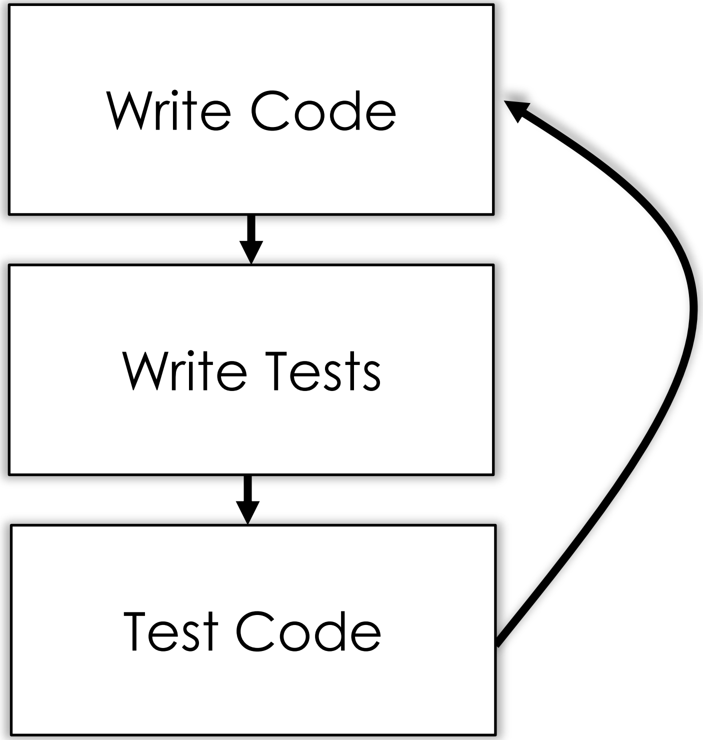
Testing Practices

By the end of this video you will be able to…

- Describe different testing practices
- Compare advantages in testing methodologies

