

ThoughtWorks®

XConf 2014

ANALYSE THE ANALYST

Hire QAs for the Right Reasons

MOST JOB DESCRIPTIONS LOOK LIKE THIS

Responsibilities

- Build advanced automated test suites to exercise our world-class applications.
- Work with the development and test engineering teams to automate testing.
- Conduct research on emerging technologies.
- Analyze and decompose a complicated software system and design a strategy to test this system.

Minimum qualifications

- BS in Computer Science or related technical field or equivalent practical experience.
- Relevant internship or work experience, including development and/or test automation experience.

Preferred qualifications

- Master's or PhD in Computer Science or related technical field.
- Extensive knowledge of UNIX/Linux environments.
- Deep knowledge of internet technologies.
- Excellent coding skills in C, C++, Java, or Python.
- Scripting skills in Python, Perl, Shell or another common language.

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With the move away from waterfall's manual regression testing, we've seen a surge in job descriptions that focus very heavily on automated testing.

This is a real example

Note:

CS heavy

Focused on construction of automated test suites

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THIS IS ME.

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I'm a developer – and I do meet all of these job requirements

A few years ago, I was borrowed-into a QA team to help guide the design of a test automation framework. The code was very well-factored and we wrote hundreds of browser tests.

It failed as a Quality Assurance effort.

FUNCTIONAL TESTS



memegenerator.net⁵

Every time a test failed, I had to investigate why:

- Did the devs introduce a defect?
- Did the devs deliberately change behavior?
- Did I write a flakey test?
- Was there an outage somewhere?

Tracing the root cause could take half a day.

WE FELL BEHIND



And worse, I was one of 6 automation QAs and there were dozens of devs.
They would introduce defects faster than I could diagnose them and file reports.



**WE BECAME THE
BOTTLENECK**

At first, code couldn't go to production without the tests passing



OUR TESTS WERE IGNORED

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But.. the test suite almost never passed in its entirety so nobody took it seriously.

And if nobody takes the automated tests seriously you can't...



MINIMIZE TIME TO MARKET

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We want to be able to minimize our time to market, so that we can validate good ideas and pivot away from bad ones.

We call the extreme of this "Continuous Delivery"



Flicker deploys to production around 12 times per day

If we want to do the same:

Don't have time to wait for QAs to write and update tests
Don't have time to re-analyze and rework poorly specified stories



We needed to step back and re-think what we expect out of our Quality Analysts.

We needed to break the bottleneck while maintaining high levels of quality.

This required that we take a good hard look at what unique skills QAs bring to our team and figure out ways to make better use of them.



