The (Ab)use and Misuse of Test Automation

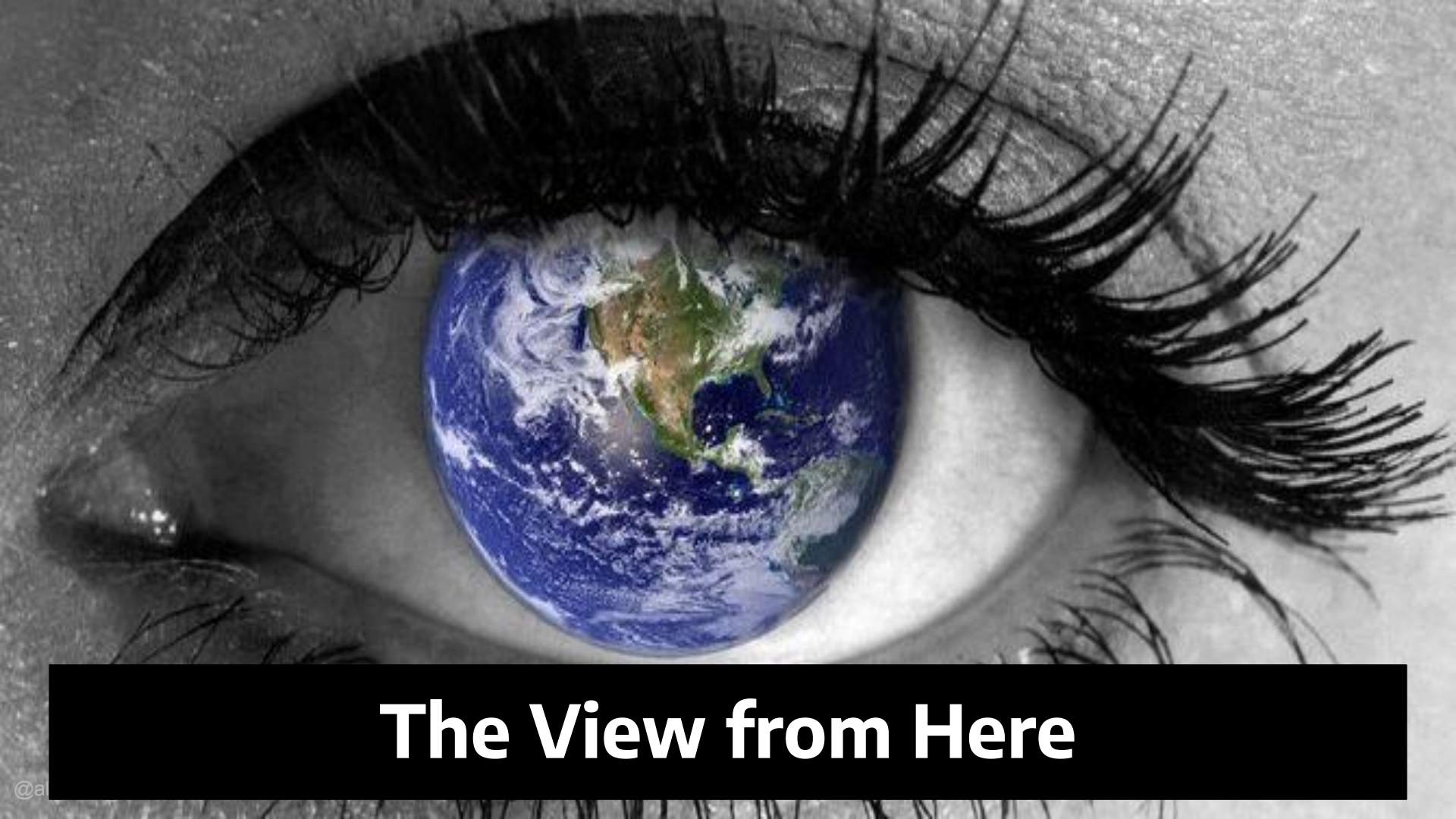
What Is Testing?
Why do we do Test?

