



Visual Regression Tracker

Getting started

SDET Java/JS

Visual Regression Tracker creator

Twitter: @pashidlos

Twitter: @VisualReTracker

Telegram: visual_tracker



Agenda

- Introduction
- How to set up
- How to integrate
- Demo
- Future plans
- How to contribute
- Questions

Introduction



Your Logo
a new experience

Search

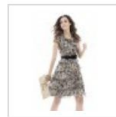
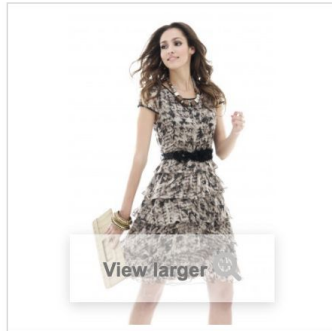


Cart (empty)

WOMEN

DRESSES

T-SHIRTS



Dress

Model demo_4

Condition New

Printed evening dress with straight sleeves with black thin waist belt and ruffled linings.



Tweet



Share



Google+



Pinterest



Send to a friend



Print

61,19 ₺

Quantity

1

-

+

Size

S

Color



Add to cart



Add to wishlist











Test everything...

1. Navigate to ...
2. Check everything is correctly displayed
3. Do action ...
4. Check everything is correctly displayed
5. Do action ...
6. Check everything is correctly displayed
7. ...

Staging

Production

SALE 70% OFF ALL PRODUCTS

GET SAVINGS NOW

SALE 70% OFF ALL PRODUCTS

GET SAVINGS NOW

Call us now:

Contact us

English

Currency : UAH

Sign in

Call us now: 0123-456-789

Contact us

English

Currency : UAH

Sign in

Your Logo
a new experience

Search



Cart (empty)

Your Logo
a new experience

Search



Cart (empty)

WOMEN

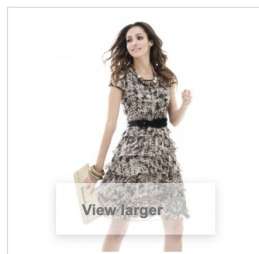
DRESSES

T-SHIRTS

WOMEN

DRESSES

T-SHIRTS



View larger



Dress

Model demo_4

Condition New

Printed evening dress with sleeves with black thin waist belt and ruffled linings.

Tweet

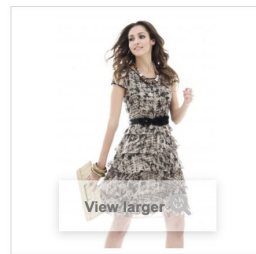
Share

Google+

Pinter

Send to a friend

Print



View larger



Dress

Model demo_4

Condition New

Printed evening dress with straight sleeves with black thin waist belt and ruffled linings.

Tweet

Share

Google+

Pinterest

Send to a friend

Print

61,19 €

Quantity

1



Size

S



Color



Add to cart



Add to wishlist

Production



SALE 70% OFF ALL PRODUCTS [GET SAVINGS NOW](#)

Call us now **0123-456-789** [Contact us](#) [English](#) [Currency : UAH](#) [Sign in](#)

Your Logo
a new experience



Cart (empty)

Staging



SALE 70% OFF ALL PRODUCTS [GET SAVINGS NOW](#)

Call us now [Contact us](#) [English](#) [Currency : UAH](#) [Sign in](#)

Your Logo
a new experience



Cart (empty)



DEBUGGING CSS

A white ceramic mug with a black interior and a black rim. The mug has a handle on the left side. Printed on the front of the mug is the text "CSS IS AWESOME" in a bold, black, sans-serif font. The text is arranged in three lines: "CSS" on the top line, "IS" on the middle line, and "AWESOME" on the bottom line. A thin black rectangular border encloses the text, with the bottom-right corner of the border extending slightly below the word "AWESOME".

CSS
IS
AWESOME

AUTOMATION



INNOVATION



PROCESS



TECHNOLOGY



SYSTEM



PRODUCTIVITY



CONTROL



INTEGRATION

THE LIFE OF A SOFTWARE
ENGINEER.