Standard Development

Standard Cycle

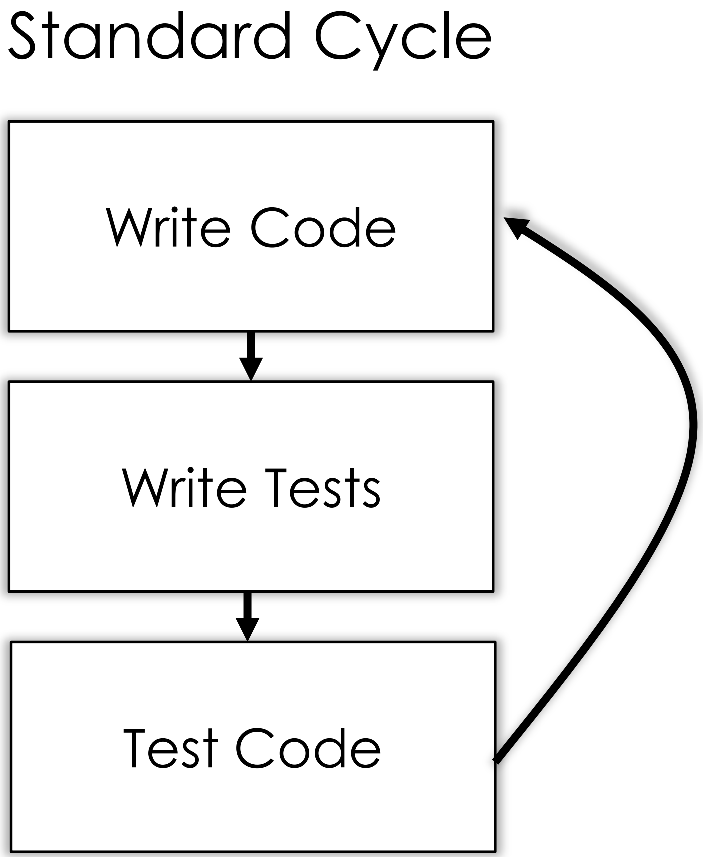


Write Code

Write Tests

Test Code

Standard Development



Standard Cycle

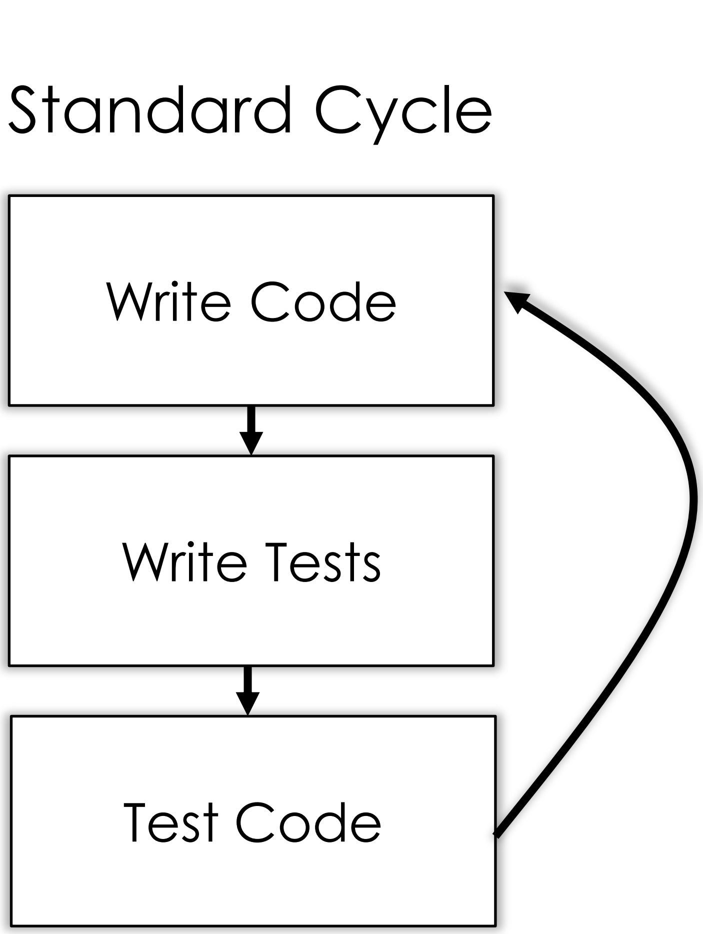
Write Code

Write Tests

Test Code

How can you write code if you don't know how it will be tested?

