



Automated screenshots for the manual

Using Cypress and Cypress Studio



Who am I?

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Working on Koha since 2010 (self-employed for 8 years).

Sponsored by

BibLibre (France)

ByWater Solutions (USA)

PTFS Europe (UK)



Demo

[Link to video](#)



Awesome? Boring?



Why?

- The screenshots are obsolete
- 1635 screenshots: cannot be done manually
- We need a tool to:
 - Get an Up-to-date version of the screenshots over the versions (follow UI changes)
 - Have translated versions of the screenshots
 - Catch regressions
- A job to do once and for all



How?

- Full automated: too complex to maintain, not robust
- Full manual: limited to developers
- Mix of both: everybody can help!
 - Use a tool to generate code automatically
 - Clean the code with manual adjustments



Cypress

- End-to-end testing framework
- Catch UI regressions
- Use a browser and simulate user's inputs
- Cypress Studio
 - Component of Cypress
 - Visual
 - Record interactions and generate code



Steps

- List the screenshots
- Estimate the difficulty of each screenshot
→ easy, medium or hard
- Add info

	Page	HTML element (class/id)	Prerequisites	
			Settings	Data
Easy				
Medium				
Hard				

- Generate code using Cypress Studio
- Clean the code

Who?

- List the screenshots (**dev**)
- Estimate the difficulty of each screenshot (**anybody**)
→ easy, medium or hard
- Add info (**anybody**)

	Page	HTML element (class/id)	Prerequisites	
			Settings	Data
Easy				
Medium				
Hard				

- Generate code using Cypress Studio (**anybody motivated**)
- Clean the code (**anybody very motivated, dev**)

Example: prefsearch

Before

Global system preferences

Manage global system preferences like MARC flavor, date format, administrator email, and templates.

After

System preferences

Manage system preferences like MARC flavor, date format, administrator email, and templates.

Preferencias del sistema

Administra preferencias globales del sistema tales como tipo MARC, formato de fecha, email del administrador, y plantillas.

Easy:

- Go to /admin/admin-home.pl
- Capture the fieldset

→ Fragile: missing a proper selector

Example: newlibrary

Before

New library

Library code: *Required*

Name: *Required*



After

Library code: *Required*

Name: *Required*

Código de biblioteca: *Requerido*

Nombre: *Requerido*

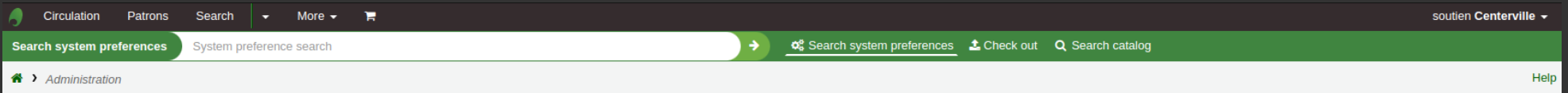
Easy:

- Go to `/admin/branches.pl?op=add_form`
- Capture first fieldset in `#Aform` ("`#Aform > :nth-child(1)`")

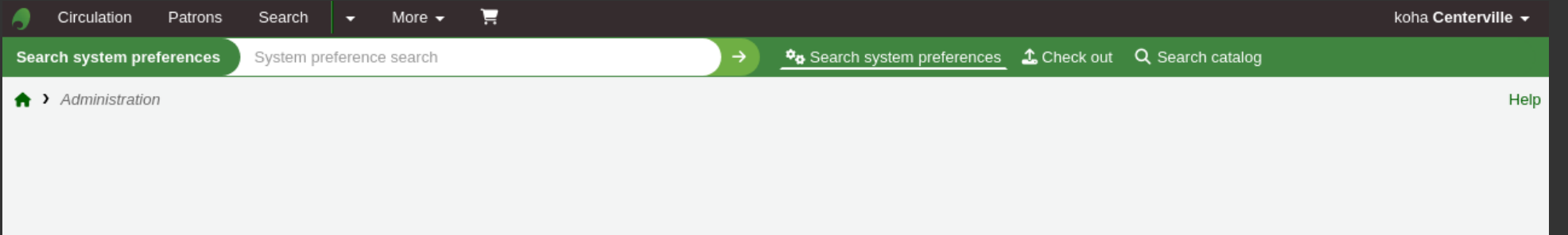
→ No "New library": cannot screenshot 2 elements

Example: searbar-admin

Before



After



Easy Hard:

- Go to /admin/admin-home.pl
- Remove .main
- Capture body

- Missing container, cannot screenshot several elements
- Too high, still needs more manual adjustments

