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Appium Meet-Up Singapore

Android, iOS and Web testing in a single framework

About myself

- IT professional for 15+ years
- Recent focus on test automation
- Carousell since 2018
- From Salzburg, Austria

Salzburg

Testautomation tools from Austria

TRICENTIS

Ranorex®

Tech stack for this talk

Se

open source

appium

Java

spring

Maven™

JUnit

Scenario: Multiple platforms

Scenario: Multiple platforms

Just a few examples

There are thousands more!

Scenario: Multiple platforms

Handling tests for different platforms **separately is not the most efficient way**.

- (possibly) different test-cases (while actually testing the same)
- (possibly) different frameworks
- (possibly) different integration into the build pipeline
- ...

How can we be more efficient?

What can be reused across platforms?

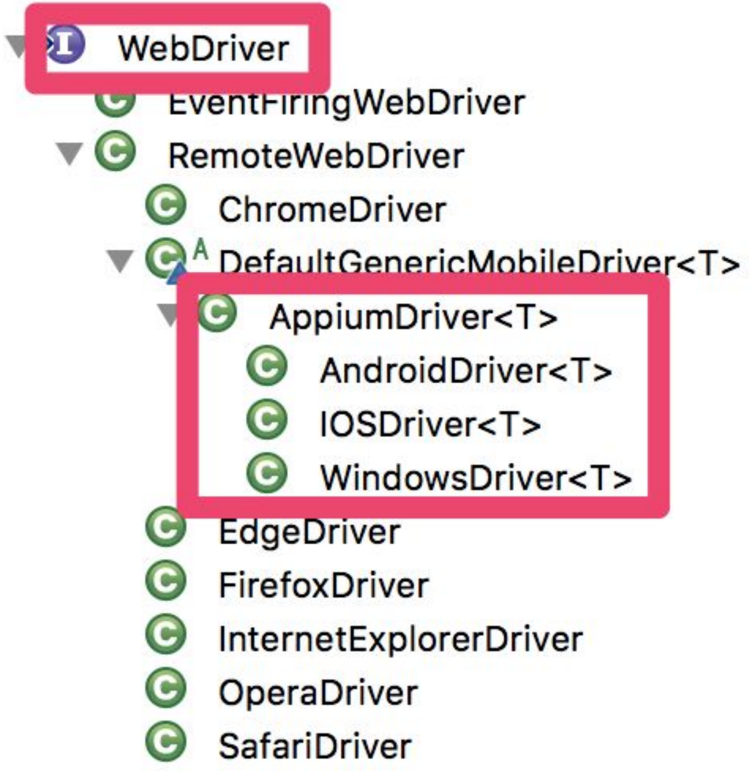
Selenium

```
WebDriver driver = new FirefoxDriver();
driver.get("http://www.google.com");

WebElement element = driver.findElement(By.name("q"));
element.sendKeys("Appium Meet-up");
element.submit();
...
```

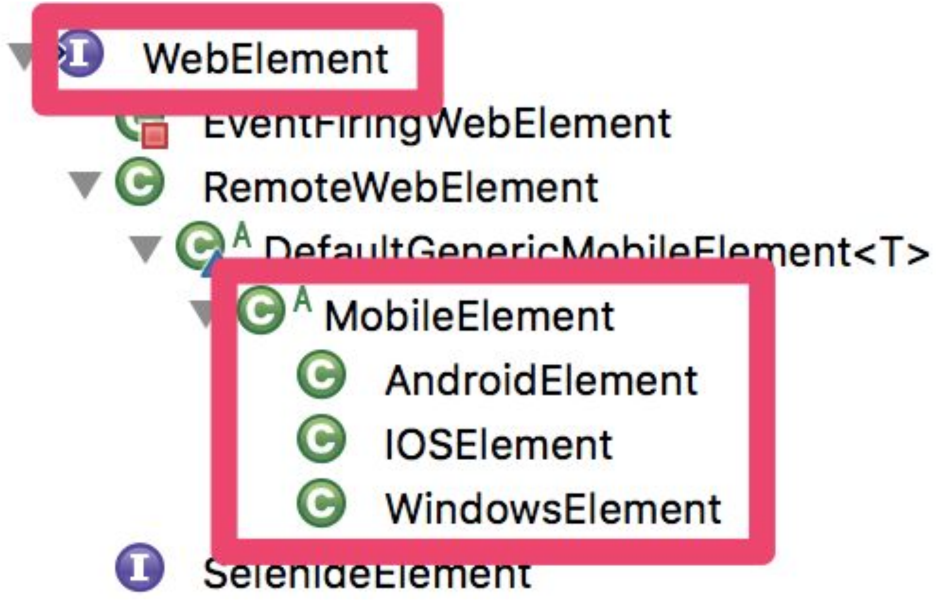
Appium

```
AppiumDriver driver = new AppiumDriver(new
URL("http://127.0.0.1:4723/wd/hub"), capabilities);

IOSElement element = driver.findElement(By.name("search"));
element.sendKeys("Appium Meet-up");
element.submit();
...
```