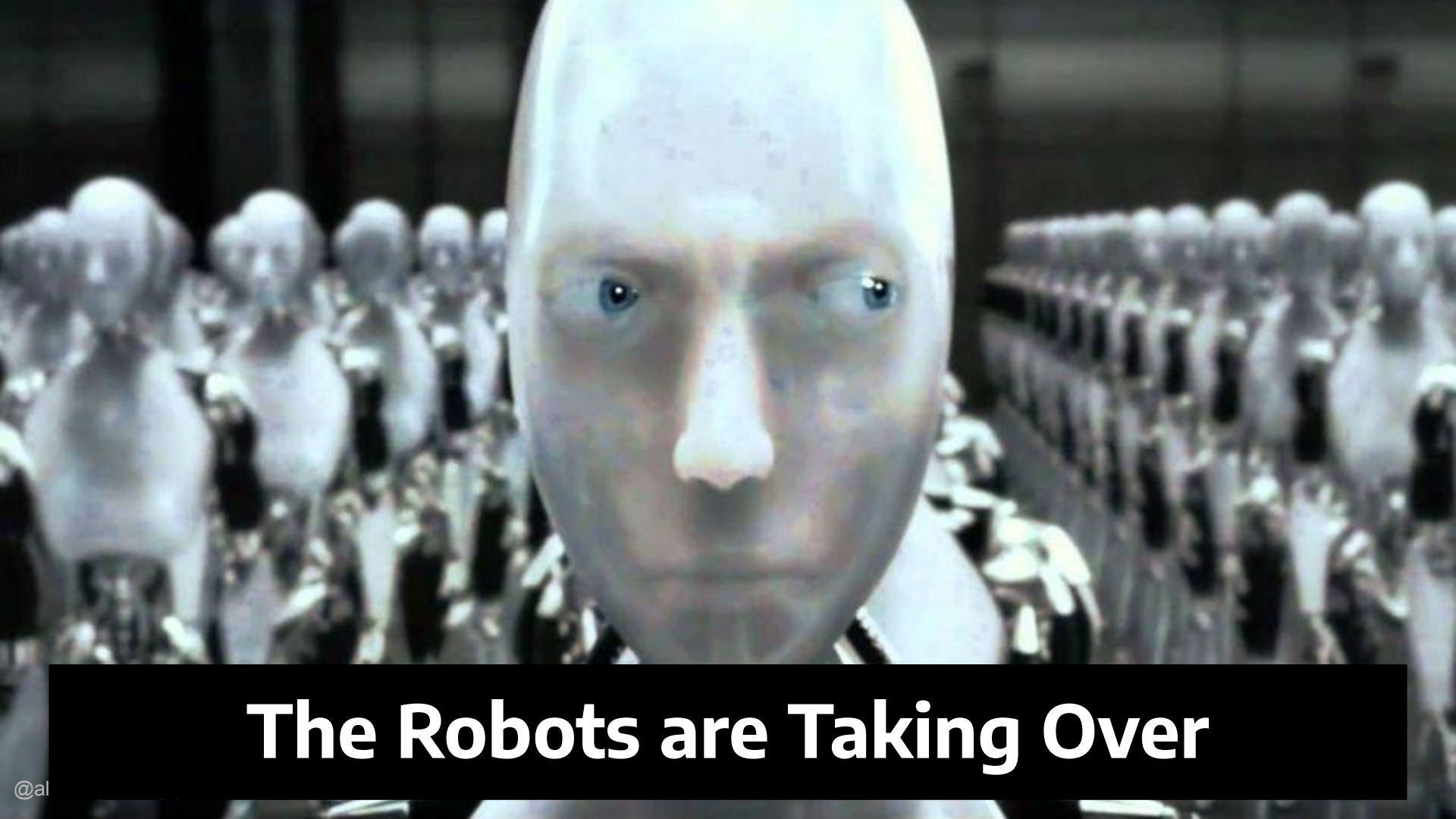
Testing is a Knowledge Acquisition Activity

We Test in order to learn more about the software under test

We Test in order to learn more about the software under test

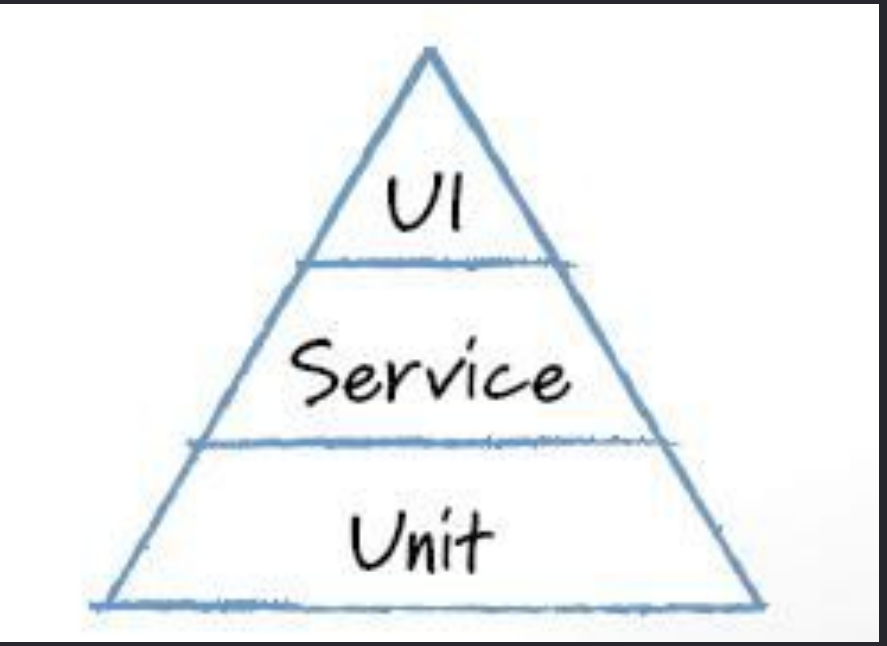
(automation is a means to an end not the goal)

