Unit testing messaging applications

Practical tips for mixing concurrency with unit tests

by Iwein Fuld

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Building Stuff

Food

profile - BlackBeltFactory - Java ...
Free Java C nity, Collaborative Exam construction around java topics such as scjp mock exam, j2se, Spring, Hibernate, J2ee, EJB3, ...
www.blackbeltfactory.com/UserView.wwa?userId=1208777

InfoQ: Spring Integration RC1 hatched: - 2 visits - 4/24/09
5 Nov 2008 ... Spring Integration provides an e p
support the well-known Enterprise Integration
www.infoq.com/news/2008/11/spring_integrat

Education

Iwein Fuld - 3 visits - 5 Jan
Iwein Fuld. I'm a professional developer, speaker and an a train people to be better developers and sometimes I cook them meals. ...
iweinfuld.posterous.com/ - Cached

What's cooking

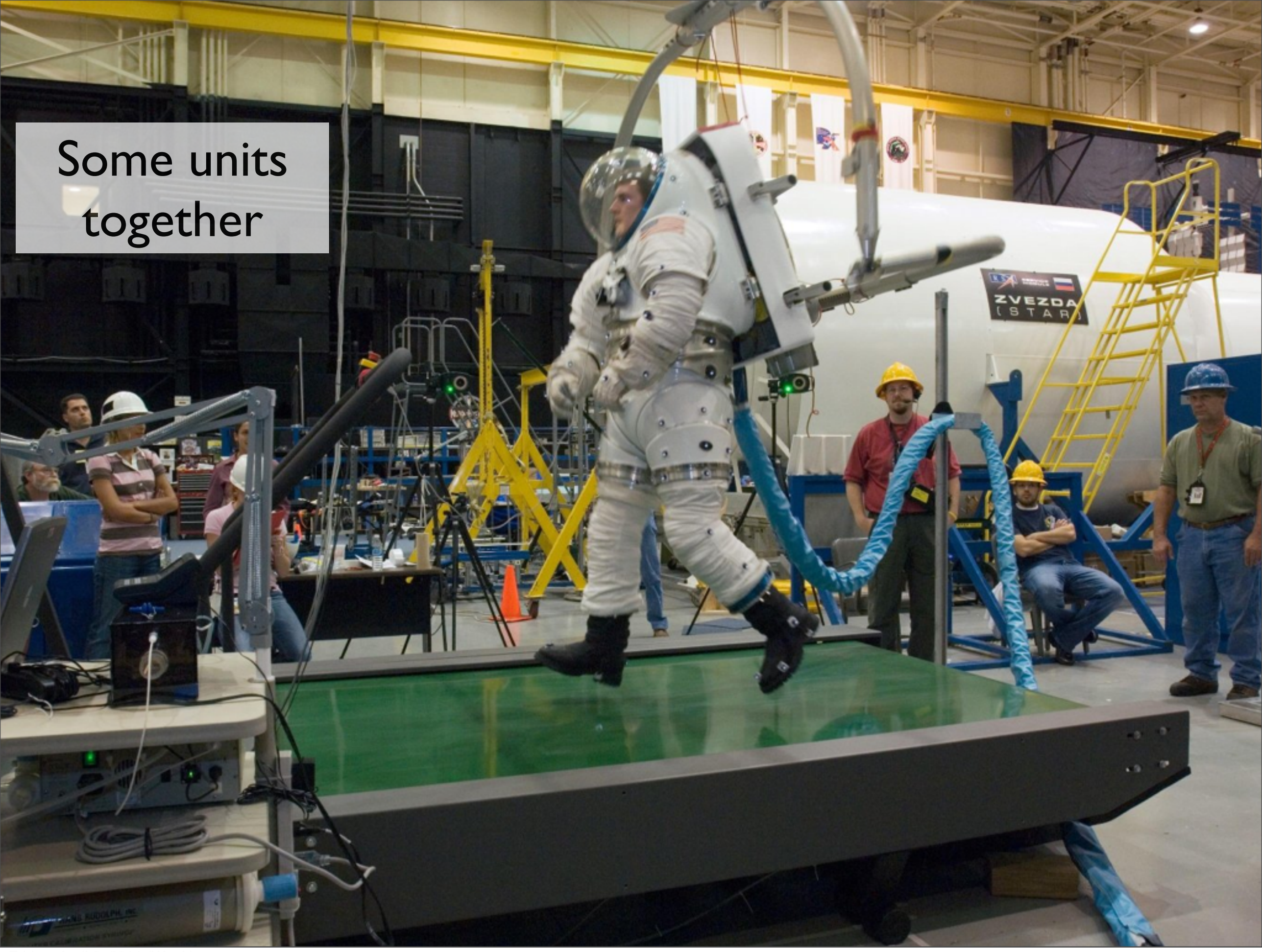
- Types of tests
- Concurrency issues in unit tests
- Logging
- Designing tests

Types of tests

Take it apart

Look at details

Some units together



Friday, April 8, 2011 (Week)

