

# Database-Backed Websites

No screens



Prof. Lydia Chilton  
COMS 4170  
21 February 2018

Say your name



Goal 1

Build websites that suit the needs and abilities of users

The main goal of many websites is to  
**display information users need.**



# This website has no database

 Columbia University

## User Interface Design

COMS 4170 · Spring 2018

[Home](#) [Syllabus](#) [Assignments](#) ▾

[Piazza](#)

**Part 1** Build websites that suit the needs and abilities of users.

**Part 2** When the needs and abilities of users are uncertain, design systems by learning from iteration and experimentation.

### INSTRUCTOR

[Prof. Lydia Chilton](#)

OH: Tuesday 3-4 pm, CEPSR 612

Please contact staff through Piazza only

### TAS

Tessa Hurr

Eleanor Murguia

Lucille Sui

### WEEKLY SCHEDULE

Lecture

Mon, Wed 4:10-5:25pm, 413 Kent Hall

# But all the other ones do

The image is a composite screenshot showing three different web pages side-by-side. On the left is the Amazon.com homepage, featuring a search bar, navigation menu, and various book recommendations. In the center is a Gmail inbox with a list of emails and a 'Compose' button. On the right is the Craigslist website, displaying a search bar, a calendar, and a grid of categories for sale and services.

**Amazon.com**

amazon prime Books

Departments - Browsing History - Lydia's Amazon.com Today's Deals Gift Cards Registry Sell Help

EN Hello, Lydia Account & Lists - Orders Prime - Cart

Books Advanced Search New Releases Amazon Charts Best Sellers & More The New York Times® Best Sellers Children's Books Textbooks Textbook Rentals Sell Us Your Books Best Books of the Month Kindle eBooks

**Popular in Books**

- Award Winners
- Bargain Books
- Best Books of 2017
- Best Books of 2017
- Books in Spanish
- Children's Books
- Deals in Books
- Top 20 Lists in Books

**More in Books**

- 100 Books to Read in a Lifetime
- Amazon Book Review Blog
- Amazon Books on Facebook
- Amazon Books on Twitter
- Amazon Kindle

**Amazon Kindle**

- Kindle eBooks
- Kindle Deals
- Kindle Unlimited
- Prime Reading
- Spanish Kindle eBooks

**Textbooks**

- Textbooks Store
- Textbook Rentals
- Sell Us Your Books
- Kindle eBooks

**facebook**

**PictureCorrect Photography Tips**

What is your Photography-Related New Year's Resolution??

15 minutes ago · Like · Comment

Adel Gomaa and Richard Schneider like this.

**Sadi Molloy** get my business looking more professional: car signed: tick, making up portrait folders: tick, stickers & cd covers: still to do... its getting there though.

11 minutes ago · Flag

**James Donnelly** Larger concerts to cover and improve my portrait editing style/skill

10 minutes ago · Flag

**Jose Antonio Rubido** To push my photograpy forward full throttle

9 minutes ago · Flag

**Deacon Jonathan Jerome Johnson** To learn more and enhance the quality of my shots!

5 minutes ago · Flag

**Latu Peti Vimahi Manulua-hafoka** learn learn learn!!!

4 minutes ago · Flag

**Tina Taylor Hammer** Get my new business moving and have it pay for that lens and other equipment that I want (and a little for me, too).

2 minutes ago · Flag

**Stefanie Bakewell** get a website up so that i can get clients full steam ahead

about a minute ago · Flag

**gmail**

https://mail.google.com/mail/u/0/#inbox

Mail

COMPOSE

**Inbox (2)**

**Sent Mail**

**Drafts (54)**

**Need to Read**

**Technology Coach**

**More**

**Primary**

- Baldwin, BPS (2) Bloglovin' - Not that I know of. Sometimes blocked sites come in on a hug 11:08 am
- Feldmann, Ann Fwd: 21
- me, Lambert (2) 8th Peri
- me (no sub)
- me, Braasch, Klamm (3) Visitation
- me, Cox (2) Bri Cox
- Tripple, Todd 3D Print
- donotreply Educati
- Ann Feldmann Fwd: [Ni
- me, Campbell (7) Khan Ac
- Toelle, me (3) 6 Word:
- me, Evon (4) Request
- Jeffrey Bernadt Shared

**craigslist**

post to classifieds my account

search craigslist

search

event calendar

M	T	W	T	F	S	S
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31	1	2	3	4
5	6	7	8	9	10	11

help, faq, abuse, legal avoid scams & fraud personal safety tips terms of use privacy policy system status

about craigslist craigslist is hiring in sf craigslist open source craigslist blog best-of-craigslist craigslist TV "craigslist joe" craig connects progressive directory weather quake tide

**SF bay area**

**community**

- activities
- artists
- childcare
- classes
- events
- general
- groups

**housing**

- apts / housing
- housing swap
- housing wanted
- office / commercial
- parking / storage
- real estate for sale
- rooms / shared
- rooms wanted
- sublets / temporary
- vacation rentals

**jobs**

- accounting+finance
- admin / office
- arch / engineering
- art / media / design
- biotech / science
- business / mgmt
- customer service
- education
- food / bev / hosp
- general labor
- government
- human resources
- internet engineers
- legal / paralegal
- manufacturing
- marketing / pr / ad
- medical / health
- nonprofit sector
- real estate
- retail / wholesale
- sales / biz dev
- software / qa / dba
- systems / network
- technical support
- transport
- tv / film / video
- web / info design
- writing / editing
- [ETC]
- [part-time]

**personals**

- strictly platonic
- women seek women
- women seeking men
- men seeking women
- men seeking men
- misc romance
- casual encounters
- missed connections
- rants and raves

**discussion forums**

apple	help	photo
arts	history	p.o.c.
atheist	housing	politics
autos	jobs	psych
beauty	jokes	queer
bikes	kink	recover
celebs	legal	religion
comp	linux	romance
crafts	m4m	science
diet	manners	spirit
divorce	marriage	sports
dying	media	tax
eco	money	travel
educ	motocv	tv
feedback	music	vegan
film	nonprofit	vwv
fitness	open	wed
fixit	outdoor	wine
food	over 50	women
frugal	parent	words

**for sale**

- antiques
- appliances
- arts+crafts
- atv/utv/sno
- auto parts
- baby+kid
- barter
- beauty+hilt
- bikes
- boats
- books
- business
- cars+trucks
- cds/dvd/vhs
- cell phones
- clothes+acc
- collectibles
- computers
- electronics
- farm+garden

**services**

- automotive
- beauty
- cell/mobile
- computer
- creative
- legal
- lessons
- marine
- pet
- real estate

**nearby cities**

- bakersfield
- chico
- fresno
- gold country
- hanford
- humboldt
- inland empire
- klamath falls
- las vegas
- los angeles
- merced
- mendocino co
- modesto
- monterey
- orange co
- palm springs
- redding
- reno
- roseburg
- sacramento
- san luis obispo
- santa barbara
- santa maria
- siskiyou co
- stockton
- susanneville
- ventura
- visalia-tulare
- yuba-sutter

**us cities**

**us states**

**canada**

**ci worldwide**

# Amazon: Database of books

The screenshot shows the Amazon Books homepage. At the top, there is a navigation bar with the Amazon Prime logo, a search bar with 'Books' selected, and a search icon. To the right of the search bar, it says 'Shop Valentine's Day Deals'. Below the search bar, there are links for 'Departments', 'Browsing History', 'Lydia's Amazon.com', 'Today's Deals', 'Gift Cards', 'Registry', 'Sell', and 'Help'. On the right side of this bar, there are links for 'EN', 'Hello, Lydia', 'Account & Lists', 'Orders', 'Prime', and a shopping cart icon with '1' item. Below this, there is a secondary navigation bar with links for 'Books', 'Advanced Search', 'New Releases', 'Amazon Charts', 'Best Sellers & More', 'The New York Times® Best Sellers', 'Children's Books', 'Textbooks', 'Textbook Rentals', 'Sell Us Your Books', 'Best Books of the Month', and 'Kindle eBooks'.

The main content area is divided into several sections:

- Popular in Books:** A list of categories including Award Winners, Bargain Books, Best Books of the Month, Best Books of 2017, Books in Spanish, Children's Books, Deals in Books, and Top 20 Lists in Books.
- More in Books:** A list of categories including 100 Books to Read in a Lifetime, Amazon Book Review Blog, Amazon Books on Facebook, Amazon Books on Twitter, and Amazon First Reads.
- Amazon Kindle:** A list of categories including Kindle eBooks, Kindle Deals, Kindle Unlimited, Prime Reading, and Spanish Kindle eBooks.
- Textbooks:** A list of categories including Textbooks Store, Textbook Rentals, Sell Us Your Books, and Kindle eTextbooks.

The main product grid displays five books:

- The Craft of Research, Third Edition:** by Wayne C. Booth, Gregory G. Colomb, and Joseph M. Williams. Paperback, 384 reviews (4.5 stars).
- A Manual for Writers of Research Papers, Theses, and Dissertations, 7th Edition:** by Kate L. Turabian and Wayne C. Booth. Paperback, 753 reviews (4.5 stars).
- Academic Writing for Graduate Students, 3rd Edition:** by John M. Swales and Christine B. Feak. Paperback, 128 reviews (4.5 stars), priced at \$25.65 with Prime.
- The Craft of Research, 2nd Edition:** by Wayne C. Booth and Joseph M. Williams. Paperback, 384 reviews (4.5 stars).
- A Manual for Writers of Research Papers, Theses, and Dissertations, Ninth Edition:** by Kate L. Turabian and Wayne C. Booth. Paperback, priced at \$18.00 with Prime.

Below the product grid is a section titled **More from the Amazon Book Editors**, which features four categories with representative images:

- Best Books of the Month:** Top 10 Literature & Fiction, Kids & Teens Books, Mystery & Thriller. See all categories.
- Celebrity Picks 2017:** Sheryl Sandberg, John Green, Gabrielle Union, Denis Leary. See all Celebrity Picks.
- Best Books of 2017:** Top 100 Print Books, Fiction, Children's Books, Biographies & Memoirs. See all.
- Amazon Book Review:** Weekend Reading, Resolution Cage Match, Graphic Novels for Kids, Sticky Fingers: Jann Wenner. See more posts.

# YouTube: Database of videos

YouTube logo | Search: windows 95 jennifer aniston matthew perry | 9+ notifications | Profile icon



7:19 / 29:44

**Windows 95 Video Guide with Matthew Perry & Jennifer Aniston**  
216,782 views | 2K likes | 48 comments | SHARE | ...

**Favorite Videos** ✓  
Published on Dec 12, 2016

Watch all about the show Friends in a single playlist - <https://www.youtube.com/playlist?list...>  
Subscribe and watch scenes from all seasons of Friends on my channel - <https://www.youtube.com/channel/UCA8V...>  
SHOW MORE

**SUBSCRIBE 201K**

**Up next** | AUTOPLAY

- Friends - The One that Goes Behind the Scenes**  
Favorite Videos ✓  
1.8M views  
42:30
- S11 E08 Would I Lie to You? - S11 E08 (NEW WILTY 19th January)**  
David Mitchell  
Recommended for you  
New  
28:34
- Actor Replacements That Totally Ruined The Show**  
Looper ✓  
3M views  
10:04
- Inside Matthew Perry's Tragic Real Life Story**  
Nicki Swift ✓  
952K views  
5:07
- Friends - ET On VH1: Behind The Friends Finale**  
Favorite Videos ✓  
1M views  
42:29
- Microsoft Windows 95 REACT S7 · E19 TEENS REACT TO WINDOWS 95**  
FBE ✓  
12M views  
8:27
- Friends - Ross and Monica's Cousin**  
Favorite Videos ✓  
3.6M views  
4:53



# GMail: Database of emails

The screenshot shows a Gmail inbox interface. The browser address bar displays `https://mail.google.com/mail/u/0/#inbox`. The page title is "Inbox (2) - jeffrey.bernad...". The interface includes a search bar with a "Loading..." indicator, a "Mail" menu, and a list of email folders: "Compose", "Inbox (2)", "Sent Mail", "Drafts (54)", "Need to Read", and "Technology Coach". The main inbox list shows 14 emails, with the following details:

Star	Sender	Subject	Time
<input type="checkbox"/>	Baldwin, BPS (2)	Bloglovin' - Not that I know of. Sometimes blocked sites come in on a hug	11:08 am
<input type="checkbox"/>	Feldmann, Ann	Fwd: 21st Century Classroom Visit? - Ann Feldmann District Technolog	10:18 am
<input type="checkbox"/>	me, Lambert (2)	8th Period - Hey, Jeff. I am planning on doing the Mystery Hangout lesson	8:05 am
<input type="checkbox"/>	me	(no subject) - -- Jeffrey Bernadt District Technology Specialist Bellevue Pu	Jan 12
<input type="checkbox"/>	me, Braasch, Kiamm (3)	Visitation & Observation Request - Good morning! The second semester is	Jan 12
<input type="checkbox"/>	me, Cox (2)	Bri Cox - Coaching Doc - Invitation to edit - Jeff, I finally was able to read a	Jan 12
<input type="checkbox"/>	Tripple, Todd	3D Printer - Hello Amy, I received some information from a 3D printing exp	Jan 11
<input type="checkbox"/>	donotreply	Education Preview Build Notice - AppleSeed Build Notice Education Pre	Jan 11
<input type="checkbox"/>	Ann Feldmann	Fwd: [New post] What "Innovative Leadership" Looks Like - A good read! :	Jan 11
<input type="checkbox"/>	me, Campbell (7)	Khan Academy Issues - It kept repeating that "changed password 7 month	Jan 8
<input type="checkbox"/>	Toelle, me (3)	6 Word Stories - Hey Jeff! We just returned from lunch, but still have quite	Jan 8
<input type="checkbox"/>	me, Evon (4)	Request to Visit on Thursday AM - Hi Jeff, Happy New Year! We would lov	Jan 6
<input type="checkbox"/>	Jeffrey Bernadt	Shared from Twitter: What teachers need to know about multicultural educ	12/23/15

On the right side, there is a contact list with a search bar "Search people...". The contacts listed are:

- Jed Givens
- Ann Feldmann
- Ann Feldmann
- Cadwallader, Julie
- Christopher Kessell
- Courtney Saffold
- Jeanette Carlson
- Johnson, Stephanie
- Kelly Bernadt
- Loomis, Phillip
- Robert Mason
- Shannon Gier
- Todd Tripple
- Toledo, Julian (Delor...

# Facebook: Database of posts

facebook



**PictureCorrect Photography Tips**

What is your Photography-Related New Year's Resolution??

15 minutes ago · Like · Comment

Adel Gomaa and Richard Schneider like this.



**Sadi Molloy** get my business looking more professional: car signed: tick, making up portrait folders: tick, stickers & cd covers: still to do... its getting there though.

11 minutes ago · Flag



**PictureCorrect Photography Tips** My resolution for 2011 is to capture more landscape photos outside the U.S. and add more countries to my portfolio! What is yours?

-Richard

11 minutes ago · Flag



**James Donnelly** Larger concerts to cover and improve my portrait editing style/skill

10 minutes ago · Flag



**Jose Antonio Rubido** To push my photpography foward full throttle

9 minutes ago · Flag



**Deacon Jonathan Jerome Johnson** To learn more and enhance the quality of my shots!

5 minutes ago · Flag



**Latu Peti Vimahi Manulua-hafoka** learn learn learn!!!

4 minutes ago · Flag



**Tina Taylor Hammer** Get my new business moving and have it pay for that lens and other equipment that I want (and a little for me too).

2 minutes ago · Flag



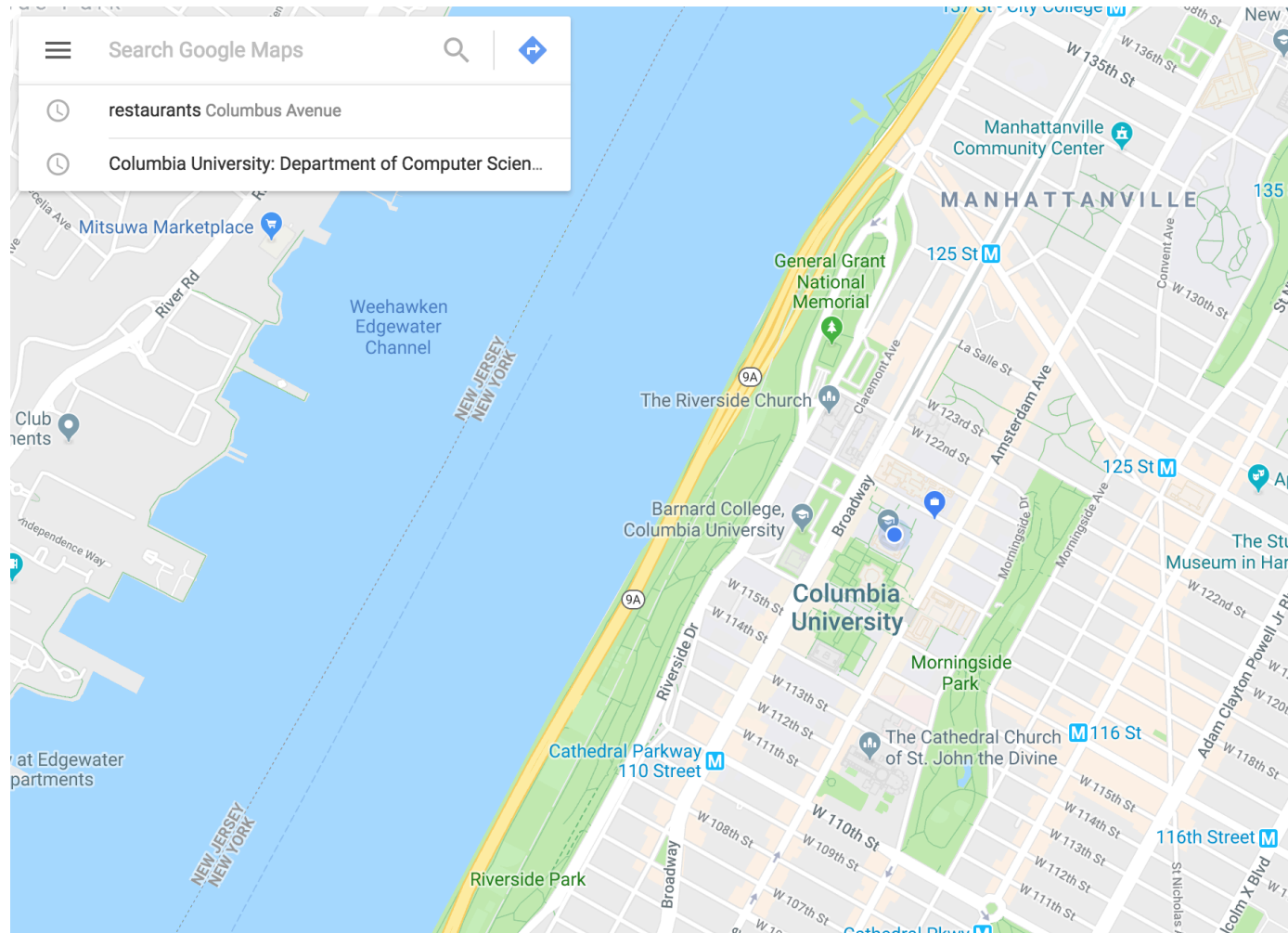
**Stefanie Bakewell** get a website up so that i can get clients full steam ahead

about a minute ago · Flag

# GCalendar: Database of events



# Google Maps: A database of locations





# New York Times: Database of news articles

SECTIONS SEARCH

hmslydia

ENGLISH 中文 (CHINESE) ESPAÑOL

## The New York Times

Friday, January 19, 2018 Today's Paper Video 34°F S. & P. 500 +0.19% ↑

World U.S. Politics N.Y. Business Opinion Tech Science Health Sports Arts Style Food Travel Magazine T Magazine Real Estate ALL

### Trump in Shutdown Talks With Schumer

#### White House Invites Democratic Leader to Negotiate a Deal

By THE NEW YORK TIMES  
49 minutes ago

- The government will shut down at 12:01 a.m. Saturday if lawmakers fail to get an agreement on some kind of spending bill.
- With Democrats balking, President Trump canceled plans to travel to his Florida resort and contacted Senator Chuck Schumer, the Democratic leader.
- **Timeline: How Congress Got to the Brink of a Shutdown**
- **Right and Left React to Prospect of Shutdown**



"We are not going to desert these young people," he said, referring to DACA beneficiaries.

