

# Good Morning!

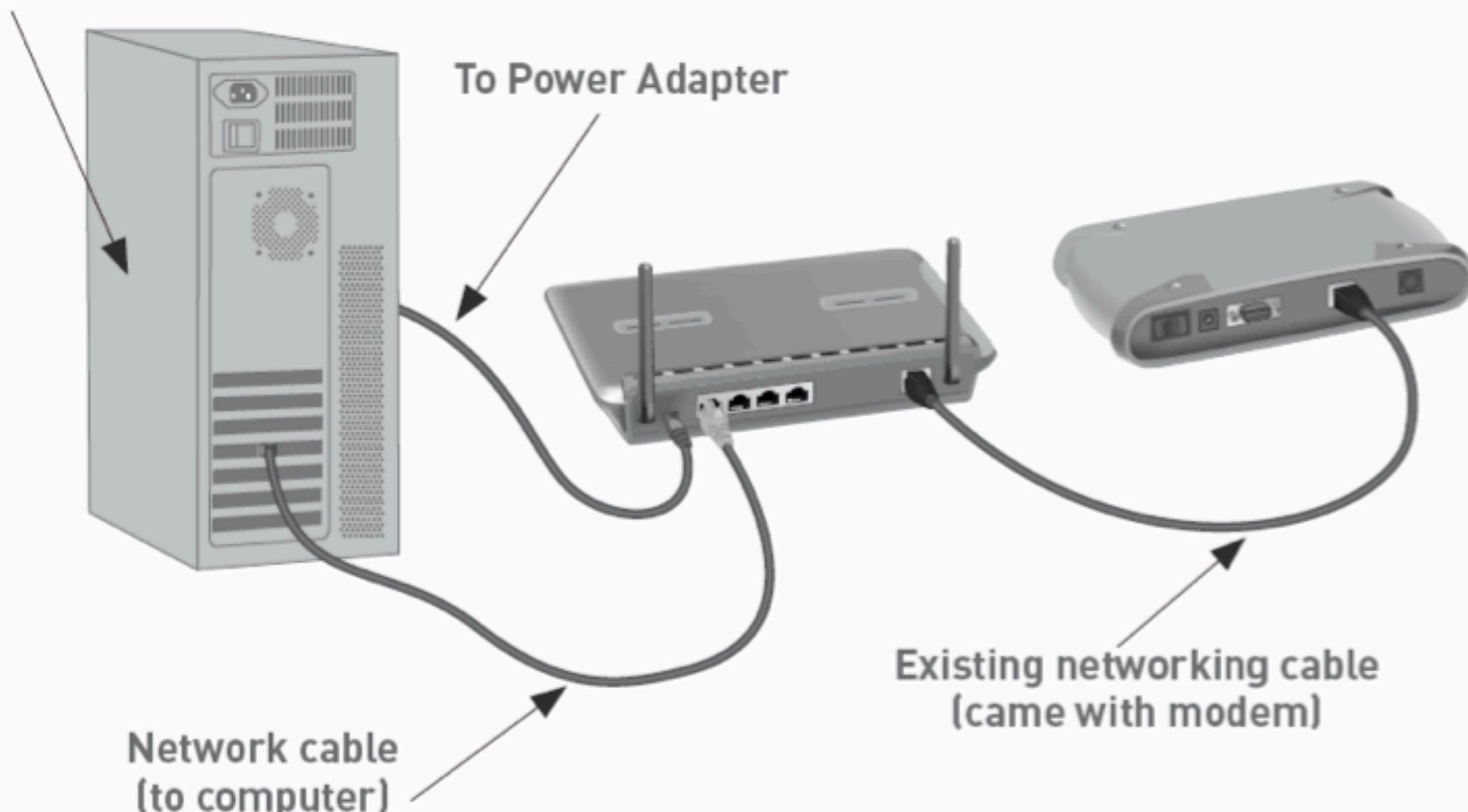
## An American Express Short Course

David J. Malan  
Harvard University  
[malan@harvard.edu](mailto:malan@harvard.edu)

# The Internet



Mac or PC computer that was originally connected to the cable or DSL modem



```
<!DOCTYPE html>
<html>
  <head>
    <meta charset="utf-8">
    <title>hello, world</title>
  </head>
  <body>
    hello, world
  </body>
</html>
```

[https://manual.cs50.net/Short\\_Course](https://manual.cs50.net/Short_Course)

## Your statement is ready

Inbox | X



**Capital One** capitalone@email.capitalone.com to

[show details](#) 15:37 (2 hours ago)



[Add us to your address book.](#)

[Help prevent fraud.](#)

[Log in to your account.](#)

## Your Capital One® statement is ready

David Malan,

The statement for your account ending in  
to view your statement and pay your bill.

is now available online. [Log in to Online Banking](#)

[Log In](#)

### Keep an eye on your credit



Access your credit score anytime, and get daily monitoring of

### Manage your account the easy way

Save yourself a phone call and [manage your account online](#).

- **Card worn out?** Request a replacement card.

### Transfer balances online



It's quick and easy!

[Transfer a balance now](#) from a

<http://agilebits.com/products/1Password/>

# Friday

- Mobile
- Search
- JavaScript
- Online Ads
- Security
- AmEx Initiatives
- ...
- One-on-One

# Hey Web 2.0:

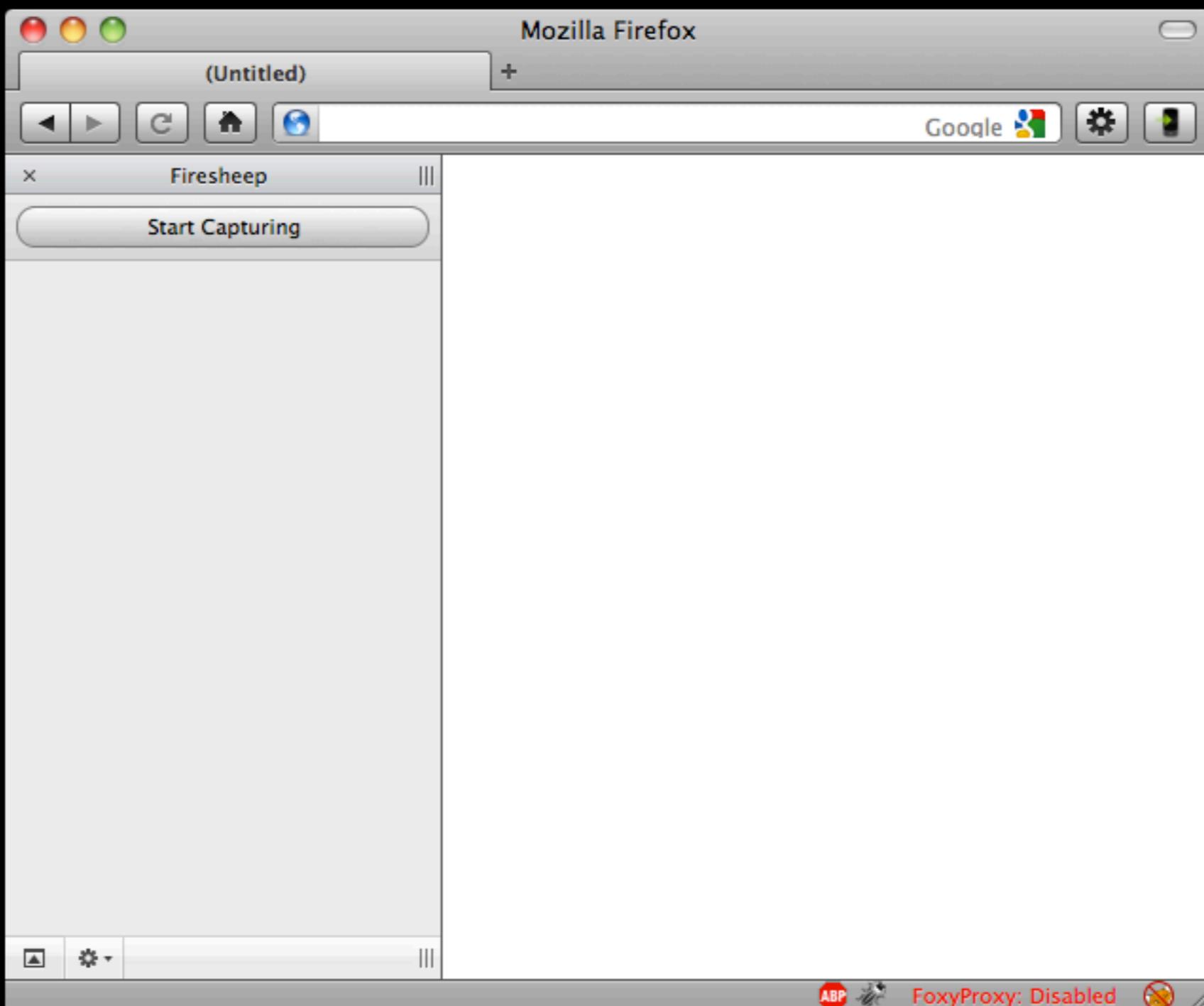
Start protecting user privacy instead of pretending to

