

Testing Web Applications

For fat clients, mobile devices and Smart-TVs

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Testing?



-  Evaluating something
-  Based on criteria
-  With an idea of what might happen
-  Using evidence
-  An imperfect art and an imperfect science

Automated testing

Replace People?

-  Using computers
-  Who *may* be testing
-  Rich observation

With Machines?

-  Navigating the user interface
-  Checking what the code knows about

Automated web testing

#1 tool globally



Free OpenSource

Uses Web Browsers



IDE: Record and playback using Firefox Web Browser



WebDriver: Write software to test other software



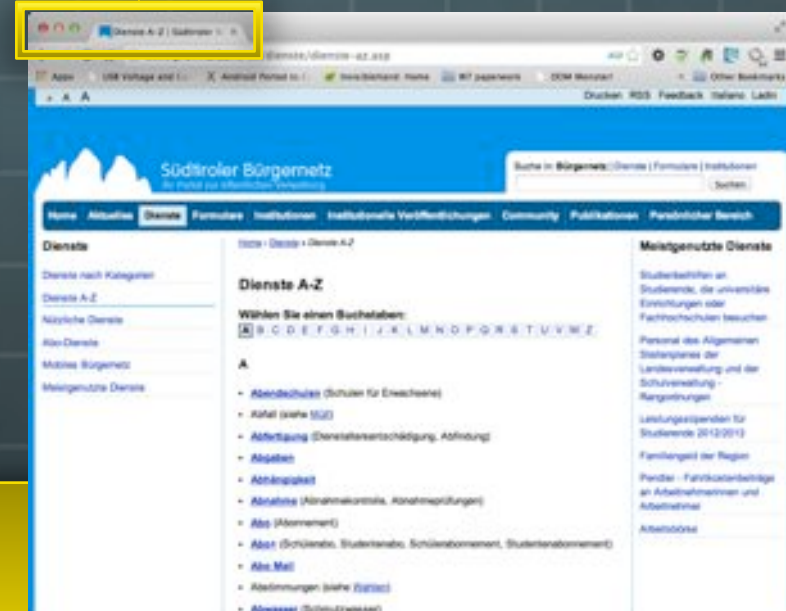
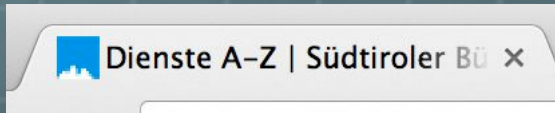
Grid: Run software tests in parallel

<http://docs.seleniumhq.org>

How Selenium WebDriver works

```
String expectedTitle = "Dienste A-Z | Südtiroler Bürgernetz";  
String actualTitle = driver.getTitle();  
Assert.assertEquals(actualTitle, expectedTitle);
```

```
import java.net.MalformedURLException;  
import java.util.concurrent.TimeUnit;  
  
import org.openqa.selenium.*;  
import org.openqa.selenium.android.AndroidDriver;  
import org.openqa.selenium.firefox.FirefoxDriver;  
import org.openqa.selenium.remote.RemoteWebDriver;  
import org.openqa.selenium.remote.UnreachableBrowserException;  
import org.testing.Assert;  
import org.testng.ITestContext;  
import org.testng.annotations.AfterSuite;  
import org.testng.annotations.AfterTest;  
import org.testng.annotations.BeforeSuite;  
import org.testng.annotations.BeforeTest;  
import org.testng.annotations.Test;  
  
public class TMTTest {  
  
    // @Test(description="Launches an EGov webpage")  
  
    public String baseUrl = "http://www.provinz.bz.it/de/dienste/dienste-az.asp";  
    public WebDriver driver;  
  
    @BeforeTest  
    public void init()  
    {  
        while(driver == null)  
        {  
            setDriver();  
        }  
        getBaseUrl();  
    }  
  
    @Test  
    public void verifyAllServices()  
  
        String expectedTitle = "Dienste A-Z | Südtiroler Bürgernetz";  
        String actualTitle = driver.getTitle();  
        Assert.assertEquals(actualTitle, expectedTitle);  
    }  
}
```

