Staying Ahead of the Curve

Trisha Gee, Java Developer at MongoDB

or:
New Technology is
Dangerous, mmmkay

Let’s Learn Lambdas!

erm…

Let’s Go Parallel!

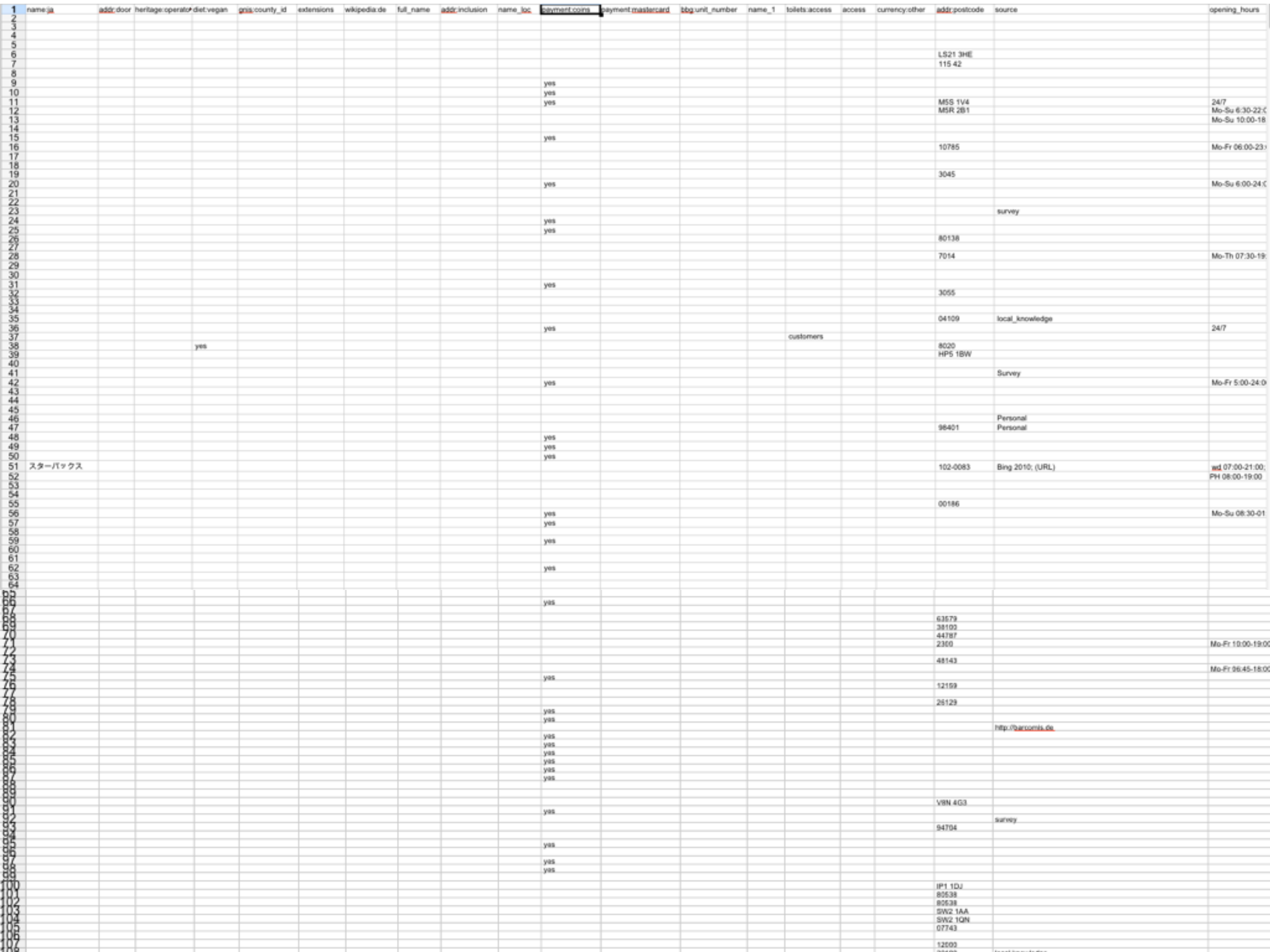
Wait a minute…

Why?