Example: allowstafftosetVisibilityForGuarantor

Before

Guarantor information

Patron card number: 23529000445172

Surname: Daniels

First name: Tanya

Relationship: mother

[Remove](#)

[+ Search to add](#)

Show checkouts to guarantors No

Allow guarantors of this patron to view this patron's checkouts from the OPAC

Show fines to guarantors No

Allow guarantors of this patron to view this patron's fines from the OPAC



After

Patron guarantor

[+ Add guarantor](#)

Show checkouts to guarantors No

Allow guarantors of this patron to view this patron's checkouts from the OPAC

Usuario responsable

[+ Agregar garante](#)

Mostrar préstamos a los garante(s) No

Permitir a los garantes de este usuario ver los préstamos de éste desde el OPAC

Medium:

- Set syspref AllowStaffToSetCheckoutsVisibilityForGuarantor to 1
- Edit a patron in the Child category
- Capture #memberentry_guarantor

→ New version is better

Example: librarylist

Before

Name	Code	Address	MARC organization code	IP	Pickup location	Actions
Centerville	CPL	Jefferson Summit			Yes	Edit Delete
Fairfield	FFL	River Station			Yes	Edit Delete
Fairview	FPL	Hickory Square			Yes	Edit Delete
Franklin	FRL	Smith Heights			Yes	Edit Delete
Institut Protestant de Théologie	IPT				Yes	Edit Delete
Liberty	LPL	East Hills			Yes	Edit Delete
Midway	MPL	372 Forest Street			Yes	Edit Delete
Pleasant Valley	PVL	Meadow Grove			Yes	Edit Delete
Riverside	RPL	Johnson Terrace			Yes	Edit Delete
Springfield	SPL	Highland Boulevard			Yes	Edit Delete
Troy	TPL	Valley Way			Yes	Edit Delete
Union	UPL	Chestnut Hollow			Yes	Edit Delete

After



Name	Code	Address	MARC organization code	IP	Pickup location	Public	SMTP server	Actions
Centerville	CPL	Jefferson Summit			Yes	Yes	Default	Edit Delete
Fairfield	FFL	River Station			Yes	Yes	Default	Edit Delete
Fairview	FPL	Hickory Square			Yes	Yes	Default	Edit Delete
Franklin	FRL	Smith Heights			Yes	Yes	Default	Edit Delete
Institut Protestant de Théologie	IPT				Yes	Yes	Default	Edit Delete
Liberty	LPL	East Hills			Yes	Yes	Default	Edit Delete
Midway	MPL	372 Forest Street			Yes	Yes	Default	Edit Delete
Pleasant Valley	PVL	Meadow Grove			Yes	Yes	Default	Edit Delete
Riverside	RPL	Johnson Terrace			Yes	Yes	Default	Edit Delete
Springfield	SPL	Highland Boulevard			Yes	Yes	Default	Edit Delete
Troy	TPL	Valley Way			Yes	Yes	Default	Edit Delete
Union	UPL	Chestnut Hollow			Yes	Yes	Default	Edit Delete

Easy:

- Go to /admin /branches.pl
- Capture main

→ Oops, hard, we need to add a wait_for_ajax call

Nombre	Código	Dirección	Código MARC para organizaciones	IP	Ubicación de retiro	Pública	Servidor SMTP	Acciones
Centerville	CPL	Jefferson Summit			Si	Si	Predeterminado	Editar Borrar
Fairfield	FFL	River Station			Si	Si	Predeterminado	Editar Borrar
Fairview	FPL	Hickory Square			Si	Si	Predeterminado	Editar Borrar
Franklin	FRL	Smith Heights			Si	Si	Predeterminado	Editar Borrar
Institut Protestant de Théologie	IPT				Si	Si	Predeterminado	Editar Borrar
Liberty	LPL	East Hills			Si	Si	Predeterminado	Editar Borrar
Midway	MPL	372 Forest Street			Si	Si	Predeterminado	Editar Borrar
Pleasant Valley	PVL	Meadow Grove			Si	Si	Predeterminado	Editar Borrar
Riverside	RPL	Johnson Terrace			Si	Si	Predeterminado	Editar Borrar
Springfield	SPL	Highland Boulevard			Si	Si	Predeterminado	Editar Borrar
Troy	TPL	Valley Way			Si	Si	Predeterminado	Editar Borrar
Union	UPL	Chestnut Hollow			Si	Si	Predeterminado	Editar Borrar

Example: patrondebt

Before

Please Confirm Checkout

- The patron has a debt of 1.00

✓ Yes, Check Out (Y) ✗ No, Don't Check Out (N)



After

Please confirm checkout

- The patron has a debt of 42.00.