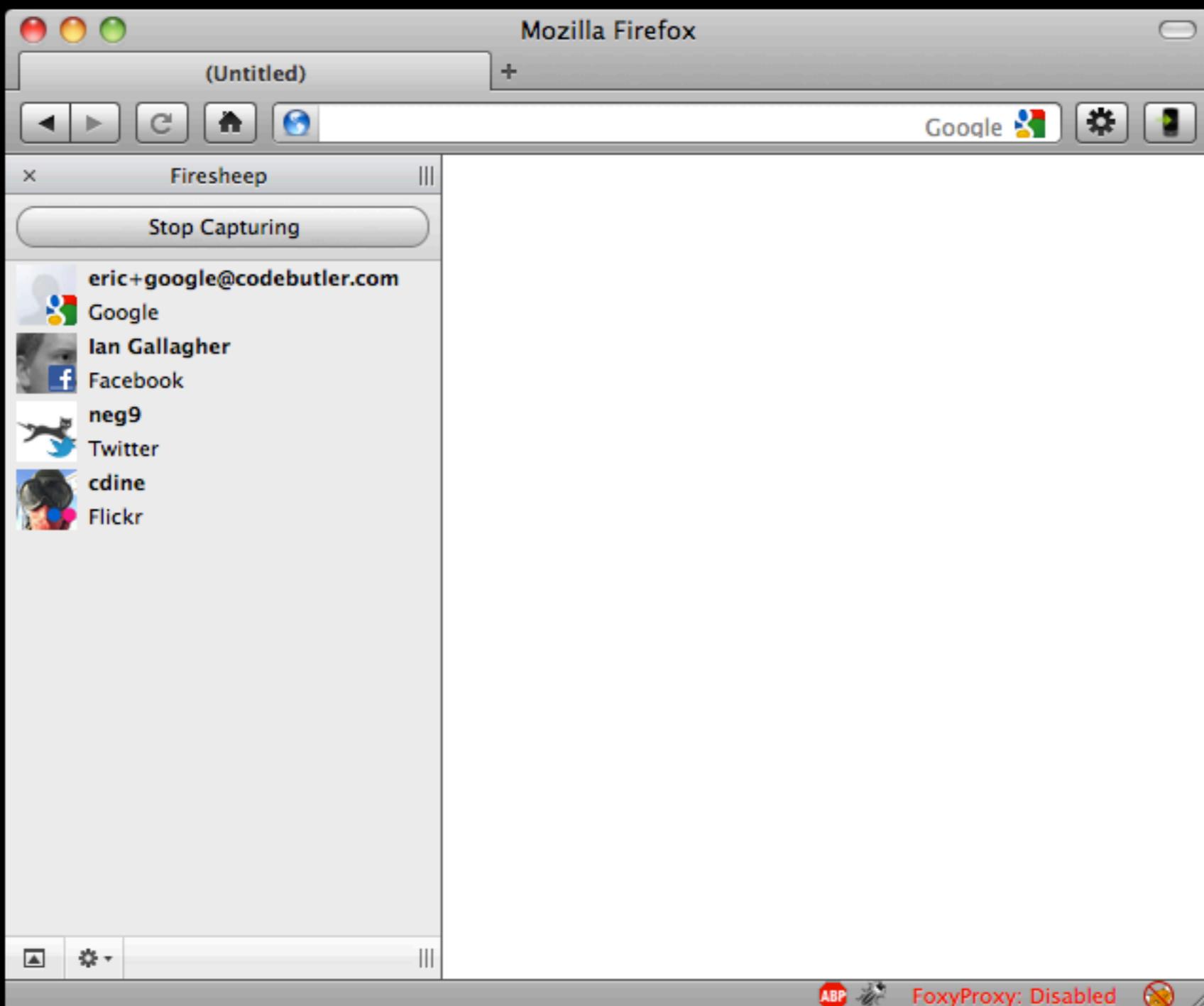
# Firesheep

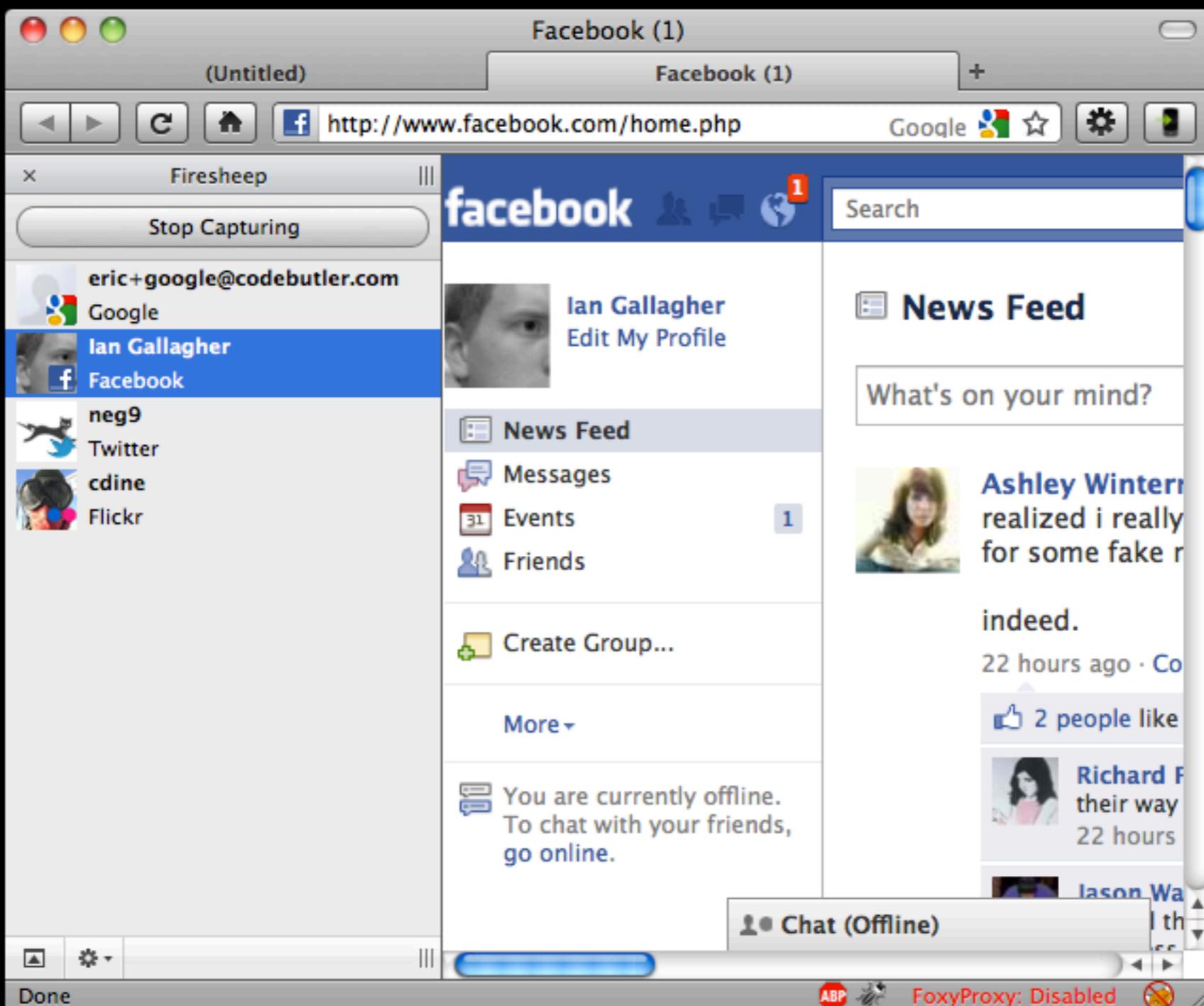
<http://codebutler.com/firesheep>

# Firesheep, a day later

<http://codebutler.com/firesheep-a-day-later>







# WPA2?

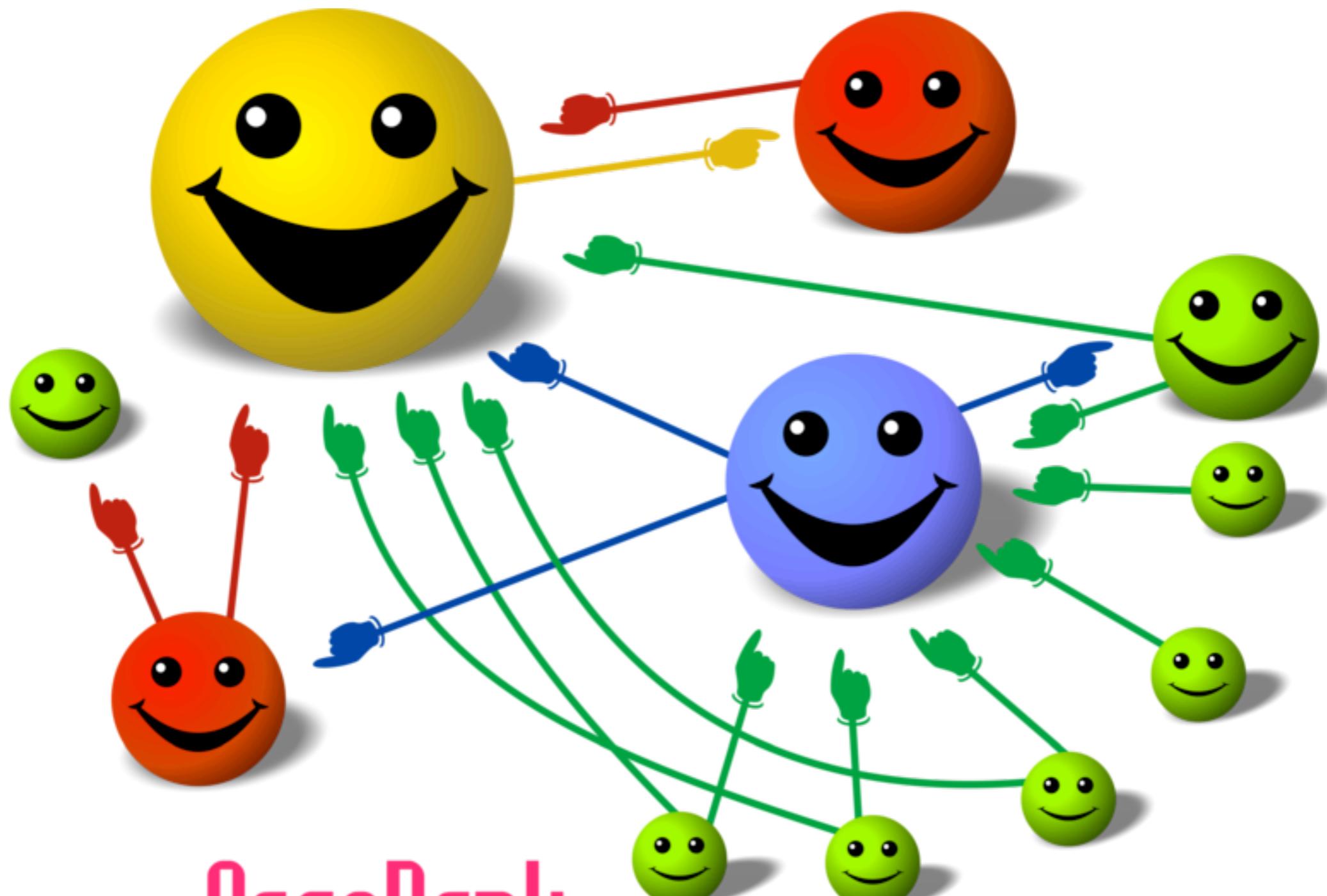
<https://www.facebook.com/>

# Man-in-the-Middle Attacks

# Final Stretch

- Mobile
- Personalized Search
- Online Advertising
- AmEx Initiatives
- Group Q&A

# Search Algorithms



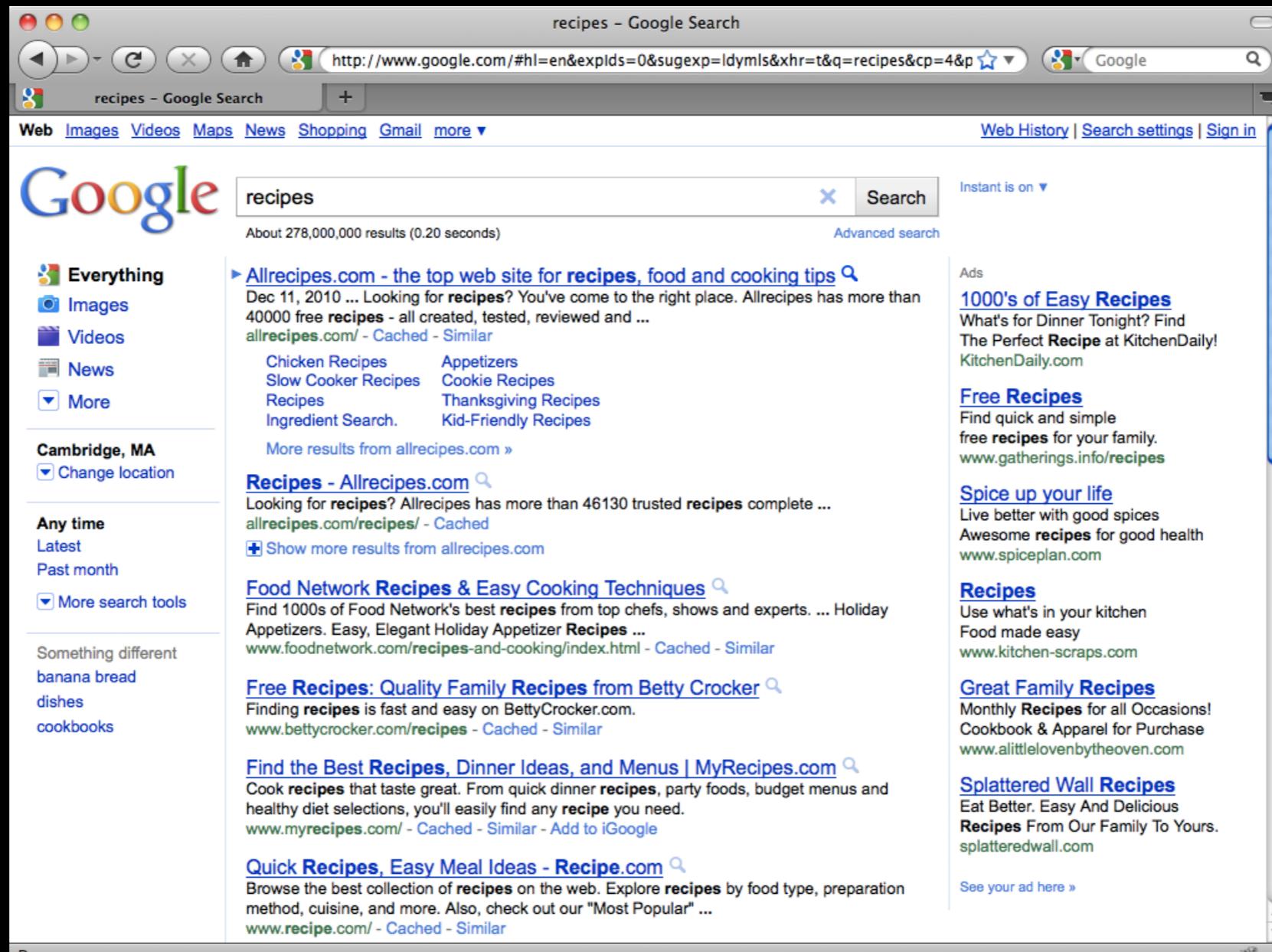
# PageRank

# Personalized Search

Today

You search for “recipes.”