For The Business

Why?

- Customisable dashboards
- A new market squeezes your downtime window
- Trying to store different shaped data in a single table



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Now What?

- Identify possible technology options, e.g:
    - HTML5/JavaScript
    - DevOps tools
    - NoSQL

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```

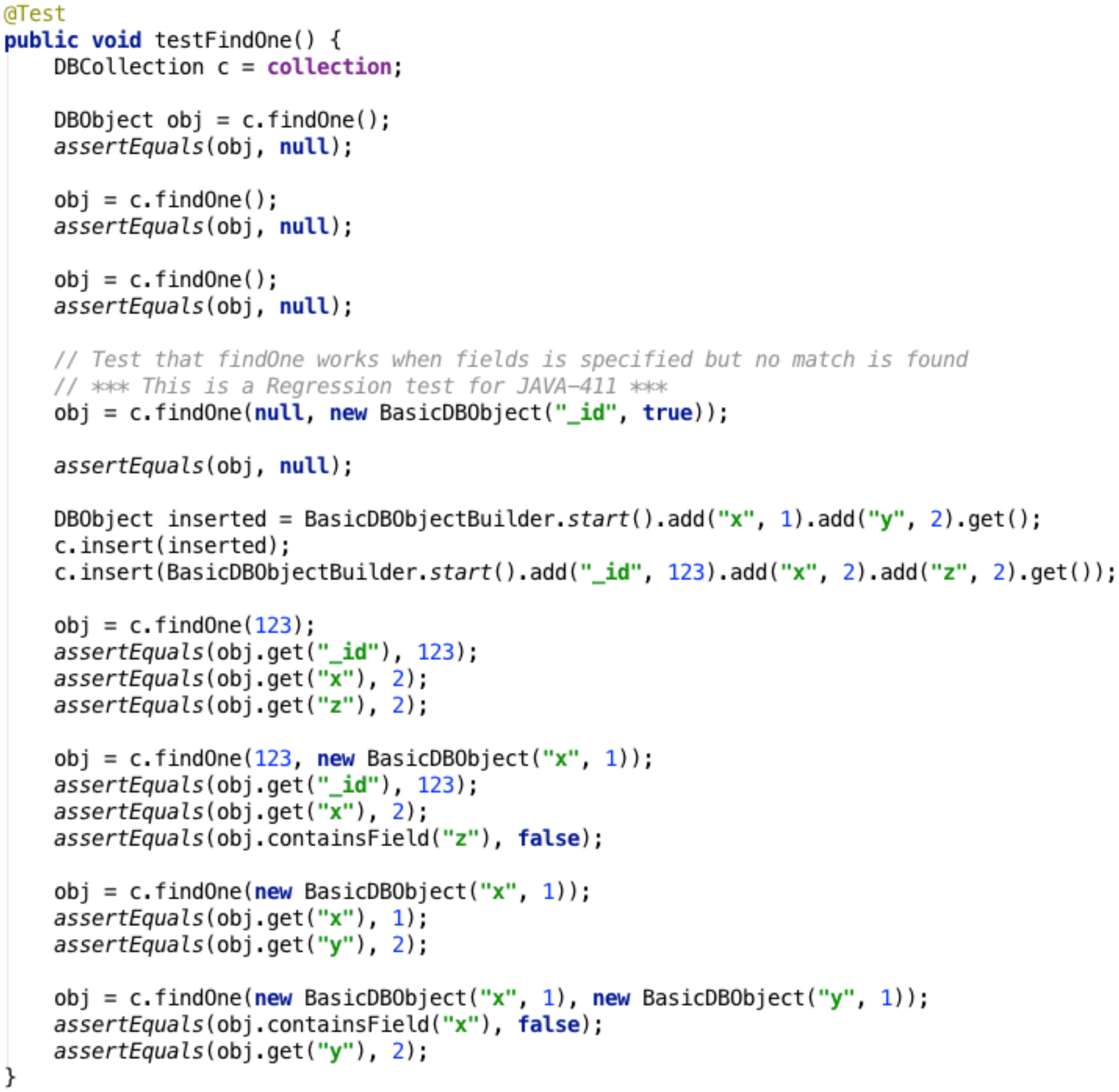
Approaches

- Spikes / prototypes
- Use in tests
- Use in non-production code
    - Build / Deploy / Continuous Delivery Pipeline
- Use in internal tools
- Use on a new project
- Get the experts in (remember to share)

For The Team

Why?