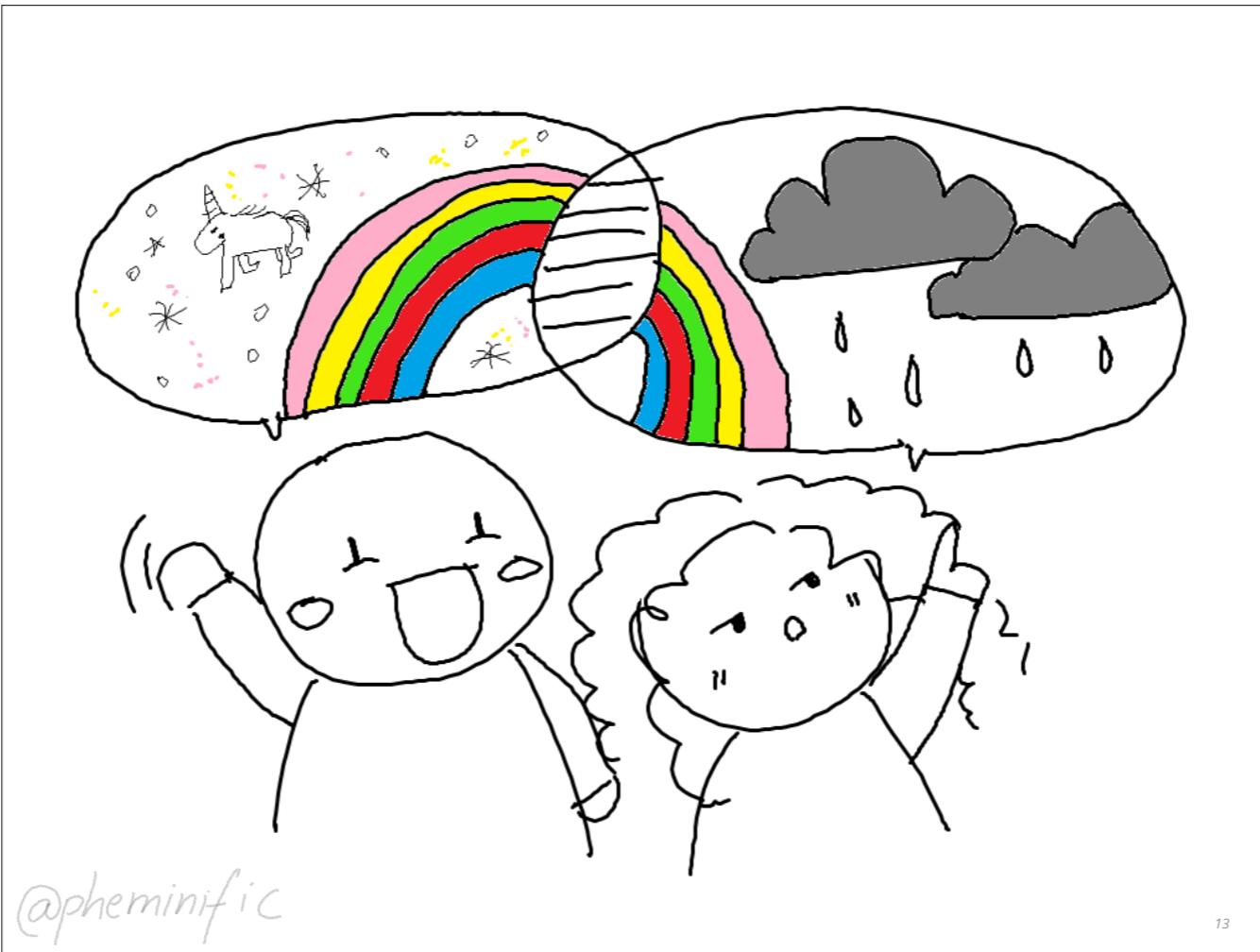
AND THAT'S ME.

I've been a QA for the last four years. I've worked with teams as small as 3 as large at 25.

I've promoted an environment where quality is the responsibility of the entire team, instead of QA being the final stage.

My goal is to work with the team throughout the entire software development product life cycle to bake quality in.

So how do I do it?



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I work with the BA to define scope during story review.

Our BAs take the requirements from the business and make them into small stories to be developed.

Often they are happy scenarios, and I support by bringing the more realistic view. Both happy and sad paths.

Credit Card example:

BA wants to store a credit card, I ask questions:

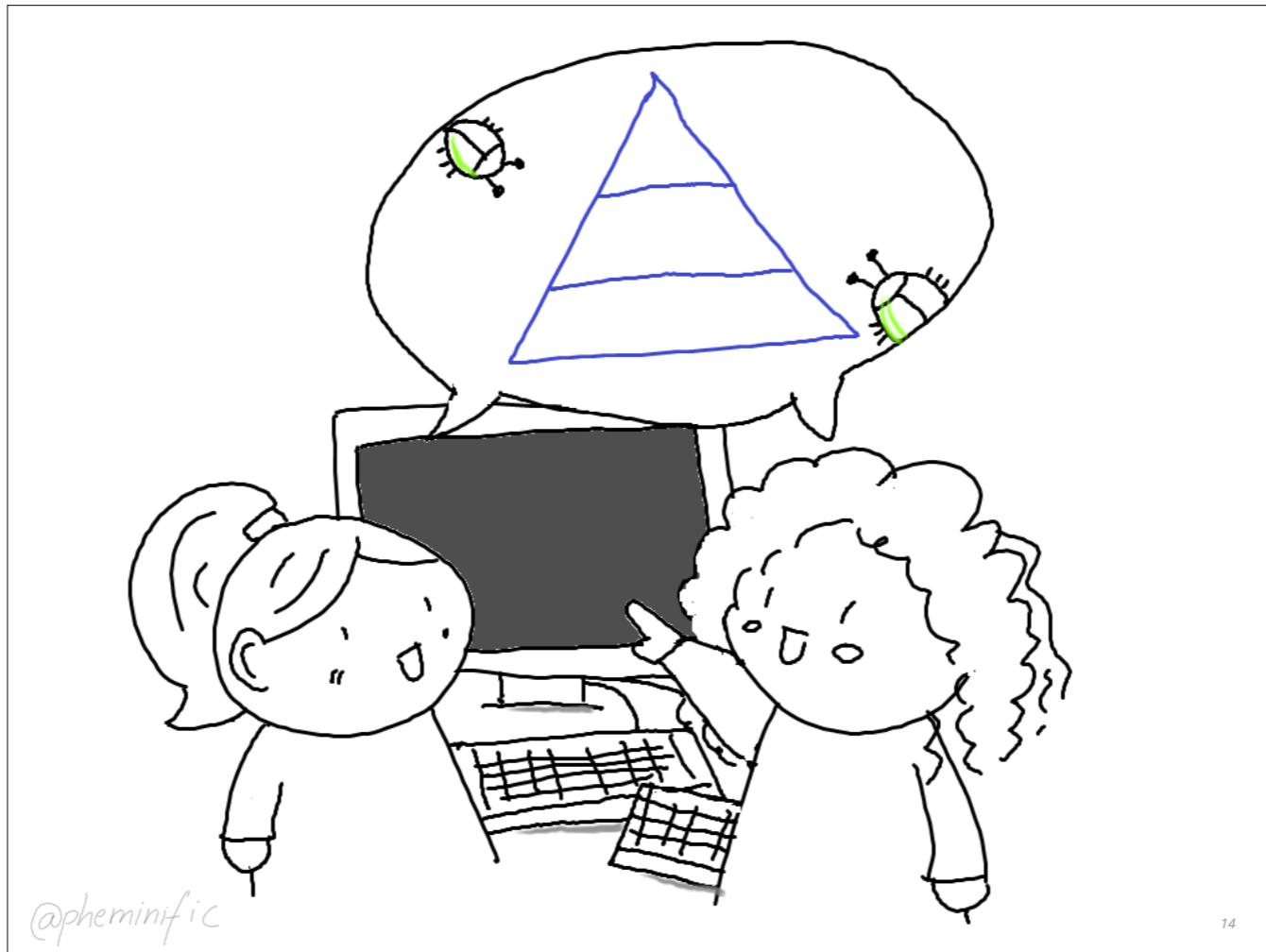
What if the user doesn't enter a number?

What if the number is too long?

What if the card is used several times in quick succession?

What if the expiration date is in the past?

