TESTING

minimizing mistaqes

SOFTWARE PRODUCTION HORROR STORIES

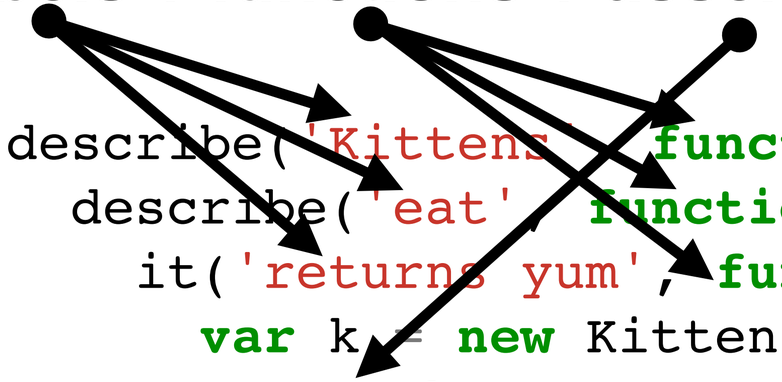
Legacy Code	“Someone dumber, sloppier, and less good looking than me wrote that code.”
Emergency Push	“It needs to go out right now because the CMO said so.”
Rush to Finish	“We’ll do our testing in the three months before launch.”
Production Destruction	“It’s just a small fix to the database update code.”
Spray/Pray	“Don’t worry, QA will find it.”
Maintenance Nightmare	“Only Roy in the basement knows how that module works.”

TESTS

- Ensure code is working
- Ensure code will continue to work after someone changes it
- Document what the code actually does
- Precision/accuracy/certainty of behavior

GETTING STARTED

- Less complicated than you might think
- Labels + functions + assertions = test specs



```
describe('Kittens', function() {
  describe('eat', function() {
    it('returns yum', function() {
      var k = new Kitten()
      expect(k.eat()).to.equal('yum')
    })
  })
})
```

ASSERTIONS

things that throw errors…

```
/* Our assertion library */
function assert (result) {
  if (!result) {
    throw new Error("A test failed")
  }
}
/* end of assertion library */
```

```
/* tests */
result = MyMathLibrary.add(1, 2)
assert(result === 3)
```

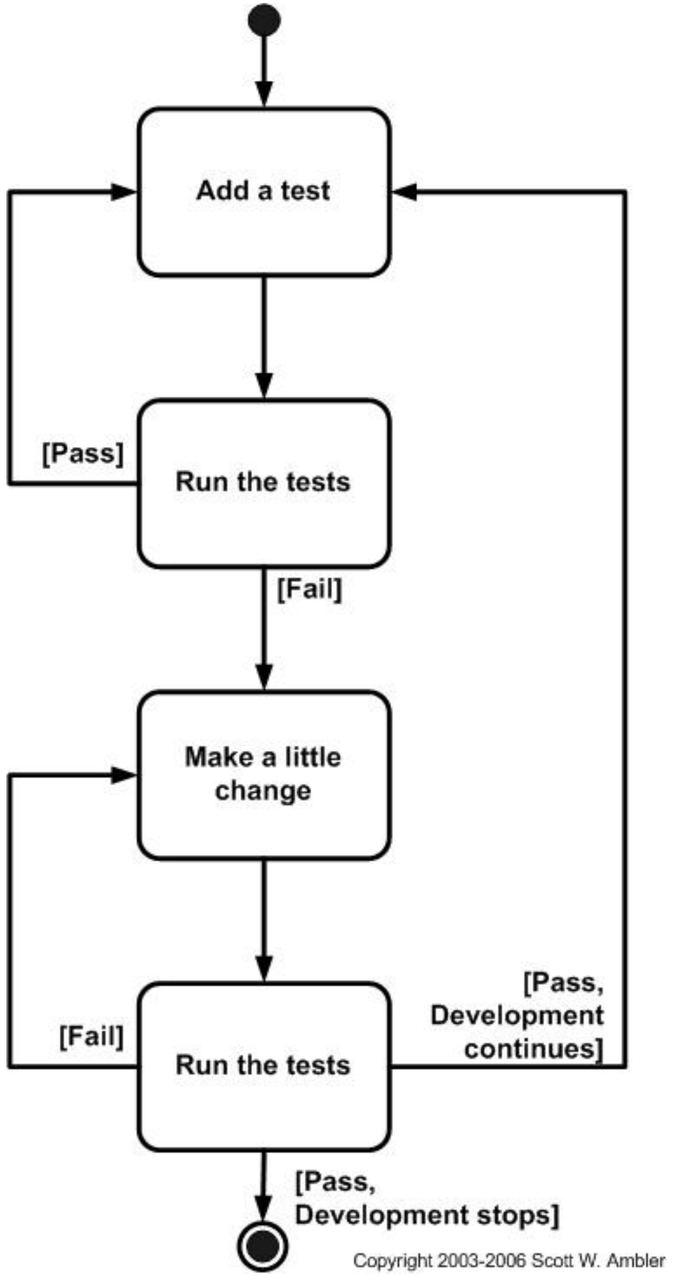
TOOLS

In JavaScript – the two contenders for most popular testing framework are Jasmine by Pivotal and Mocha/Chai by TJ Holowaychuk