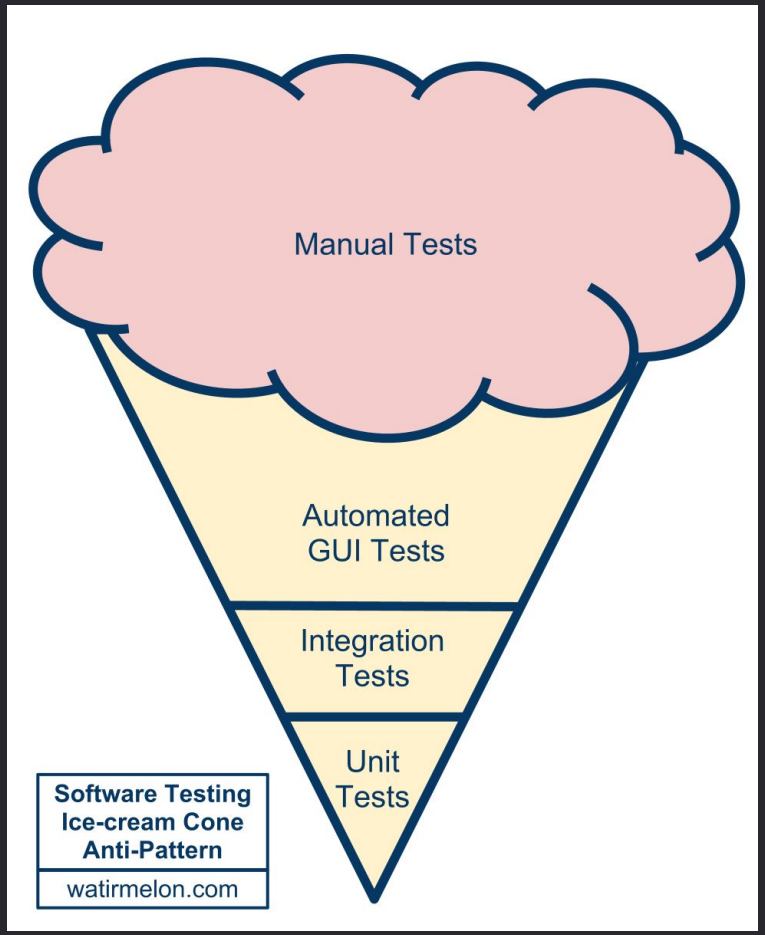

The View from Here



The Robots are NOT Taking Over

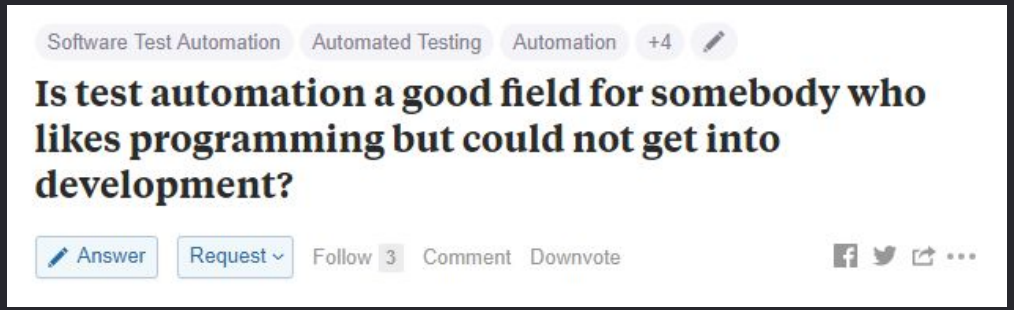
Strong Opinions about Automation Follow...

