LOGGING IN THE DEBUGGER’S TOOLKIT

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WHY LOGGING?

• Logging gives your code a temporal dimension

• Enables teasing out even the most intermittent bugs

• Contains nuts?

• Temporal attack on bugs that built-up temporally
GENERAL THEMES

- Logging systems put in place for one bug inevitably help with lots of others down the line

- What is logging?

- Two temporal bugs
Monday proposed flow on email certificates (now in granbox)

Pay for what?
- NEC 2011 pt 1
- Lockout/Tagout
- This is really me

What’s your license?
- [ ] MC/AV
- [ ] CAB/SD

How do we know what you filed, right?
- This is where we mail your stuff.
- Jan. Schwan
  123 Main Pl.
  Somewhere, AR 12345

How did you get your certificates to you?
- [ ] Mail (old-school)
- [ ] Email (I'm like it's 2014)
- [ ] Give me EVERYTHING

Additions later next week or early the following in brown

- [ ] Disabling is an option that includes email is selected
- [ ] Will it be a note saying why they can't pay for check?
  If not they will call and ask

- [ ] My address is actually
- [ ] My email is actually

- [ ] [Redacted]
- [ ] [Redacted]
CONTENT NAVIGATION BUG

• Began as simple forward-back buttons, over years requirements crept in requiring randomized content and randomized order, etc.

• Each person unique – from standardized to individualized

• Solution: log every time a user clicks to navigate
“Welcome to the age of Mass Individualization.”

-Oliver Gertz
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SO WHAT?

• Moore’s Law: we’ve got the space now, so store all the things

• Helped get to the root of several other “bugs”: networking timestamp issues (client-side vs. server-side tracking), mobile issues, who the heck still uses IE 6 or runs Win2000?
SYNCHRONIZATION BUG
DEPRECATED SOME SYSTEMS
CLASSIC: TOO MANY COOKS

- Each “generation” of site came in and tried to toss out the previous and start from scratch
- What do you do with all the built-up data and everything?
- “Uh, where is this coming from?”
"If I have seen further, it is by standing on the shoulders of giants."

-Isaac Newton
NO MORE SUPERHEROES

• Follow backwards through everyone’s thought process?

• Nobody can understand it all anymore, so don’t claim to

• Solution: logging point at each “join” between previous coder’s attempts – ugly and time consuming
TAKEAWAYS

• Always leave a system more robust than you found it.

• There’s always somewhere to stash data (well, now).

• Data Mining: guess what coders, you’re data scientists too now.

• It’s all too big. Nobody knows everything anymore.
QUESTIONS? COMMENTS? CONCERNS?