The Debugger

Debugging concurrent problems is tougher

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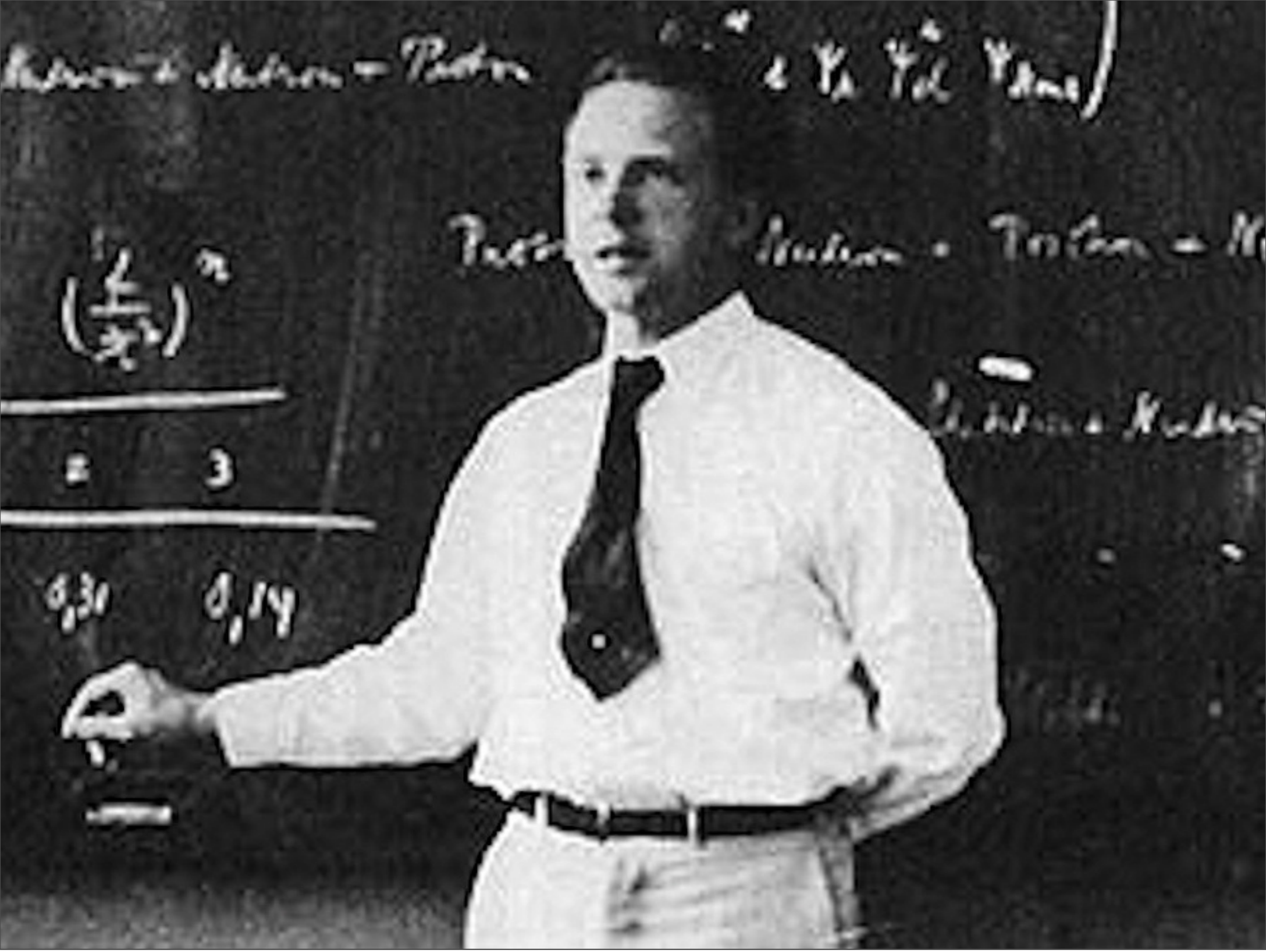
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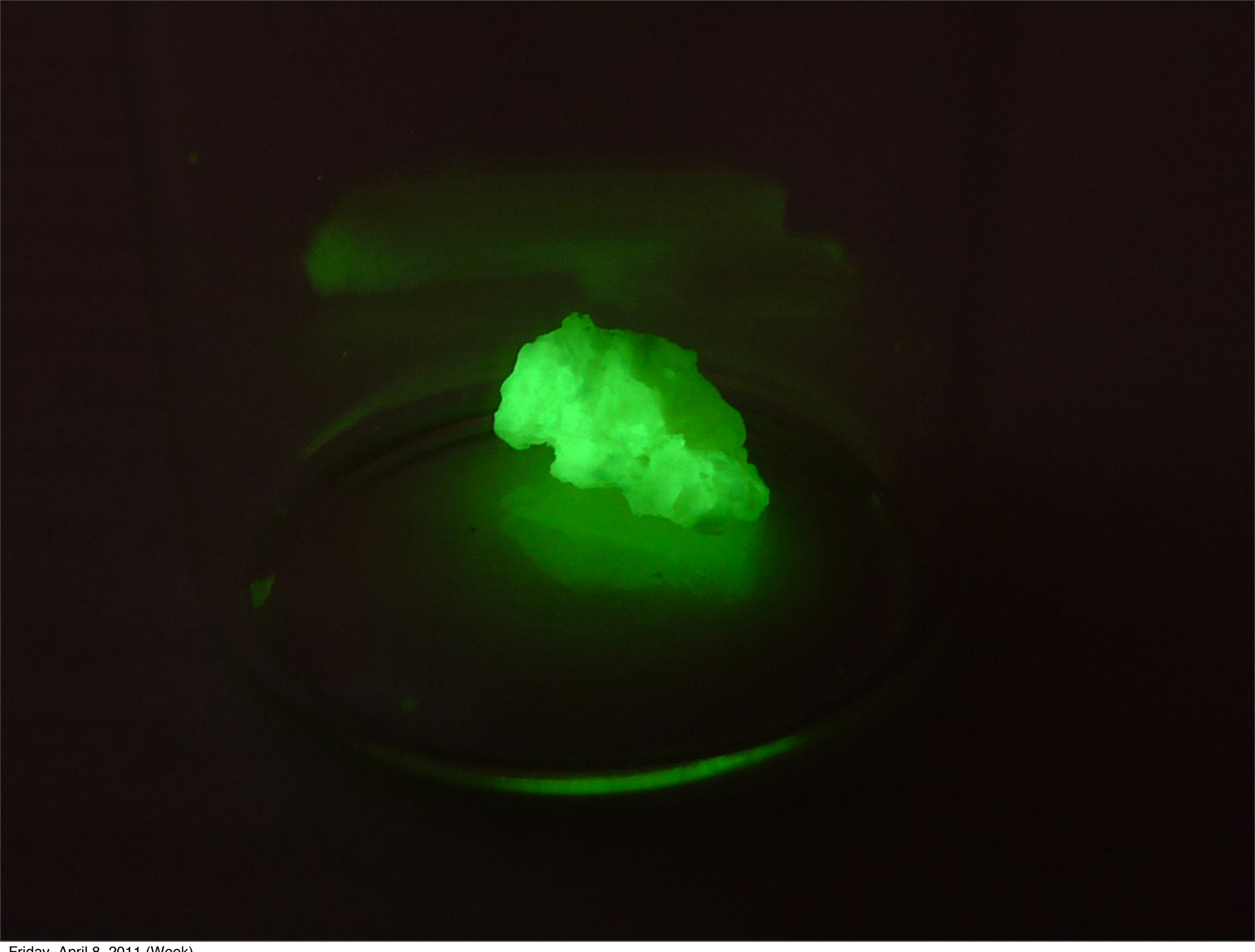
0,14