- Mixed team used to different programming styles
- Releases are painful
- Databases schema changes take ages
- Testing is hard and inconsistent



```
@Test
public void testFindOne() {
    DBCollection c = collection;

    DBObject obj = c.findOne();
    assertEquals(obj, null);

    obj = c.findOne();
    assertEquals(obj, null);

    obj = c.findOne();
    assertEquals(obj, null);

    // Test that findOne works when fields is specified but no match is found
    // *** This is a Regression test for JAVA-411 ***
    obj = c.findOne(null, new BasicDBObject("_id", true));

    assertEquals(obj, null);

    DBObject inserted = BasicDBObjectBuilder.start().add("x", 1).add("y", 2).get();
    c.insert(inserted);
    c.insert(BasicDBObjectBuilder.start().add("_id", 123).add("x", 2).add("z", 2).get());

    obj = c.findOne(123);
    assertEquals(obj.get("_id"), 123);
    assertEquals(obj.get("x"), 2);
    assertEquals(obj.get("z"), 2);

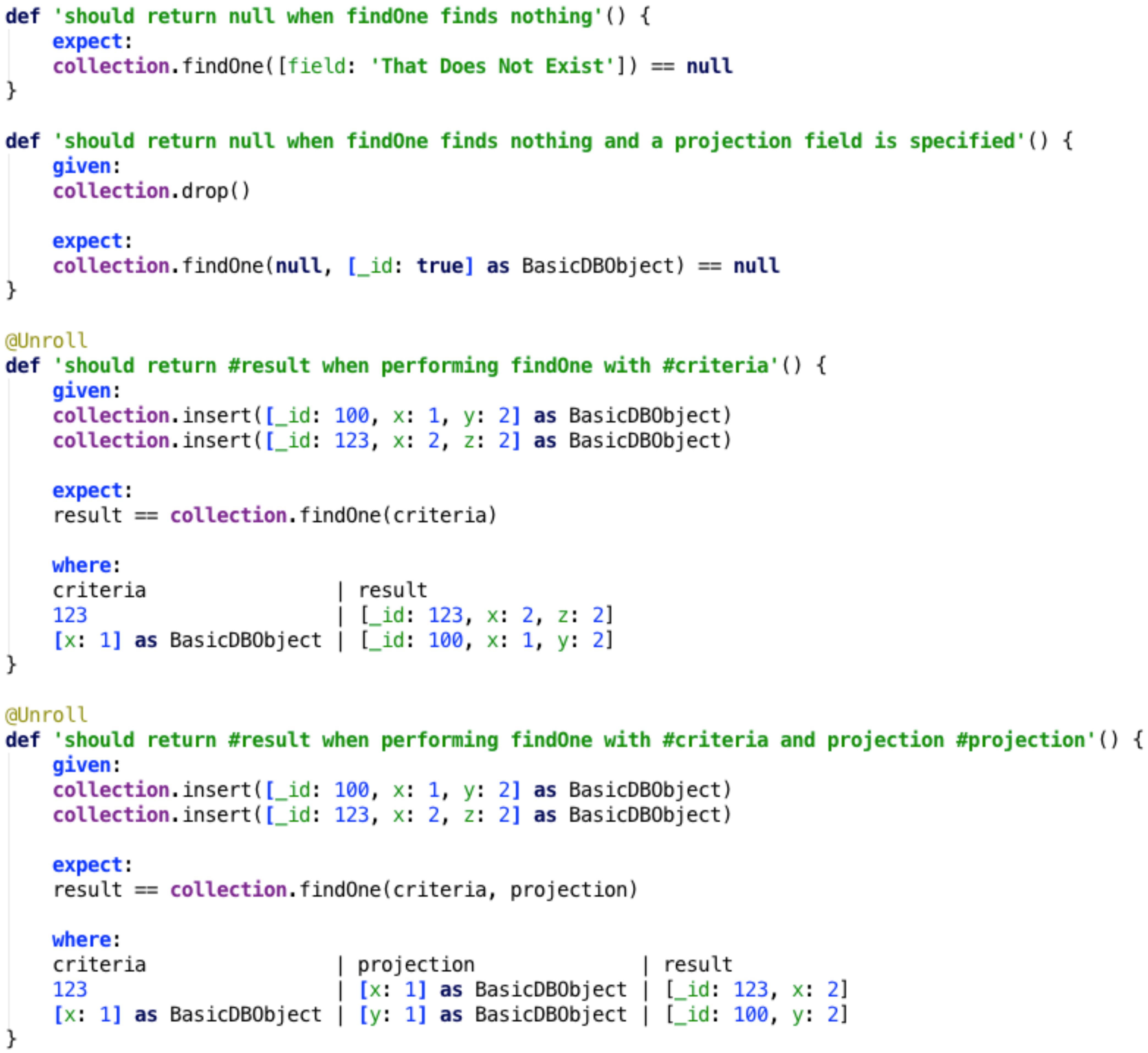
    obj = c.findOne(123, new BasicDBObject("x", 1));
    assertEquals(obj.get("_id"), 123);
    assertEquals(obj.get("x"), 2);
    assertEquals(obj.containsField("z"), false);

    obj = c.findOne(new BasicDBObject("x", 1));
    assertEquals(obj.get("x"), 1);
    assertEquals(obj.get("y"), 2);

    obj = c.findOne(new BasicDBObject("x", 1), new BasicDBObject("y", 1));
    assertEquals(obj.containsField("x"), false);
    assertEquals(obj.get("y"), 2);
}
```