Appium and Selenium



WebDriver
EventFiringWebDriver
RemoteWebDriver
ChromeDriver
DefaultGenericMobileDriver<T>
AppiumDriver<T>
AndroidDriver<T>
IOSDriver<T>
WindowsDriver<T>
EdgeDriver
FirefoxDriver
InternetExplorerDriver
OperaDriver
SafariDriver



WebElement
EventFiringWebElement
RemoteWebElement
DefaultGenericMobileElement<T>
MobileElement
AndroidElement
IOSElement
WindowsElement
SelenideElement

Feature files

```
@web
Scenario Outline: Filter by tags
    Given I am on the homepage
    When I go to the tags page
    And I filter for "<tag>"
    And I select the tag "<tag>"
    And I select the first question
    Then the question is tagged with "<tag>"
    Examples:
        | tag |
        | selenium |
        | appium |
```

Step definitions

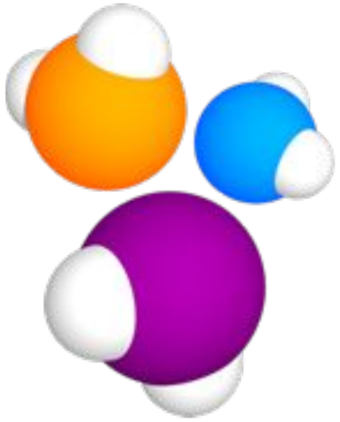
```java
public class HomeSteps extends BaseSteps {
    private HomePage home;

    @Given("^I am on the homepage$")
    public void homepage() {
        home.load();
    }

    @When("I search for \"([^\"]*)\"")
    public void search(String query) {
        home.search(query);
    }
```

PageObjects

```
@Component
@Profile(Platform.WEB)
public class HomePage extends BasePage {
    private QuestionsPage questions;
    private TagsPage tags;

    public QuestionsPage search(String query) {
        $("SEARCH_FIELD").sendKeys(query);
        $("SEARCH_BUTTON").should(appear).click();
        return questions;
    }
```

Syntactic sugar with Selenide

```java
import static com.codeborne.selenide.Selenide.*;
import static com.codeborne.selenide.Condition.*;
@Test
public void userCanLoginByUsername() {
  open("/login");
  $(By.name("user.name")).setValue("johny");
  $("#submit").click();
  $(".loading_progress").should(disappear);
  $("#username").shouldHave(text("Hello, Johny!"));
}
```



http://selenide.org/documentation/selenide-vs-selenium.html

Fluent assertions with AssertJ

```
import static org.assertj.core.api.Assertions.*;

assertThat(frodo.getName()).isEqualTo("Frodo");

assertThat(frodo.getName()).startsWith("Fro")
                           .endsWith("do")
                           .isEqualToIgnoringCase("frodo");

assertThat(fellowshipOfTheRing).hasSize(9)
                               .contains(frodo, sam)
                               .doesNotContain(sauron);

assertThat(frodo.getAge()).as("check %s's age", frodo.getName()).isEqualTo(33);
```

http://joel-costigliola.github.io/assertj

Autowiring page objects with Spring

```
@Component
@Profile(Platform.WEB)
public class HomePage extends BasePage {
    private QuestionsPage questions;
    private TagsPage tags;
    public QuestionsPage search(String query) {
        $("SEARCH_FIELD").sendKeys(query);
        $("SEARCH_BUTTON").should(appear).click();
        return questions;
    }
}
```