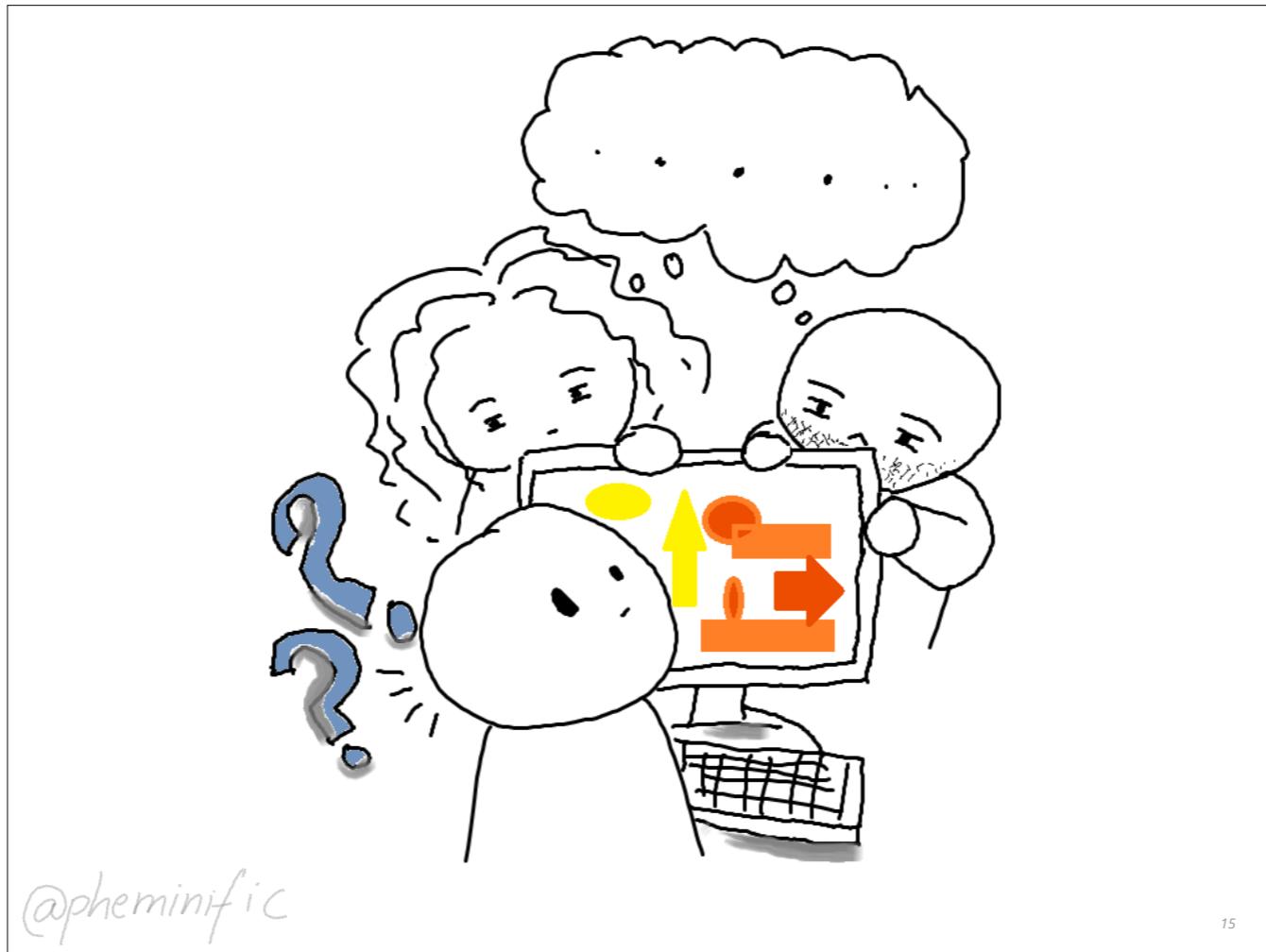
Is it ok to store the security code?



I work with developers to determine what needs to be tested.

Discuss unit test coverage and the most valuable scenarios for our functional tests.

This is also a good time to review the code that has been done so far. We call this a desk check. Before the developer hands it off, I sit with them, try out the new feature, and review its test coverage. This way we can catch defects early instead of waiting until they are finished and the developer has mentally moved-on to other functionality.



Here I am working with Designers.

As a QA, I challenge what is quality.