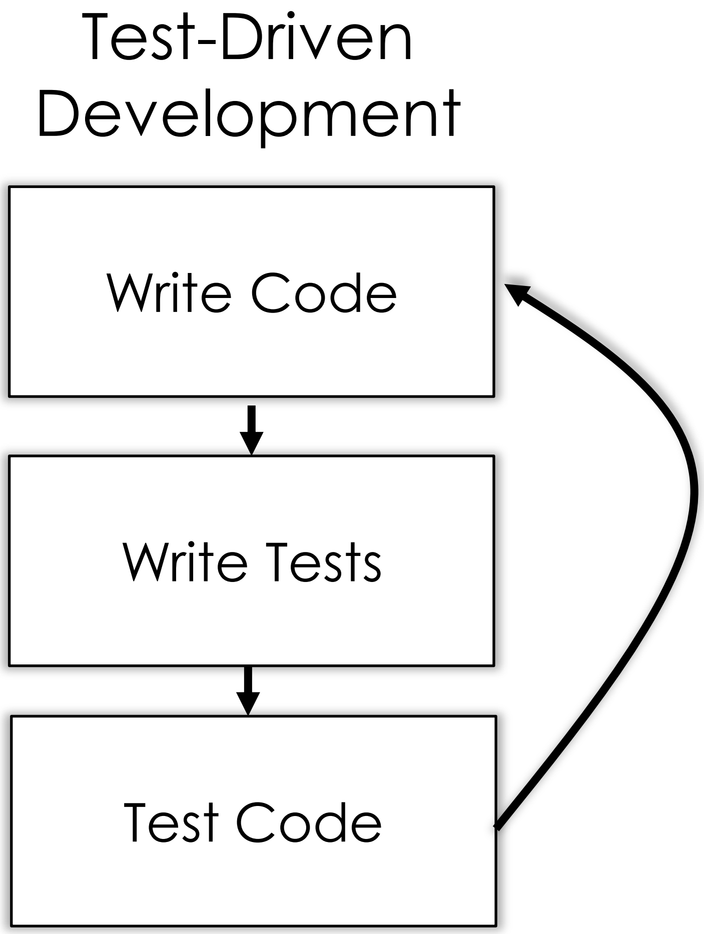
Test Driven Development


Standard Cycle

Write Code

Write Tests

Test Code

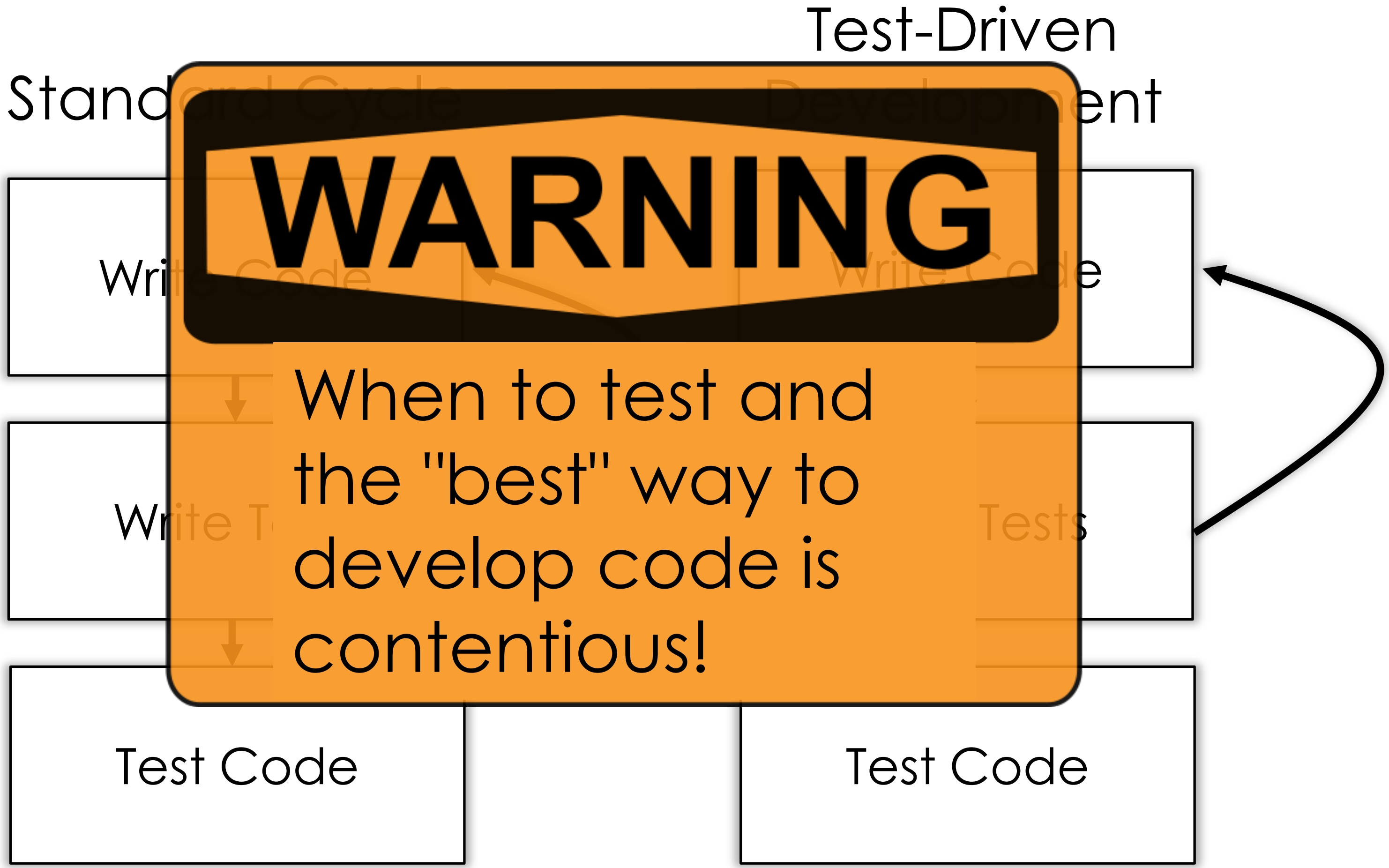

Test-Driven Development

Write Code

Write Tests

Test Code

Test Driven Development



Standard Cycle

Write Code

Write Tests

Test Code

Test-Driven Development

Write Code

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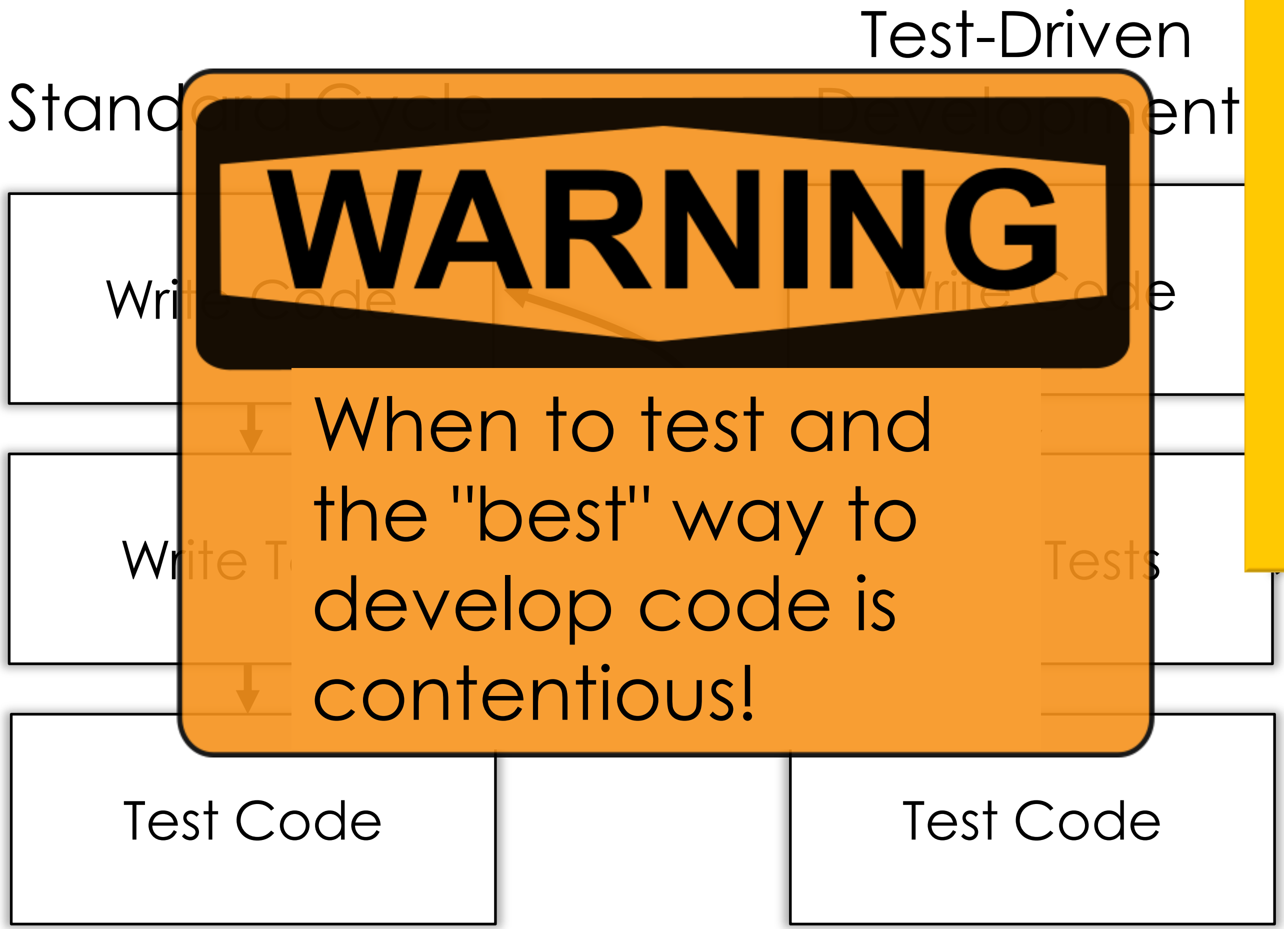
Test Code

When to test and the "best" way to develop code is contentious!

Test Driven Development



When to test and the "best" way to develop code is contentious!