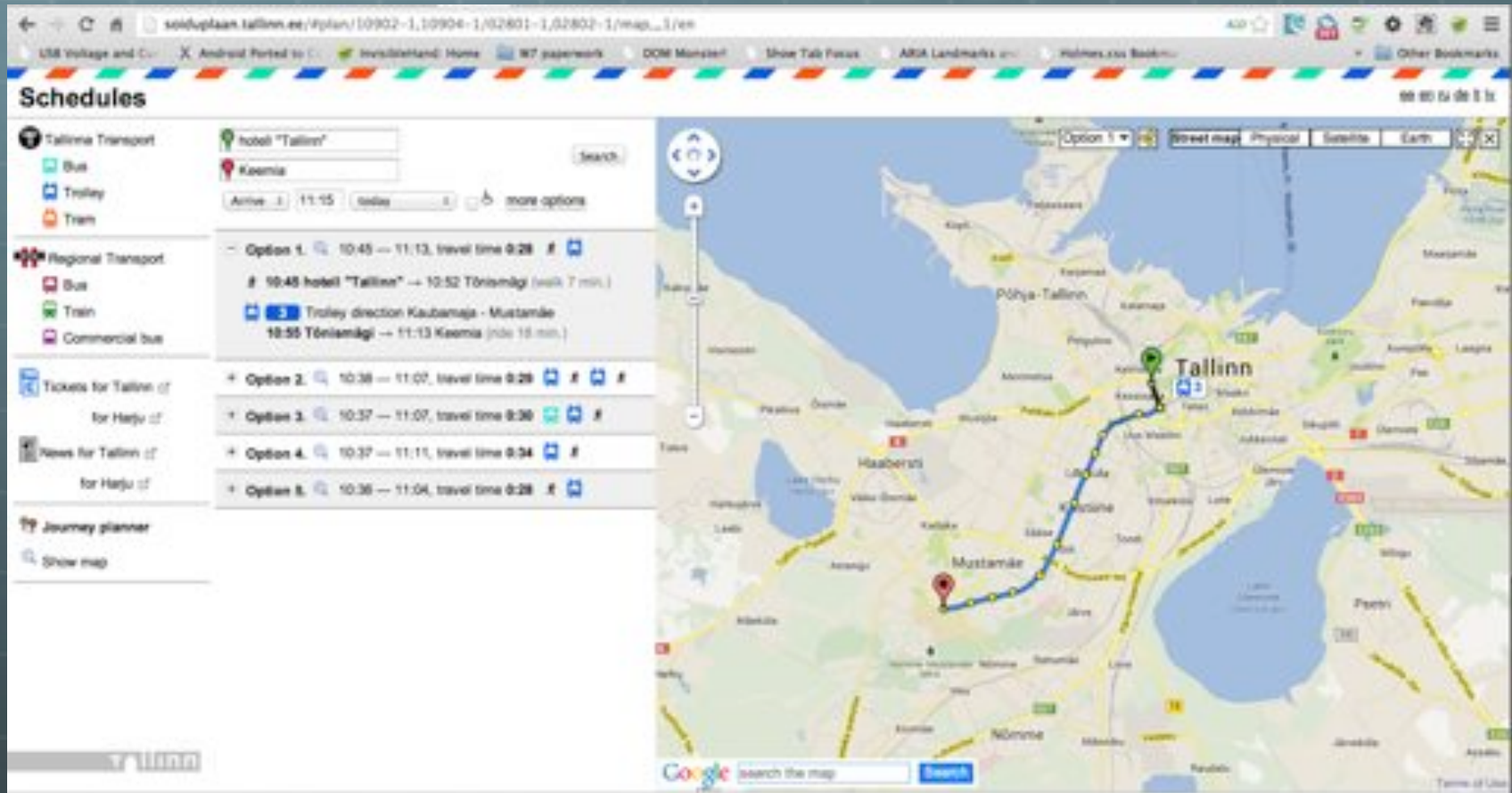


API

API



Challenges: mobile websites

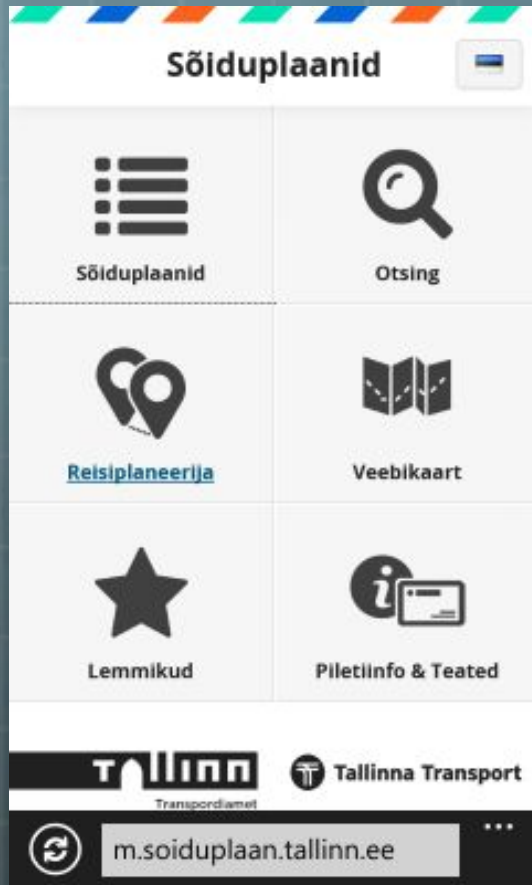


<http://soiduplaan.tallinn.ee/#plan/10902-1,10904-1/02801-1,02802-1/map,,,1/en>