Senator Bernie Sanders of Vt.

#### How the Debate in Congress Breaks Down

By ALICIA PARLAPIANO and WILSON ANDREWS  
Lawmakers have until Friday at midnight to pass a short-term spending bill to avoid a government shutdown.

#### Senate to Vote With Shutdown at Stake

By THOMAS KAPLAN and SHERYL GAY STOLBERG 44 minutes ago  
Senate Democrats appear ready to block legislation to keep the government funded past midnight, gambling that Mr. Trump will offer concessions on immigration and other issues.

574 Comments

#### The Chaos President vs. His Iron-Fisted Chief of Staff

By MAGGIE HABERMAN and JULIE

VIDEO INTERVIEW

#### Opinion

EDITORIAL

#### Here's Another Fine Mess They've Gotten Us Into

Once again, Trump and Congress cannot perform a basic task, preventing a government shutdown.



- **Krugman: Doomsday Politics**
- **The Breakdown in Trust That Could Lead to a Shutdown**
- **Brooks: It's Time to Talk About the Power of Touch**
- **Goldberg: Is This the Collusion We Were Waiting For?**
- **Kristof: Swallowed by the Sea**
- **Leonhardt: A Warning for Democrats**
- **Egan: The Mad King**
- **The Shadow Safety Net**

FRANK BRUNI

#### Donald Trump's Radical Honesty

In his own wild way, this president is as truthful and transparent as they come.



#### Clubbable, but in the Worst Way

By MICHAEL GOLDFARB

Donald Trump is a man of his class — the nouveau-riche, country-club class.



- **How the Pro-Life Movement Has Promoted Liberal Values**
- **ICE Detained My Husband for Being an Activist**
- **Follow us on Twitter »**

TIMES INSIDER »

**'I, Figure Skating Reporter': Full Circle With Tonya Harding**

THE CROSSWORD »

**Play Today's Puzzle**



33m **The Justice Department wants to ask if you are a U.S. citizen** in the 2020 census. But public distrust of the government could lead Hispanic people to avoid being counted.



5h **Can software predict crime?** A study suggests that human amateurs are about as accurate as a popular software that many judges use to



# Craigslist: Database of sales posts

CL new york > brooklyn > for sale > furniture - by owner

[◀ prev](#) ▲ [next ▶](#)

reply 

prohibited 

Posted 12 days ago

☆ **Gorgeous new 6ft. tall throne chair - \$1199 (Brooklyn)** 



condition: new

Gorgeous new 6ft. tall throne chair for \$1199obo. I will deliver it to you!

- do NOT contact me with unsolicited services or offers

post id: 6490476659

posted: 12 days ago

updated: 34 minutes ago

[email to friend](#)

♥ [best of](#) 

- [safety tips](#)
- [prohibited items](#)
- [product recalls](#)
- [avoiding scams](#)



# Database-backed Websites

# This class is not about backend development

facebook

PictureCorrect Photography Tips  
What is your Photography-Related New Year's Resolution??  
15 minutes ago · Like · Comment

Adel Gomaa and Richard Schneider like this.

**Sadi Holloy** get my business looking more professional: car signed: tick, making up portrait folders: tick, stickers & cd covers: still to do... its getting there though.  
11 minutes ago · Flag

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Richard  
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2 minutes ago · Flag

**Stefanie Bakewell** get a website up so that i can get clients full steam ahead  
about a minute ago · Flag

Google Calendar  
http://www.google.com/calendar/render  
einz.aina@gmail.com | Office | Settings | Help | Sign out

Today: May 11 - 17 2009 Refresh

Time	Mon 5/11	Tue 5/12	Wed 5/13	Thu 5/14	Fri 5/15	Sat 5/16	Sun 5/17
06:00	06:45 - Workout	07:30 - Workout	07:30 - Workout	07:30 - Workout	07:30 - Workout	07:30 - Workout	07:30 - Workout
07:00	07:30 - Shower	08:00 - Shopping	08:00 - Shopping	08:00 - Meal	08:00 - Newsletter	08:00 - Newsletter	08:00 - Shower
08:00	08:40 - Workout	09:00 - Breakfast	09:30 - Play	09:30 - Play	09:30 - Play	09:30 - Play	09:30 - Shower
09:00	09:40 - Shower	10:00 - Meal	10:00 - Meal	10:00 - 11:30 Study, Mail	10:45 - Work	10:30 - Workout	10:30 - Shower
10:00	10:30 - Blog	10:30 - Writing	10:30 - Play	11:00 - 11:30 Play	11:00 - 11:30 Shopping	11:00 - 11:30 Shopping	11:00 - 11:30 Shopping
11:00	11:00 - Workout	11:00 - 11:30 Play	11:00 - 11:30 Play	11:00 - 11:30 Play	11:00 - 11:30 Play	11:00 - 11:30 Play	11:00 - 11:30 Play
12:00	12:00 - Lunch	12:00 - Lunch	12:00 - Lunch	12:00 - Lunch	12:00 - Lunch	12:00 - Lunch	12:00 - Lunch
13:00	13:00 - 12:42	13:00 - 13:30 Blog	13:00 - 13:30 Play	13:00 - 13:30 Play	13:00 - 13:30 Play	13:00 - 13:30 Play	13:00 - 13:30 Play
14:00	14:00 - 14:45	14:00 - 14:15 Reading	14:15 - Lunch	14:30 - Tip	14:30 - Tip	14:30 - Tip	14:30 - Tip
14:45	14:45 - 15:30 Reading	15:30 - 16:15 Play	16:00 - Tip	16:00 - Tip	16:00 - Tip	16:00 - Tip	16:00 - Tip
15:00	15:30 - 16:30 Reading	16:15 - 17:00 Play	16:30 - Play	16:30 - 17:00 Meditation	16:30 - 17:00 Play	16:30 - 17:00 Play	16:30 - 17:00 Play
16:00	16:30 - 17:30 Reading	17:30 - 18:30 Tip	17:30 - 18:00 Play	17:30 - 18:00 Play	17:30 - 18:00 Play	17:30 - 18:00 Play	17:30 - 18:00 Play
17:00	17:30 - 18:30 Reading	18:30 - 19:30 Tip	18:00 - 19:45 Play	18:00 - 19:45 Reading	18:00 - 19:45 Reading	18:00 - 19:45 Reading	18:00 - 19:45 Reading
18:00	18:30 - 19:30 Reading	19:30 - 20:00 Tip	19:30 - 20:45 Play	19:30 - 20:45 Reading	19:30 - 20:45 Reading	19:30 - 20:45 Reading	19:30 - 20:45 Reading
19:00	19:30 - 20:00 Reading	20:00 - 20:30 Tip	20:00 - 20:45 Play	20:00 - 20:45 Reading	20:00 - 20:45 Reading	20:00 - 20:45 Reading	20:00 - 20:45 Reading
20:00	20:30 - 21:00 Reading	21:00 - 21:30 Tip	21:00 - 21:45 Play	21:00 - 21:45 Reading	21:00 - 21:45 Reading	21:00 - 21:45 Reading	21:00 - 21:45 Reading
21:00	21:30 - 22:00 Reading	22:00 - 22:30 Tip	22:00 - 22:45 Play	22:00 - 22:45 Reading	22:00 - 22:45 Reading	22:00 - 22:45 Reading	22:00 - 22:45 Reading
22:00	22:30 - 23:00 Reading	23:00 - 23:30 Tip	23:00 - 23:45 Play	23:00 - 23:45 Reading	23:00 - 23:45 Reading	23:00 - 23:45 Reading	23:00 - 23:45 Reading
23:00	23:30 - 24:00 Reading	24:00 - 24:30 Tip	24:00 - 24:45 Play	24:00 - 24:45 Reading	24:00 - 24:45 Reading	24:00 - 24:45 Reading	24:00 - 24:45 Reading

The New York Times  
Friday, January 10, 2018 | Today's Paper | News | Video | 34°F | 8 P.M. 500 +1.9% +

World U.S. Politics N.Y. Business Opinion Tech Science Health Sports Arts Style Food Travel Magazine T Magazine Real Estate ALL

### Trump in Shutdown Talks With Schumer

White House Invites Democratic Leader to Negotiate a Deal

“We are not going to desert these young people,” he said, referring to DACA beneficiaries.  
Senator Bernie Sanders of Vt.

### How the Debate in Congress Breaks Down

Senators in a War of Wits

### Senators to Vote With Shutdown at Stake

Lawmakers have until Friday at midnight to pass a short-term spending bill to avoid a government shutdown.

### The Chaos President vs. His Iron-Fisted Chief of Staff

new york > brooklyn > for sale > furniture - by owner

Posted 12 min ago

### Gorgeous new 6ft. tall throne chair - \$1199 (Brooklyn)

condition new

Congress new 6ft. tall throne chair for \$1199. I will deliver it to you!

do NOT contact me with unsolicited services or offers

SHARE 114478559 | POSTED 12 min ago | UPDATED 12 min ago | EMAIL TO FRIEND | HELP OF IT

• info: 30a  
• condition: like  
• price: 1,199  
• location: brooklyn

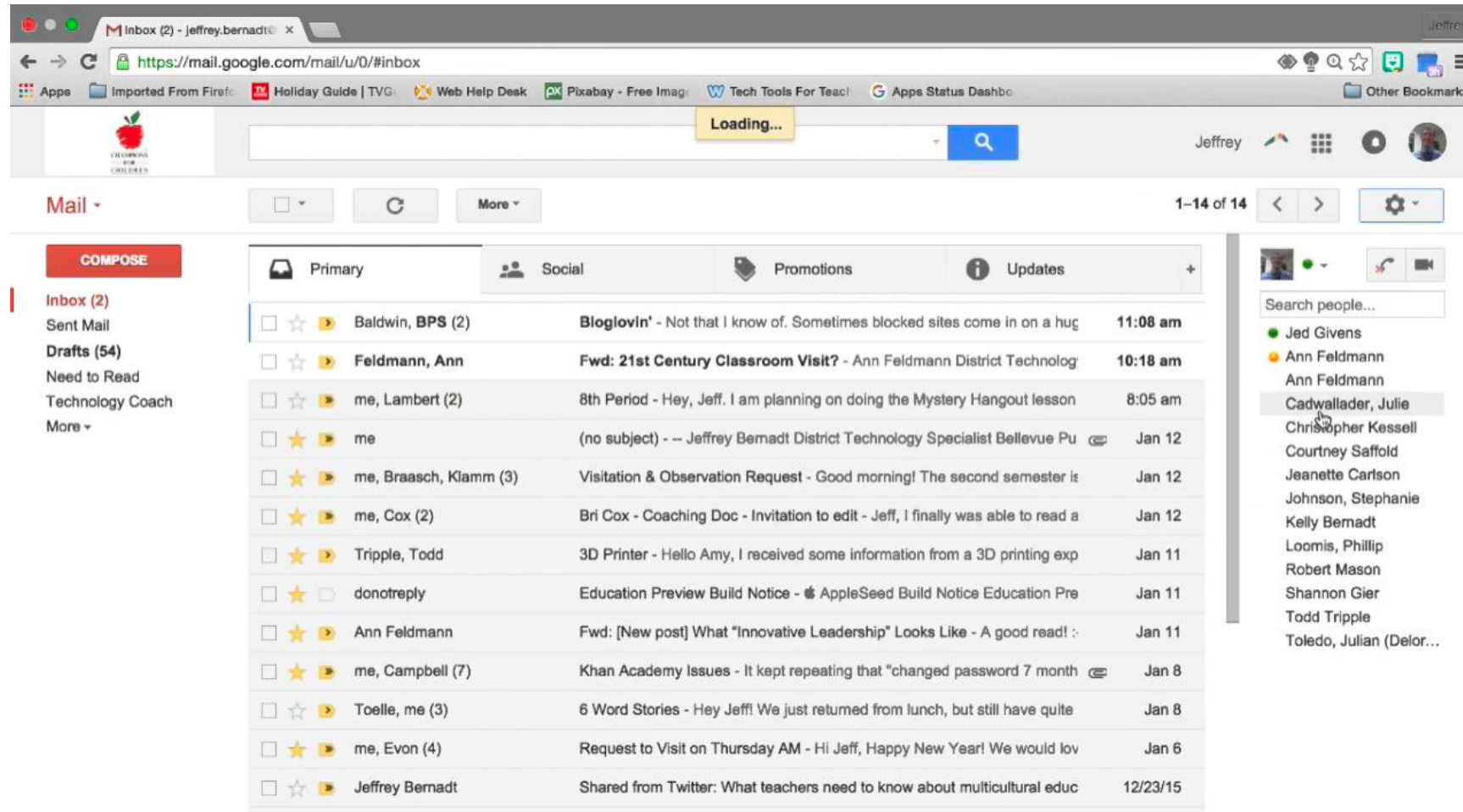
But front-ends and back-ends are tightly coupled.  
So you need to know something about back-end databases  
To create awesome websites

# Interacting with Databases

CRUD: Create, Read, Update Delete



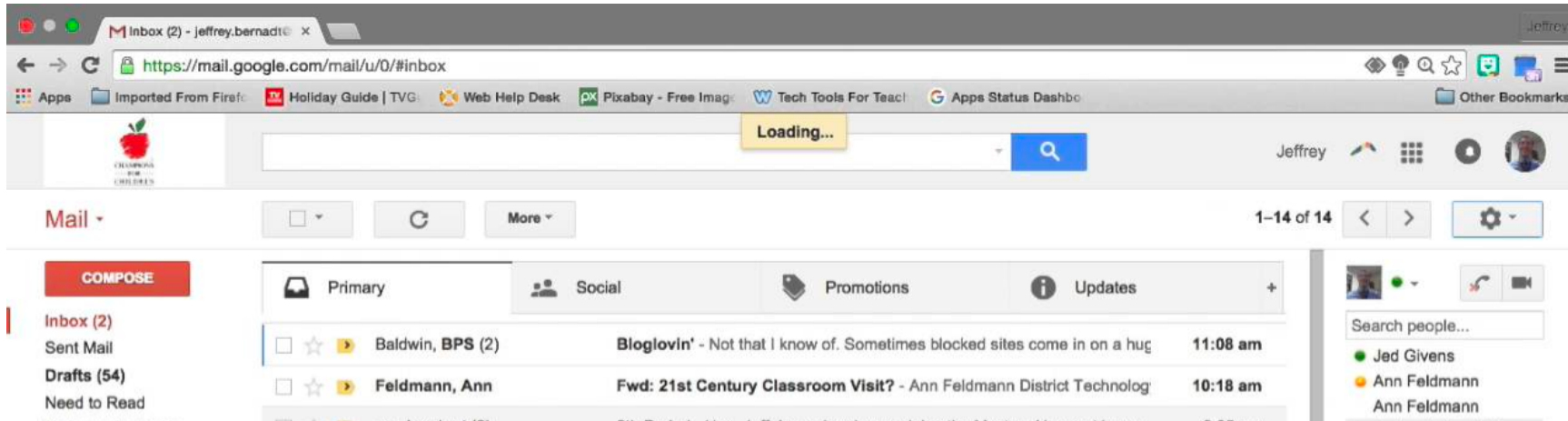
# Gmail is a database of emails



The screenshot shows a Gmail inbox interface. The browser address bar displays `https://mail.google.com/mail/u/0/#inbox`. The interface includes a search bar with a "Loading..." indicator, a user profile for "Jeffrey", and navigation controls. The main content area shows a list of 14 emails in the "Primary" tab. The left sidebar contains navigation links for "Compose", "Inbox (2)", "Sent Mail", "Drafts (54)", "Need to Read", and "Technology Coach". The right sidebar shows a "Search people..." dropdown menu with a list of contacts, including "Jed Givens", "Ann Feldmann", "Ann Feldmann", "Cadwallader, Julie", "Christopher Kessell", "Courtney Saffold", "Jeanette Carlson", "Johnson, Stephanie", "Kelly Bernadt", "Loomis, Phillip", "Robert Mason", "Shannon Gier", "Todd Tripple", and "Toledo, Julian (Delor...)".

Sender	Subject	Time
Baldwin, BPS (2)	Bloglovin' - Not that I know of. Sometimes blocked sites come in on a hug	11:08 am
Feldmann, Ann	Fwd: 21st Century Classroom Visit? - Ann Feldmann District Technolog	10:18 am
me, Lambert (2)	8th Period - Hey, Jeff. I am planning on doing the Mystery Hangout lesson	8:05 am
me	(no subject) - -- Jeffrey Bernadt District Technology Specialist Bellevue Pu	Jan 12
me, Braasch, Klamm (3)	Visitation & Observation Request - Good morning! The second semester is	Jan 12
me, Cox (2)	Bri Cox - Coaching Doc - Invitation to edit - Jeff, I finally was able to read a	Jan 12
Tripple, Todd	3D Printer - Hello Amy, I received some information from a 3D printing exp	Jan 11
donotreply	Education Preview Build Notice - AppleSeed Build Notice Education Pre	Jan 11
Ann Feldmann	Fwd: [New post] What "Innovative Leadership" Looks Like - A good read! :	Jan 11
me, Campbell (7)	Khan Academy Issues - It kept repeating that "changed password 7 month	Jan 8
Toelle, me (3)	6 Word Stories - Hey Jeff! We just returned from lunch, but still have quite	Jan 8
me, Evon (4)	Request to Visit on Thursday AM - Hi Jeff, Happy New Year! We would lov	Jan 6
Jeffrey Bernadt	Shared from Twitter: What teachers need to know about multicultural educ	12/23/15

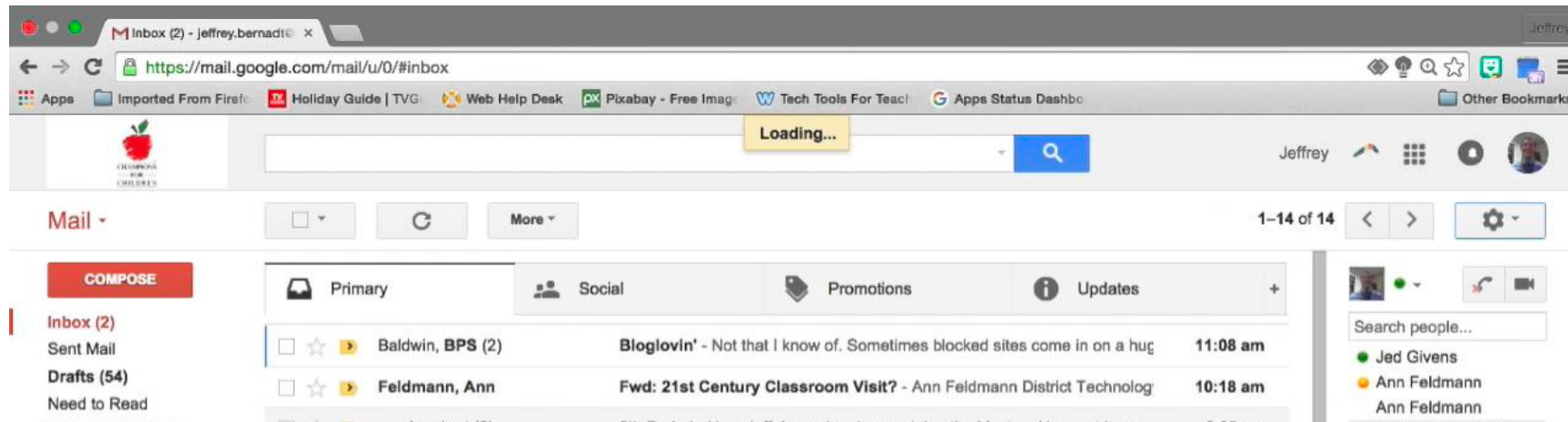
# What are the key bits of information stored for each email?



