

# Dark Patterns at Scale:

Findings from a Crawl of 11K Shopping Websites

**Gunes Acar**

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POLICY  
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**KULEUVEN**



# 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

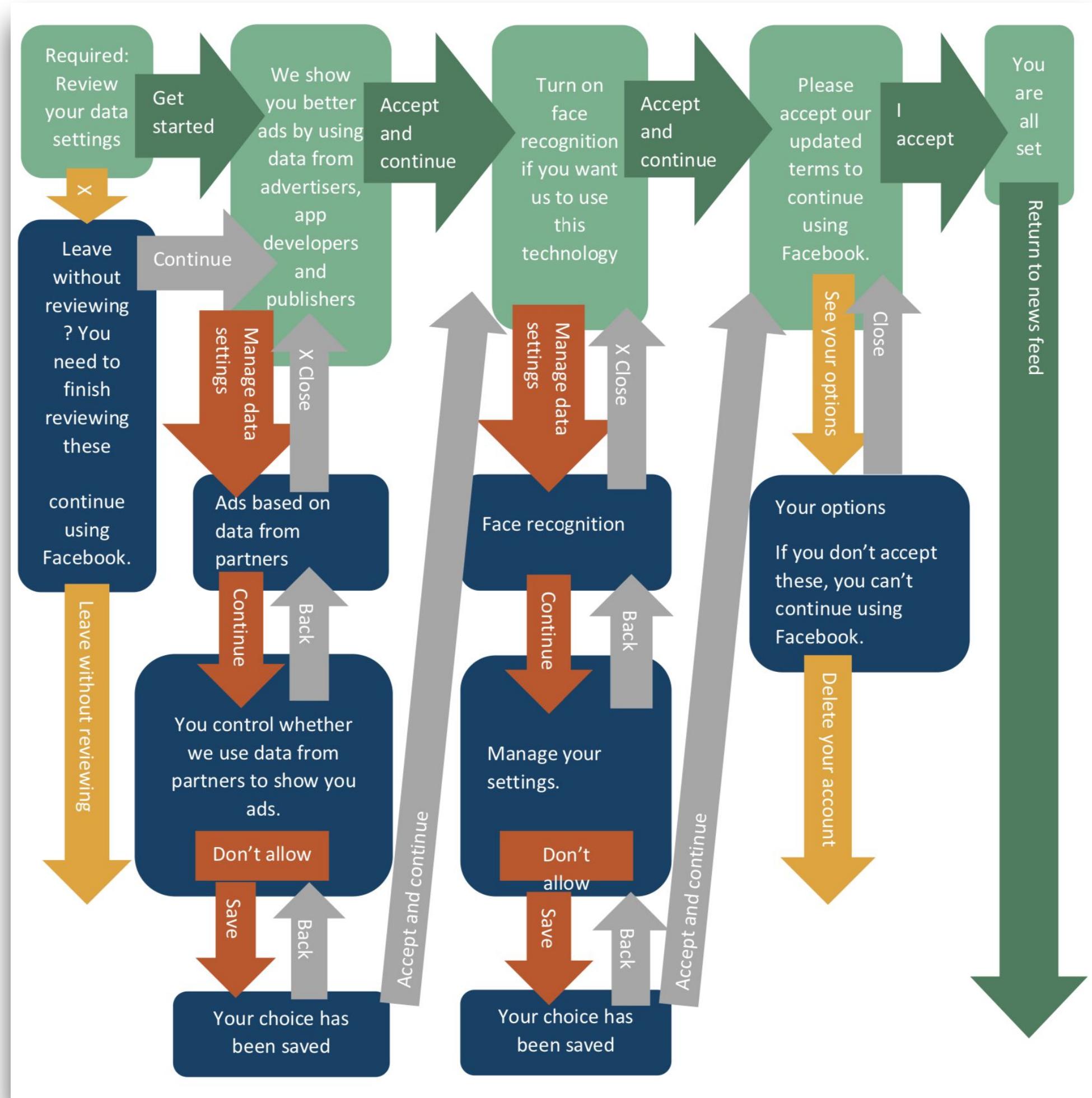


# Example #1: Instagram Ad

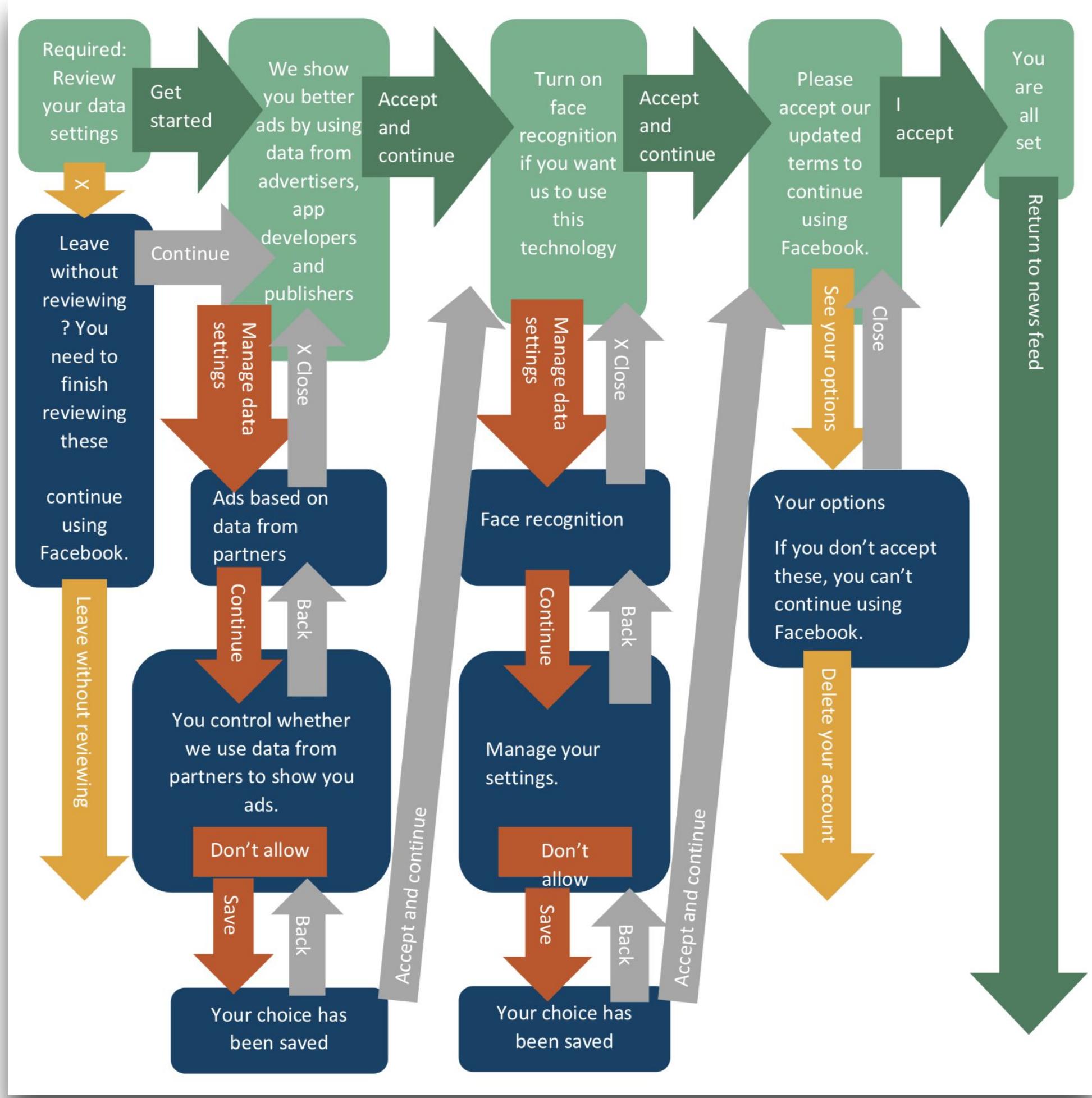


Not a real  
strand of hair

# 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

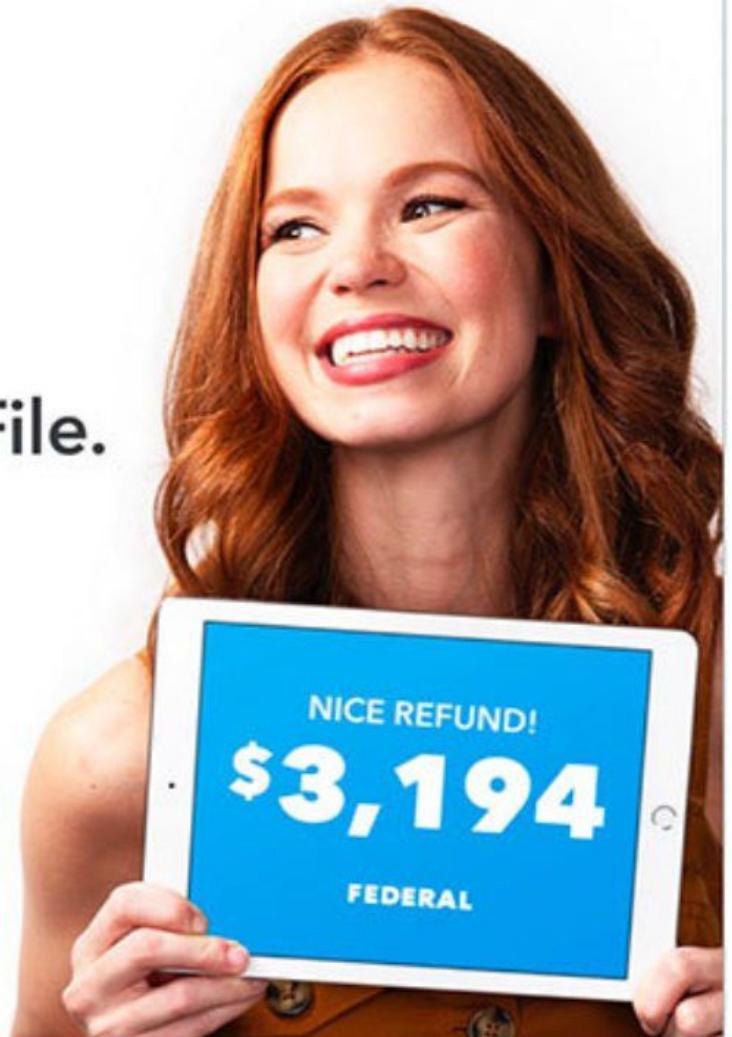
# Example #4: TurboTax Pricing

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**

**Intuit**  
turbotax quickbooks mint  
One account. Everything Intuit.  
[Learn more](#)

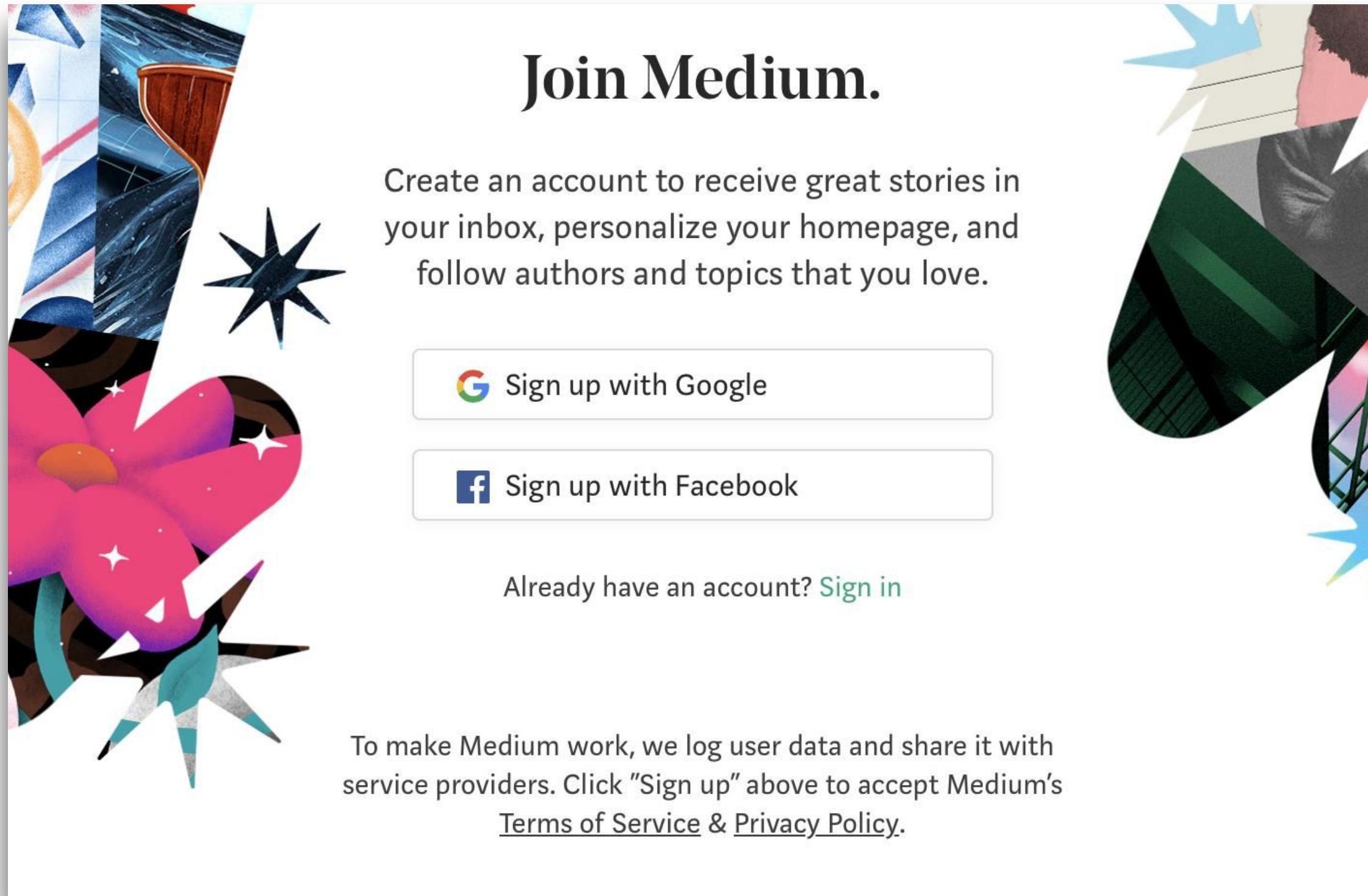
User ID   
Password   
 Remember me  
**Sign In**

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



The image shows the 'Join Medium' page. It features a colorful, abstract collage of various images on the left side. The main title 'Join Medium.' is at the top. Below it is a descriptive text: 'Create an account to receive great stories in your inbox, personalize your homepage, and follow authors and topics that you love.' There are two sign-up buttons: 'Sign up with Google' and 'Sign up with Facebook'. Below these buttons is a link 'Already have an account? Sign in'. At the bottom, there is a note about data sharing and links to 'Terms of Service & Privacy Policy'.

**Join Medium.**

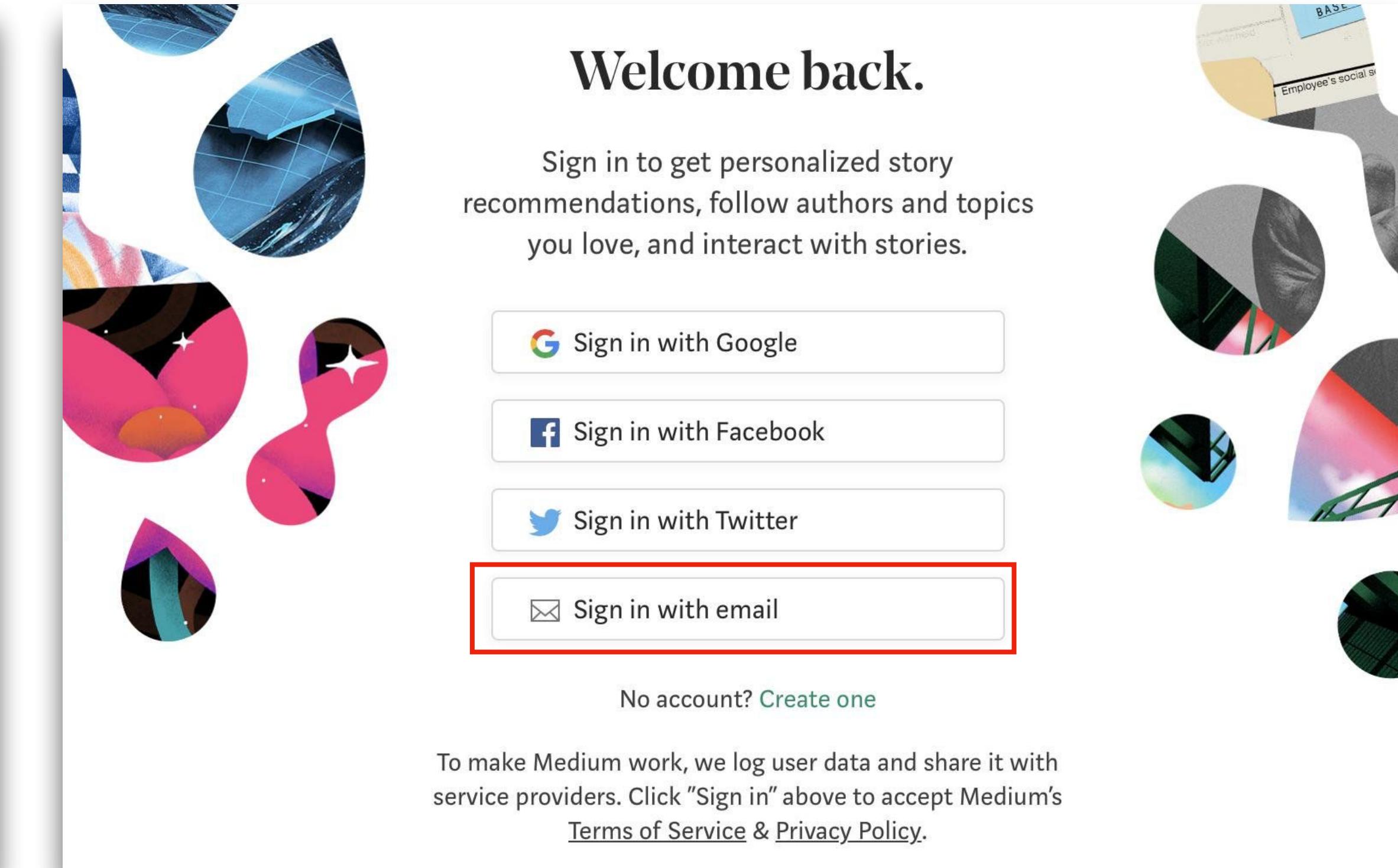
Create an account to receive great stories in your inbox, personalize your homepage, and follow authors and topics that you love.