CLEAN SLATE. SOLID
FOUNDATIONS. THIS TIME
I WILL BUILD THINGS THE
RIGHT WAY.



MUCH LATER...

OH MY. I'VE
DONE IT AGAIN,
HAVEN'T I ?



Introduction

1. Navigate to ...

Introduction

1. Navigate to ...
 - a. Find element
 - b. Element has text
 - c. Element has class

Introduction

1. Navigate to ...
 - a. Find element
 - b. Element has text
 - c. Element has class
2. Open product page

Introduction

1. Navigate to ...
 - a. Find element
 - b. Element has text
 - c. Element has class
2. Open product page
 - a. Check name
 - b. Check description
 - c. Check price
 - d. Check size
 - e.

View larger 

 Blouse



Blouse

Model demo_2

Condition New

Short sleeved blouse with feminine draped sleeve detail.

 Tweet

 Share

 Google+

 Pinterest

 **Send to a friend**

 **Print**

32,40 €

Quantity

1

-

+

Size

S

Color



Add to cart



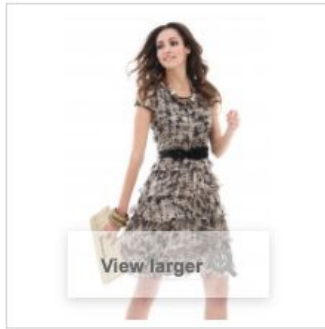
Add to wishlist

PayPal

VISA

MasterCard





Printed Dress

Model demo_4

Condition New

Printed evening dress with straight sleeves



Tweet



Share



Google+



Pinterest



Send to a friend



Print

\$50.99

Quantity

1

-

+

Size

S

Color



Add to cart



Add to wishlist

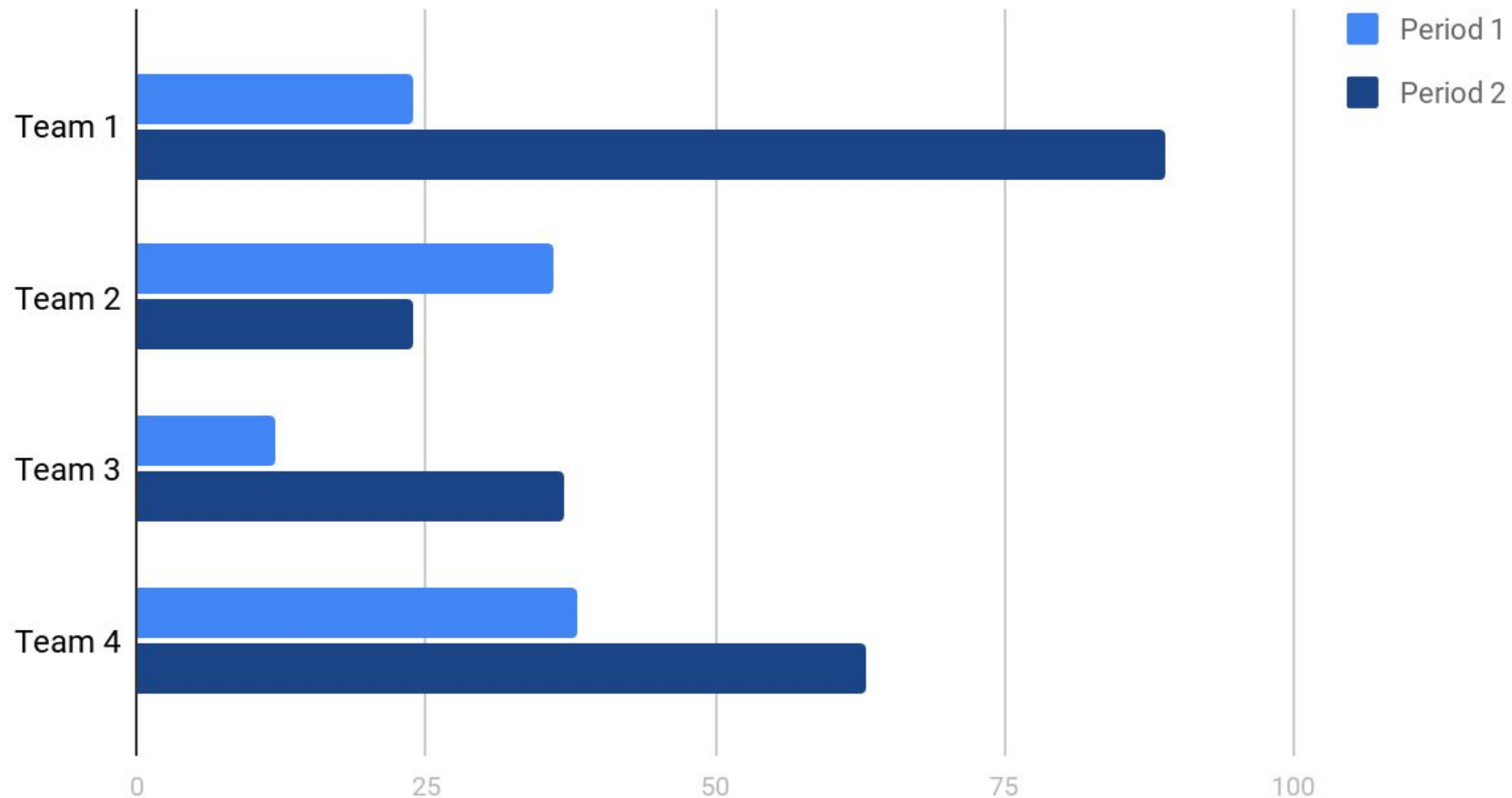


MORE INFO

Fashion has been creating well-designed collections since 2010. The brand offers feminine designs delivering stylish separates and statement

REVIEWS

Points scored





Introduction



Introduction

What to check:

- Responsive design

Introduction

What to check:

- Responsive design
- Cross-browser rendering

Introduction

What to check:

- Responsive design
- Cross-browser rendering
- Whole page or separate elements

Introduction

What to check:

- Responsive design
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- Whole page or separate elements

What to catch:

- Visual regressions

Introduction

What to check:

- Responsive design
- Cross-browser rendering
- Whole page or separate elements

What to catch:

- Visual regressions
- Functional regressions???

Curated list of visual regression testing resources



<https://project-awesome.org/mojoaxel/awesome-regression-testing>

Library vs SaaS

	Library	SaaS
Language	specific	agnostic
Automation tool	specific	agnostic
Images store	VCS	cloud
Price	free	paid (except OSS)

Client vs Server side screenshot

	Client	Server
Sent to SaaS	image	HTML + CSS
App type	any	web
Test to browser relation	One to one	One to many