What happens when you visit the URL on a laptop

Equivalence & consistency for mobile web users



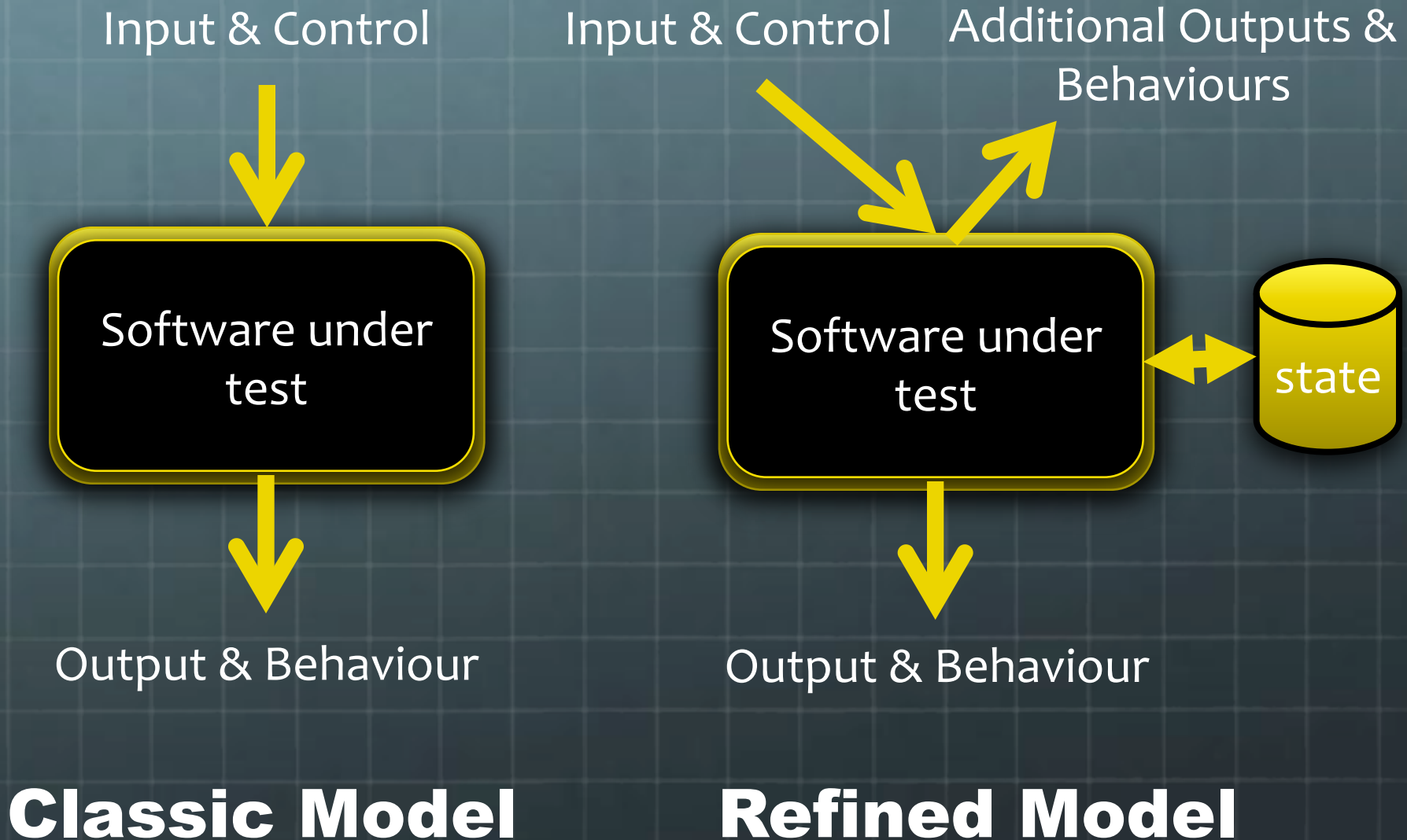
What would a mobile web user like the web site to do?