$$\Delta x \, \Delta p \geq h$$

$$\sigma_x \, \sigma_p \geq h/2$$



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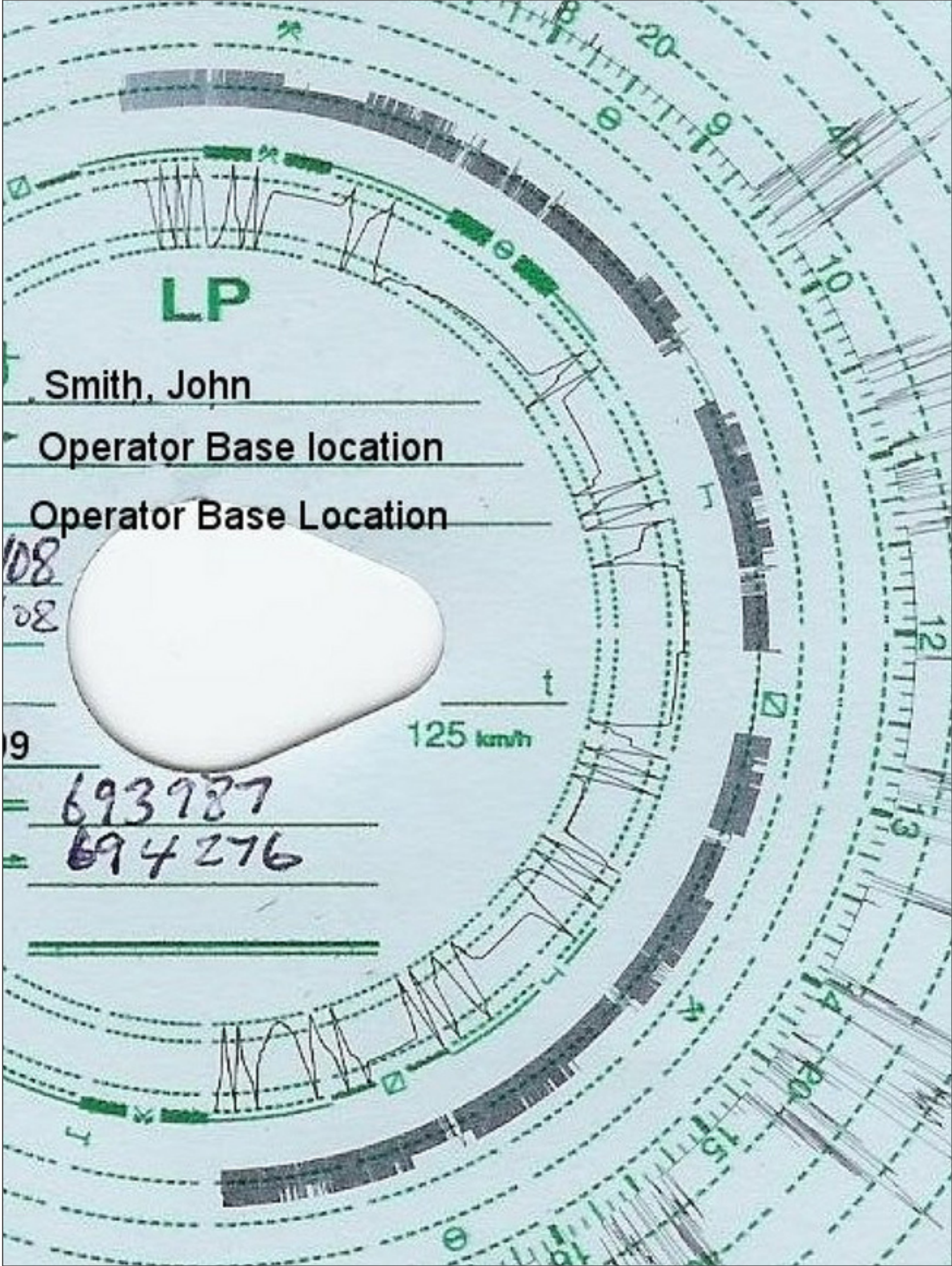
Logging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