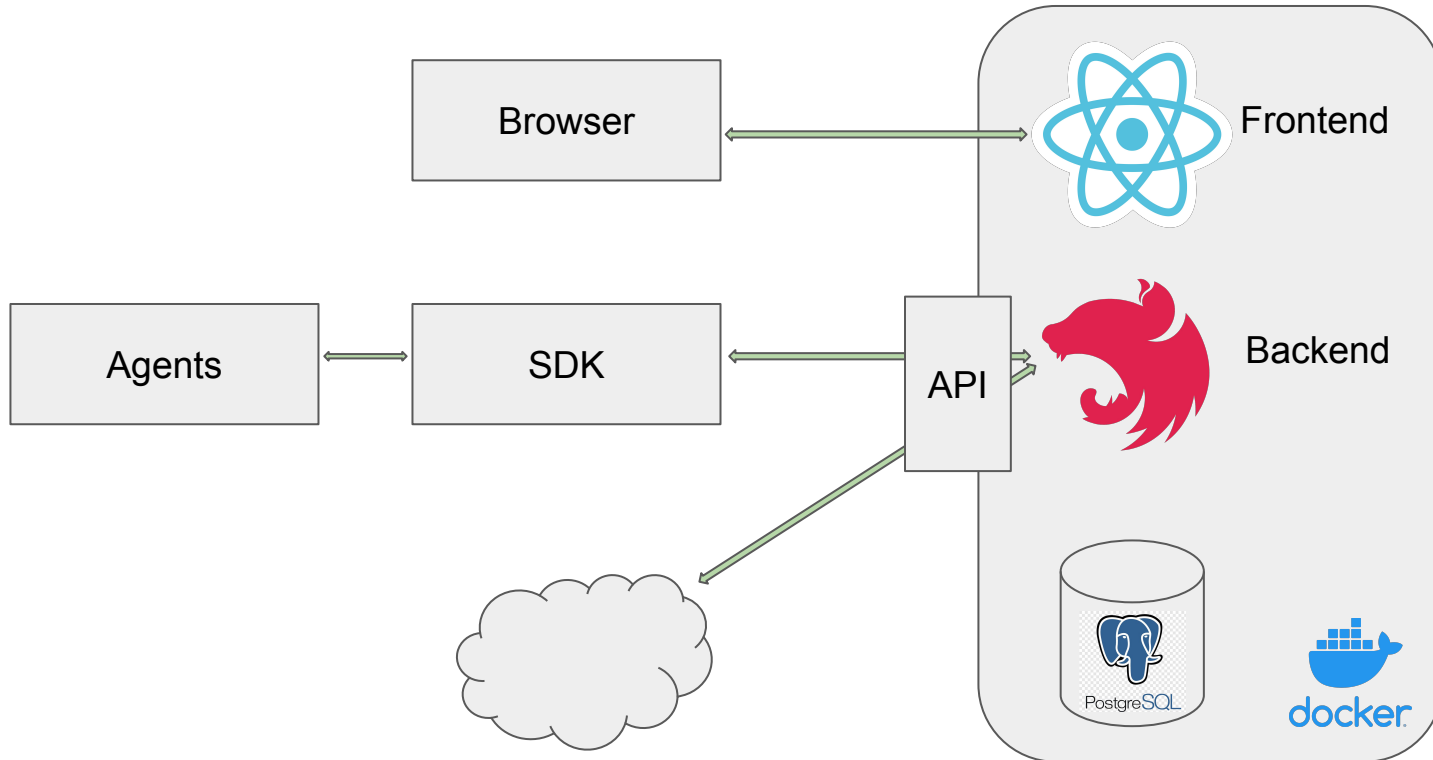


Visual Regression Tracker



<https://github.com/Visual-Regression-Tracker/Visual-Regression-Tracker>

Visual Regression Tracker



Set up

1. Install [Docker](#)
2. Copy [docker-compose.yml](#)

```
$ curl  
https://raw.githubusercontent.com/Visual-Regression-Tracker/Visual-Regression-Tracker/master/docker  
-compose.yml -o docker-compose.yml
```

3. Copy [.env](#)

```
$ curl  
https://raw.githubusercontent.com/Visual-Regression-Tracker/Visual-Regression-Tracker/master/.env  
-o .env
```

4. Create folder for images imageUploads

```
$ mkdir imageUploads
```

5. Start service

```
$ docker-compose up
```


Set up on Remote server via SSH



<https://www.youtube.com/watch?v=cPsHeKnqL2M>

```
migration_1 | Migration Database actions Status
migration_1 |
migration_1 | 20200503001556-init 5 CreateTable statements. Done 🚀
migration_1 | 20200524162125-baseline-history 1 CreateTable statements. Done 🚀
migration_1 | 20200526195312-approved-test-status-added statements. Done 🚀
migration_1 | 20200627134248-comment-added statements. Done 🚀
migration_1 |
migration_1 | You can get the detailed db changes with prisma migrate up --experimental --verb
migration_1 | ose
migration_1 | Or read about them in the ./migrations/MIGRATION_ID/README.md
migration_1 | 🚀 Done with 4 migrations in 920ms.
migration_1 | Seeding data...
api_1 | [Nest] 17 - 07/01/2020, 1:12:40 PM [NestApplication] Nest application successfully started +391ms
migration_1 | Seeding default data...
migration_1 | []
migration_1 | []
migration_1 | #####
migration_1 | ## CREATING DEFAULT PROJECT ##
migration_1 | #####
migration_1 | Project name Default project
migration_1 | Project key: cac055d4-b700-4d52-847e-17f376fa578a
migration_1 | #####
migration_1 | ## CREATING DEFAULT USER ##
migration_1 | #####
migration_1 | The user with the email "visual-regression-tracker@example.com" and password "123456" was created
migration_1 | The Api key is: 3F1KTG91NAM2B9NM7HHHP492PQJ
demo_migration_1 |
ui_1 | 172.20.0.1 -- [01/Jul/2020:13:13:11 +0000] "GET / HTTP/1.1" 200 2425 "-" "Mozilla/5.0 (Macintosh; Intel Mac OS X 10_15_5) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/83.0.4103.116 Safari/537.36" "-"
ui_1 | 172.20.0.1 -- [01/Jul/2020:13:13:11 +0000] "GET /static/css/main.91f847c9.chunk.css HTTP/1.1" 304 0 "http://localhost:8080/" "Mozilla/5.0 (Macintosh; Intel Mac OS X 10_15_5) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/83.0.4103.116 Safari/537.36" "-"
```

