

Testowanie Automatyczne II

Wykład 3

Przypomnienie o projekcie

- Należy dostarczyć do 23.06.2023
 - Opis testów
 - Wynik testów
 - Repozytorium z testami
 - Jeżeli testy opierają się na waszym projekcie to wymagane elementy do jego odpalenia

Ocena

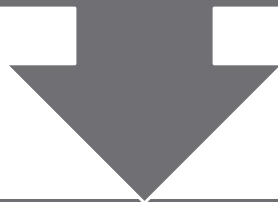
- 3.0 Należy dostarczyć 10 testów automatycznych
 - Każdy test musi się składać z akcji i asercji
 - Testy muszą przechodzić
- +0.5 Za:
 - Użycie cypress.json do konfiguracji
 - Rozszerzenie raportowania testów przez raport HTML
 - Fixtures
 - Tagi
 - PageObject
 - Praca w zespole
 - wzrost ilości testów (12 testów per osoba)
 - Dashboard
 - Commands

Jak dostarczyć projekt

- Slack
 - Napisać do mnie wiadomość
 - Link do repozytorium
 - Lub zip
 - Jeżeli opis testów nie jest w repozytorium to
 - Link do pliku
 - Lub plik
- Mail
 - Na: ernest.o.czajkowski@gmail.com
 - Link do repozytorium
 - Jeżeli opis testów nie jest w repozytorium to
 - Link do pliku
 - Lub plik

Environmental

Czasami potrzeba nam zmiennych
dostępnych w całym środowisku testów.



Cypress daje nam do tego

Zmienne „środowiskowe”


Gdzie i jak

- Zmienne środowiskowe mogą być konfigurowane w:
 - Linii poleceń
 - `--env host=kevin.dev.local`
 - Pliku konfiguracyjnym

```
env:{  
  "salt": "",  
  "lang": "eng"  
},
```

Oddzielny plik

- Domyślnie wczytywany jest cypress.env.json
- Te wartości można nadpisać przez:
 - Linie poleceń
 - Polecenie w teście
- Te wartości nadpisują
 - Zmienne o tej samej nazwie w config.js

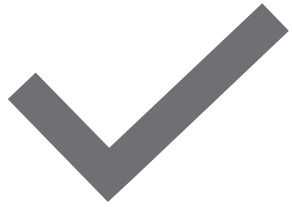
A screenshot of a code editor window. The title bar shows a file named 'cypress.env.json' with a close button. The editor content shows a JSON object with two properties: 'salt' and 'lang'. The 'salt' property has an empty string value, and the 'lang' property has the value 'eng'. Line numbers 1 through 4 are visible on the left side of the editor.

```
{  
  "salt": "",  
  "lang": "eng"  
}
```

Użycie

```
cy.log('Base cypress.json should be PL');  
cy.log(Cypress.env('Lang'));  
cy.log('Extended by cypress.env.json should be somefile.txt')  
cy.log(Cypress.env('File'));  
cy.log(Cypress.env('something'));
```


Cypress Cloud



**Narzędzie dostarczane jako
usługa przez Cypress**



Służy do

Haczyk

Cypress Cloud jest Software-as-a-service

Zakładanie konta

- Proste i przyjemne

Sign up



Sign up with GitHub



Sign up with Google



Sign up with Email

Create a new project

Projects act as a unique workspace to group together the runs from your repository.

[You can also create projects from the Cypress app→](#)

Project Name

The name of the project, product, or workspace that will be associated to each run.

 Your project name (e.g. Design System)

CI Provider

Enter the CI provider you're using, which we'll use to guide the experience in the following step.

 Search CI providers... 

Project Access

☒ **Private** — Only invited users can view recorded test results.

☐ **Public** — Anyone can view recorded test results.

Create project


[Back](#)

Tworzenie nowego projektu

1

Project Name


The name of the project, product, or workspace that will be associated to each run.



 SampleTestProjectPB

2

CI Provider

Enter the CI provider you're using, which we'll use to guide the experience in the following step.

