NON-FUNCTIONAL REQUIREMENTS

HOW WELL DOES YOUR SYSTEM DO WHAT IT DOES?

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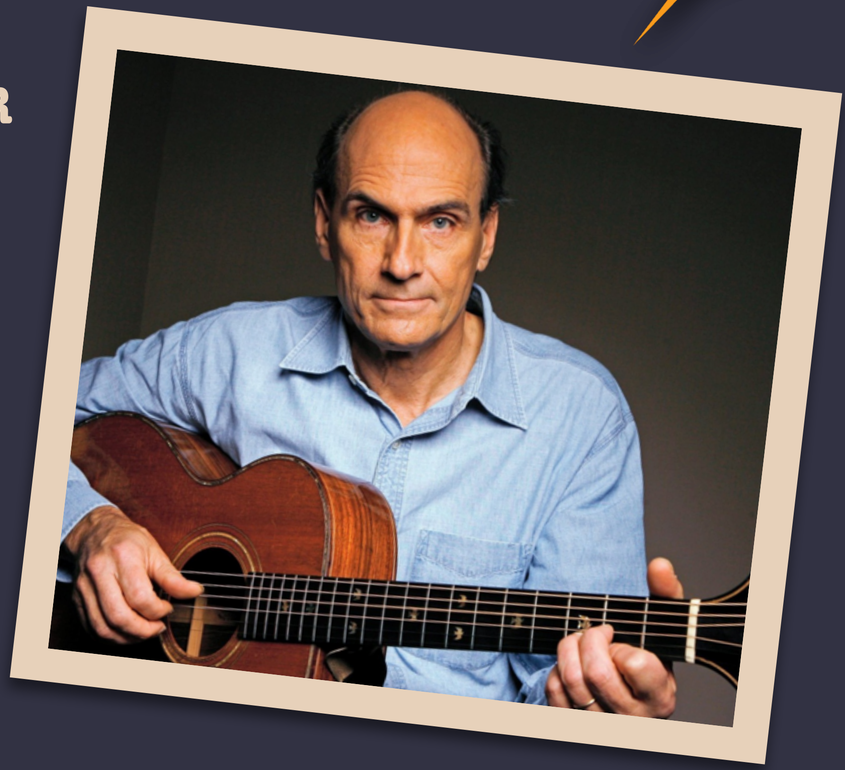
"I WAS A FUNCTIONAL ADDICT."

