

Dark Patterns at Scale:

Findings from a Crawl of 11K Shopping Websites

Gunes Acar

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Jonathan Mayer, Marshini Chetty,
Arvind Narayanan



Overview

- 1. What is a dark pattern?**
Definitions & examples
- 2. How do we identify dark patterns on the web at scale?**
Automated measurements & prevalence
- 3. What can we do about dark patterns?**
Legal / technical solutions, and future work

What is a Dark Pattern?

Example #1: Instagram Ad

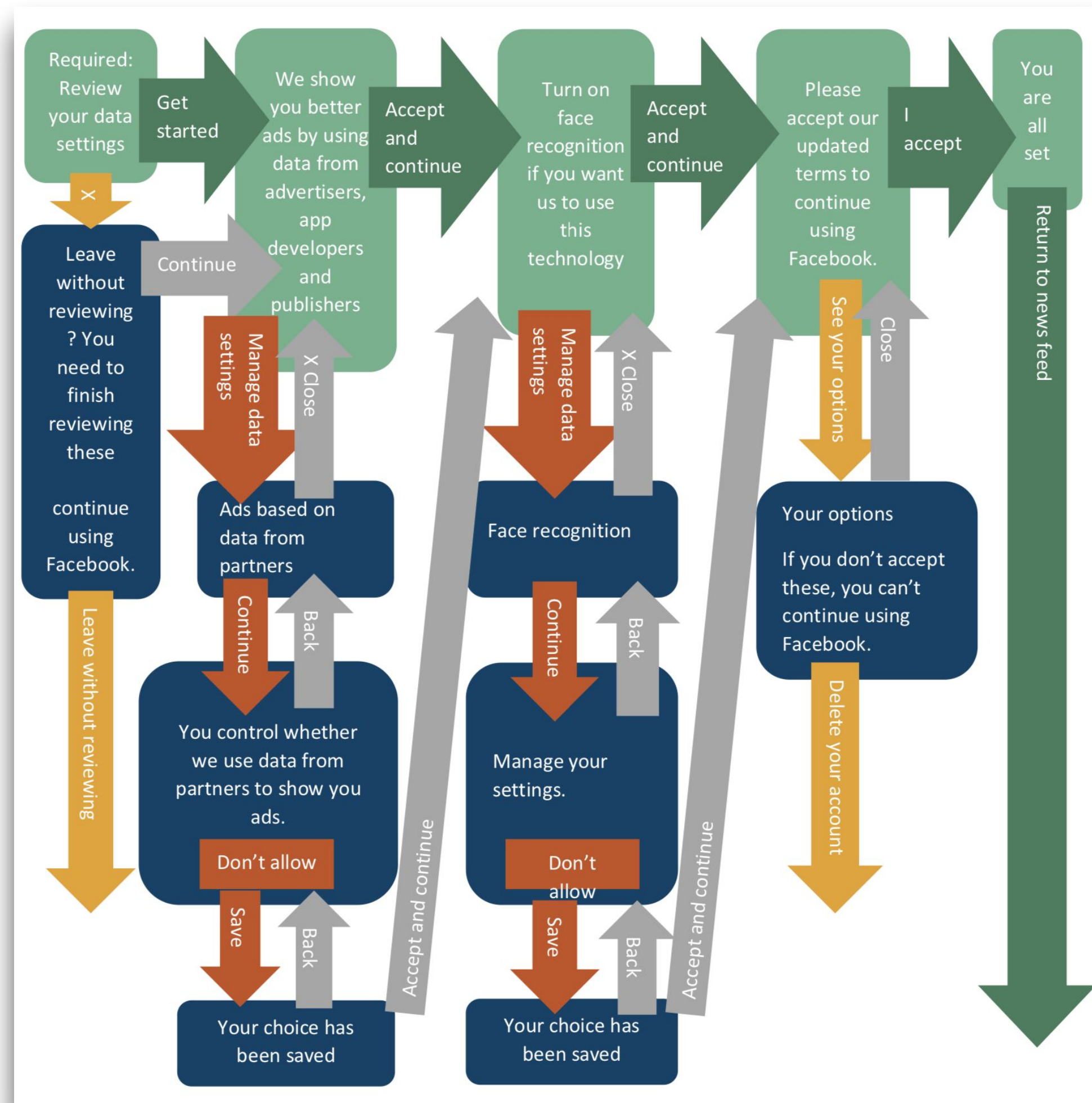


Example #1: Instagram Ad

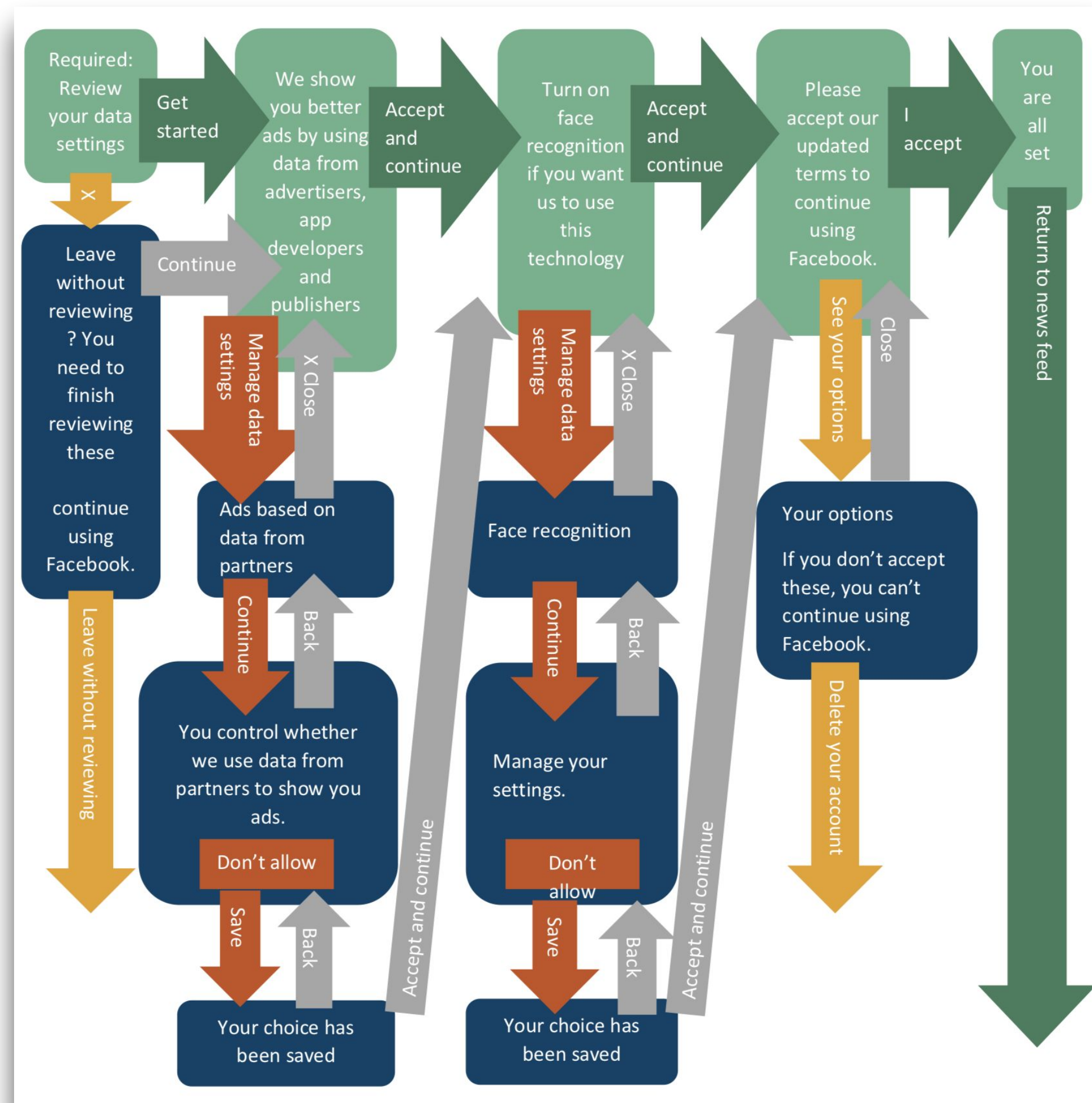


Not a real
strand of hair

Example #2: Facebook Consent



Example #2: Facebook Consent



3 clicks to accept
14 clicks to reject

Example #3: Virgin Active Marketing

HOW WE CONTACT YOU

By providing your details you agree that we can contact you (including by electronic means such as email, SMS and MMS) about promotions, special offers and discounts from Virgin Active. If you would prefer not to hear about these please untick this box.



We would also like to share your information with other Virgin companies and other carefully selected organisations so that they may contact you from time to time (including by electronic means such as email, SMS and MMS) about promotions, special offers and discounts we think may be of interest to you. Please untick this box if you would like to hear about these.



Example #3: Virgin Active Marketing

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Untick to opt-out

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Tick to opt-out

Example #4: TurboTax Pricing

Maine and Massachusetts residents: Taxes are due 4/17. [File now!](#)



 [Products & Pricing](#) [Tools & Tips](#) [After You File](#) [Help](#) [Security](#) [Tax Reform](#) [Sign In](#) [En Español](#)

FREE
Guaranteed.
\$0 Fed. \$0 State. \$0 To File.

Easily and accurately file your simple tax returns for FREE. [See why it's free](#)



NICE REFUND!
\$3,194
FEDERAL


  
One account. Everything Intuit.
[Learn more](#)

User ID

Password

☐ Remember me

[Sign In](#)

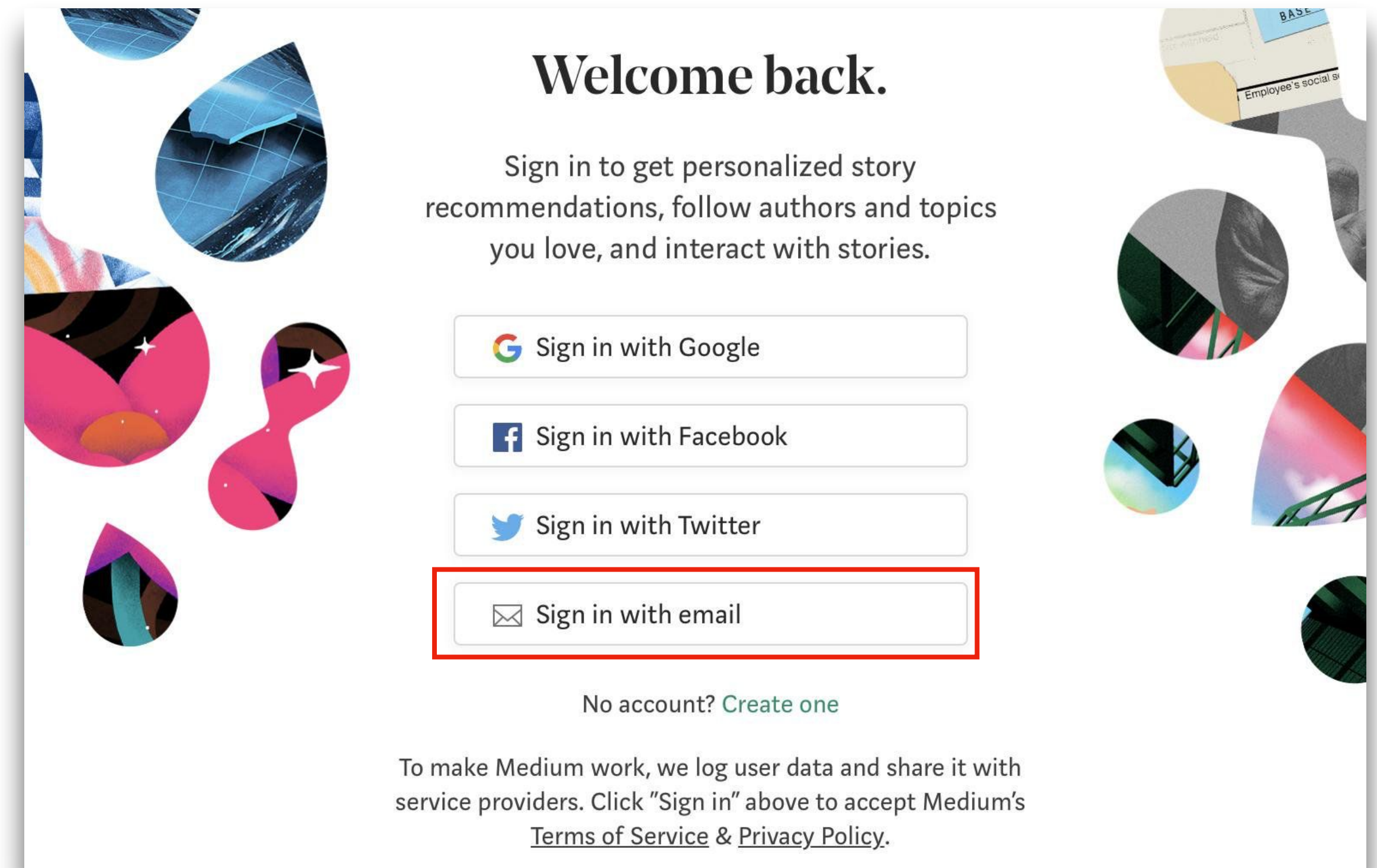
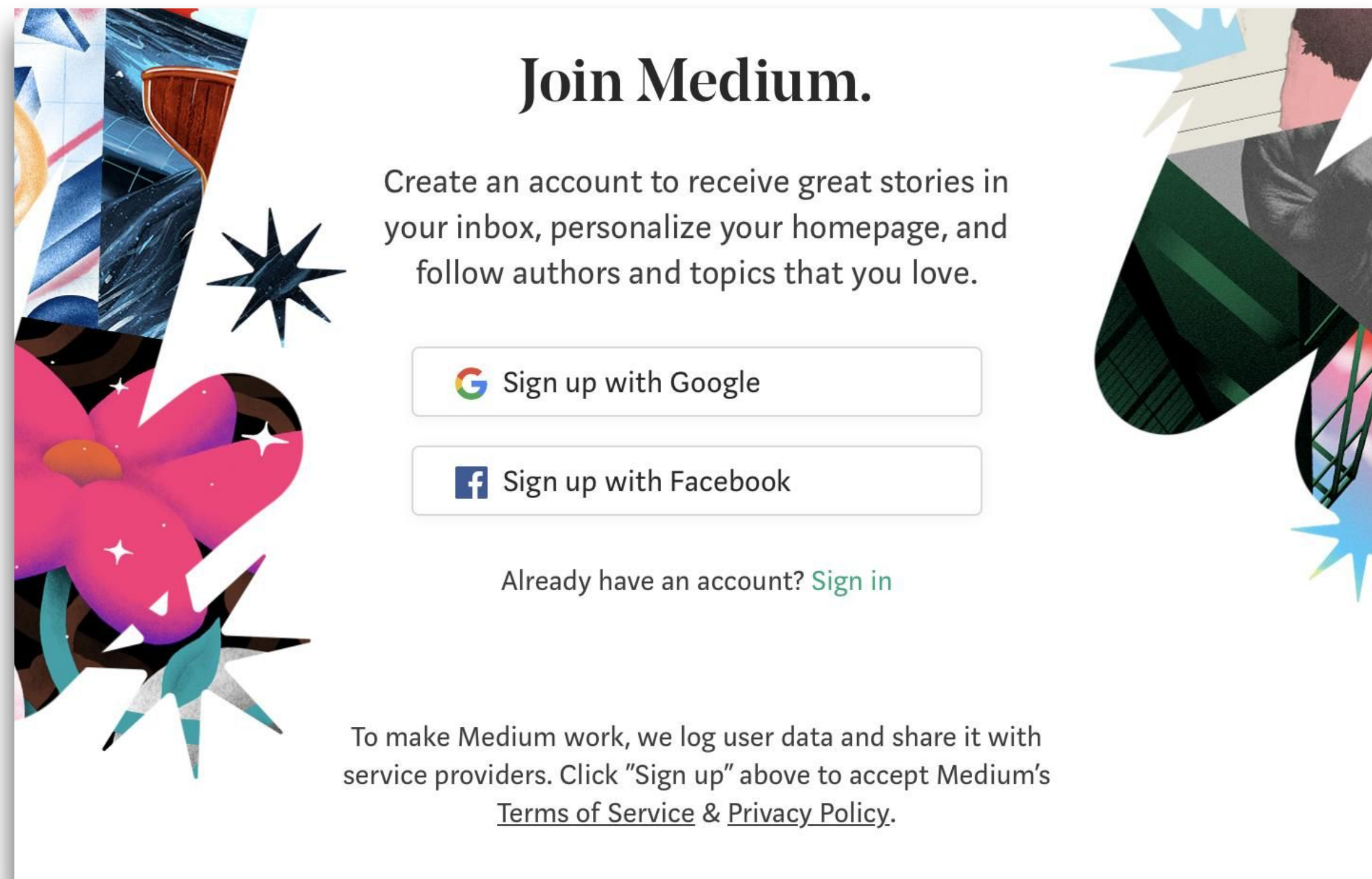
By clicking Sign In, you agree to the [TurboTax Terms of Service](#), [Turbo Terms of Use](#) and have read and acknowledge our [Privacy Statement](#).

[Forgot user ID or password?](#) | [Create an account](#)

✓ [Maximum refund, guaranteed](#)

✓ [100% accurate calculations](#)

Example #5: Medium Account Creation



“

Dark patterns are tricks used in websites and apps that make you do things that you didn't mean to, like buying or signing up for something.

”

— Brignull, 2010

More Broadly ...

Dark patterns are user interface design choices that benefit an online service by **coercing**, **steering**, or **deceiving** users into making decisions that — if fully informed and capable of selecting alternatives — they might not make.

How do Dark Patterns Work?