About 278,000,000 results.



You scroll through.

You pick [epicurious.com](#).



You cook.

# Tomorrow

You search for “recipes” again.

# 278,000,000 results again.

A screenshot of a Google search results page for the query "recipes". The search bar at the top shows the query "recipes". Below the search bar, it says "About 278,000,000 results (0.20 seconds)". The main content area displays several search results:

- Epicurious.com: Recipes, Menus, Cooking Articles & Food Guides**  
Aug 15, 2010 ... Savor 100000 recipes from Gourmet, Bon Appetit, Self, cookbooks, chefs, and home cooks. Learn from holiday food guides, get healthy, ...  
[www.epicurious.com/](http://www.epicurious.com/) - Cached - Similar - Add to iGoogle
- Recipes & Menus**  
Desserts  
Holidays & Celebrations  
Quick & Easy
- Top-rated recipes**  
Advanced Search  
Thanksgiving Guide  
Add your own recipes
- Search epicurious.com**
- Recipes - Allrecipes.com**  
Looking for **recipes**? Allrecipes has more than 46130 trusted **recipes** complete ...  
[allrecipes.com/recipes/](http://www.allrecipes.com/recipes/) - Cached
- Show more results from allrecipes.com**
- Food Network Recipes & Easy Cooking Techniques**  
Find 1000s of Food Network's best **recipes** from top chefs, shows and experts. ... Holiday Appetizers. Easy, Elegant Holiday Appetizer **Recipes** ...  
[www.foodnetwork.com/recipes-and-cooking/index.html](http://www.foodnetwork.com/recipes-and-cooking/index.html) - Cached - Similar
- Free Recipes: Quality Family Recipes from Betty Crocker**  
Finding **recipes** is fast and easy on BettyCrocker.com.  
[www.bettycrocker.com/recipes](http://www.bettycrocker.com/recipes) - Cached - Similar
- Find the Best Recipes, Dinner Ideas, and Menus | MyRecipes.com**  
Cook **recipes** that taste great. From quick dinner **recipes**, party foods, budget menus and healthy diet selections, you'll easily find any **recipe** you need.  
[www.myrecipes.com](http://www.myrecipes.com) - Cached - Similar - Add to iGoogle
- Quick Recipes, Easy Meal Ideas - Recipe.com**  
Browse the best collection of **recipes** on the web. Explore **recipes** by food type, preparation method, cuisine, and more. Also, check out our "Most Popular" ...  
[www.recipe.com/](http://www.recipe.com/) - Cached - Similar

On the right side of the search results, there are several ads:

- 1000's of Easy Recipes**  
What's for Dinner Tonight? Find The Perfect **Recipe** at KitchenDaily! KitchenDaily.com
- Free Recipes**  
Find quick and simple free **recipes** for your family. [www.gatherings.info/recipes](http://www.gatherings.info/recipes)
- Spice up your life**  
Live better with good spices Awesome **recipes** for good health [www.spiceplan.com](http://www.spiceplan.com)
- Recipes**  
Use what's in your kitchen Food made easy [www.kitchen-scrap.com](http://www.kitchen-scrap.com)
- Great Family Recipes**  
Monthly **Recipes** for all Occasions! Cookbook & Apparel for Purchase [www.alittleovenbytheoven.com](http://www.alittleovenbytheoven.com)
- Splattered Wall Recipes**  
Eat Better. Easy And Delicious **Recipes** From Our Family To Yours. [splatteredwall.com](http://splatteredwall.com)

At the bottom of the page, there is a "See your ad here »" link.

But epicurious.com is now on top!

► [Epicurious.com: Recipes, Menus, Cooking Articles & Food Guides](#) 

Aug 15, 2010 ... Savor 100000 recipes from Gourmet, Bon Appetit, Self, cookbooks, chefs, and home cooks. Learn from holiday food guides, get healthy, ...

[www.epicurious.com/](http://www.epicurious.com/) - Cached - Similar - Add to iGoogle

<a href="#">Recipes &amp; Menus</a>	<a href="#">Top-rated recipes</a>
<a href="#">Desserts</a>	<a href="#">Advanced Search</a>
<a href="#">Holidays &amp; Celebrations</a>	<a href="#">Thanksgiving Guide</a>
<a href="#">Quick &amp; Easy</a>	<a href="#">Add your own recipes</a>

The search engine “learned” what you like and personalized your results.

# How?

# Self-Organizing Heuristics

Heuristic that reorders a list of elements according to how the elements are accessed.

# Self-Organizing Heuristics

- Move-to-Front Heuristic
  - A heuristic that moves the target of a search to the head of a list so it is found faster next time.
- Frequency Count Heuristic
  - A heuristic that keeps the elements of a list ordered by number of times each element is the target of a search.

But how does the search  
engine know it's you?

# Your IP Address

Much like a postal address, your computer has a unique address on the Internet like 1.2.3.4 that the search engine can recognize.

# Cookies

Websites can store information in your browser to remind them that you've visited before.

# Maybe you logged in

If you're logged into the search engine (as with a Gmail or Yahoo account), everything you search for can be logged and associated with you.

Scary. But helpful?

You search for “SOX”.

# You wanted...

# Sarbanes–Oxley Act - Wikipedia, the free encyclopedia

# But you got...

► [The Official Site of The Boston Red Sox | redsox.com: Homepage](http://redsox.com) 

Dec 11, 2010 ... Headlines, statistics, photograph galleries and general team information.  
[Schedule](#) - [Shop](#) - [Tickets](#) - [2010 Standings](#)  
[boston.redsox.mlb.com/](http://boston.redsox.mlb.com/) - Cached

[redsox.com](#) - Cached

Not next time.

# Personalized Search

- Benefits
  - Efficiency
  - Accuracy
  - ...
- Costs
  - Privacy
  - Inaccuracy
  - ...

# Who

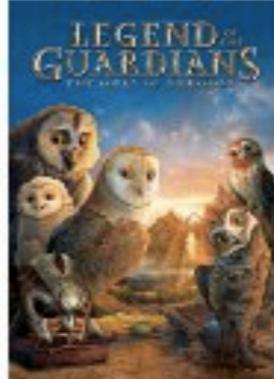
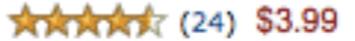
- Google
- Bing
- Yahoo
- Amazon
- ...

# You might also like...

**Today's Recommendations For You**

Here's a daily sample of items recommended for you. Click here to [see all recommendations](#) Page 84 of 88 [\(Start over\)](#)

  
[Cables To Go 03117 18 AWG Outlet Saver Power Ex...](#)  
 (37) \$9.76  
[Fix this recommendation](#)

  
[Legend of the Guardian... \(Video On Demand\) Video On Demand](#)  
~ Emil...  
 (24) \$3.99  
[Fix this recommendation](#)

IX this recommendation

★★★★★ (35) \$21.00

Outlets & Surge Protectors

IX this recommendation

★★★★★ (54) \$6.23

~ Film

Video On Demand

# Personalization Techniques

- Search History
- Self-Organizing Heuristics
- IP Geolocation
- User Feedback
  - Starring Favorites
  - Hiding Non-Favorites
- Purchase History
- ...

# Analytics



David J. Malan, David Su and 468 others like this. [Unlike](#) · [Admin Page](#) · [Insights](#)

[API](#) | [Report a Bug](#) | [CS50 Apps](#)

| [CS50.net](#) | [CS50.tv](#) | djm '99

# HarvardCourses

by CS50

[Login](#)

## Visualize Your Schedule

Click the **Calendar** tab to see courses you're shopping or taking.