Integration

1. Agent

- Playwright
- Cypress
- CodeceptJS
- WebDriverIO (in progress)

Integration

1. Agent

- Playwright
- Cypress
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2. SDK

- JavaScript
- Java
- Python

Integration

1. Agent

- Playwright
- Cypress
- CodeceptJS
- WebDriverIO (in progress)

2. SDK

- JavaScript
- Java
- Python

3. API

Integration



[examples-js](#)



[examples-java](#)



[examples-python](#)


```
18 public class SelenideExample {
19     VisualRegressionTrackerConfig config = new VisualRegressionTrackerConfig(
20         apiUrl: "http://localhost:4200",
21         project: "Default project",
22         apiKey: "CPKVK4JNK24NVNPNQVFQ853HXXEG",
23         branchName "master",
24         enableSoftAssert true
25     );
26     VisualRegressionTracker visualRegressionTracker = new VisualRegressionTracker(config);
27
28     @BeforeSuite
29     public void setUp() throws IOException {
30         visualRegressionTracker.start();
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```
44 @Test
45 ▶ public void testExample() throws IOException {
46     Selenide.open( relativeOrAbsoluteUrl: "/" );
47
48     vrt.track( name: "Home page", screenshot() );
49
50     $( cssSelector: ".product-container" ).click();
51
52     vrt.track( name: "Product page", screenshot() );
53 }
54
55 private String screenshot() {
56     return ((TakesScreenshot) WebDriverRunner.getWebDriver()).getScreenshotAs( OutputType.BASE64 );
57 }
58 }
```