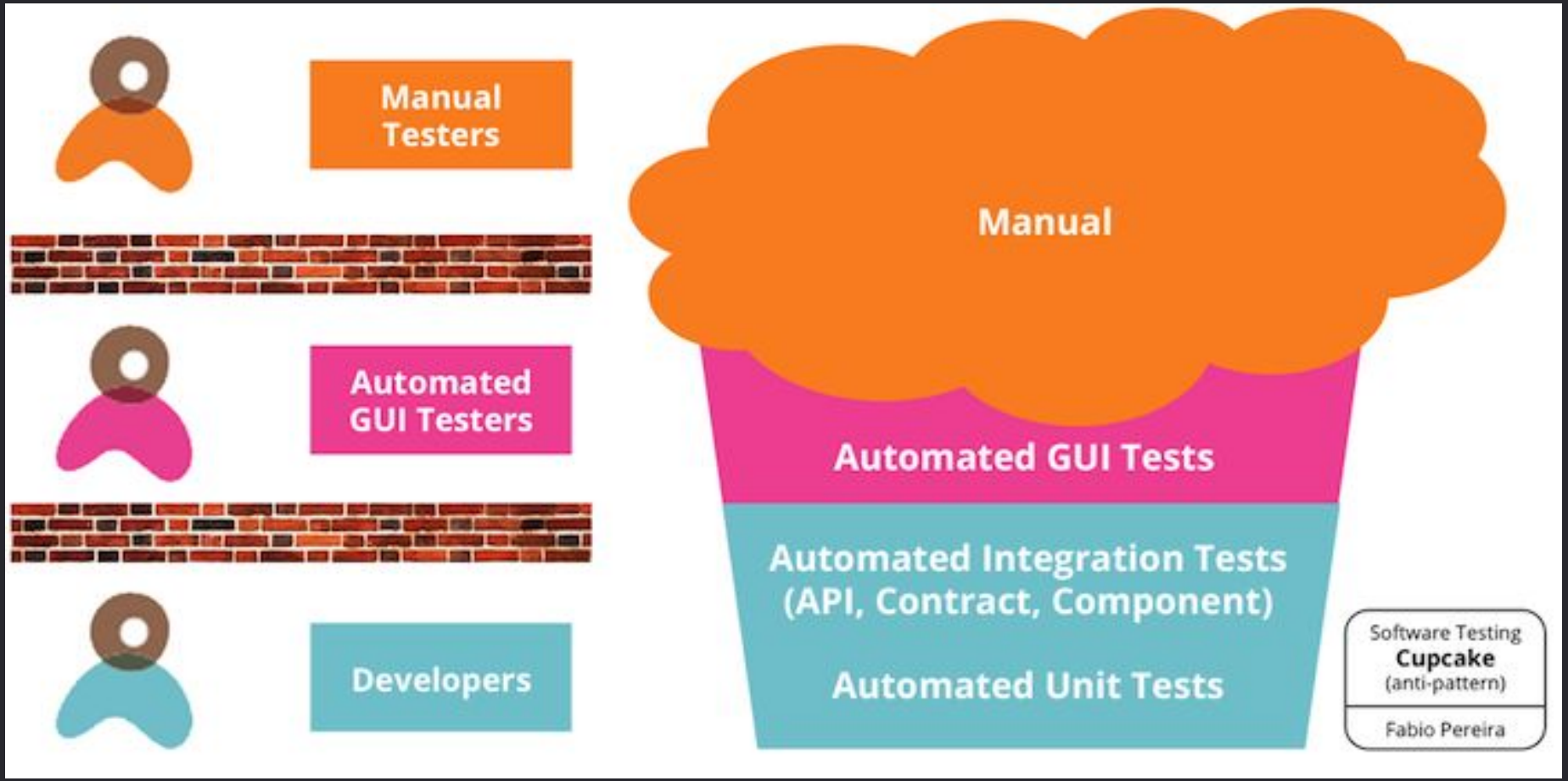

UI
Service
Unit

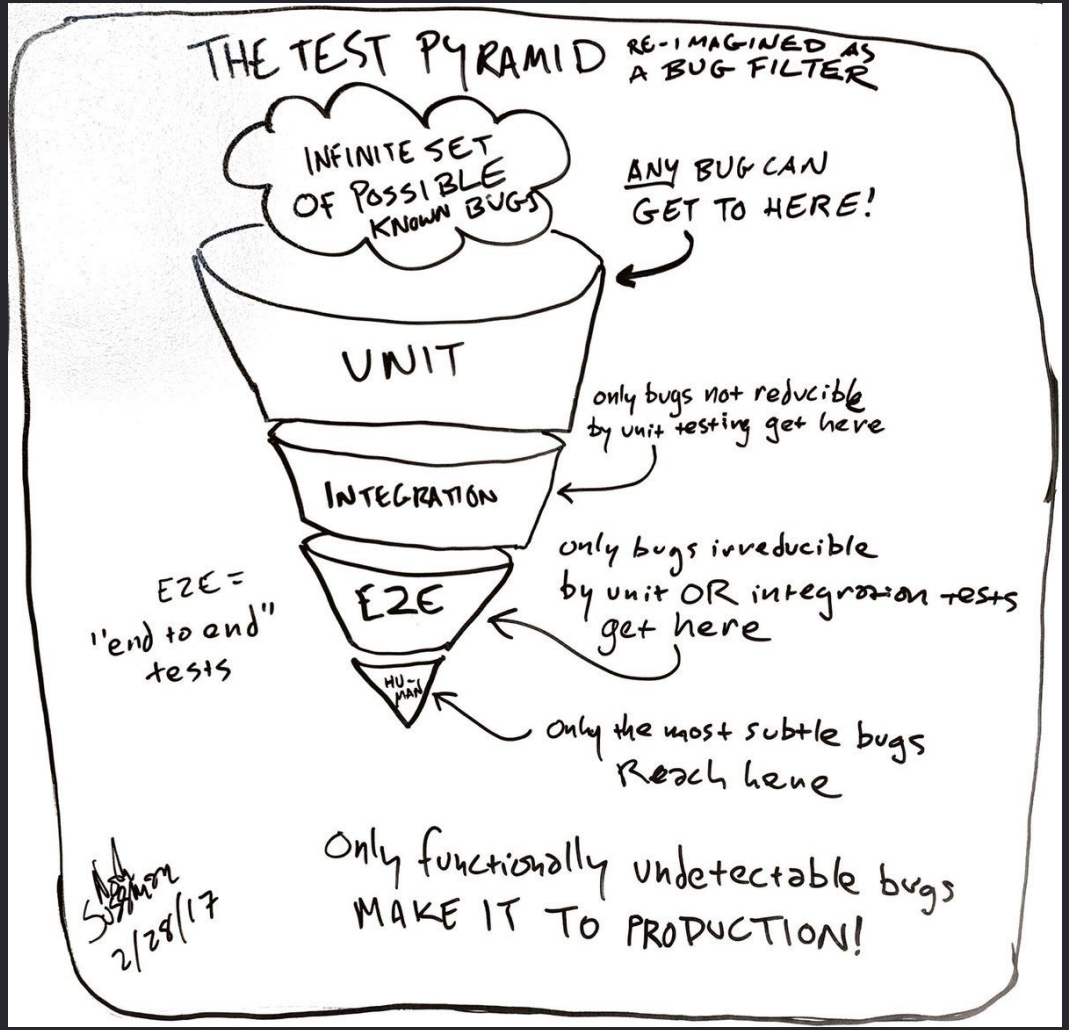

Manual Tests
Automated GUI Tests
Integration Tests
Unit Tests
Software Testing Ice-cream Cone Anti-Pattern
watirmelon.com


Jobs and Careers in Software Testing
Manual Testing
+5
How can I get test automation experience as a manual tester?
Answer
Request
Follow 2
Comment
Downvote


Software Test Automation
SDET
Software Quality Assurance
+2
How do I switch from manual tester to automation?
Answer
Request
Follow 8
Comment
Downvote


Software Test Automation
Automated Testing
Automation
+4
Is test automation a good field for somebody who likes programming but could not get into development?
Answer
Request
Follow 3
Comment
Downvote


Manual Testers
Automated GUI Testers
Developers
Manual
Automated GUI Tests
Automated Integration Tests (API, Contract, Component)
Automated Unit Tests
Software Testing
Cupcake
(anti-pattern)
Fabio Pereira


THE TEST PYRAMID
RE-IMAGINED AS A BUG FILTER
INFINITE SET OF POSSIBLE KNOWN BUGS
ANY BUG CAN GET TO HERE!
UNIT
only bugs not reducible by unit testing get here
INTEGRATION
only bugs irreducible by unit OR integration tests get here
E2E
E2E = "end to end" tests
HU-MAN
Only the most subtle bugs Reach here
2/28/17
Only functionally undetectable bugs MAKE IT TO PRODUCTION!

Test Design

How many testers are here?

How many test automators?

How many test designers?

Test Design
Is NOT distinct from
“Automated Test Design”

Some Tests are Simply Better Suited for Automation (or computer assistance)

The Test Automation Design Challenge

You should automate 100% of the tests that should be automated

One account is all you need

One free account gets you into everything Google.

Take it all with you

Switch between devices, and pick up wherever you left off.