From	To	Subject	Body	Time
Baldwin	Jeffrey	Blogloving'	Not that I know of...	158904993585835
Ann Feldman	Jeffrey	Fwd: Classroom visit?	Ann Feldman District Technology	158904993585923
...				

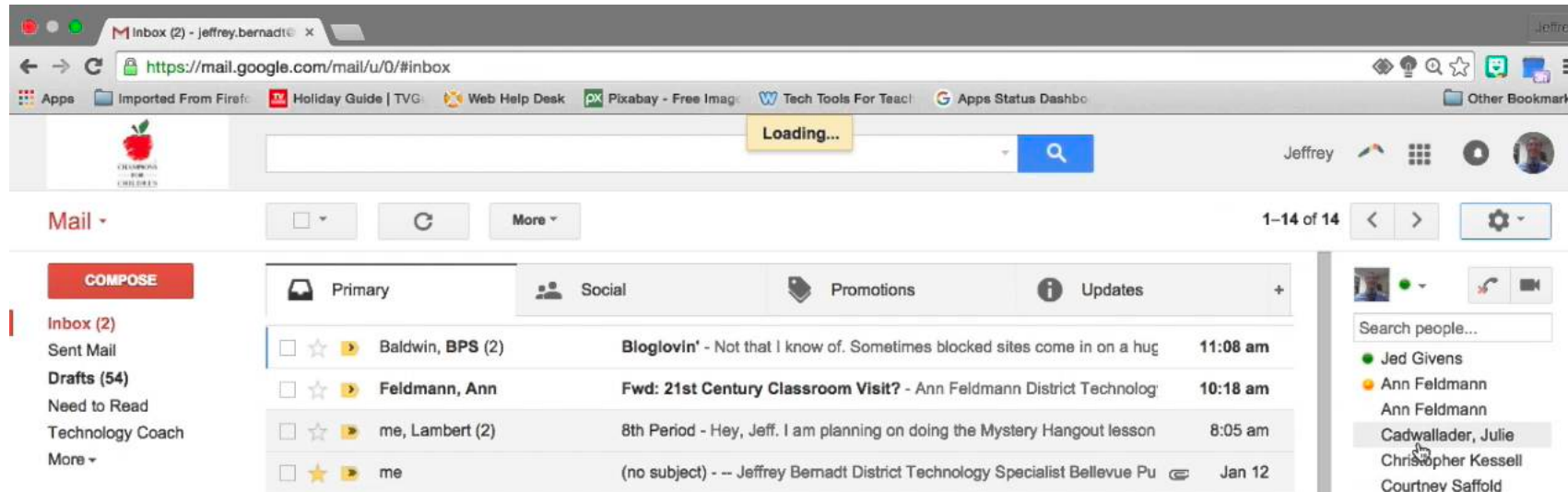


# Remember: Multiple users' data stored in one database



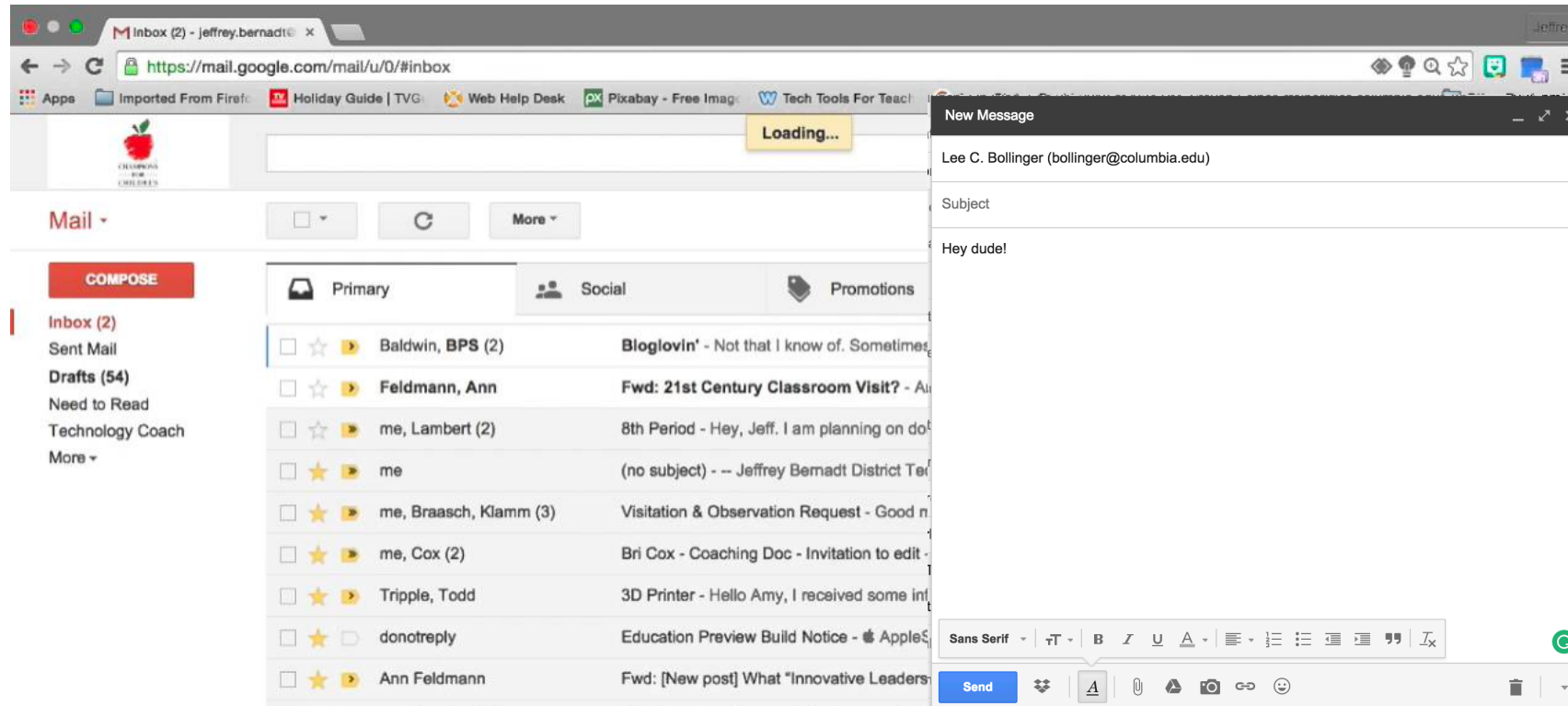
From	To	Subject	Body	Time
Baldwin	Jeffrey	Blogloving'	Not that I know of...	158904993585835
Ann Feldman	Jeffrey	Fwd: Classroom visit?	Ann Feldman District Technology	158904993585923
Lydia Chilton	Lee Bollinger	Bowling tuesday	Hey dude! Donnie and I were thinking of going bowling...	158904993443772
...				

# Most websites allow users to: Create, Read, Update, and Delete Data



From	To	Subject	Body	Time
Baldwin	Jeffrey	Blogloving'	Not that I know of...	158904993585835
Ann Feldman	Jeffrey	Fwd: Classroom visit?	Ann Feldman District Technology	158904993585923
Lydia Chilton	Lee Bollinger	Bowling tuesday	Hey dude! Donnie and I were thinking of going bowling...	158904993443772

# CREATE: How do users create data in GMail?

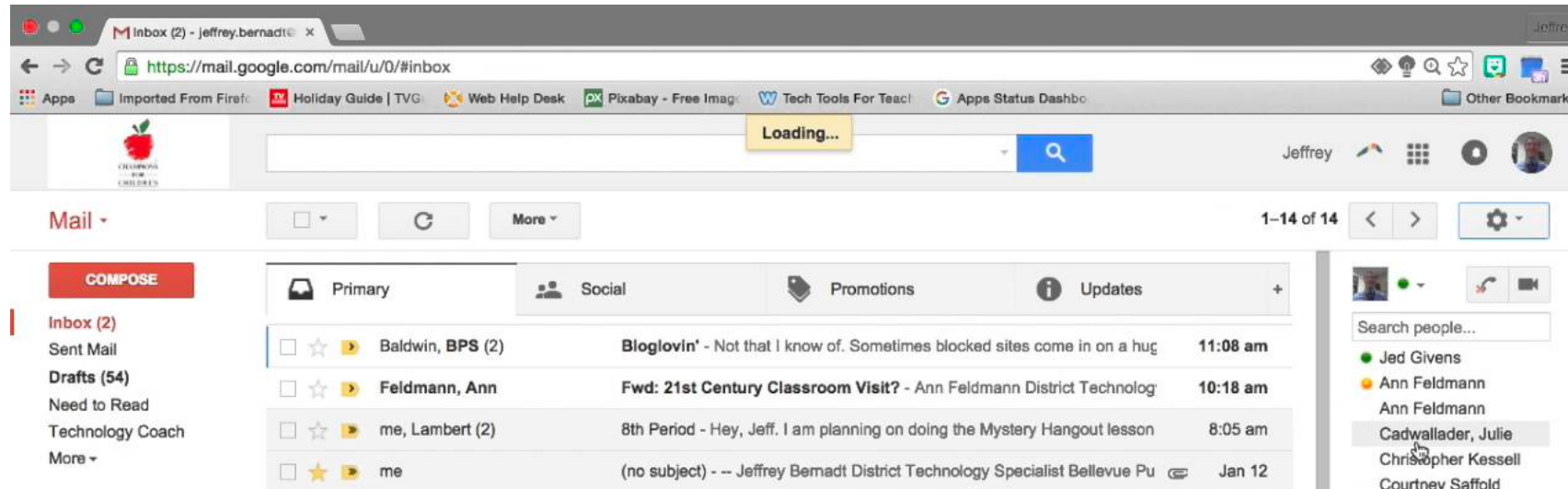


INSERT INTO emails (To, From, Subject, Body, time)

VALUES ("Baldwin", "Jeffrey", "Bloglovin'", "not that I know of", NOW)

# READ: How do users read data in GMail?

How do they see different portions of the database?



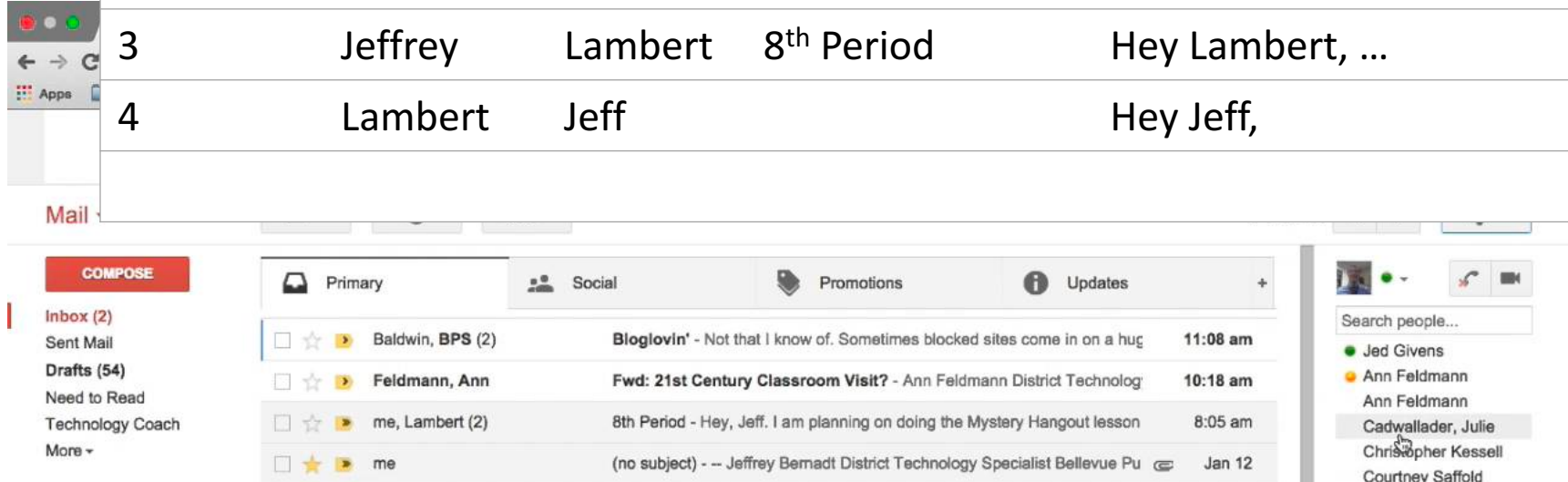
Select \* FROM emails  
WHERE (to = "Jeffrey")  
ORDER BY time DESCENDING  
LIMIT 30

**WHY NOT THIS?**  
Select FROM emails WHERE  
(to = "Jeffrey" OR from = "Jeffrey")

# READ: How do users read data in GMail?

How do they see different portions of the database?

ID	From	To	Subject	Body	Response to	Time
1	Baldwin	Jeffrey	Blogloving'	Not that I know of...		158904993585
2	Ann Feldman	Jeffrey	Fwd: Classroom visit?	Ann Feldman District Technology		158904993585
3	Jeffrey	Lambert	8 <sup>th</sup> Period	Hey Lambert, ...	0	158904993589
4	Lambert	Jeff		Hey Jeff,	3	158904993599

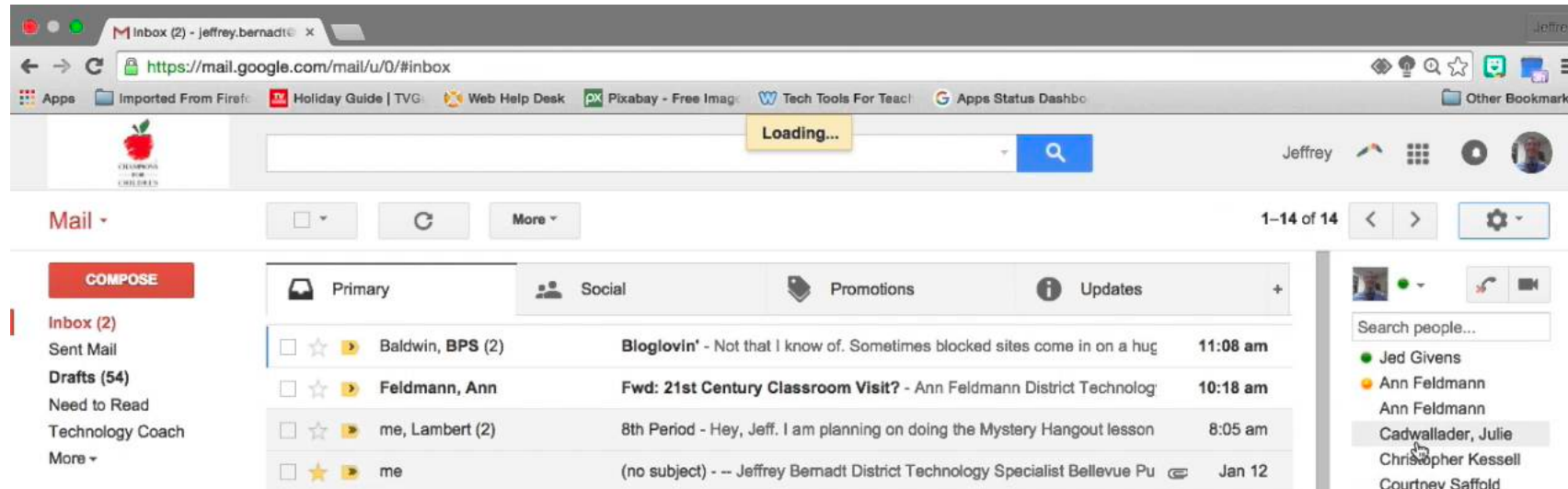
The screenshot shows a Gmail interface. On the left, there's a sidebar with a 'COMPOSE' button and a list of folders: 'Inbox (2)', 'Sent Mail', 'Drafts (54)', 'Need to Read', 'Technology Coach', and 'More'. The main area displays an inbox with four emails. The first email is from Baldwin to Jeffrey with subject 'Bloglovin'' and time '11:08 am'. The second is from Ann Feldman to Jeffrey with subject 'Fwd: 21st Century Classroom Visit?' and time '10:18 am'. The third is from Jeffrey to Lambert with subject '8th Period' and time '8:05 am'. The fourth is from Lambert to Jeffrey with subject '(no subject) -- Jeffrey Bernadt District Technology Specialist Bellevue Pu' and time 'Jan 12'. On the right, there's a search bar and a list of contacts including 'Jed Givens', 'Ann Feldmann', 'Ann Feldmann', 'Cadwallader, Julie', 'Christopher Kessell', and 'Courtnev Saffold'.

My\_emails\_id = Select \* FROM emails WHERE (to = "Jeffrey")

Select \* FROM emails WHERE (responseTo IN My\_email\_ids)

# UPDATE: How do users update data in GMail?

What do they update? And how do they do it in the interface?