FAS

Spring

Search



start over

All Faculty

All Fields of Study

All Levels

enable Q Guide

doesn't conflict with  Courses I'm Taking  busy blocks

satisfies Gen Ed

allows cross registration

offered this year

on friends' lists

Catalog

Calendar

Friends

Discuss

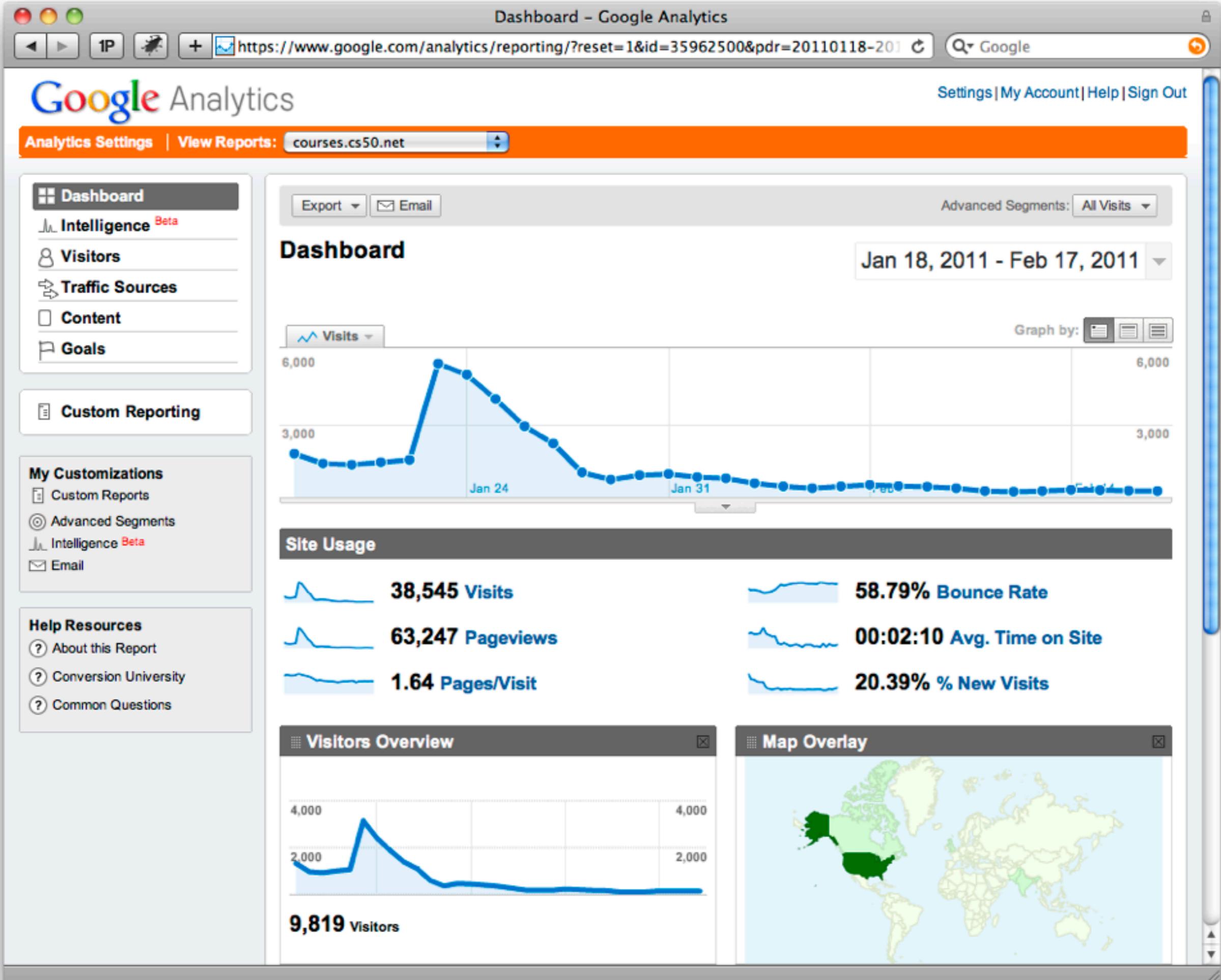
		course	title	faculty	Q	n	meets
lists ▾		AESTH&INTP 12	Poetry in America	New			spring '12 M., ...
lists ▾		AESTH&INTP 14	Putting Modernism Together	Albright	Q	96	spring '11 MW ...
lists ▾		AESTH&INTP 16	Openings: The Illuminated Manuscript	Hamburger			spring '12 Tu., ...
lists ▾		AESTH&INTP 17	Soundscapes: Exploring Music in a Changing ...	Shelemay	Q	143	spring '13 M., ...
lists ▾		AESTH&INTP 20	Poems, Poets, Poetry	Vendler	Q	63	spring '11 MWF...
lists ▾		AESTH&INTP 23	Interracial Literature	Sollors	Q	17	spring '12 M., ...
lists ▾		AESTH&INTP 26	Gender and Performance	Bernstein	Q	24	spring '12 Tu., ...
lists ▾		AESTH&INTP 29	Moral Imagination in Modern Jewish Literature	Wisse	Q	16	spring '12 Tu., ...
lists ▾		AESTH&INTP 31	American Musicals and American Culture	Oja	Q	53	spring '11 TuTh...
lists ▾		AESTH&INTP 32	Revolution and Reaction: The Rise and Fall of t...	Malmstad	Q	10	spring '13 M., ...
lists ▾		AESTH&INTP 39	Old Tales for New Times: The Appropriation of ...	Idema	Q	7	spring '11 TuTh...
lists ▾		AESTH&INTP 40	Monuments of Islamic Architecture	Roxburgh			spring '11 TuTh...
...		AESTH&INTP 44	... ... ... ...	Todd	Q	44	spring '14 MWF...

# Social Plugins

```
<script type="text/javascript">
// <![CDATA[
var _gaq = _gaq || [];
_gaq.push(["_setAccount", "UA-"]);
_gaq.push(["_trackPageview"]);

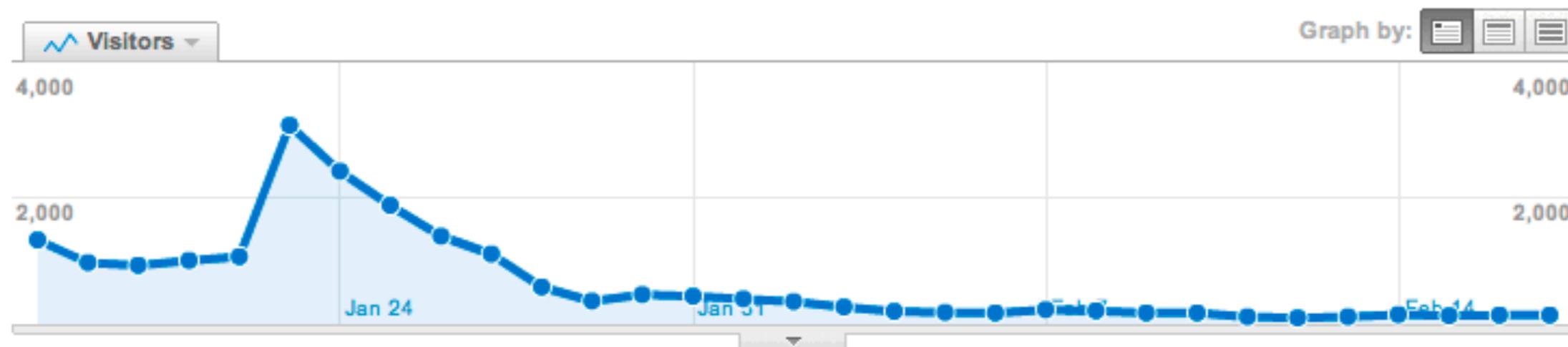
(function() {
    var ga = document.createElement("script"); ga.type = "text/javascript"; ga.async = true;
    ga.src = ("https:" == document.location.protocol ? "https://ssl" : "http://www") + ".google-analytics.com/ga.js";
    var s = document.getElementsByTagName("script")[0]; s.parentNode.insertBefore(ga, s);
})();

// ]]>
</script>
```



## Visitors Overview

Jan 18, 2011 - Feb 17, 2011



**9,819 people visited this site**



**38,545 Visits**



**9,819 Absolute Unique Visitors**



**63,247 Pageviews**



**1.64 Average Pageviews**



**00:02:10 Time on Site**



**58.79% Bounce Rate**



**20.39% New Visits**

### Visitor Segmentation



**Visitors Profile:** languages, network locations, user defined



**Browser Profile:** browsers, operating systems, browser and operating systems, screen colors, screen resolutions, java support, Flash



**Map Overlay**

Geolocation visualization

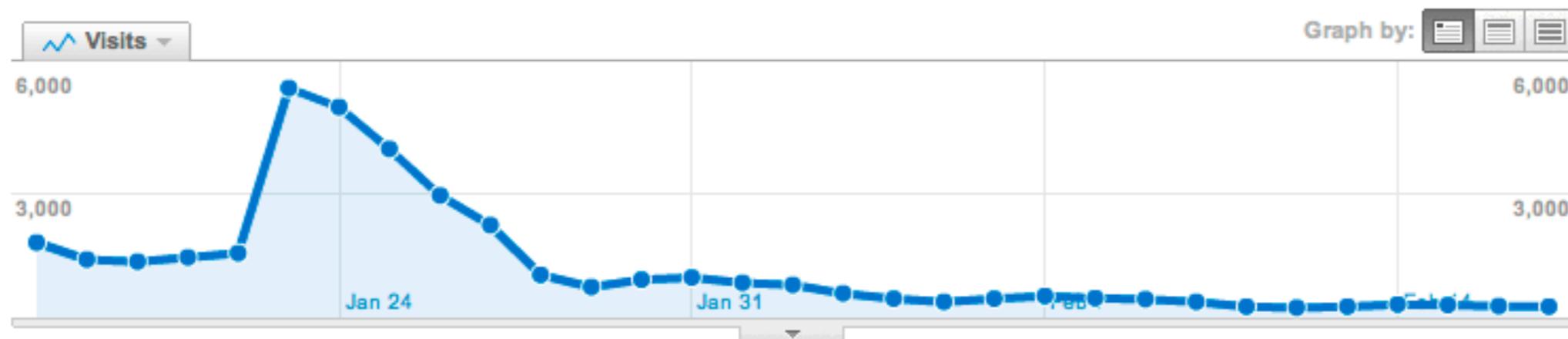


**Try Google Ad Planner.**

Understand the demographics and behaviors of your website's visitors.

## Traffic Sources Overview

Jan 18, 2011 - Feb 17, 2011



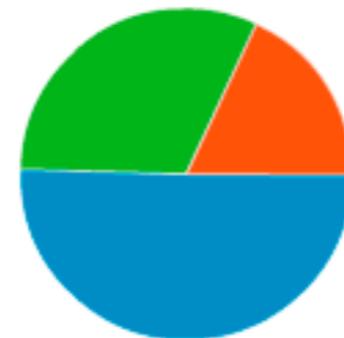
All traffic sources sent a total of 38,545 visits



**31.44%** Direct Traffic

**50.48%** Referring Sites

**18.07%** Search Engines



- Referring Sites  
19,459.00 (50.48%)
- Direct Traffic  
12,119.00 (31.44%)
- Search Engines  
6,967.00 (18.07%)

## Top Traffic Sources

Sources	Visits	% visits
facebook.com (referral)	16,420	42.60%
(direct) ((none))	12,119	31.44%
google (organic)	6,908	17.92%
uc.fas.harvard.edu (referral)	994	2.58%
cs50.net (referral)	439	1.14%

[view full report](#)

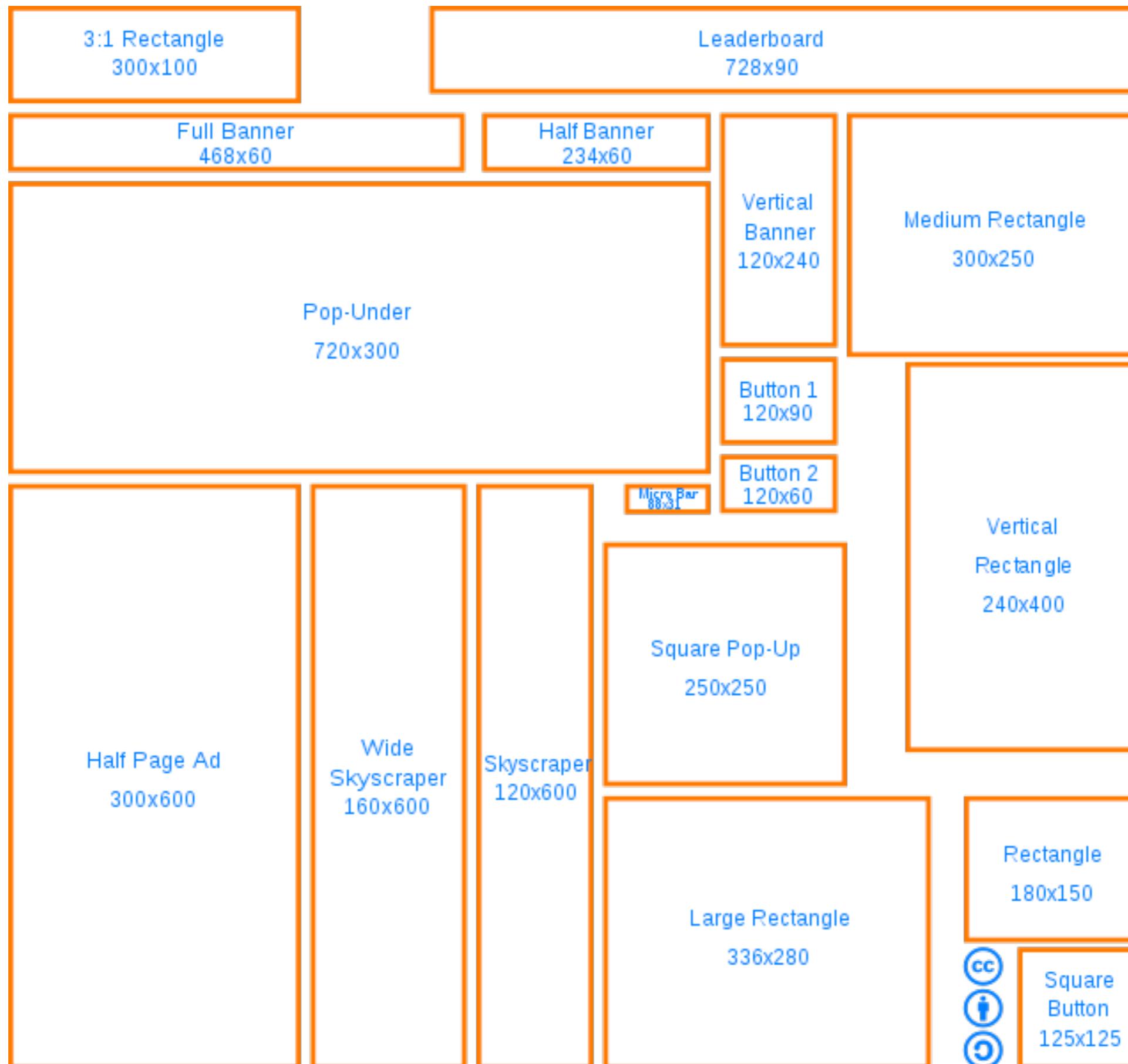
Keywords	Visits	% visits
harvard courses cs50	2,108	30.26%
cs50 courses	1,845	26.48%
cs50 harvard courses	477	6.85%
courses cs50	388	5.57%
courses.cs50.net	213	3.06%