- JAMES TAYLOR



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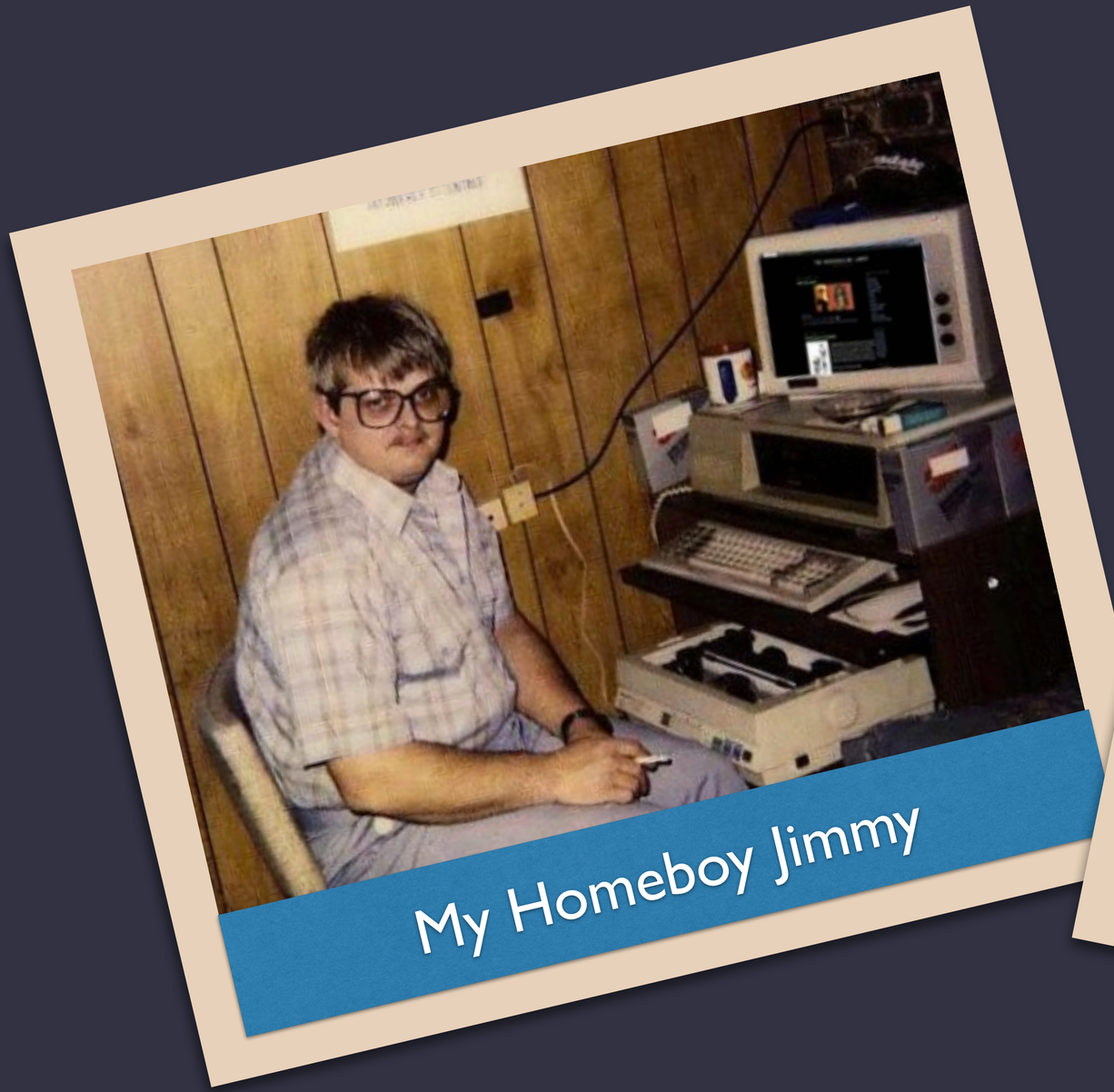
THIS IS JIMMY!



Jimmy is a software engineer.
Jimmy is awesome!

Jimmy likes Pina Coladas
and getting caught in the rain.

He’s not into health food.
He is into champagne.