Autowiring page objects with Spring contd.

```
public class HomeSteps extends BaseSteps {
    private HomePage home;


    @When("I search for \"([^\"]*)\"")
    public void search(String query) {
        home.search(query);
    }
```

That’s it! No constructor calls! Just declare and use!

Scenario: Multiple platforms

What can be reused across platforms?

- test cases = feature files
- steps
- page objects

probably up to 80-90%

probably ~50%, can also make use of inheritance

What will usually be different?

- UI identifiers

Platform specific page objects

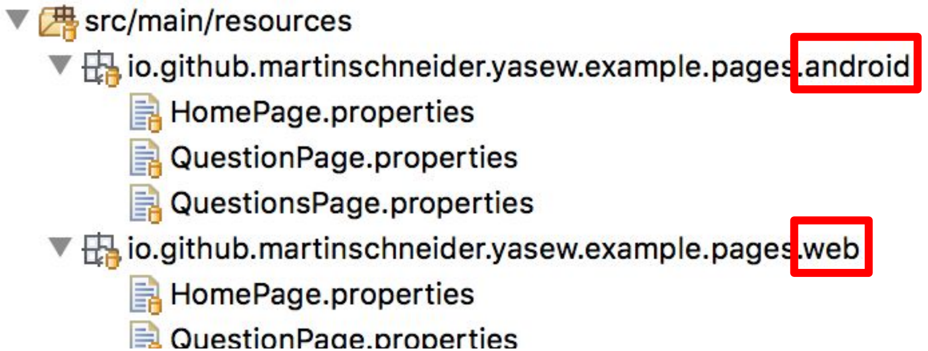
Spring profiles for the rescue!

```
@Component
@Profile({ Platform.WEB, Platform.ANDROID })
public class TagsPage extends BasePage
```

```
# GENERAL settings
platform=web
```

Platform specific page objects

Identifying UI elements



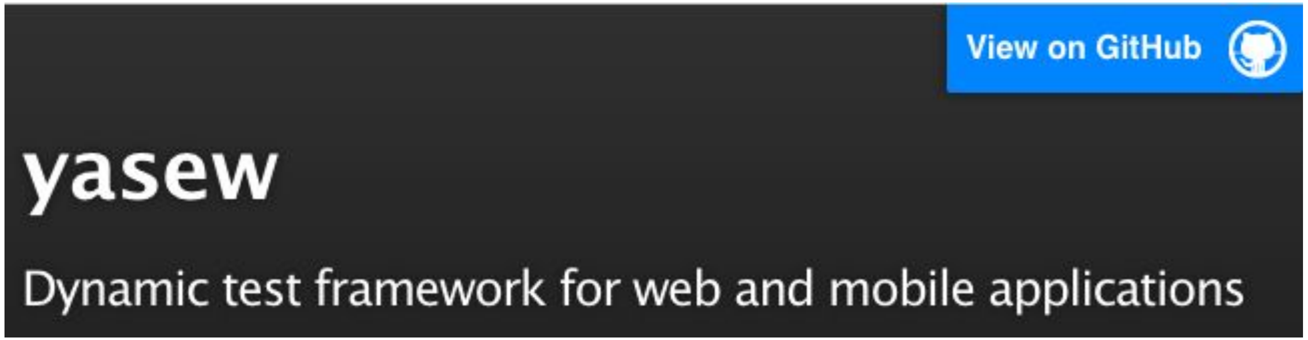
```
src/main/resources
  io.github.martinschneider.yasew.example.pages.android
    HomePage.properties
    QuestionPage.properties
    QuestionsPage.properties
  io.github.martinschneider.yasew.example.pages.web
    HomePage.properties
    QuestionPage.properties
```

```
SEARCH_FIELD=ID|com.stackexchange.stackoverflow:id/search_src_text
ITEM_SCORE=ID|com.stackexchange.stackoverflow:id/question_list_item_score
TOOLBAR=ID_com.stackexchange.stackoverflow:id/toolbar
```

```
$("SEARCH_FIELD").sendKeys(query);
$("SEARCH_BUTTON").should(appear).click();
```

