CIS 4930/COP 5641 Summer 2014
Jun 17, 2014
Quiz #2

Name: _____

Complete 2 of the following 3 problems on the separate sheet provided. Each problem is worth 5 points. Clearly indicate which problem you are answering.

You have 15 minutes.

1. A `mutex` (as discussed in class) can be *locked* with `mutex_lock()` and `mutex_lock_interruptible()` (as well as others functions). What is the difference between the *interruptible* and the *non-interruptible* version. What can cause an *interruption*? Give a brief explanation on how the *interruption* should be handled by driver code.

2. Describe an error with the usage of the `wait*` facilities in following code taken from *scull/pipe.c* . (Note there is an error.)

```
struct scull_pipe {
    ...
    wait_queue_head_t inq, outq;
    ...
}

static int scull_getwritespace(struct scull_pipe *dev, struct file *filp)
{
    ...
    DEFINE_WAIT(wait);
    ...

    if (spacefree(dev) == 0) {
        prepare_to_wait(&dev->outq, &wait, TASK_INTERRUPTIBLE);
        schedule();
    }

    ...
}
```

3. List and briefly describe (in words) one *alternative* to implementing an `ioctl` command. Your chosen alternative should be able to achieve the same functionality as an `ioctl` command, so your description should include how this functionality is achieved.

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