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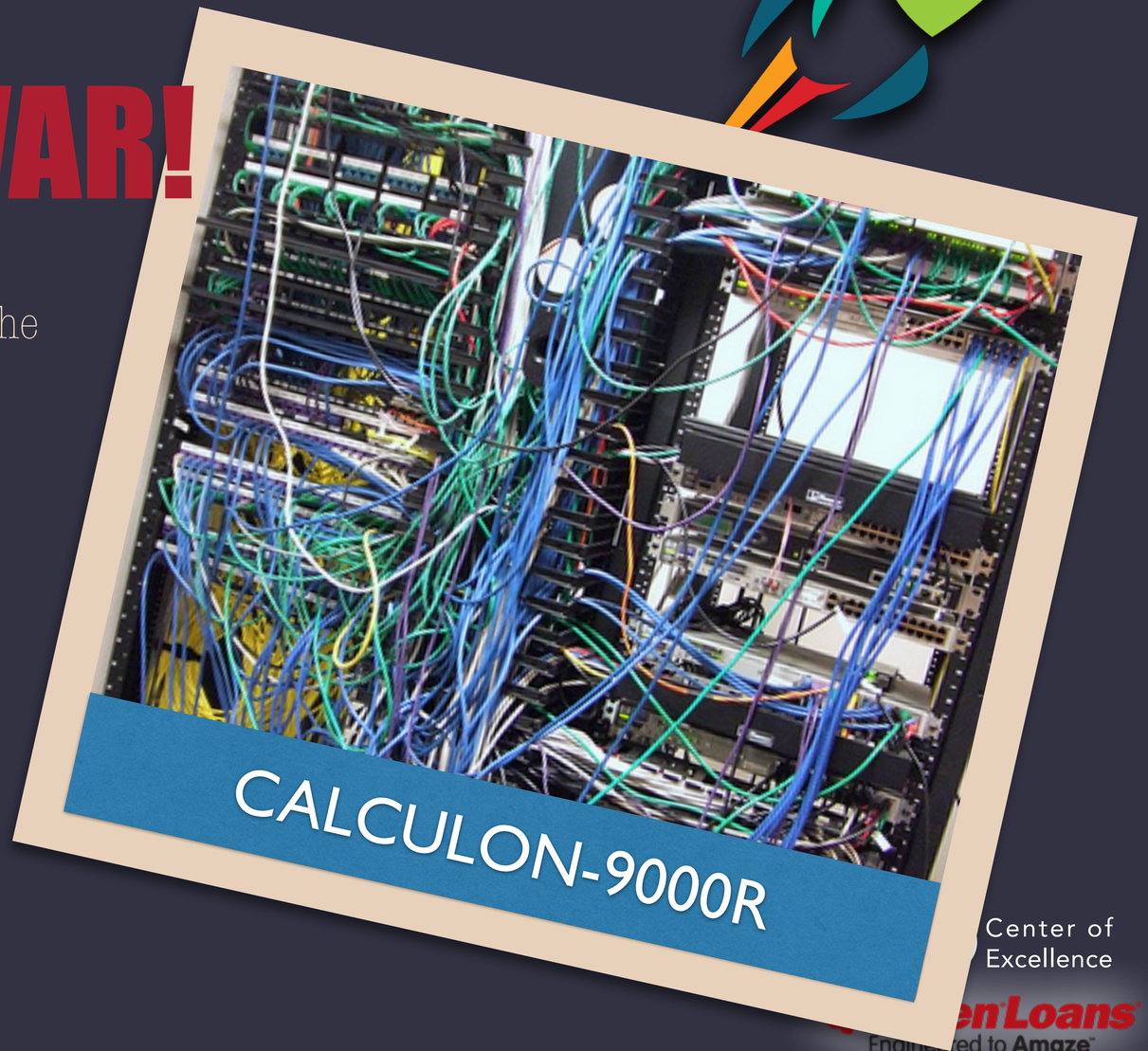
DANG, JIMMY!
BEST SYSTEM EVAR!

- The Calculon-9000R is going to revolutionize the entire industry!
- **It performs every mortgage function EVER.**
- An engineering marvel!
- Every edge case is covered!
- It can calculate everything!
- OMG PONIES!
- It's got electrolytes



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CALCULON-9000R PUT IN PRODUCTION!

WHY IS DAWSON SAD?