Nearly everyone agrees, don't wait till the end to test!

Two Testing Styles

Black Box Testing

Only tests through the interface

Two Testing Styles

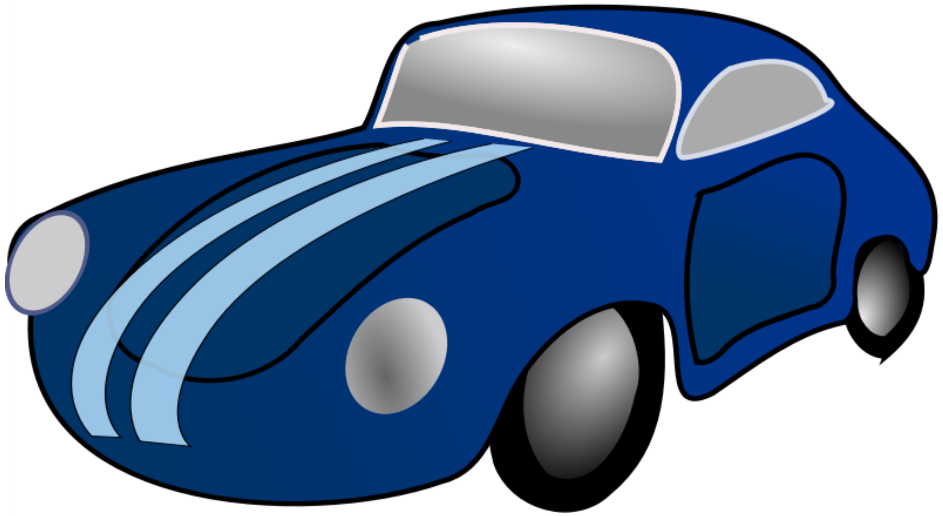
Black Box Testing

Only tests through the interface

Clear Box Testing

Tests which know about the implementation

Testing Styles: Two sides of abstraction barrier



Abstraction Barrier

sets the rules of interaction

Test Interface: Black Box

Test Implementation: Clear-Box

Both have advantages

Black Box Testing

Clear Box Testing

Which of the following are advantages for black box testing <select all>?