Name

First | Last

Choose your username

@gmail.com

Create a password

Confirm your password

Birthday

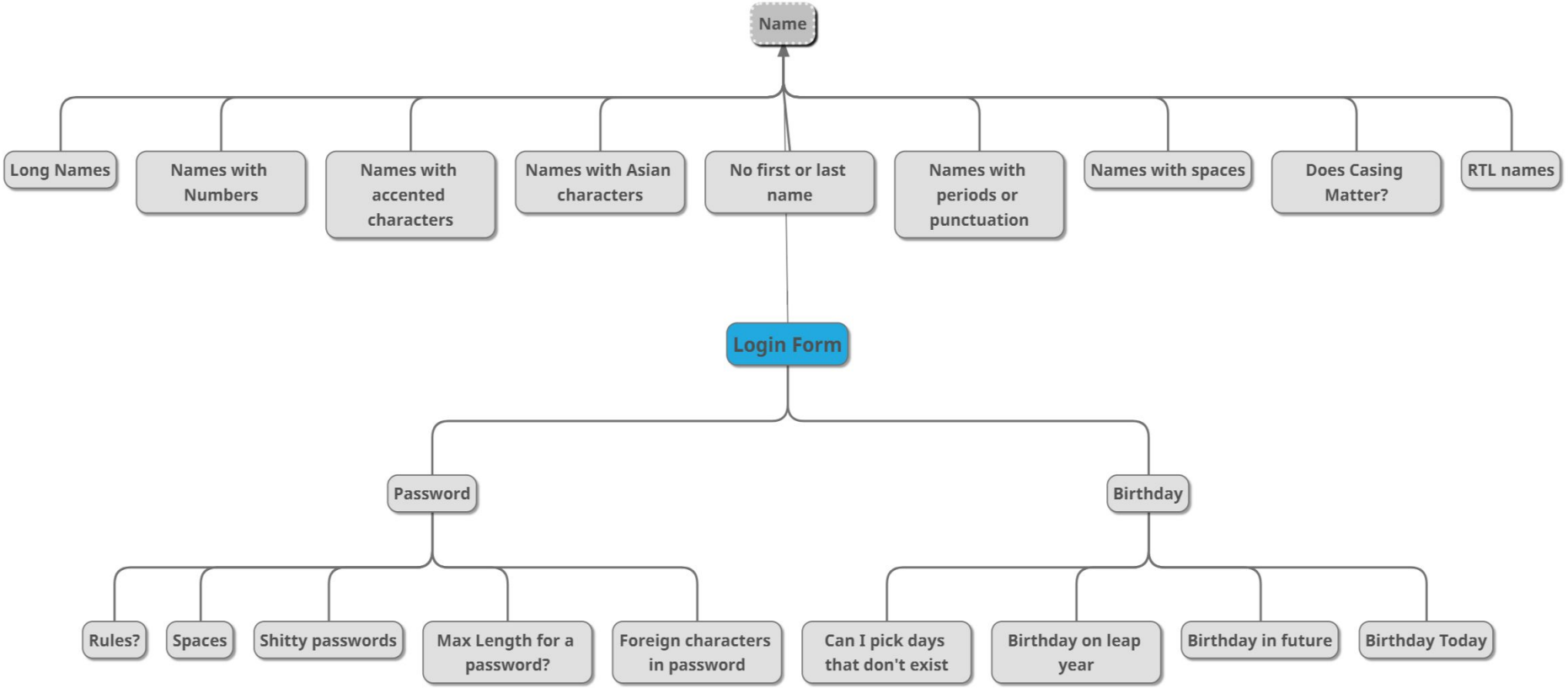
Month | Day | Year

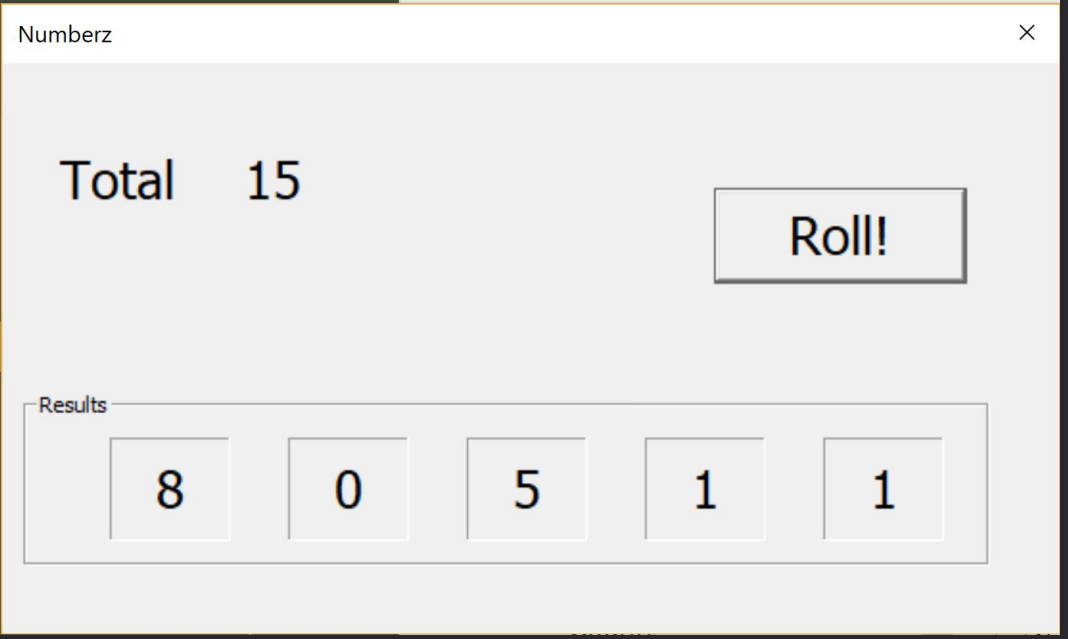
Gender

I am...

Mobile phone

Your current email address


Name
Long Names
Names with Numbers
Names with accented characters
Names with Asian characters
No first or last name
Names with periods or punctuation
Names with spaces
Does Casing Matter?
RTL names
Login Form
Password
Birthday
Rules?
Spaces
Shitty passwords
Max Length for a password?
Foreign characters in password
Can I pick days that don't exist
Birthday on leap year
Birthday in future
Birthday Today



Test Case 1:

1. Press Roll button
2. Verify that value in Total field is correct

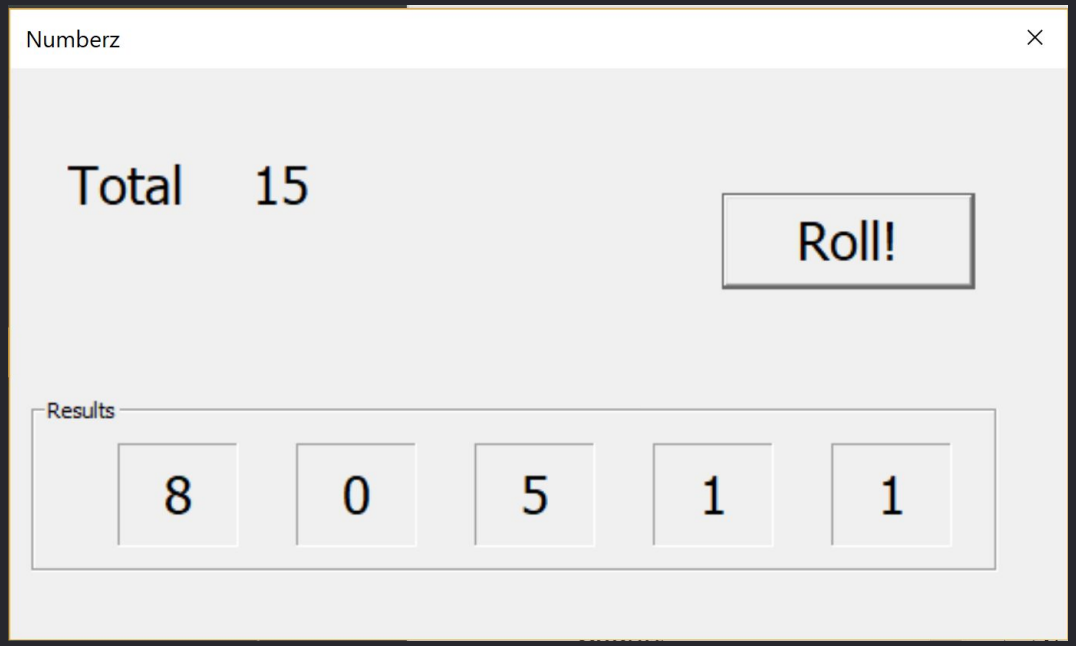
Test Case 2:

1. Press Roll
2. Ensure that values are 0-9 inclusively

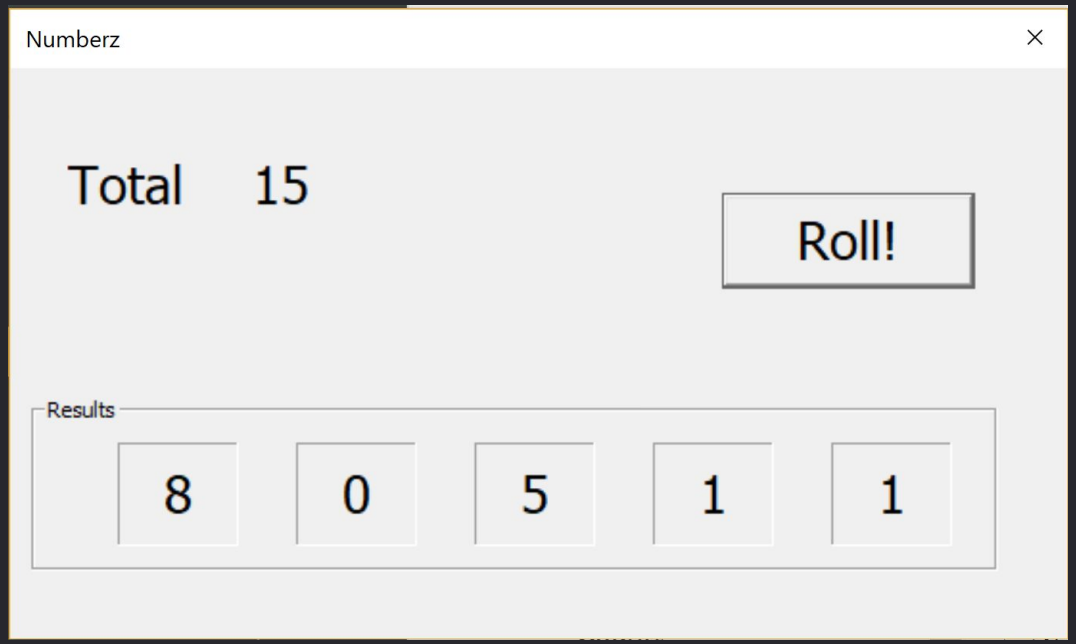
Test Case 3:

1. Press Roll
2. Ensure numbers are “random”

What do we Automate?



How can automation help us do better testing with this application?



```
for (int loop = 0; loop < LoopCount; loop++)
{
    SendDlgItemMessage(hwnd, buttonID, WM_LBUTTONDOWN, 0, 0);
    SendDlgItemMessage(hwnd, buttonID, WM_LBUTTONUP, 0, 0);
```

```
    ...
    int proposedVal = GetDlgItemInt(hwnd, resultID, NULL, FALSE);
    if (proposedVal != total)
    {
        StringCchPrintf(buffer, 256,
            L"[Loop iteration %d] Error: Total of dice is %d, Actual is %d\r\n",
            loop, proposedVal, total);
            Log(hFile, buffer);
        additionErrors++;
    }
}
StringCchPrintf(buffer, 256, L"Total of %d addition errors in %d iterations (%f)\r\
    additionErrors, LoopCount, (double)additionErrors/(double)LoopCount);
    Log(hFile, buffer);
```

https://github.com/angryweasel/Numberz.git

Do you trust your tests?