Try it yourself!

https://martinschneider.github.io/yasew/



View on GitHub

yasew

Dynamic test framework for web and mobile applications

YASeW in action!

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Questions

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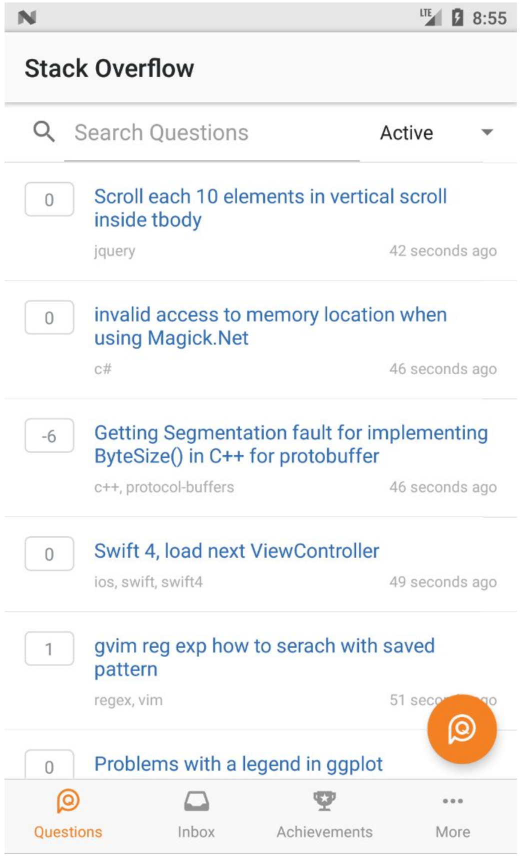
Appium Meet-Up Singapore

Visual and layout testing with Appium

Detecting images


8:55

Stack Overflow

Search Questions Active

0 Scroll each 10 elements in vertical scroll inside tbody
jquery 42 seconds ago

0 invalid access to memory location when using Magick.Net
c# 46 seconds ago

-6 Getting Segmentation fault for implementing ByteSize() in C++ for protobuffer
c++, protocol-buffers 46 seconds ago

0 Swift 4, load next ViewController
ios, swift, swift4 49 seconds ago

1 gvim reg exp how to serach with saved pattern
regex, vim 51 seco...go

0 Problems with a legend in ggplot

find( )