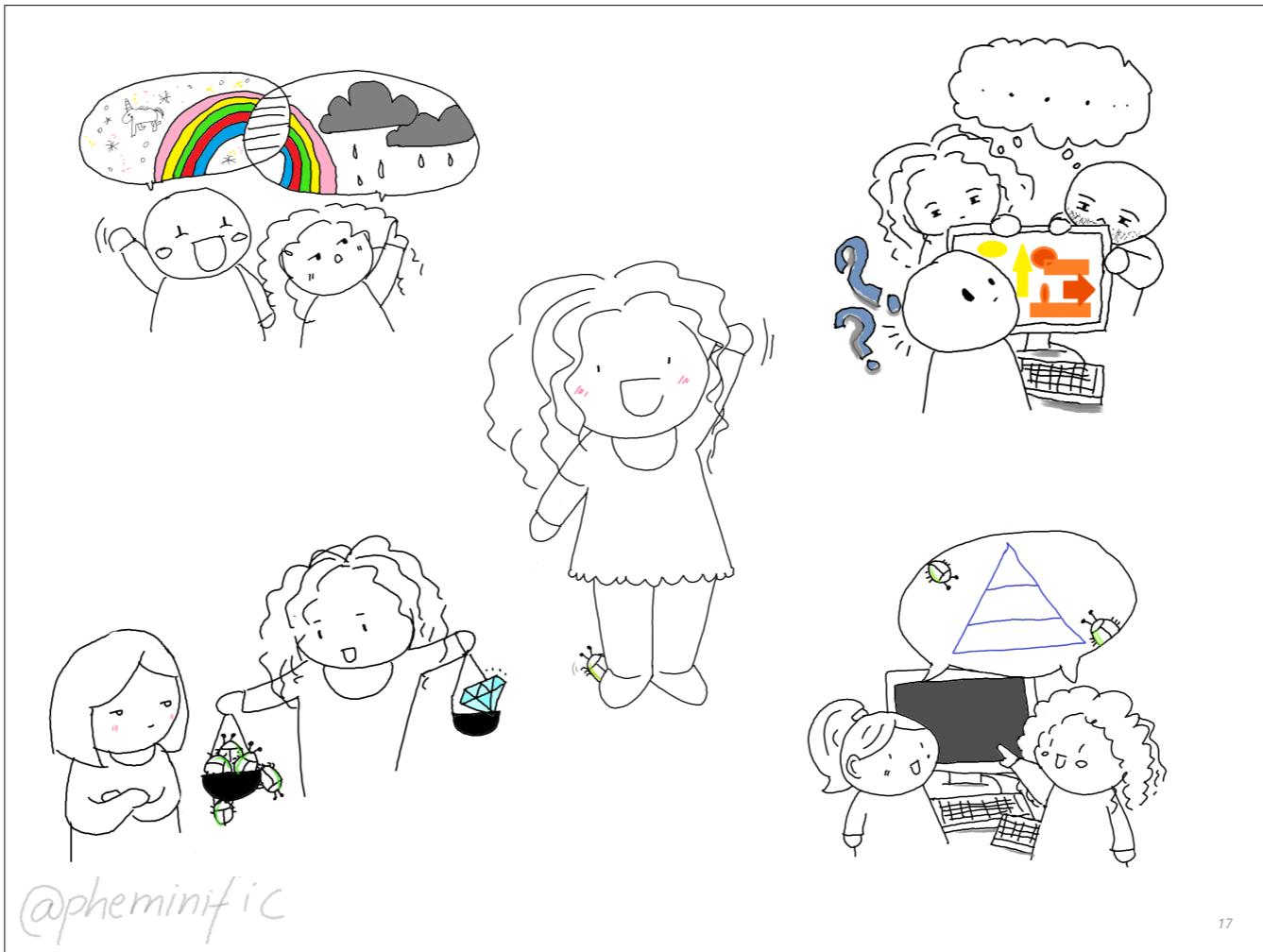
Even if it is bug-free, I believe that if our users are unable to interact with our software because they don't understand it, it's not really quality. Poor user experience is a type of poor quality.

I'm also active in user testing. By understand how users interact with our application, it gives me more insight on what is valuable to test.