Asymmetric

Covert

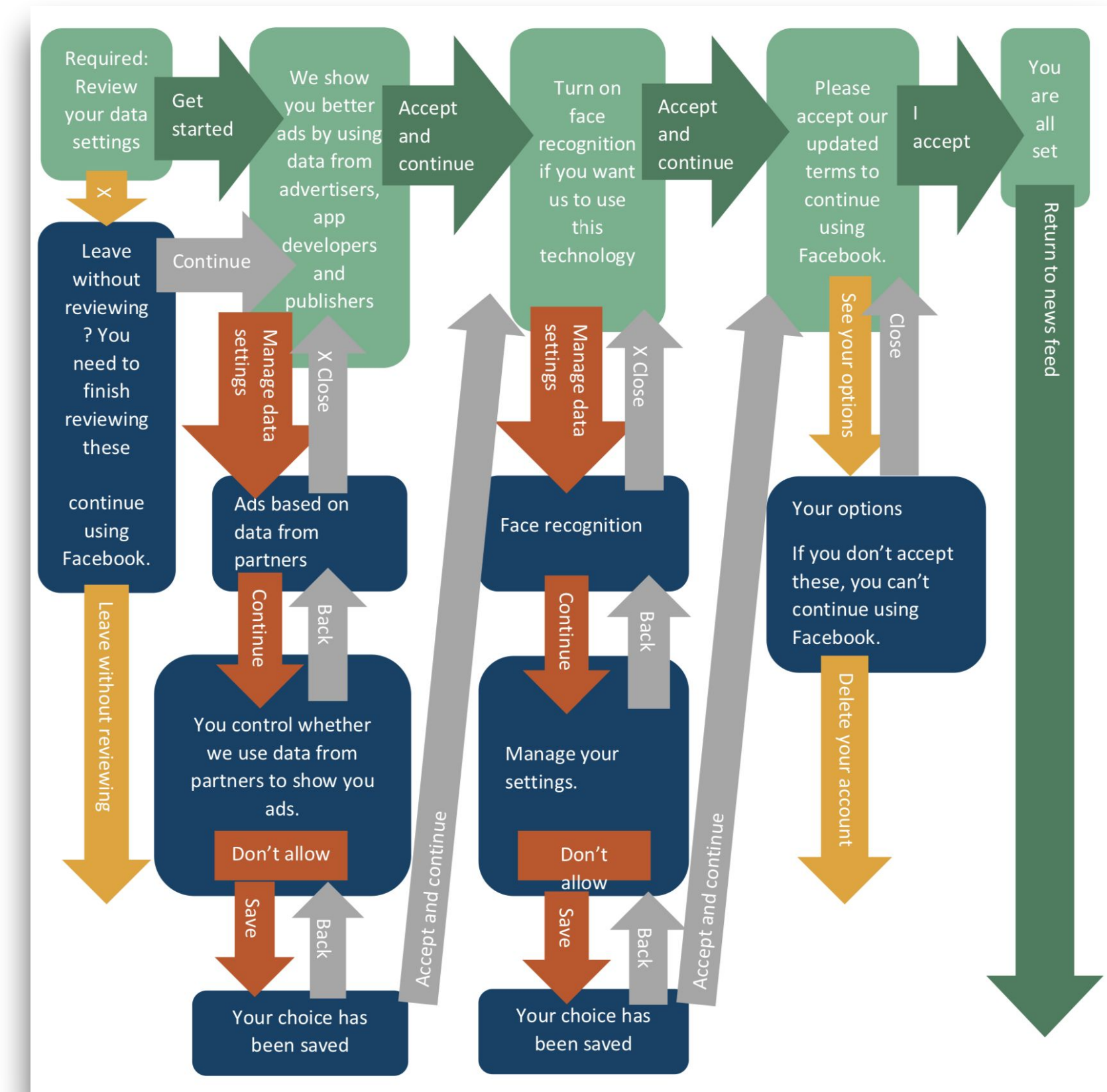
Deceptive

Hides Information

Restrictive

How do Dark Patterns Work?

Asymmetric
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How do Dark Patterns Work?

Asymmetric

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Restrictive



How do Dark Patterns Work?

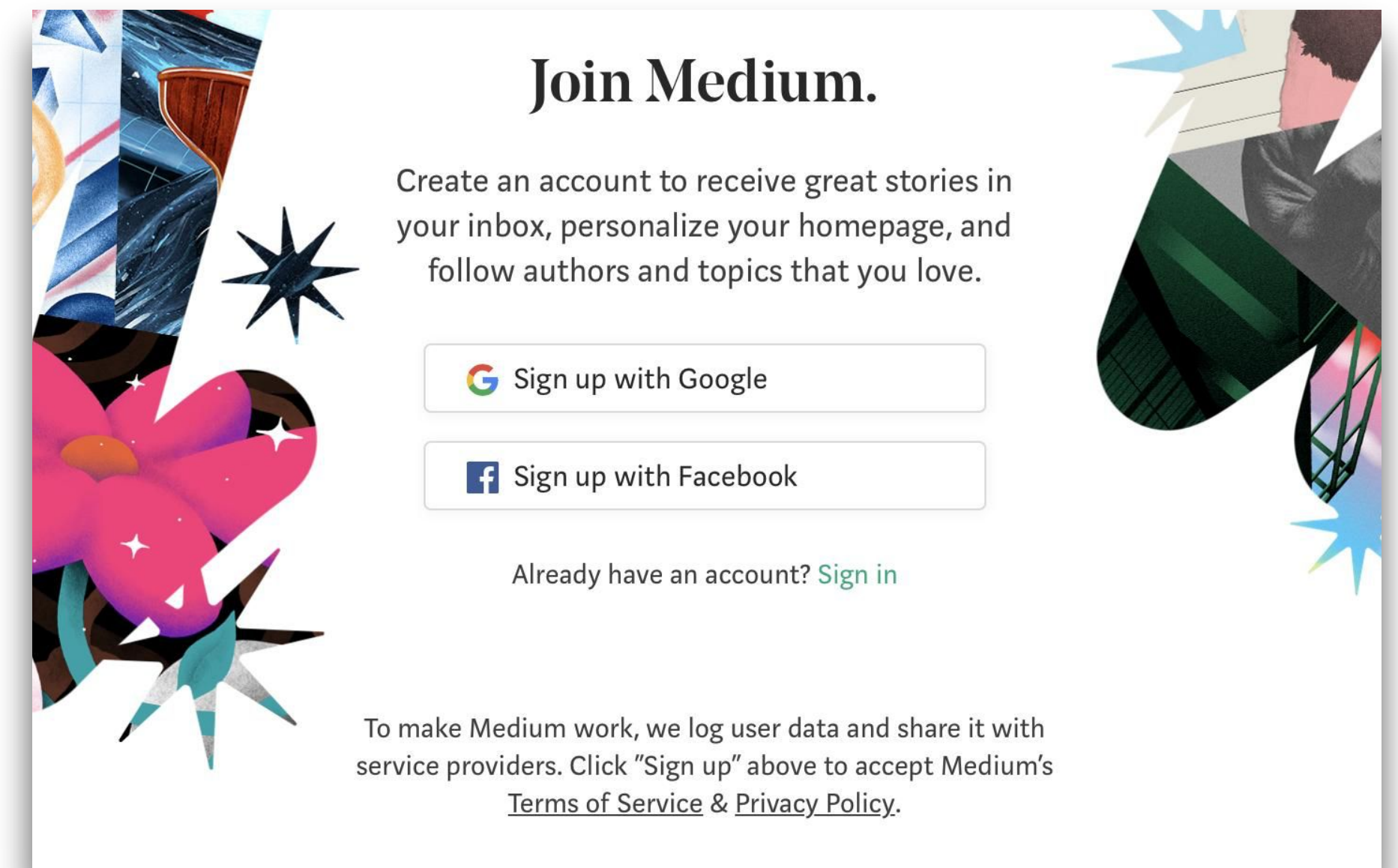
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How do Dark Patterns Work?

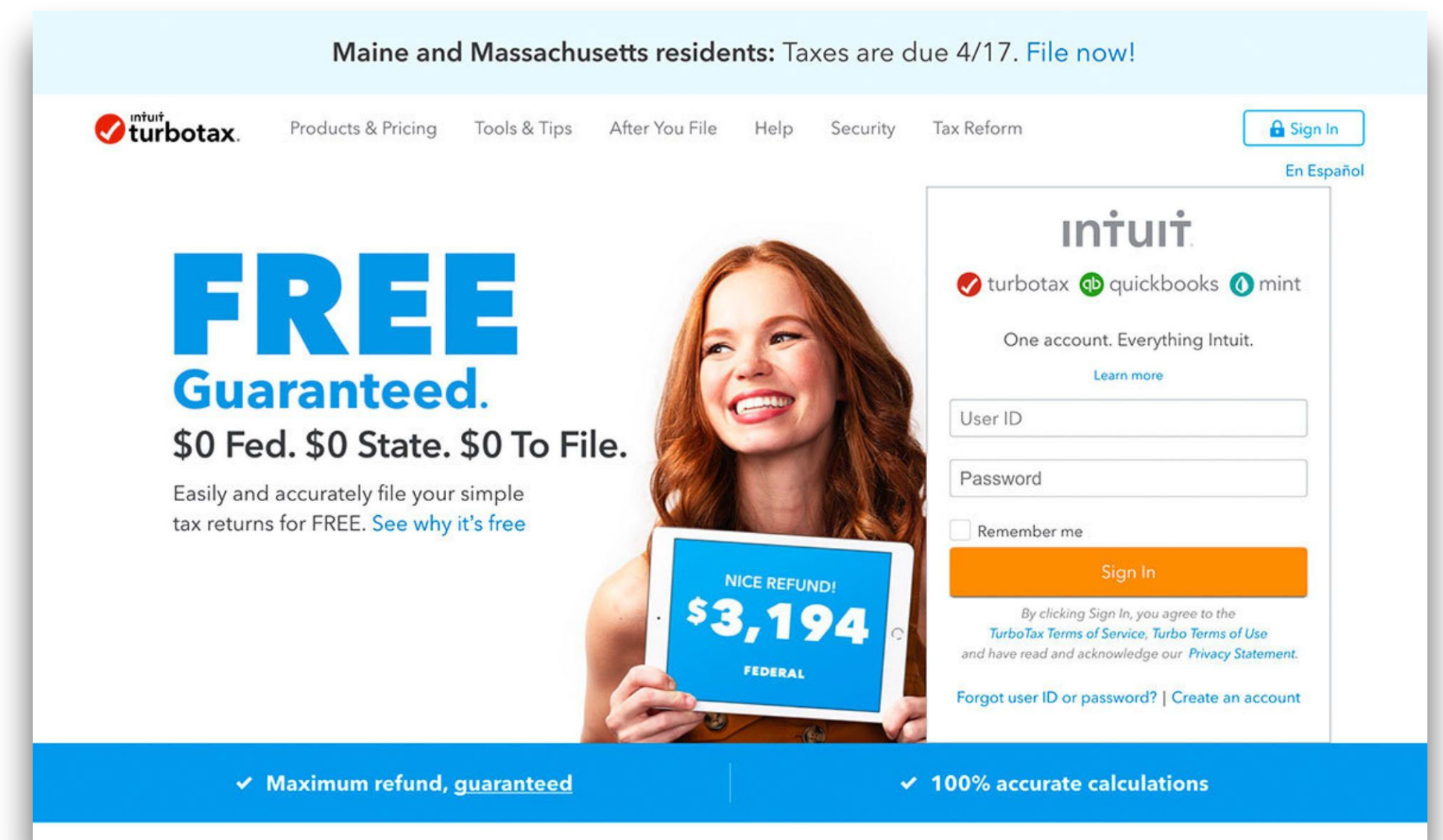
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Restrictive



Why Use Dark Patterns?

Money	Nudging you to buy more
Data	Getting around privacy protections
Time	Making apps addictive

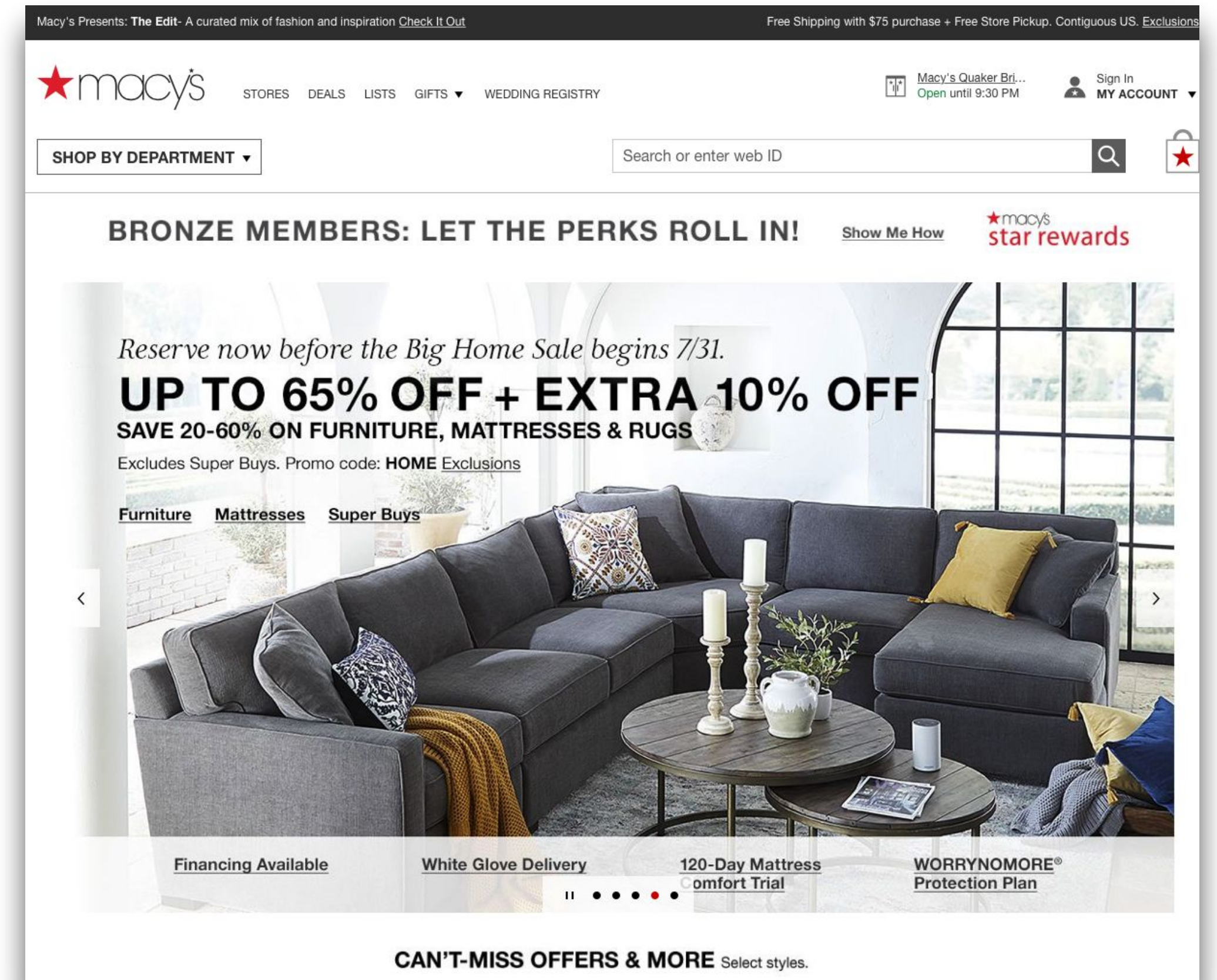
How can we identify and measure
dark patterns on the web at scale?

Why Measurement?

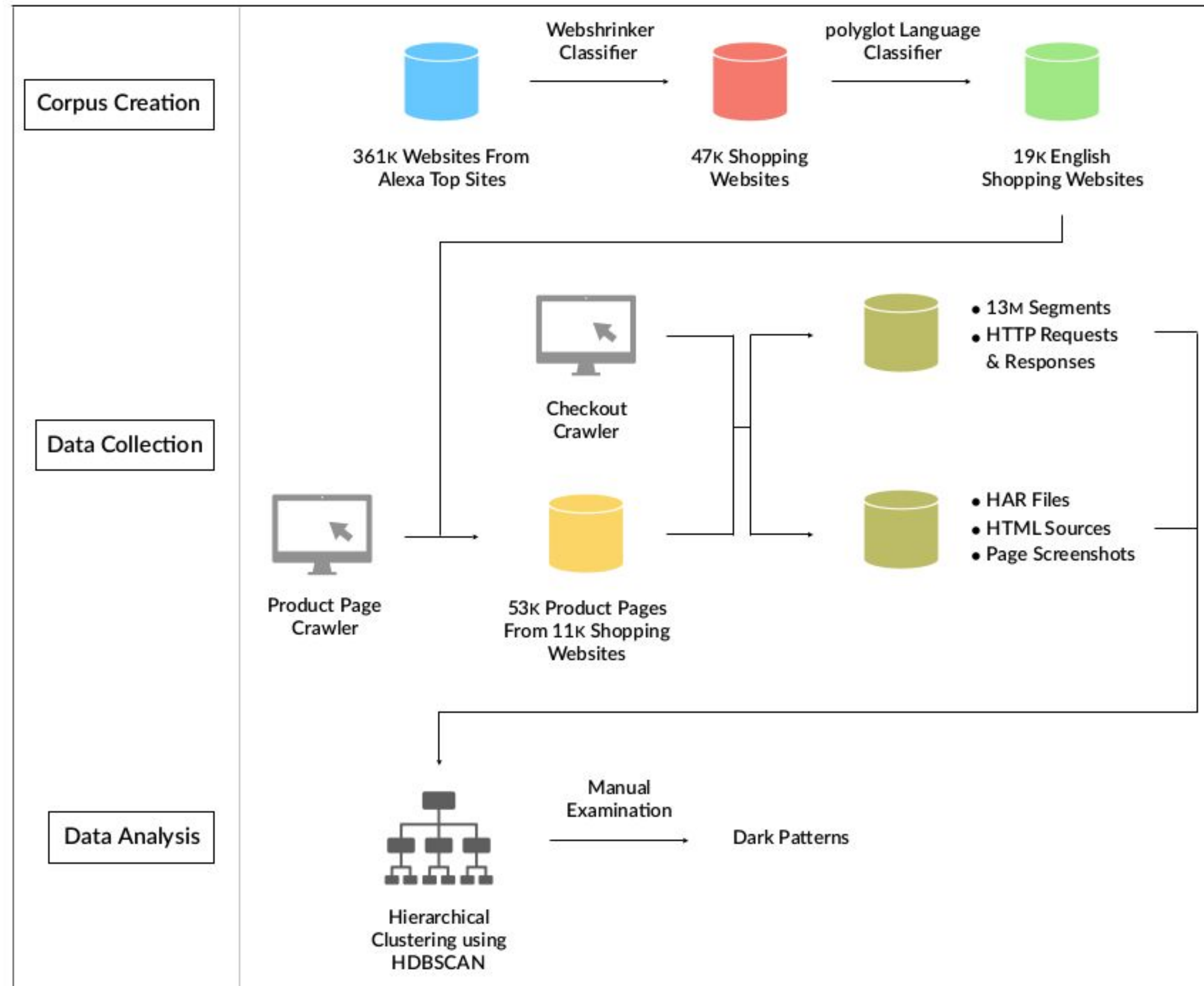
1. Document various forms of user-facing patterns.
2. Measurement can be the basis of building defenses.
3. Companies respond to public pressure. Precedents include privacy & security measurement studies.