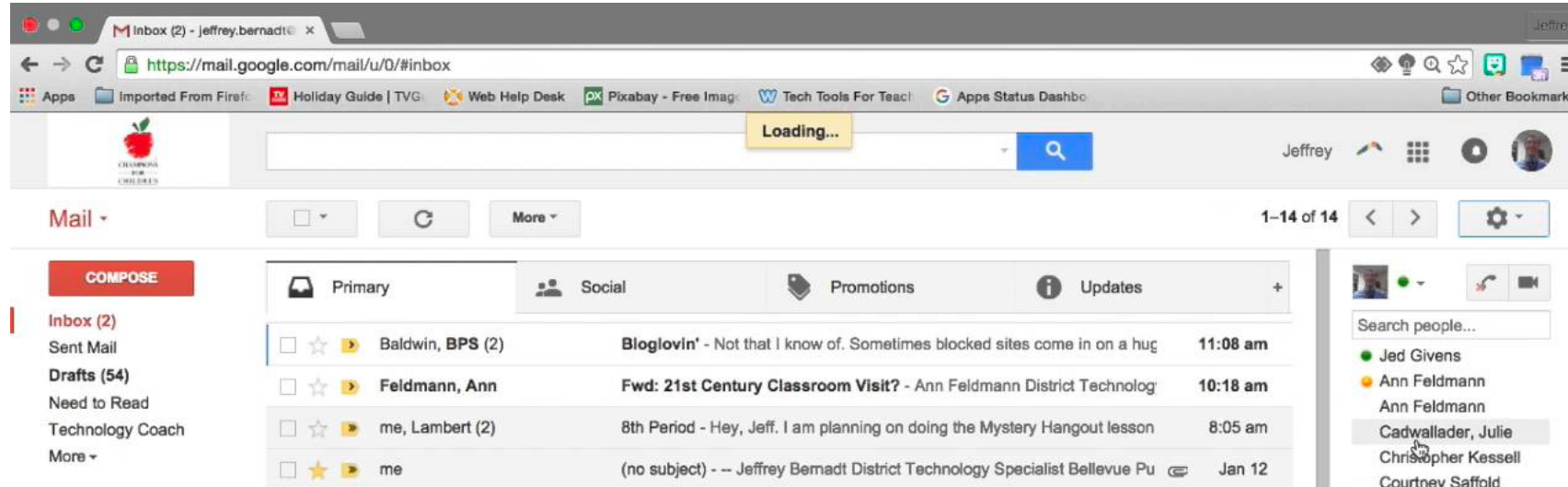
UPDATE email\_table

SET starred = True

WHERE email\_id="123456"

# DELETE: How do users delete data in GMail?

First, what objects can be deleted in GMail?



```
DELETE FROM email_drafts_table WHERE id="123456"
```

```
UPDATE email_table  
SET mark_as_deleted = True  
WHERE email_id="123456"
```



# Facebook is a database of posts.





# What fields are in the Facebook posts database?



creator	text	Likes	Time
Charles Morton	Charles Age 41: Personal..	210	15890499358

# CREATE: How do users create data in Facebook?

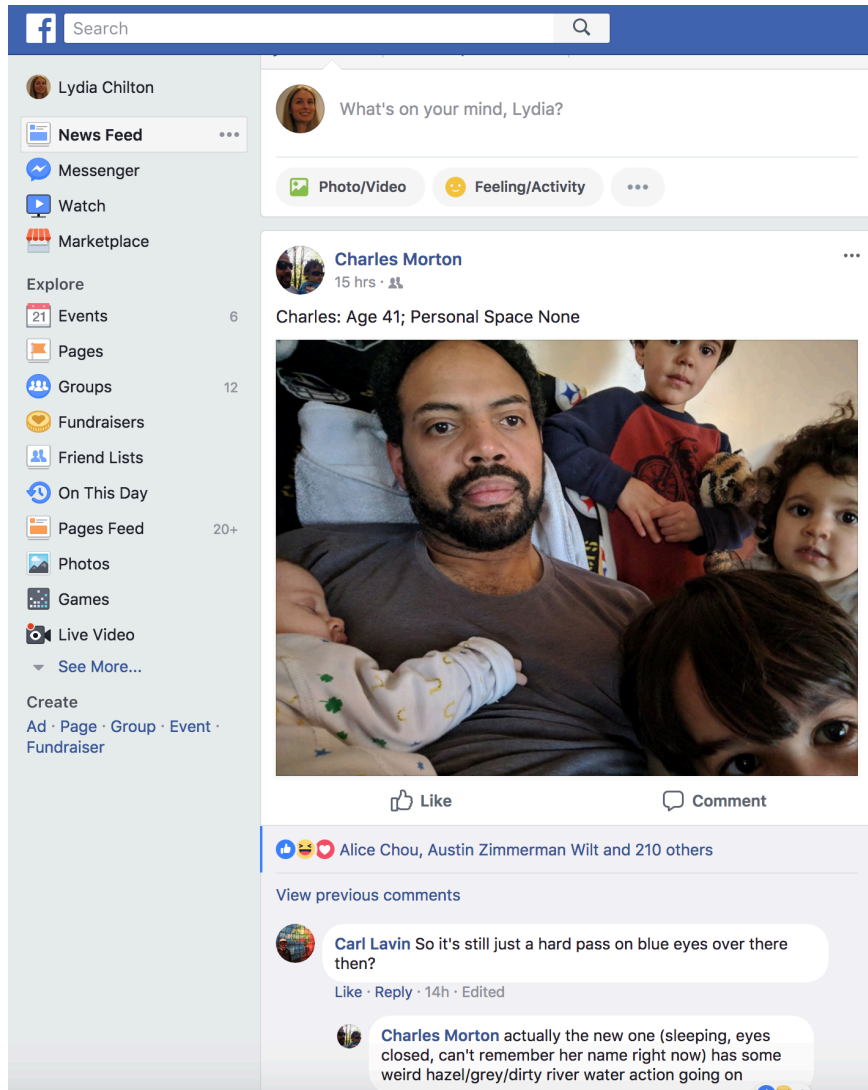


INSERT INTO  
posts (creator, text, likes, time)

VALUES  
("Charles Morton",  
"Charles: Age 41: Personal Space None <img src="">")  
0,  
NOW())

# READ: How do users read data in Facebook?

How do they see different portions of the database?



`my_friends =`

`Select * FROM Friends WHERE friend1="Lydia Chilton"`

`Select * FROM posts WHERE (creator in my_friends )`

# UPDATE: How do users update data in Facebook?



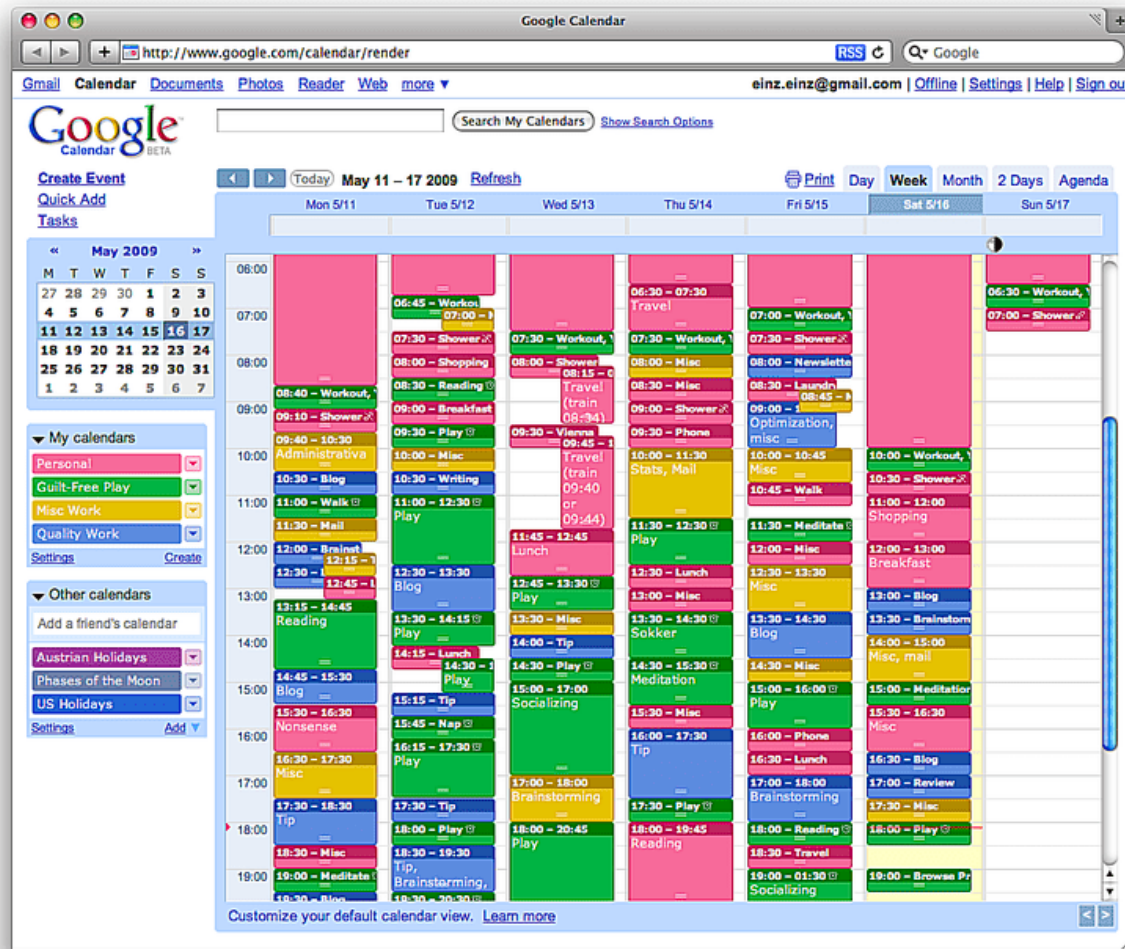
UPDATE posts  
INCREMENT likes  
WHERE post\_id = "123345"

# DELETE: How do users delete data in Facebook?



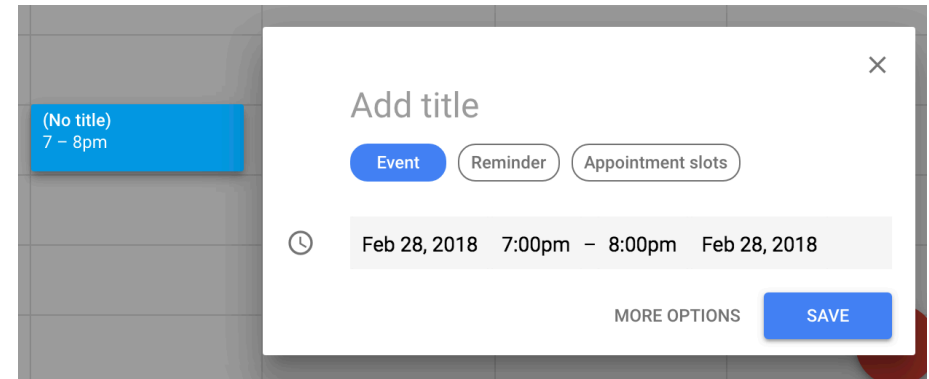
DELETE FROM posts  
WHERE post\_id = "123456"

# What fields are in the Calendar events database?





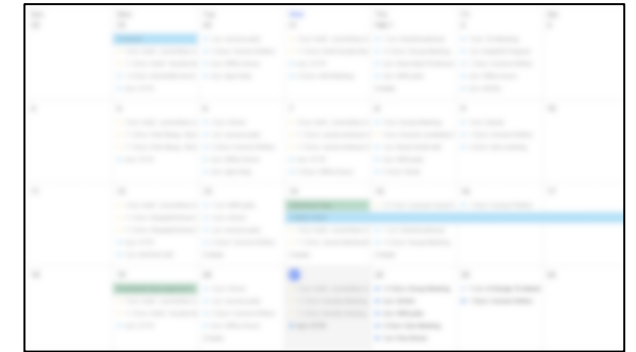
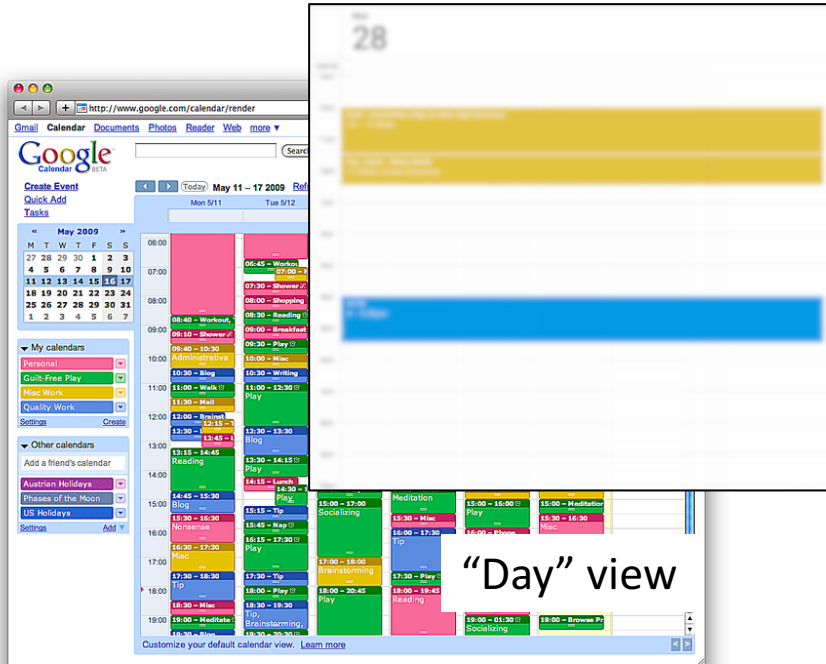
# CREATE: How do users create data in Calendar?



Creator	Start date	End Date	Title
Chilton	Feb 28, 7pm	Feb 28, 8pm	Dinner with Lee
Chilton	Feb 14, 4pm	Feb 17, 12pm	National Academy of Sciences event
...			

# READ: How do users read data in Calendar?

How do they see different portions of the database?



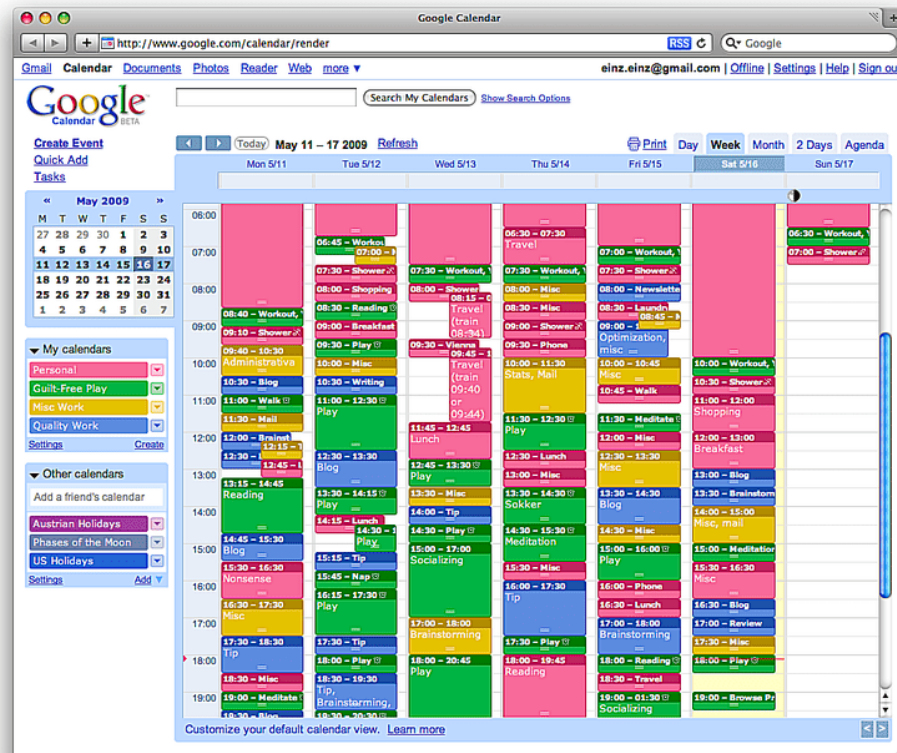
"Week" view

"Month" view

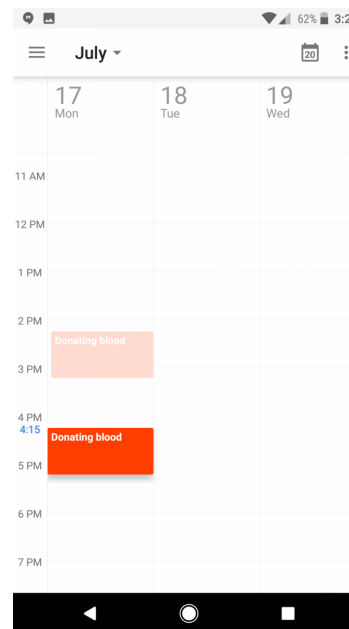
Creator	Start date	End Date	Title
Chilton	Feb 28, 7pm	Feb 28, 8pm	Dinner with Lee
Chilton	Feb 14, 4pm	Feb 17, 12pm	National Academy of Sciences event



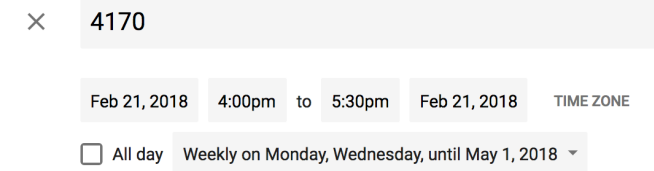
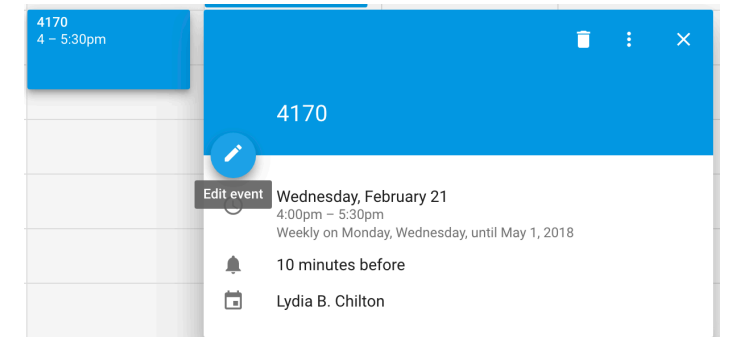
# UPDATE: How do users update data in Calendar?



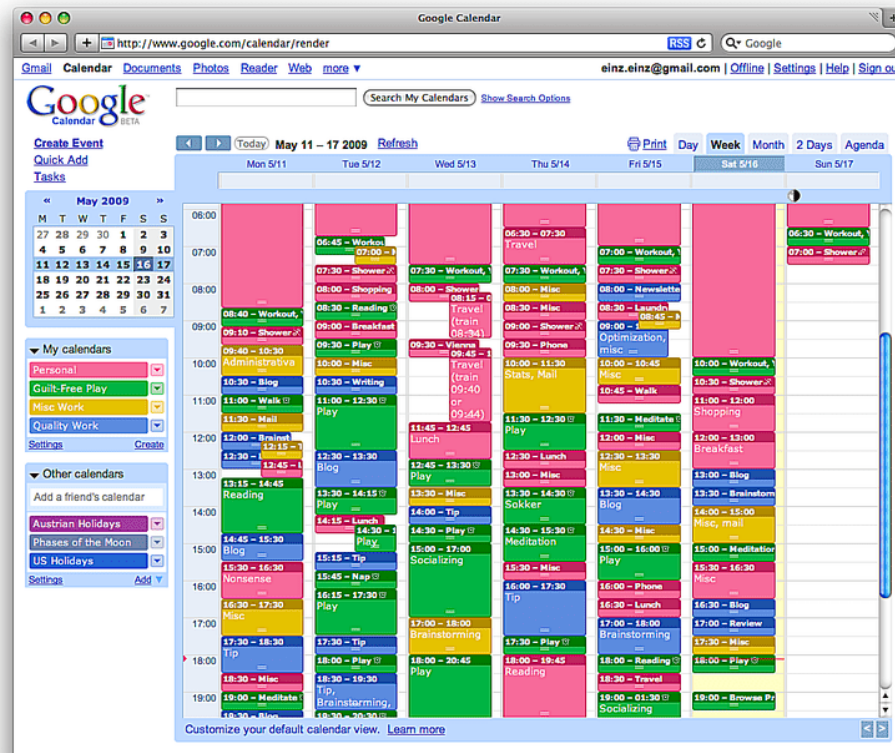
## Drag and drop



## Select an event and edit a form



# DELETE: How do users delete data in Calendar?



Selecting an event and clicking delete



# CRUD: Operations for interacting with a database

## Create


**New Message**

To

From Lydia Chilton <chilton@cs.columbia.edu> v

Subject

Hey dude!

