When a Virtual Machine is not Complex Enough

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What is STX:LIBJAVA

A Java implementation for Smalltalk/X

Smalltalk/X

What is Smalltalk/X??

- Fast smalltalk implementation

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What is Smalltalk/X??

- Fast smalltalk implementation
- VM written in C, including JIT
- Support for Ruby, Javascript, XQuery, Pascal

STX:LIBJAVA

Why yet another language?

- different approach

stx:libJava

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- possibility to reuse existing code

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- interop research

STX:LIBJAVA

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and it's fun :)

Hands on - JUnit

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```
public class JUnit4Tests {

    @Test
    public void helloWorld() {
        assertEquals("Is zero equal 5-5 test",0, (5-5));
    }

    @Test
    public void
        assertEq
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    public stati
        System.o
        Result r
        System.o
        System.o
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            Syst
        }
    }

    public stati
        return J
    }
```

Workspace3

File Buffers Edit View Bookmarks Execute Workspace Smalltalk ?

MyWorkspace | Workspace2 | Workspace3

```
1  Java addToClassPath: '/home/m/Projects/libjava/tests/libjava/'.
2  Java classForName: 'stx.libjava.tests/JUnit4Tests'.
3      "--> stx.libjava.tests.JUnit4Tests"
4  (Java classForName: 'stx.libjava.tests/JUnit4Tests')