Smith, John
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Operator Base Location
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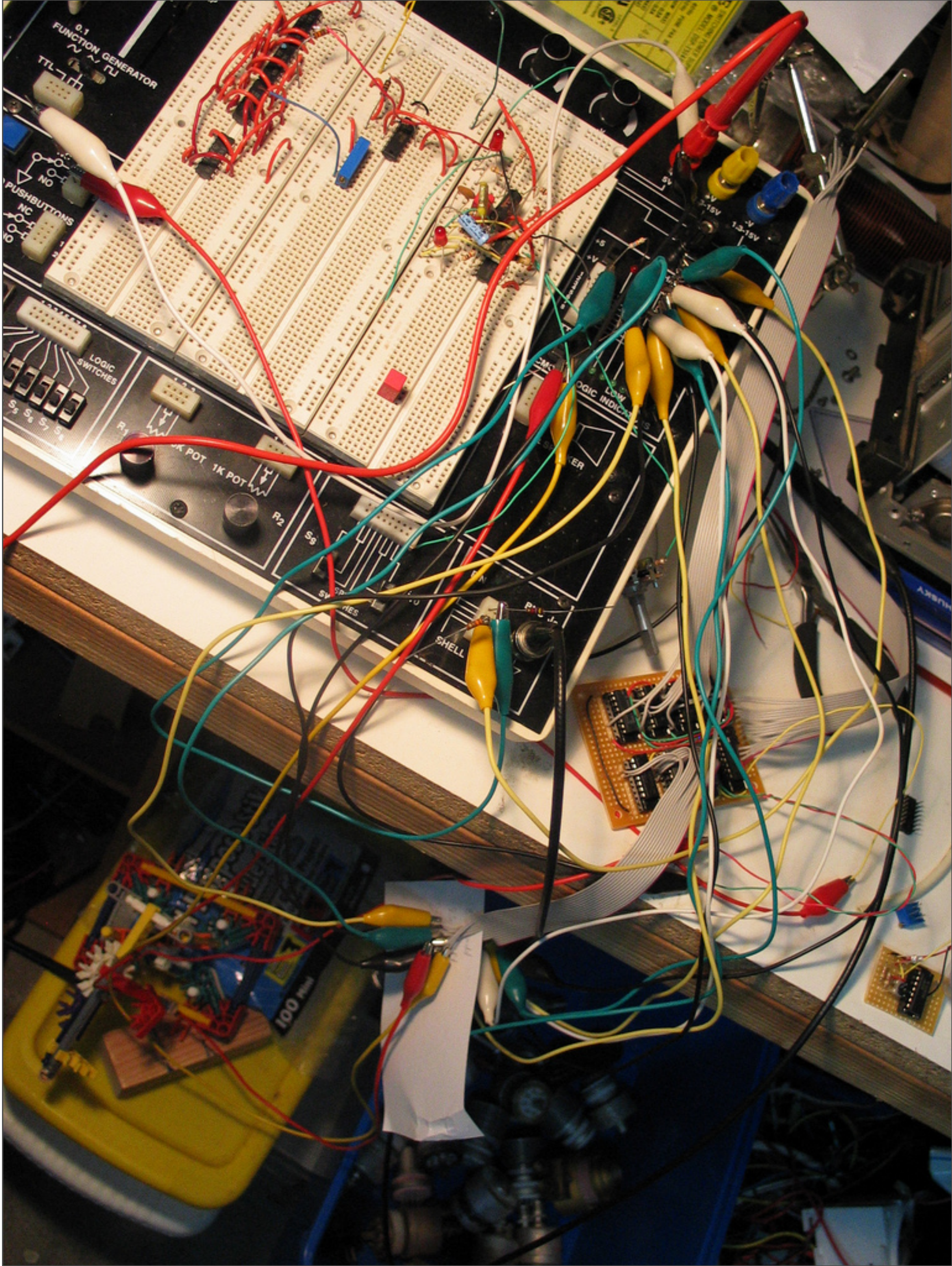