 What's on your mind, Lydia?

**Add title**

(No title)  
7 - 8pm

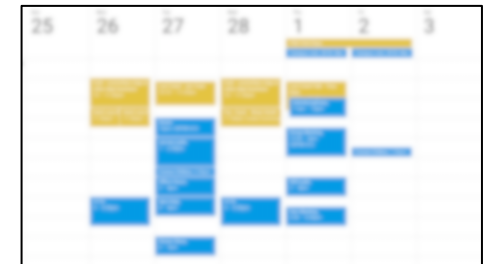
Event  Reminder  Appointment slots

Feb 28, 2018 7:00pm - 8:00pm Feb 28, 2018

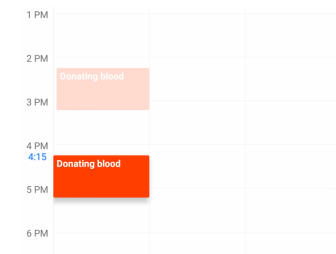
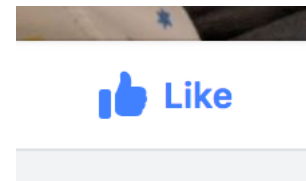
MORE OPTIONS

## Read

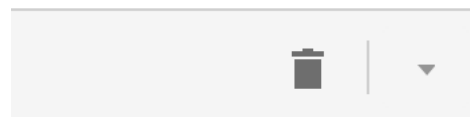
Baldwin, BPS (2)	<b>Bioglovin'</b> - Not that I know of. Sometimes bi
Feldmann, Ann	<b>Fwd: 21st Century Classroom Visit?</b> - Ann
me, Lambert (2)	8th Period - Hey, Jeff. I am planning on doing
me	(no subject) - -- Jeffrey Bernadt District Techn



## Update



## Delete



**Delete Post?**

Are you sure you want to delete it?



Dynamically Generated Webpages

# On IMDB, are there 100,000 static HTML pages sitting around?

IMDb Find Movies, TV shows, Celebrities and more... All

Movies, TV & Showtimes | Celebs, Events & Photos | News & Community | Watchlist

FULL CAST AND CREW | TRIVIA | USER REVIEWS | IMDbPro | MORE | SHARE

**The Big Chill (1983)** ★ 7.2 / 10 (28,073) ☆ Rate This

R | 1h 45min | Comedy, Drama | 30 September 1983 (USA)



2:02 | Trailer | 1 VIDEO | 76 IMAGES

Watch Now With Prime Video

WATCH NOW ON DISC

A group of seven former college friends gather for a weekend reunion at a South Carolina winter house after the funeral of one of their friends.

**Director:** Lawrence Kasdan  
**Writers:** Lawrence Kasdan, Barbara Benedek  
**Stars:** Tom Berenger, Glenn Close, Jeff Goldblum | See full cast & crew »

62 Metascore From metacritic.com | 186 user | 61 critic | 4,222 (↑ 509) Popularity

**Nominated for 3 Oscars.** Another 3 wins & 5 nominations. See more awards »



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**The Big Lebowski (1998)** ★ 8.2 / 10 (609,031) ☆ Rate This

R | 1h 57min | Comedy, Crime | 6 March 1998 (USA)



0:31 | Trailer | 9 VIDEOS | 141 IMAGES

Watch Now From \$2.99 (SD) on Prime Video

ON DISC

"The Dude" Lebowski, mistaken for a millionaire Lebowski, seeks restitution for his ruined rug and enlists his bowling buddies to help get it.

**Directors:** Joel Coen, Ethan Coen (uncredited)  
**Writers:** Ethan Coen, Joel Coen  
**Stars:** Jeff Bridges, John Goodman, Julianne Moore | See full cast & crew »

69 Metascore From metacritic.com | 1,075 user | 257 critic | 515 (↓ 32) Popularity

**Top Rated Movies #167** | 4 wins & 17 nominations. See more awards »

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FULL CAST AND CREW | TRIVIA | USER REVIEWS | IMDbPro | MORE | SHARE

**The Big Short (2015)** ★ 7.8 / 10 (274,582) ☆ Rate This

R | 2h 10min | Biography, Comedy, Drama | 23 December 2015 (USA)



2:05 | Trailer | 39 VIDEOS | 128 IMAGES

Watch Now From \$2.99 (SD) on Prime Video

ON DISC

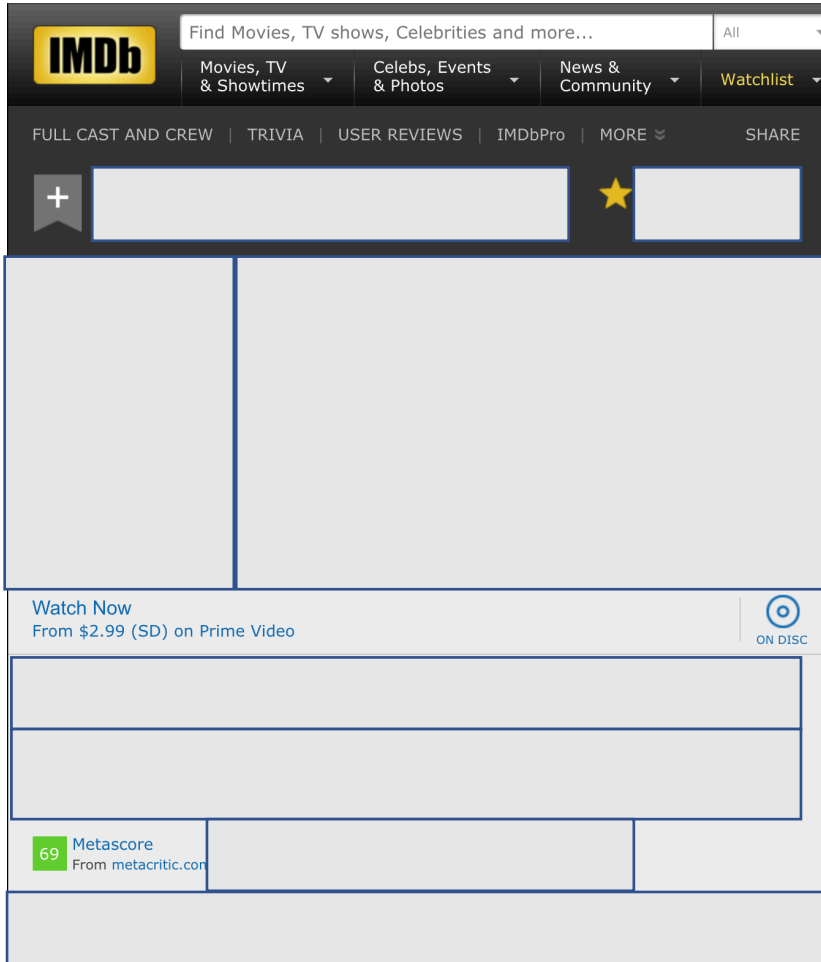
In 2006-7 a group of investors bet against the US mortgage market. In their research they discover how flawed and corrupt the market is.

**Director:** Adam McKay  
**Writers:** Charles Randolph (screenplay), Adam McKay (screenplay) | 1 more credit »  
**Stars:** Christian Bale, Steve Carell, Ryan Gosling | See full cast & crew »

81 Metascore From metacritic.com | 428 user | 454 critic | 434 (★ 47) Popularity

**Won 1 Oscar.** Another 37 wins & 79 nominations. See more awards »

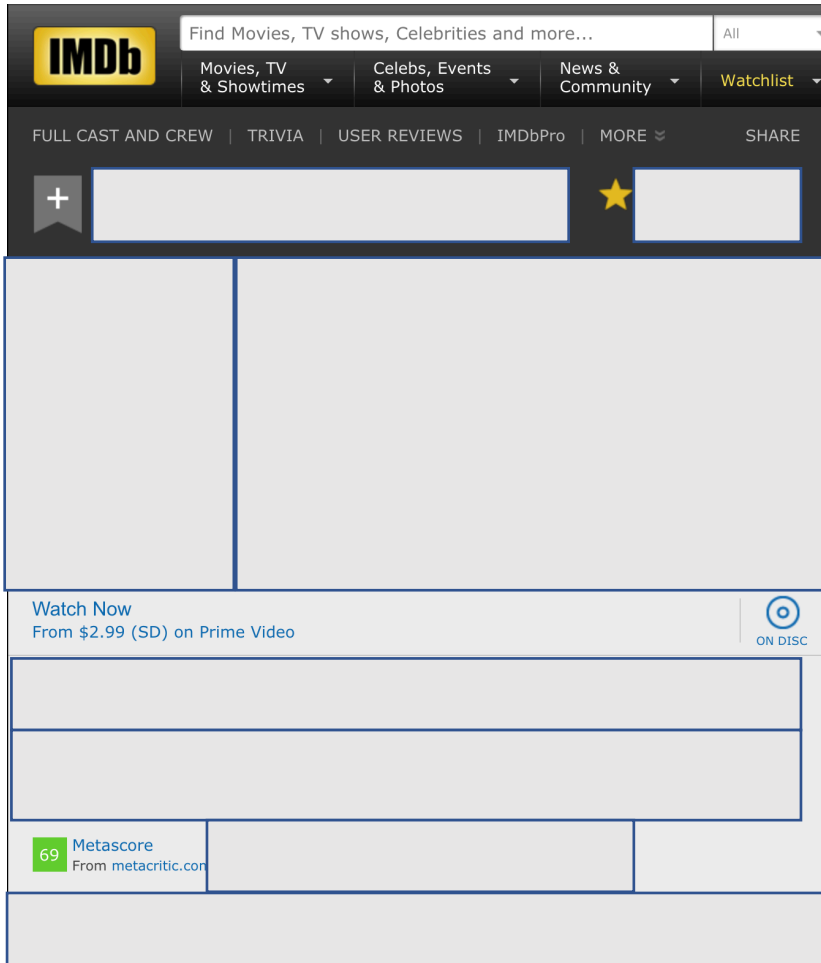
# IMDB uses a template and a database



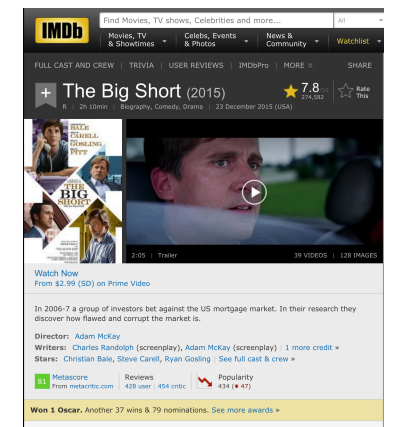
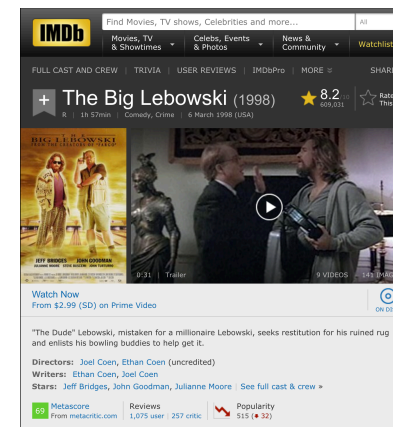
Title	Plot summary	poster	year
The Big Lebowski	"The dude" Lebowski, mistaken...	Lebowski.jpg	1998
The Big Short	In 2006-7 a group of investors...	Big_short.jpg	2015
The Big Chill	A group of 7 former roommates	Big_chill.jpg	1983



# IMDB uses a template and a database And fills in the data dynamically on pageload

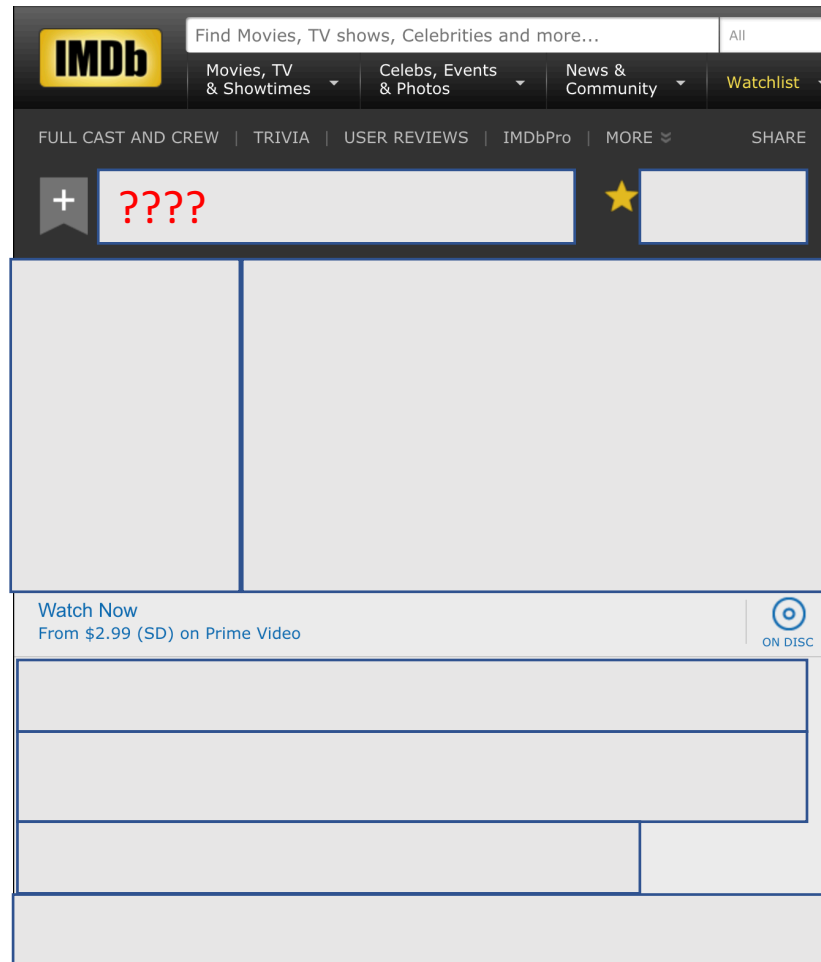


Title	Plot summary	poster	year
The Big Lebowski	"The dude" Lebowski, mistaken...	Lebowski.jpg	1998
The Big Short	In 2006-7 a group of investors...	Big_short.jpg	2015
The Big Chill	A group of 7 former roommates	Big_chill.jpg	1983

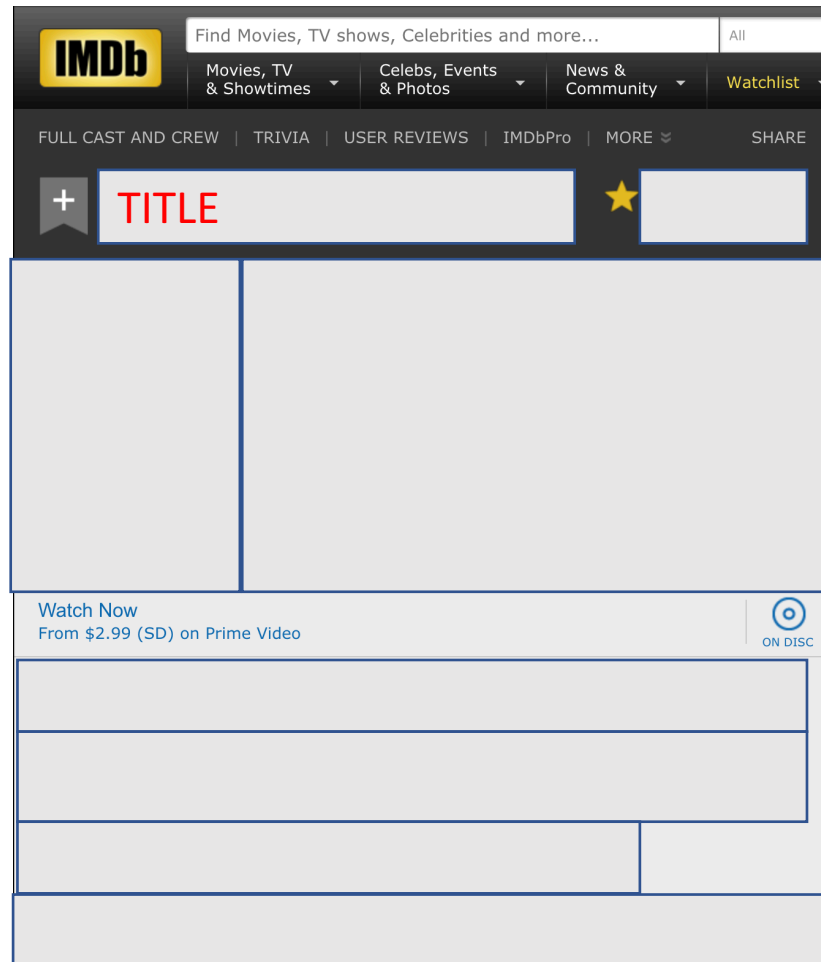




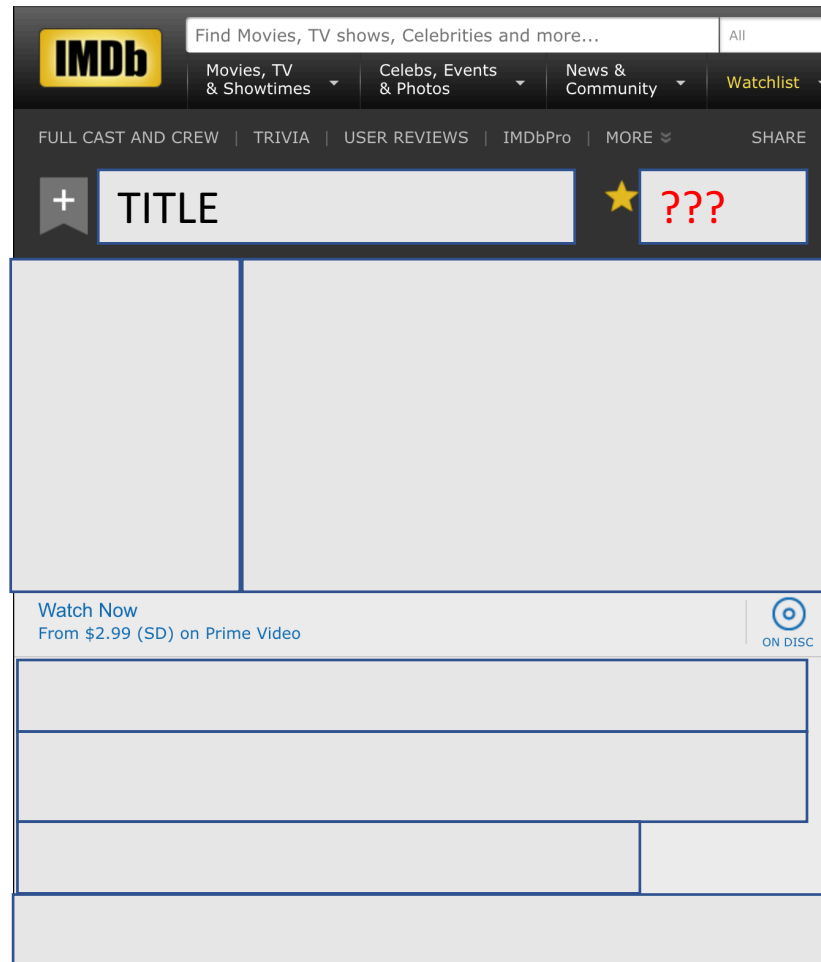
# What goes in the template?