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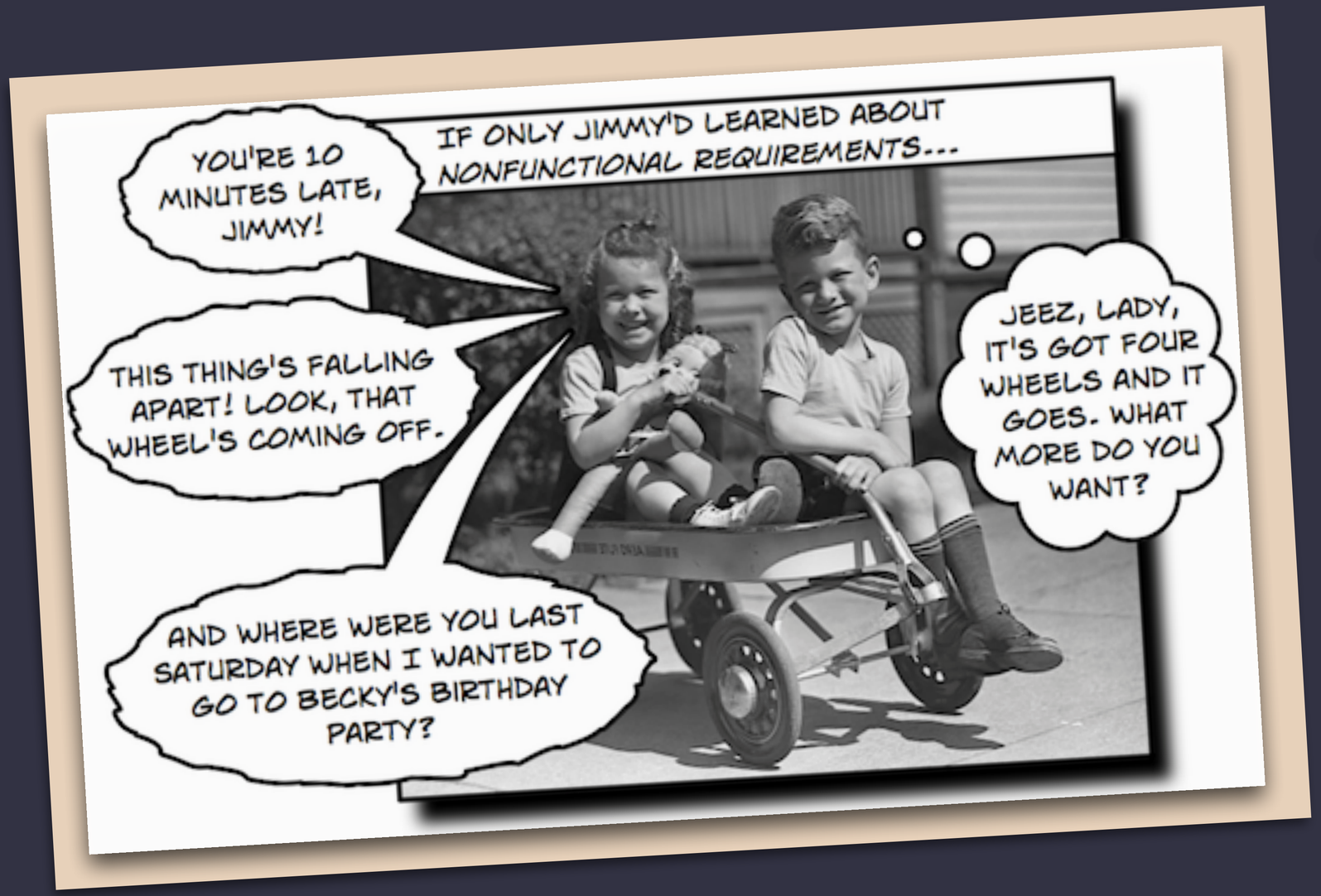

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NFR'S ARE NOT ABOUT WHAT A SYSTEM DOES...

THEY ARE ABOUT HOW IT DOES IT.

THIS IS A NON-TRIVIAL DIFFERENTIATION.

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HEY NOW!

- Where's the documentation?
- Does the system even perform?
- What about testing?
- Is it secure?

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ASPECTS OF SOFTWARE THAT DEFINE HOW IT FITS INTO THE ECOSYSTEM.

This is not a comprehensive list, but instead are examples of non-functional aspects of a system.

IT'S ALL ABOUT THE "ILITIES"

- ★ Security... ummm... securitiltity
- ★ Maintainability
- ★ Testability
- ★ Scaleability
- ★ Extensibility
- ★ Availability
- ★ Reliability
- ★ ...

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- Accessibility
- Accountability
- Adaptability
- Administrability
- Affordability
- Agility
- Availability
- Capability
- Composability
- Configurability
- Compatibility
- ★ Demonstrability
- Deployability
- Durability
- Executability
- Extensibility
- Evolvability
- Fidelity
- Flexibility
- Functionality
- Integratability
- Interoperability
- Interpretability
- ★ Maintainability
- Manageability
- Mobility
- Modifiability
- Operability
- ★ Performability
- Portability
- Practibilty
- Practicality
- Predictability
- Producibility
- Recoverability
- Reliability
- Repeatability
- Responsibility
- Reusability
- ★ Scalability
- Serviceability
- Stability
- Supportability
- Suitability
- Survivability
- Tailorability
- ★ Testability
- Traceability
- ★ Trainability
- Transportability
- Trustability
- ★ Understandability
- Upgradability
- Usability
- Verifiability
- ★ Vulnerability

SO... MANY...