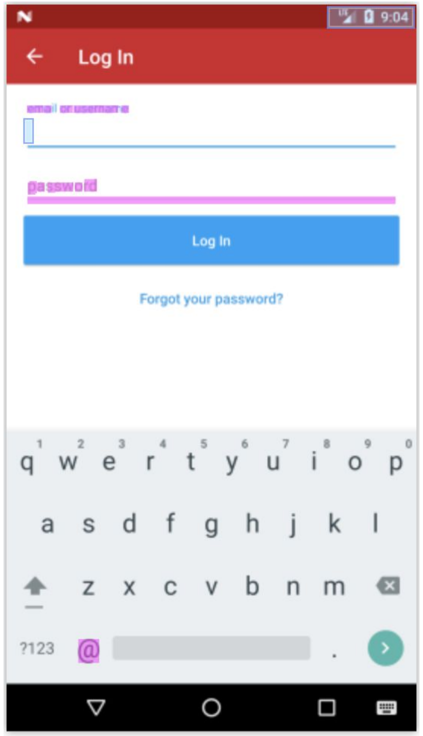
Sometimes we don’t want to care about

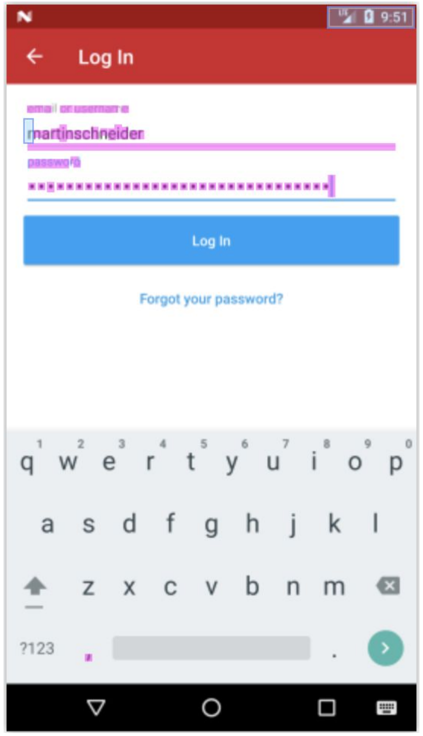
- locators (CSS, XPath etc.)
- image size
- image location
- pixel perfect matching