Now What?

- Identify possible technology / process options, e.g:
  - Java 8, Groovy
  - DevOps
  - NoSQL
  - Modern Test Frameworks (e.g. Spock, Lambda Behave)



```
def 'should return null when findOne finds nothing'() {
    expect:
    collection.findOne([field: 'That Does Not Exist']) == null
}

def 'should return null when findOne finds nothing and a projection field is specified'() {
    given:
    collection.drop()

    expect:
    collection.findOne(null, [_id: true] as BasicDBObject) == null
}

@Unroll
def 'should return #result when performing findOne with #criteria'() {
    given:
    collection.insert([_id: 100, x: 1, y: 2] as BasicDBObject)
    collection.insert([_id: 123, x: 2, z: 2] as BasicDBObject)

    expect:
    result == collection.findOne(criteria)

    where:
    criteria                   | result
    123                        | [_id: 123, x: 2, z: 2]
    [x: 1] as BasicDBObject | [_id: 100, x: 1, y: 2]
}

@Unroll
def 'should return #result when performing findOne with #criteria and projection #projection'() {
    given:
    collection.insert([_id: 100, x: 1, y: 2] as BasicDBObject)
    collection.insert([_id: 123, x: 2, z: 2] as BasicDBObject)

    expect:
    result == collection.findOne(criteria, projection)

    where:
    criteria                   | projection                 | result
    123                        | [x: 1] as BasicDBObject | [_id: 123, x: 2]
    [x: 1] as BasicDBObject | [y: 1] as BasicDBObject | [_id: 100, y: 2]
}
```

Approaches

- Spikes / prototypes
- Use in tests
- Use in non-production code
  - Build / Deploy / Continuous Delivery Pipeline
- Use in internal tools
- Skunkworks projects / hack days

