How to let humans and programs access the same file without stepping on each others' toes

Asked 15 years, 10 months ago Modified 15 years, 10 months ago

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Suppose I have a file, urls.txt, that contains a list of URLs I'm monitoring. My monitoring script edits that file occasionally, say, to indicate whether each URL is reachable. I'd like to also manually edit that file, to add to or change the list of URLs. How can I allow that such that I don't have to think about it when manually editing?

Here are some possible answers. What would you do?

1. Engage in hackery like having the program check for the lockfiles that vim or emacs create. Since this is just for me, this would actually work.
    - If the human edits always take precedence, just always have the human clobber the program's changes (eg, ignore the editor's warning that the file has changed on disk). The program can then just redo its changes on its next loop. Still, changing the file while the user edits it is not so nice.
    - Never let a human touch a file that a program makes ongoing modifications to. Rethink the

design and have one file that only the human edits and another file that only the program edits.

- Give the human a custom tool to edit the file that does the appropriate file locking. That could be as crude as locking the file and then launching an editor, or a custom interface (perhaps a simple command line interface) for inserting/changing/deleting entries from the file.
- Use a database instead of a flat file and then the locking is all taken care of automatically.

(Note that I concocted the URL monitoring example to make this more concrete and because what I actually have in mind is perhaps too weird and distracting -- this question is strictly about how to let humans and programs both modify the same state file.)

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asked Feb 17, 2009 at 4:01

dreeves

26.9k ● 45 ● 155 ● 234

Sounds like you've got the alternatives pretty well nailed down... i think it's up to you to choose the appropriate one in your weird-and-distracting context :) – nailitdown Feb 17, 2009 at 4:22

4 Answers

Sorted by: Highest score (default)

6

I'd use a database since that's basically what you're going to have to build to achieve what you want. Why re-invent the wheel?

If a full-blown DBMS is too much of a load, separate the files into two and synchronize them periodically. Whether the URL is reachable doesn't sound like something the user would be changing, so should not be editable by them.

During the synchronize process (which would have to lock out the monitor and the user although it could be a sub-function of the monitor), remove entries in the monitor file that aren't in the user full. Also, add to the monitor file those that have been added to the user file (and start monitoring them).

But, I'd go the database method with a special front-end for the user, since you can get relatively good light-weight databases nowadays.

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answered Feb 17, 2009 at 4:05

paxdiablo

880k ● 241 ● 1.6k ● 2k

2

Use a sensible version control system!

(Git would work well here).

That said, the nature of the problem implies that a real database would be best - and they will generally have either database-level, table-level, or row-level locking - but then put any scripts you need into version control.

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answered Feb 17, 2009 at 5:21

Arafangion

11.9k ● 1 ● 43 ● 74

1

I would go with option 3. In fact, I would have the program read the human-edited input file, and append the results of each query to a log file. In this way, you can also analyse the reachability of sites over time. You can also have the program maintain a file that indicates the current reachability state of each site in the input file, as a snapshot of the current state.

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answered Feb 17, 2009 at 4:41

Greg Hewgill

990k ● 191 ● 1.2k ● 1.3k

0

One other option is using two files, one for automated access and one for manual. You'd need a way in the user file to indicate modifications or deletions but you'd have similar problems in some of the other solutions as well.

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answered Feb 17, 2009 at 11:52

Joe

42.5k ● 20 ● 106 ● 127