I work with product owners on prioritization of developing shiny new functionality versus the importance of fixing defects.

This is not to say we fix all defects, but we discuss the impact of the defect along with the likelihood that it will occur.



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This is my way of scaling the QA point of view across the entire team.

If we bake quality in, everyone has more confidence of how the application is performing.

We no longer have a QA bottleneck. Everyone is responsible.

Which seems great... but revisiting the job description we saw earlier.

LET'S TAKE A LOOK BACK

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Everything that I've talked about isn't mentioned.

We don't even see the word "analyze".

Nothing about the deconstructive, critical mindset that differentiates QA from Dev.



I'M UNEMPLOYABLE.

The skills which have aided my team to create quality applications have rendered me unemployable.

(Theoretically speaking. I'm still very happy at my current employer ;))

"Facebook has no dedicated QA team; all Facebook engineers are responsible for writing automated tests for their code and keeping the tests maintained as the underlying code changes."

- Steven Grimm, Engineer at Facebook

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Facebook is right here to break up the QA silo.

But they're still perpetuating this misunderstanding that QA is Automated testing.

Well, we're both fruit.



EXPLORATORY VS. AUTOMATION

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If we only hire people with who can write functional tests, we are missing out on exploratory, analytical thinking of testing.

And these two styles of testing are completely different.

Automation's goal is regression. We want to confirm that all new changes do not break older features.

Whereas – exploratory testing's goal is uncovering and learning what our software is actually doing. It's critical in nature.

One cannot replace the other. These two compliment each other.



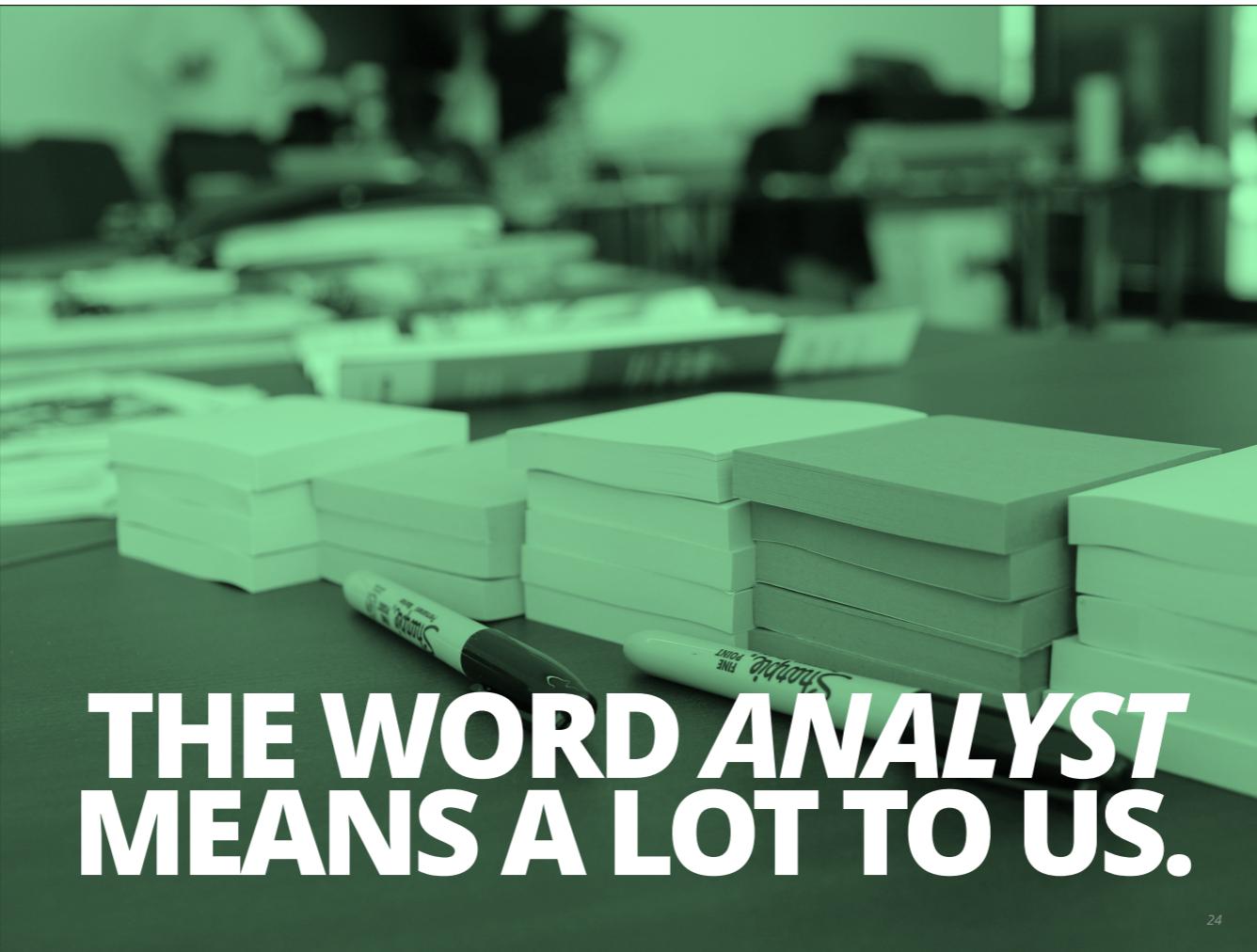
Let's broaden even further to test strategy. "What should be tested"
Risk analysis feeds into what should be tested (working with Devs)
"This system doesn't need a scalability test, we only have max 100 users"
Defines acceptance criteria (Tolerances)