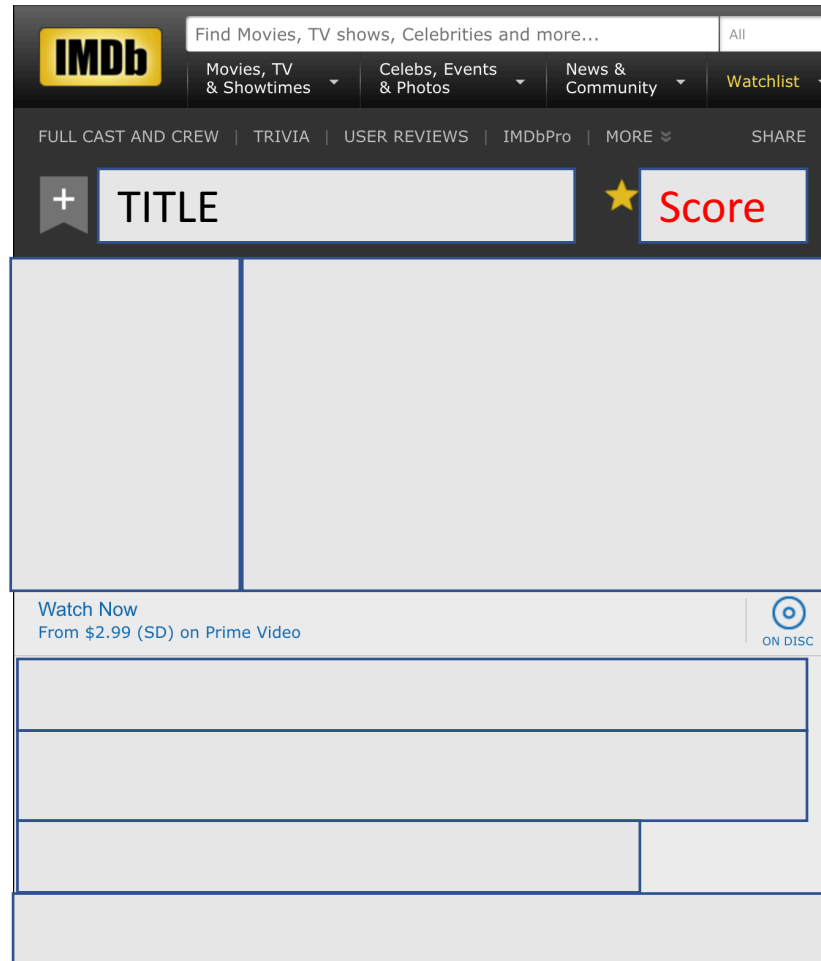
# What goes in the template?



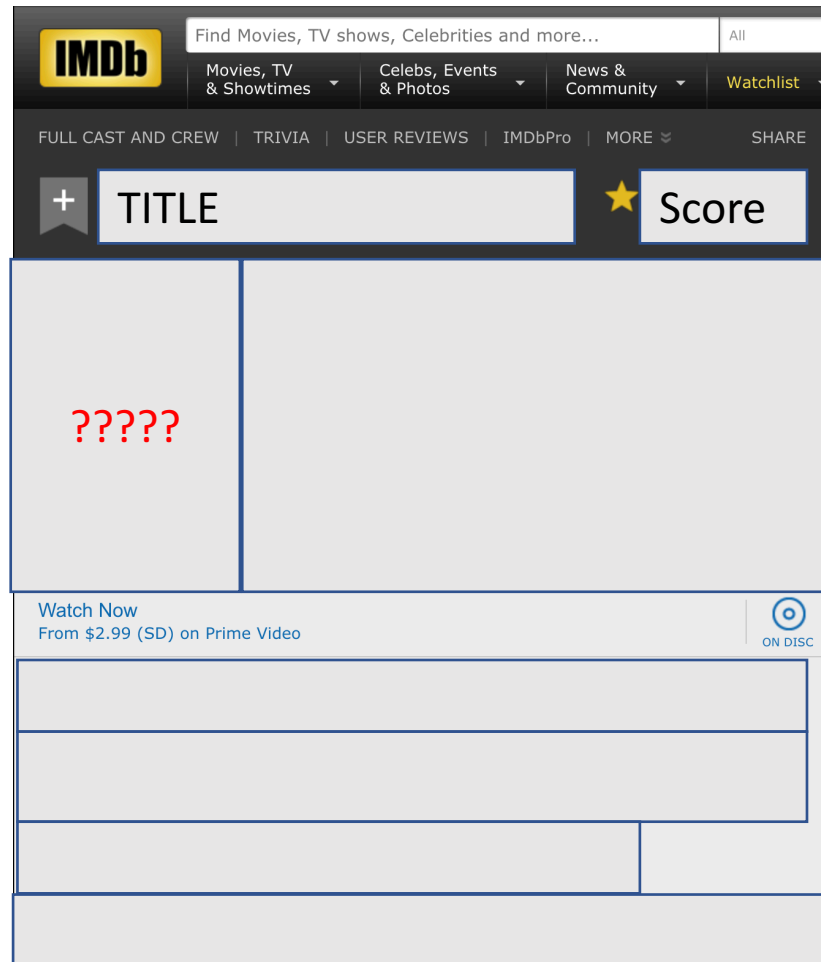
# What goes in the template?



# What goes in the template?



# What goes in the template?

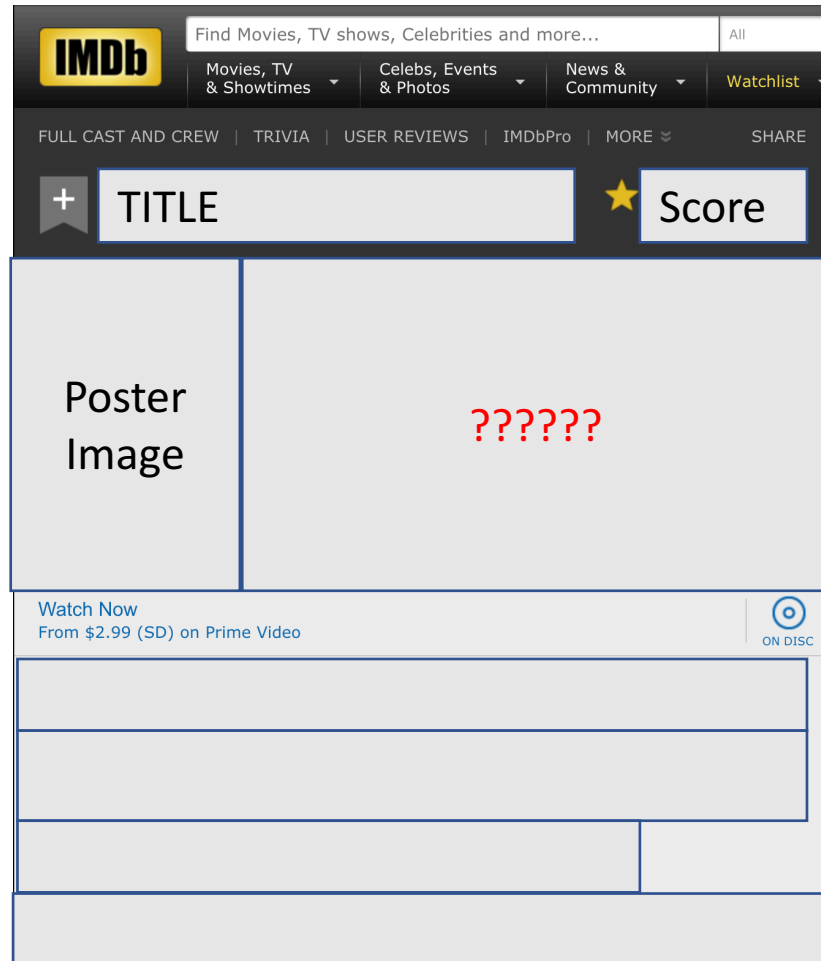


# What goes in the template?

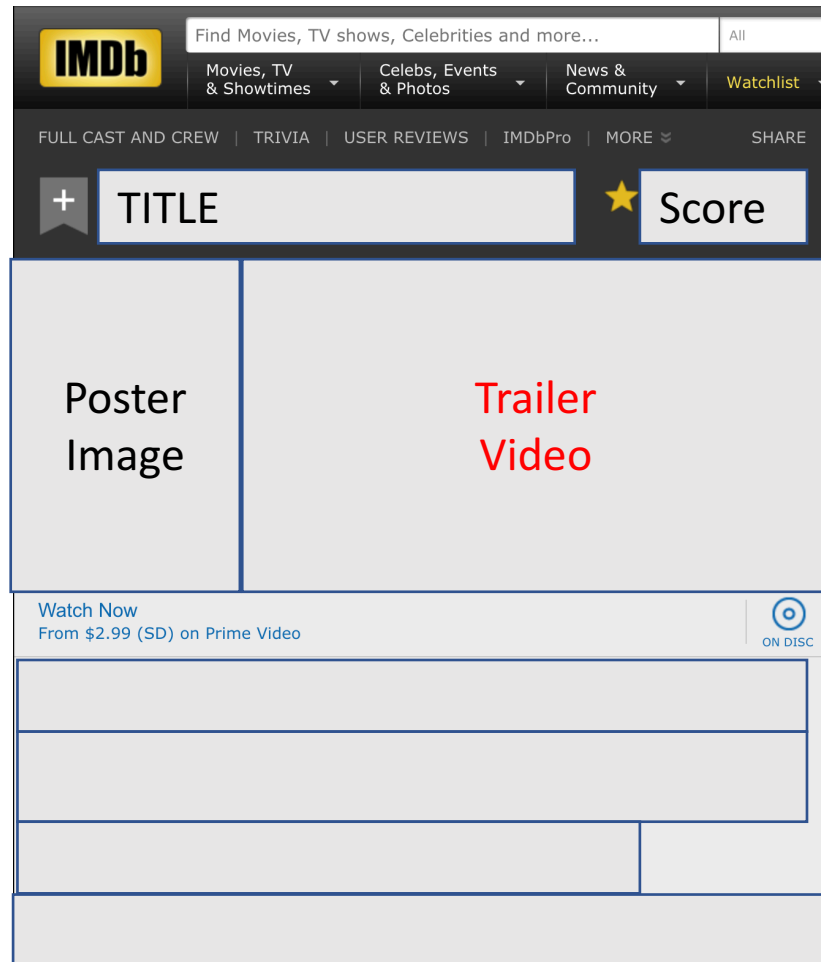




# What goes in the template?



# What goes in the template?



# IMDb uses a template and dynamically fills the template from a database query

The screenshot displays the IMDb page for the movie "The Big Lebowski" (1998). The page includes the IMDb logo, a search bar, and navigation tabs for "Movies, TV & Showtimes", "Celebs, Events & Photos", "News & Community", and "Watchlist". Below the navigation is a header for the movie, showing the title "The Big Lebowski (1998)", a rating of 8.2/10, and a "Rate This" button. The main content area features a movie poster on the left and a trailer player on the right. The trailer player is overlaid with a large blue grid template, illustrating how the page structure is dynamically filled from a database query.

IMDb Find Movies, TV shows, Celebrities and more... All

Movies, TV & Showtimes Celebs, Events & Photos News & Community Watchlist

FULL CAST AND CREW TRIVIA USER REVIEWS IMDbPro MORE SHARE

+ The Big Lebowski (1998) ★ 8.2/10 609,031 ☆ Rate This

R | 1h 57min | Comedy, Crime | 6 March 1998 (USA)

0:31 Trailer 9 VIDEOS 141 IMAGES

Watch Now From \$2.99 (SD) on Prime Video ON DISC

# Anyone remember the other categories?

IMDb Find Movies, TV shows, Celebrities and more... All

Movies, TV & Showtimes | Celebs, Events & Photos | News & Community | Watchlist

FULL CAST AND CREW | TRIVIA | USER REVIEWS | IMDbPro | MORE | SHARE

**The Big Lebowski (1998)** ★ 8.2<sup>/10</sup> 609,031 Rate This

R | 1h 57min | Comedy, Crime | 6 March 1998 (USA)

**BIG LEBOWSKI**  
FROM THE CREATORS OF "FARGO"

JEFF BRIDGES JOHN GOODMAN  
JULIANNE MOORE STEVE BUSCEMI JOHN TURTURRO

0:31 Trailer 9 VIDEOS 141 IMAGES

Watch Now  
From \$2.99 (SD) on Prime Video

ON DISC


# Anyone remember the other categories?

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**The Big Lebowski (1998)** ★ 8.2<sup>10</sup> / 609,031 Rate This

R | 1h 57min | Comedy, Crime | 6 March 1998 (USA)

**Plot summary**

**Main creatives**

**Reviews**

**Awards**

# Anyone remember the other categories?

IMDb Find Movies, TV shows, Celebrities and more... All

Movies, TV & Showtimes | Celebs, Events & Photos | News & Community | Watchlist

FULL CAST AND CREW | TRIVIA | USER REVIEWS | IMDbPro | MORE | SHARE

**The Big Lebowski** (1998) ★ 8.2<sub>10</sub> ☆ Rate This  
R | 1h 57min | Comedy, Crime | 6 March 1998 (USA)

**Watch Now**  
From \$2.99 (SD) on Prime Video

"The Dude" Lebowski, mistaken for a millionaire Lebowski, seeks restitution for his ruined rug and enlists his bowling buddies to help get it.


**Directors:** [Joel Coen](#), [Ethan Coen](#) (uncredited)  
**Writers:** [Ethan Coen](#), [Joel Coen](#)  
**Stars:** [Jeff Bridges](#), [John Goodman](#), [Julianne Moore](#) | [See full cast & crew »](#)

**69** Metascore From [metacritic.com](#) | **Reviews** 1,075 user | 257 critic | **Popularity** 515 (▲ 32)

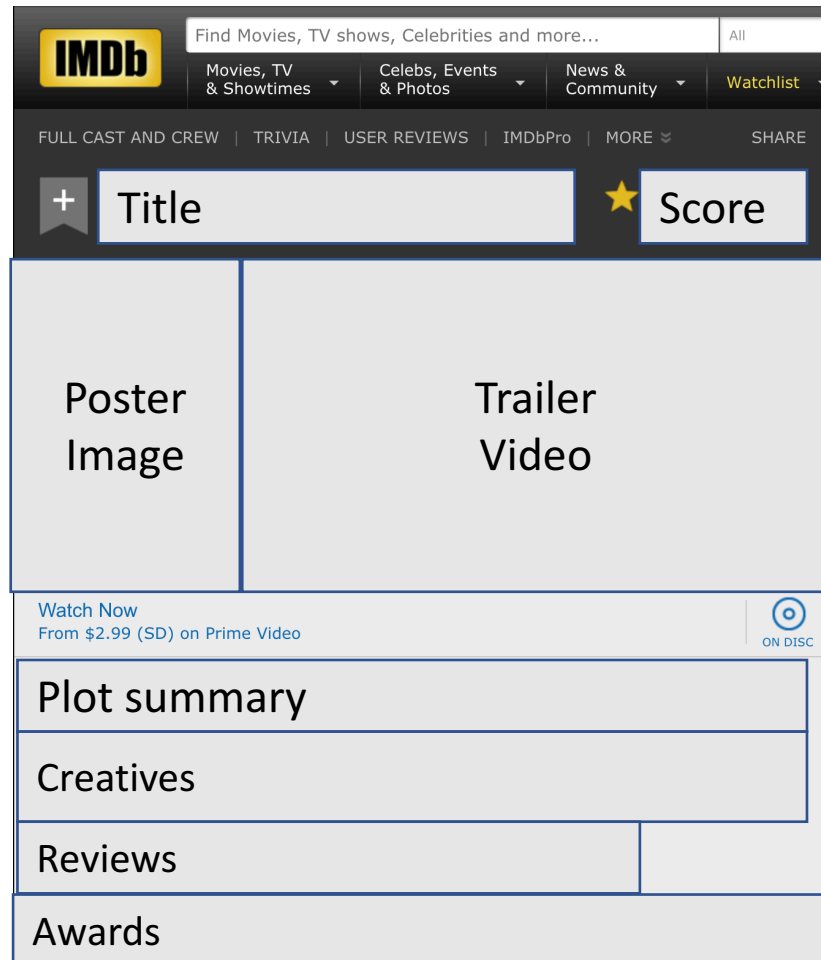
**Top Rated Movies #167** | 4 wins & 17 nominations. [See more awards »](#)



# IMDB Template

		<input type="text" value="Find Movies, TV shows, Celebrities and more..."/>	All
Movies, TV & Showtimes		Celebs, Events & Photos	News & Community
Watchlist			
FULL CAST AND CREW		TRIVIA	USER REVIEWS
IMDbPro		MORE	
SHARE			
+ TITLE		★ Score	
Poster Image	Trailer Video		
Watch Now From \$2.99 (SD) on Prime Video			
ON DISC			
Plot summary			
Main creatives			
Reviews			
Awards			

# Templates are standardizations. What can go wrong?



# Templates are standardizations. What can go wrong?



# Expect to iterate on your templates

IMDb Find Movies, TV shows, Celebrities and more... All

Movies, TV & Showtimes | Celebs, Events & Photos | News & Community | Watchlist

FULL CAST AND CREW | TRIVIA | USER REVIEWS | IMDbPro | MORE | SHARE

**The Big Chill (1983)** ★ 7.2 /10 28,073 Rate This

R | 1h 45min | Comedy, Drama | 30 September 1983 (USA)

How much love, sex, fun and friendship can a person take?

**THE BIG CHILL**  
In a cold world you need your friends to keep you warm.

2:02 | Trailer | 1 VIDEO | 76 IMAGES

Watch Now With Prime Video | WATCH NOW | ON DISC

A group of seven former college friends gather for a weekend reunion at a South Carolina winter house after the funeral of one of their friends.

**Director:** [Lawrence Kasdan](#)  
**Writers:** [Lawrence Kasdan](#), [Barbara Benedek](#)  
**Stars:** [Tom Berenger](#), [Glenn Close](#), [Jeff Goldblum](#) | [See full cast & crew](#) »

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**Nominated for 3 Oscars.** Another 3 wins & 5 nominations. [See more awards](#) »

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Movies, TV & Showtimes | Celebs, Events & Photos | News & Community | Watchlist

FULL CAST AND CREW | TRIVIA | USER REVIEWS | IMDbPro | MORE | SHARE

**The Big Lebowski (1998)** ★ 8.2 /10 609,031 Rate This

R | 1h 57min | Comedy, Crime | 6 March 1998 (USA)

**THE BIG LEBOWSKI**  
FROM THE CREATORS OF "FARGO"

JEFF BRIDGES JOHN GOODMAN  
JULIANNE MOORE STEVE BUSCEMI JOHN TURTURRO

0:31 | Trailer | 9 VIDEOS | 141 IMAGES

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**Directors:** [Joel Coen](#), [Ethan Coen](#) (uncredited)  
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Movies, TV & Showtimes | Celebs, Events & Photos | News & Community | Watchlist

FULL CAST AND CREW | TRIVIA | USER REVIEWS | IMDbPro | MORE | SHARE

**The Big Short (2015)** ★ 7.8 /10 274,582 Rate This

R | 2h 10min | Biography, Comedy, Drama | 23 December 2015 (USA)

**THE BIG SHORT**  
THE BIG SHORT

2:05 | Trailer | 39 VIDEOS | 128 IMAGES

Watch Now From \$2.99 (SD) on Prime Video | ON DISC

In 2006-7 a group of investors bet against the US mortgage market. In their research they discover how flawed and corrupt the market is.

