10/13/15 Pre-Class Work

* Required

Harvard email address: *

Please indicate which course you are taking. *

- ○ CS61 (College)
- ○ CSCIE-61 (Extension)

mmap

mmap is faster than read/write because *
(check all that apply)

- ☐ The OS uses faster memory for mmap.
- ☐ The OS is guaranteed to perform fewer IOs.
- ☒ There will be fewer copies.
- ☒ The process makes fewer system calls.
- ☐ No other programs are allowed to run.

What would you expect to happen if you made the following two system calls: fd = open ("foo", O_RDONLY); a = mmap(NULL, 4096, PROT_WRITE, MAP_PRIVATE, fd, 0); *

- ○ Segfault (NULL pointer dereference)
- ○ Success -- the file foo is mapped into the address space
- ○ EINVAL: you can't map a file that has been opened
- ☒ EACCESS: You are not allowed to write to this file descriptor

Select all of the following situations in which mmap is both possible and appropriate. *

- ☐ Creating a new file of some unknown length.
- ☐ Reading a file to which you do not have access.
- ☒ Sharing a file among multiple processes.
- ☐ Mapping an entire file of 6 GB on a 32-bit machine.
- ☒ Implementing a multi-player game with shared state.

Review Questions

Which of the following exercises undefined behavior? *
(Check all that apply.)

- [ ] char c = 'a'; printf("%c\n", c);
- [x] char c; printf("%c\n", c);
- [x] char c; printf("%p\n", &c);
- [ ] char c = 'a'; printf("%c\n", c + 4);

The following is a line of output from hexdump. What is the address of the value 0xDEADBEEF? *
bfff5d34 0e ad be ef ef be fe ca ef be ad de ad de ef be

- 0xbfff5d34
- 0xbfff5d38
- [x] 0xbfff5d3c
- 0xbfff5d40

Which of the following is the correct 32-bit representation of -42? *

- 0x0000002A
- 0xFFFFFFD5
- [x] 0xFFFFFFD6
- 0x1000002A

0x2A
0010 1010
1101 0101
1101 0110
D 6

Use the following two code snippets for the next questions.

A) unsigned u = 0xFFFFFFFF; u + 1;
B) int i = -1; i + 1;

What is the relationship between the values (u + 1) and (i + 1)? *

- (u + 1) < (i + 1)
- [x] (u + 1) = (i + 1)
- (u + 1) < (i + 1)
- Can't tell

Will the state of the flags registers be the same or different after executing (u+1) and (i + 1)? *

- [x] Same
- Different

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