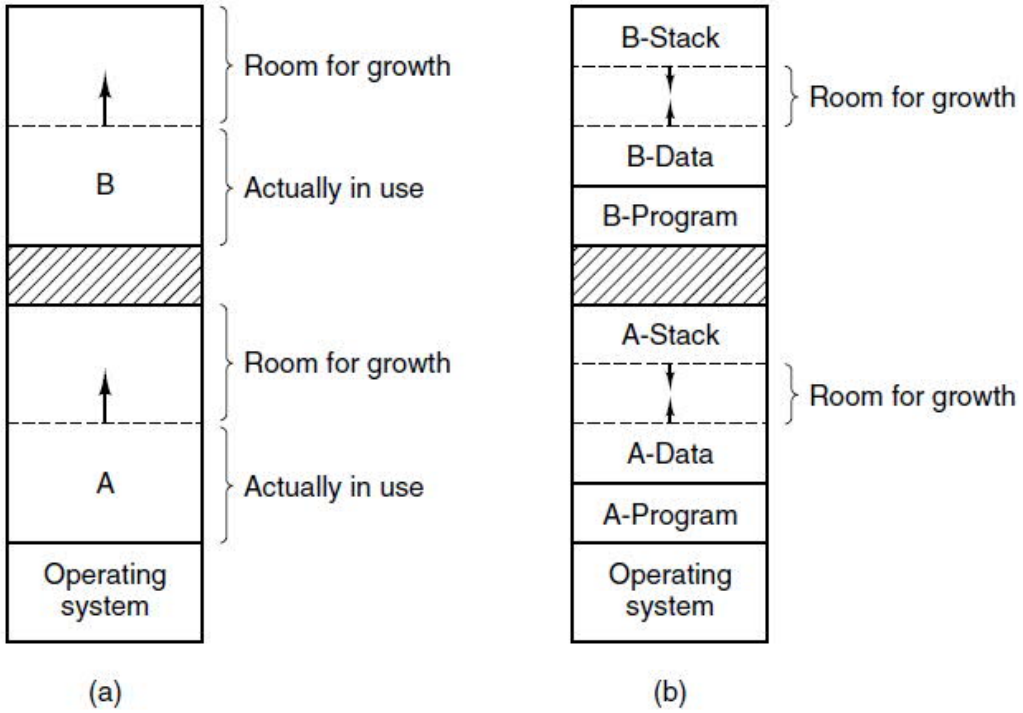
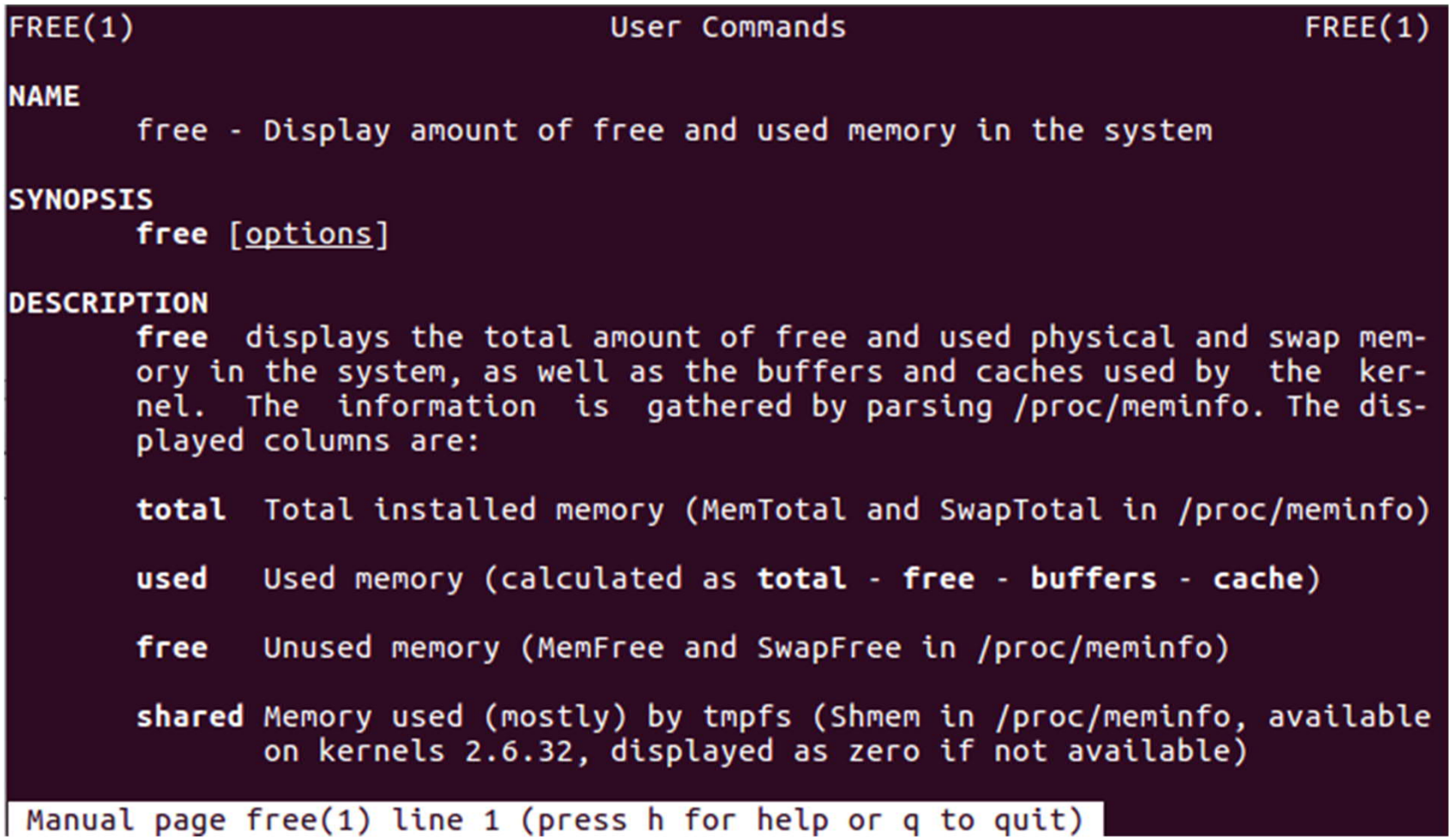


Figure 3-5. (a) Allocating space for a growing data segment.
(b) Allocating space for a growing stack and a growing data segment.

free


FREE(1) User Commands FREE(1)
NAME
free - Display amount of free and used memory in the system
SYNOPSIS
free [options]
DESCRIPTION
free displays the total amount of free and used physical and swap memory in the system, as well as the buffers and caches used by the kernel. The information is gathered by parsing /proc/meminfo. The displayed columns are:
total Total installed memory (MemTotal and SwapTotal in /proc/meminfo)
used Used memory (calculated as total - free - buffers - cache)
free Unused memory (MemFree and SwapFree in /proc/meminfo)
shared Memory used (mostly) by tmpfs (Shmem in /proc/meminfo, available on kernels 2.6.32, displayed as zero if not available)
Manual page free(1) line 1 (press h for help or q to quit)

free – sample output / screen shot

```
csc4421@ubuntu:~$ free -w
              total        used        free      shared     buffers       cache   available
Mem:        4025400      674956     2837416       10492       38076      474952     3070232
Swap:       4192252           0     4192252
csc4421@ubuntu:~$
```

Some Helpful Website w.r.t. Linux RAM Usage

https://www.linuxatemyram.com/

https://unix.stackexchange.com/questions/87908/how-do-you-empty-the-buffers-and-cache-on-a-linux-system