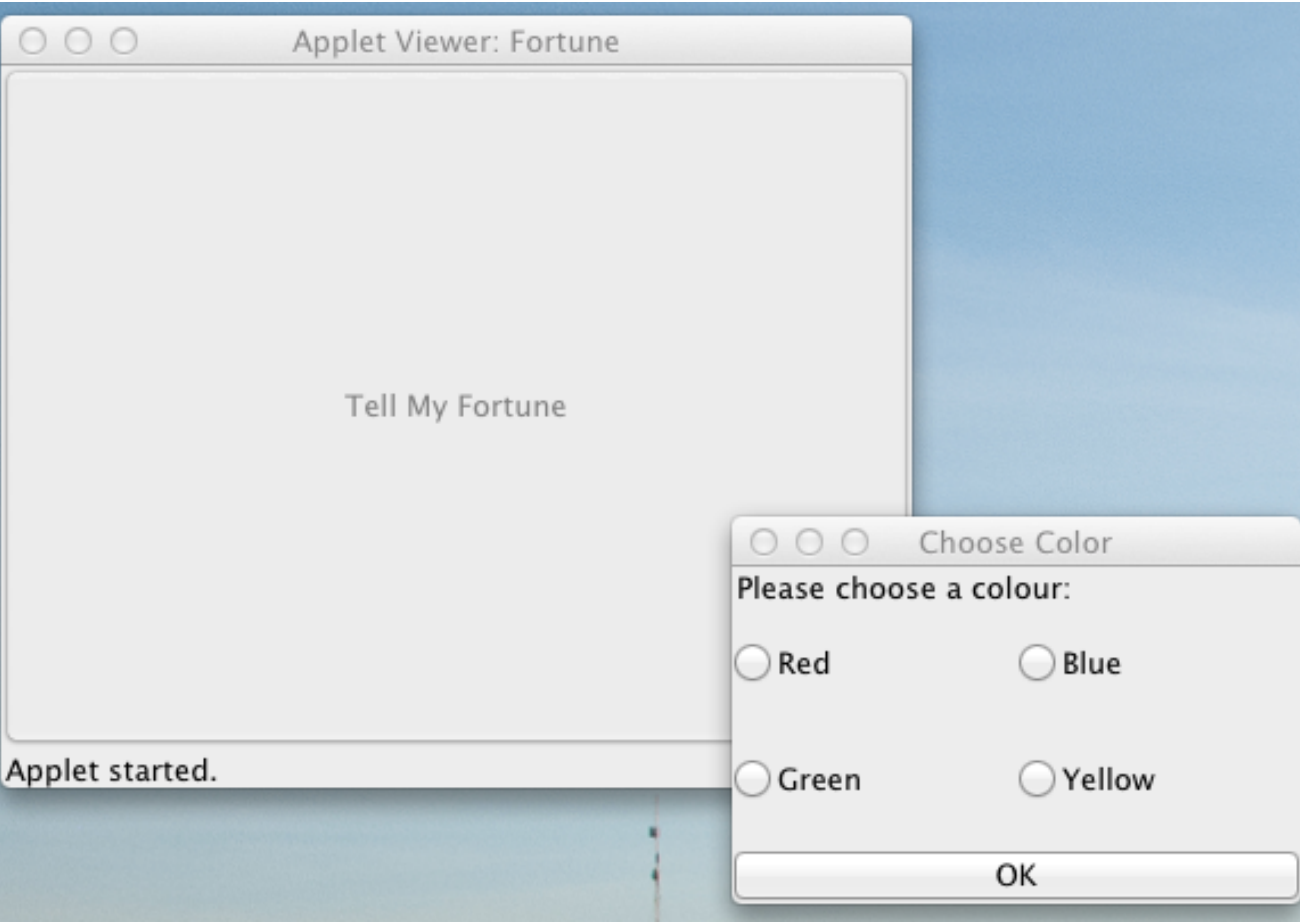
For You

Why?

- I want to have fun
- I want a new job
- I want to be a Technology Guru in this job
- I don’t want to be left behind