We cannot rely on mass inspection to improve quality, though there are times when 100 percent inspection is necessary. As Harold S. Dodge said many years ago, 'You cannot inspect quality into a product.' The quality is there or it isn't by the time it's inspected.

(W. Edwards Deming)

[izquotes.com](#)



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Let's rewrite the Job advert to reflect these values

LET'S SEE THE ADVERT ONE MORE TIME

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In the style of the Agile Manifesto:

While there is value in the items on the right, we value the items on the left more.

While having test automation skill is fine, we value analysis skills more

We aren't saying you are wrong to hire people with those skills we showed in the job description, we are simply saying think that there are other skills that QAs bring that are just as valuable and that these are being overlooked.

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Collaborate with the **entire development team** to identify needs and gather requirements.

This includes but is not limited to Business Analysts, Developers, User Experience Designers, Operations, and Product Owners to determine best strategy to achieve the **highest quality application**.

Collaboration Examples:

- Audit test suite
- Define monitoring needs
- Define acceptance criteria
- Prioritize defects / features
- Observe end users

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Have a **deconstructive** mindset.

Be a **critical thinker** - understanding of full life cycle development right from the requirements gathering to delivery.

Experience with **exploratory testing**, not just working to test plans.

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Many of our most-skilled QAs come from non-CS backgrounds.

Developers can automate their own tests. It's relatively easy because they can stay in the same constructive mindset that they're in while writing production code. Conversely, it's hard for developers to critique their own code because it requires them to switch into a deconstructive mindset.

We want to make sure that we don't miss out on the unique probing, deconstructive mindset that a Quality Analyst brings.