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57 }
58 }
```



Project: Demo ▾

RESET

#2

14/10/2020, 18:06:30

master

passed

#1

14/10/2020, 18:05:43

master

failed

Name	OS	Device	Browser	Viewport	Status	
	All ▾	All ▾	All ▾	All ▾	All ▾	
Name	OS	Device	Browser	Viewport	Status	
Home page					approved	⋮
Product page	macOS Catalina	Macbook Pro	Chrome	1240x1024	approved	⋮

Diff: % Diff tolerance: 0% Status: new

BASELINE HISTORY



Ignore areas

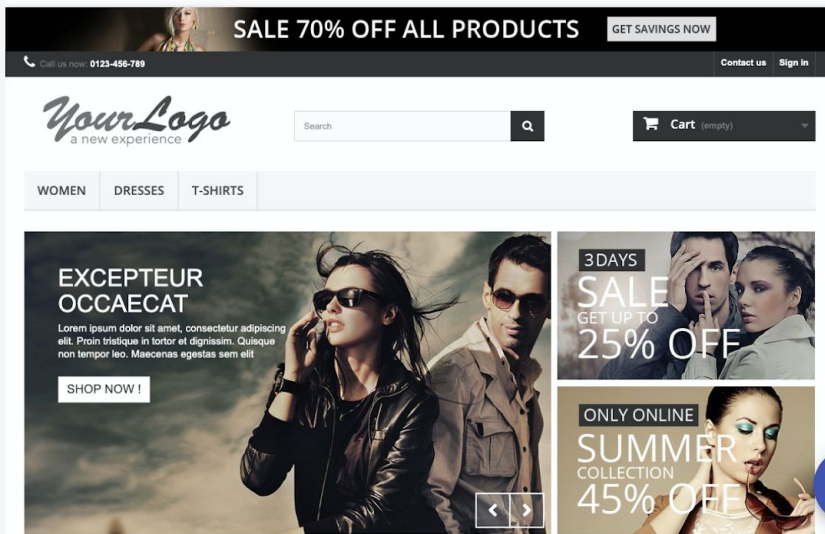


No image available

Image

Real size: 1240 x 945

master





OS: macOS Catalina Device: Macbook Pro Browser: Chrome Viewport: 1240x1024 Diff: % Diff tolerance: 0% Status: new

[BASELINE HISTORY](#)



Ignore areas



No image available

Image

Real size: 1240 x 945

master

The screenshot shows an e-commerce website with a black header banner that reads "SALE 70% OFF ALL PRODUCTS" and "GET SAVINGS NOW". Below the banner is a navigation bar with "Your Logo a