✓ Yes, check out (Y) ✗ No, don't check out (N)

Por favor confirme el préstamo

- El usuario tiene una deuda de 42.00.

✓ Sí, prestar (S) ✗ No, no prestar (N)

Hard:

- Set syspref AllowFineOverride = 1
- Add a manual invoice of 42 to patron id=5
- Checkout item id=3999900000001 to patron id=5
- Capture #circ_needsconfirmation

Example: prevcheckout

Before

Please confirm checkout

- Patron has previously checked out this title: **ABC of cats** . Check out anyway?

Yes, check out (Y) No, don't check out (N)



After

Please confirm checkout

- Patron has previously checked out this title: **E Street shuffle : by Heylin, Clinton..** Check out anyway?

Yes, check out (Y) No, don't check out (N)

Por favor confirme el préstamo

- Este ítem ha sido previamente prestado a este usuario: **E Street shuffle : por Heylin, Clinton..**
¿Prestar de todas maneras?

Sí, prestar (S) No, no prestar (N)

Hard:

- Set syspref CheckPrevCheckout = "hardyes"
- Checkout one item to patron id=5
- Checkin the item
- Checkout the same item to patron id=5
- Capture #circ_needsconfirmation

→ Will fail on second run, need to delete entries in old_issues for patron id=5



To be discussed

- Is it the best method to do this work?
- Start with the “easy” ones?
- Reuse the existing names?
- Which data? Are Koha sample data enough?
- Always use the same patron, biblio/item/auth record? Get one per language?
- When do we generate the screenshots? Monthly, for each release, ...?
- How to catch regressions? Manually, automatically?
- How to confirm the screenshots have been correctly generated?
- Where to put the code? Koha, koha-manual, separately?



Demo again?

[Link to video](#)



Question?

Bug 34076 - Automated screenshots using Cypress.io testing framework

gitlab.com/joubu/Koha/-/commits/cypress-studio

Cleaning

Cypress Studio

```
/* ==== Test Created with Cypress Studio ==== */
it("prevcheckout", function () {
  /* ==== Generated with Cypress Studio ==== */
  cy.visit("http://kohadev-intra.mydnsname.org:8081/");
  cy.get("#userid").clear();
  cy.get("#userid").type("koha");
  cy.get("#password").clear();
  cy.get("#password").type("koha");
  cy.get("#submit-button").click();
  cy.get(
    ":nth-child(2) > .biginks-list > :nth-child(6) > .icon_general"
  ).click();
  cy.get("fieldset > [type='text']").clear("CheckPrevCheckout");
  cy.get("fieldset > [type='text']").type("CheckPrevCheckout");
  cy.get(".btn").click();
  cy.get("#pref_CheckPrevCheckout").select("hardyes");
  cy.get(".save-all").click();
  cy.get("#toplevelmenu > :nth-child(2) > a").click();
  cy.get("#search_patron_filter").clear();
  cy.get("#search_patron_filter").type("edna");
  cy.get(".action > .btn").click();
  cy.get("#menu > ul > :nth-child(1) > a").click();
  cy.get("#barcode").clear();
  cy.get("#barcode").type("3999900000001");
  cy.get("#circ_circulation_issue > .btn").click();
  cy.get(":nth-child(2) > .keep_text > .tab-title").click();
  cy.get("#ret_barcode").clear();
  cy.get("#ret_barcode").type("3999900000001");
  cy.get("#checkin_search > form > button > .fa").click();
  cy.get(
    "[href='/cgi-bin/koha/members/moremember.pl?borrowernumber=5']"
  ).click();
  cy.get("#menu > ul > :nth-child(1) > a").click();
  cy.get("#barcode").clear("3999900000001");
  cy.get("#barcode").type("3999900000001");
  cy.get("#circ_circulation_issue > .btn").click();
```

Cleaned version

```
it("prevcheckout", function () {
  cy.query(
    "DELETE FROM old_issues WHERE borrowernumber=5 AND itemnumber=1"
  );
  cy.query("SELECT barcode from items WHERE itemnumber=1").then(res => {
    let barcode = res[0].barcode;
    cy.set_syspref("CheckPrevCheckout", "hardyes");
    cy.checkout(5, barcode);
    cy.checkin(barcode);
    cy.checkout(5, barcode);
    cy.get("#circ_needsconfirmation")
      .should("be.visible")
      .screenshot("prevcheckout");
  });
});
```