[view full report](#)

# Online Advertising

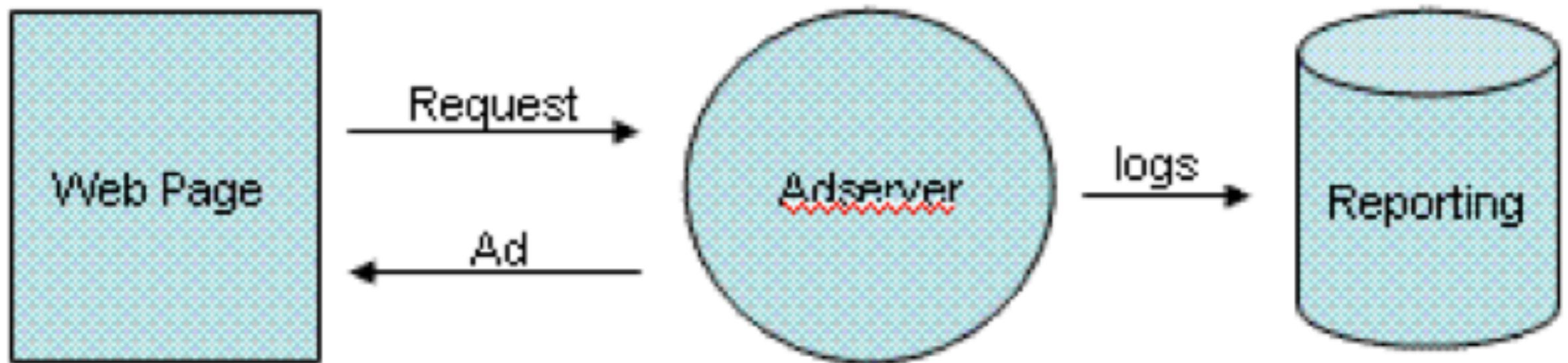
# Banner Ads

- GIFs, JPEGs, PNGs
- Animated GIFs
- Flash animations
- Flash videos
- ...



# Types of Advertising

- Banner Ads
  - Content Targeting (e.g., “only show my creatives on financial websites”)
  - Audience Targeting (e.g., “only show my creatives to big spenders”)
- Search Terms (e.g., AdSense)
- Social (Facebook Pages, Like buttons, sponsored tweets)
- Groupon-like (group buying)
- Local (detecting location via foursquare, shopkick)



# Display Advertising Technology Landscape



# Ad Servers Help Advertisers

- Decide which ad to deliver
- Manage campaigns
- Ensure campaigns are fulfilled
- ...

# Ad Servers

- ADTECH (AOL)
- EmediateAd
- DoubleClick
- OpenX
- ...

# Ad Networks

- 24/7 Real Media
- AOL
- Casale
- Collective Media
- CPX Interactive
- DoubleClick
- Federated Media
- Glam Media
- Right Media
- Specific Media
- Undertone
- Yahoo
- ...

# Ad Serving



# Targeting



# Targeting



# Exchanging Data

```
var tag = '';  
document.write(tag);
```

# Exchanging Data

```
var user = 12345;  
someFunction(user);
```

# Exchanging Data

```
document.cookie = "user=12345";
```

# Retargeting

FetchBack *et al.*



NFL SHOP  
NFLSHOP.COM



NFL Prefers Visa

Catalog  
Quick Search

GO



Cart (1 Item)



NFL.com Help My Account Wish List Request A Catalog

Sign Up & Save 15%

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New Arrivals Custom Shop Sports & Games Gift Cards Gift Center College Outlet

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WOMEN'S

KIDS'

HATS

BIG & TALL

COLLECTIBLES

HOME & OFFICE

TAILGATING

DVDS

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- [CUSTOMIZED GEAR >>](#)
- [OUTLET SHOP >>](#)
- [PRO LINE GEAR >>](#)
- [CHAMPIONSHIP GEAR >>](#)
- [PLAYER SHOP >>](#)

SHOP BY TEAM

Home | NFL Men's Gear

[NFL Men's Gear >>](#)

Arizona Cardinals

Atlanta Falcons

Baltimore Ravens

Buffalo Bills

Carolina Panthers

Chicago Bears

Cincinnati Bengals

Cleveland Browns

Dallas Cowboys

Denver Broncos

Detroit Lions

Green Bay Packers

Houston Texans

Indianapolis Colts

Jacksonville Jaguars

Kansas City Chiefs

Miami Dolphins

**MEN'S**  
BENGALS  
2010 Sideline

**NFL SHOP**  
NFLSHOP.COM

VISA  
NFL Prefers Visa

Catalog Quick Search  GO | Cart (1 Item)

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New Arrivals Custom Shop Sports & Games Gift Cards Gift Center College Outlet

SHOP BY TEAM JERSEYS MEN'S WOMEN'S KIDS' HATS BIG & TALL COLLECTIBLES HOME & OFFICE TAILGATING DVDS

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OUTLET SHOP ➤  
PRO LINE GEAR ➤  
CHAMPIONSHIP GEAR ➤  
PLAYER SHOP ➤

Home | NFL Men's Gear | Dallas Cowboys

COWBOYS

SHOP BY CATEGORY

- NFL Men's Gear
  - Jerseys
  - T-Shirts
  - Hats
  - Sweatshirts/Fleece
  - Jackets
  - Big & Tall
  - Custom Apparel
  - Accessories
  - Bottoms
  - Fabric
  - Footwear & Socks
  - Golf Equipment

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Hats [SHOP NOW](#)



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NFLSHOP.COM

VISA

NFL Prefers Visa

Catalog  
Quick Search

GO



Cart (1 Item)



NFL.com

Help

My Account

Wish List

Request A Catalog

Sign Up & Save 15%

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New Arrivals

Custom Shop

Sports & Games

Gift Cards

Gift Center

College

Outlet

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MEN'S

WOMEN'S

KIDS'

HATS

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\$89.99

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CUSTOMIZED GEAR >>

OUTLET SHOP >>

PRO LINE GEAR >>

CHAMPIONSHIP GEAR >>

PLAYER SHOP >>

Home | Men's | Reebok Dallas Cowboys St. Patrick's Flex Slouch Hat



+ ENLARGE

## Reebok Dallas Cowboys St. Patrick's Flex Slouch Hat #10797470

\$19.99



14 people like this. Be the first of your friends.

### Product Rating



(0 Ratings)

Write a Review

**SAVINGS ALERT**

Free Shipping on Your Order - Feel Good Friday (See Promotion Details)

Size:

View Size Chart

Qty:

**ADD TO CART >>**

**ADD TO WISHLIST**

**EMAIL A FRIEND**

BROWSE: Men's



< PREV

NEXT >

### FANS ALSO BOUGHT...



Reebok Dallas Cowboys  
Dez Bryant Replica White  
Jersey  
**\$79.99**

**+ BUY NOW**





NFL SHOP  
NFLSHOP.COM

VISA  
NFL Prefers Visa

Catalog  
Quick Search

GO



Cart (1 item)



NFL.com Help My Account Wish List Request A Catalog Sign Up & Save 15%

1.877.NFL.SHOP

New Arrivals Custom Shop Sports & Games Gift Cards Gift Center College Outlet

SHOP BY TEAM

JERSEYS

MEN'S

WOMEN'S

KIDS'

HATS

BIG & TALL

COLLECTIBLES

HOME & OFFICE

TAILGATING

DVDS

# TODAY ONLY - FREE SHIPPING



THE  
TROPHY COLLECTION  
T-SHIRT • HAT • TOWEL • DVD

\$89.99

SHOP NOW



SWEEPSTAKES ➤ [ENTER NOW](#)

CUSTOMIZED GEAR ➤

OUTLET SHOP ➤

PRO LINE GEAR ➤

CHAMPIONSHIP GEAR ➤

PLAYER SHOP ➤

FedEx

VISA

## YOUR SHOPPING CART

[Previous Page](#) | [Home](#)

QTY.	ITEM DESCRIPTION	PRICE	TOTAL
1	 <b>Reebok Dallas Cowboys St. Patrick's Flex Slouch Hat</b> Color: Dallas Cowboys Size: Small/Medium Item #: 10797470  Leaves warehouse in 1 - 2 full bus days.   <a href="#">See Terms</a> ? Gift wrapping available   <a href="#">See Terms</a> ?	\$19.99	\$19.99

[UPDATE CART](#)

Using a Promotional Code?  [APPLY](#)

## TOTAL ORDER COST

Merchandise Subtotal	\$19.99
Estimated Shipping & Handling	\$4.99

## YOU MAY ALSO LIKE

Reebok Dallas Cowboys Second Season Knit Hat



\$19.99 **\$17.97**

Qty:  (One Size)

Siskiyou Dallas Cowboys Sunglasses



\$16.99 **\$14.99**

Qty:  (One Size)

Hi, Laura ▾ | Sign Out | All-New Mail | Help ▾

Trending: Alexa Ray Joel

**YAHOO! MAIL**  
Classic

**SHOP**  
NFLSHOP.COM

Reebok Dallas Cowboys St. Patrick's Flex Slouch Hat

SHOP NOW \$19.99

SEARCH

Web Search

Mail Contacts Calendar Notepad

Check Mail New ▾

Mail Search

What's New? - Mobile M...

The screenshot shows the Yahoo! Mail Classic interface. At the top, there are links for 'Hi, Laura' (with a dropdown arrow), 'Sign Out', 'All-New Mail', and 'Help'. Below that is the classic 'YAHOO! MAIL' logo with 'Classic' underneath. A prominent shopping banner for Reebok Dallas Cowboys St. Patrick's Flex Slouch Hats is displayed, featuring a green cap with a white star, a price of '\$19.99', and a 'SHOP NOW' button. To the left of the banner is a NFLShop.com logo with a red 'SHOP' button and a 'SAVE 10% ON YOUR PURCHASE' offer. The main search bar has a magnifying glass icon and the word 'Search'. To the right of the search bar is a yellow 'Web Search' button. Below the banner, there's a navigation bar with tabs for 'Mail' (which is selected and highlighted in blue), 'Contacts', 'Calendar', and 'Notepad'. On the far right of the navigation bar, there's a link 'What's New? - Mobile M...'. At the bottom of the interface, there are buttons for 'Check Mail' and 'New' (with a dropdown arrow), a search bar with a magnifying glass icon, and a 'Mail Search' button.

```

```



# Facebook

Fans, Ads, Likes, ...