[Sign up with Google](#)

[Sign up with Facebook](#)

Already have an account? [Sign in](#)

To make Medium work, we log user data and share it with service providers. Click "Sign up" above to accept Medium's [Terms of Service & Privacy Policy](#).



The image shows the 'Welcome back' page. It features a colorful, abstract collage of various images on the right side. The main title 'Welcome back.' is at the top. Below it is a descriptive text: 'Sign in to get personalized story recommendations, follow authors and topics you love, and interact with stories.' There are four sign-in buttons: 'Sign in with Google', 'Sign in with Facebook', 'Sign in with Twitter', and 'Sign in with email'. The 'Sign in with email' button is highlighted with a red border. Below these buttons is a link 'No account? Create one'. At the bottom, there is a note about data sharing and links to 'Terms of Service & Privacy Policy'.

**Welcome back.**

Sign in to get personalized story recommendations, follow authors and topics you love, and interact with stories.

[Sign in with Google](#)

[Sign in with Facebook](#)

[Sign in with Twitter](#)

[Sign in with email](#)

No account? [Create one](#)

To make Medium work, we log user data and share it with service providers. Click "Sign in" above to accept Medium's [Terms of Service & Privacy Policy](#).

“

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

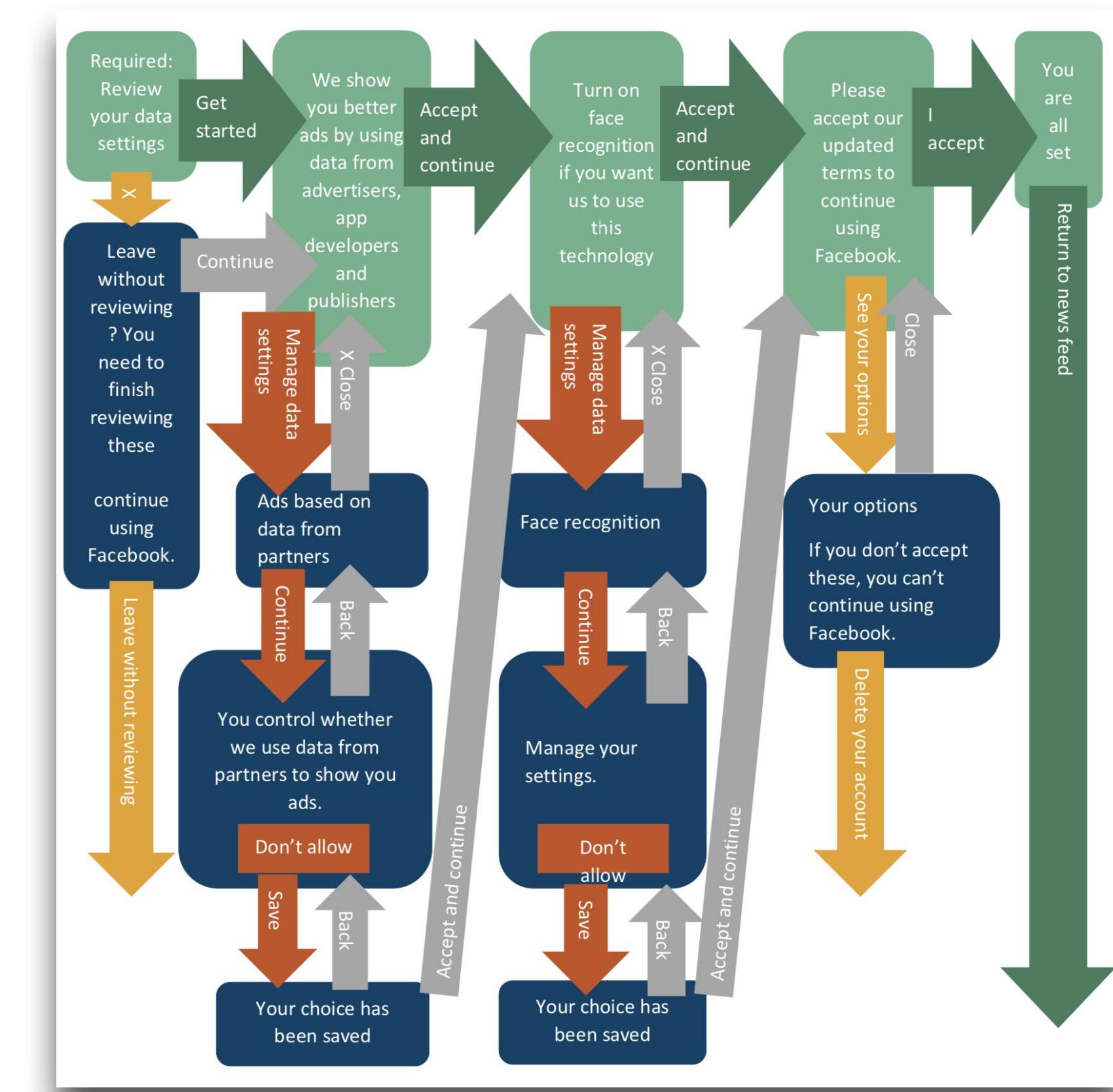
Deceptive

Hides Information

Restrictive

# How do Dark Patterns Work?

Asymmetric  
Covert  
Deceptive  
Hides Information  
Restrictive



# How do Dark Patterns Work?

Asymmetric  
Covert  
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Restrictive

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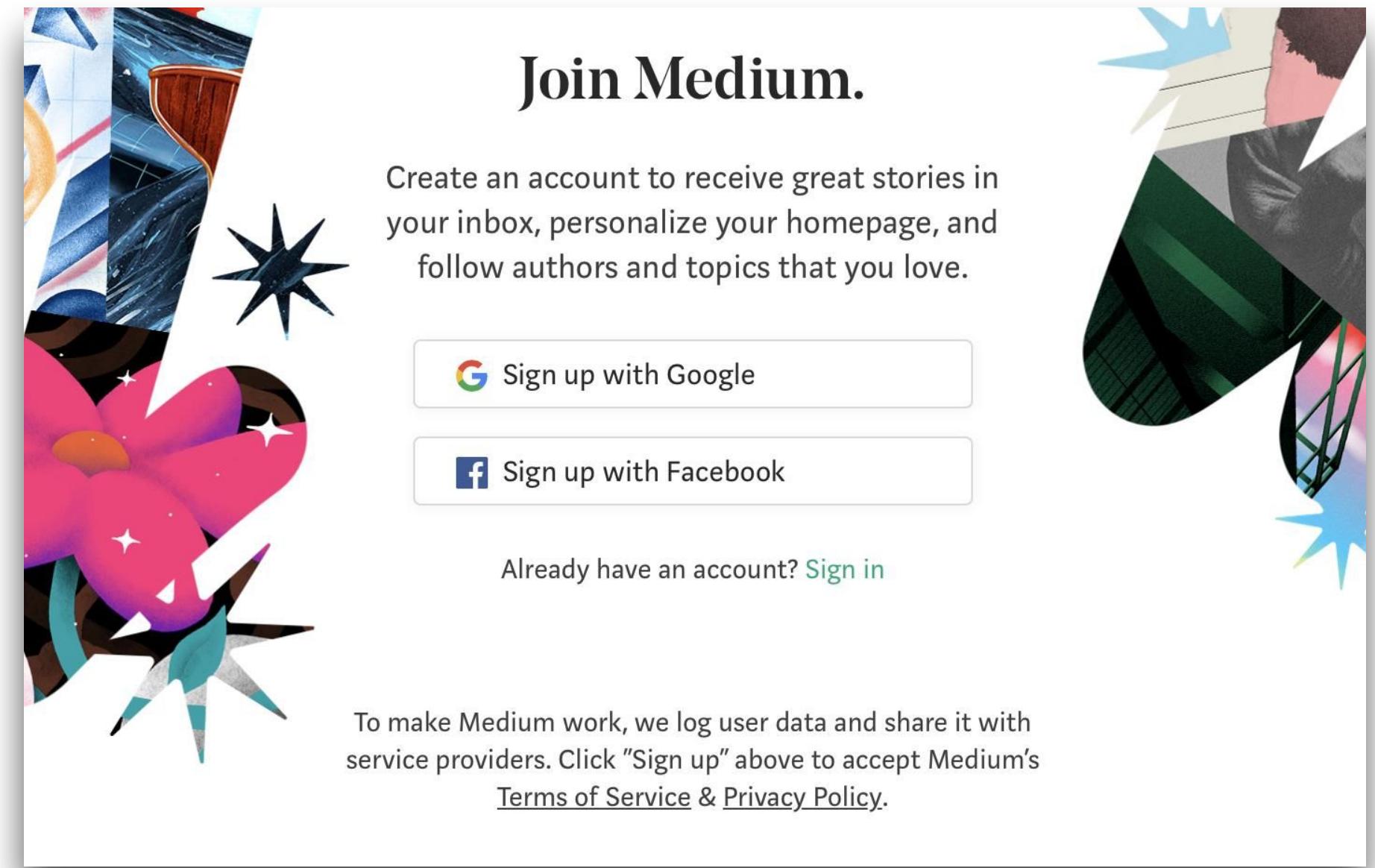
Hides Information

Restrictive



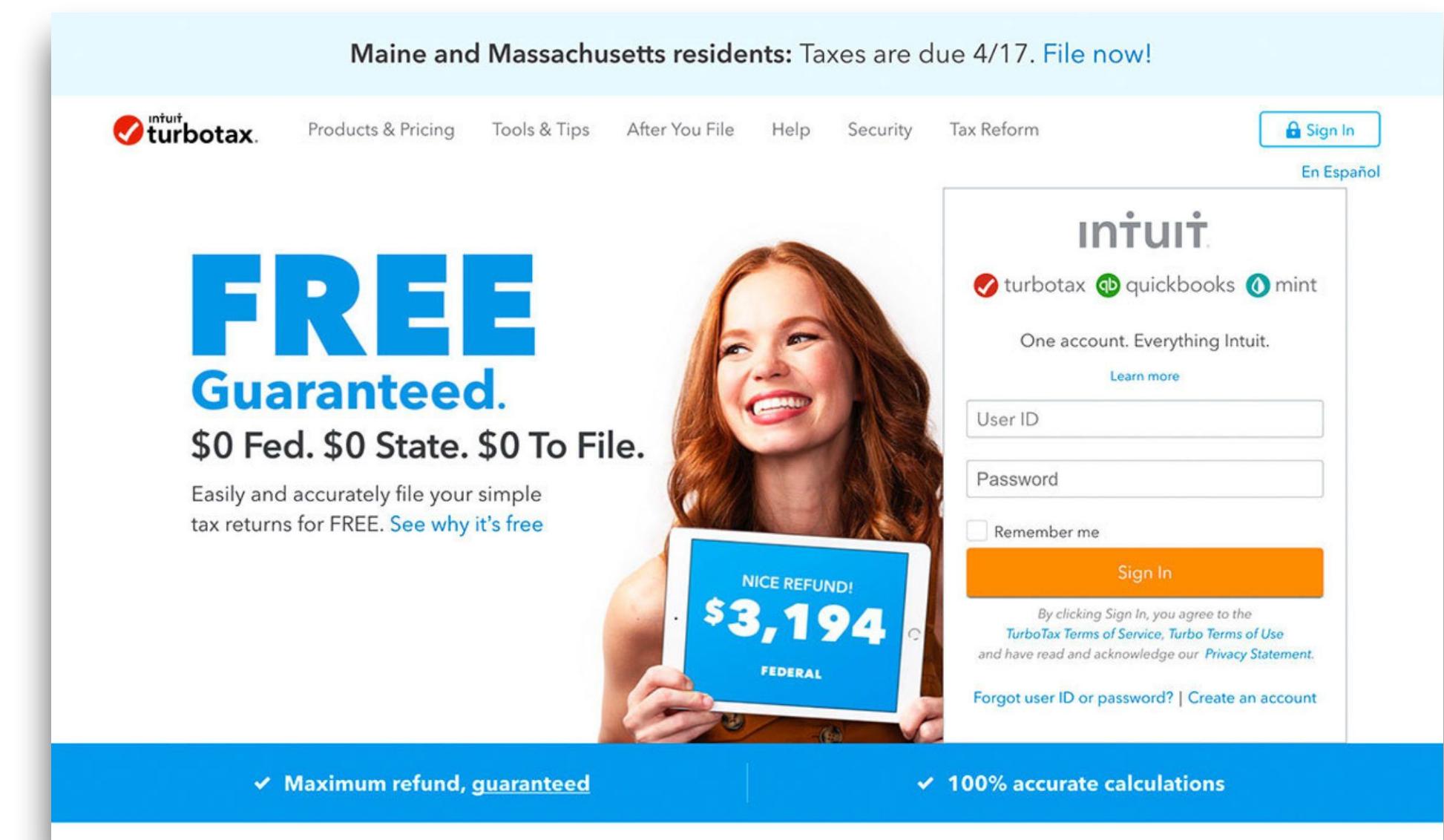
# How do Dark Patterns Work?

Asymmetric  
Covert  
Deceptive  
Hides Information  
Restrictive



# How do Dark Patterns Work?

Asymmetric  
Covert  
Deceptive  
Hides Information  
Restrictive



# Why Use Dark Patterns?

<b>Money</b>	Nudging you to buy more
<b>Data</b>	Getting around privacy protections
<b>Time</b>	Making apps addictive

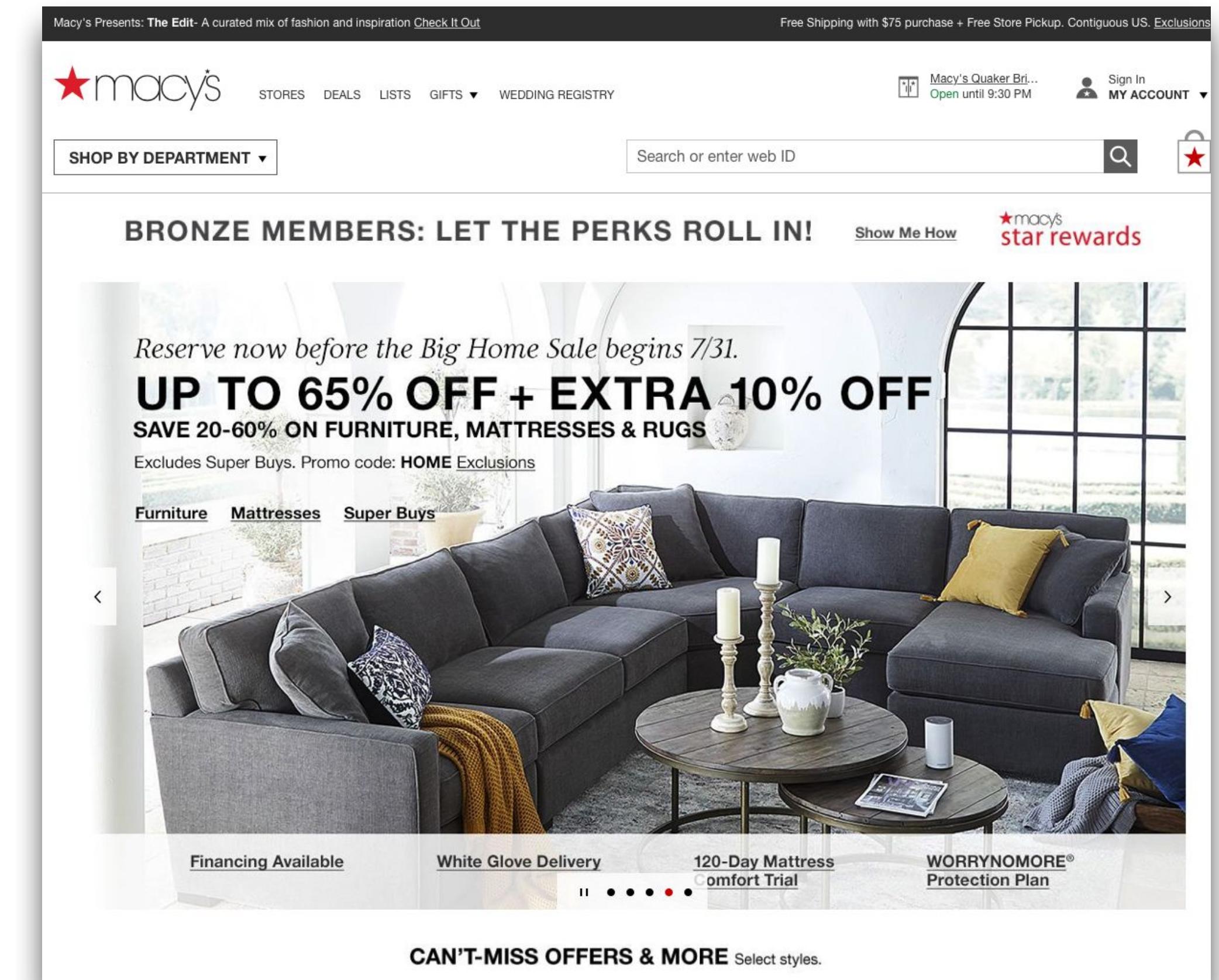
How can we identify and measure  
dark patterns on the web at scale?