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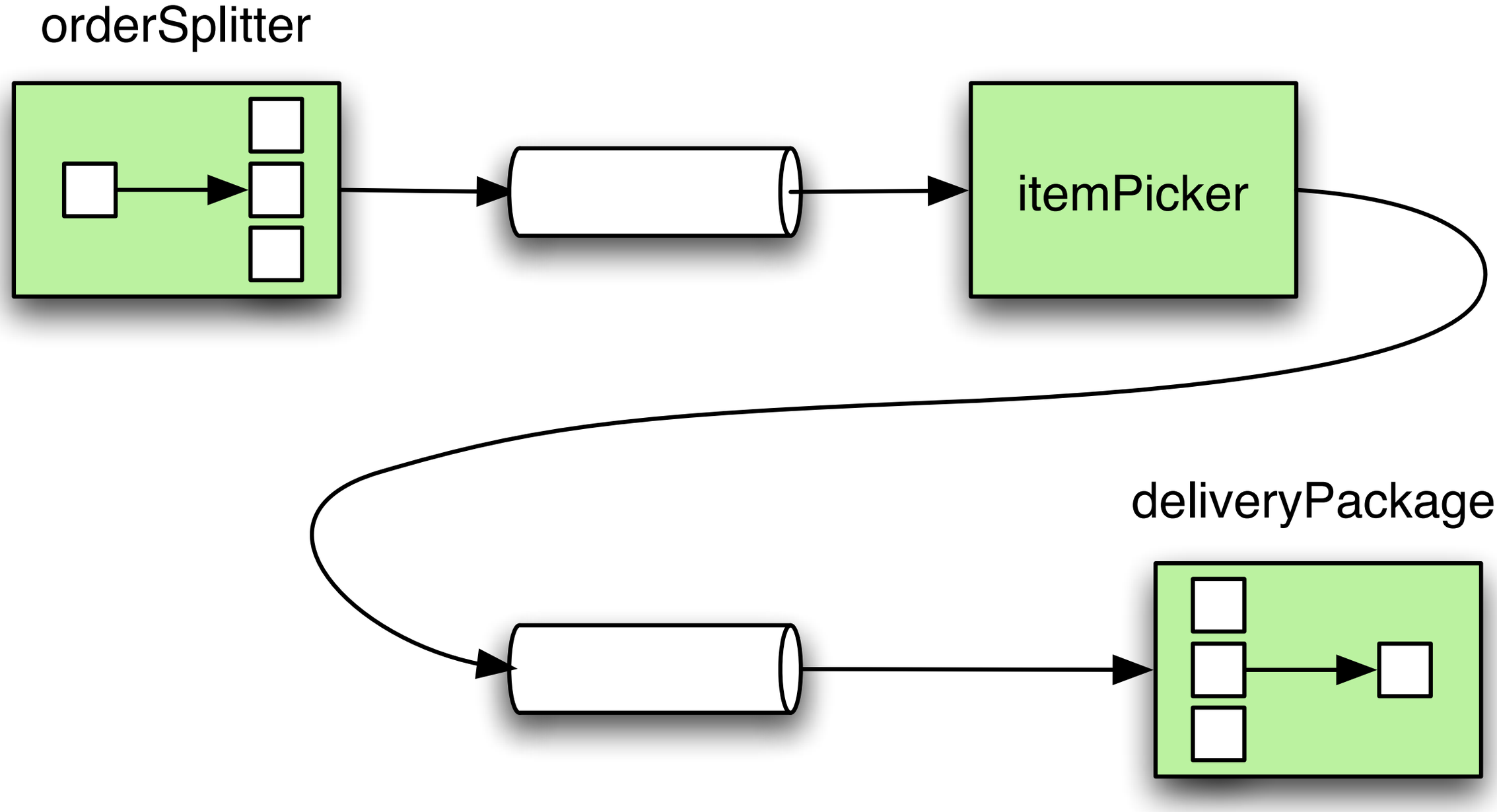
Testing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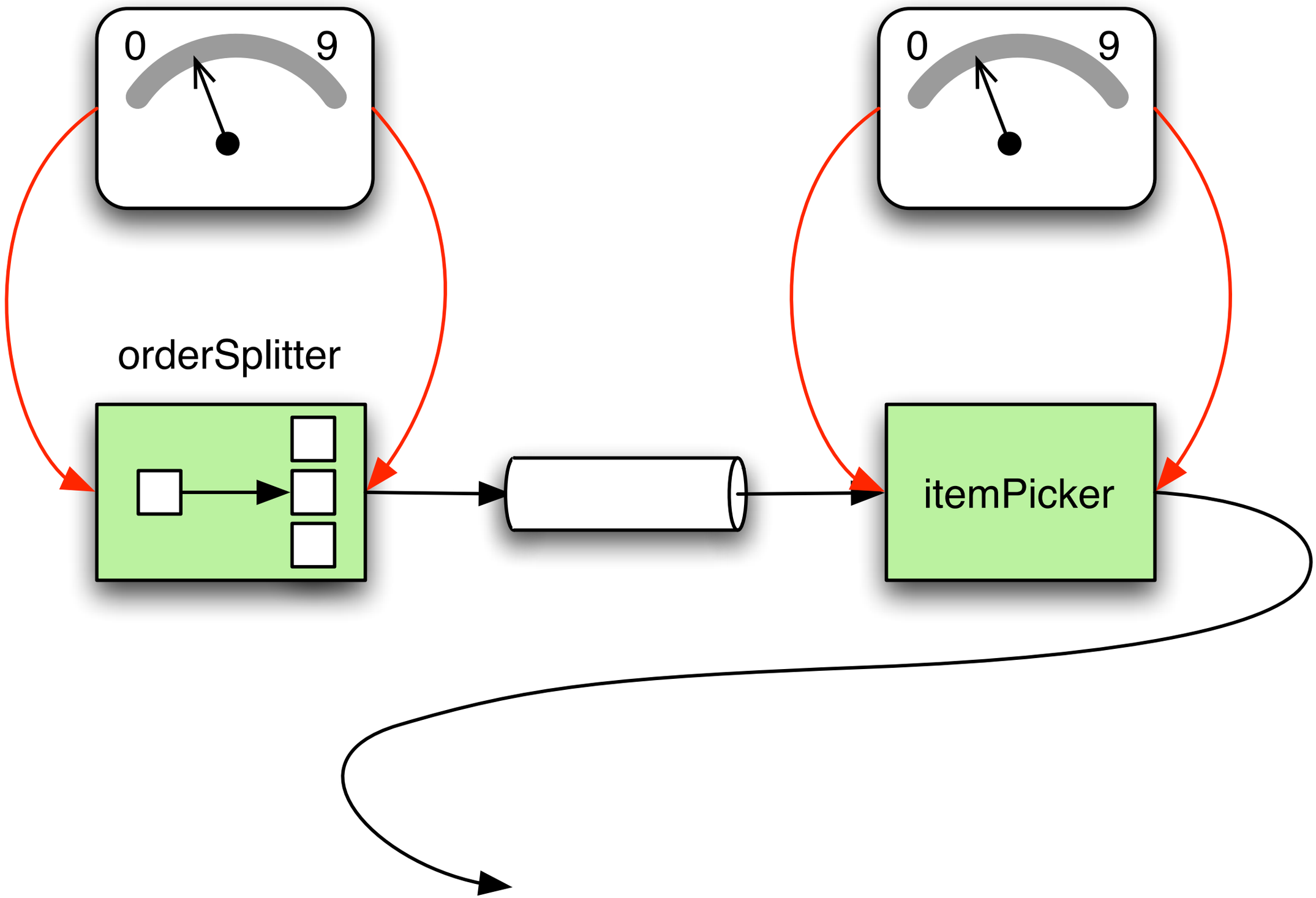