new experience", a search bar, and a "Cart (empty)" button. The main content area features a category menu with "WOMEN", "DRESSES", and "T-SHIRTS". Under "T-SHIRTS", there is a sub-menu for "Faded Short Sleeve T-shirts". The product listing includes a photo of a woman wearing a red t-shirt and denim shorts, a price tag of "\$16.51", and a "Quantity" selector set to "1". Social sharing options for "Tweet", "Share", "Google+", and "Pinterest" are visible, along with "Send to a friend" and "Print" buttons. A blue "Add to cart" button is at the bottom right of the product listing.



Project: Demo ▾


Select branch ▾

MERGE

Name OS Device Browser Viewport Branch


All All All All All All

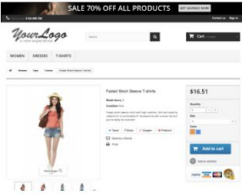
RESET



Home page

master

HISTORY 




Product page

OS: macOS Catalina Device: Macbook Pro

Browser: Chrome Viewport: 1240x1024

master

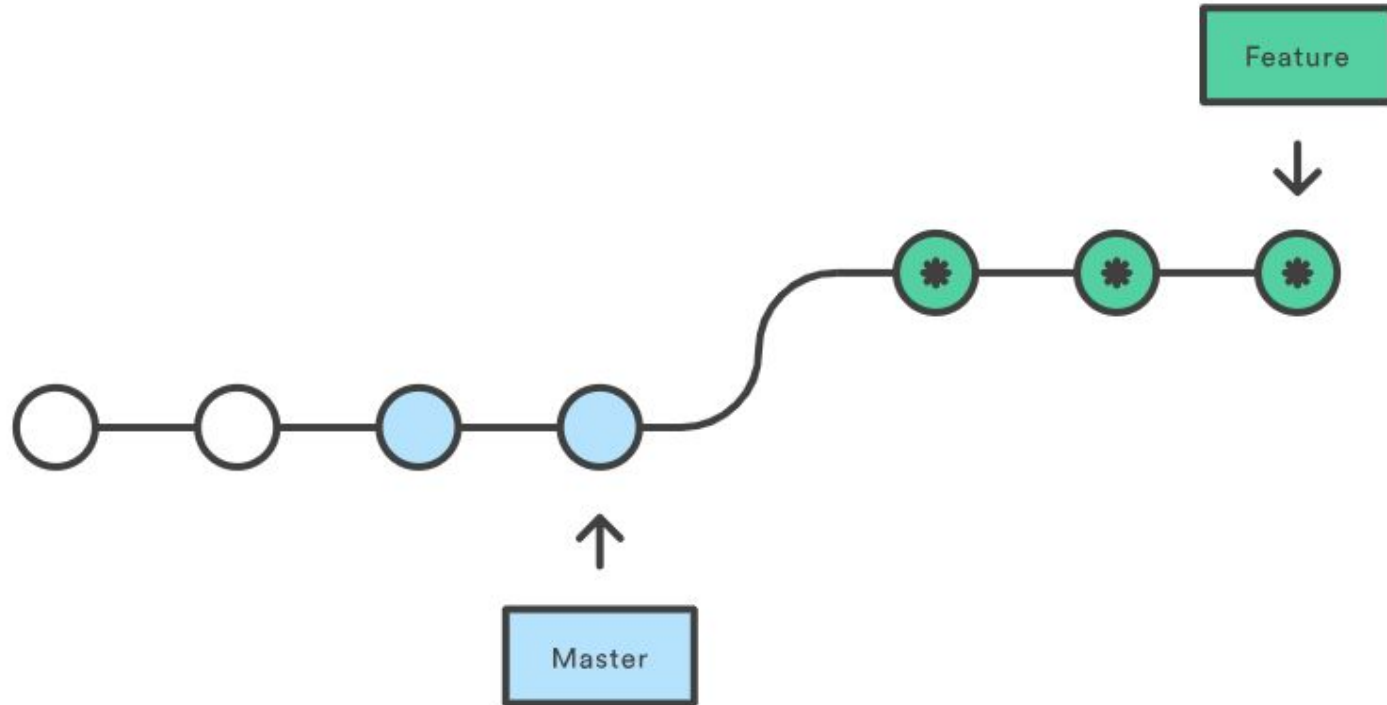
HISTORY 



53
54
55
56
57
58
59
60
61
62
63
64