# Why Measurement?

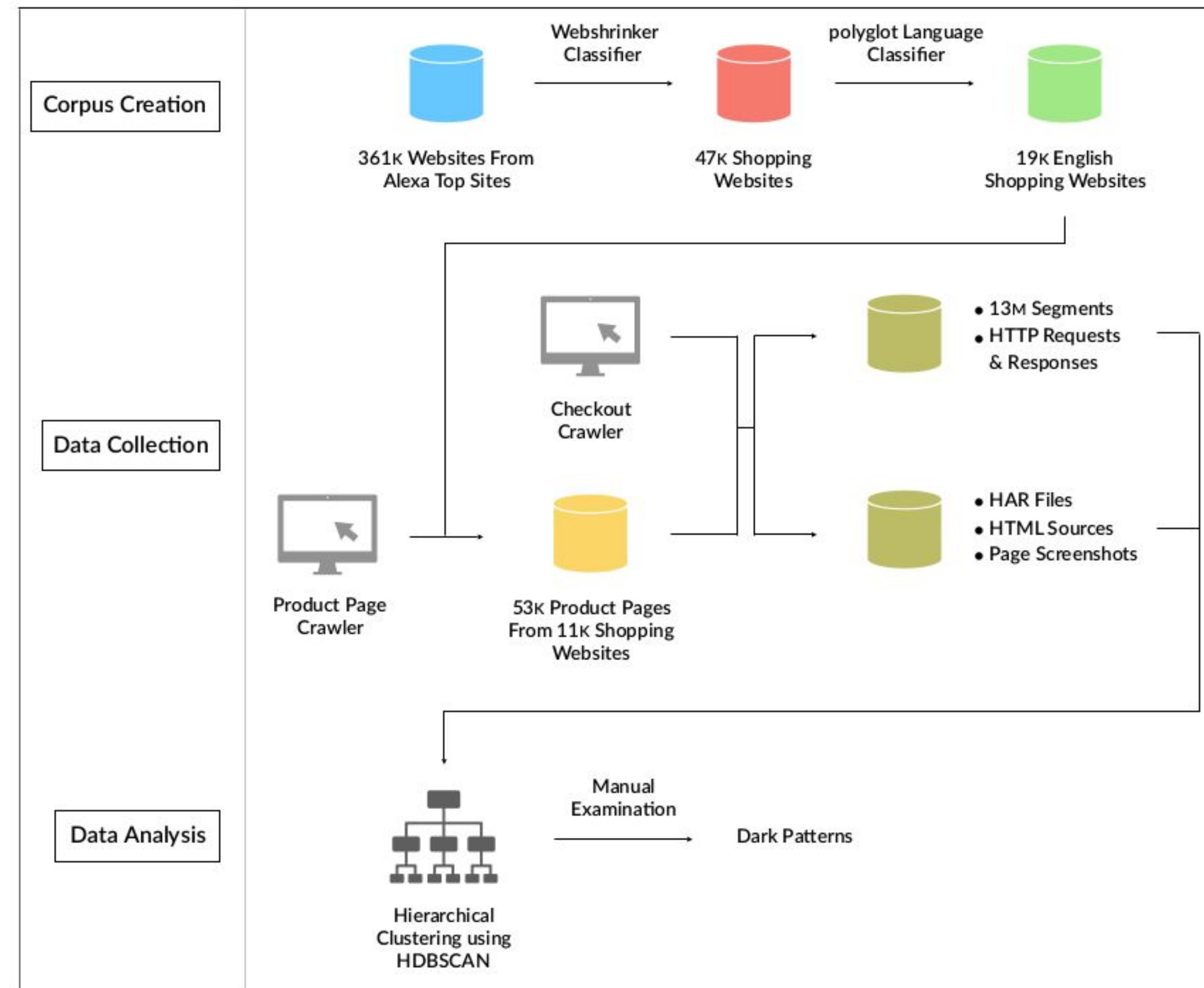
1. Document various forms of user-facing patterns.
2. Measurement can be the basis of building defenses.
3. Companies respond to public pressure. Precedents include privacy & security measurement studies.

# Our study: Shopping Websites

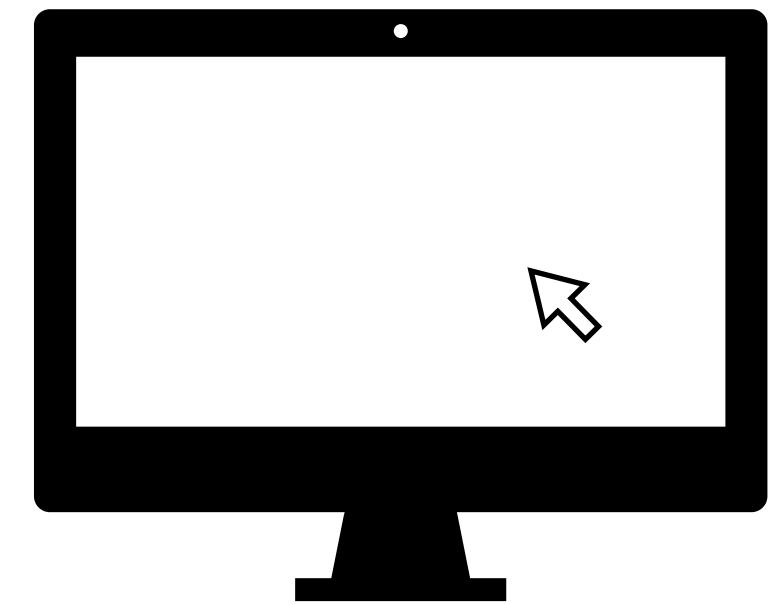
1. Several anecdotal examples of dark patterns.
2. Gathered a corpus of 11K of the most popular shopping websites worldwide.



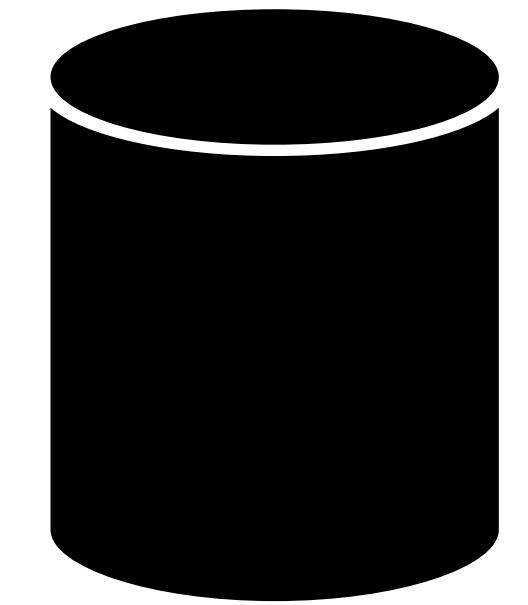
# Data collection and analysis pipeline



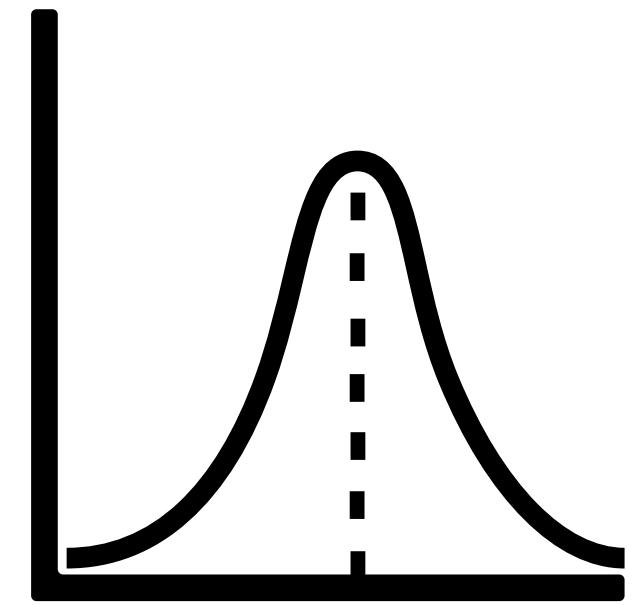
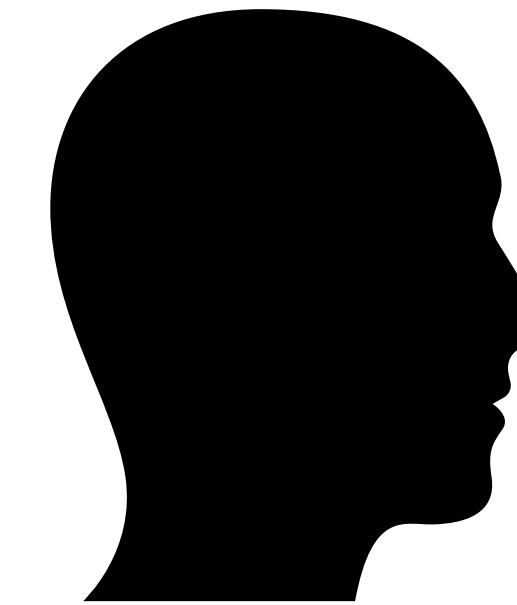
# Three Key Challenges



Mimicking a real user  
browsing websites

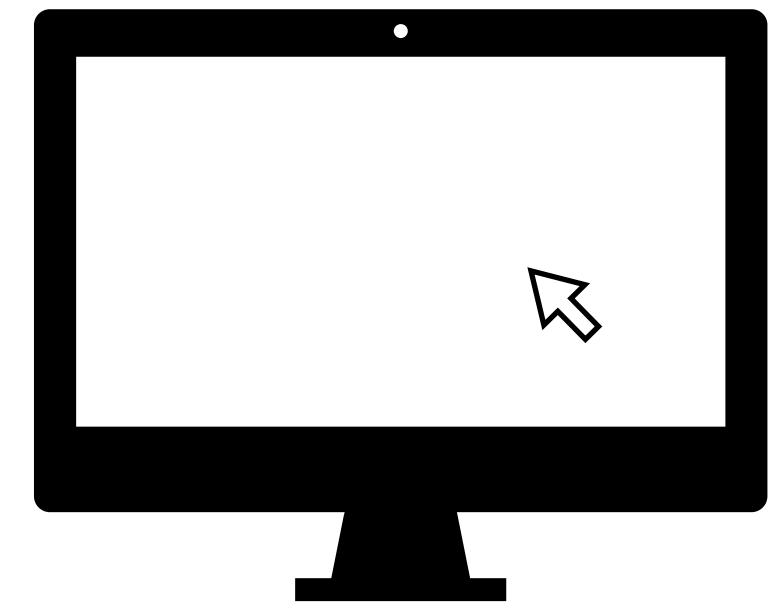


Collecting and storing  
data from websites

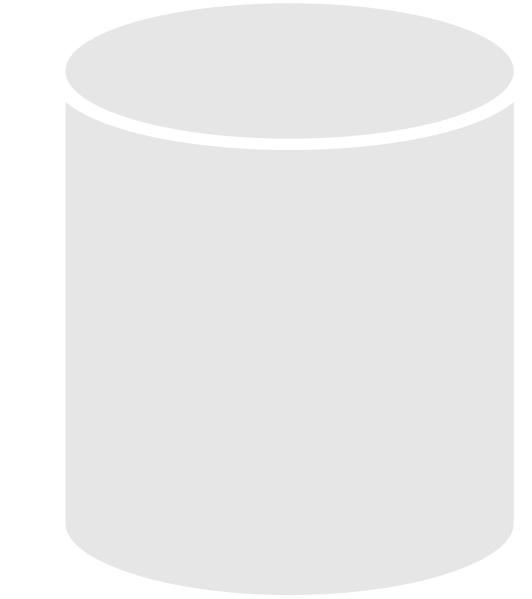


Analyzing collected  
data

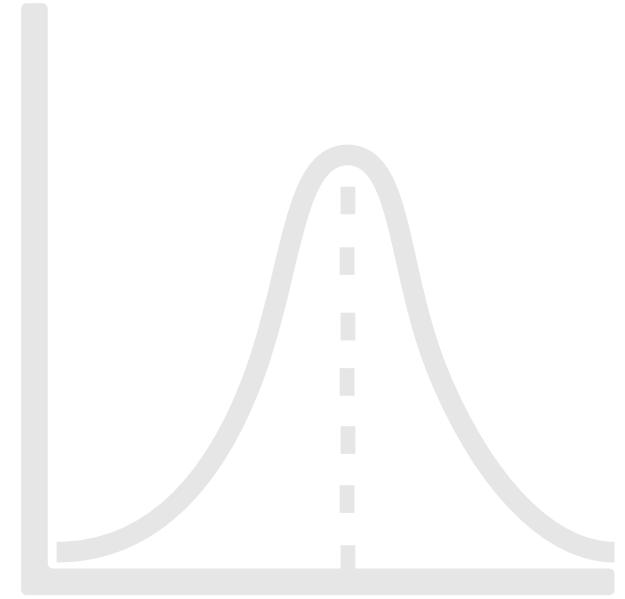
# Three Key Challenges



Mimicking a real user  
browsing websites



Collecting and storing  
data from websites



Analyzing collected  
data

# Shopping Bot

The screenshot shows a product page for the American Rag Jamie T-Strap Platform Dress Sandals on Macy's website. The main image displays a tan leather sandal with a cork platform and strap. To the left, a vertical gallery shows five other views of the shoe. Below the main image is a "Watch Video" button. The product title is "American Rag Jamie T-Strap Platform Dress Sandals, Created for Macy's". It has a rating of 4.5 stars from 105 reviews and a limited-time sale price of \$29.75 (50% off). The original price was \$59.50. The color is listed as "Tan" with options for other colors. The size is set to "Please select" with a size chart link. The quantity is set to 1 with increment/decrement buttons. There are two buttons at the bottom: "ADD TO BAG" (in red) and "ADD TO LIST". A "customers also shopped" sidebar on the right lists three similar products: G by GUESS Shelli Sandals (tan, 4 stars, \$59.00), Jessica Simpson Jakayla Wedge Sandals (black, 5 stars, \$36.13), and Call It Spring Acavieel Wedge Sandals (black, 5 stars, \$25.00).

# Shopping Bot

The screenshot shows a product page for the American Rag Jamie T-Strap Platform Dress Sandals on Macy's website. The main image displays a single red sandal with a cork platform and strap. To the left, a vertical gallery shows five other views of the sandal. Below the main image is a "Watch Video" button. The product title is "American Rag Jamie T-Strap Platform Dress Sandals, Created for Macy's". It has a rating of 4.5 stars from 105 reviews and is labeled as a "Limited-Time Special" with a price of \$59.50, now on sale for \$29.75 (50% off). The page also features a "Find Your True Fit" size chart and quantity selection buttons. A "customers also shopped" sidebar on the right lists three similar products: G by GUESS Shelli Sandals, Jessica Simpson Jakayla Wedges, and Call It Spring Acavieel Wedges, each with a small image, price, and star rating.

Macy's / Shoes / Sandals & Flip Flops

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

See All Colors ▾

Find Your True Fit

Size: Please select | Size Chart

5M 5.5M 6M 6.5M 7M

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 Acavieel Wed... Reg. \$50.00 Sale \$25.00

# Shopping Bot

The screenshot shows a product page for the American Rag Jamie T-Strap Platform Dress Sandals on macy's.com. The main image displays a black microfiber sandal with a cork platform and strap. To the left, a vertical gallery shows five other views of the shoe. Below the main image is a "Watch Video" button. The product title is "American Rag Jamie T-Strap Platform Dress Sandals, Created for Macy's". It has a 4-star rating from 105 reviews and is marked as a "Limited-Time Special" with a price of \$59.50, now on sale for \$29.75 (50% off). The page also features a "Find Your True Fit" size chart and a quantity selector. Two buttons at the bottom are "ADD TO BAG" (in red) and "ADD TO LIST". A sidebar on the right shows "customers also shopped" items, including G by GUESS Shelli Sandals and Jessica Simpson Jakayla Wedges, both with 5-star ratings. At the bottom, a section titled "Product Details" describes the sandal's design and heel height.