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SO... MANY...

- Maintainability
- Scalability
- Trainability
- Demonstrability
- Understandability
- Performability
- Testability
- Vulnerability

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SECURITY

- Vulnerability

PERFORMANCE

- Testability
- Performability
- Scalability

DOCUMENTATION

- Understandability
- Maintainability
- Trainability
- Demonstrability

WE SELECTED THREE INITIAL NON-FUNCTIONAL REQUIREMENTS

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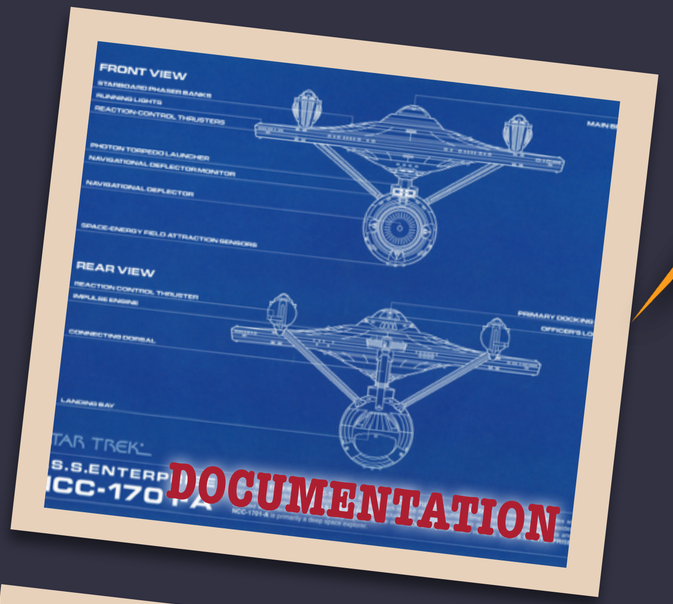
WE SELECTED FOUR INITIAL NON-FUNCTIONAL REQUIREMENTS

The Architecture teams collaborated and decided that there are four primary areas to focus on as a starting point...



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SECURITY

- Data Handling
  - PIFI Encryption
    - Transport over any network must be encrypted using QKS
    - Must be encrypted with QKS prior to persistence
- Authentication & Authorization
  - Authentication using the Auth Service
  - Authorization is currently managed by apps after authentication

PERFORMANCE

- Performance Metrics
  - Transactions/Second
  - Response Time
  - What are your SLA's to the business?
  - ...other metrics
- Teams are asked to perform:
  - Baseline Load Testing - get a set of starting benchmarks
  - Regular Load Testing - see if their system is getting better or worse

DOCUMENTATION

- Architecture
  - Inner workings of application
  - External interactions and dependencies
- Data
  - Data Flow Diagram
  - Data Dictionary
- Each time a change is introduced, teams need to update their documentation

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CODE COVERAGE

- Identify your code coverage levels!
- Code coverage NOT available?
  - Determine which frameworks are available
  - Write at least one test in the framework
- Code coverage IS available?
  - Define an acceptable threshold for each release
  - Make sure your coverage at least remains constant
- Define a plan to for **continuous**, **incremental improvement**!
- Follow the plan!

Make it so!

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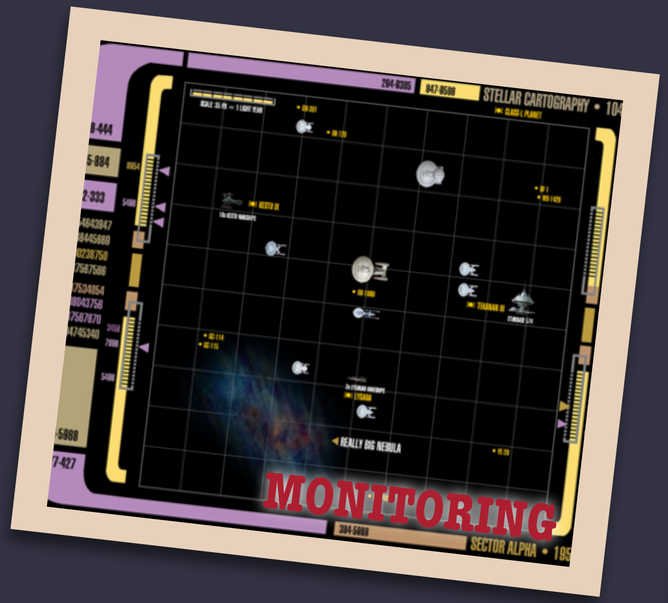
AS ENGINEERS BECOME ACCUSTOMED TO NFR'S...