Our study: Shopping Websites

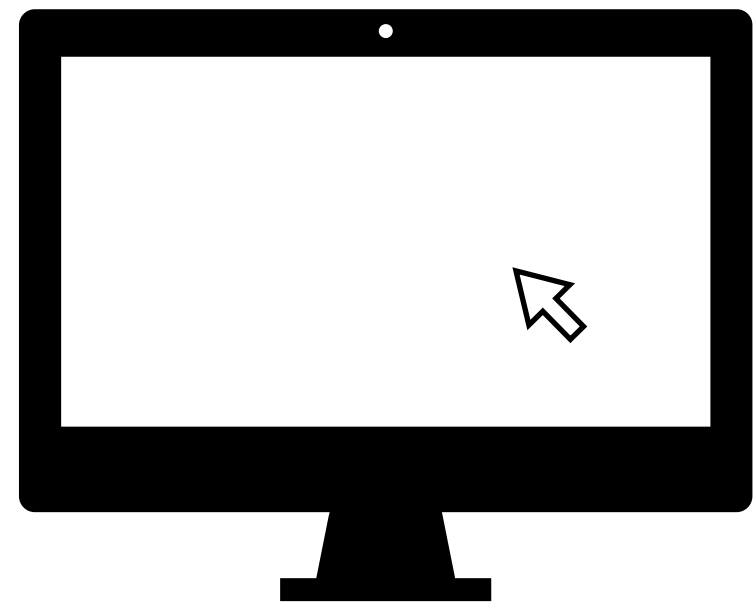
1. Several anecdotal examples of dark patterns.
1. Gathered a corpus of 11K of the most popular shopping websites worldwide.



Data collection and analysis pipeline



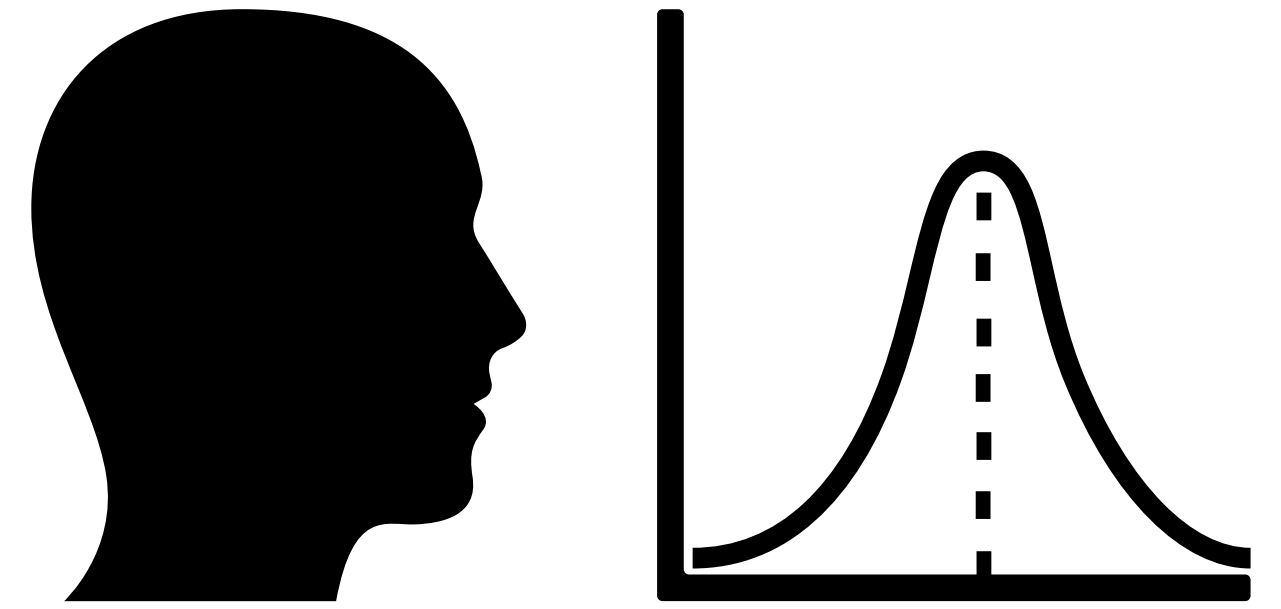
Three Key Challenges



Mimicking a real user
browsing websites

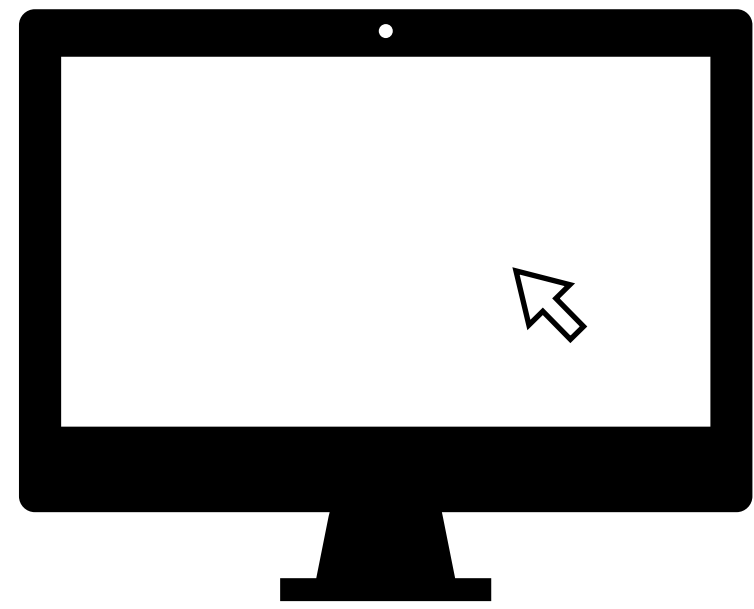


Collecting and storing
data from websites



Analyzing collected
data

Three Key Challenges



Mimicking a real user
browsing websites



Collecting and storing
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Analyzing collected
data

Shopping Bot

American Rag Jamie T-Strap Platform Dress Sandals, Created for Macy's

★★★★★ 105 Reviews 2 Questions & 6 Answers

Limited-Time Special

\$59.50

Sale \$29.75 (50% off) Sale ends 7/30/19

Color: **Tan**

Find Your True Fit

Size: **Please select** | [Size Chart](#)

5M 5.5M 6M 6.5M 7M See All Sizes

Qty: 1 - +

ADD TO BAG **ADD TO LIST**

Availability

Select a size above in order to view availability.

Product Details

American Rag's Jamie dress sandals take your style up a notch with a platform heel and T-strap design for a look that wows!

- 4-1/2" block heel, 1-1/4" platform

customers also shopped

G by GUESS Shelli Sandals \$59.00 ★★★★★ (2)

Jessica Simpson Jakayla We... Orig. \$79.00 **Now \$36.13** ★★★★★ (1)

Call It Spring Acaviel Wed... Reg. \$50.00 **Sale \$25.00**

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American Rag Jamie T-Strap Platform Dress Sandals, Created for Macy's

★★★★★ 105 Reviews 2 Questions & 6 Answers

Limited-Time Special

\$59.50

Sale \$29.75 (50% off) Sale ends 7/30/19

Color: **Red**

Find Your True Fit

Size: **Please select** | [Size Chart](#)

5M 5.5M 6M 6.5M 7M See All Sizes

Qty: 1 - +

ADD TO BAG **ADD TO LIST**

Availability

Select a size above in order to view availability.

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Shopping Bot

A screenshot of a web browser displaying the product page for American Rag Jamie T-Strap Platform Dress Sandals on the Macy's website. The browser's address bar shows the URL: <https://www.macys.com/shop/product/american-rag-jamie-t-strap-platform-dress-sandals-created-for-macys?ID=2603457&CategoryID=56172&swatchColor=Tan#fn=sp%3D1%26sp...>. The page features a large image of the sandals, a "Watch Video" button, and a "Limited-Time Special" price of \$29.75 (50% off) from \$59.50, ending on 7/30/19. The product is available in Black Micro color and sizes 5M to 7M. The page also includes a "customers also shopped" section with recommendations for G by GUESS Shelli Sandals, Jessica Simpson Jakayla We..., and Call It Spring Acaviel Wed....

Macy's / Shoes / Sandals & Flip Flops

American Rag
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5M 5.5M 6M 6.5M 7M See All Sizes
Qty: 1 - +
ADD TO BAG **ADD TO LIST**

Availability
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Color: **Black Micro**
Find Your True Fit
Size: **7M** | Size Chart
5M 5.5M 6M 6.5M **7M** See All Sizes

Qty: 1 - +
ADD TO BAG **ADD TO LIST**

☒ **Ship It**
In stock: Usually ships within 3 business days.
☐ **Free Pickup In Store**
[Check Availability In Stores](#)

Product Details

American Rag's Jamie dress sandals take your style up a notch with a platform heel and T-strap

customers also shopped

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★★★★★ (2)

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Shopping Bot

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★★★★★ 105 Reviews [2 Questions & 6 Answers](#)

Limited-Time Special
\$59.50
Sale \$29.75 (50% off) Sale ends 7/30/19

Color: **Black Micro**

Find Your True Fit

Size: **6.5M** | [Size Chart](#)

Qty: 1

ADD TO BAG **ADD TO LIST**

☒ **Ship It**
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[Check Availability In Stores](#)

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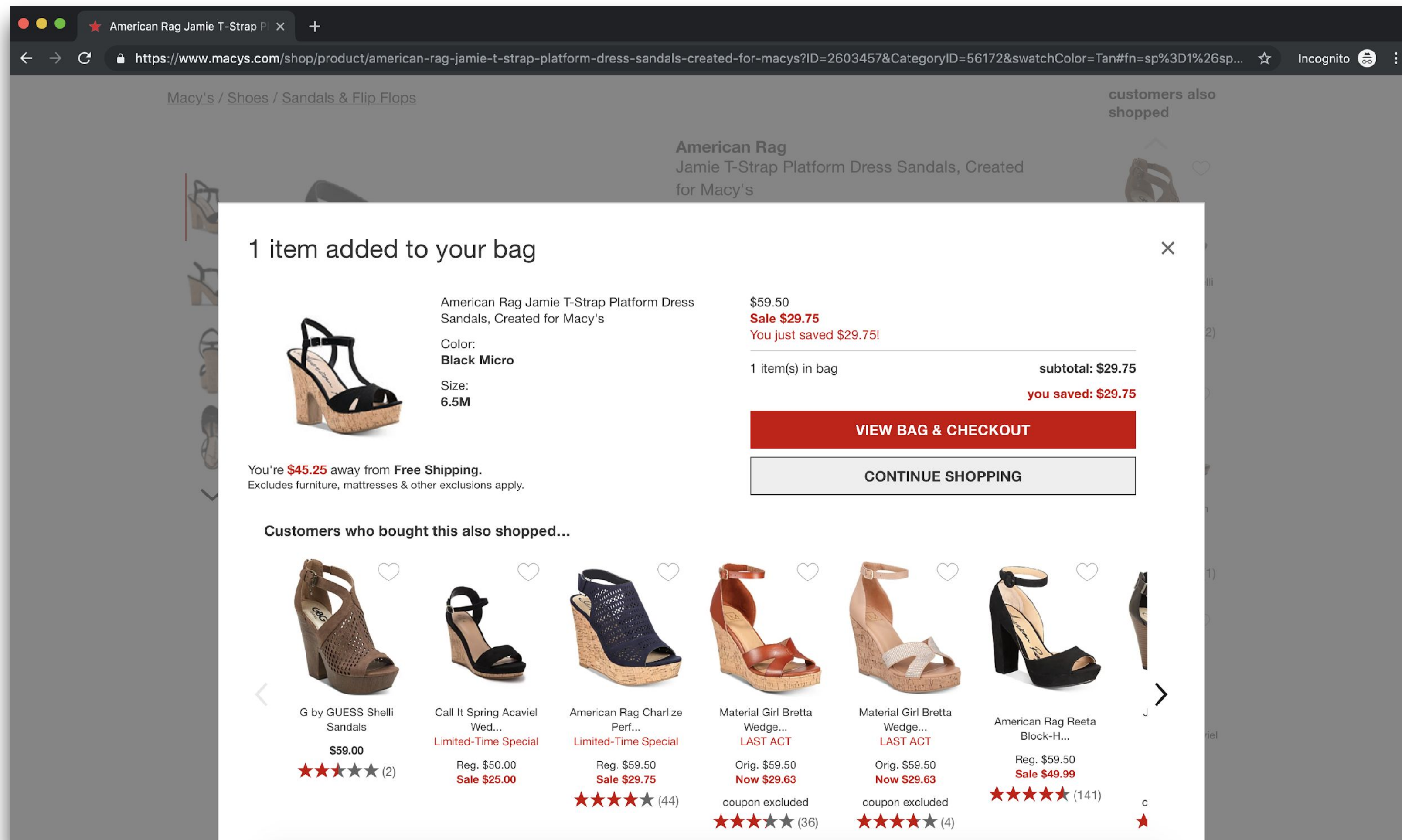
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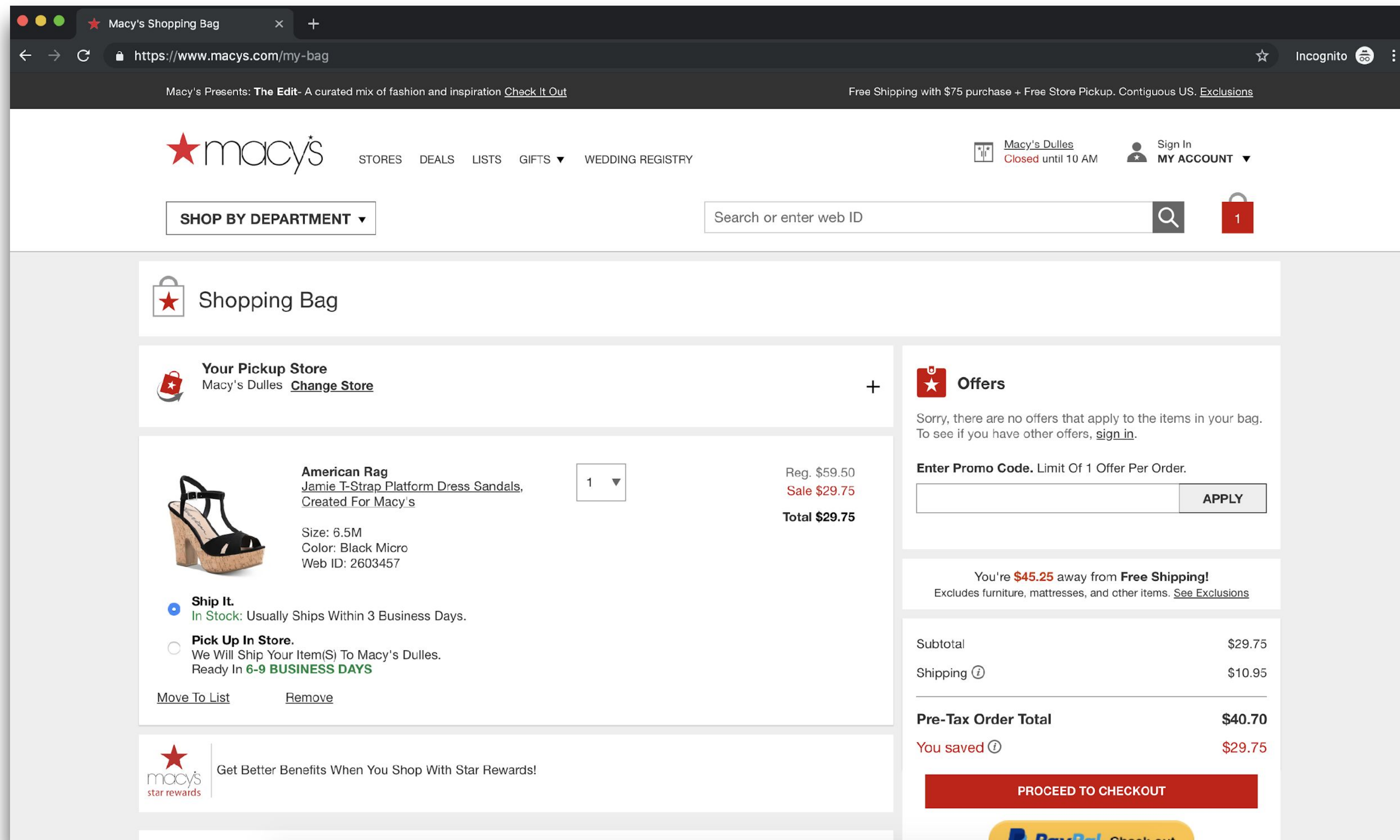
Jessica Simpson Jakayla We...
Orig. \$79.00
Now \$36.13
★★★★★ (1)