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

★★★★★ 105 Reviews

Limited-Time Special

\$59.50

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

Color: Black Micro

Find Your True Fit

Size: Please select | Size Chart

5M 5.5M 6M 6.5M 7M

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

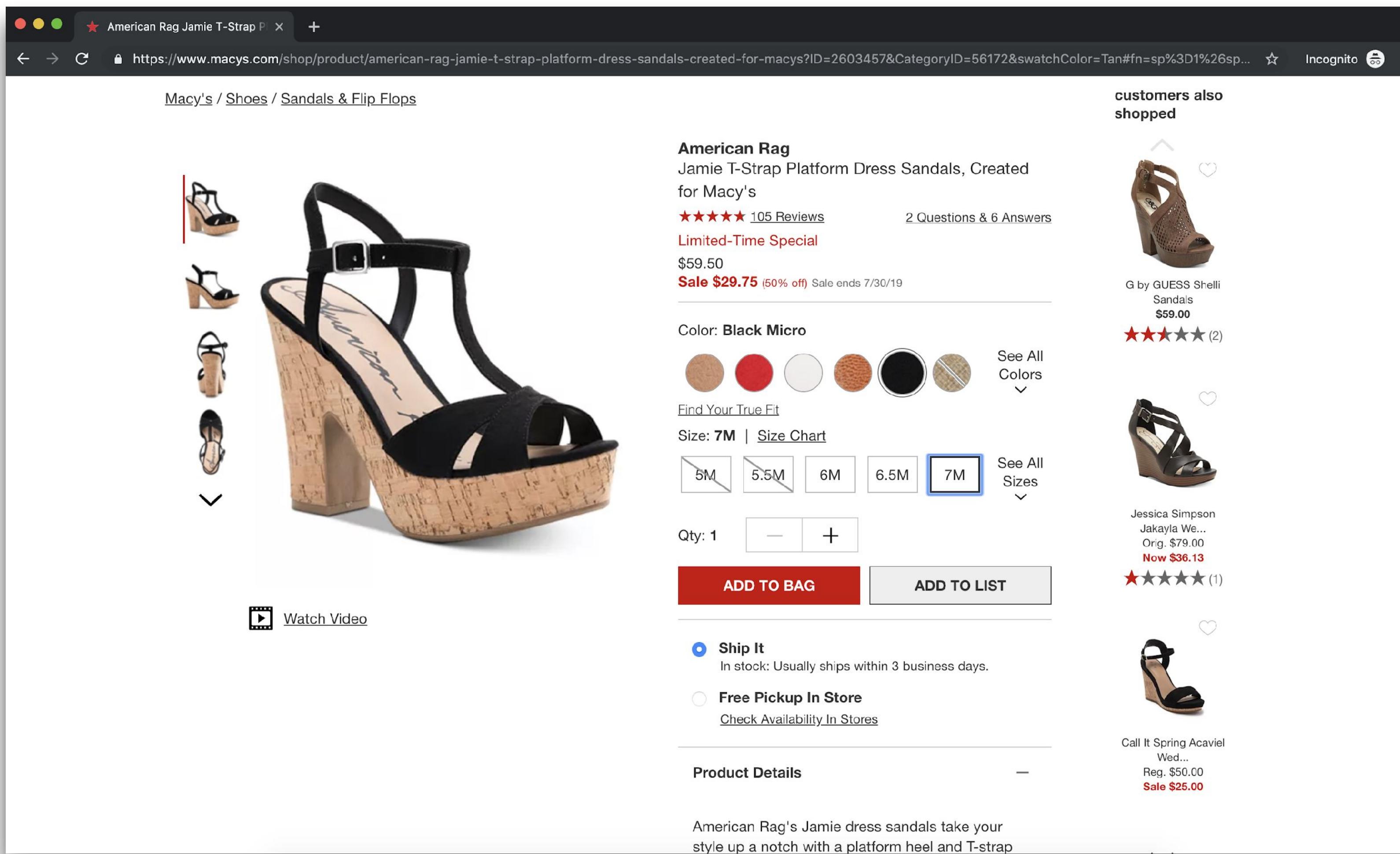
customers also shopped

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

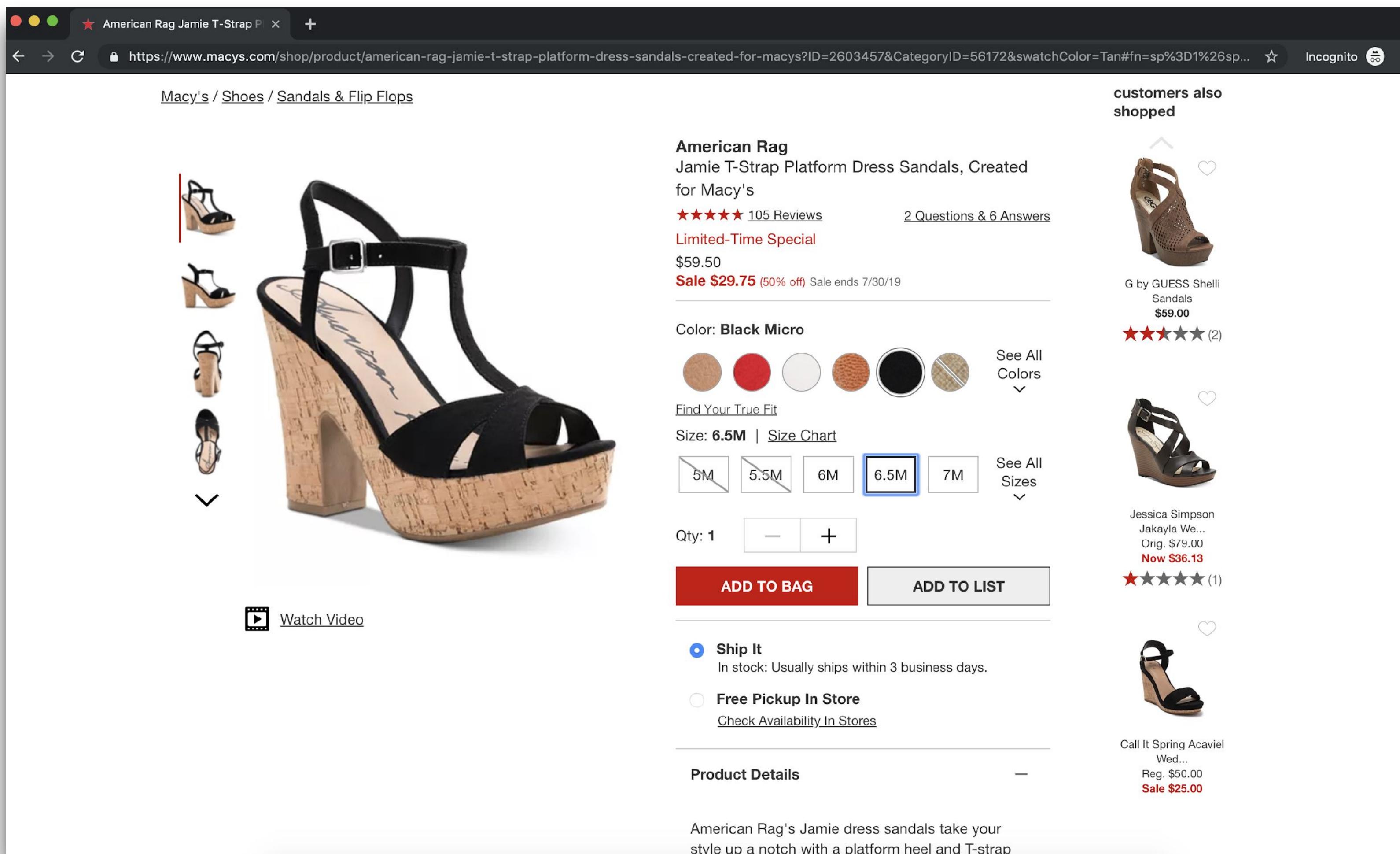
Jessica Simpson Jakayla We... Orig. \$79.00 Now \$36.13 ★★★★★ (1)

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

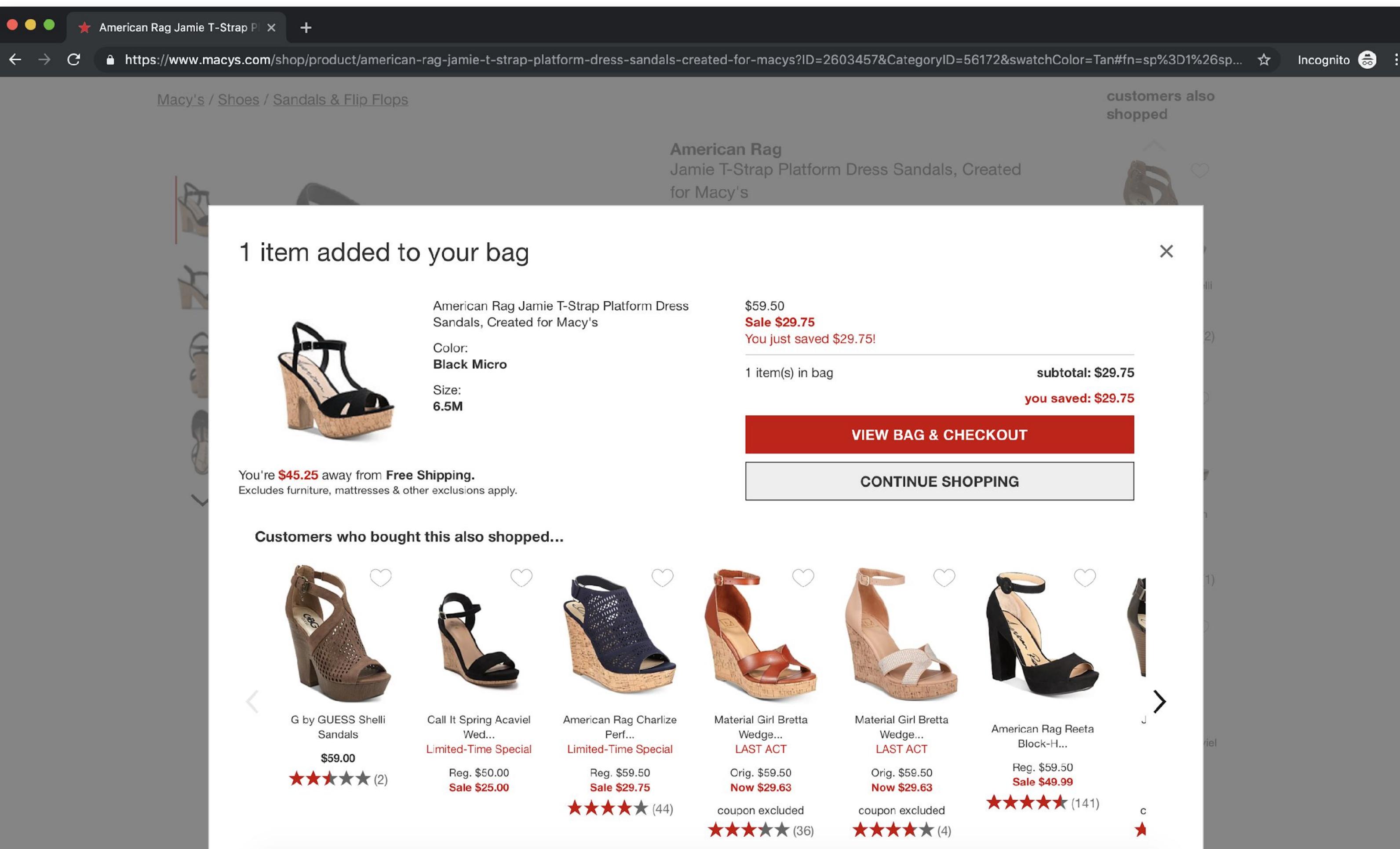
# Shopping Bot



# Shopping Bot



# Shopping Bot



# Shopping Bot

The screenshot shows a shopping cart on the Macy's website. The cart contains one item: "American Rag Jamie T-Strap Platform Dress Sandals". The item is listed at a regular price of \$59.50, a sale price of \$29.75, and a total of \$29.75. The item is "Created For Macy's". It is available in size 6.5M, color Black Micro, and has a Web ID of 2603457. There are two shipping options: "Ship It." (In Stock) and "Pick Up In Store." (Ready in 6-9 BUSINESS DAYS). The cart summary shows a subtotal of \$29.75, shipping of \$10.95, and a pre-tax order total of \$40.70. A note indicates that the user is \$45.25 away from free shipping. The "PROCEED TO CHECKOUT" button is visible at the bottom.

Macy's Presents: **The Edit**- A curated mix of fashion and inspiration [Check It Out](#)

Free Shipping with \$75 purchase + Free Store Pickup. Contiguous US. [Exclusions](#)

Incognito [Sign In](#) [MY ACCOUNT](#)

SHOP BY DEPARTMENT ▾

Search or enter web ID

1

Shopping Bag

Your Pickup Store  
Macy's Dulles [Change Store](#)

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

Reg. \$59.50  
Sale \$29.75  
Total \$29.75

Size: 6.5M  
Color: Black Micro  
Web ID: 2603457

Ship It.  
In Stock: Usually Ships Within 3 Business Days.

Pick Up In Store.  
We Will Ship Your Item(S) To Macy's Dulles.  
Ready In **6-9 BUSINESS DAYS**

Move To List Remove

Subtotal \$29.75  
Shipping ⓘ \$10.95

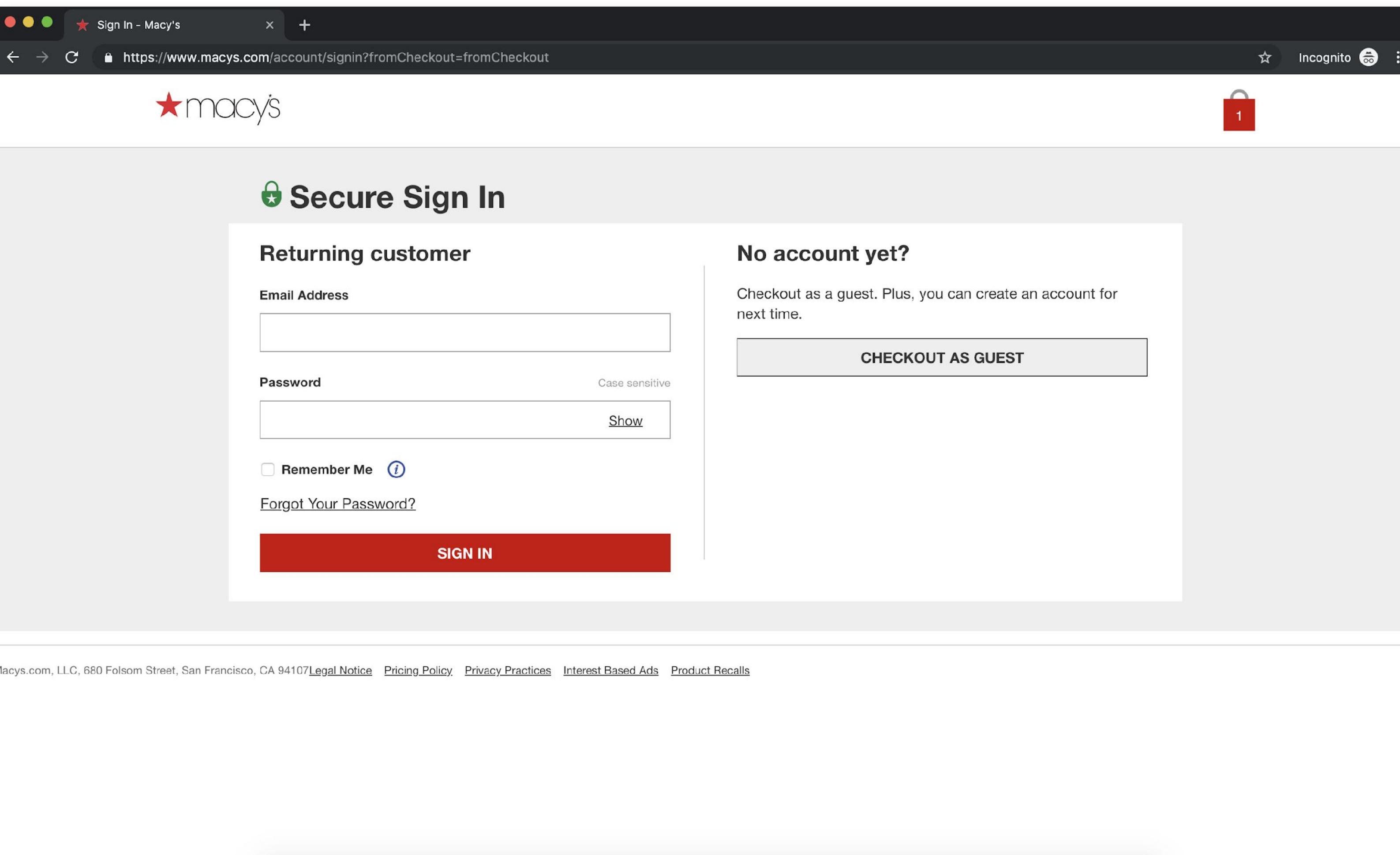
Pre-Tax Order Total \$40.70  
You saved ⓘ \$29.75

PROCEED TO CHECKOUT

PayPal Check out

Get Better Benefits When You Shop With Star Rewards!

# Shopping Bot



# Shopping Bot

The screenshot shows a checkout page from Macy's. On the left, there is a form for entering a shipping address. The fields include: First name (input field), Last name (input field), Address line 1 (input field), Address line 2 (optional) (input field containing "Apt, Suite, Bldg, Floor, etc"), ZIP code (input field), State (dropdown menu labeled "Select"), City (input field), and Phone number (input field). A "CONTINUE" button is located at the bottom of this section. On the right, there is a summary of the order details:

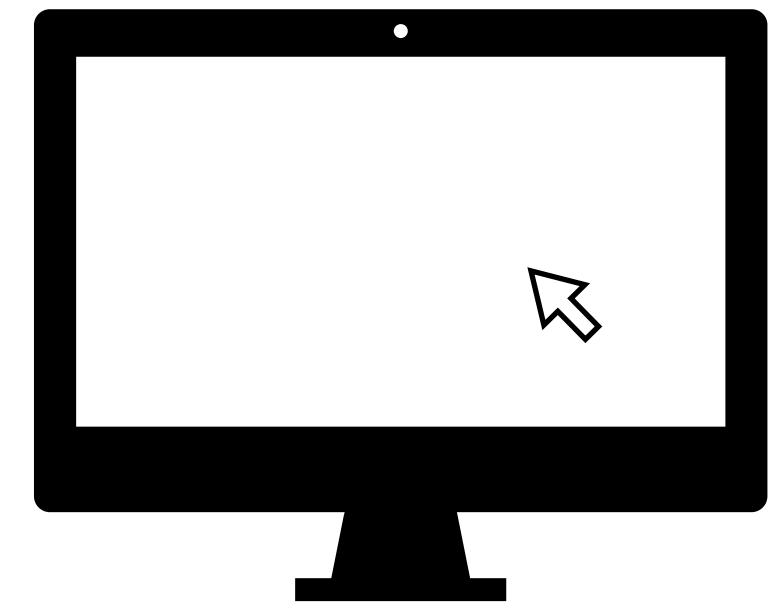
<b>Subtotal</b>	<b>\$29.75</b>
Shipping	\$10.95
Estimated tax <small>(i)</small>	\$1.79
<hr/>	
<b>Order total</b>	<b>\$42.49</b>
You saved	\$29.75

A large red "PLACE ORDER" button is prominently displayed.