The New York Times

https://www.facebook.com/nytimes

RSS Google

facebook Search Home Profile Account

**The New York Times** Like

Wall Info Stories Video Photos Events >

**The New York Times**

 **Violence in Bahrain**  
video.nytimes.com  
Op-Ed columnist Nicholas Kristof reported earlier today from a hospital in Manama, Bahrain, after police had opened fire on pro-democracy protesters sleeping in Pearl Square.  
11 hours ago · Share  
191 people like this.  
View all 44 comments

**The New York Times** Hailee Steinfeld, the 14-year-old actress who plays Mattie Ross in "True Grit," is leading readers' predictions for which nominee will win the award for Best Supporting Actress. Fill out an Oscars ballot to cast your vote in each category.  
<http://oscars.nytimes.com/favorites>  
 **Who Will Win the Oscar for Best Supporting Actress ?**  
oscars.nytimes.com  
The top contenders for the 83rd Academy Awards, according to the latest votes on NYTimes.com and from The New York Times Facebook community.  
12 hours ago · Share  
235 people like this.  
View all 46 comments

**The New York Times** How one person trained their brain and became a world-class memory athlete.  
 **Secrets of a Mind-Gamer – NYTimes.com**  
nyti.ms  
The unlikely story of how I ended up in the finals of the U.S.A. Memory Championship, stock-still and sweating profusely, began a year earlier in the same auditorium, on the 19th floor of the Con Edison building near Union Square in Manhattan.  
20 hours ago · Share

Chat (0)

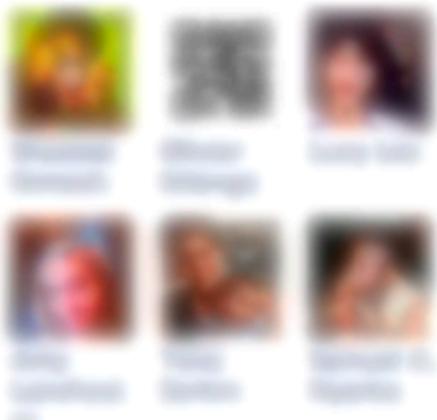
Add to my page's favourites

Information

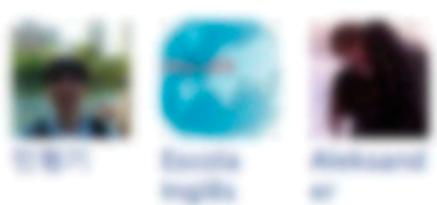
Founded: 1851

57 friends like this.

6 of 57 friends See all



1,126,208 people like this



Canceled opening the page



## Create a Facebook Page

A Facebook Page is a public Profile that enables you to share your business and products with Facebook users. Create one in a few minutes with our simple interface. For more details about Facebook Pages, download our Product Guide.



Josh became a fan of The New York Times.



Communications - 363,195 fans

[Comment](#) - Like



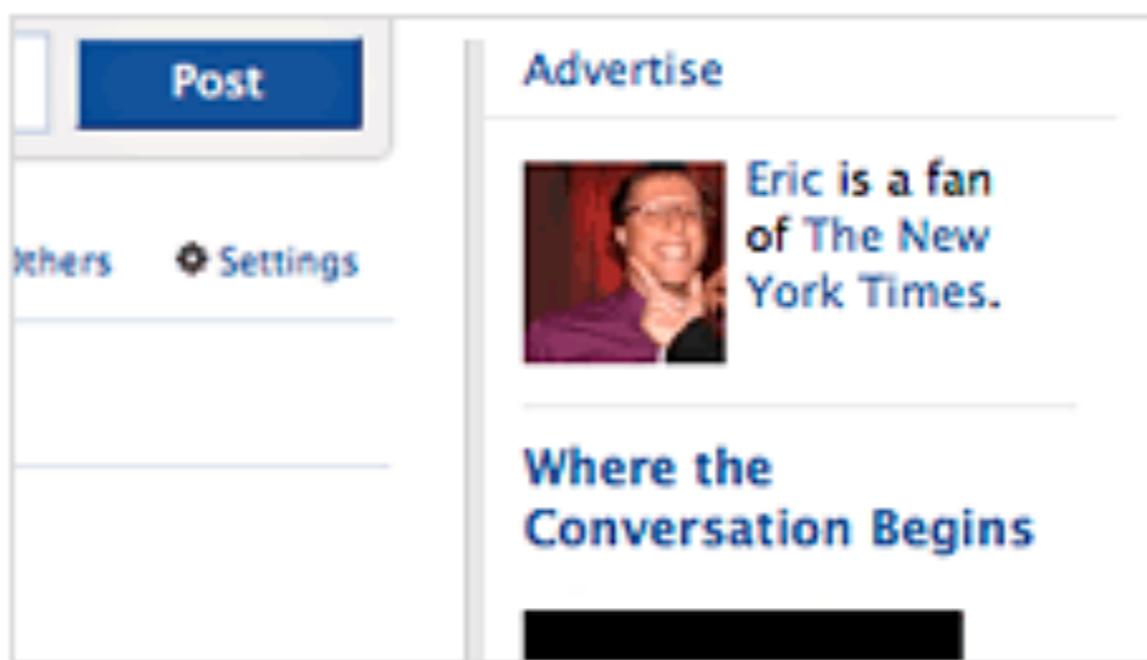
Eric at 1:16pm March 3

I start every day with the New York Times

[Write another comment...](#)

## Start the conversation

When your fans interact with your Facebook Page, stories linking to your Page can go to their friends via News Feed. As these friends interact with your Page, News Feed keeps driving word-of-mouth to a wider circle of friends.



## Drive customer awareness

Spread the word even further with Facebook Adverts. You choose your graphic, text and target audience. We'll even add available information about their friends' interaction with your Facebook Page, if you choose.

# Case Study

## Reach the right people at the right time.

People treat Facebook as an authentic part of their lives, so you can be sure you are connecting with real people with real interest in your products. Facebook Adverts provided CM Photographic with the ability to target its exact demographic — 24–30-year-old women whose relationship status on Facebook indicated that they were engaged.

### Recently engaged?



CM Photographics would love to be a part of your event. Mention this ad for \$500 off!

Original advert placed

Over 12 months, CM Photographics generated nearly \$40,000 in revenue directly from a \$600 advertising investment on Facebook. Of the Facebook users who were directed to CM Photographics' website from the adverts, 60% became qualified leads and actively expressed interest in more information.



# Case Study

## Flexible pricing and real-time suggested bids provide guidance for cost-effective advert campaigns.

Facebook Adverts makes it easy and cost-effective to quickly set up and manage your campaign. G5 found success setting up a series of Facebook Advert campaigns targeted to college students at 21 campuses prior to summer break for StorQuest self service storage facilities. Real-time suggested bids for our auction-based system provided guidance that enabled G5 to hone advert effectiveness based on their various targeting filters (age, college level and location).

### StorQuest Self Storage



Your stuff deserves a good place to stay while you're away

Original advert placed

The results from StorQuest's Facebook advert campaign were one of their highest performing online advertising efforts:

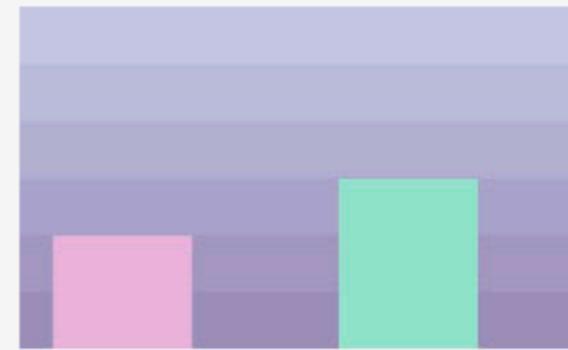
- Over 50% increase in total rentals versus prior year at the same store.
- 10% conversion rate from visits originating from Facebook Adverts.
- On par with Google AdWords on a cost-per-lead and cost-per-customer basis.
- \$1.25 CPC delivered \$10.25 cost-per-lead.
- \$100 average rentals; \$600 average life time value per customer.

- 2100 average rentals; 2000 average life time value per customer.

Learn more

<https://www.facebook.com/advertising/>

### StorQuest's total rentals



Before Facebook After Facebook

*“Facebook helped our client target a specific audience and offer a solution for their specific needs. Offering college students self storage right at the end of the semester with Facebook Adverts helped StorQuest post record-breaking student occupancy rates.”*

— Dan Hobin, CEO, G5 Search Marketing

View StorQuest page

# Case Study

## Combining marketing solutions on Facebook for a positive ROI.

When you have a broader presence on Facebook with Facebook pages or Facebook events plus adverts for instance, you can turn your advertising message into a trusted referral by including content from a user's friends who are already affiliated with your products. ANA took this approach by creating a Facebook page to acquire interested users for ongoing messaging opportunities and developing a compelling advertising campaign. ANA used a creative grouping of keywords to target advertising to users specifically interested in traveling and Japanese culture and developed advert creative that resonated with their audience.

All Nippon Airways



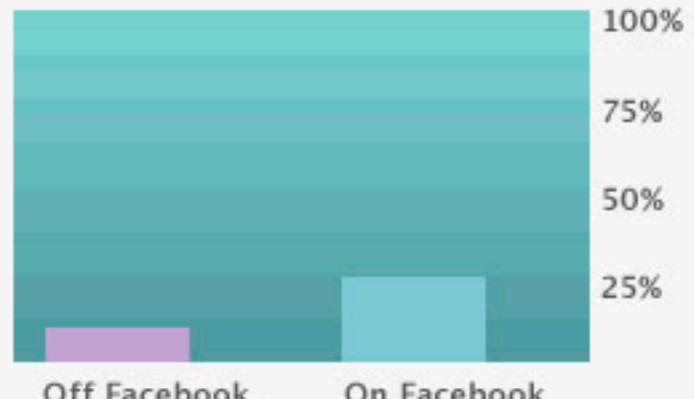
Want sushi, anime or cherry blossoms? Let ANA take you to Japan in comfort and style. Click here to see our lowest fares!

Original advert placed

Original advert placed

Average campaigns for ANA result in CTR of 8-12%. Facebook Adverts resulted in a 25% CTR. Conversions resulted in positive ROI which is unique for ANA considering their product is not an impulse purchase for most people and Japan is not traditionally seen as a leisure destination.

Click-through rate



*To date, Facebook has been our best performing advert campaign online. It's hard to beat the low cost of participation and uniquely engaged audience.*

— Damion R. Martin, PR & Marketing

[View Nippon Airways page](#)

# Apps

- shopkick
- foursquare
- Yelp
- ...