Demo Appium + OpenCV

Visual regression testing

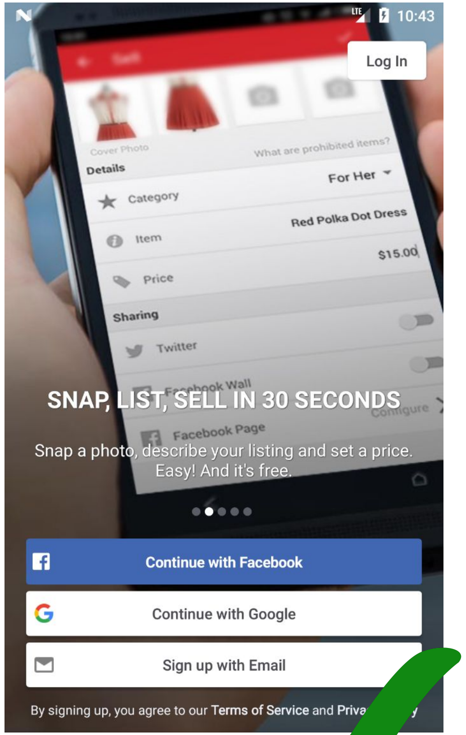
baseline vs. checkpoint





Demo Appium + Applitools

Challenges and limitations



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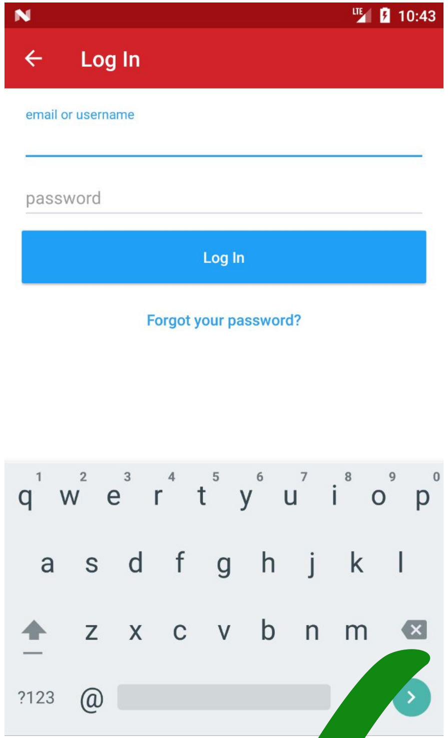
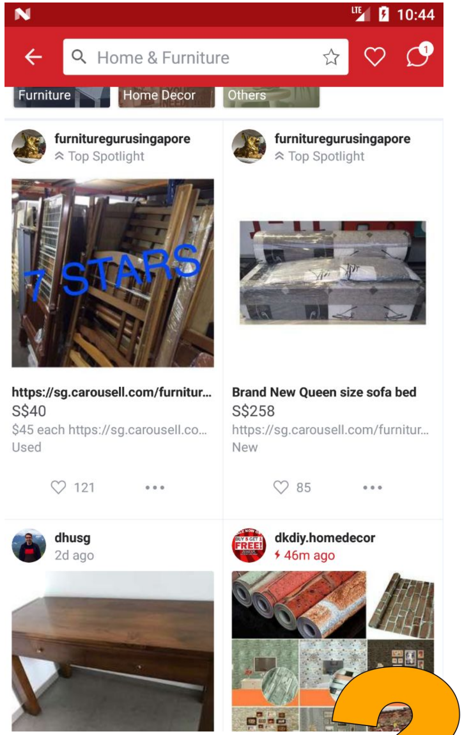
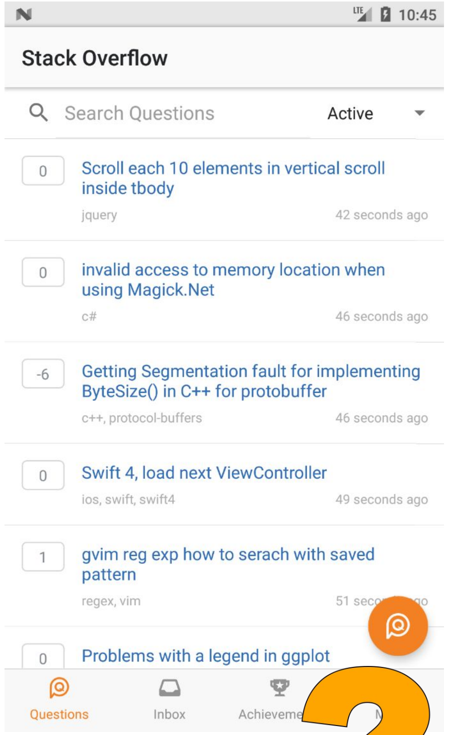
By signing up, you agree to our Terms of Service and Priva





https://sg.carousell.com/furnitur...
S$40
$45 each https://sg.carousell.co...
Used

Brand New Queen size sofa bed
S$258
https://sg.carousell.com/furnitur...
New



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regex, vim 51 seconds ago

0 Problems with a legend in ggplot

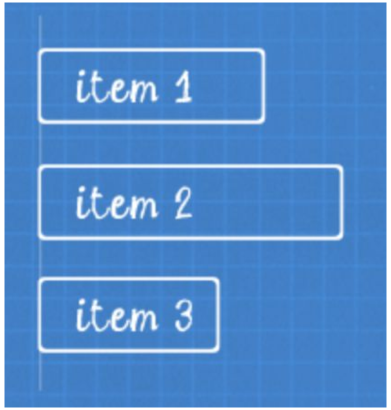
✓ ✓ ? ?

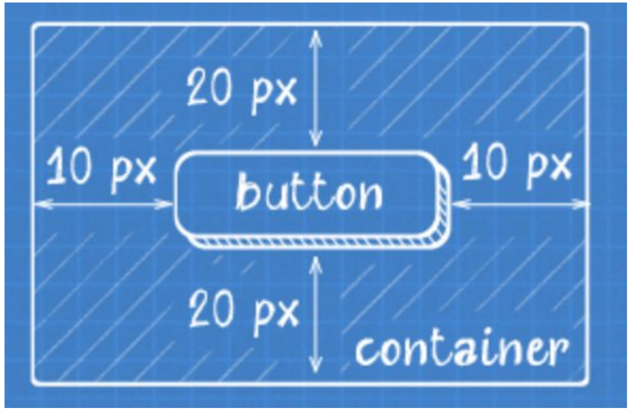
Layout-based testing

Maybe consider a different approach...

Layout-based testing

- http://galenframework.com





Demo Appium + Galen

Get connected!

Singapore Appium Meet-up Slack Channel

https://singaporeappiummeetup-slack.herokuapp.com

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Thank you!