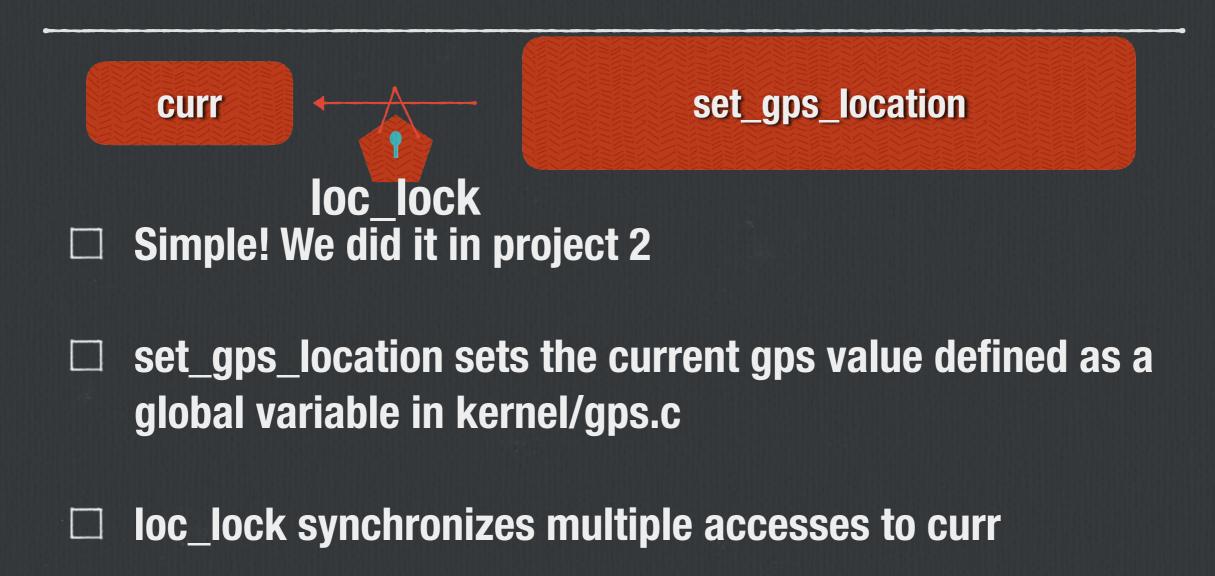# Geo-tagged file system

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set_gps_location system call

curr

set_gps_location

loc_lock

- [ ] Simple! We did it in project 2

- [ ] set_gps_location sets the current gps value defined as a global variable in kernel/gps.c

- [ ] loc_lock synchronizes multiple accesses to curr

Change in inode structure

__u64 latitude
__u64 longitude
__u32 accuracy

__le64 latitude
__le64 longitude
__le32 accuracy

☐ ext2_inode_info is inode structure used in memory

☐ ext2_inode is inode structure used in disk

New inode operations

- [ ] set_gps_location: sets the gps location of a file

- [ ] used in various places to update gps data when file/directory is modified

- [ ] get_gps_location: gets the gps location of a file

- [ ] used in get_gps_location system call to get the gps data of a file given the file path

- [ ] both use loc_lock to safely access file's gps data

Write to disk, get from disk

☐ Uses lexx_to_cpu, cpu_to_lexx macros to match endianness

☐ Fix ext2_iget and __ext2_write_inode operation to write and get gps data to and from disk

get_gps_location system call

- [ ] calls get_gps_location inode operation inside to get the gps location of a given file

- [ ] gets the data regardless of the permission

- [ ] also uses loc_lock

Floating point operation

☐ **Uses bitwise operation to get exponent and mantissa part of double, and convent into int type with multiplying 8192 for increasing accuracy.**

☐ **Uses Euclidean distance for comparing two GPS location**

Thanks! <EOM>