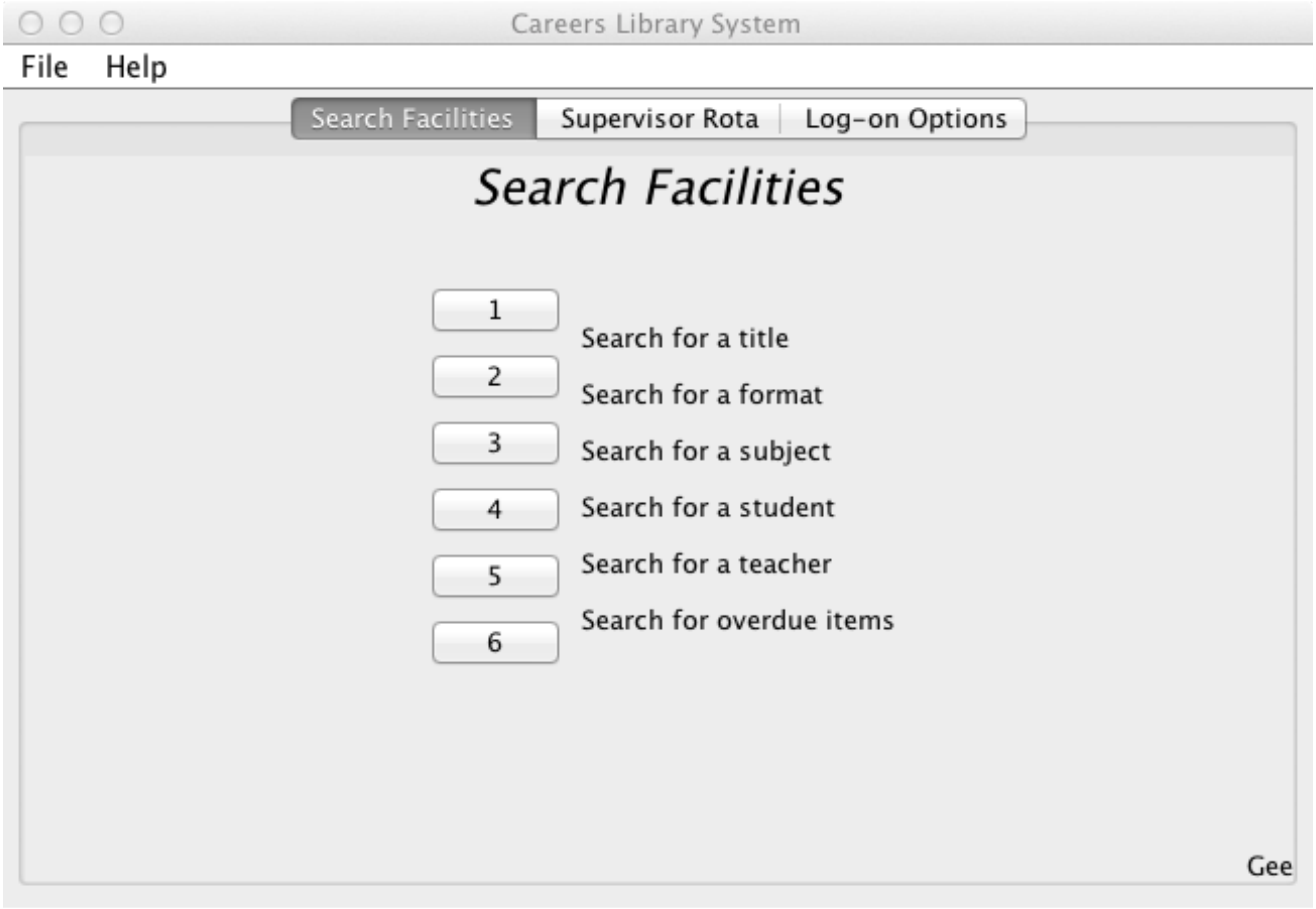
Now What?

- Any technology that looks awesome
- Buzz words from job adverts
- Any technology that is currently (or soon to be) used at work
- Any/all of the above. Or None.



Please choose a colour:

Applet started.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Help
Search Facilities
Supervisor Rota
Log-on Options
Search Facilities
1
Search for a title
2
Search for a format
3
Search for a subject
4
Search for a student
5
Search for a teacher
6
Search for overdue items
Gee

Approaches

- User Groups
- Online courses
- Pet project
- Join an open source project
- Find a project at work
- Get a new job!

Why?