itemPicker
deliveryPackager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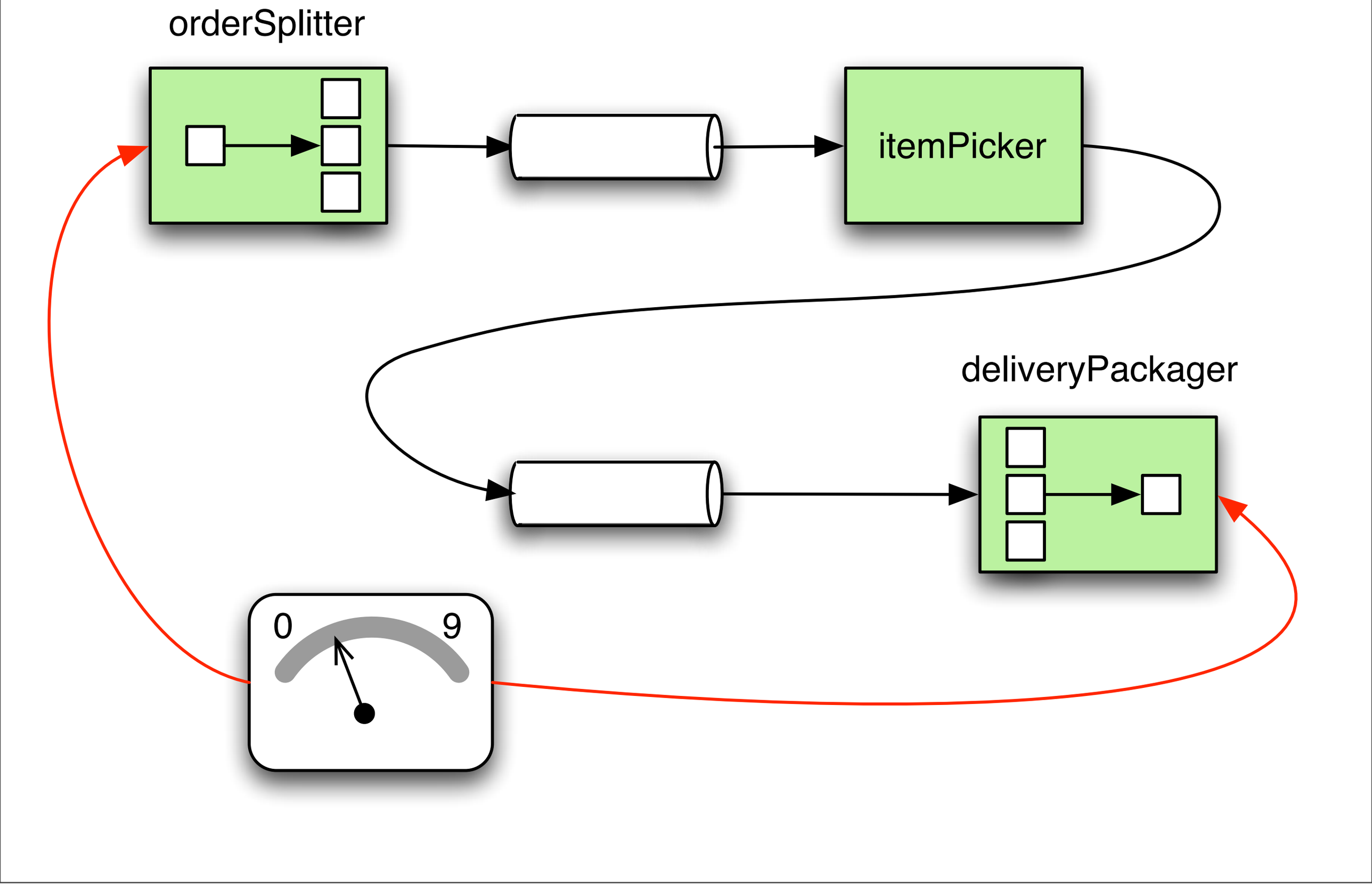
orderSplitter
itemPicker