**Director:** [Adam McKay](#)  
**Writers:** [Charles Randolph](#) (screenplay), [Adam McKay](#) (screenplay) | [1 more credit](#) »  
**Stars:** [Christian Bale](#), [Steve Carell](#), [Ryan Gosling](#) | [See full cast & crew](#) »

81 Metascore From metacritic.com | Reviews 428 user | 454 critic | Popularity 434 (♦ 47)

**Won 1 Oscar.** Another 37 wins & 79 nominations. [See more awards](#) »

# What is statically generated on the Craigslist homepage?

**craigslist**

post to classifieds  
my account

search craigslist

event calendar

M	T	W	T	F	S	S
19	20	21	22	23	24	25
26	27	28	1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18

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avoid scams & fraud  
personal safety tips

terms of use <sup>new</sup>  
privacy policy  
system status

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craigslist open source  
craigslist blog  
best-of-craigslist  
craigslist TV  
"craigslist joe"  
craig connects  
progressive directory  
weather quake tide

SF bay area [sfc](#) [sby](#) [eby](#) [pen](#) [nby](#) [scz](#)

**community**

activities local news  
artists lost+found  
childcare musicians  
classes pets  
events politics  
general rideshare  
groups volunteers

**housing**

apts / housing  
housing swap  
housing wanted  
office / commercial  
parking / storage  
real estate for sale  
rooms / shared  
rooms wanted  
sublets / temporary  
vacation rentals

**jobs**

accounting+finance  
admin / office  
arch / engineering  
art / media / design  
biotech / science  
business / mgmt  
customer service  
education  
food / bev / hosp  
general labor  
government  
human resources  
internet engineers  
legal / paralegal  
manufacturing  
marketing / pr / ad  
medical / health  
nonprofit sector  
real estate  
retail / wholesale  
sales / biz dev  
salon / spa / fitness  
security  
skilled trade / craft  
software / qa / dba  
systems / network  
technical support  
transport  
tv / film / video  
web / info design  
writing / editing  
[ETC]  
[ part-time ]

**personals**

strictly platonic  
women seek women  
women seeking men  
men seeking women  
men seeking men  
misc romance  
casual encounters  
missed connections  
rants and raves

**discussion forums**

apple	help	photo
arts	history	p.o.c.
atheist	housing	politics
autos	jobs	psych
beauty	jokes	queer
bikes	kink	recover
celebs	legal	religion
comp	linux	romance
crafts	m4m	science
diet	manners	spirit
divorce	marriage	sports
dying	media	tax
eco	money	travel
educ	motocy	tv
feedback	music	vegan
film	nonprofit	w4w
fitness	open	wed
fixit	outdoor	wine
food	over 50	women
frugal	parent	words
gaming	pets	writing
garden	philos	yoga
haiku		

**for sale**

antiques free  
appliances furniture  
arts+crafts garage sale  
atv/utv/sno general  
auto parts heavy equip  
baby+kid household  
barter jewelry  
beauty+hlt materials  
bikes motorcycles  
boats music instr  
books photo+video  
business rvs+camp  
cars+trucks sporting  
cds/dvd/vhs tickets  
cell phones tools  
clothes+acc toys+games  
collectibles trailers  
computers video gaming  
electronics wanted  
farm+garden

**services**

automotive legal  
beauty lessons  
cell/mobile marine  
computer pet  
creative real estate  
cycle skilled trade  
event sm biz ads  
farm+garden therapeutic  
financial travel/vac  
household write/ed/tran  
labor/move

**gigs**

computer event  
creative labor  
crew talent  
domestic writing

**resumes**

english

nearby ci

- bakersfield
- chico
- fresno
- gold country
- hanford
- humboldt
- inland empire
- klamath falls
- las vegas
- los angeles
- medford
- mendocino co
- merced
- modesto
- monterey
- orange co
- palm springs
- redding
- reno
- roseburg
- sacramento
- san luis obispo
- santa barbara
- santa maria
- siskiyou co
- stockton
- susanville
- ventura
- visalia-tulare
- yuba-sutter

**us cities**

**us states**

**canada**

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new york city [mnh](#) [brk](#) [que](#) [brx](#) [str](#) [jsy](#) [lgi](#) [wch](#) [fct](#)

**community**

activities local news  
artists lost+found  
childcare musicians  
classes pets  
events politics  
general rideshare  
groups volunteers

**housing**

apts / housing  
housing swap  
housing wanted  
office / commercial  
parking / storage  
real estate for sale  
rooms / shared  
rooms wanted  
sublets / temporary  
vacation rentals

**jobs**

accounting+finance  
admin / office  
arch / engineering  
art / media / design  
biotech / science  
business / mgmt  
customer service  
education  
food / bev / hosp  
general labor  
government  
human resources  
internet engineers  
legal / paralegal  
manufacturing  
marketing / pr / ad  
medical / health  
nonprofit sector  
real estate  
retail / wholesale  
sales / biz dev  
salon / spa / fitness  
security  
skilled trade / craft  
software / qa / dba  
systems / network  
technical support  
transport  
tv / film / video  
web / info design  
writing / editing  
[ETC]  
[ part-time ]

**personals**

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divorce	marriage	sports
dying	media	tax
eco	money	travel
educ	motocy	tv
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gaming	pets	writing
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haiku		

**for sale**

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collectibles trailers  
computers video gaming  
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farm+garden

**services**

automotive legal  
beauty lessons  
cell/mobile marine  
computer pet  
creative real estate  
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financial travel/vac  
household write/ed/tran  
labor/move

**gigs**

computer event  
creative labor  
crew talent  
domestic writing

**resumes**

english

nearby ci

- albany
- allentown
- baltimore
- binghamton
- catskills
- central nj
- delaware
- delaware ct
- eastern shore
- harrisburg
- hartford
- hudson valley
- jersey shore
- lancaster
- long island
- new haven
- north jersey
- northwest ct
- oneonta
- philadelphia
- poconos
- reading
- rhode island
- scranton
- south coast
- south jersey
- western mass
- williamsport
- worcester
- york

**us cities**

**us states**

**canada**

**ci worldwide**

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SF bay area [sfc](#) [sby](#) [eby](#) [pen](#) [nby](#) [scz](#)

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divorce	marriage	sports
dying	media	tax
eco	money	travel
educ	motocy	tv
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film	nonprofit	w4w
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apts / housing  
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bikes	motorcycles
boats	music instr
books	photo+video
business	rvs+camp
cars+trucks	sporting
cds/dvd/vhs	tickets
cell phones	tools
clothes+acc	toys+games
collectibles	trailers
computers	video gaming
electronics	wanted
farm+garden	

**services**

automotive	legal
beauty	lessons
cell/mobile	marine
computer	pet
creative	real estate
cycle	skilled trade
event	sm biz ads
farm+garden	therapeutic
financial	travel/vac
household	write/ed/tran
labor/move	

**jobs**

accounting+finance  
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computer	event
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sublets / temporary  
vacation rentals

**for sale**

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baby+kid	household
barter	jewelry
beauty+hlt	materials
bikes	motorcycles
boats	music instr
books	photo+video
business	rvs+camp
cars+trucks	sporting
cds/dvd/vhs	tickets
cell phones	tools
clothes+acc	toys+games
collectibles	trailers
computers	video gaming
electronics	wanted
farm+garden	

**services**

automotive	legal
beauty	lessons
cell/mobile	marine
computer	pet
creative	real estate
cycle	skilled trade
event	sm biz ads
farm+garden	therapeutic
financial	travel/vac
household	write/ed/tran
labor/move	

**jobs**

accounting+finance  
admin / office  
arch / engineering  
art / media / design  
biotech / science  
business / mgmt  
customer service  
education  
food / bev / hosp  
general labor  
government  
human resources  
internet engineers  
legal / paralegal  
manufacturing  
marketing / pr / ad  
medical / health  
nonprofit sector  
real estate  
retail / wholesale  
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salon / spa / fitness  
security  
skilled trade / craft  
software / qa / dba  
systems / network  
technical support  
transport  
tv / film / video  
web / info design  
writing / editing  
[ETC]  
[ part-time ]

**gigs**

computer	event
creative	labor
crew	talent
domestic	writing

**resumes**

english

nearby ci

- albany
- allentown
- baltimore
- binghamton
- catskills
- central nj
- delaware
- eastern ct
- eastern shore
- harrisburg
- hartford
- hudson valley
- jersey shore
- lancaster
- long island
- new haven
- north jersey
- northwest ct
- oneonta
- philadelphia
- poconos
- reading
- rhode island
- scranton
- south coast
- south jersey
- western mass
- williamsport
- worcester
- york

us cities  
us states  
canada  
ci worldwide



# What is statically generated on the Craigslist homepage?

The image shows a screenshot of the Craigslist homepage for New York City, with the interface in English. The page is organized into several main sections:

- Navigation and Search:** Includes the Craigslist logo, a search bar, and a calendar for events. The top navigation bar shows the current location as "ciudad de nueva york" and the language as "english".
- Community and Services:** A grid of categories including "comunidad", "vivienda", "trabajo", "servicios", "curros", and "currículums".
- Personal and Relationships:** A section for "personales" with sub-categories like "strictly platonic", "women seek women", and "men seeking men".
- Housing and Real Estate:** A "housing" section with sub-categories like "apts / housing", "parking / storage", and "vacation rentals".
- For Sale and Business:** A "for sale" section with sub-categories like "antiques", "appliances", and "garage sale".
- Discussion Forums:** A section for "discussion forums" with sub-categories like "apple", "arts", "history", and "politics".
- Jobs and Finance:** A "jobs" section with sub-categories like "accounting+finance", "admin / office", and "retail / wholesale".
- Resumes:** A "resumes" section with sub-categories like "computer", "creative", and "labor".

The page is designed to be a comprehensive hub for various services and listings, with a clear and organized layout.

AJAX: Updating portions of the page from the database

# These pages do not update once loaded

**craigslist**

post to classifieds  
my account

search craigslist  
search

event calendar  
M T W T F S S  
19 20 21 22 23 24 25  
26 27 28 1 2 3 4  
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best-of-craigslist  
craigslist TV  
"craigslist joe"  
craig connects

new york city mnh brk que brx stn jsy lgi wch fct

**community**

- activities
- artists
- childcare
- classes
- events
- general
- groups
- local news
- lost+found
- musicians
- pets
- politics
- rideshare
- volunteers

**housing**

- apts / housing
- housing swap
- housing wanted
- office / commercial
- parking / storage
- real estate for sale
- rooms / shared
- rooms wanted
- sublets / temporary
- vacation rentals

**jobs**

- accounting+finance
- admin / office
- arch / engineering
- art / media / design
- biotech / science
- business / mgmt
- customer service
- education
- food / bev / hosp
- general labor
- government
- human resources
- internet engineers
- legal / paralegal
- manufacturing
- marketing / pr / ad
- medical / health
- nonprofit sector
- real estate
- retail / wholesale
- sales / biz dev
- salon / spa / fitness
- security
- skilled trade / craft
- software / qa / dba
- systems / network
- technical support
- transport
- tv / film / video
- web / info design
- writing / editing
- [ETC]
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**nearby ci**

- albany
- allentown
- baltimore
- binghamton
- catskills
- central nj
- delaware
- eastern ct
- eastern shore
- harrisburg
- hartford
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- jersey shore
- lancastr
- long island
- new haven
- north jersey
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- scranton
- south coast
- south jersey
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- worcester
- york

**us cities**

**us states**

**canada**

**cl worldwide**

**community**

- antiques
- appliances
- arts+crafts
- atv/utv/sno
- auto parts
- baby+kid
- barter
- beauty+hilth
- bikes
- boats
- books
- business
- cars+trucks
- cds/dvd/vhs
- cell phones
- clothes+acc
- collectibles
- computers
- electronics
- farm+garden
- free
- furniture
- garage sale
- general
- heavy equip
- household
- jewelry
- materials
- motorcycles
- music instr
- photo+video
- rvs+camp
- sporting
- tickets
- tools
- toys+games
- trailers
- video gaming
- wanted

**services**

- automotive
- beauty
- cell/mobile
- computer
- creative
- cycle
- event
- farm+garden
- financial
- household
- labor/move
- legal
- lessons
- marine
- pet
- real estate
- skilled trade
- sm biz ads
- therapeutic
- travel/vac
- write/ed/tran

**gigs**

- computer
- creative
- crew
- domestic
- event
- labor
- talent
- writing

**resumes**

**IMDb** Find Movies, TV shows, Celebrities and more... All

Movies, TV & Showtimes | Celebs, Events & Photos | News & Community | Watchlist

FULL CAST AND CREW | TRIVIA | USER REVIEWS | IMDbPro | MORE | SHARE

**The Big Lebowski (1998)** ★ 8.2 /10 609,031 ☆ Rate This

R | 1h 57min | Comedy, Crime | 6 March 1998 (USA)

0:31 | Trailer | 9 VIDEOS | 141 IMAGES

**Watch Now**  
From \$2.99 (SD) on Prime Video ON DISC

"The Dude" Lebowski, mistaken for a millionaire Lebowski, seeks restitution for his ruined rug and enlists his bowling buddies to help get it.

**Directors:** Joel Coen, Ethan Coen (uncredited)  
**Writers:** Ethan Coen, Joel Coen  
**Stars:** Jeff Bridges, John Goodman, Julianne Moore | [See full cast & crew »](#)

**69** Metascore From metacritic.com | **Reviews** 1,075 user | 257 critic | **Popularity** 515 (▲ 32)

**Top Rated Movies #167** | 4 wins & 17 nominations. [See more awards »](#)

# These pages DO update once loaded

A screenshot of a Facebook post. The post is by Charles Morton, posted 15 hours ago. The post content includes a photo of a man (Charles Morton) and two children. Below the photo, there are interaction buttons for 'Like' and 'Comment'. A comment by Alice Chou, Austin Zimmerman Wilt and 210 others is visible. Below that, a comment by Carl Lavin asks about blue eyes. At the bottom, a comment by Charles Morton explains the photo: 'actually the new one (sleeping, eyes closed, can't remember her name right now) has some weird hazel/grey/dirty river water action going on'.

A screenshot of a Gmail inbox. The browser address bar shows 'https://mail.google.com/mail/u/0/#inbox'. The inbox is sorted by 'Primary'. A 'Loading...' indicator is visible above the email list. The email list contains the following entries:

Sender	Subject	Time
Baldwin, BPS (2)	Bloglovin' - Not that I know of. Sometimes blocked sites come in on a hug	11:08 am
Feldmann, Ann	Fwd: 21st Century Classroom Visit? - Ann Feldmann District Technolog	10:18 am
me, Lambert (2)	8th Period - Hey, Jeff. I am planning on doing the Mystery Hangout lesson	8:05 am
me	(no subject) -- Jeffrey Bernadt District Technology Specialist Bellevue Pu	Jan 12
me, Braasch, Klam (3)	Visitation & Observation Request - Good morning! The second semester is	Jan 12
me, Cox (2)	Bri Cox - Coaching Doc - Invitation to edit - Jeff, I finally was able to read a	Jan 12
Tripple, Todd	3D Printer - Hello Amy, I received some information from a 3D printing exp	Jan 11
donotreply	Education Preview Build Notice - AppleSeed Build Notice Education Pre	Jan 11
Ann Feldmann	Fwd: [New post] What "Innovative Leadership" Looks Like - A good read! :	Jan 11
me, Campbell (7)	Khan Academy Issues - It kept repeating that "changed password 7 month	Jan 8
Toelle, me (3)	6 Word Stories - Hey Jeff! We just returned from lunch, but still have quite	Jan 8
me, Evon (4)	Request to Visit on Thursday AM - Hi Jeff, Happy New Year! We would lov	Jan 6
Jeffrey Bernadt	Shared from Twitter: What teachers need to know about multicultural educ	12/23/15

On the right side of the inbox, there is a 'Search people...' dropdown menu with a list of names: Jed Givens, Ann Feldmann, Ann Feldmann, Cadwallader, Julie, Christopher Kessell, Courtney Saffold, Jeanette Carlson, Johnson, Stephanie, Kelly Bernadt, Loomis, Phillip, Robert Mason, Shannon Gier, Todd Tripple, Toledo, Julian (Delor...).

# What portions of this page update?



The image shows a screenshot of a Facebook post. On the left is a navigation sidebar with options like News Feed, Messenger, Watch, Marketplace, and various explore categories. The main content area shows a post by Charles Morton, 15 hours old, with a photo of a man and children. Below the photo are interaction buttons for Like and Comment. A notification bar indicates that Alice Chou, Austin Zimmerman Wilt, and 210 others liked the post. Two comments are visible: one from Carl Lavin asking about blue eyes, and a reply from Charles Morton explaining the child's eye color.

Lydia Chilton

What's on your mind, Lydia?

Photo/Video Feeling/Activity

**Charles Morton**  
15 hrs · 11

Charles: Age 41; Personal Space None

Like Comment

Alice Chou, Austin Zimmerman Wilt and 210 others

View previous comments

**Carl Lavin** So it's still just a hard pass on blue eyes over there then?  
Like · Reply · 14h · Edited

**Charles Morton** actually the new one (sleeping, eyes closed, can't remember her name right now) has some weird hazel/grey/dirty river water action going on

# What portions of this page update?

The image shows a screenshot of a Facebook interface. At the top, there is a search bar and a navigation menu on the left with options like News Feed, Messenger, Watch, Marketplace, and various explore categories. The main content area shows a post by Charles Morton, 15 hours old, with a photo of a man and children. Below the photo are interaction buttons for Like and Comment. A red rectangular box highlights the post's content, including the photo, the Like/Comment buttons, the notification 'Alice Chou, Austin Zimmerman Wilt and 210 others', and the 'View previous comments' section. The comments section shows a comment from Carl Lavin and a reply from Charles Morton.

Lydia Chilton

What's on your mind, Lydia?