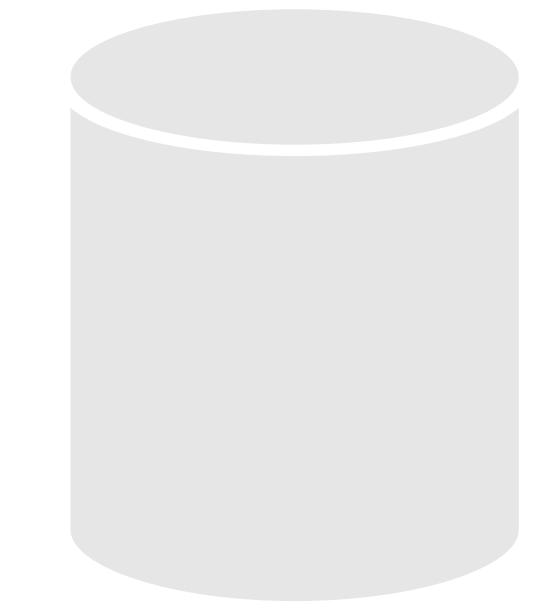
**Shipping options**

[https://www.macys.com/chkout/startguestcheckout?bypass\\_redirect=true](https://www.macys.com/chkout/startguestcheckout?bypass_redirect=true)

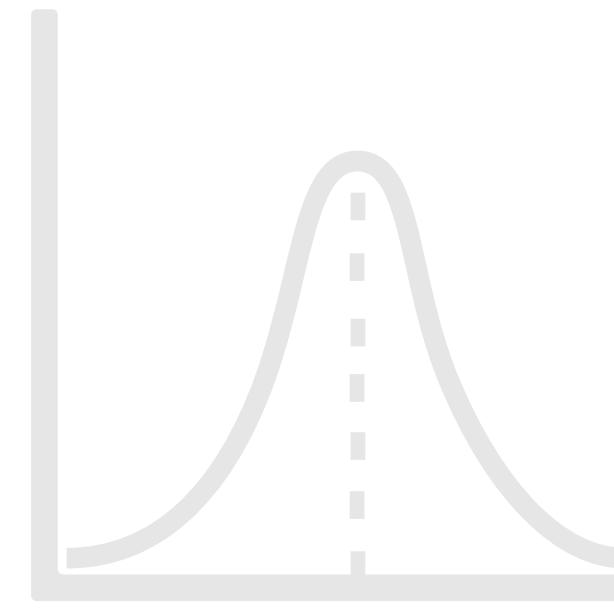
# Three Key Challenges



Mimicking a real user  
browsing websites



Collecting and storing  
data from websites

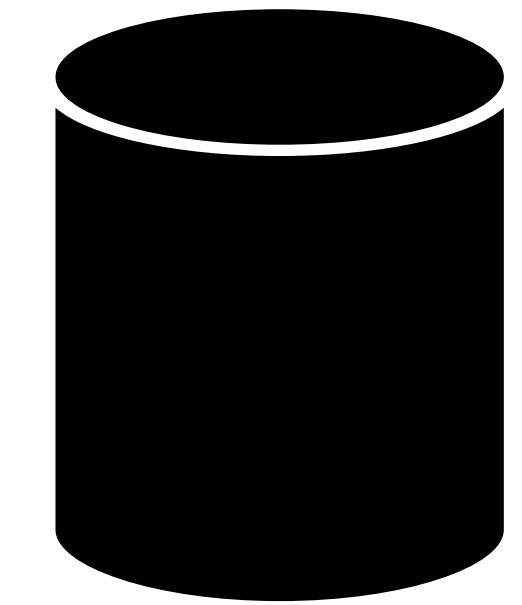


Analyzing collected  
data

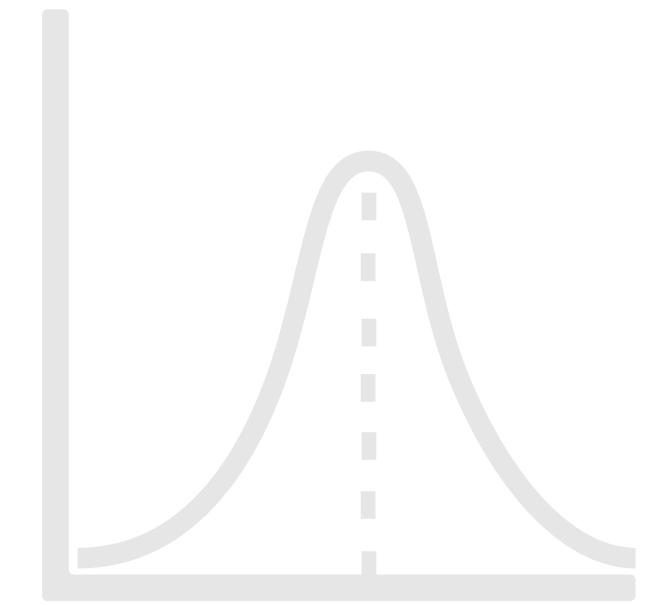
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# Page Segments

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](#) [ADD TO LIST](#)

**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

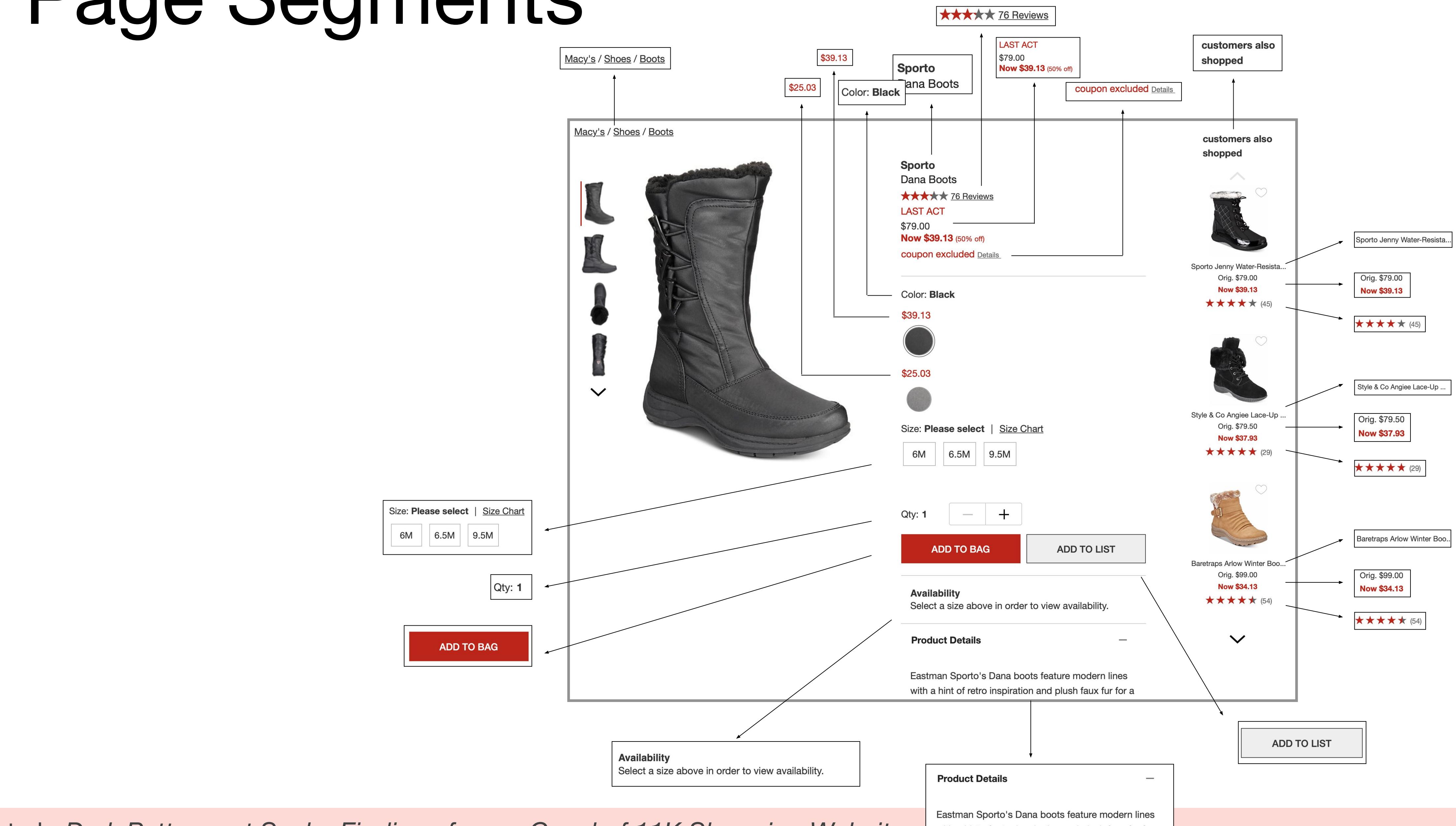
customers also shopped

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

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

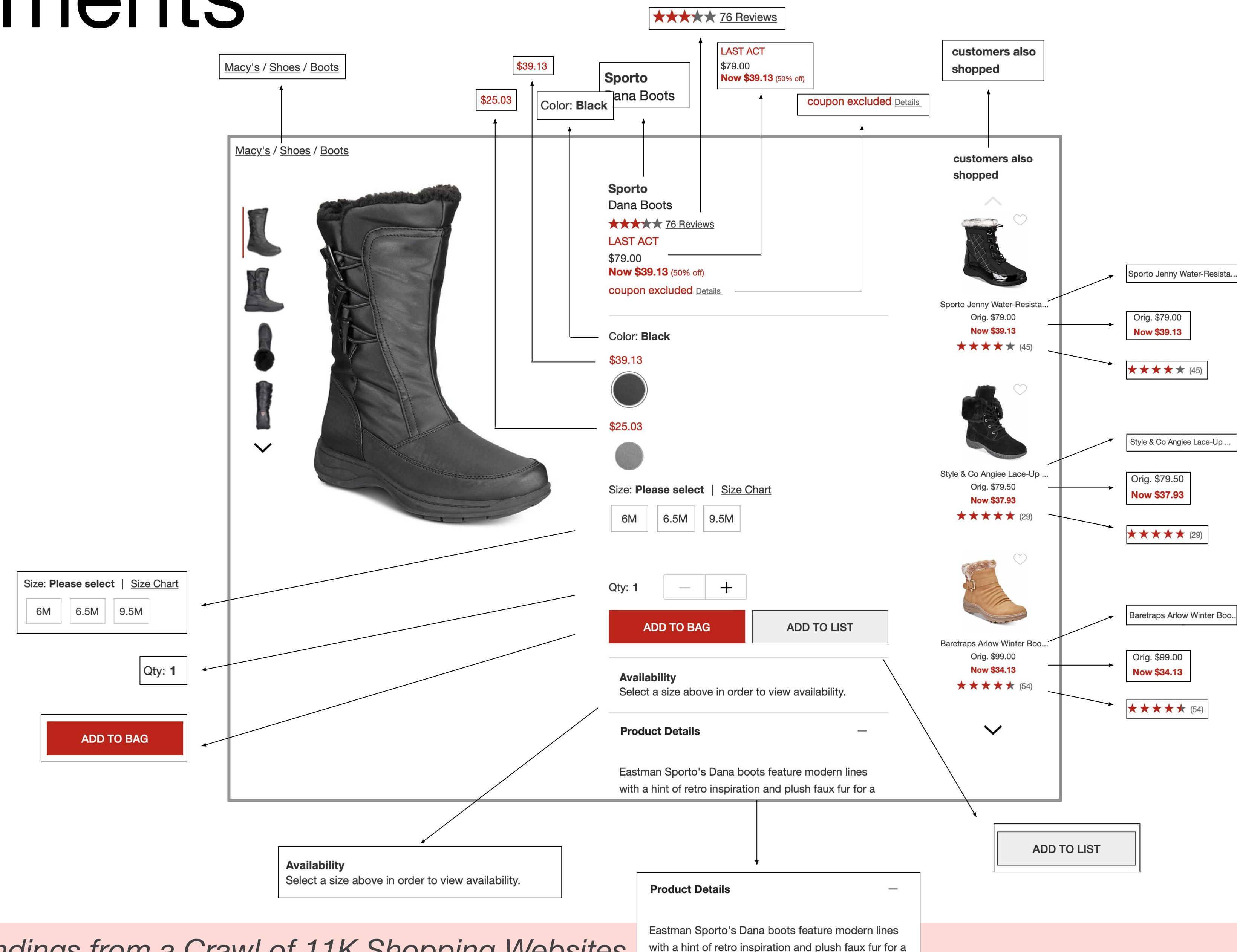
Baretraps Arlow Winter Boo...  
Orig. \$99.00  
Now \$34.13  
★★★★★ (54)

# Page Segments



# Page Segments

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



[Code](#)[Issues 19](#)[Pull requests 9](#)[Projects 0](#)[Wiki](#)[Security](#)[Insights](#)

A JavaScript library that makes observing changes to the DOM easy

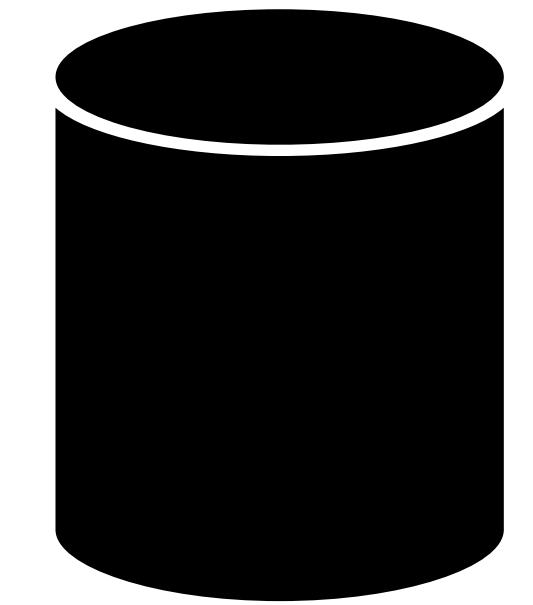
[82 commits](#)[1 branch](#)[0 releases](#)[4 contributors](#)[Apache-2.0](#)[Branch: master ▾](#)[New pull request](#)[Create new file](#)[Upload files](#)[Find file](#)[Clone or download ▾](#)

 rafaelw	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

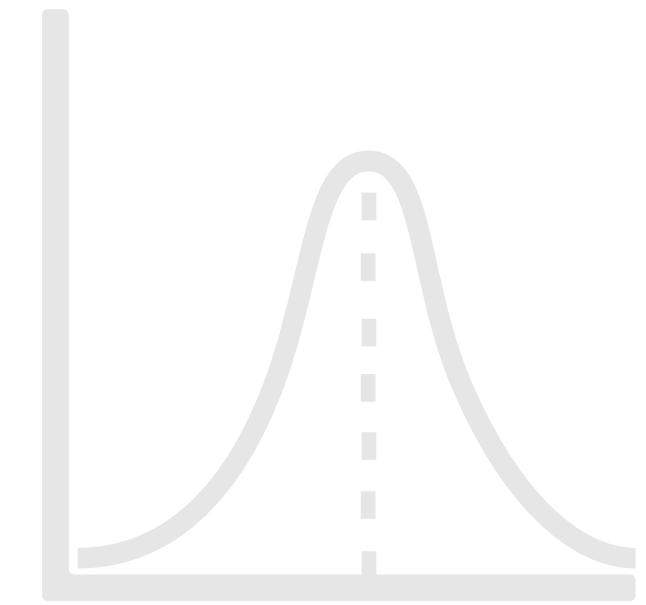
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browsing websites



Collecting and storing  
data from websites

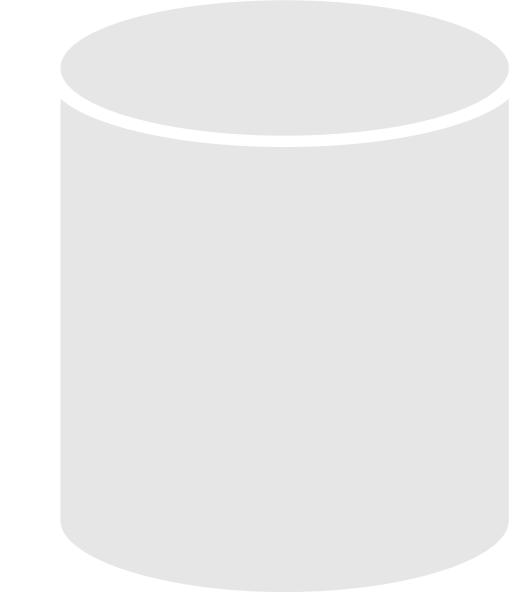


Analyzing collected  
data

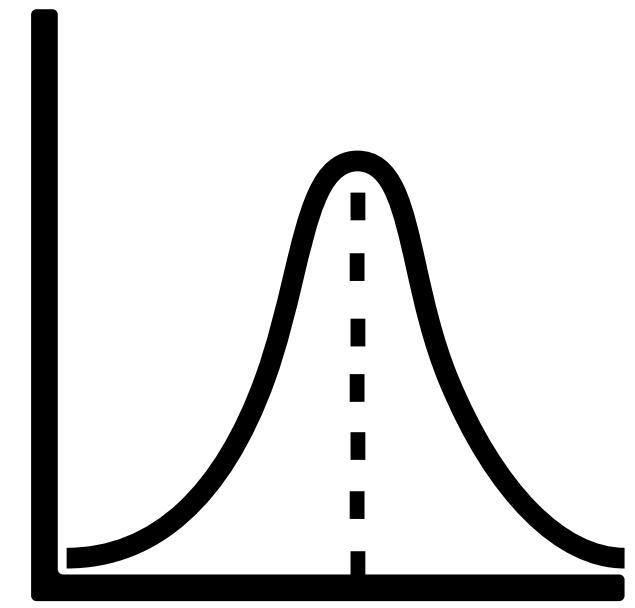
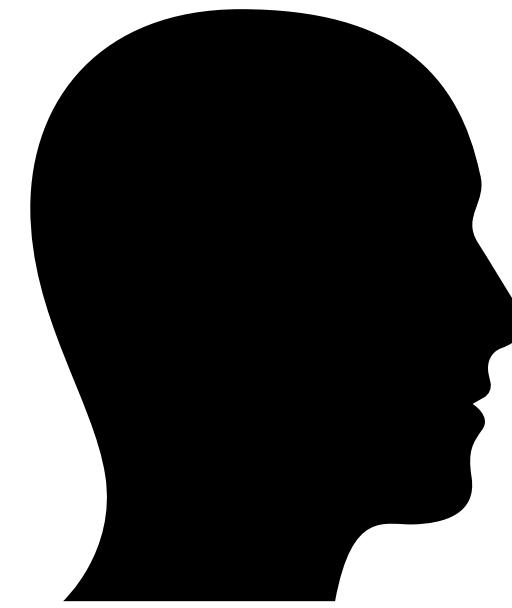
# Three Key Challenges