orderSplitter
itemPicker
deliveryPackager
0
9

Mock Spring bean

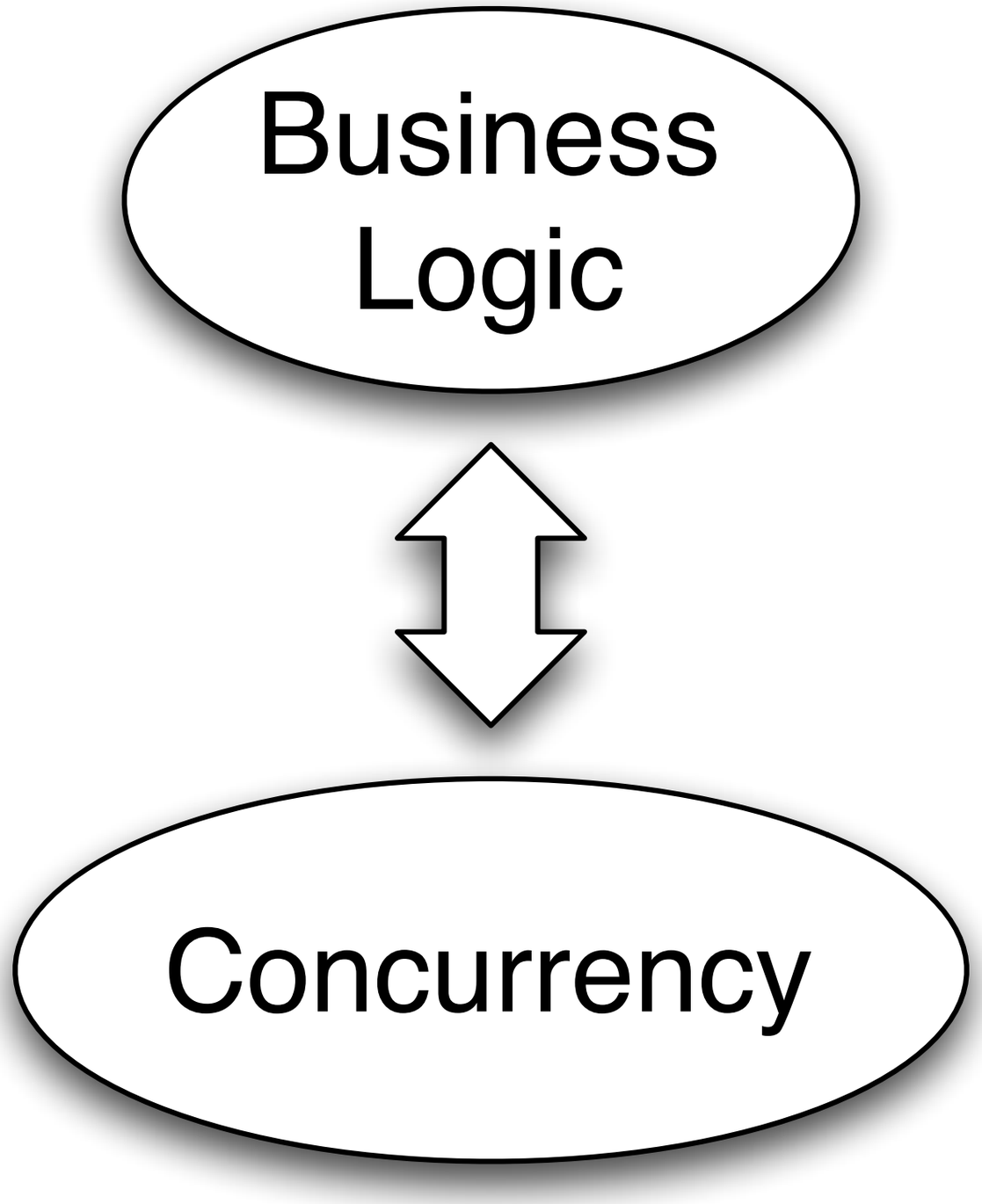
```
<b:bean name="itemReferences" class="org.mockito.Mockito"
        factory-method="mock">
    <b:constructor-arg
        value="org.springframework.integration.core.PollableChannel"/>
</b:bean>
```

```
/*
This is our bypass (a mock that replaced the actual channel)
 */
@Autowired
MessageChannel itemReferences;

@Before
public void trainItemReferences(){
    given(itemReferences.send(isA(Message.class))).willReturn(true);
}
```