 None

3

Project Access

☐ **Private** — Only invited users can view recorded test results.

☒ **Public** — Anyone can view recorded test results.

4

Create project

Back

Dodawanie do projektu

1. Confirm the Cypress version that you're using for this project:

v10.0 or later

v9.x or earlier

2. Add the `projectId` to your `cypress.json` file:

```
1 {  
2   "projectId": "2ngdxa"  
3   // The rest of the Cypress config options go here...  
4 }
```

Copy


3. Run this command with your [record key](#) from your terminal or in CI:

```
$ npx cypress run --record --key c165efbe-
```

Copy

4. Optimize your tests in CI by following these guides:


 CircleCI

 GitHub Actions

 Bitbucket Pipelines

 GitLab

 AWS CodeBuild

 See other examples

Latest runs

FILTER BY

📅 All Time

🏷️ Status

🔗 Branch

👤 Committer

🏷️ Tag

🧩 Flaky Tests

Last updated: 6:46:13pm ↻

✓	Update main.yml	Local	Ernest Czajkowski	Ran 2 hours ago	02:44	main	Not available	# 19	0	0	27	0
✓	Update main.yml		Ernest Czajkowski	Ran 2 hours ago	02:42	main	Not available	# 18	0	0	27	0
✗	Update main.yml		Ernest Czajkowski	Ran 4 hours ago	01:38:33	refs/heads/main	GitHub Actions 2520490468	# 17	0	0	6	1
⚠️	Update main.yml		Ernest Czajkowski	Ran 4 hours ago	01:34:47	refs/heads/main	GitHub Actions 2520474336	# 16	0	0	9	1
⚠️	screenshots		Ernest Czajkowski	Ran 4 hours ago	01:32:29	main	GitHub Actions 2520456979	# 15	0	0	9	1
✗	chrome		Ernest Czajkowski	Ran 4 hours ago	02:41	main	GitHub Actions 2520446030	# 14	2	0	13	12
✗	chrome		Ernest Czajkowski	Ran 4 hours ago	02:43	main	GitHub Actions 2520431787	# 13	2	0	13	12
⚠️	remove ./		Ernest Czajkowski	Ran 4 hours ago	01:38:55	main	GitHub Actions 2520414516	# 12	0	0	0	0
⚠️	remove recordings and screenshots		Ernest Czajkowski	Ran 4 hours ago	01:30:03	main	Not available	# 11	0	0	0	0
⚠️	remove recordings and screenshots		Ernest Czajkowski	Ran 4 hours ago	01:33:36	main	GitHub Actions 2520400524	# 10	0	0	0	0



KerconPB
Ernest Czajkowski



✓ PB-EDU-Tester3

View all projects

✓ Latest runs

Branches

Analytics

Run status

Run duration

Test suite size

Top failures

Slowest tests

Most common errors

Flaky tests

Project settings



Support

Documentation



Update main.yml Local

Ernest Czajkowski

Ran 2 hours ago

02:44

main

Not available

19



0 0 0 ✓ 27 ✗ 0

Overview

Test Results 27

Specs 15



Failed tests



All tests passed

Errors



No tests errored

Summary

<div></div>		
Passed	27	100.00%
Failed	0	0.00%
Pending	0	0.00%
Skipped	0	0.00%
Total	27	100.00%

Flaky tests



Find and fix your flaky tests. Available with Team plans.