Let’s talk about “Flaky” tests

Too much tolerance for unreliable tests:

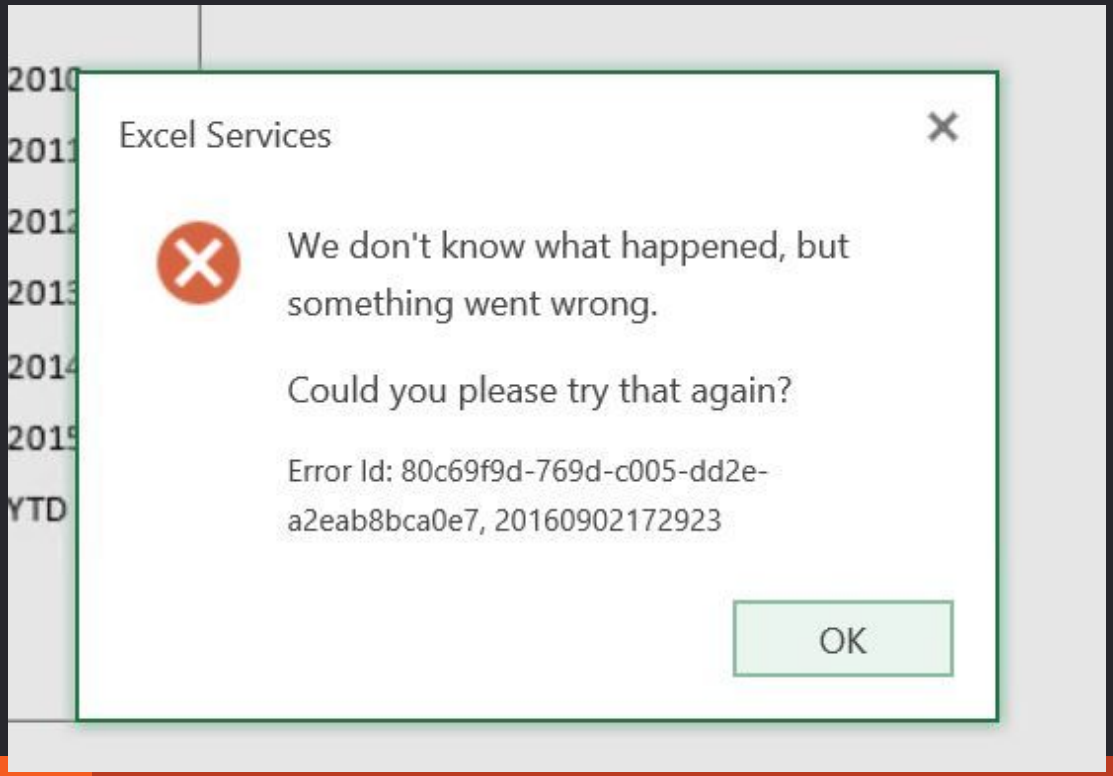
Test failed -> rerun -> Test passed (what does this mean)?

Oracles are hard - if it’s not perfect, consider not writing the test (or running it elsewhere)

Avoid test Code “smells”

Measure mean-time-to=diagnose (MTTD)

Debugging and Logging



Good test logging is critical

If you have to “set up a repro” - you have failed

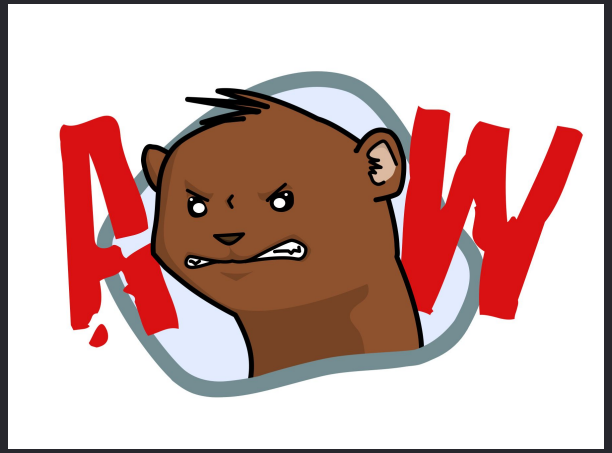
Track MTTD (Mean Time To Diagnose) test failures

Abused, Misused, Overused (and under valued)

It augments human testing - it doesn't replace it

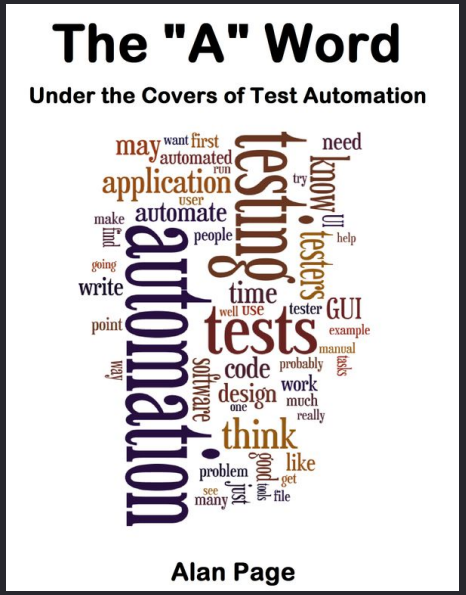
Your goal (or at least part of it) is to test - focus on *testing*, not automating

You can't effectively think about automated testing separately from human testing.



http://angryweasel.com

http://angryweasel.com/ABTesting



https://leanpub.com/TheAWord