5      performStatic: #'main([Ljava/lang/String;)V' with: nil.
6      "-->
7  Expected output: 3 run, 1 failed
8  getRunCount() = 3
9  getFailureCount() = 1
10 "
```

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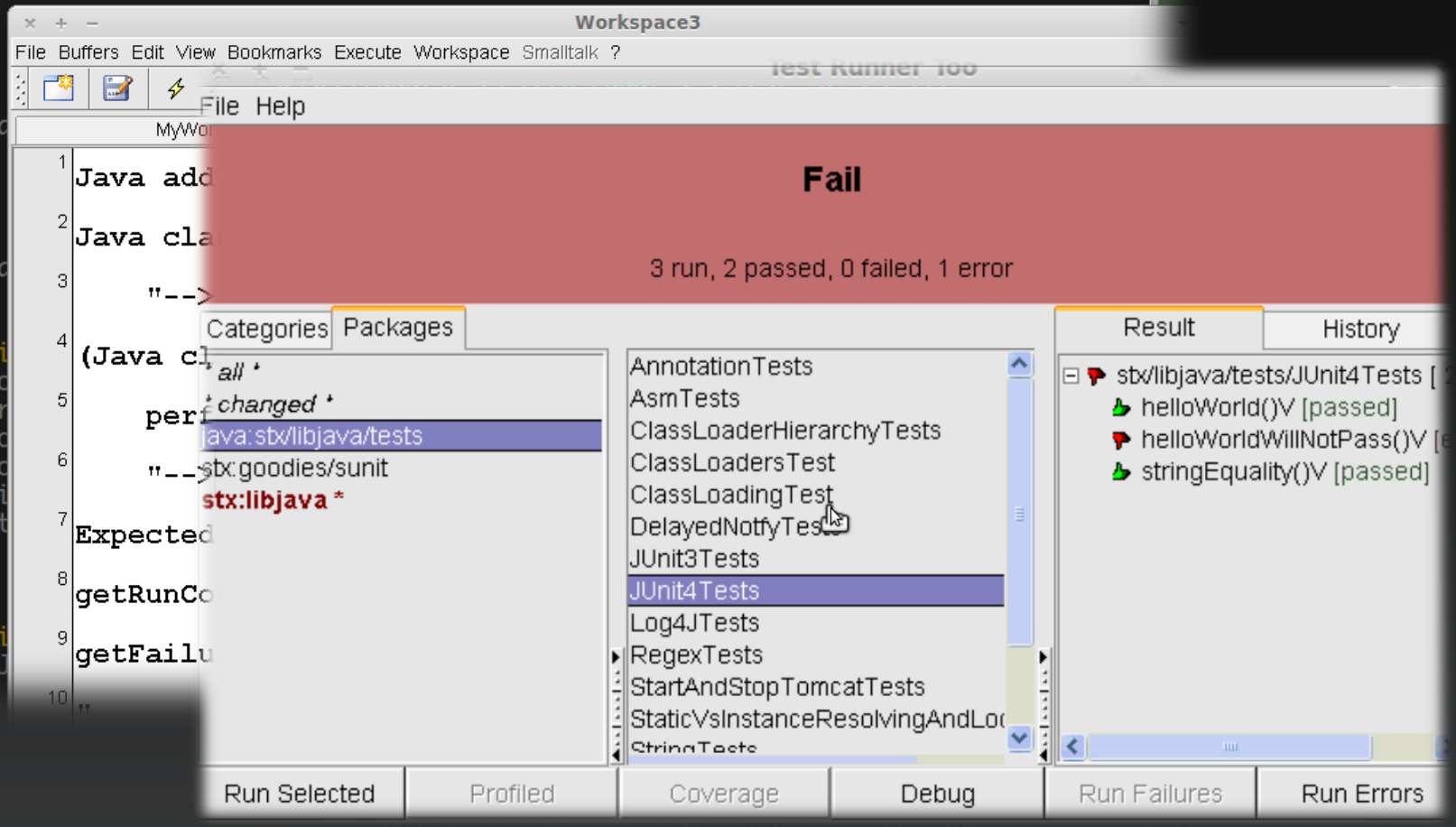

Hands on - JUnit

That's it??

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Not quite yet

How it works?

- loads Java `.class` files

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- executes Java bytecodes (no translation)

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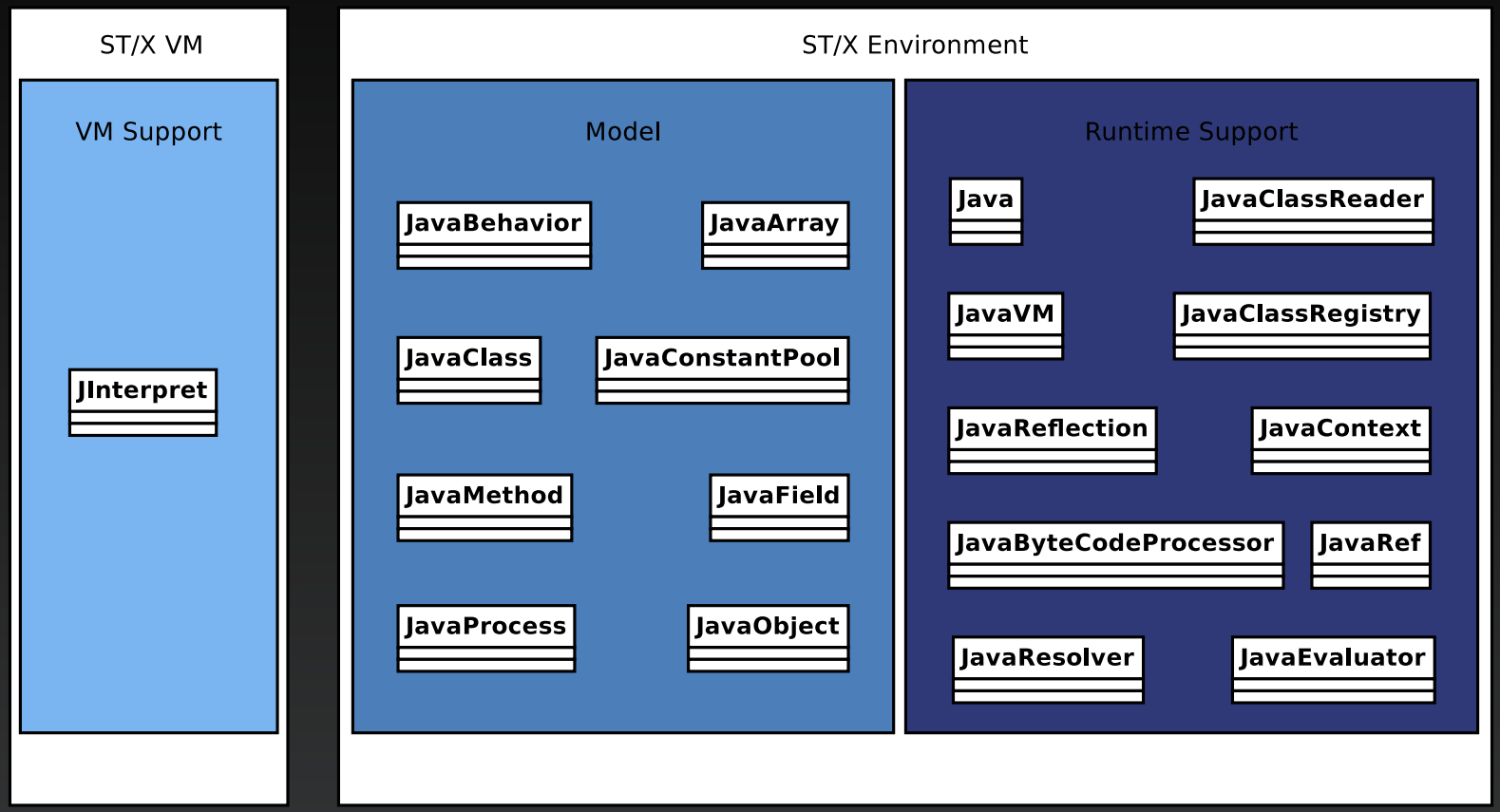
- loads Java `.class` files
- executes Java bytecodes (no translation)
- no difference between Java and Smalltalk objects

High level overview



Hands on - Groovy