Call It Spring Acaviel
Wed...
Reg. \$50.00
Sale \$25.00

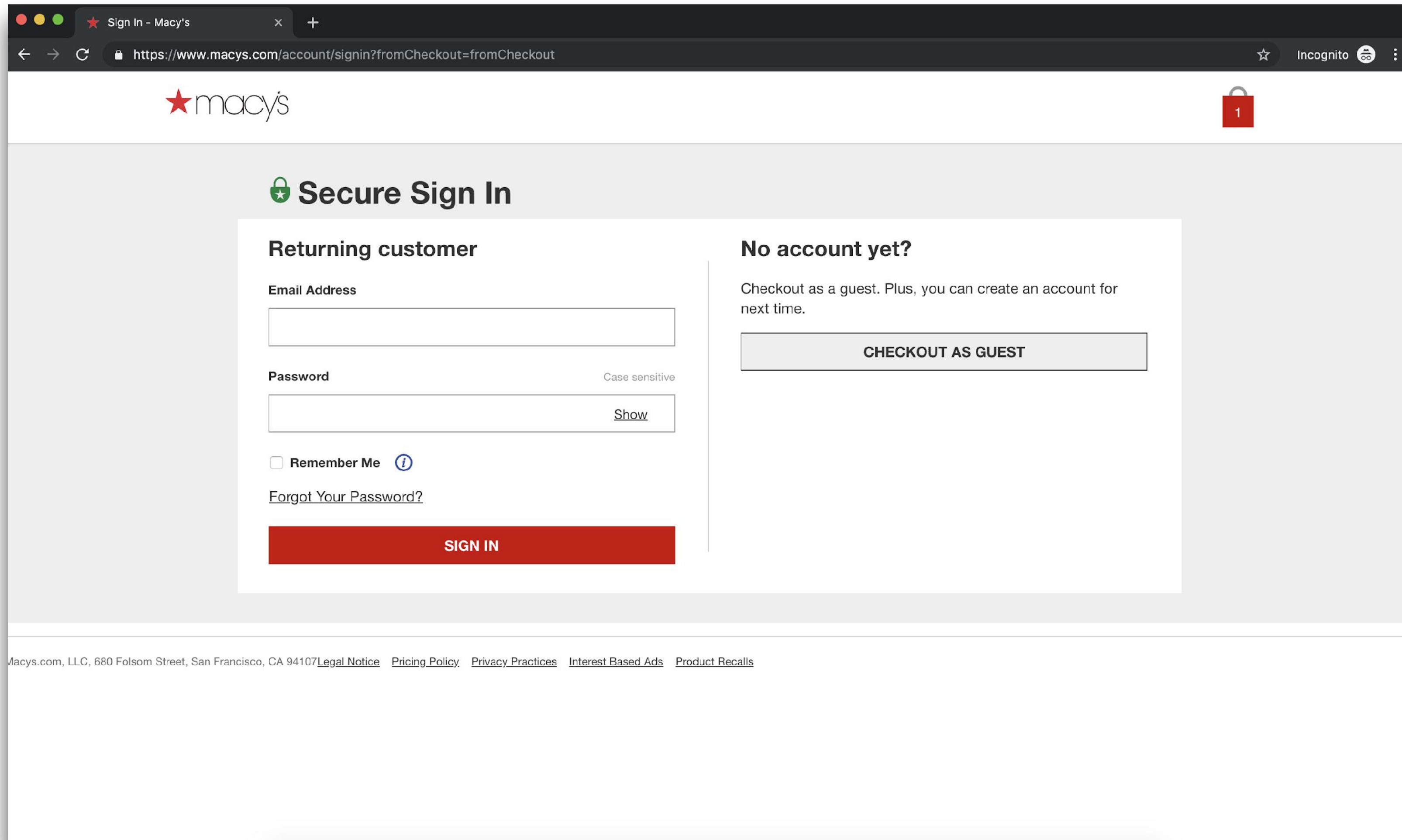
Shopping Bot



Shopping Bot



Shopping Bot



The screenshot shows a web browser window with the title "Sign In - Macy's" and the URL "https://www.macys.com/account/signin?fromCheckout=fromCheckout". The browser is in Incognito mode. The Macy's logo is in the top left, and a shopping cart icon with the number "1" is in the top right. The main content area is titled "Secure Sign In" with a green padlock icon. It is divided into two columns. The left column, "Returning customer", contains an "Email Address" input field, a "Password" input field with a "Show" link and "Case sensitive" text, a "Remember Me" checkbox with an information icon, a "Forgot Your Password?" link, and a red "SIGN IN" button. The right column, "No account yet?", contains a message "Checkout as a guest. Plus, you can create an account for next time." and a grey "CHECKOUT AS GUEST" button. The footer contains the text "Macy's.com, LLC, 680 Folsom Street, San Francisco, CA 94107" followed by links for "Legal Notice", "Pricing Policy", "Privacy Practices", "Interest Based Ads", and "Product Recalls".


Sign In - Macy's

https://www.macys.com/account/signin?fromCheckout=fromCheckout

Incognito

macys

1


 **Secure Sign In**

Returning customer

Email Address

Password Case sensitive

[Show](#)

☐ Remember Me 

[Forgot Your Password?](#)

SIGN IN

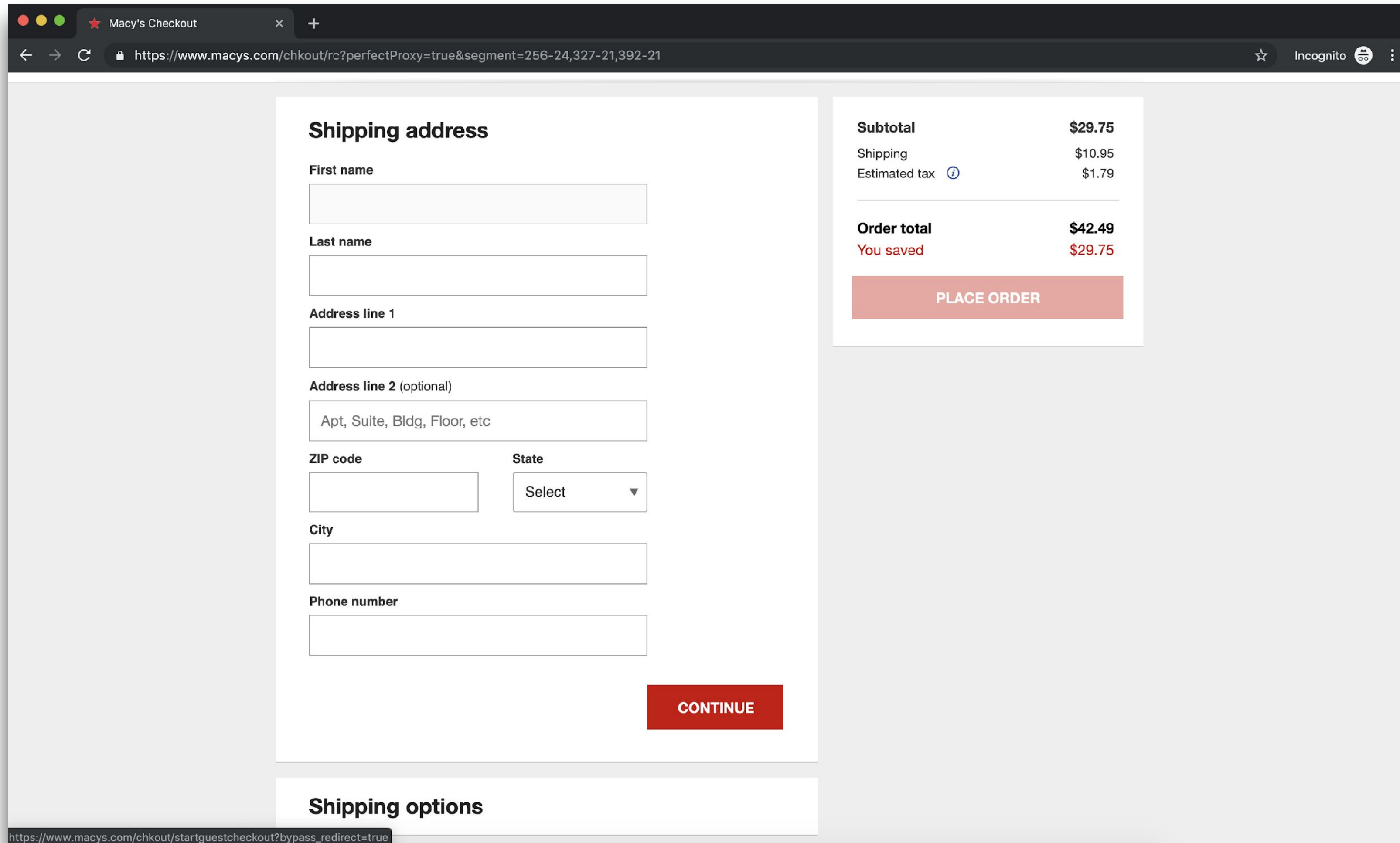
No account yet?

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CHECKOUT AS GUEST

Macy's.com, LLC, 680 Folsom Street, San Francisco, CA 94107 [Legal Notice](#) [Pricing Policy](#) [Privacy Practices](#) [Interest Based Ads](#) [Product Recalls](#)

Shopping Bot



The screenshot shows a web browser window with the title "Macy's Checkout" and the URL <https://www.macys.com/chkout/rc?perfectProxy=true&segment=256-24,327-21,392-21>. The page is in Incognito mode. The main content area is divided into two columns. The left column contains a "Shipping address" form with fields for First name, Last name, Address line 1, Address line 2 (optional), ZIP code, State (a dropdown menu), City, and Phone number. A red "CONTINUE" button is at the bottom right of this section. The right column contains an order summary table and a red "PLACE ORDER" button.

Shipping address	
First name	<input type="text"/>
Last name	<input type="text"/>
Address line 1	<input type="text"/>
Address line 2 (optional)	<input type="text" value="Apt, Suite, Bldg, Floor, etc"/>
ZIP code	<input type="text"/>
State	<input type="text" value="Select"/>
City	<input type="text"/>
Phone number	<input type="text"/>

CONTINUE

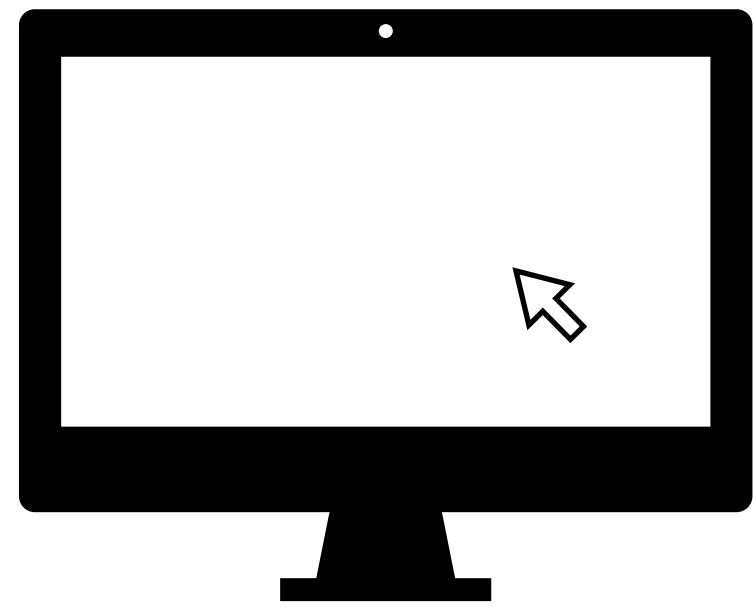
Order summary	
Subtotal	\$29.75
Shipping	\$10.95
Estimated tax ?	\$1.79
Order total	\$42.49
You saved	\$29.75

PLACE ORDER

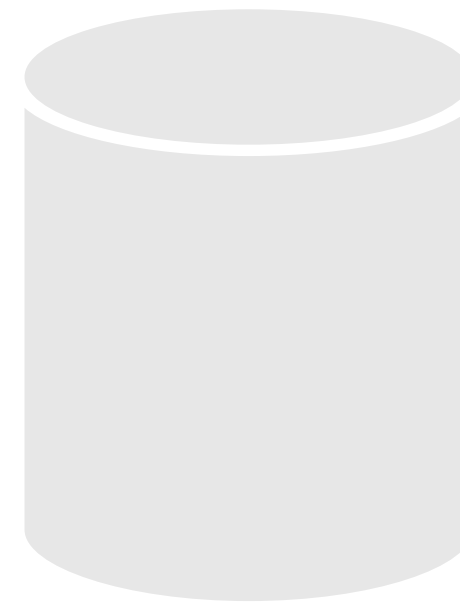
Shipping options

https://www.macys.com/chkout/startguestcheckout?bypass_redirect=true

Three Key Challenges



Mimicking a real user
browsing websites



Collecting and storing
data from websites

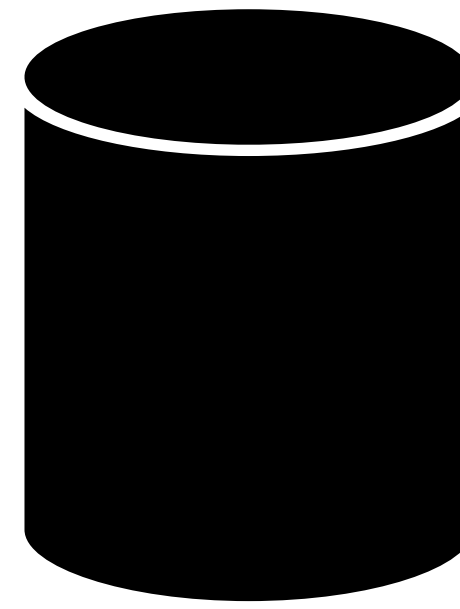


Analyzing collected
data

Three Key Challenges



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browsing websites




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data from websites



Analyzing collected
data

Page Segments

[Macy's / Shoes / Boots](#)



Sporto
Dana Boots

★★★★☆ 76 Reviews

LAST ACT

\$79.00

Now \$39.13 (50% off)

coupon excluded [Details](#)

Color: **Black**

\$39.13

\$25.03

Size: **Please select** | [Size Chart](#)

6M 6.5M 9.5M

Qty: 1



ADD TO BAG


Availability
Select a size above in order to view availability.

Product Details


Eastman Sporto's Dana boots feature modern lines with a hint of retro inspiration and plush faux fur for a


customers also shopped







Sporto Jenny Water-Resista...
Orig. \$79.00
Now \$39.13
★★★★☆ (45)






Style & Co Angiee Lace-Up ...
Orig. \$79.50
Now \$37.93
★★★★★ (29)

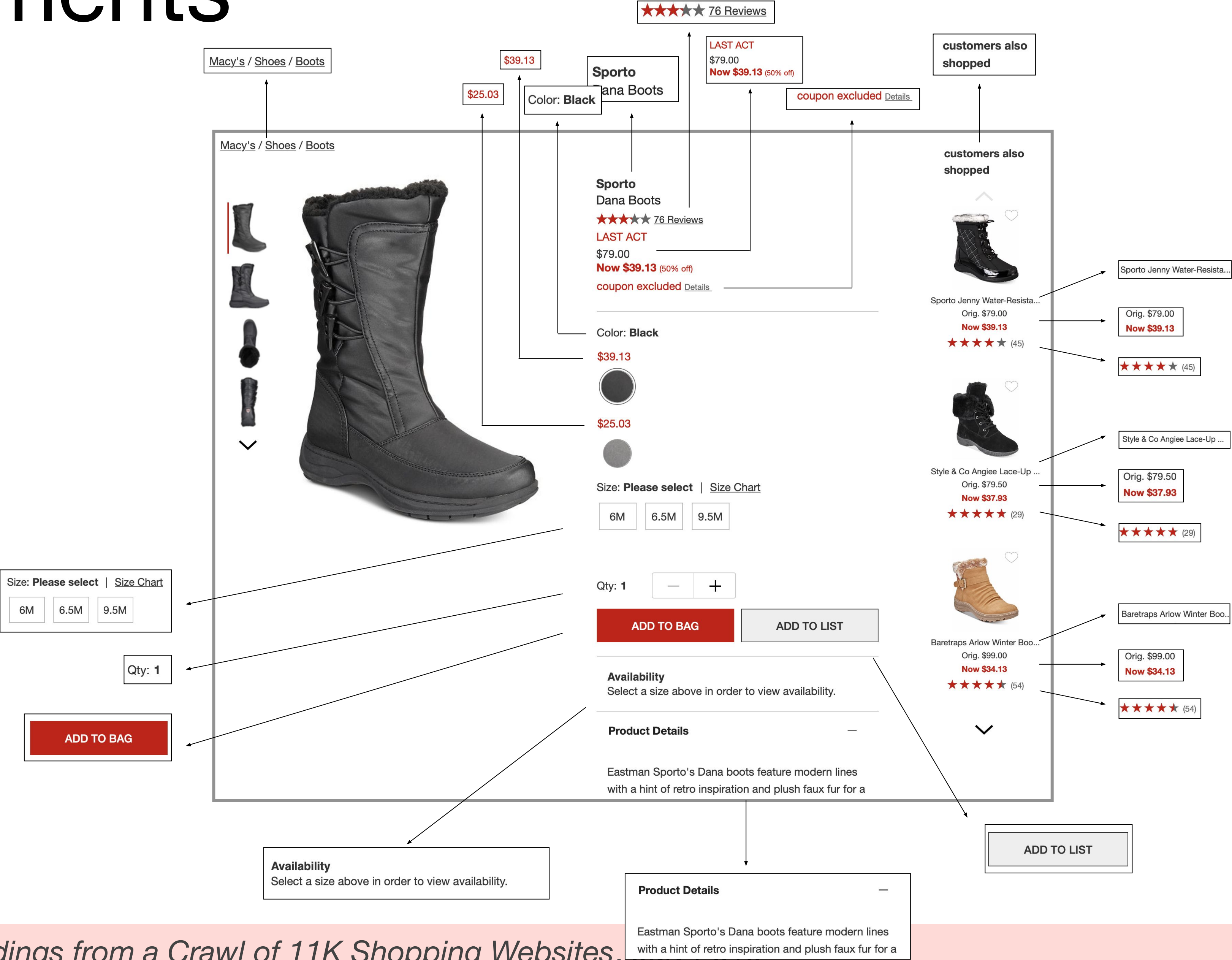




Baretraps Arlow Winter Boo...
Orig. \$99.00
Now \$34.13
★★★★★ (54)