Using latches in mocks

http://bit.ly/latch-mock

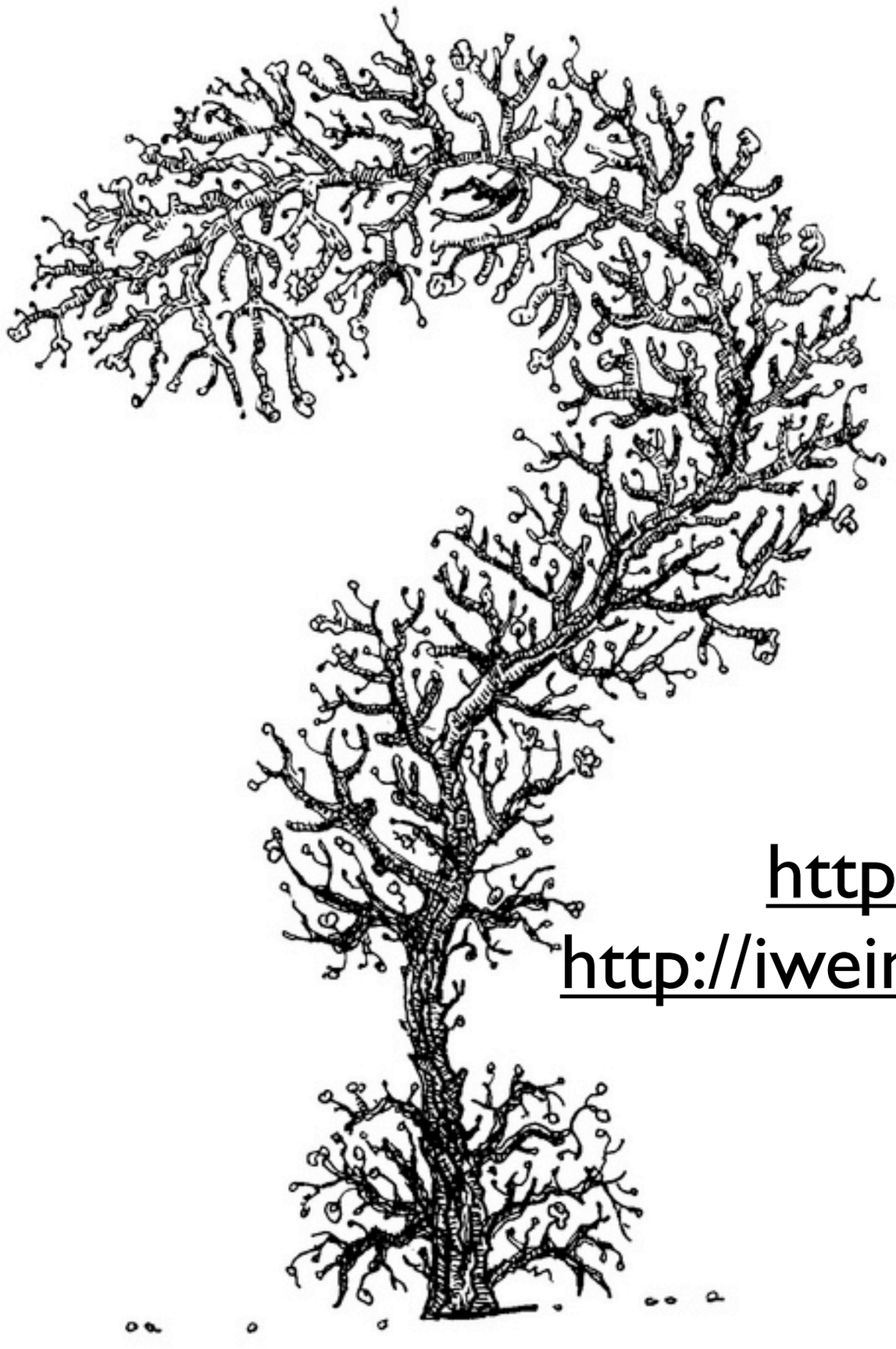

Business
Logic
Concurrency

Tools

- Multithreaded TC
- Byteman
- Awaitility

Summary

- Concurrency is debugger kryptonite
- Logging is the answer
- Simple readable tests with proper frameworks



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