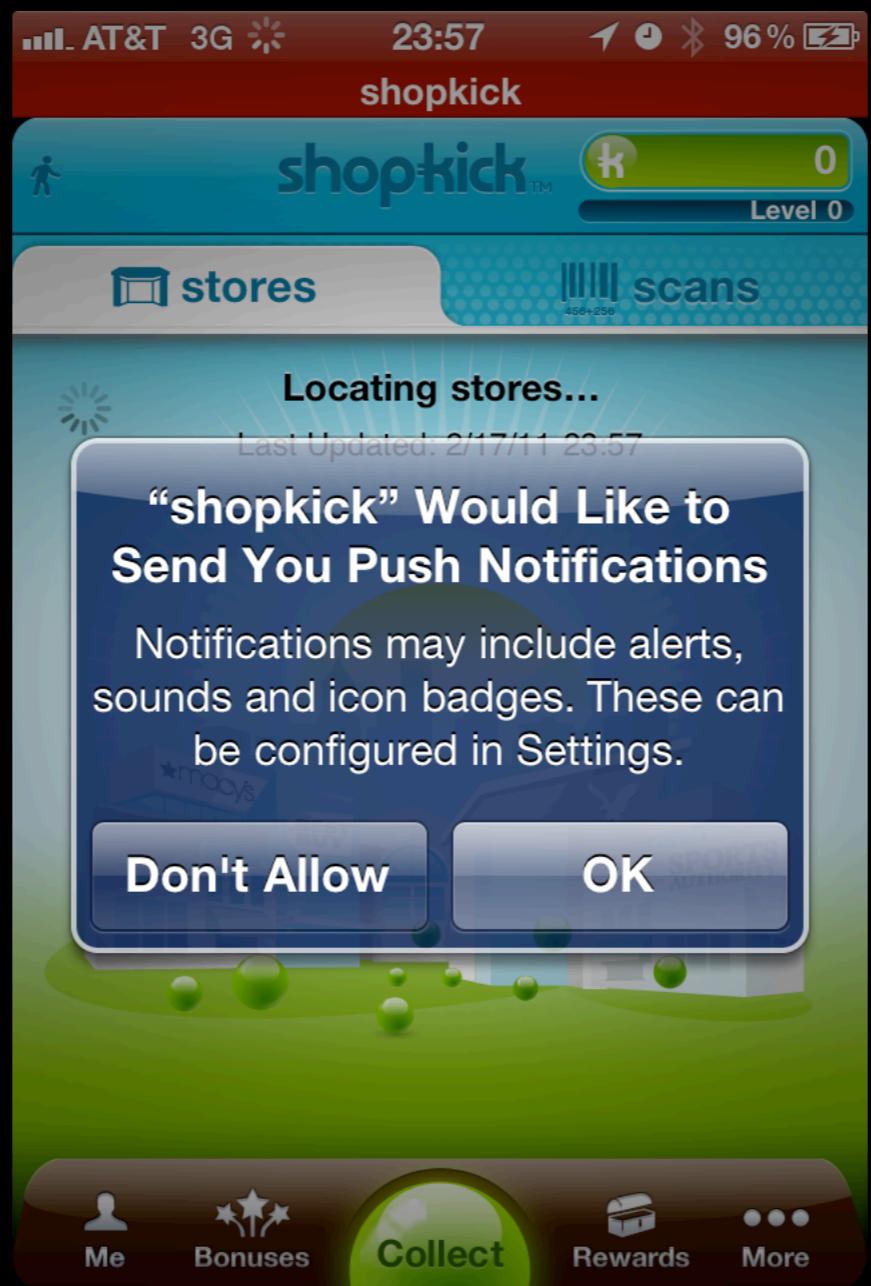
# shopkick



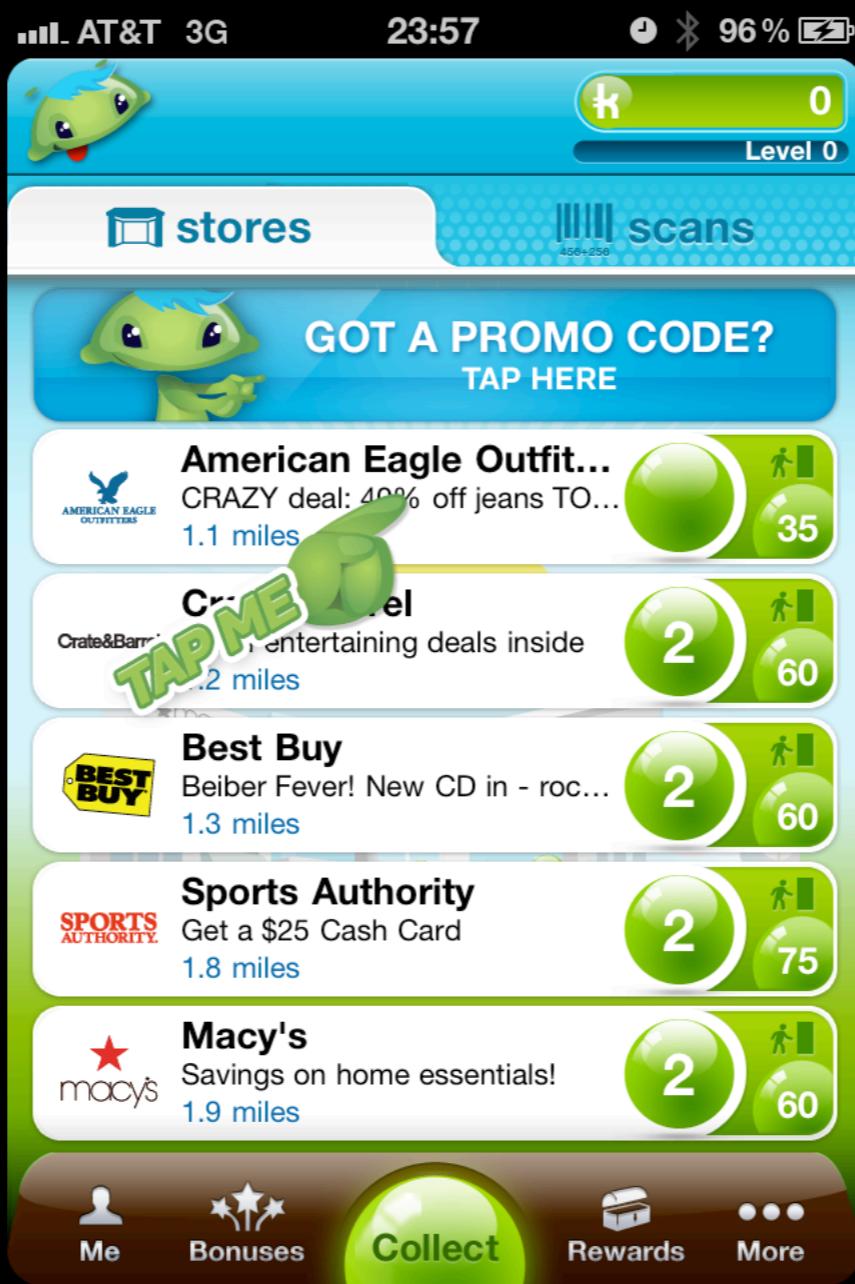
# shopkick



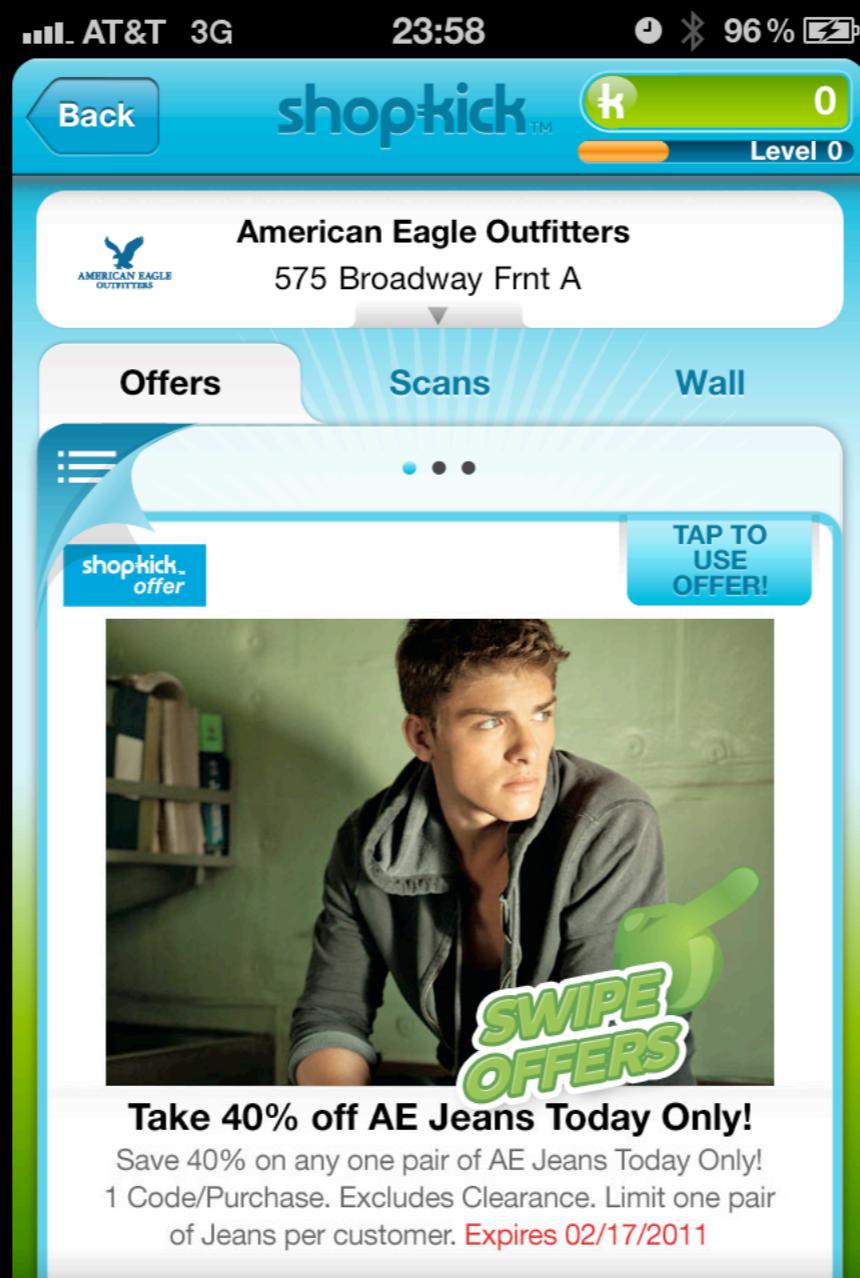
# shopkick



# shopkick



# shopkick



# iAds for Brands



# Standard Targeting Options

- Demographics
- Application preferences
- Music passions
- Movie, TV and audiobook genre interests
- Location
- Device (iPhone, iPod touch)
- Network (WiFi, 3G)

# Approaches

- Engage with agencies that can figure out who a company's existing audience is.
- Circulate RFPs to ad networks or publishers that are good brand fits
- Facebook, other social opportunities.
- Provide creatives to ad networks who themselves leverage social APIs.