TEST-DRIVEN DEVELOPMENT

- A practice where you write your automated unit tests BEFORE you write your implementation code
- Focus on what code is supposed to do
- Have a goal
- Ensure you don’t blow off automated testing
- Improves design and modularity of code
- “Refactorability”

TDD


Add a test
Run the tests
[Pass]
[Fail]
Make a little change
Run the tests
[Fail]
[Pass, Development continues]
[Pass, Development stops]
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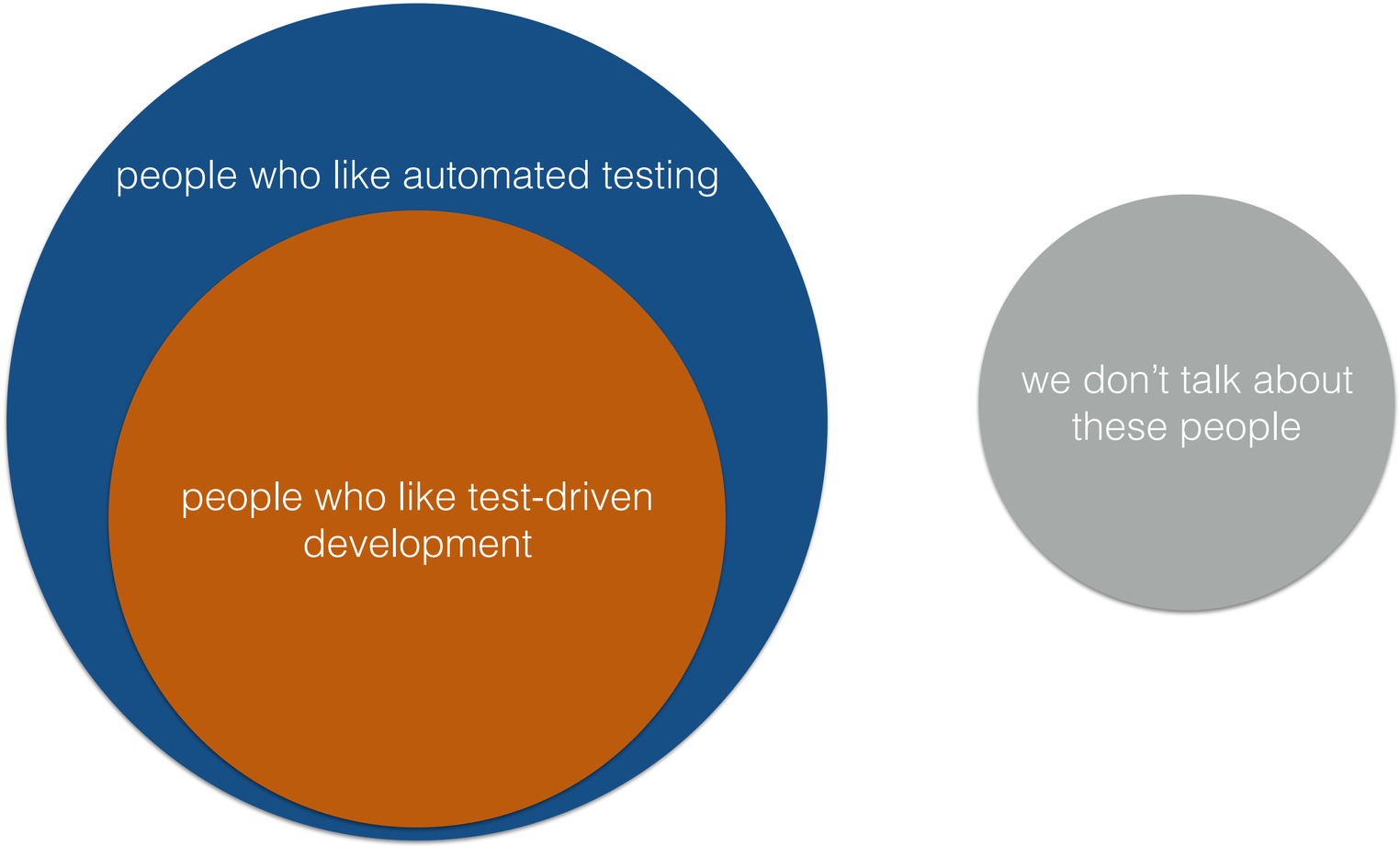
AUTOMATED TESTING ≠ TEST-DRIVEN DEVELOPMENT



ISOLATE TESTS

- Highly intertwined tests are brittle – change one thing and the whole thing will break
- Reduce state
- Reduce moving pieces / things running
- Reduce dependence on other components