Upgrade

Learn more

Modified tests

Run Branch

✓ PageObjects > Using PageObject
e2e/basics11.spec.js

Modified



✓ PageObjects > Using PageObject
e2e/basics11.spec.js

Modified




2 total


See all

Run status

FILTER BY

 Branch ▼

 Tag ▼

 Last 3 Months ▼

 Weekly ▼

Total runs over time

● Passed ● Failed ● Canceled



Total runs

19

↑ 100%

Average per day

19.00

—

Passed runs

2

Failed runs

6

WEEK BEGINNING	PASSED	FAILED	CANCELED	TOTAL	FAILURE RATE
Jun 13, 2022	2	6	11	19	32% <div><div></div></div>
Jun 6, 2022	0	0	0	0	0% <div><div></div></div>

✓ PB-EDU-Tester3

◀ View all projects

✓ Latest runs

🔗 Branches

📊 Analytics

Run status

Run duration

Test suite size

Top failures

Slowest tests

Most common errors

Flaky tests

⚙️ Project settings



📖 Support

📖 Documentation

Top failures

VIEW BY

Test Case ▾

FILTER BY

🔗 Branch ▾

🏷️ Tag ▾

📅 Last 7 Days ▾

📄 Run Group ▾

👤 Committer ▾

📄 Spec File ▾

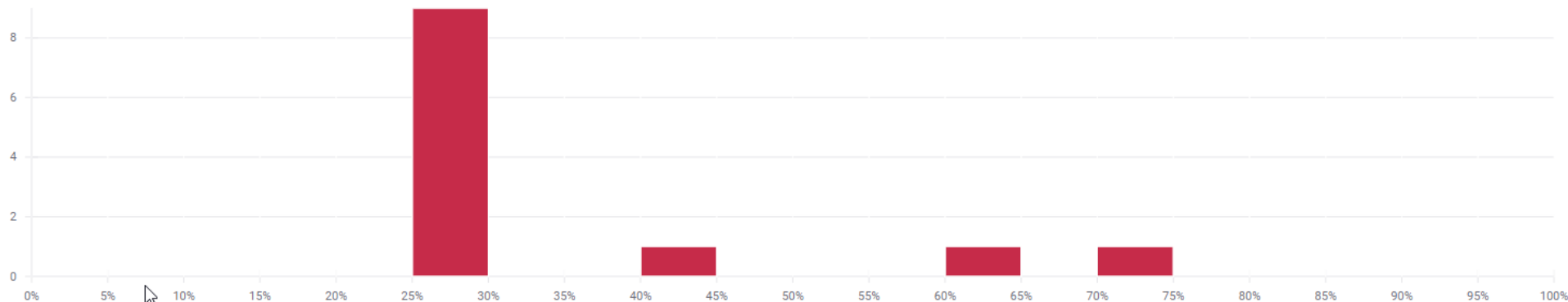
🌐 Browser ▾

🌐 Cypress Version ▾

🌐 Operating System ▾

🧩 Flaky Tests ▾

Number of test cases by failure rate



Median failure rate

29%

Number of failures

12

Test Cases

TEST CASE		LAST FAILURE	FAILED RUNS	FAILURE RATE	
1	PersonalPage > Should be able to visit 📄 e2e/basics6.spec.js	4 hours ago 5 test runs ago	5/7	71% <div><div></div></div>	>
2	Commands > Using Command 📄 e2e/basics10.spec.js	4 hours ago 2 test runs ago	9/14	64% <div><div></div></div>	>
User can close cookie popup > Personalize should be available		4 hours ago			



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PB-EDU-Tester3

View all projects



Latest runs



Branches



Analytics

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Top failures

Slowest tests

Most common errors

Flaky tests



Project settings



Support



Documentation



Most common errors

FILTER BY



Branch



Tag



Last 7 Days



Run Group



Committer



Spec File



Browser



Cypress Version



Operating System



Flaky Tests

Top error classes



Number of failures

13

test cases

Number of errors

9

ERROR

IMPACTED TESTS



AssertionError

Timed out: retrying after 4000ms: Expected to find element: `#L2AGLb > .QSSgu`, but never found it.

5



AssertionError

Timed out retrying after 4000ms: Expected to find element: `#L2AGLb > .QSSgu`, but never found it. Because this error occurred during a `before each` hook we are skipping the remaining tests in the current suite: `Commands`

1



AssertionError

Timed out retrying after 4000ms: Expected to find element: `#L2AGLb > .QSSgu`, but never found it. Because this error occurred during a `before each` hook we are skipping the remaining tests in the current suite: `Test on Search Results`

1



AssertionError

Timed out retrying after 4000ms: Expected to find element: `#VnjCcb > .QSSgu`, but never found it.