- Because you want to

Being Proactive

Preventing Premature Implementation

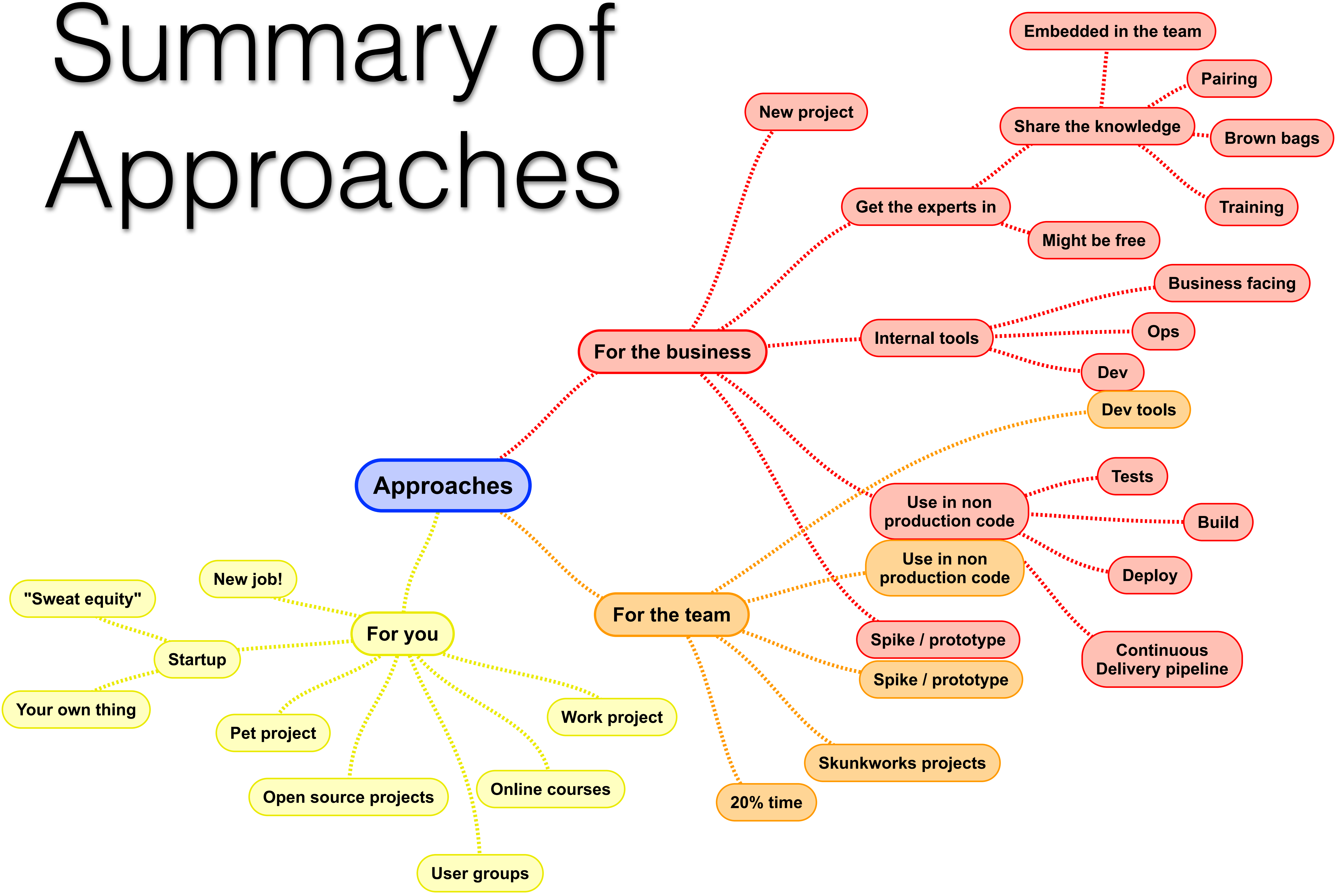
- Hack days
- Skunkworks
- 20% time
- Conferences
- Brown Bags
- User Groups