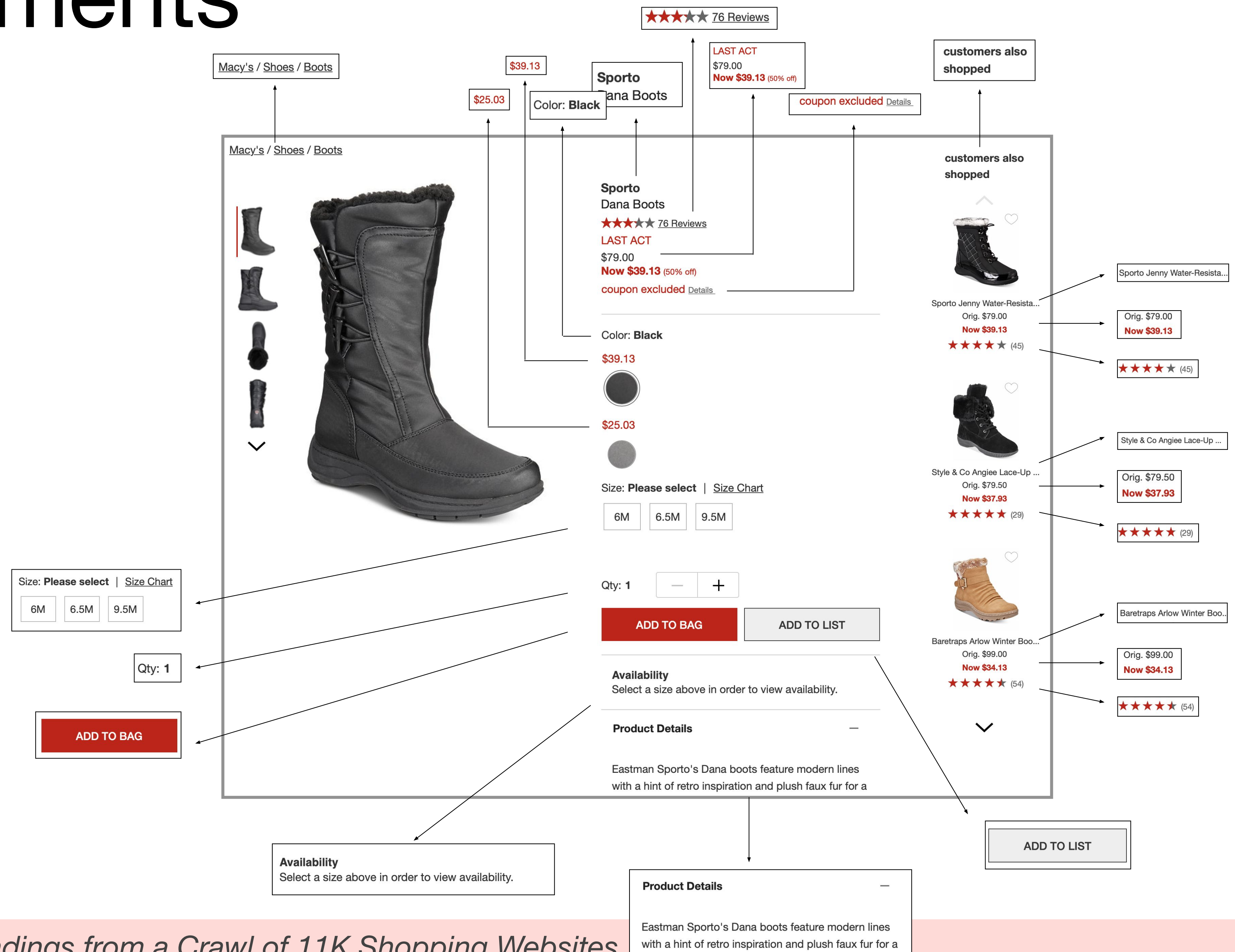


Page Segments



Page Segments

- HTML Sources
- HAR files
- Screenshots
- HTTP Requests
- HTTP Responses



rafaelw / mutation-summary

Watch

46

Star

545

Fork

129

Code

Issues 19

Pull requests 9

Projects 0

Wiki

Security

Insights

A JavaScript library that makes observing changes to the DOM easy

82 commits

1 branch

0 releases

4 contributors

Apache-2.0

Branch: master

New pull request

Create new file

Upload files

Find file

Clone or download



rafaew Update APIReference.md

Latest commit 421110f on Apr 12, 2015

docs

Update ObserversVsEvents.md

6 years ago

examples

Updated to latest typescript

5 years ago

src

added reparented to characterData query

5 years ago

tests

added reparented to characterData query

5 years ago

util

Updated to latest typescript

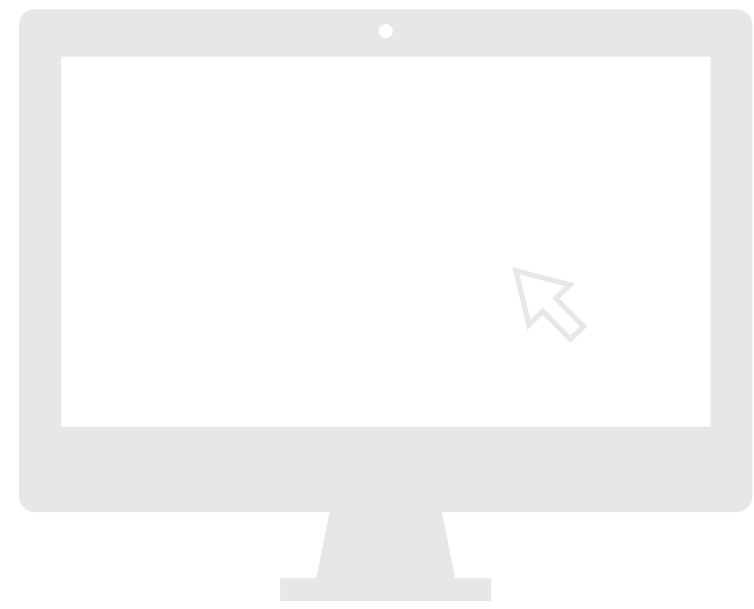
5 years ago

.gitignore

update TypeScript

6 years ago

Three Key Challenges



Mimicking a real user
browsing websites



Collecting and storing
data from websites

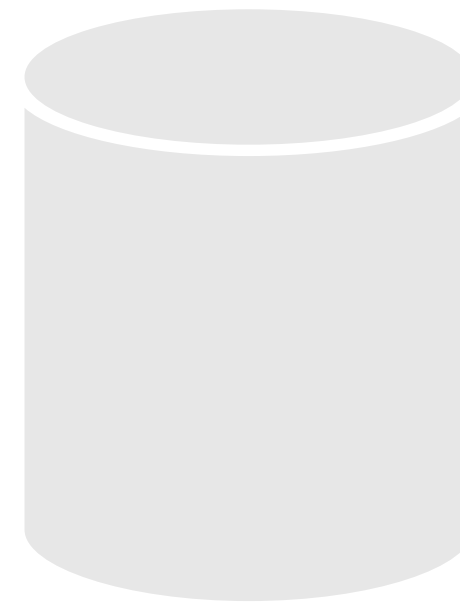


Analyzing collected
data

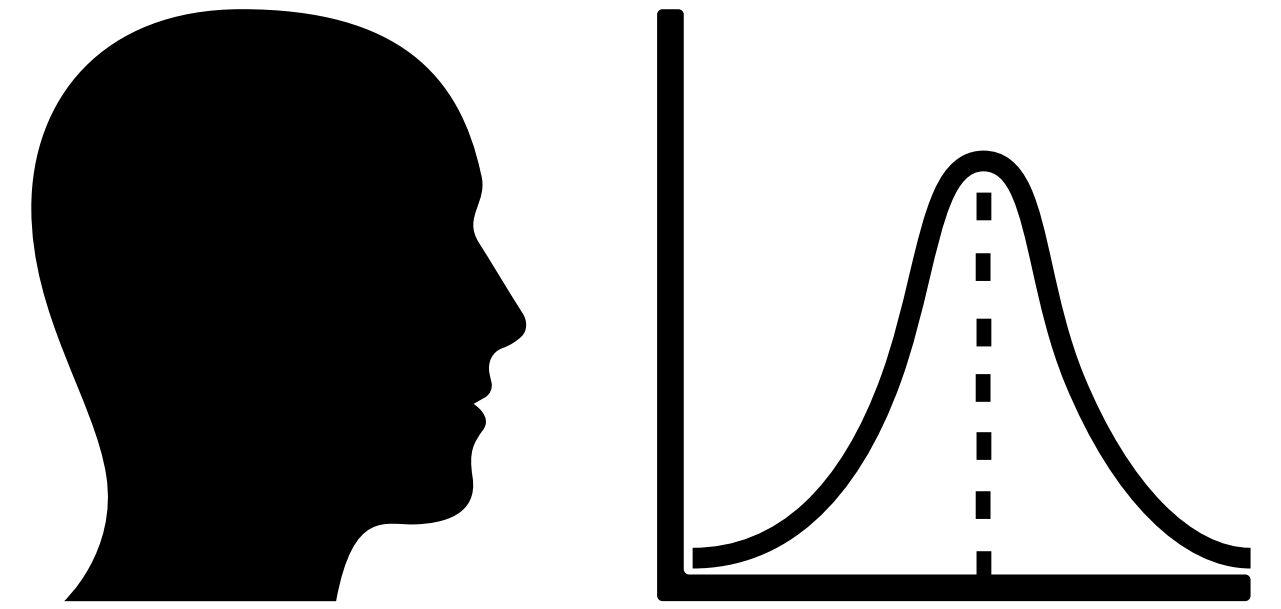
Three Key Challenges



Mimicking a real user
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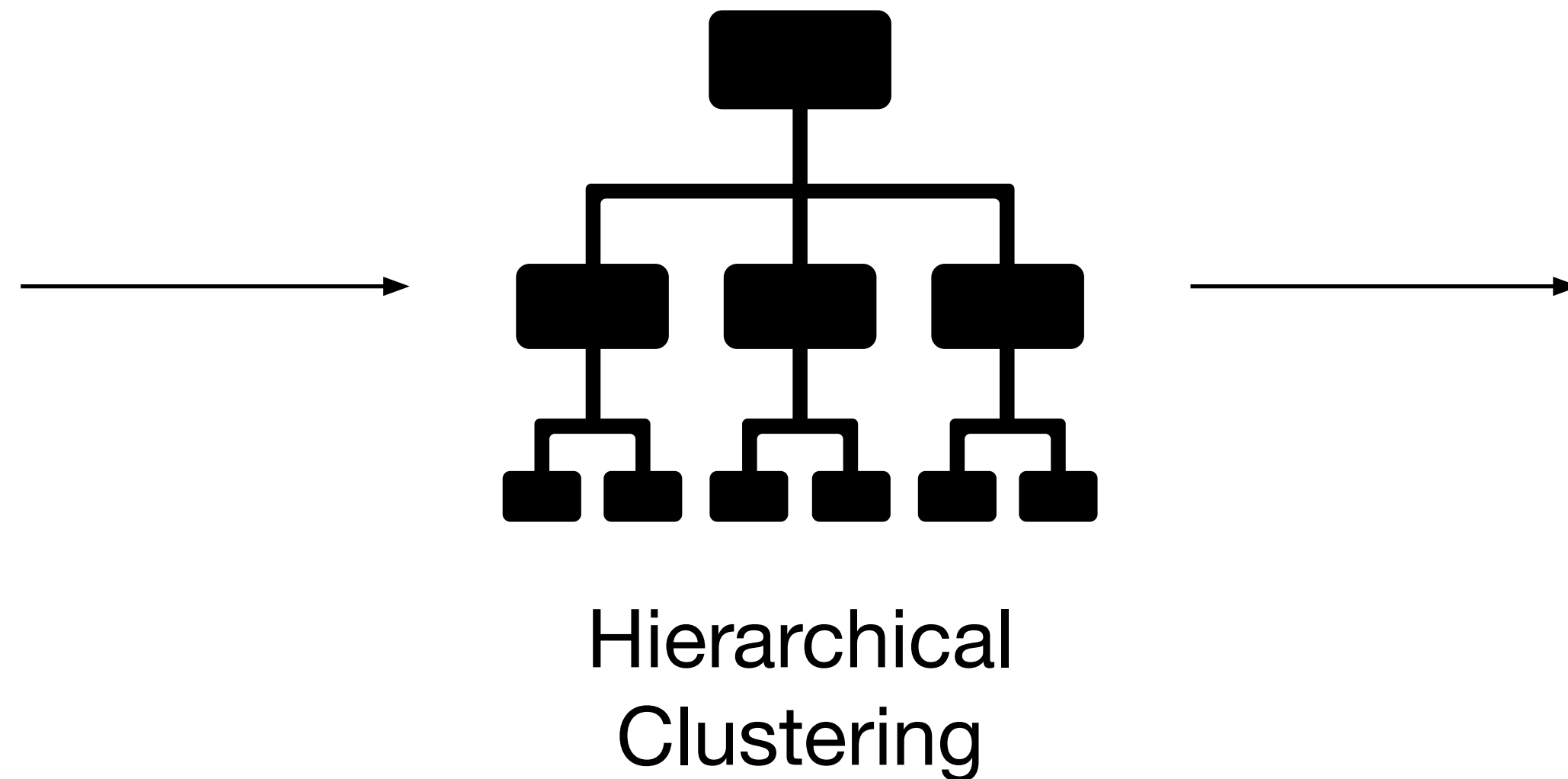
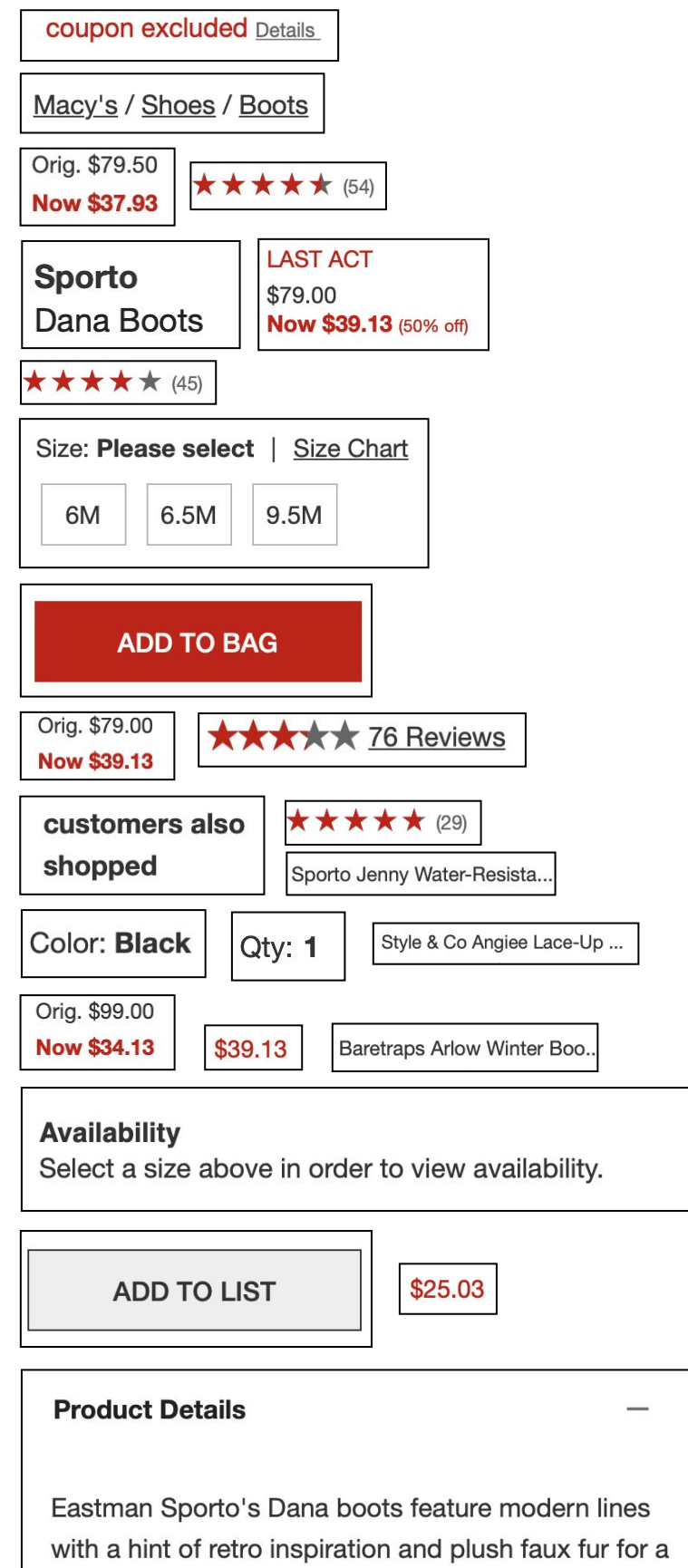


