A Partial-Multiverse Model of Time Travel for Debugging

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ABSTRACT:

Ever type 'next' into your debugger and then realize you should have used 'step'? Or perhaps invoked a method that you wish you could take back? Regret no more! Just turn the clock back a few ticks and begin again! With only a few restrictions and side-effects we will learn how to construct and use a time machine.

WARNING: Time travel may cause zombies.
Debuggers
Byebug (demo)
How does THAT work? (demo)
Sweet
OK. What could be better?
MAD SCIENCE
The Idea
fork() the universe during 'next'
Suspend the child fork
Keep track of all created child forks
Upon 'prev', grab the most recent child fork
Resume (time-travel!) the previous child fork
Unix Processes & Forks (demo)
So... "fork" byebug! (demo)
Limitations
Can only travel back to checkpoints
"Partial" time-travel
Zombies
Might crash the multiverse through memory exhaustion, I guess
References

https://github.com/TomOnTime/timetrawelpdb
THE END