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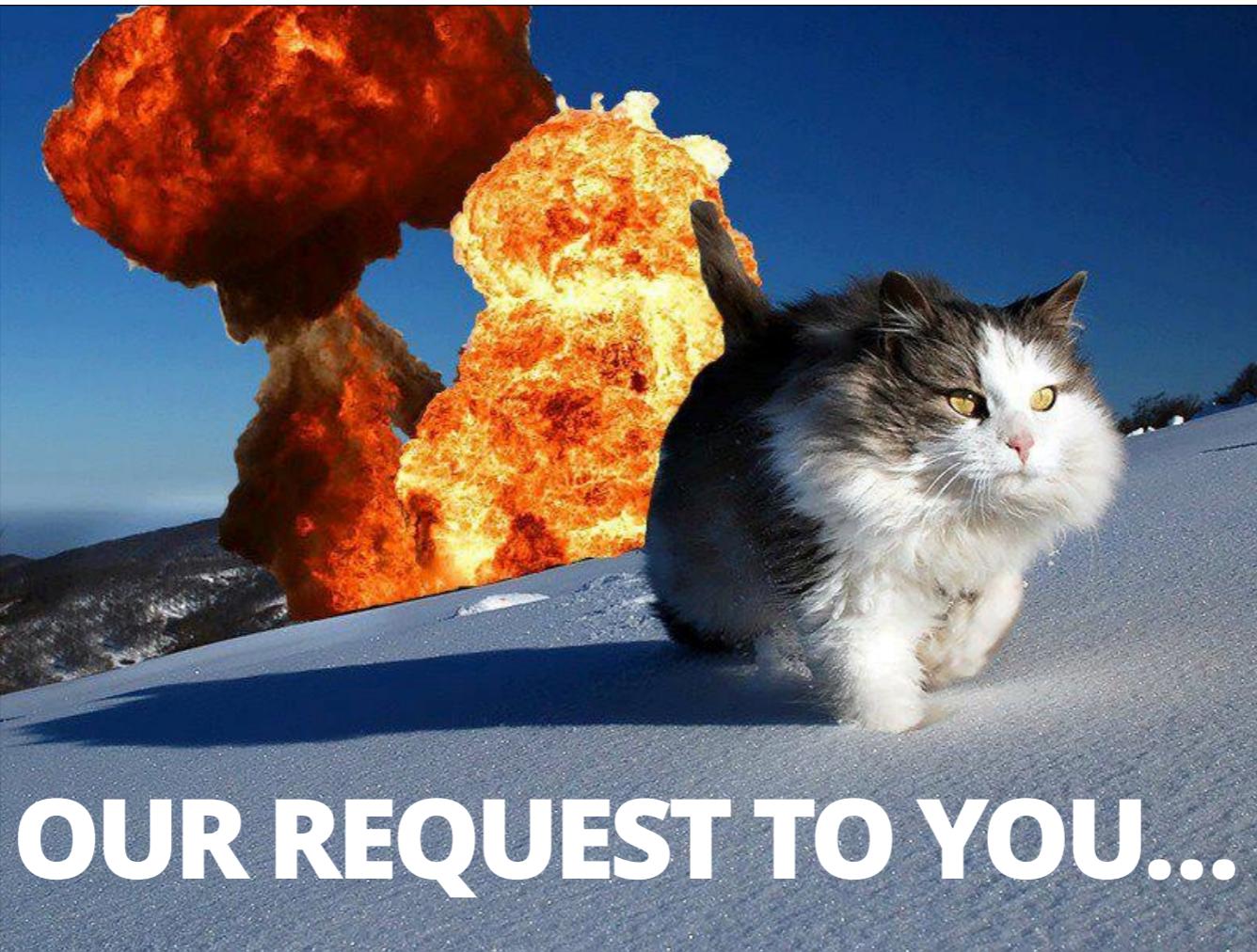
Awareness of test automation and ability to spot points of value in the process.

Advocate for best practices like pair programming, Test Driven Development (TDD), Continuous Integration (CI), Continuous Delivery (CD).

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Technical ≠ code. Just because we have cut out the CS degree, does not mean we are saying that QAs aren't or shouldn't be technical.

We love the idea of having people who are passionate about test strategy and awareness best coding practices.



OUR REQUEST TO YOU...

Think about what QA can mean for your team

Challenge the idea that QA is just a clicker who acts as a human regression test.

Advocate for QAs to be involved in the software development life cycle earlier on

Support change



**THANKS!
ANY QUESTIONS?**

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