Collecting and storing
data from websites



Analyzing collected
data

Clustering Segments



Examine clusters for dark patterns

1,818 dark patterns on 1,254
shopping websites

15 Types, 7 Categories

Sneaking

1. Sneak into Basket
2. Hidden Costs
3. Hidden Subscription

Urgency

1. Countdown Timer
2. Limited-time Message

Scarcity

1. Low-stock Message
2. High-demand Message

Misdirection

1. Confirmshaming
2. Visual Interference
3. Trick Questions
4. Pressured Selling

Social Proof

1. Activity Messages
2. Testimonials of Uncertain Origin

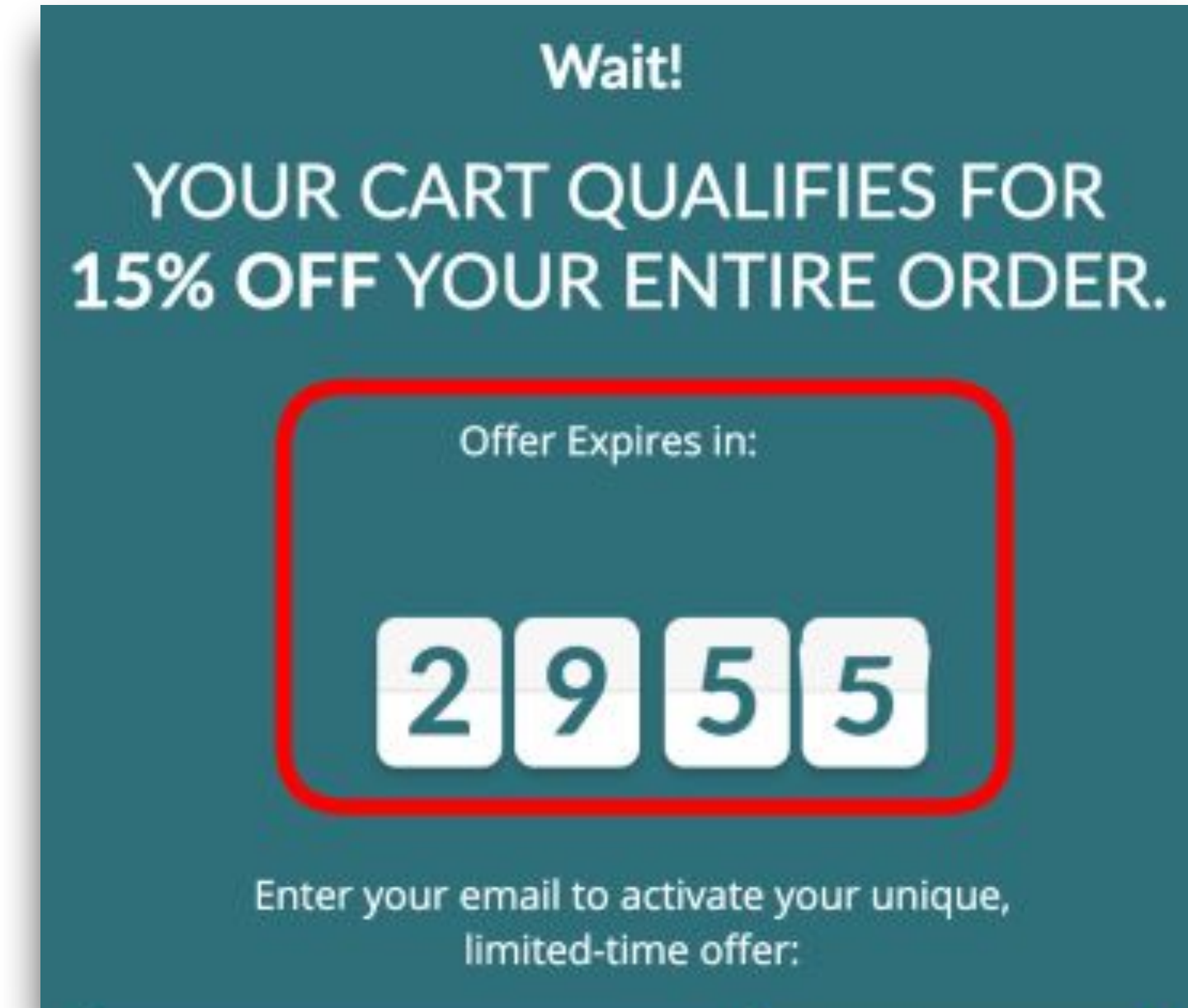
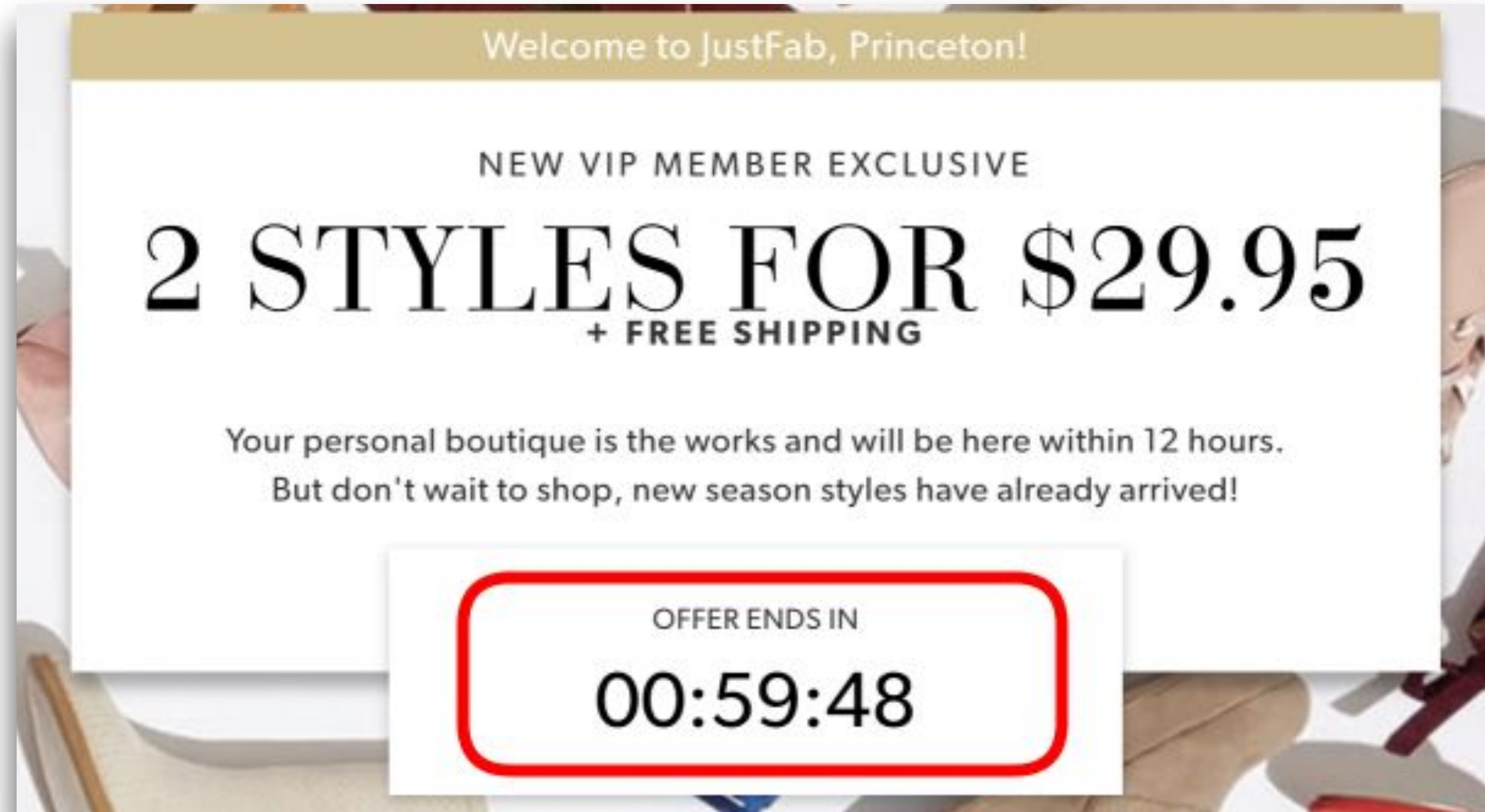
Obstruction

1. Hard to Cancel

Forced Action

1. Forced Enrollment

DP #1: Urgency — Timers



- 393 instances across 361 websites.
- 157 deceptive instances.

DP #2: Urgency — Limited Time

XE800ZBA-HC1U5 

HMD Odyssey+ - Windows Mixed Reality Headset

★★★★☆ 3.6 (48) [Write a review](#)

Windows Mixed Reality

Dual 3.5" AMOLED (1440x1600 dots)

 Price includes \$200 instant savings - 40% off. Limited time only.


\$299.99 ~~\$499.99~~
You Save \$200

SKU: T181129005

In stock

Only 3 left

~~\$119.00~~ **\$99.00**

Save: 17% off **Sale ends soon:** 

SIZE *

- 88 instances across 84 websites.

DP #3: Sneaking — Sneak into Basket



TODAY'S SALE!- VALID ONLINE ONLY- *Up To 45% Off + Free Local Delivery

① [Delivery Info](#) — ② [Billing Info](#) — ③ [Review & Place Order](#)

Need assistance? We are here to help! Call us any time at **877-638-3303**




[Log in](#) to apply your points or discounts and earn even more points towards future purchases


SHOPPING CART


Item	Qty	Price	Subtotal
 Dreaming of Tuscany Selected: "As Shown" 2nd choice: similar as possible, same look and feel	1	\$52.99	\$52.99
 Greeting Card Service Selected: "STANDARD"	1	\$3.99	\$3.99

✓ **In stock:** [Ships today if ordered by 2pm EST!](#)

QTY: 1 **ADD TO MY CART**

 **LIFETIME** Quality Assurance Warranty  **90 Day** Return Policy  **110% Low** Price Guarantee

Send me purchase updates on Messenger
☐ Send to  Messenger

 **LG V40 ThinQ - Full Edge Tempered Glass Screen Protector, Black**
~~\$19.99~~ **\$4.99**
☒ Add to my cart


- 7 instances across 7 websites.

DP #4: Sneaking — Hidden Subscription

Case – **SAVE over \$100** SALE

Collection

average bottle rating i



15 bottles for JUST \$13.29 each

\$199.35

Reg. \$306.35

SAVE \$107.00

Shipping Rates


☐ Enjoy **FREE shipping** with WSJwine Advantage [Learn More](#)

Add to Cart

Item No. A07897

VIP ✨ *rewards*

YOU DESERVE OUR SPECIAL TREATMENT!



Start saving with the Ross-Simons VIP Rewards Club! Annual benefits include:

- Three \$50 gift coupons (\$150 total) to use on three distinct purchases – it more than pays for itself!
- Free 2-business-day domestic shipping.
- Free shipping on jewelry returns.
- Exclusive invitation-only savings events that you'll receive several times a year.
- Priority phone line answered by a dedicated VIP consultant to assist you.

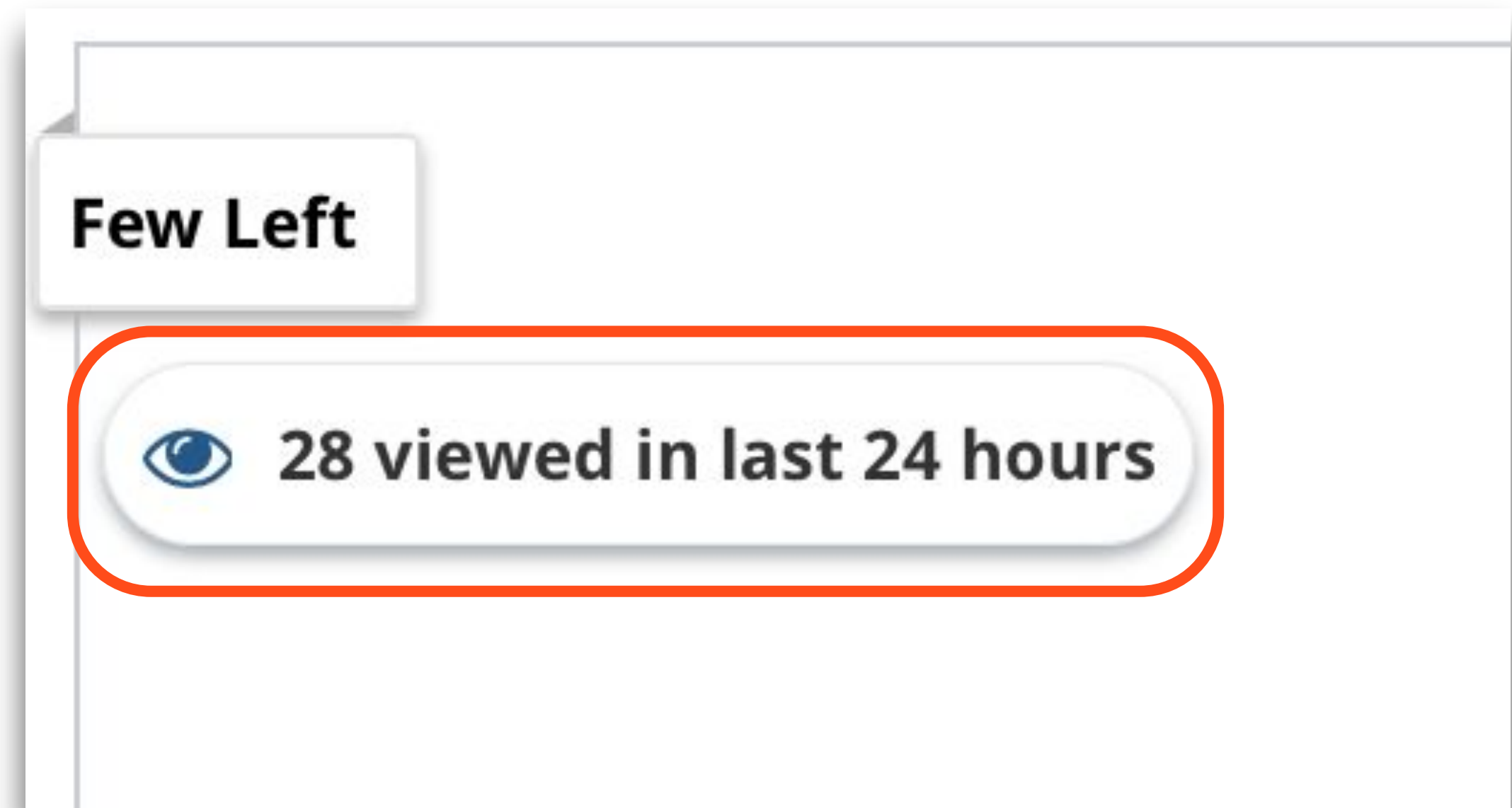
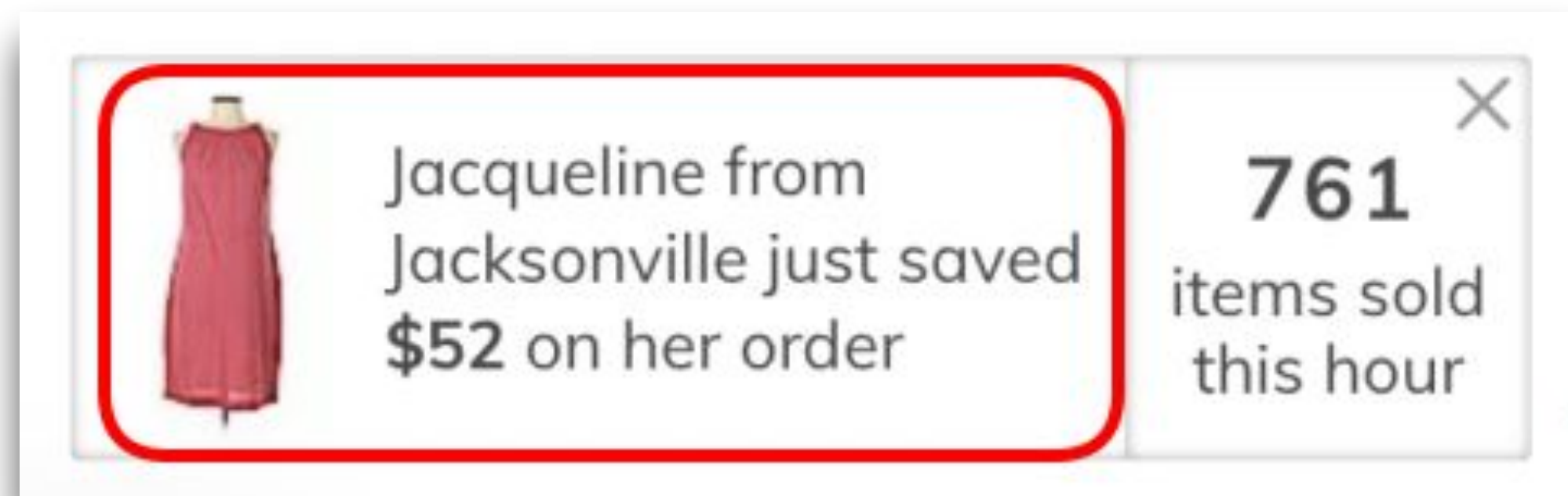
Just \$95.00

JOIN TODAY

Already a member? [Sign In.](#) [Terms and conditions](#)

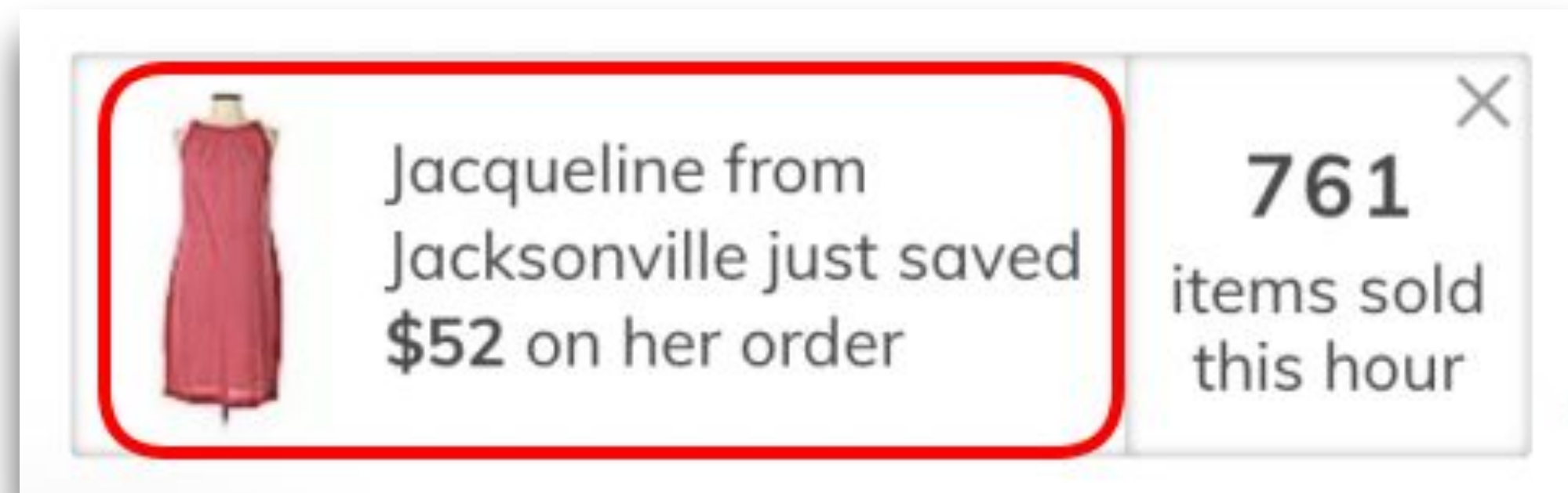
- 14 instances across 13 websites.