Mimicking a real user  
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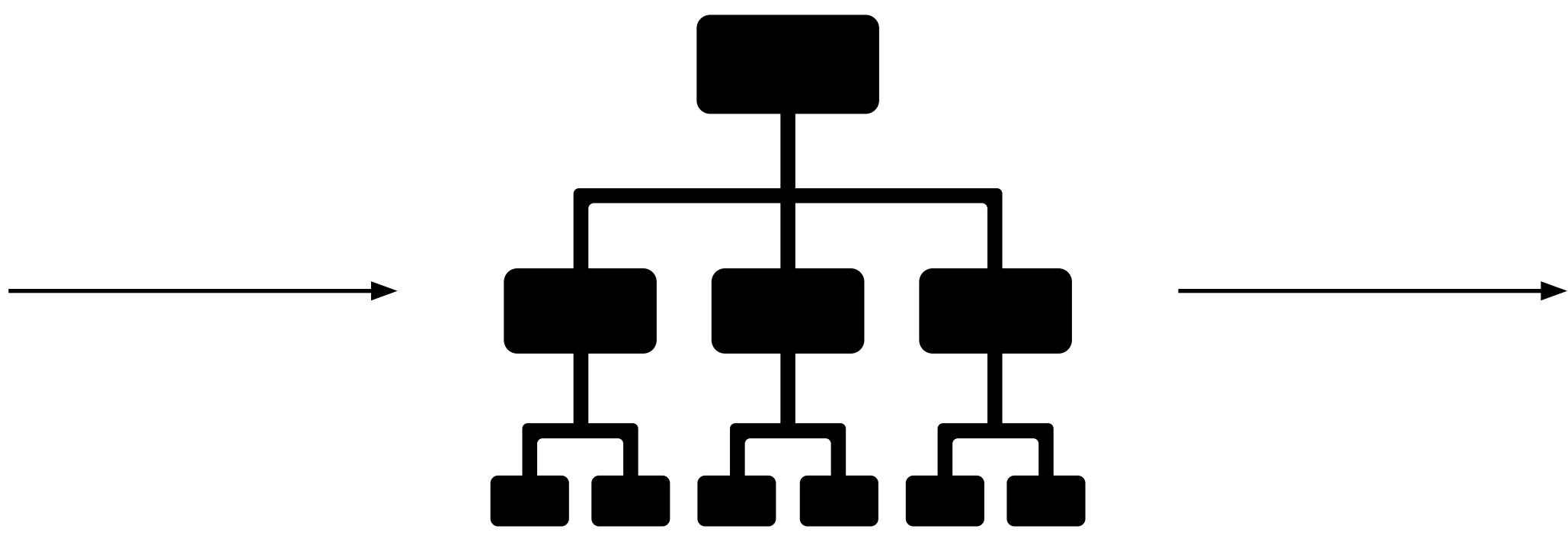
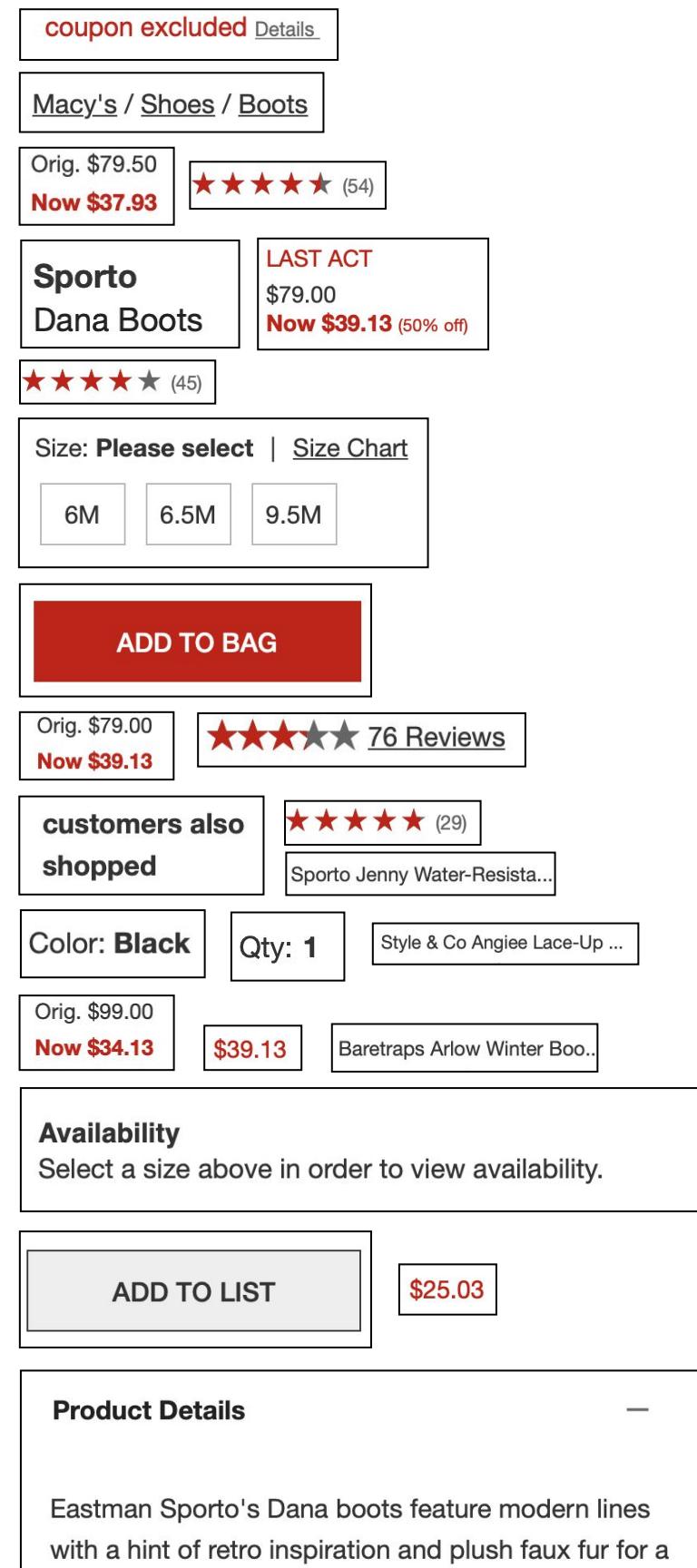


Collecting and storing  
data from websites



Analyzing collected  
data

# Clustering Segments



Hierarchical  
Clustering

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

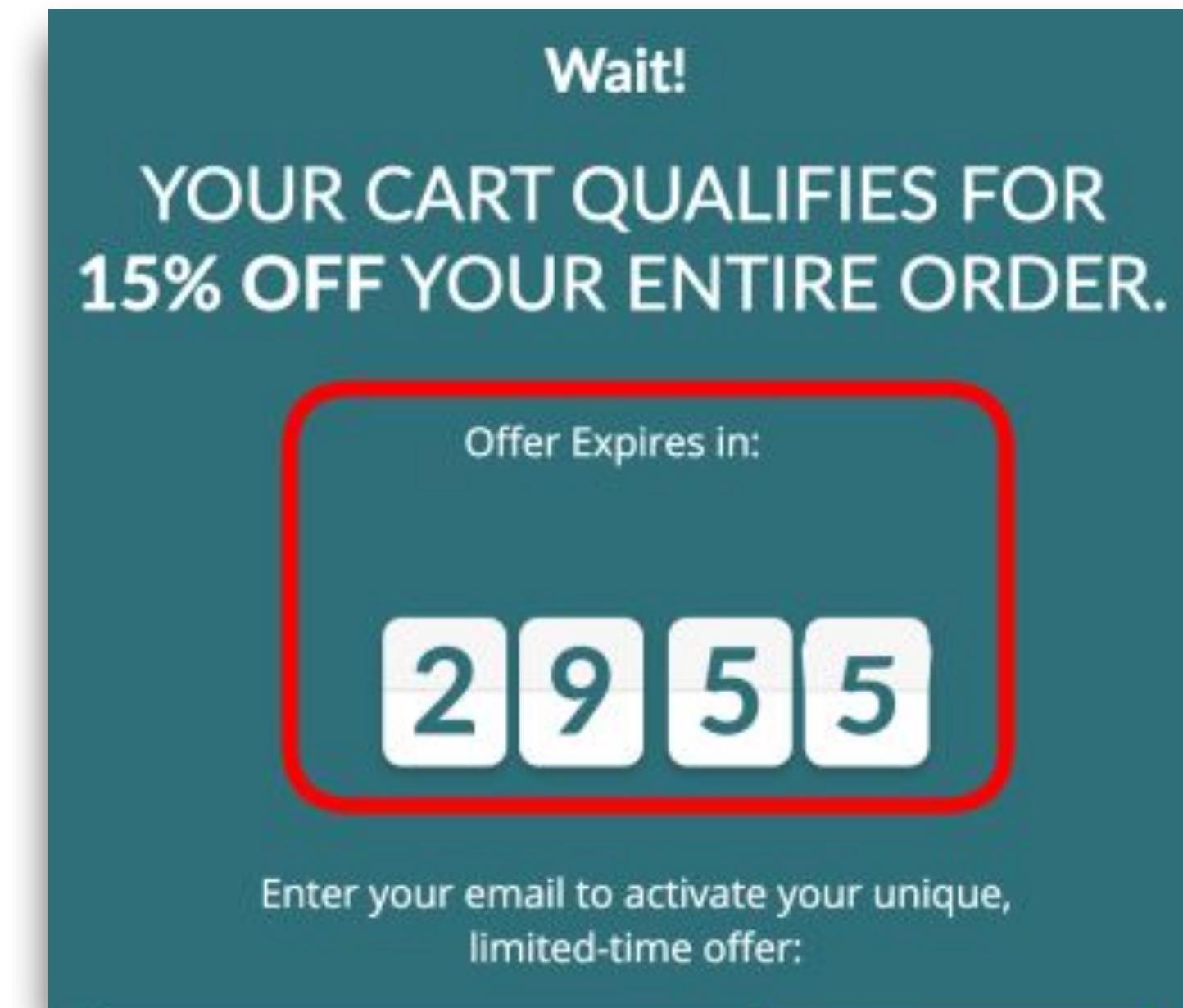
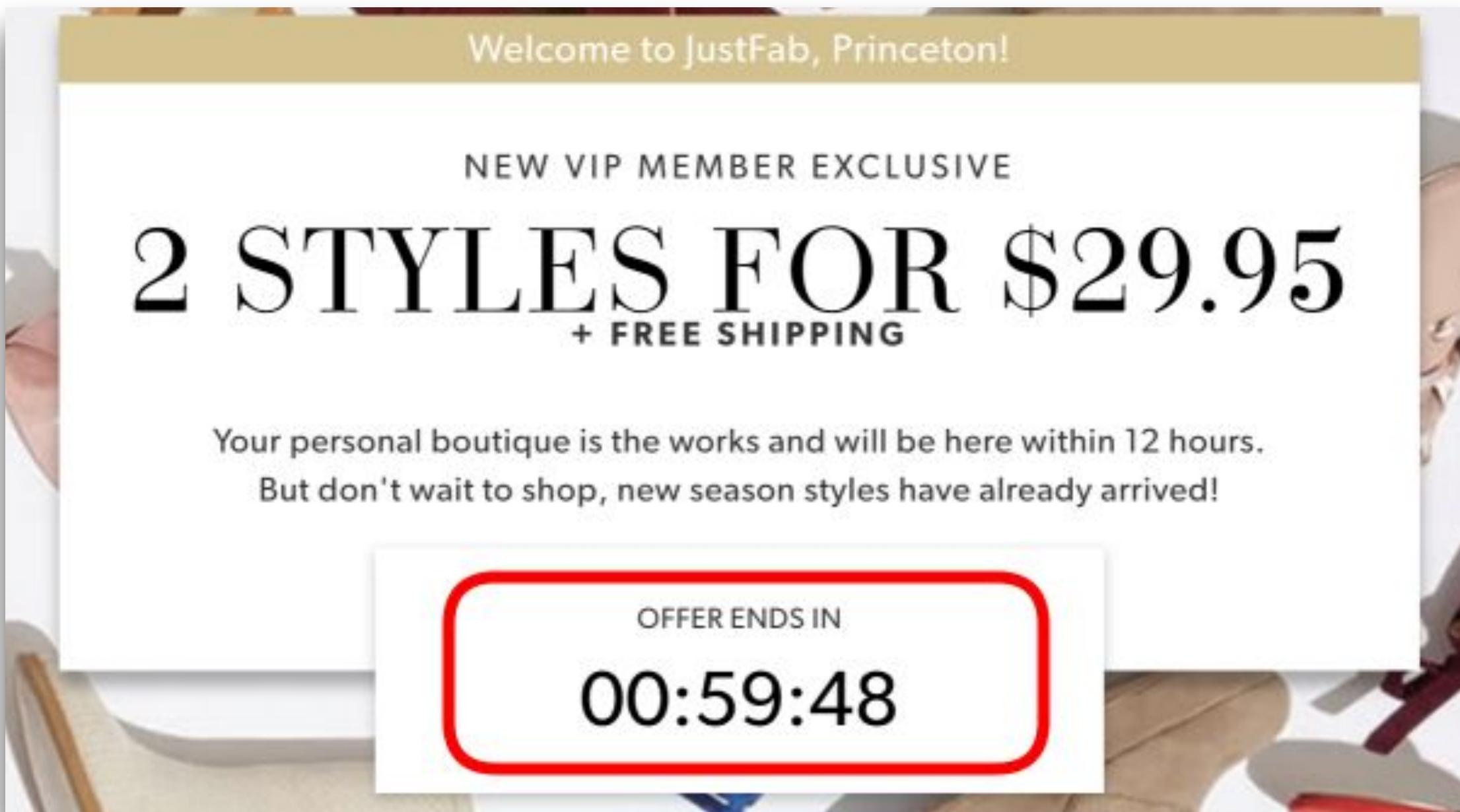
## Obstruction

- 1. Hard to Cancel

## Forced Action

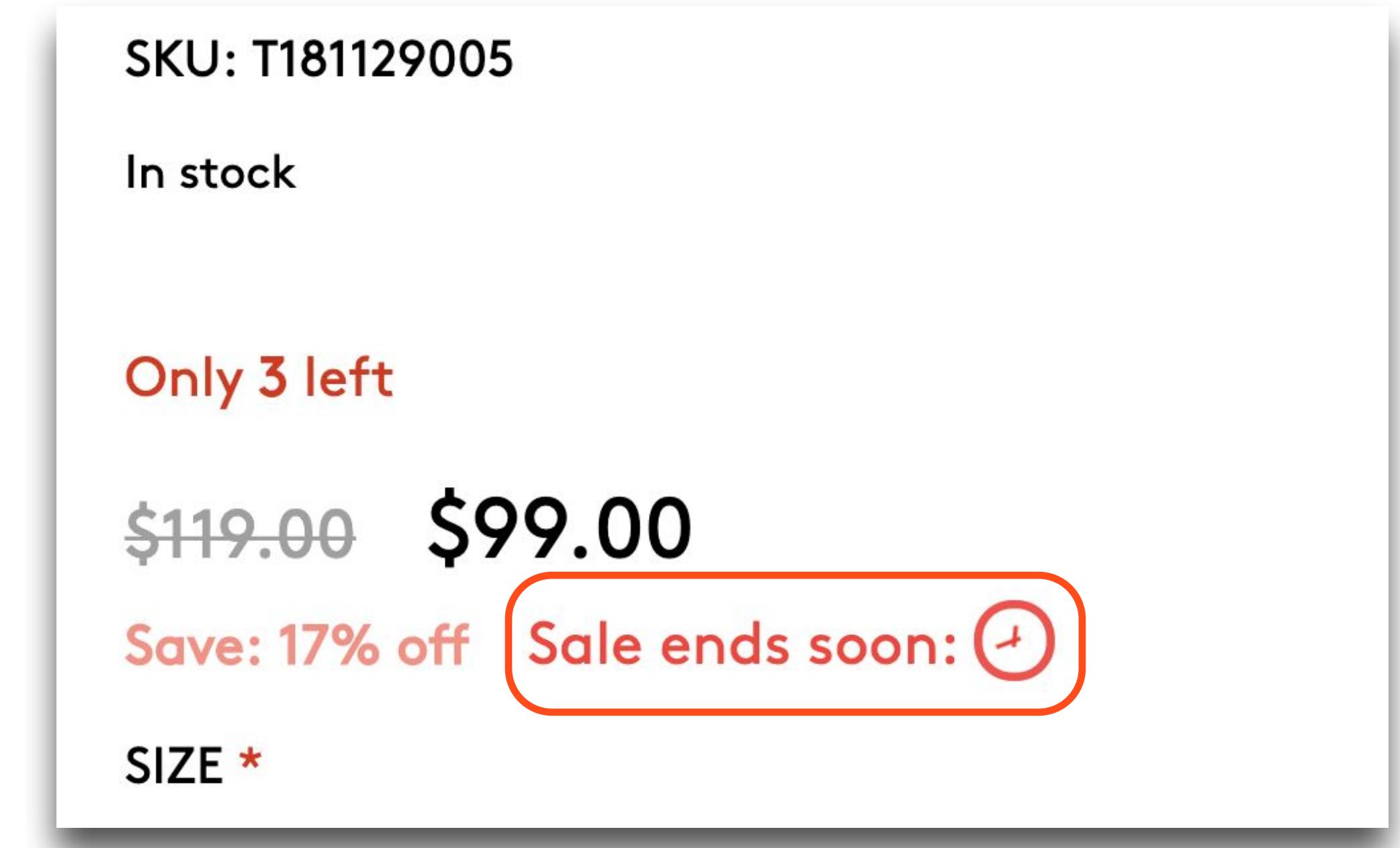
- 1. Forced Enrollment

# DP #1: Urgency – Timers



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

# DP #2: Urgency – Limited Time



- 88 instances across 84 websites.