Risks

Benefits

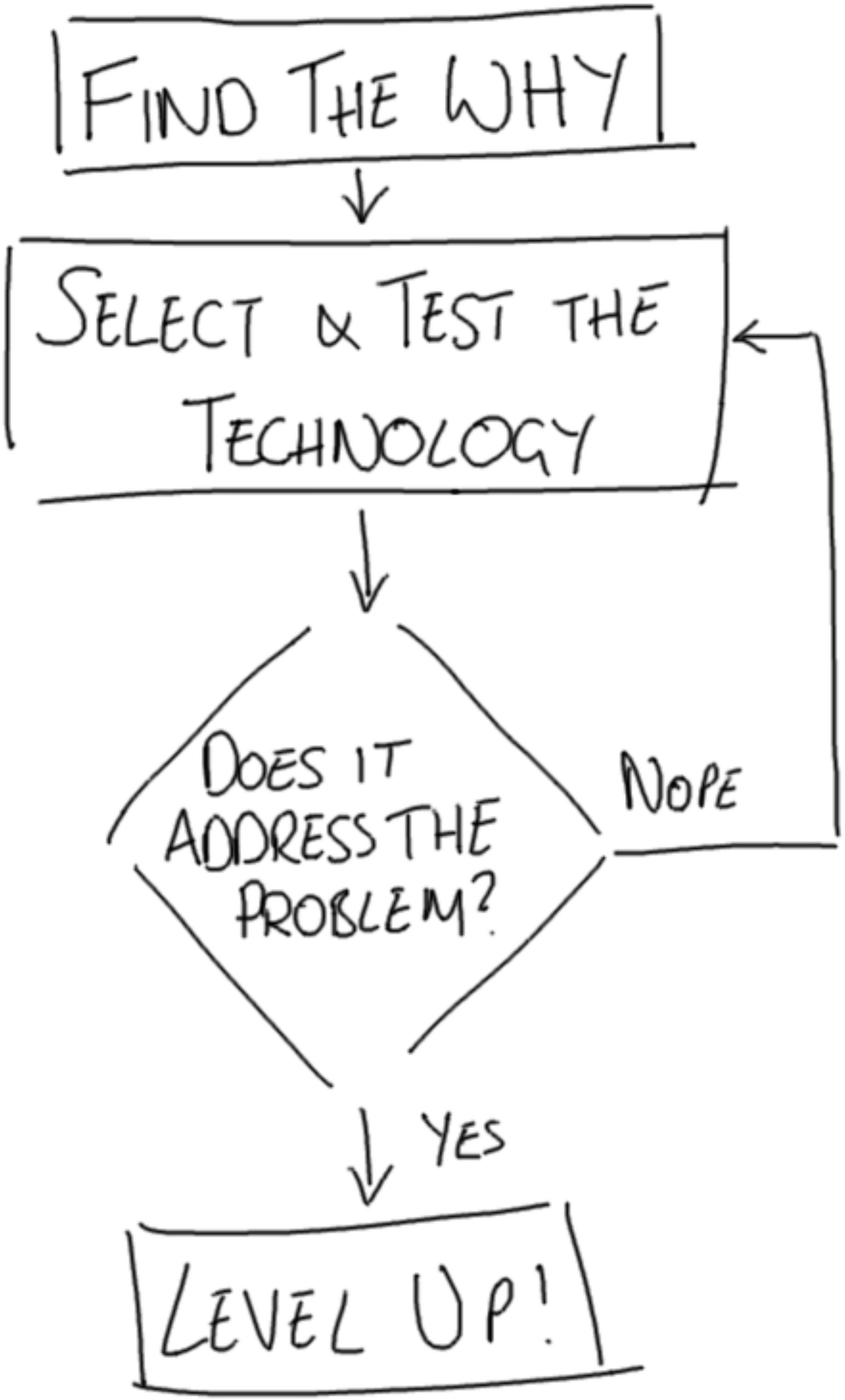
- Skilled Developers
- Ready to adopt the right technology at the right time
- Happy Developers

Summary of Approaches



So What Can I Do?

Don’t Panic!


FIND THE WHY
SELECT & TEST THE TECHNOLOGY
DOES IT ADDRESS THE PROBLEM?
NOPE
YES
LEVEL UP!

Lambdas: The Right Way

http://bit.ly/
stayingahead