DP #5: Social Proof — Activity Notification



- 313 instances across 264 websites.
- 29 deceptive instances.

DP #5: Social Proof — Activity Notification



```
Ms = ["Abigail", "Alexandra", "Alexis", "Alicia", "Allison",  
      "Alyssa", "Amanda", "Amber", "Amy", "Andrea", "Angela", "Anna",  
      "April", "Ashley", "Brianna", "Brittany", "Brittney", "Brooke",  
      "Caitlin", "Caroline", "Cassandra", "Catherine", "Chelsea",  
      "Christina", "Christine", "Courtney", "Crystal", "Danielle",  
      "Destiny", "Diana", "Elizabeth", "Emily", "Emma", "Erica",  
      "Erika", "Erin", "Gabrielle", "Grace", "Hailey", "Haley",  
      "Hannah", "Heather", "Isabella", "Jacqueline", "Jamie", "Jasmine",  
      "Jenna", "Jennifer", "Jessica", "Jordan", "Julia", "Julie",  
      "Kaitlyn", "Katelyn", "Katherine", "Kathryn", "Katie", "Kayla",  
      "Kelly", "Kelsey", "Kimberly", "Kristen", "Kristin", "Laura",  
      "Lauren", "Leah", "Lindsay", "Lindsey", "Lisa", "Madison",  
      "Maria", "Marissa", "Mary", "Megan", "Melissa", "Michelle",  
      "Molly", "Monica", "Morgan", "Natalie", "Nicole", "Olivia",  
      "Paige", "Rachel", "Rebecca", "Samantha", "Sara", "Sarah",  
      "Savannah", "Shannon", "Shelby", "Sierra", "Sophia", "Stephanie",  
      "Sydney", "Taylor", "Tiffany", "Vanessa", "Victoria", "Whitney"  
],  
As = ["Albuquerque", "Anaheim", "Arlington", "Atlanta", "Aurora",  
      "Austin", "Bakersfield", "Baltimore", "Boston", "Charlotte",  
      "Chicago", "Cleveland", "Colorado", "Columbus", "Dallas",  
      "Denver", "Detroit", "El Paso", "Fort Worth", "Fresno",  
      "Honolulu", "Houston", "Indianapolis", "Jacksonville", "Kansas ",  
      "Las Vegas", "Long Beach", "Los Angeles", "Louisville", "Memphis",  
      "Mesa", "Miami", "Milwaukee", "Minneapolis", "Nashville",  
      "New Orleans", "New York City", "Oakland", "Oklahoma ", "Omaha",  
      "Philadelphia", "Phoenix", "Portland", "Raleigh", "Riverside",  
      "Sacramento", "San Antonio", "San Diego", "San Francisco",  
      "San Jose", "Santa Ana", "Seattle", "St. Louis", "Tampa",  
      "Tucson", "Tulsa", "Virginia", "Washington", "Wichita"  
],
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BXN Premium Pre-Rolls (Hybrid Mix) – 3 Pack

\$15

\$12

★★★★★ 4.53 (17)

Limited time only! \$11.99 for 3 Pre-Rolls!

Each Sativa Pre-Roll contains approximately 0.8 gram of lab-tested Hybrid flower mix.

• This product is excluded from cart discount codes.

Image for reference only

Quantity:

– 1 +

ADD TO CART