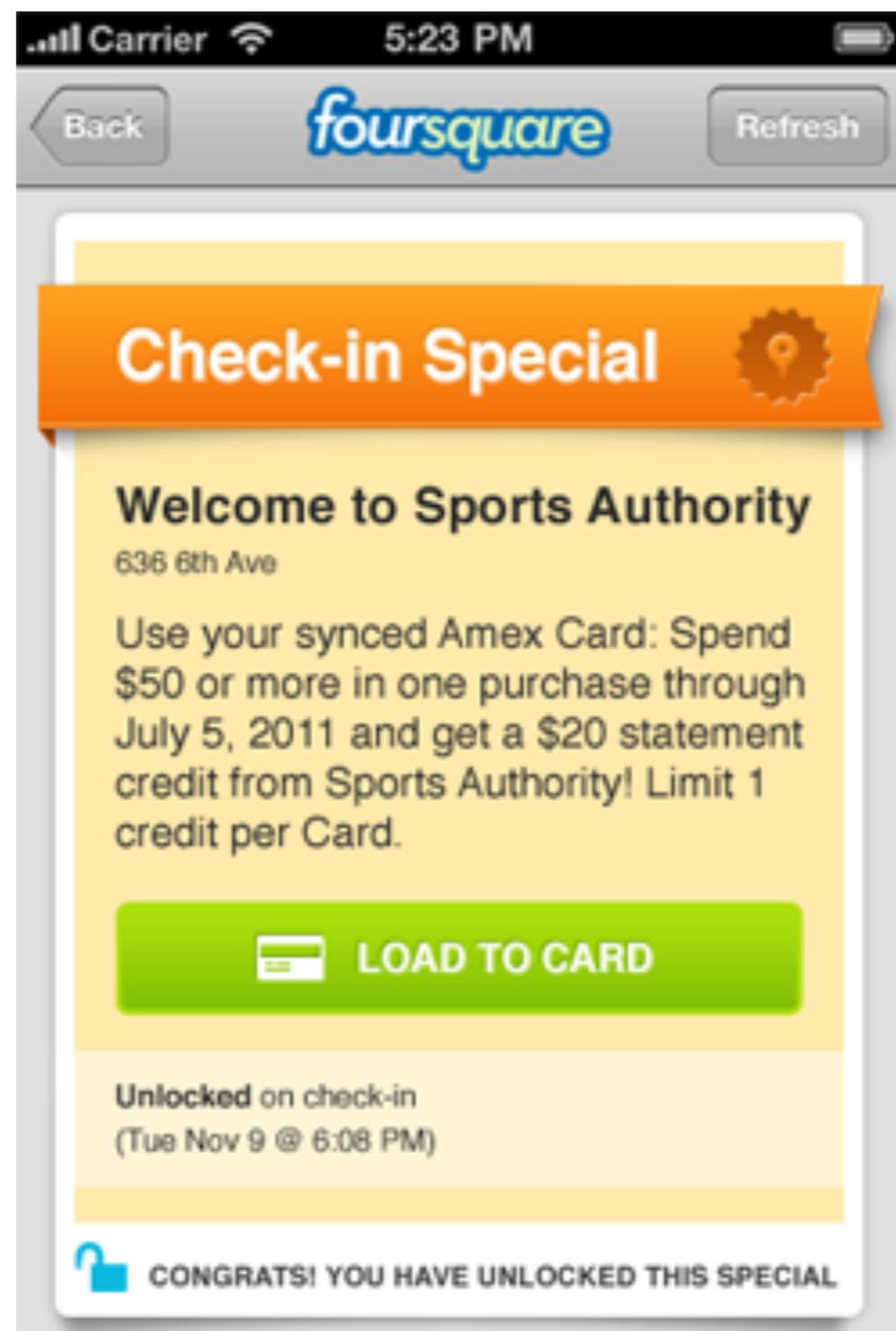


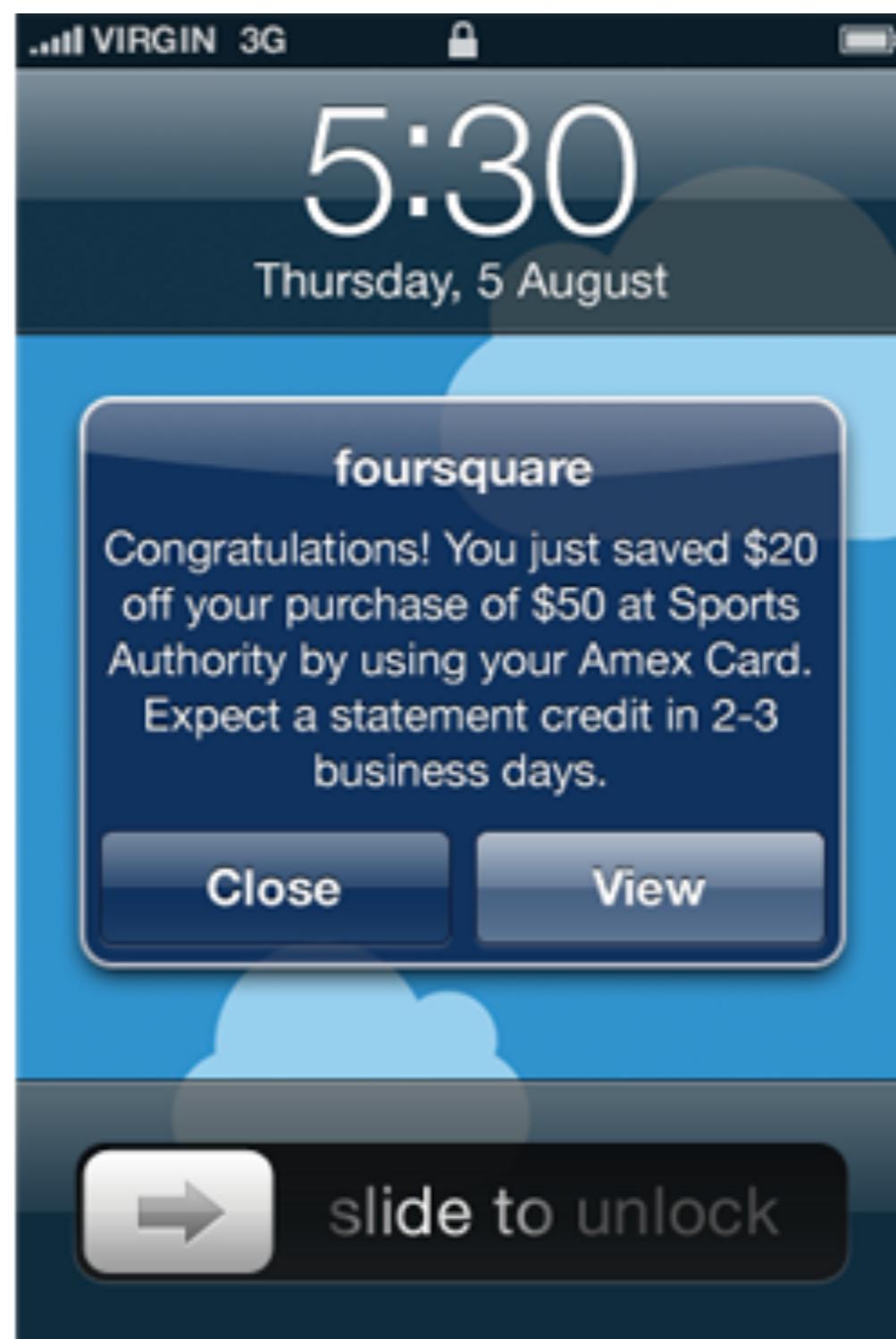
	SERVE	PAYPAL	CASH	DEBIT	CREDIT
<b>Prepaid</b>	Yes	No	No	Yes	No
<b>Physical Card</b>	Yes	Yes	No	Yes	Yes
<b>Create subaccounts</b>	Yes	Only for minors	No	No	Yes
<b>Send and receive payments instantly</b>	Yes	Yes	Yes	Direct deposit and transfer only	Send Only
<b>Move money from one account to another</b>	Yes	No	No	Only at the same bank	No
<b>You can earn rewards</b>	No	Yes (PayPal Preferred & the PayPal Card)	No	Some	Some
<b>You can pay for purchases over time</b>	No	Yes (with the PayPal Card)	No	No	Yes



SYNC, EXPLORE,  
AND SAVE.







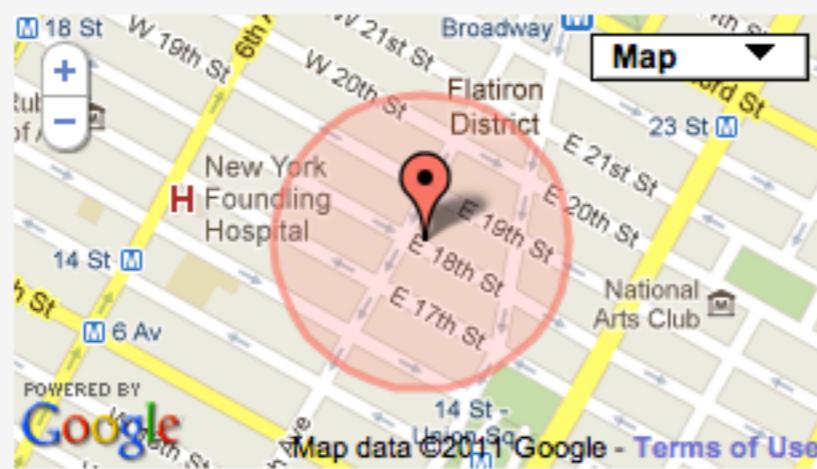


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New York, NY 10011  
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[www.hm.com](http://www.hm.com)

+ ADD TO MY TO-DO LIST



**Categories:** Clothing Store, Women's Store

**Tags:** nightlife haunts, boutiques, fashion events,  
nightlife haunts, boutiques and fashion event, mazda, h&m, glorietta 5, makati

[edit](#)

## Check-in Special



Use your synced Amex Card: Spend \$75 or more in one purchase through August 31, 2011 at H&M and get \$10 off your transaction as a statement credit! Limit 1 credit per Card.

Unlocked every check-in

H&M offers fashion and quality at affordable prices for women, men and children. The collections are comprehensive, and new merchandise arrives in the store every day. In this way customers can always find something new and create their own personal style. For more information visit [www.hm.com](http://www.hm.com).

YOUR CHECK-INS

0

TOTAL PEOPLE

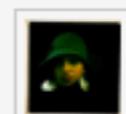
5,547

TOTAL CHECK-INS

7,132

## Mayor

Last 60 Days



Tia R.

47 checkins



## Staff





## Sports Authority

636 6th Ave  
at W 19th St  
New York, NY 10011  
(212) 929-8971

@SportsAuthority



ADD TO MY TO-DO LIST

Map



</>

POWERED BY  
**Google**

Map data ©2011 Google - [Terms of Use](#)

edit

**Categories:** Sporting Goods Shop

**Tags:** untagged

### Check-in Special



Use your synced Amex Card: Spend \$50 or more in one purchase through August 31, 2011 and get a \$20 statement credit from Sports Authority! Limit 1 credit per Card.

Unlocked every check-in

### Check-in Special



Spend \$100 and get a \$25 Cash Card. Check-in to unlock this offer.

Unlocked every check-in

YOUR CHECK-INS

0

TOTAL PEOPLE

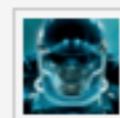
556

TOTAL CHECK-INS

758

### Mayor

Last 60 Days



Ning Z.  
7 checkins



### Staff



SPORTS  
AUTHORITY

Now, American Express takes what you "like"  
**AND GIVES YOU WHAT YOU LOVE**

 Like 15K



**Whole Foods Market®**  
SPEND \$20 OR MORE,  
GET \$5 BACK

WHOLE FOODS MARKET

VIRGIN AMERICA

BEST BUY

LORD & TAYLOR

You and your friends like and share many things on Facebook. Now, American Express has deals and experiences for you based on those likes and interests. And once you sign up and choose your deals, all you have to do is use your American Express® Card and statement credits will be sent directly to your Card account.

No coupons. No hassles. Just a credit on your statement, and savings in your pocket.

**Get Started**

**Amex: Link, Like, Love** is requesting permission to do the following:



### Access my basic information

Includes name, profile picture, gender, networks, user ID, list of friends, and any other information I've shared with everyone.



**Amex: Link, Like, Love**



### Access my data any time

Amex: Link, Like, Love may access my data when I'm not using the application



### Check-ins

Amex: Link, Like, Love may read my check-ins.



### Access my profile information

Likes, Music, TV, Movies, Books, Quotes and Interests



### Access my friends' information

Likes, Music, TV, Movies, Books, Quotes and Interests

By proceeding, you agree to the Amex: Link, Like, Love [Terms of Service](#) and [Privacy Policy](#) · [Report App](#)

# The End!

An American Express Short Course

David J. Malan  
Harvard University  
[malan@harvard.edu](mailto:malan@harvard.edu)