```
vrt.track(  
    name: "Product page",  
    screenshot(),  
    TestRunOptions.builder()  
        .device("Macbook Pro")  
        .os("macOS Catalina")  
        .browser("Chrome")  
        .viewport("1240x1024")  
        .diffTolerancePercent(1.0f)  
        .build()  
);  
}
```

Baseline branching



Baseline (master)

\$50.99

Quantity

1

Size

S

Color

TICKET-123

\$50.99

Quantity

1

Size

S

Color

Baseline (master)

\$50.99

Quantity

1

Size

S

Color

Diff

\$50.99

Quantity

1

Size

S

Color

TICKET-123

\$50.99

Quantity

1

Size

S

Color

Baseline (master)

\$50.99

Quantity

1

Size

S

Color

Baseline(TICKET-123)

\$50.99

Quantity

1

Size

S

Color

TICKET-123

\$50.99

Quantity

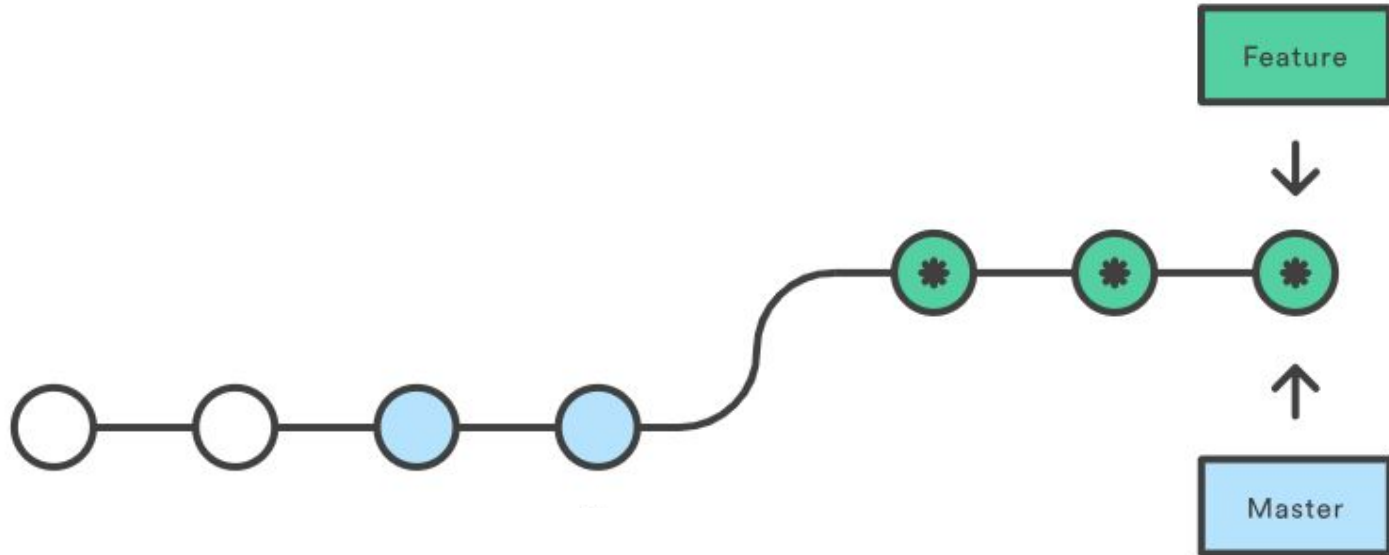
1

Size

S

Color

Baseline branching



Baseline (master)

\$50.99

Quantity

1

Size

S

Color

Diff

\$50.99

Quantity

1

Size

S

Color

master + TICKET-123

\$50.99

Quantity

1

Size

S

Color

Baseline (master)

\$50.99

Quantity

1

Size

S

Color

Add to cart

Add to wishlist

master

\$50.99

Quantity

1

Size

S

Color

Add to cart

Add to wishlist

Tips for stability

- Freeze animation

Tips for stability

- Freeze animation

- Mock dynamic data

Tips for stability

- Freeze animation
- Mock dynamic data
- Take screenshots in docker environment

Tips for stability

- Freeze animation
- Mock dynamic data
- Take screenshots in docker environment
- Do retry

Tips for stability

The slide features a white background with a decorative border of small orange 'x' marks. At the top, there is a solid black horizontal bar. The main content is arranged as follows:

- HEISENBUG** (with 'HEISEN' in black and 'BUG' in orange) and **2018 Moscow** in black text.
- A small orange plus sign (+) to the left of the event title.
- Антон Усманский** (Anton Usmanov) in black text, with **Яндекс** (Yandex) in orange text below it.
- A portrait of a man with a beard and a camouflage jacket on a grey background.
- An orange trapezoidal shape at the bottom left containing the text: **Особенности визуального тестирования интерфейсов** (Features of visual interface testing).
- At the bottom, there is another solid black horizontal bar and a decorative border of small orange 'x' marks and plus signs (+).

Future plans

- UX/UI improvements

Future plans

- UX/UI improvements
- Custom image comparison algorithm

Custom image comparison algorithms



HEISENBUG
2019 MOSCOW

Adam Carmi
Applitools

AI and Testing: Tips from
the trenches



Future plans

- UX/UI improvements
- Custom image comparison algorithm
- Your suggestions!

Features

- Automation framework independent

Features

- Automation framework independent
- Platform independent

Features

- Automation framework independent
- Platform independent
- Baseline history

Features

- Automation framework independent
- Platform independent
- Baseline history
- Branching baselines

Features

- Automation framework independent
- Platform independent
- Baseline history
- Branching baselines
- Drag n drop ignore regions

Features

- Automation framework independent
- Platform independent
- Baseline history
- Branching baselines
- Drag n drop ignore regions
- Easy setup

Drawbacks

- New



Drawbacks

- New
- Small community

Directed by
ROBERT B. WEIDE

Drawbacks

- New
- Small community
- Self-hosted

How to contribute

- Use it, request features, suggest improvements, share feedback

How to contribute

- Use it, request features, suggest improvements, share feedback

- More language support for SDK

How to contribute

- Use it, request features, suggest improvements, share feedback
- More language support for SDK
- More integrations with testing frameworks as Agents

Comparison

	License	UI	Image storage	Ignore area	Platforms	Programming language
Applitools	paid	yes	cloud	yes	any	all
Percy	paid (trial 5k/month)	yes	cloud	yes	web	JS Java Python Ruby
Jest-image-snapshot	free	no	git	no	any	JS
Visual Regression Tracker	free	yes	cloud	yes	any	JS Java Python (or any via API)



Thank you!

Twitter: @pashidlos

Twitter: @VisualReTracker
Telegram: visual_tracker