# DP #3: Sneaking – Sneak into Basket

The image displays two screenshots of e-commerce websites demonstrating dark patterns related to adding items to a shopping cart.

**Screenshot 1 (Left):** A three-step checkout process. Step 1: Delivery Info. Step 2: Billing Info. Step 3: Review & Place Order. A blue line connects the steps. Above the steps, a banner reads: "TODAY'S SALE! - VALID ONLINE ONLY- \*Up To 45% Off + Free Local Delivery". Below the steps, a blue bar says: "Need assistance? We are here to help! Call us any time at 877-638-3303". A link "Log in to apply your points or discounts and earn even more points towards future purchases" is present. A "SHOPPING CART" section shows two items:

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

**Screenshot 2 (Right):** A product listing for an LG V40 ThinQ screen protector. The item is marked as "In stock" with a green checkmark and "Ships today if ordered by 2pm EST!". It shows a quantity selector set to 1, a large yellow "ADD TO MY CART" button with a play icon, and a "Send me purchase updates on Messenger" checkbox. To the right of the button, icons indicate "LIFETIME Quality Assurance Warranty", a "90 Day Return Policy", and a "\$" symbol with "110% Low Price Guarantee". Below the main product, another item is shown with a red border around its price and "Add to my cart" button: "LG V40 ThinQ - Full Edge Tempered Glass Screen Protector, Black" originally \$19.99, now \$4.99, with a checked "Add to my cart" checkbox.

- 7 instances across 7 websites.

# DP #4: Sneaking – Hidden Subscription

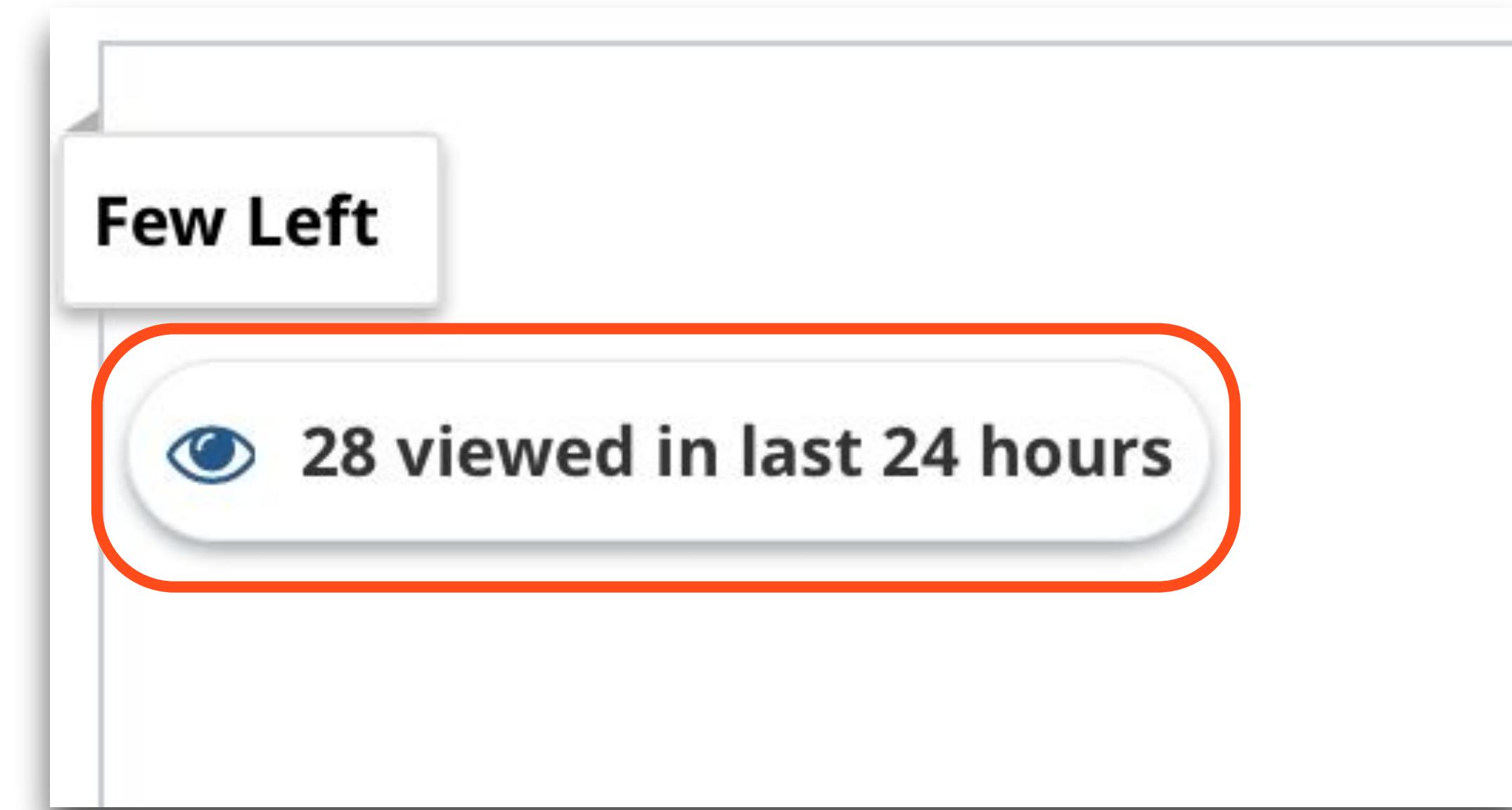
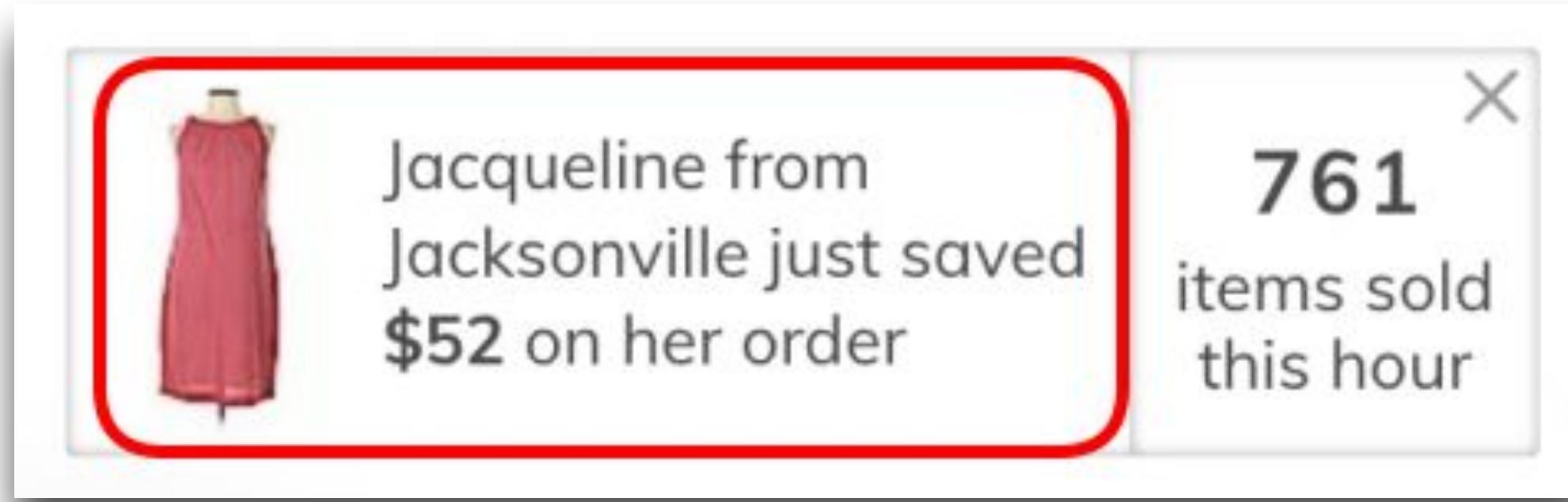
The screenshot shows a product listing for a wine case. The headline says "Case - SAVE over \$100" with a small "SALE" badge. Below it, it says "Collection" and "Average bottle rating". To the left, there's a grid of wine bottles. The main price is \$199.35, marked down from \$306.35. It also says "SAVE \$107.00". A section titled "Shipping Rates" contains a checkbox for "Enjoy FREE shipping with WSJwine Advantage" which is highlighted with a red border. Below this is a red "Add to Cart" button. At the bottom, it says "Item No. A07897".

The screenshot shows a promotional page for the "VIP + rewards" program. The title is "YOU DESERVE OUR SPECIAL TREATMENT!". It features a photo of a woman with blonde hair. To the right, it says "Start saving with the Ross-Simons VIP Rewards Club! Annual benefits include:" followed by a bulleted list of perks. At the bottom, it says "Just \$95.00", "JOIN TODAY", and "Already a member? [Sign In.](#) [Terms and conditions](#)".

- 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.

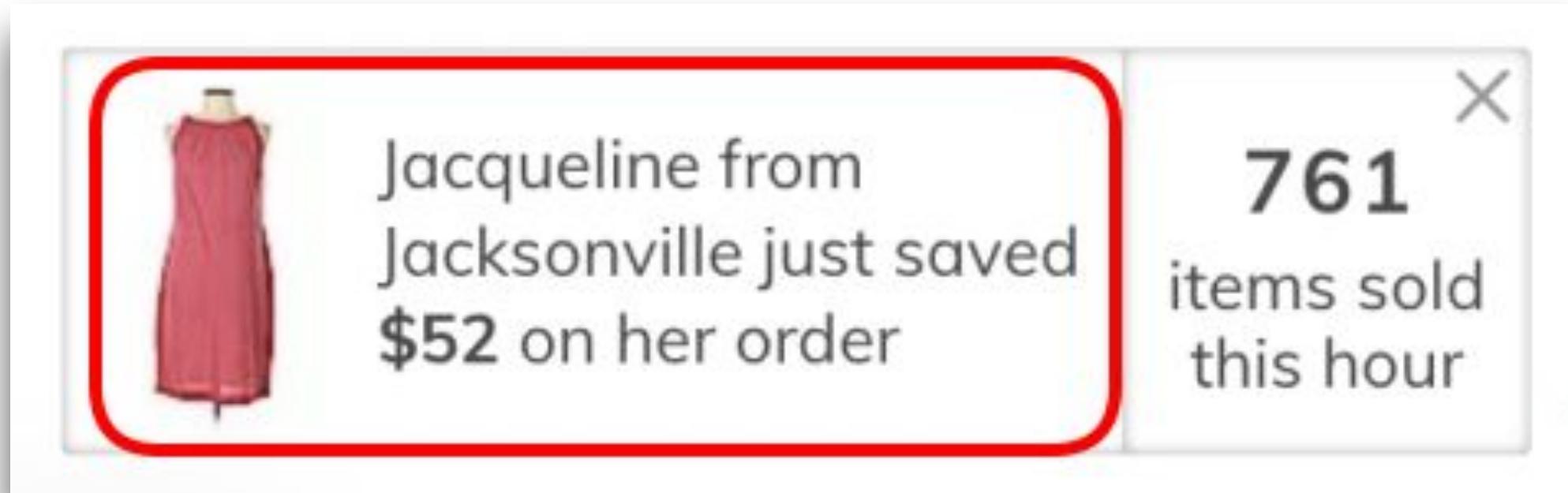
- 14 instances across 13 websites.

# 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"
],
```



## BXN Premium Pre-Roll (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 Websites	# Alexa Top 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*.

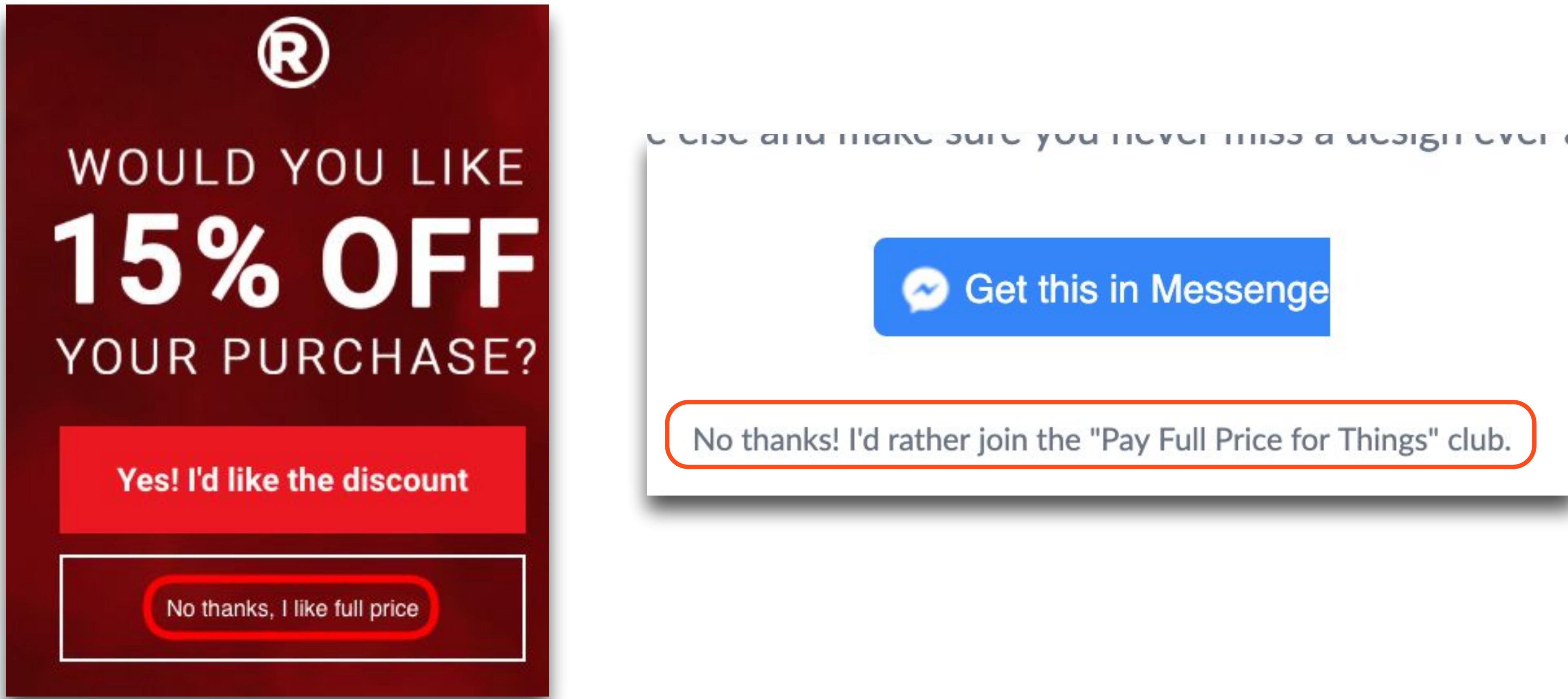
If you just started, it can be hard for you to show real boosts right from the very beginning. Fake Boosts can be used until some genuine interactions data gets piled up.

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



The screenshot shows a software interface for creating a 'Lead Boost'. At the top, there's a progress bar with steps 1 (Boost Type), 2 (Configure, which is highlighted in blue), 3 (Message), 4 (Display), and 5 (Review & Publish). A large input field labeled 'Name your Boost' has a placeholder 'My first boost'. Below it, a section titled 'Lead Boost' describes capturing leads when a form is completed, noting it works with most forms and popups. It shows a URL 'http://www.poo ба/thanks/bye/' and a dropdown for 'Form ID' set to '#contact-form'. A note below says 'A lead will be captured when the form found on this URL is completed.' There's a toggle switch labeled 'ENABLE FAKE PROOFS UNTIL SUFFICIENT REAL LEADS ARE CAPTURED' with a subtitle 'MIX FAKE BOOSTS UNTIL AT LEAST - 20 + REAL LEADS ARE CAPTURED'. At the bottom are 'Save & Close' and 'Continue' buttons.

# 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?

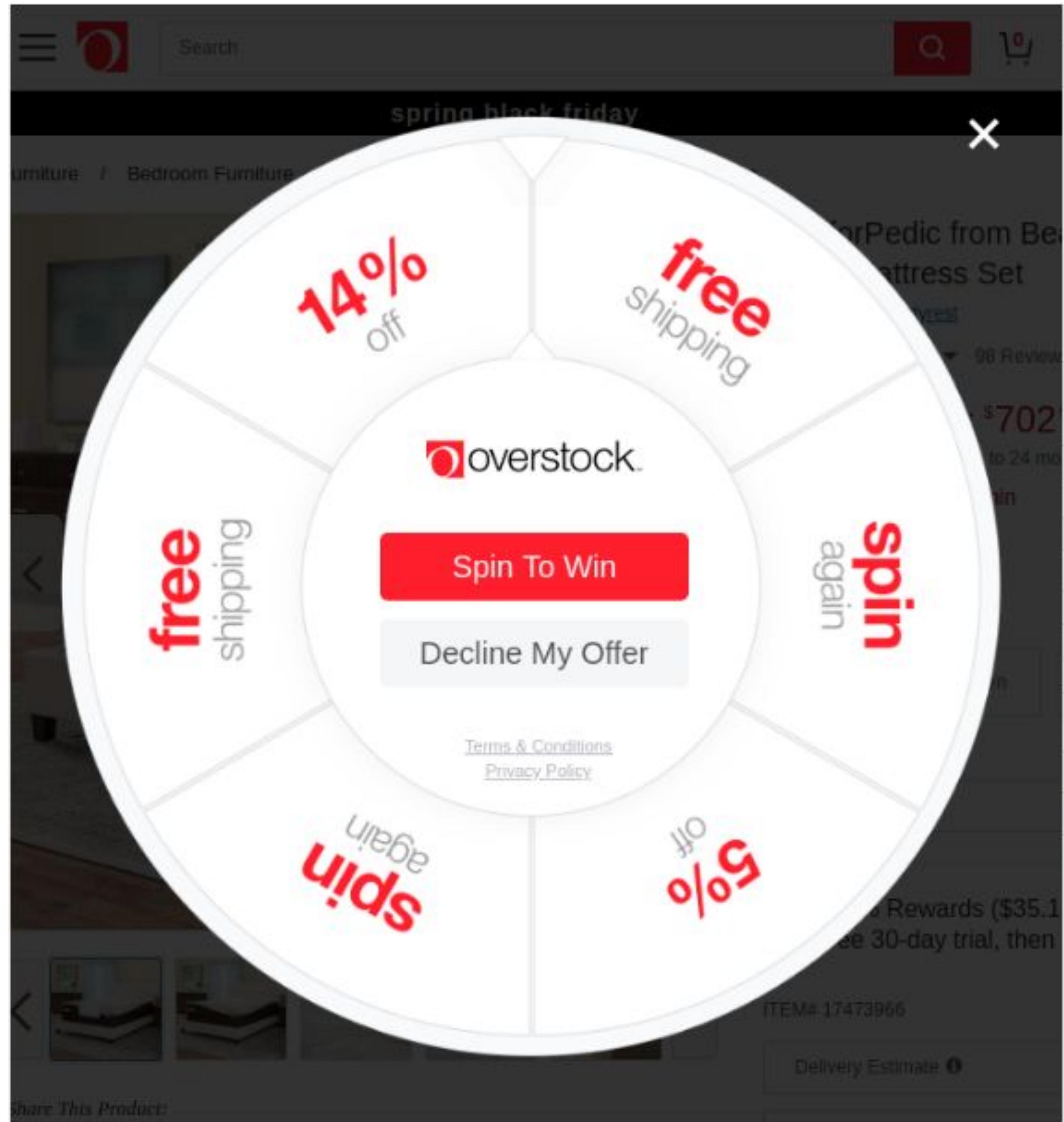
- \* You can spin the wheel once.
- \* If you win, you can claim your coupon for 10 mins only!

Every email address kills a terrorist

TRY YOUR LUCK

No, I don't feel lucky