- Test for equivalent results between Desktop & Mobile Web Site editions
- And seek to provide an enhanced service for mobile web users e.g.
 - Take advantage of location data if available

What happens when you visit the same URL on a Windows Phone 8

<http://soiduplaan.tallinn.ee/#plan/10902-1,10904-1/02801-1,02802-1/map,,,1/en>

Behaviour



testingmachine.eu workshops

Fresh insights into using

 Test Automation

 Analytics

 Webserver Logs

Improve the skills of software developers



testingmachine.eu workshops

Reduce the 'friction' of testing e-government services using automated testing

- 🌐 Better design of functional tests
- 🌐 Using heuristics to find problems
- 🌐 Use Analytics and Web Logs to augment testing
- 🌐 Make automated tests easy to commission & run
- 🌐 Demonstrate working software in public

<https://github.com/julianharty/android-webdriver-vm-demo>

<https://travis-ci.org/julianharty/android-webdriver-vm-demo>



Rethinking e-government services

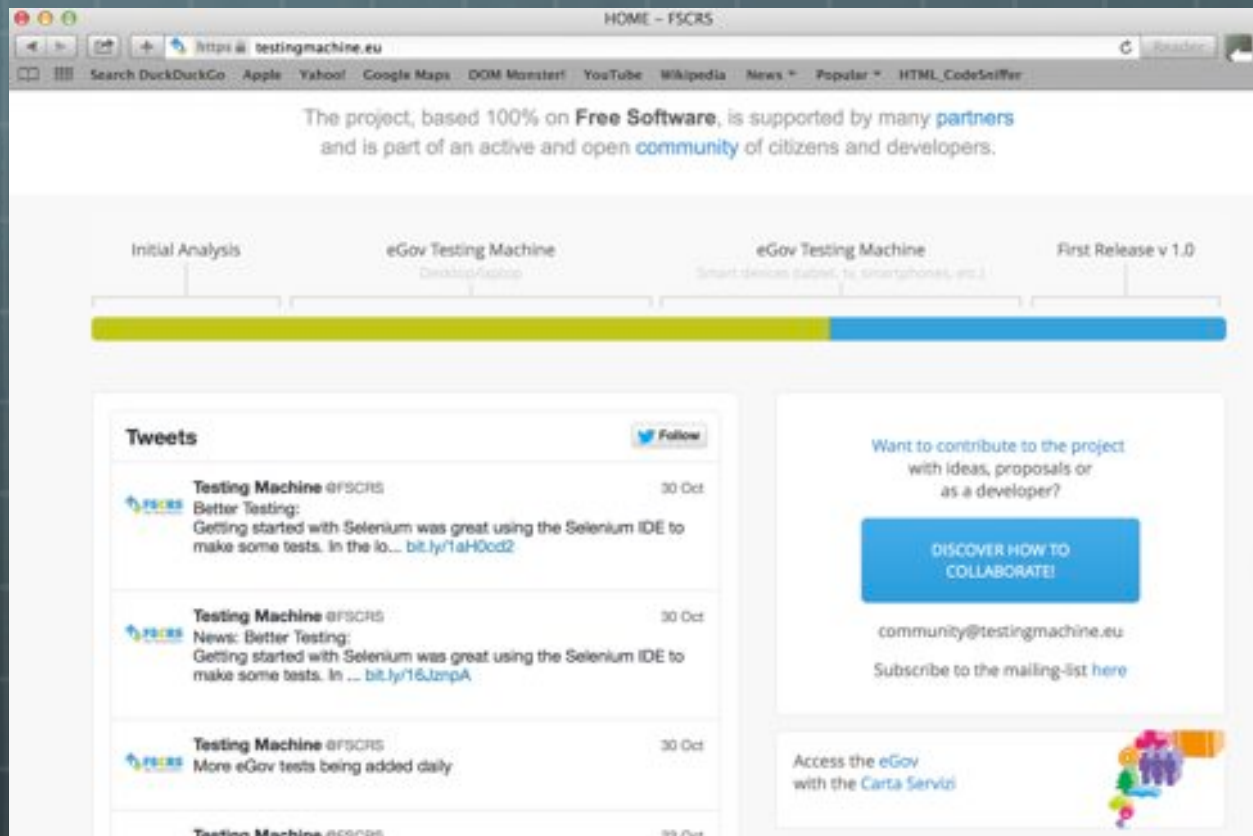
What if

- 🌐 users could 'do', 'undo' & 'redo' each task?
- 🌐 the services are in 'safe-mode' by default?
- 🌐 all authorized users can see the state of their interactions?

We might get happier users *and* much easier testing

Testing machine for you

- 🌐 Simplify your testing
- 🌐 Increase your confidence in your online services



Click
here

Thank you

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