1



AssertionError

Timed out retrying after 4000ms: Expected to find element: `//button[@id='L2AGLb']`, but never found it.

1



Rozszerzanie Cypress

- Cypress jest narzędziem zbudowanym na node.js
 - Dzięki temu możemy rozszerzać go o biblioteki node.js
- Oprócz tego część rozszerzeń jest też pisana pod cypress, mocha, chai.js i możemy je używać „prościej”

Przykładowa uniwersalna biblioteka

- `@faker-js/faker`
 - `npm install --save-dev @faker-js/faker`
- Umożliwia nam łatwiejsze tworzenie danych do testowania
- Używamy jej przez importowanie jej plikach testowych lub funkcja

Przykład dedykowanej biblioteki

- cypress-xpath
 - `npm install --save-dev cypress-xpath`
- Umożliwia nam używanie xpath jako selektora
- Dodaje nam nowe polecenie po dodaniu `require('cypress-xpath')` do `index.js`
- `cy.xpath("//img[@alt='Google']")`

Przykład dedykowanej biblioteki

```
cypress > support > JS index.js > ...
```

```
 8  // You can change the location of this file or turn off
 9  // automatically serving support files with the
10  // 'supportFile' configuration option.
11  //
12  // You can read more here:
13  // https://on.cypress.io/configuration
14  // *****
15
16  // Import commands.js using ES2015 syntax:
17  import './commands'
18  import '../CustomCommands/basicCommands'
19
20  require('cypress-xpath')
```



Reporters

Dzięki temu że Cypress korzysta z mocha „bardzo łatwo” można rozszerzyć raportowanie do pliku



Mamy tak naprawdę do wyboru co chcemy



Wbudowane

Json, list, markdown

jUnit



Do instalowania

mocha-multi-reporters

Mochawesome

cypress-mochawesome-reporter

Cypress ♥ Mocha

Czemu

- Polityka firmy
 - Firma nie chce korzystać z Cypress Dashboard
- Rozszerzenie naszego wewnętrznego raportowania w CI
- Do wykorzystania jako warunek dla CI
- Szybkie generowanie raportów i ich długo terminowe przechowanie

Przykład mochawesome

- `npm i --save-dev mocha
mochawesome mochawesome-merge
mochawesome-report-generator`

Przykład mochawesome

- Konfigurujemy w cypress.config.js:

```
"reporter": "mochawesome",  
"reporterOptions": {  
  "reportFilename": "[status]_[datetime]-[name]-report",  
  "timestamp": "isoDateTime",  
  "overwrite": false,  
  "html": true,  
  "json": true  
}
```

Przykład mochawesome

- Uruchamiamy nasze testy
- Scalamy nasze wyniki
 - `npx mochawesome-merge mochawesome-report/*.json>combined-report.json`
- Generujemy Całościowy raport:
 - `npx marge --reportDir "testReport" "combined-report.json"`

PersonalPage

655ms 1 1



Should be able to visit

655ms

CypressError: 'cy.visit()' failed trying to load: http://127.0.0.1:8080/ We attempted to make an http request to this URL but the request failed without a response. We received this error at the network level: > Error: connect ECONNREFUSED 127.0.0.1:8080 Common situations why this would fail: - you don't have internet access - you forgot to run / boot your web server - your web server isn't accessible - you have weird network configuration settings on your computer

Sample test Context

Sample test Description

1.3s 1 1



This is true body of Sample test

1.3s

Sample test2 description

Sample test2 context

503ms 1 1



This is true body of Sample test2

503ms

Sample test3 description

Sample test3 description2

PersonalPage

655ms 1 1

Should be able to visit

655ms

CypressError: `cy.visit()` failed trying to load: http://127.0.0.1:8080/ We attempted to make an http request to this URL but the request failed without a response. We received this error at the network level: > Error: connect ECONNREFUSED 127.0.0.1:8080 Common situations why this would fail: - you don't have internet access - you forgot to run / boot your web server - your web server isn't accessible - you have weird network configuration settings on your computer

CypressError: `cy.visit()` failed trying to load:

http://127.0.0.1:8080/

We attempted to make an http request to this URL but the request failed without a response.