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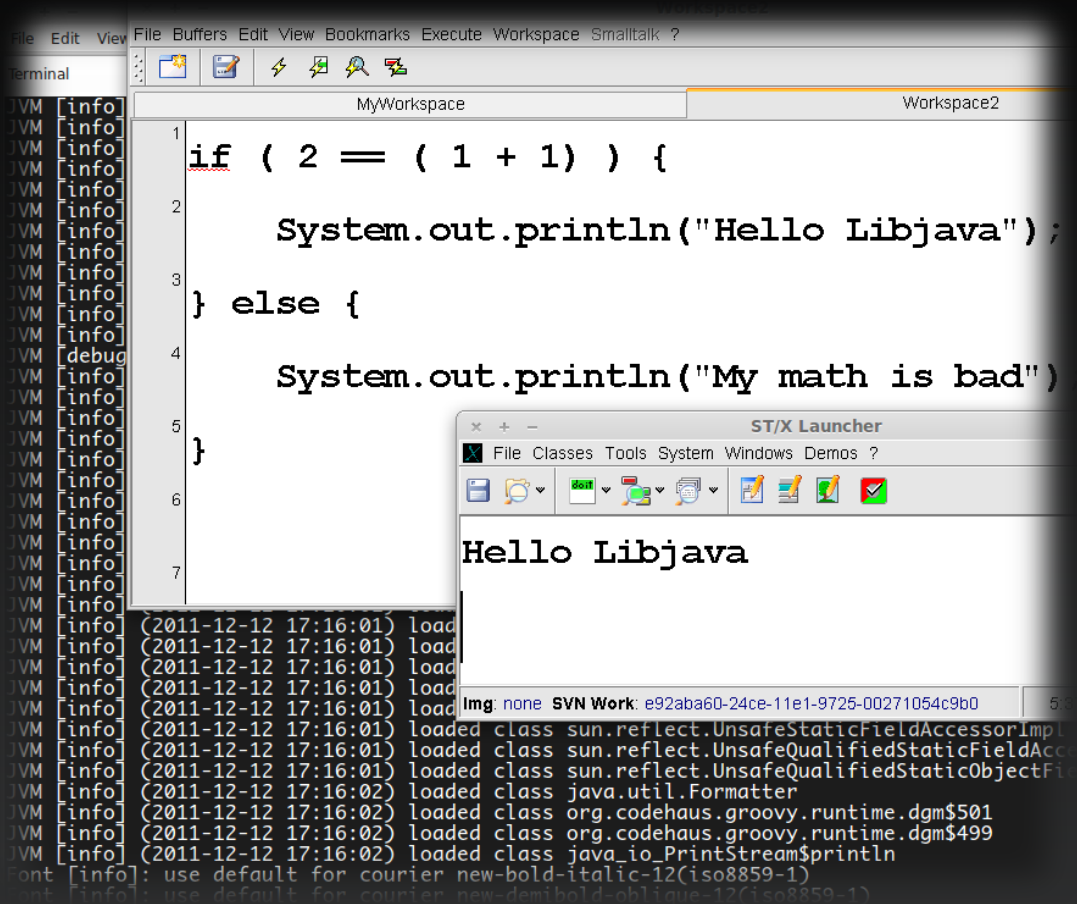
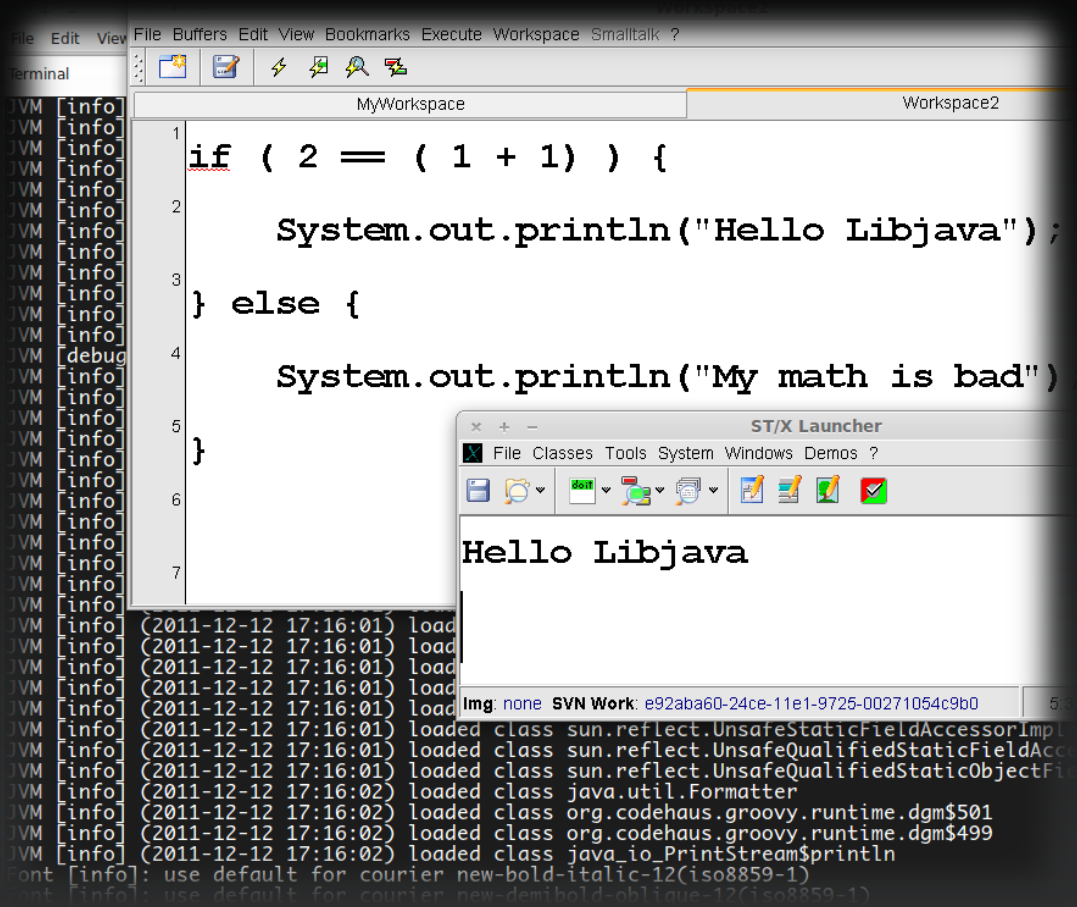


Hands on - Groovy



Ok, better, but still..

Obstacles on the way

- Class Loaders

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- Synchronization

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- Exceptions

Obstacles on the way

- Class Loaders
- Synchronization
- Exceptions
- finally

Hands on - Tomcat

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Bits missing -- future work

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- Integration

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- Incremental compiler

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but mostly

interoperability

Questions

Q & A