We would like to introduce three more high-level concepts to each system and project.



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LOGGING

- Accountability
- Manageability
- Recoverability
- Supportability
- Verifiability

MONITORING

- Availability
- Capability
- Durability
- Manageability
- Performability
- Reliability
- Scalability
- Supportability
- Survivability
- Testability
- Verifiability

ALERTING

- Understandability
- Maintainability
- Trainability
- Demonstrability
- Reliability
- Stability
- Supportability
- Verifiability
- Vulnerability

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AGILE & NFR'S

- Should NFR's be prioritized separately from functional requirements?
- Should NFR's be in a separate backlog?
- If there is a separate backlog, how are NFR's prioritized against functional requirements?
- How should NFR's and FR's be sequenced?

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WHEN DO WE START?

- **NOW!**
- No, really. **NOW!**
- All leaders are on board, top down!
- It’s the right thing to do!
- **Did we mention… NOW?!**

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HOW DO WE MEASURE SUCCESS?

- Starts with project managers
- Spreads to the team
- Existing and new projects!
- NFR's become integrated into every aspect of our culture
- **Think globally - act locally**
- **It's not about who's right, it's about what's right**
- **Do the right thing**

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A SPIKE LEE JOINT
DO THE RIGHT THING

WANT TO KNOW MORE?

shorty/NFR

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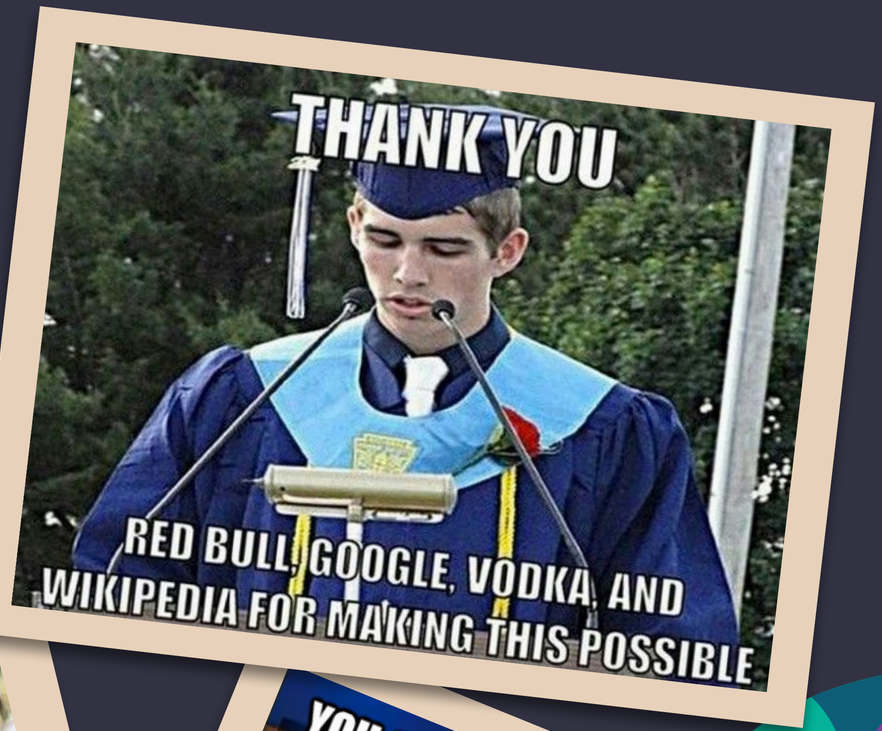
THANKS!



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