```
probability: .5,  
pattern: "{X} have {Y} this product in the past {Z} {W}",  
variables: {  
  X: [2, 3, 4, 5, 6, 7, 8, 9, 10],  
  Y: ["purchased", "looked at"],  
  Z: [2, 3, 4, 5, 6, 7, 8, 9, 10],  
  W: ["minutes", "hours"]  
}
```

Social Proof

Third parties

Third-party Entity	Prevalence		Additional Dark Patterns
	# Shopping	# Alexa Top	
	Websites	Million	
Beeketing	406	4,151	Pressured Selling, Urgency, Scarcity
Dynamic Yield	114	416	Urgency
Yieldify	111	323	Urgency, Scarcity
Fomo	91	663	–
Fresh Relevance	86	208	Urgency
Insider	52	484	Scarcity, Urgency
Bizzy	33	213	–
ConvertCart	31	62	–
Taggstar	27	4	Scarcity, Urgency
Qubit	25	73	Pressured Selling, Scarcity, Urgency
Exponea	18	180	Urgency, Scarcity
Recently	14	66	–
Proof	11	508	–
Fera	11	132	Pressured Selling, Scarcity, Urgency
Nice	10	80	–
Woocommerce Notification	10	61	–
Bunting	5	17	Urgency, Scarcity
Credibly	4	67	–
Convertize	3	58	Scarcity, Urgency
LeanConvert	2	0	–
Boost	1	3	–
Amasty	1	0	Pressured Selling, Scarcity, Urgency

Hush it's a secret! If you are just starting, you can use *fake* boosts.

If you just started, it can be hard for you to show real boosts right from the very beginning. Fake Boosts can be used until some genuine interactions data gets piled up.

It's the perfect feature for a fresh start-up



Roberto from Roma, IT
Bought [The Boost Plugin](#)
Recently

Verified by: **boost**

1 Boost Type

2 **Configure**

3 Message

4 Display

5 Review & Publish

Lead Boost

Capture leads when a form is completed. Works with most forms and popups.

A lead will be captured when the form found on this URL is completed

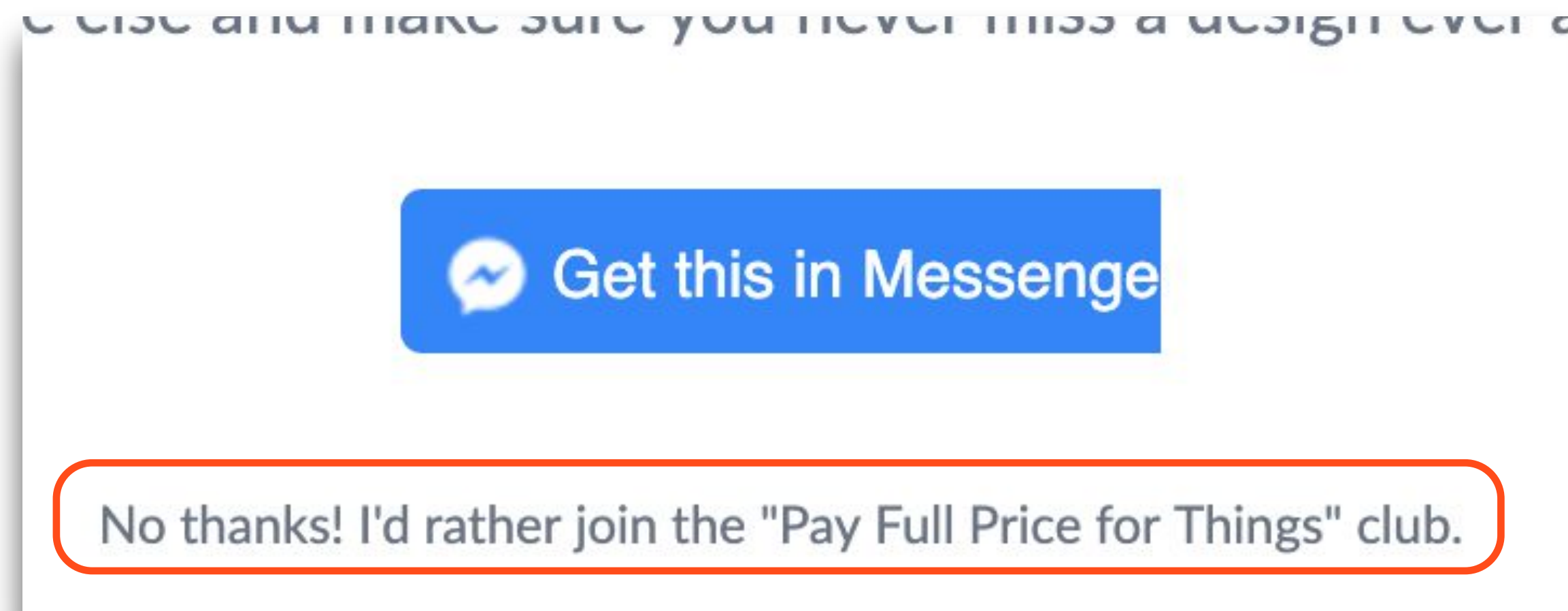
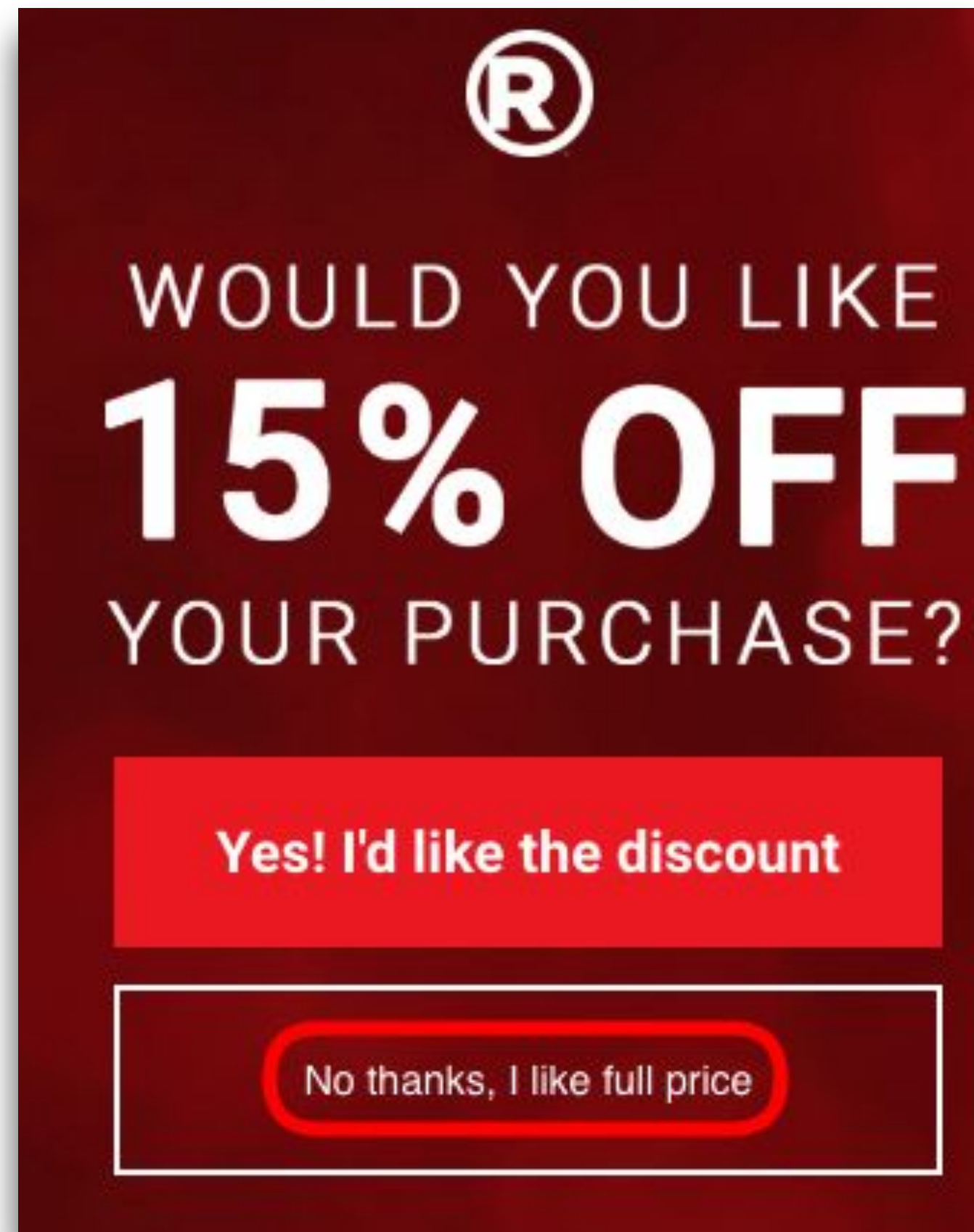
☒
ENABLE FAKE PROOFS UNTILL SUFFICIENT REAL LEADS ARE CAPTURED

MIX FAKE BOOSTS UNTIL AT LEAST REAL LEADS ARE CAPTURED

Save & Close

Continue

DP #6: Misdirection — Confirmshaming



- 169 instances across 164 websites.



AAF special bonus!

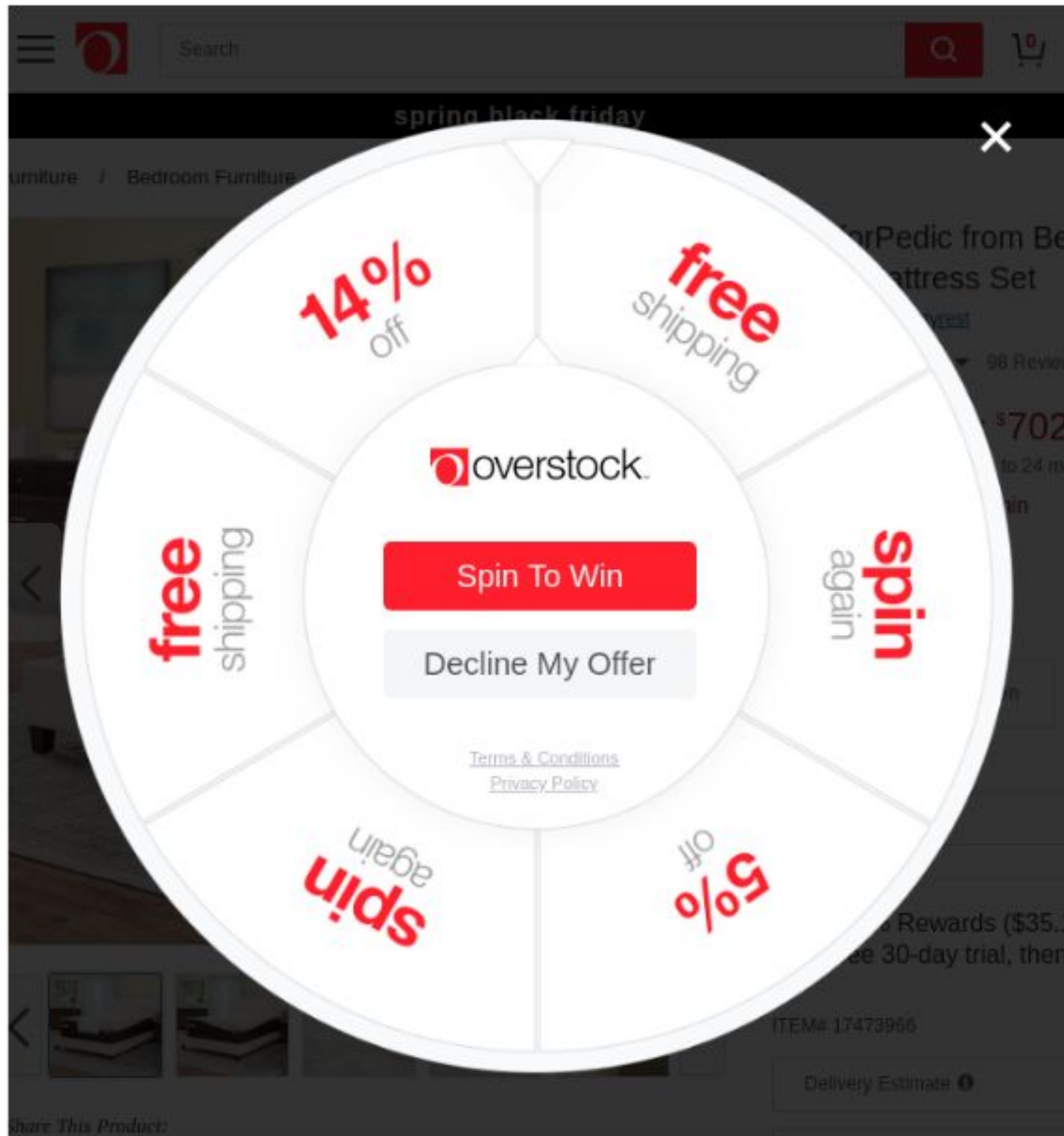
You have a chance to win a big fat discount. Are you ready, patriot?

* You can spin the wheel once.
* If you win, you can claim your coupon for 10 mins only!

TRY YOUR LUCK

No, I don't feel lucky





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Elements Network Console Sources Performance
spage.html?grou...5804&coupon=12 x
331     document.getElementById('_spin_spinner').src = "r
332     }, 3400);
333     setTimeout(spinSignUp, 5400);
334 }
335
336 function onClick() {
337     var img = document.getElementById('_spin_spinner');
338     img.removeAttribute('style');
339     var css = 'transform: rotate(750deg);';
340     img.setAttribute(
341         'style', css
342     );
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Line 339, Column 1

Scope Watch

Call Stack

Not paused

Breakpoints

No breakpoints

XHR/fetch Breakpoints

DOM Breakpoints

Global Listeners

Event Listener Breakpoints

Console Remote devices Sensors What's New Network c

Aa .* rotate(750deg) ↺ ↻

spage.html?groupid=5804&coupon=12 — www.overstock.com/98813/spage.f

339 ...sform: rotate(750deg);;

DP #7: Misdirection — Trick Questions

* Phone ?

* Email

☐ We'd love to send you emails with offers and new products from New Balance Athletics, Inc. but if you do not wish to receive these updates, please tick this box. [View Privacy Policy.](#)

CONTINUE TO BILLING

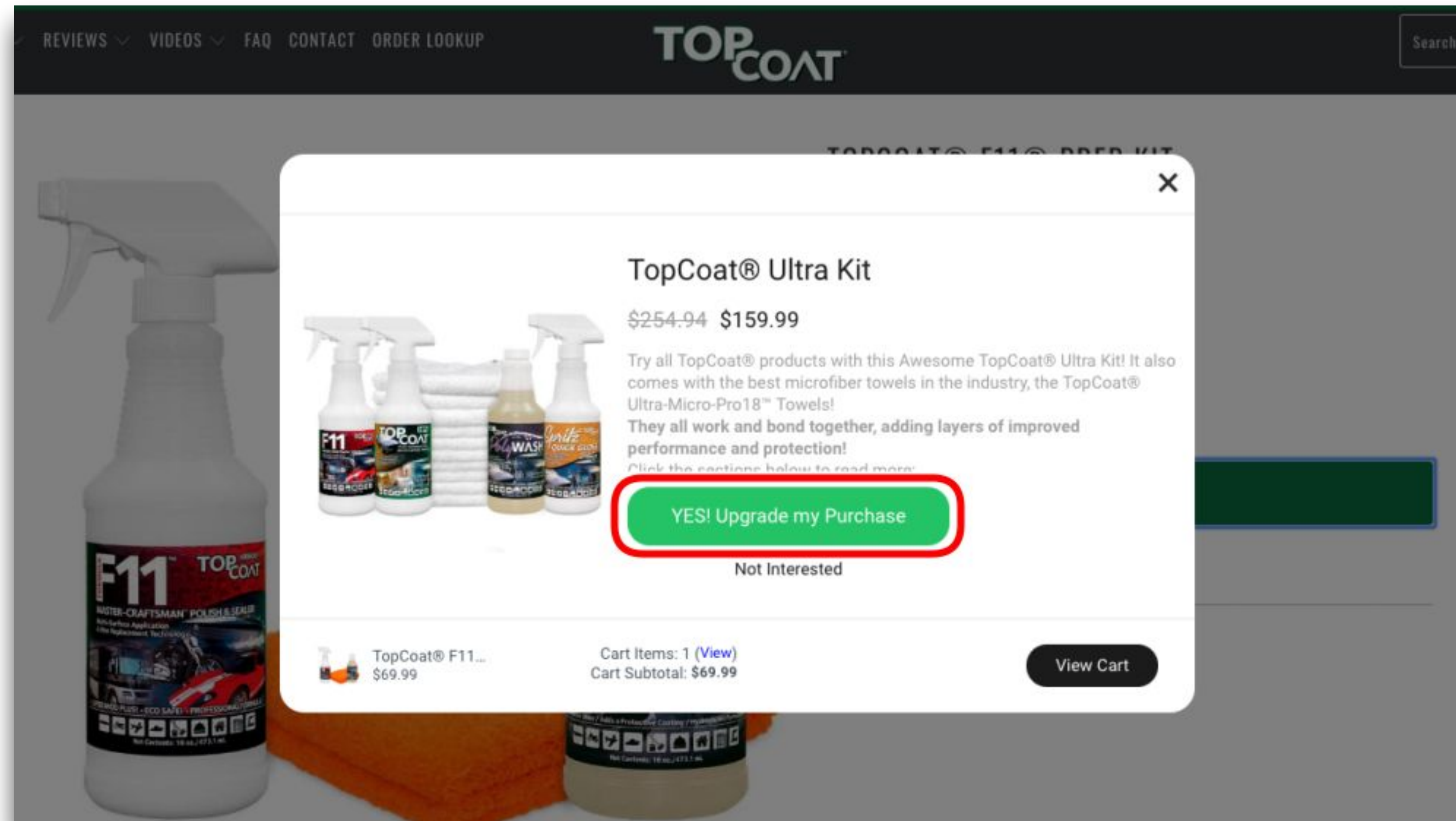
Email address

☐ If you click continue below we will be happy to tell you about discounts, money off and new products from Very by e-mail and text, unless you tell us you **DO NOT** want to hear about them, by ticking here.

☐ If you would like to receive offers from carefully selected 3rd parties, please tick here.

- 32 instances across 32 websites.

DP #8: Misdirection — Upselling



- 67 instances across 62 websites.

DP #9: Misdirection — Visual Interference

CONTACT PREFERENCES




Please select **Yes** below if you are happy to receive email notifications of **exclusive member offers** from M8 Group companies. You will always have the option to unsubscribe from any emails you decide you would rather not receive.

☐ **YES** I do want to hear about exclusive offers & discounts

☐ **NO** I'd rather NOT hear about exclusive offers & discounts

Don't worry, we will never sell or rent your personal information, it's part of our [privacy policy](#). Also, you can update your preferences and unsubscribe from 'My Account' at any time.

ORDER SUMMARY

	HARRIETT SLOUCH BOOT SIZE: 8.5 Remove Save for Later	QTY: 1 2 FOR \$29.95: \$19.98 \$39.95 VIP \$59.95 REG
	SLEEK SOPHISTICATED BELT BAG Remove Save for Later	QTY: 1 2 FOR \$29.95: \$9.97 \$19.95 VIP \$29.95 REG
	PARENTS 2 YEAR SUBSCRIPTION You will not be billed for this offer (24 Issue)	INCLUDED View offer & refund details Remove Pick Another One

ADD PROMO CODE / GIFT CARD +

SUBTOTAL:	\$59.90
PROMO CODE: 2 for \$29.95	-\$29.95
SHIPPING: Classic Fab (7-10 days) Change	\$4.95
TAX: ⓘ	\$0.77
TOTAL:	\$35.67
YOU ARE SAVING	\$69.95

CONTINUE CHECKOUT

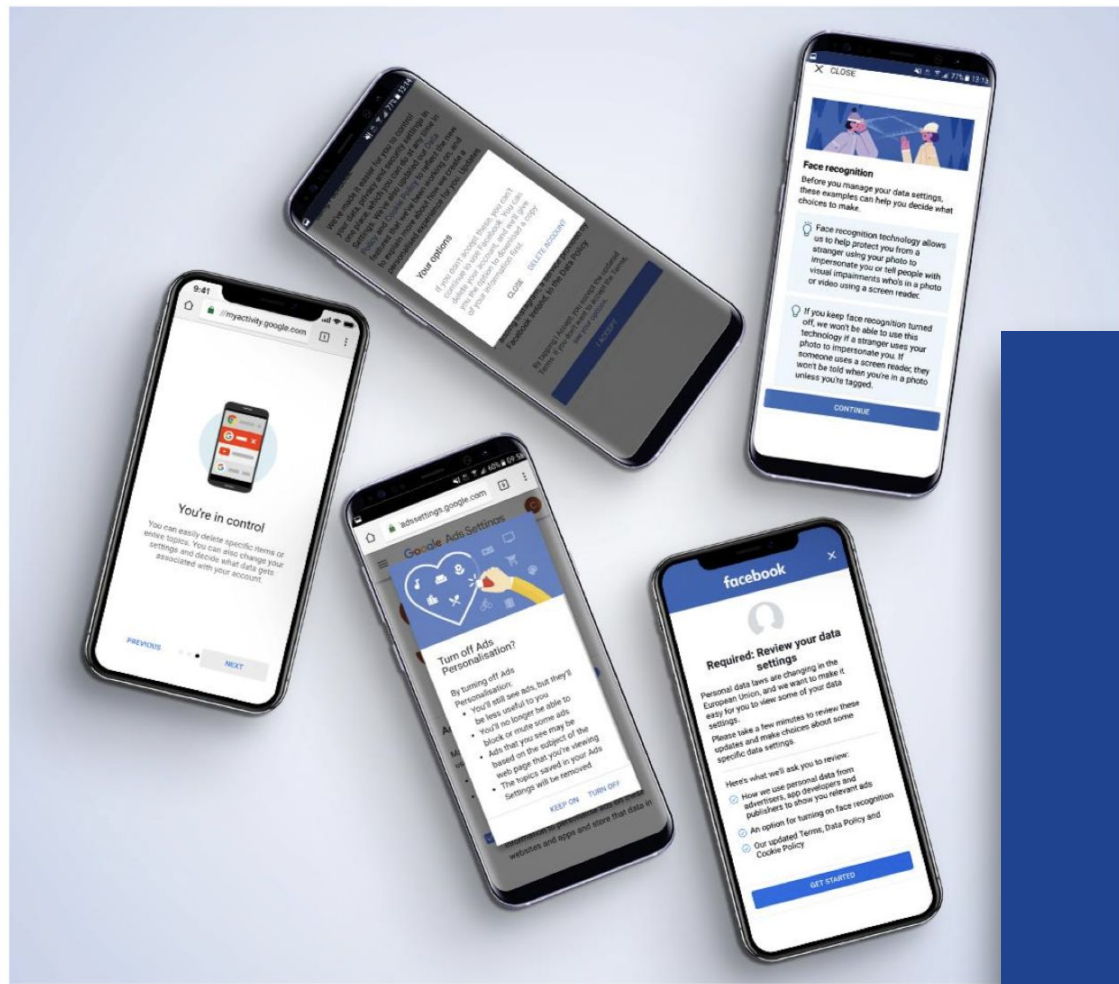
- 25 instances across 24 websites.

Is any of this new?



- Scale
- Sophistication
- Variety

What can we do about dark
patterns?



DECEIVED BY DESIGN

How tech companies use dark patterns to discourage us from exercising our rights to privacy

27.06.2018



IP REPORTS

INNOVATION AND FORESIGHT

N°06

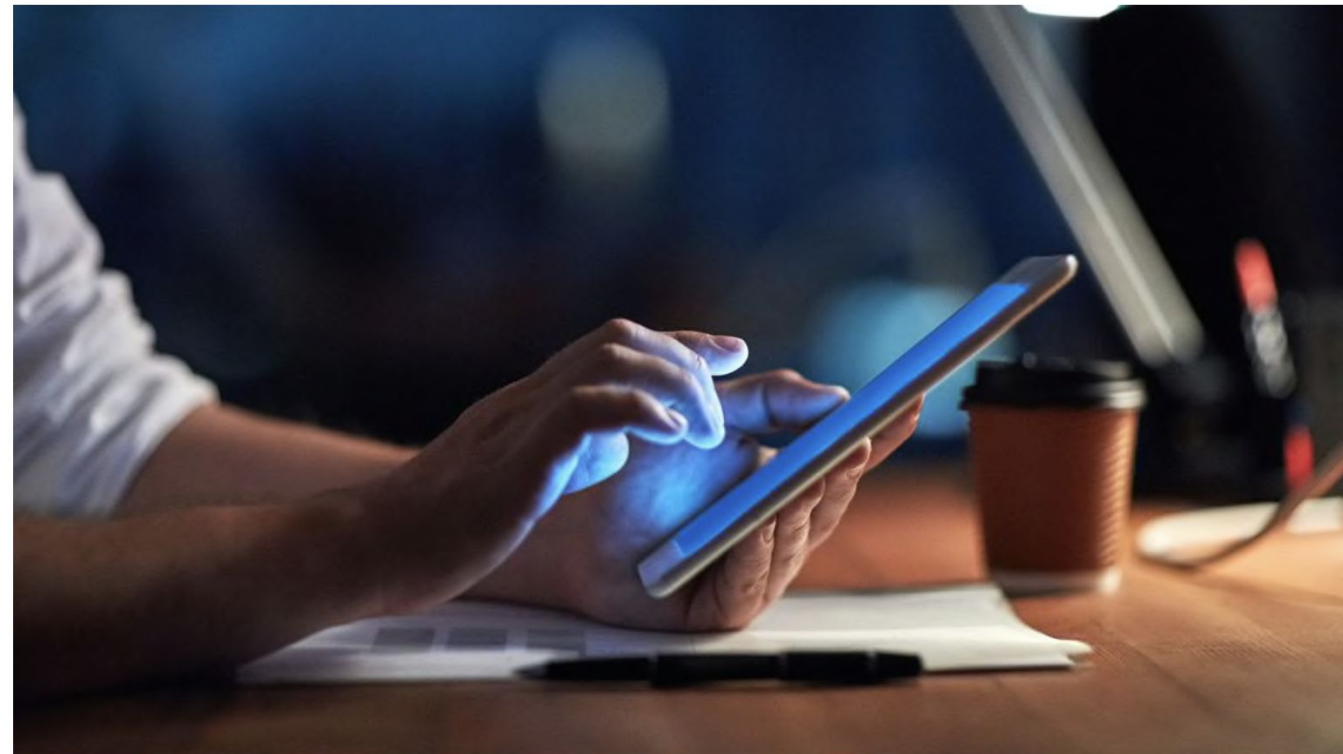
Shaping Choices in the Digital World

From dark patterns to data protection:
the influence of ux/ui design on user empowerment

How to Spot Manipulative 'Dark Patterns' Online

Hard-to-find settings and confusing language can lead you to buy, share, or receive more than you want. This guide can help.

By Thomas Germain
January 30, 2019



Anyone who's tried to close an Amazon account knows that breaking up is

hard to do. The instructions are buried deep in the menu, and customers

Legal Solutions

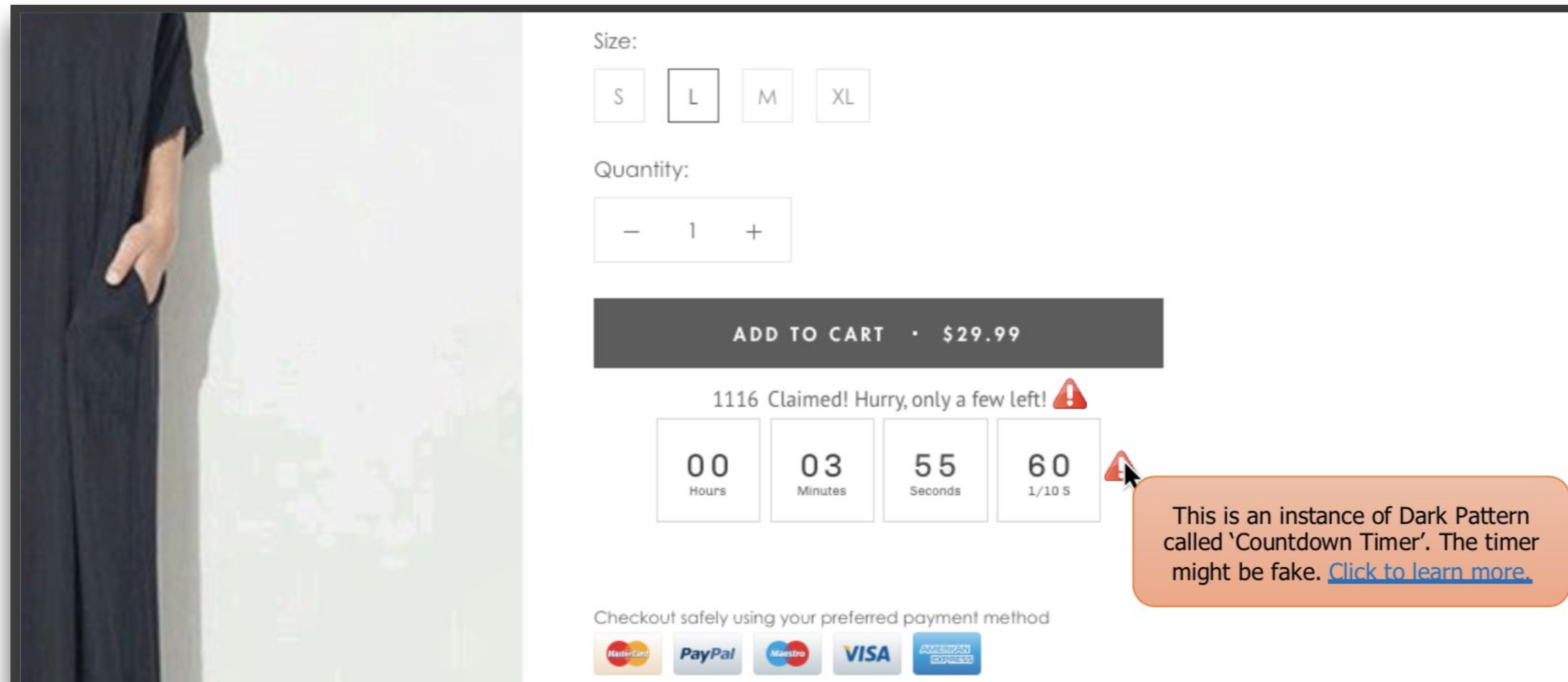
1. GDPR - Consent dialogs (not freely given?)
2. US Federal Trade Commission Act (*deceptive* practices)
3. “Sneaking” and “aggressive” dark patterns violate the Consumer Rights Directive in the UK.
4. Industry specific rules in the United States: ROSCA, Funeral Rule, Used Car Rule.

Legal Solutions



Proposed DETOUR act reins in more broadly against design that “obscures, subverts, or impairs user autonomy and decision-making”.

Technical Solutions



Browser extension to alert users about dark patterns, or block third-parties that enable dark patterns

Thank you for listening

Gunes Acar

✉ gunes.acar@kuleuven.be

<https://webtransparency.cs.princeton.edu/dark-patterns>