We received this error at the network level:

> Error: connect ECONNREFUSED 127.0.0.1:8080

Common situations why this would fail:

- you don't have internet access
- you forgot to run / boot your web server
- your web server isn't accessible
- you have weird network configuration settings on your computer

at http://localhost:63618/___cypress/runner/cypress_runner.js:163327:82

at visitFailedByErr (http://localhost:63618/___cypress/runner/cypress_runner.js:162631:12)

at http://localhost:63618/___cypress/runner/cypress_runner.js:163326:11

at tryCatcher (http://localhost:63618/___cypress/runner/cypress_runner.js:13022:23)

at Promise._settlePromiseFromHandler (http://localhost:63618/___cypress/runner/cypress_runner.js:10957:31)

at Promise._settlePromise (http://localhost:63618/___cypress/runner/cypress_runner.js:11014:18)

at Promise._settlePromise0 (http://localhost:63618/___cypress/runner/cypress_runner.js:11059:10)

at Promise._settlePromises (http://localhost:63618/___cypress/runner/cypress_runner.js:11135:18)

at _drainQueueStep (http://localhost:63618/___cypress/runner/cypress_runner.js:7729:12)

at _drainQueue (http://localhost:63618/___cypress/runner/cypress_runner.js:7722:9)

at Async.../node_modules/bluebird/js/release/async.js.Async._drainQueues (http://localhost:63618/___cypress/runner/cypress_runner.js:7738:5)

at Async.drainQueues (http://localhost:63618/___cypress/runner/cypress_runner.js:7608:14)

From Your Spec Code:

at Context.eval (http://localhost:63618/___cypress/tests?p=cypress\integration\e2e\basics6.spec.js:102:8)

From Node.js Internals:

Error: connect ECONNREFUSED 127.0.0.1:8080

at TCPConnectWrap.afterConnect [as oncomplete] (node:net:1142:16)

cy.visit("http://127.0.0.1:8080/");

Rozszerzenia selekcji testów

Zależnie od preferencji nie zawsze chcemy odpalać wszystkich testów na danym środowisku



Jest to trochę bolączka cypress

Natywnie musimy wskazywać foldery lub pliki testowe



Normalnie obchodziliśmy to przez pisanie własnej funkcji do filtrowania

Cypress-grep

- cypress-grep to pluginowa paczka
 - npm i -D @cypress/grep
 - Którą inicjalizujemy w suport file

```
const registerCypressGrep = require('@cypress/grep')  
registerCypressGrep()
```

```
import registerCypressGrep from '@cypress/grep/src/suport'  
registerCypressGrep()
```

Użycie Cypress-grep

- Używamy tego filtrowania przez zmienną środowiskową
 - Jeżeli szukamy po nazwie testu
 - `npx cypress run --env grep="Sample test"`
 - Jeżeli szukamy po nazwie tagu
 - `npx cypress run --env grepTags="local"`

Tagi w teście

- Dzięki że mamy mocha tagi można przekazać jako konfiguracje elementu mocha

```
/// <reference types="cypress" />

describe('PersonalPage', {tags: 'local'}, function () {
  it('Should be able to visit', function () {
    cy.visit("http://127.0.0.1:8080/");
    cy.viewport(1920,1080);
    cy.get(".testinput").type('test');
    cy.get(".testinput").should("have.value", 'test').should('contain.value', 'test');
    cy.get('#demo2').should('have.text', 'test').should("contain", 'test');
  })
})
```