A. Is often more representative of user use of code

B. Is easier to write by someone unfamiliar with the implementation

C. Is more knowledgeable of potential corner cases which might cause incorrect behavior

Both have advantages

Black Box Testing

Clear Box Testing

Which of the following are advantages for black box testing < select all >?

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Black Box Testing

Clear Box Testing

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Both have advantages

Black Box Testing

Clear Box Testing

Okay, so what do we test?

Which of the following are advantages for black box testing <SELECT ALL>?

A. Is often more representative of user use of code ✓

B. Is easier to write by someone unfamiliar with the implementation ✓

C. Is more knowledgeable of potential corner cases which might cause incorrect behavior ✗

So, what do we test?

Should I test every statement, like this?

```
int a = 5;
if( a != 5 ) { System.exit(0); }
```

So, what do we test?

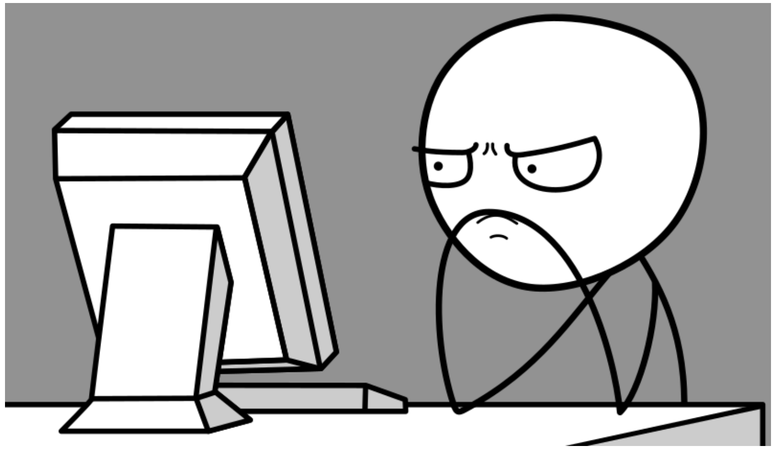
Should I test every statement, like this? ✗

```
int a = 5;
if( a != 5 ) { System.exit(0); }
```

Way too fine-grain...

So, what do we test?

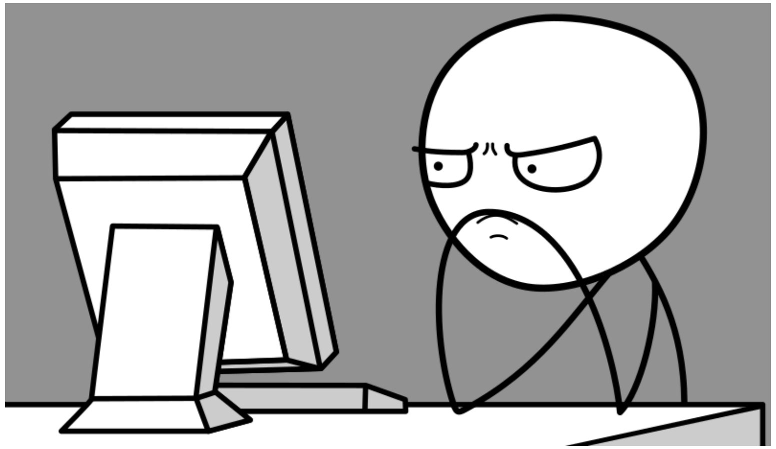
Okay, so should I wait for user alpha testing?



Users

So, what do we test?

Okay, so should I wait for user alpha testing? ✗



Users

Way too late!!!

So, what do we test?

Okay, so what should I test?

So, what do we test?

Okay, so what should I test?

Usually – methods.

So, what do we test?

Okay, so what should I test?

Usually – methods.

Unit Testing!

So, how do we test?

So, how do we test?

JUnit

http://junit.org/

So, how do we test?

JUnit

Allows us to write and run unit tests.

So, how do we test?

JUnit

Allows us to write and run unit tests.

More on JUnit in Eclipse in the Support Video