```
Elements Network Console Sources Performance
spage.html?group...5804&coupon=12 ×
331     document.getElementById('_spin_spinner').src = "t
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     );
343   }
344
{} 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
Aa .* rotate(750deg)
spage.html?groupid=5804&coupon=12 — www.overstock.com/98813/spage.h
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**

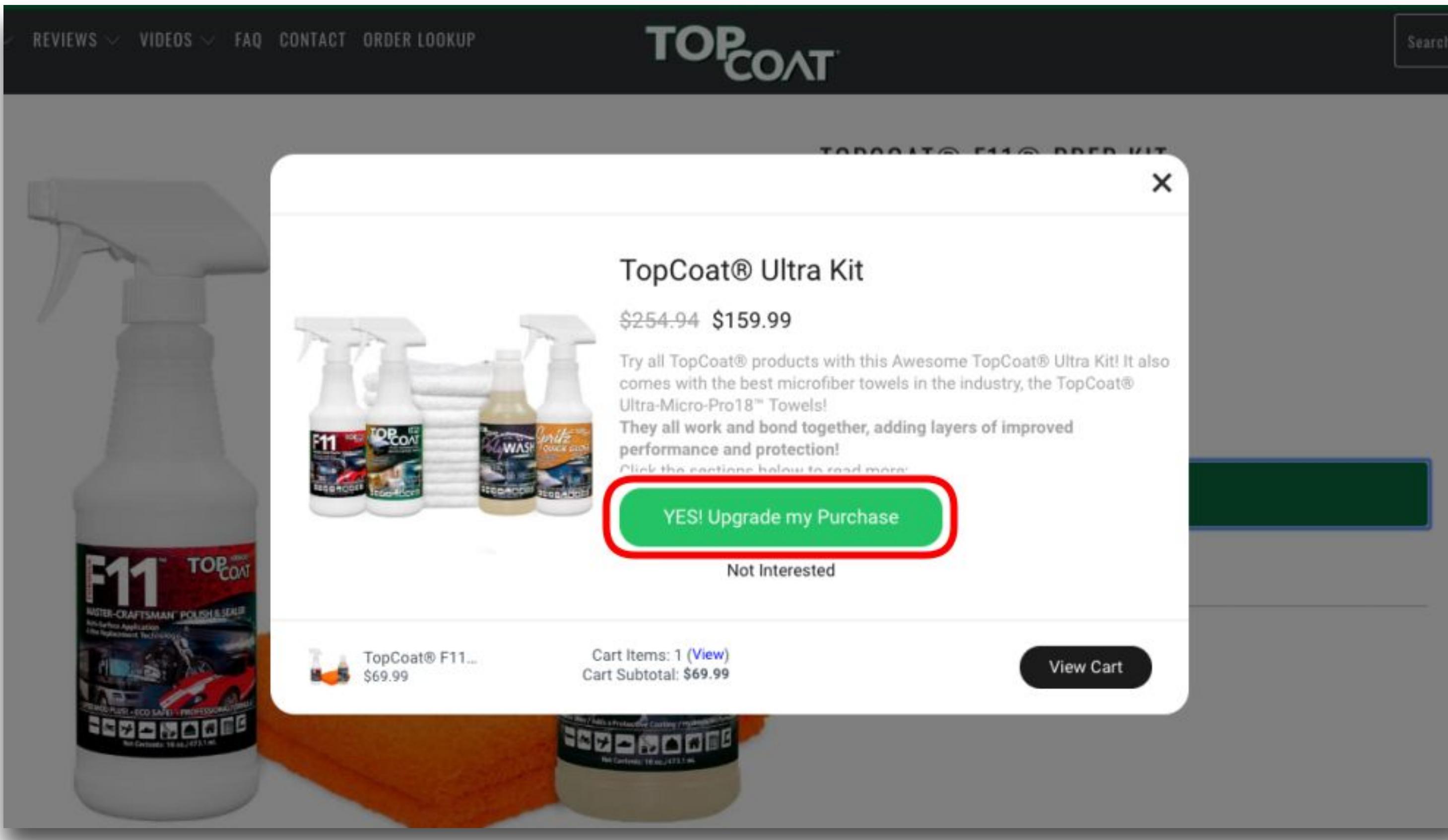
Email address

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 SOUCH BOOT SIZE: 8.5 <a href="#">Remove</a>   <a href="#">Save for Later</a>	QTY: 1	2 FOR \$29.95: \$19.98 \$39.95 VIP \$59.95 REG
	SLEEK SOPHISTICATED BELT BAG <a href="#">Remove</a>   <a href="#">Save for Later</a>	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) <a href="#">View offer &amp; refund details</a> <a href="#">Remove</a>   <a href="#">Pick Another One</a>	INCLUDED	

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**

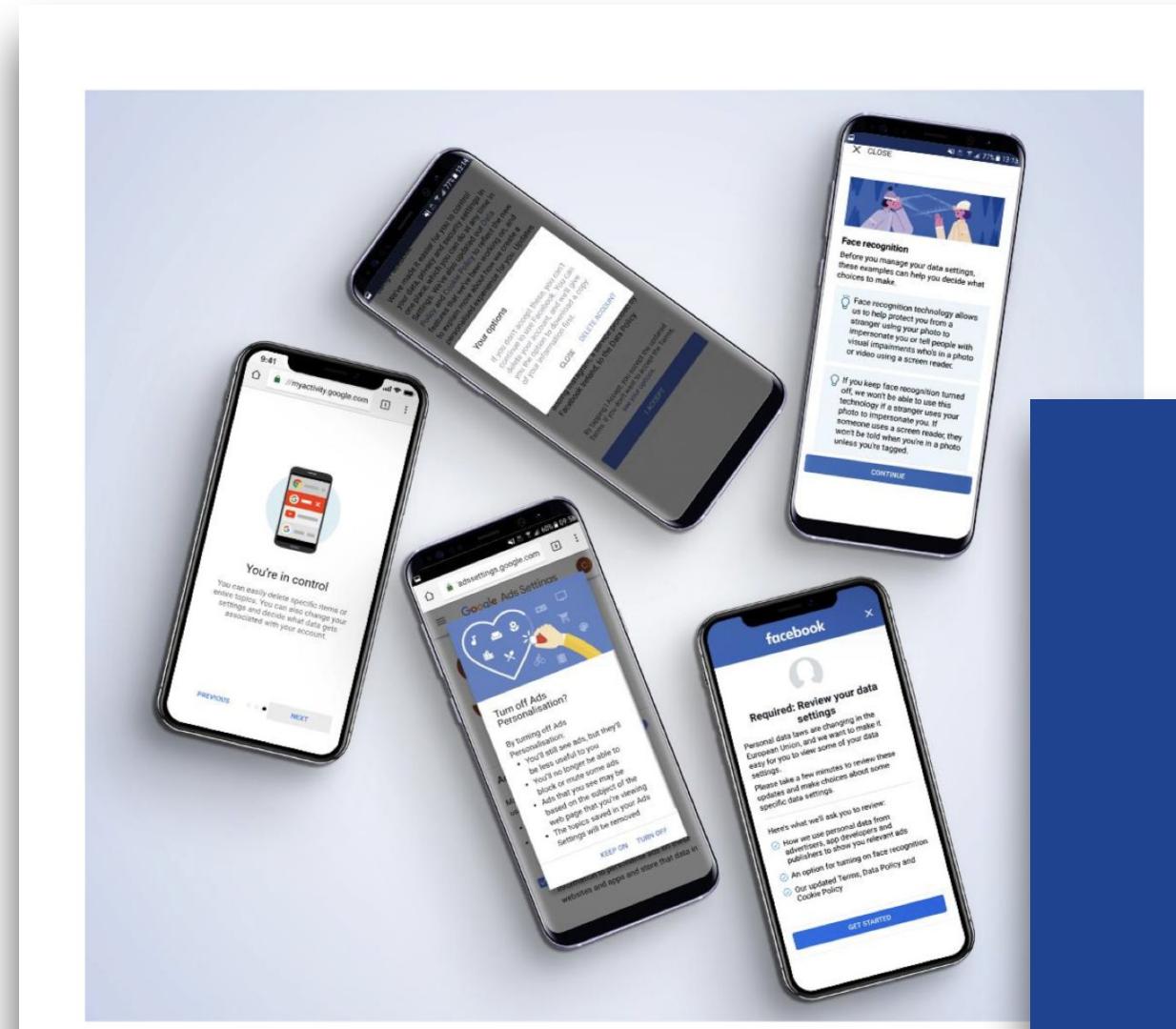
- 25 instances across 24 websites.

# 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

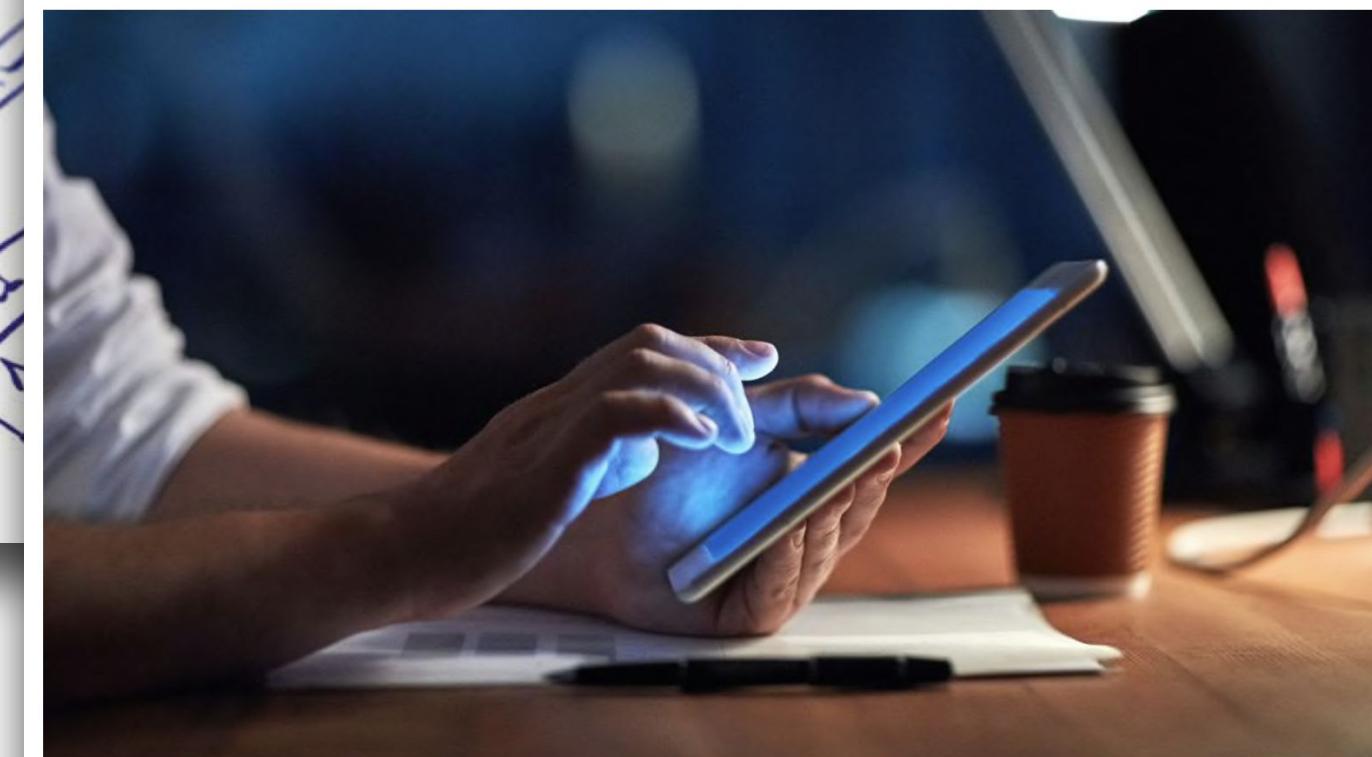
# Shaping Choices in the Digital World

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, and the language is confusing.

# Legal Solutions

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1. Many deceptive dark patterns violate Section 5 of the FTC Act.

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2. “Sneaking” and “aggressive” dark patterns violate the Consumer Rights Directive in the UK.

# Legal Solutions

1. Many deceptive dark patterns violate Section 5 of the FTC Act.
2. “Sneaking” and “aggressive” dark patterns violate the Consumer Rights Directive in the UK.
3. Industry specific rules in the United States: ROSCA, Funeral Rule, Used Car Rule.

# Legal Solutions

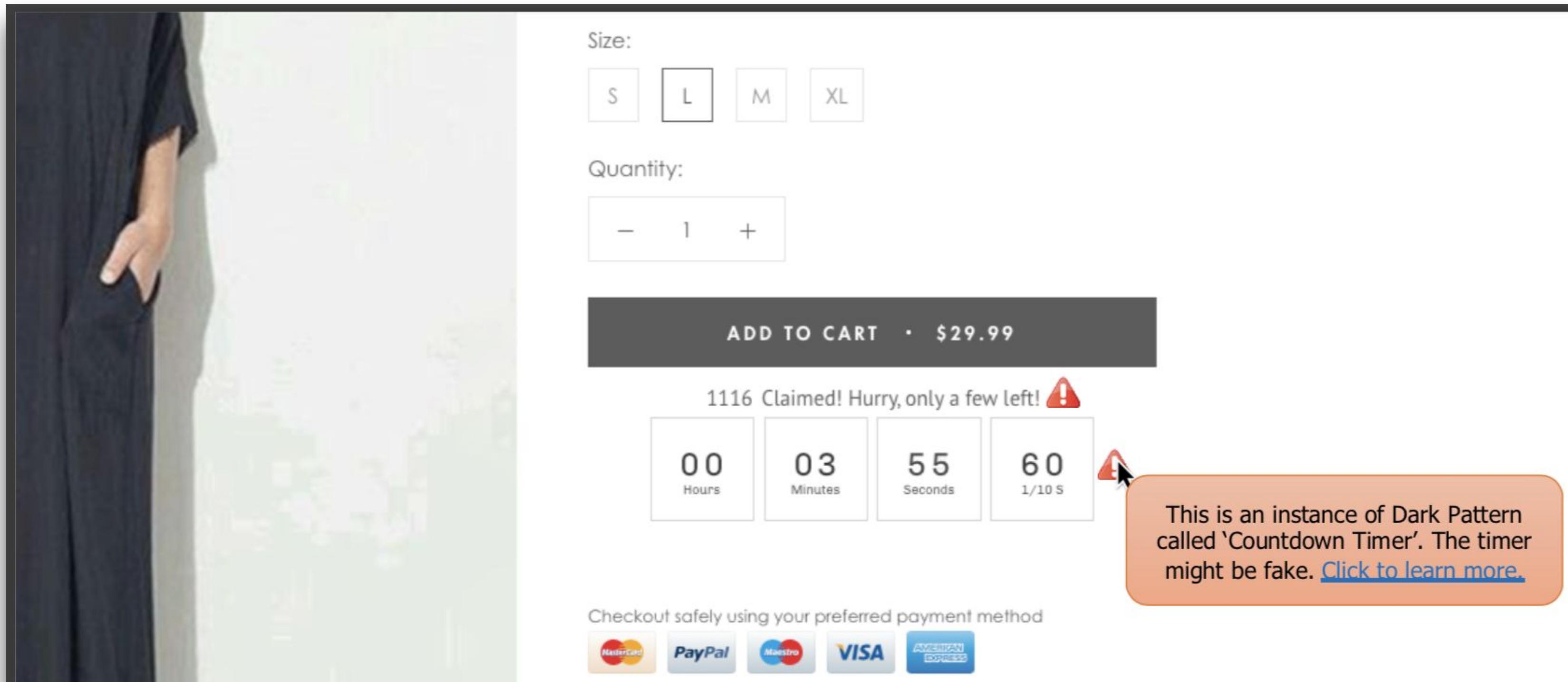
Mark Warner @MarkWarner

You might not have heard of a “dark pattern,” but chances are you’ve seen these annoying, manipulative designs trying to trick you into clicking, buying, or signing up for something you don’t want. Today I introduced the DETOUR Act with [@SenatorFischer](#) to do something about them.

**THE DETOUR ACT**

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>



CENTER FOR  
INFORMATION  
TECHNOLOGY  
POLICY  
PRINCETON UNIVERSITY

