**Notes:**

Pipeline of WebSystem

SQL<->PHP<->Server<->client

We want to test

- Unit test PHP on it's own?

What info is sent as HTTP requests?

- Type of Command

- GET

- What URL you'd like to get

- Destination

- URI

- What specific part/directory do we wanna go to and bring back to our browser?

- headers are name/value pairs

decision types?

- if + 2

- loop + 3 (none, one, some)

- switch +n+1

- polymorphism? overloaded function +n

- try catch +n+1

- ?: +2

- &&, || these add a choice when used + 1

What is Non-Functional Testing?

- User Testing

- alpha

- beta

- Performance

- same Time-ness

- Bottlenecks

- bandwidth X/t

CRUD

- Create

- Read

- Update

- Delete

**Quizes:**

According to the author, software is ...

like mathematics

none of the above \*\*

like a machine

like information

like language and thought

According to the author, the "waterfall model" is ...

modeled after engineering

Various iterative development methodologies blame \_\_\_\_\_ for software problems.

poor specifications

No one actually believed the "waterfall model" either accurately represented the existing or desired software development ideal. What is the primary difference between it and current models?

size of the smallest iteration

The author claims testing does not improve quality. What does?

process change

In Lean, what is the difference between "act" and "do"?

do is local, act is global

The key component of both TDD and BDD is ...

create tests first

The author suggests that someone with a testing mindset will ...

inquire about specifications

Given that regression testing typically involves running all automated tests, what is the point of retesting?

its quicker

A typical example of a type of bug white-box testing finds but black-box testing likely misses is ...

buffer overrun

According to the author, validation "trumps" verification because ...

actual users are involved

The author claims specification accuracy is the harder than ...

writing new features

debugging

manual testing

regression testing

"beta" testing

What kind of testing begins after integration?

alpha

Which of these defects are detectable via static analysis?

security loophole

incorrect indentation and formatting

incorrect return types

In an object-oriented project, you are required to test a set of classes which implement the Template Method pattern. What type of testing should you us?

unit tests for each subclass

Acceptance tests ...

may include user trials

involve real-world context

are a contractual milestone

Automated tests are good for which of the following?

smoke tests

regression tests

performance tests

Non-functional assertions differ from programming assertions because ...

they are not executed

Usability testing differs from Beta testing because ...

it can impact the design

A/B testing requires ...

some sort of network traffic switching

Performance testing is concerned with ...

determining bandwidth limits

Performance testing can be difficult because ...

duplicating a live deploy environment is hard

# Design for Testing

"Rules"

* create units: modules, layers, objects
* decouple units, stateless between transactions
* decouple responsibilities, one responsibility / unit
* allow what is necessary, rather than what is possible
* consider what is possible, rather than what is necessary

"There are two hard problems in computer science: cache invalidation, naming things, and off-by-one errors."  
                       -- Leon Bambrick

Examples:

* malloc/free/realloc
* OO-context interface
* OO-change notification (base virtual chain assertion)
* excel recalc algorithm

Code coverage means at least one test exercises

a line of code

Branch coverage means at least one test exercises

a path of the code

Input/output coverage means at least one test exercises

a class of input / output

When determining the amount of effort to spend testing a particular feature, which of the following are a factor?

complexity of the code

What is point of "axes" / dimensions in testing?

a method of uncovering areas for testing emphasis

The main reason for broad coverage (vs. deep coverage) is to

identify areas of risk

The main reason for deep coverage (vs. broad coverage) is to

identify specific bugs