Photo/Video Feeling/Activity

Charles Morton  
15 hrs · 11

Charles: Age 41; Personal Space None

Like Comment

Alice Chou, Austin Zimmerman Wilt and 210 others

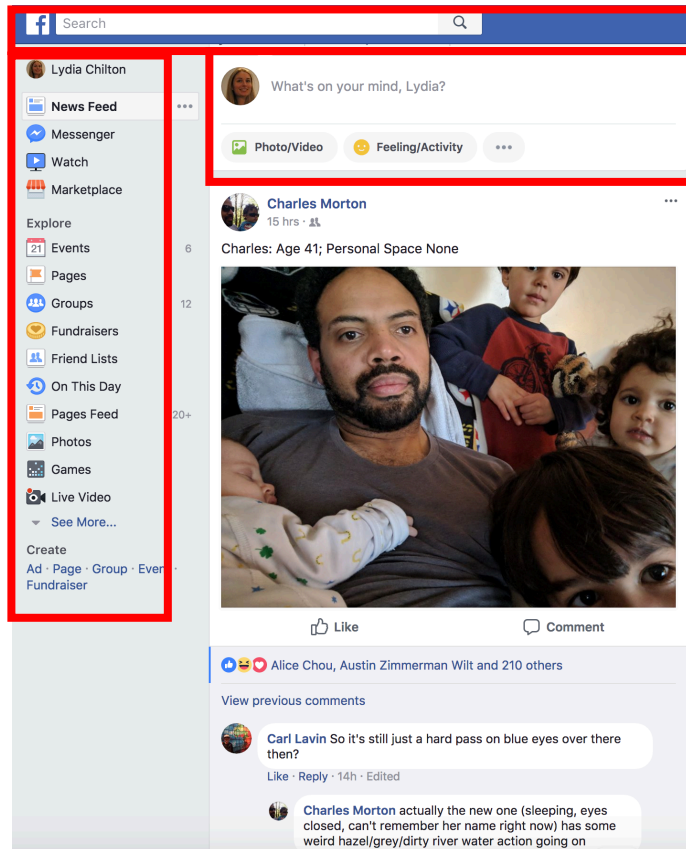
View previous comments

Carl Lavin So it's still just a hard pass on blue eyes over there then?  
Like · Reply · 14h · Edited

Charles Morton actually the new one (sleeping, eyes closed, can't remember her name right now) has some weird hazel/grey/dirty river water action going on



# What portions of this page DO NOT update?





# What portions of this page DO NOT update?



The image shows a screenshot of a Facebook post. At the top, there is a search bar and a navigation menu on the left side with options like News Feed, Messenger, Watch, Marketplace, and various explore categories. The main content is a post by Charles Morton, 15 hours old, with a photo of a man and children. Below the photo are like and comment buttons. A notification shows that Alice Chou, Austin Zimmerman Wilt, and 210 others liked the post. There are two comments: one from Carl Lavin asking about blue eyes, and a reply from Charles Morton explaining the child's eye color.

Lydia Chilton

What's on your mind, Lydia?

Photo/Video Feeling/Activity

Charles Morton  
15 hrs · 11

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Like · Reply · 14h · Edited

Charles Morton actually the new one (sleeping, eyes closed, can't remember her name right now) has some weird hazel/grey/dirty river water action going on

# What portions of this page update?

The screenshot shows a Gmail inbox interface. At the top, there's a browser window with the URL <https://mail.google.com/mail/u/0/#inbox>. Below the browser, there's a search bar with a "Loading..." indicator and a search icon. The main content area is divided into a left sidebar, a central email list, and a right sidebar.

**Left Sidebar:**

- Mail
- COMPOSE
- Inbox (2)
- Sent Mail
- Drafts (54)
- Need to Read
- Technology Coach
- More

**Central Email List:**

Primary	Social	Promotions	Updates
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Baldwin, BPS (2)			<b>Bloglovin'</b> - Not that I know of. Sometimes blocked sites come in on a hug 11:08 am
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Feldmann, Ann			<b>Fwd: 21st Century Classroom Visit?</b> - Ann Feldmann District Technolog 10:18 am
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> me, Lambert (2)			8th Period - Hey, Jeff. I am planning on doing the Mystery Hangout lesson 8:05 am
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> me			(no subject) - -- Jeffrey Bernadt District Technology Specialist Bellevue Pu Jan 12
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> me, Braasch, Klamm (3)			Visitation & Observation Request - Good morning! The second semester is Jan 12
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> me, Cox (2)			Bri Cox - Coaching Doc - Invitation to edit - Jeff, I finally was able to read a Jan 12
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Tripple, Todd			3D Printer - Hello Amy, I received some information from a 3D printing exp Jan 11
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> donotreply			Education Preview Build Notice - AppleSeed Build Notice Education Pre Jan 11
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Ann Feldmann			Fwd: [New post] What "Innovative Leadership" Looks Like - A good read! : Jan 11
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> me, Campbell (7)			Khan Academy Issues - It kept repeating that "changed password 7 month Jan 8
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Toelle, me (3)			6 Word Stories - Hey Jeff! We just returned from lunch, but still have quite Jan 8
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> me, Evon (4)			Request to Visit on Thursday AM - Hi Jeff, Happy New Year! We would lov Jan 6
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Jeffrey Bernadt			Shared from Twitter: What teachers need to know about multicultural educ 12/23/15

**Right Sidebar:**

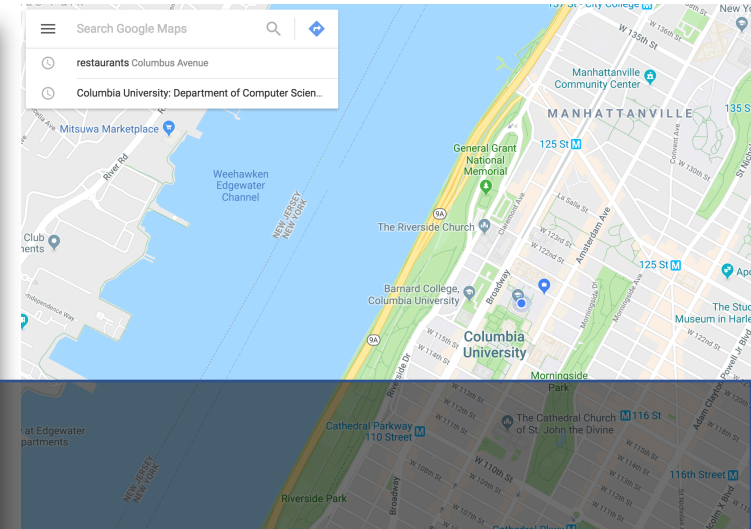
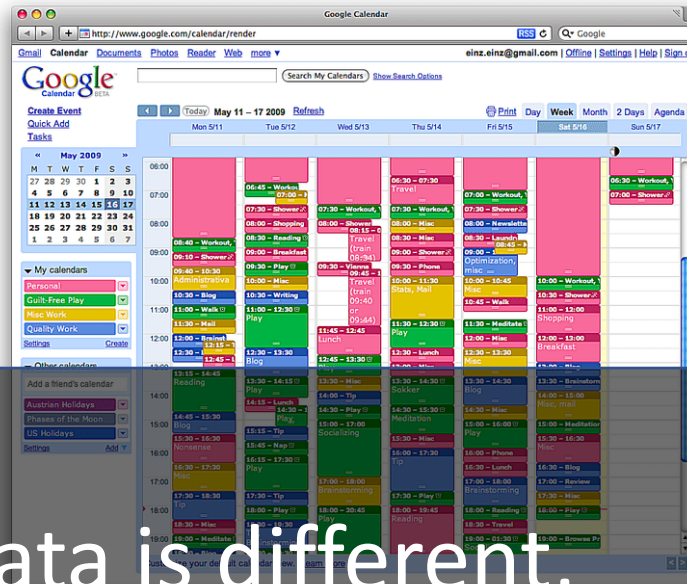
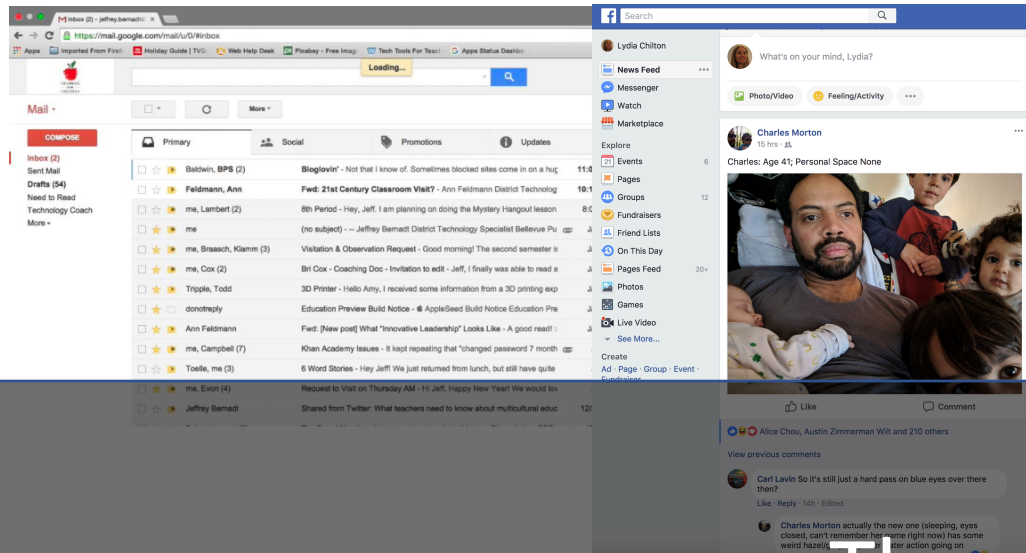
- Search people...
- Jed Givens
- Ann Feldmann
- Ann Feldmann
- Cadwallader, Julie
- Christopher Kessell
- Courtney Saffold
- Jeanette Carlson
- Johnson, Stephanie
- Kelly Bernadt
- Loomis, Phillip
- Robert Mason
- Shannon Gier
- Todd Tripple
- Toledo, Julian (Delor...

# What portions of this page DO NOT update?

The screenshot shows a Gmail inbox interface. The browser address bar displays `https://mail.google.com/mail/u/0/#inbox`. The page title is "Inbox (2) - jeffrey.bernad...". The interface includes a search bar with a "Loading..." indicator, a "Mail" header, and a list of email categories: "Primary", "Social", "Promotions", and "Updates". The "Primary" category is selected, showing a list of 14 emails. The right sidebar contains a "Search people..." field and a list of contacts, including "Jed Givens", "Ann Feldmann", "Cadwallader, Julie", "Christopher Kessell", "Courtney Saffold", "Jeanette Carlson", "Johnson, Stephanie", "Kelly Bernadt", "Loomis, Phillip", "Robert Mason", "Shannon Gier", "Todd Tripple", and "Toledo, Julian (Delor...".

Category	Sender	Subject	Time
Primary	Baldwin, BPS (2)	Bloglovin' - Not that I know of. Sometimes blocked sites come in on a hug	11:08 am
Primary	Feldmann, Ann	Fwd: 21st Century Classroom Visit? - Ann Feldmann District Technolog	10:18 am
Primary	me, Lambert (2)	8th Period - Hey, Jeff. I am planning on doing the Mystery Hangout lesson	8:05 am
Primary	me	(no subject) - -- Jeffrey Bernadt District Technology Specialist Bellevue Pu	Jan 12
Primary	me, Braasch, Klam (3)	Visitation & Observation Request - Good morning! The second semester is	Jan 12
Primary	me, Cox (2)	Bri Cox - Coaching Doc - Invitation to edit - Jeff, I finally was able to read a	Jan 12
Primary	Tripple, Todd	3D Printer - Hello Amy, I received some information from a 3D printing exp	Jan 11
Primary	donotreply	Education Preview Build Notice - AppleSeed Build Notice Education Pre	Jan 11
Primary	Ann Feldmann	Fwd: [New post] What "Innovative Leadership" Looks Like - A good read! :	Jan 11
Primary	me, Campbell (7)	Khan Academy Issues - It kept repeating that "changed password 7 month	Jan 8
Primary	Toelle, me (3)	6 Word Stories - Hey Jeff! We just returned from lunch, but still have quite	Jan 8
Primary	me, Evon (4)	Request to Visit on Thursday AM - Hi Jeff, Happy New Year! We would lov	Jan 6
Primary	Jeffrey Bernadt	Shared from Twitter: What teachers need to know about multicultural educ	12/23/15

# From a back-end perspective Facebook, Gmail are very similar. What's different?



The data is different,  
And the information needs they serve are different.



You can drive a lot of human behavior  
with one database update.



# Summary

# Sites with lots of data have a database in the backend

facebook

A screenshot of a Facebook post from the page 'PictureCorrect Photography Tips'. The post title is 'What is your Photography-Related New Year's Resolution?'. It shows a timestamp of '15 minutes ago' and a 'Like' button. Below the text, there are several comments from users like Adel Gomaa, Sadi Holloy, Richard, James Donnelly, Jose Antonio Rubido, Deacon Jonathan Jerome Johnson, Latu Peti Vimahi Manulua-hafoka, Tina Taylor Hammer, and Stefanie Bakewell, each with their own profile picture and a 'Flag' button.

A screenshot of a Google Calendar interface. The main view is a weekly calendar for May 2009, showing days from Monday to Sunday. The calendar is filled with various colored blocks representing events and tasks, such as 'Work', 'Shower', 'Shopping', 'Reading', 'Travel', 'Lunch', 'Breakfast', 'Dinner', 'Gym', 'Sleep', 'Meditation', 'Play', 'Study', 'Workout', 'Dinner', 'Reading', 'Sleep', 'Meditation', 'Play', 'Study', 'Workout', 'Dinner', 'Reading', 'Sleep', 'Meditation', 'Play', 'Study', 'Workout'. The interface includes navigation buttons for 'Today', 'Refresh', 'Print', 'Day', 'Week', 'Month', and 'Agenda'. There are also search and settings options at the top.

A screenshot of the New York Times website. The main headline is 'Trump in Shutdown Talks With Schumer'. Other articles include 'White House Invites Democratic Leader to Negotiate a Deal', 'Here's Another Fine Mess They've Gotten Us Into', 'Clubbable, but in the Worst Way', 'How the Debate in Congress Breaks Down', 'Senate to Vote With Shutdown at Stake', and 'The Chaos President vs. His Iron-Fisted Chief of Staff'. The page layout includes a navigation bar, a search bar, and various article teasers with images and text.

A screenshot of an e-commerce website listing a 'Gorgeous new 6ft. tall throne chair - \$1199 (Brooklyn)'. The product image shows a red and gold throne chair. The listing includes a price tag, a 'condition new' label, and a 'Posted 12 min ago' timestamp. There are also links for 'Share', 'Add to cart', and 'Add to wishlist'. The website has a clean, modern design with a white background and blue accents.

Front-ends and back-ends are tightly coupled.  
So you need to know something about back-end databases  
To create awesome websites



# CRUD: Operations for interacting with a database

## Create


**New Message**

To  |

From Lydia Chilton <chilton@cs.columbia.edu> ▾

Subject

Hey dude!

 What's on your mind, Lydia?

**Add title**

(No title)  
7 - 8pm

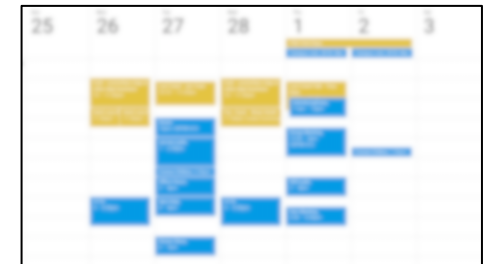
Event  Reminder  Appointment slots

Feb 28, 2018 7:00pm - 8:00pm Feb 28, 2018

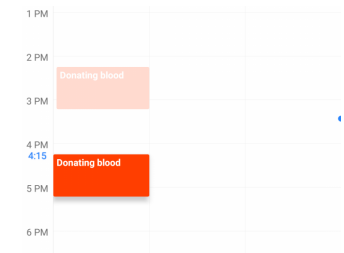
MORE OPTIONS

## Read

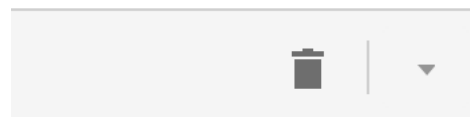
Baldwin, BPS (2)	Bloglovin' - Not that I know of. Sometimes bi
Feldmann, Ann	Fwd: 21st Century Classroom Visit? - Ann
me, Lambert (2)	8th Period - Hey, Jeff. I am planning on doing
me	(no subject) - -- Jeffrey Bernadt District Techn



## Update



## Delete

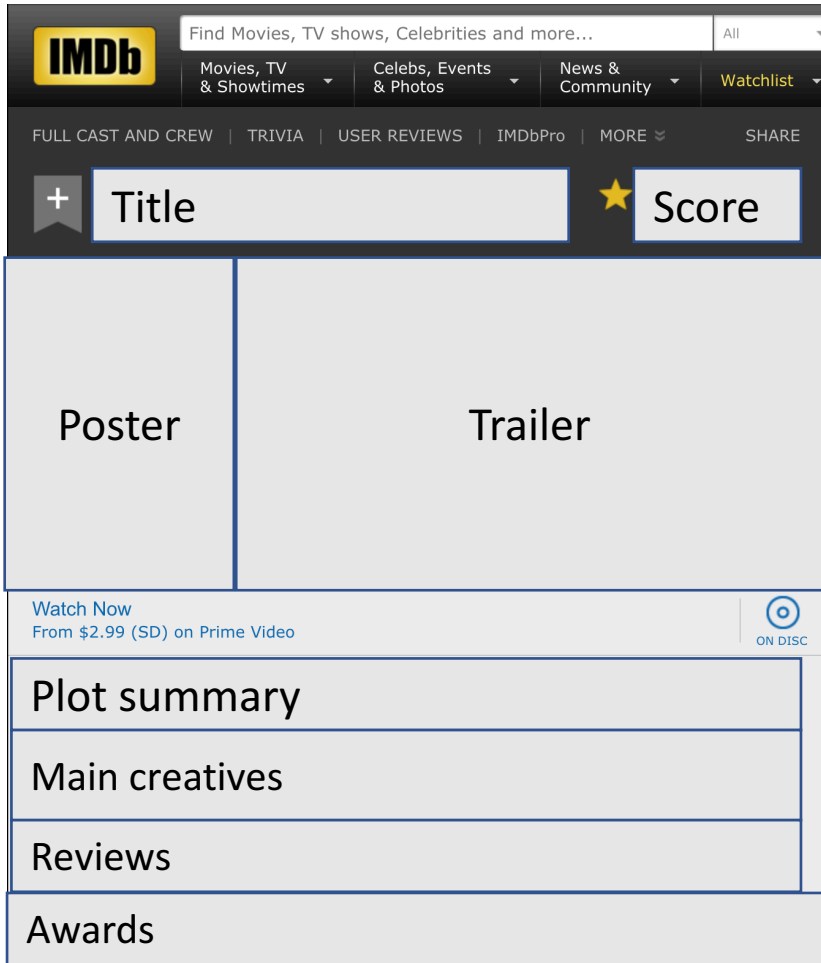


**Delete Post?**

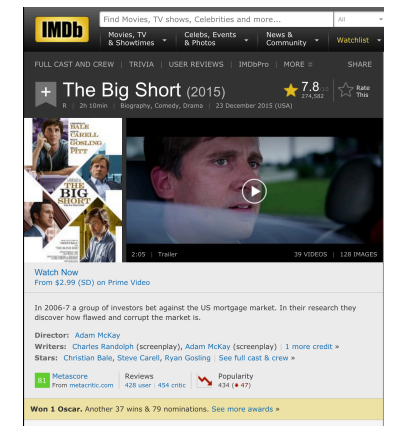
Are you sure you want to delete it?



# Use templates to for dynamically generate pages from data in the database



Title	Plot summary	poster	year
The Big Lebowski	"The dude" Lebowski, mistaken...	Lebowski.jpg	1998
The Big Short	In 2006-7 a group of investors...	Big_short.jpg	2015
The Big Chill	A group of 7 former roommates	Big_chill.jpg	1983



# Some sites reload portions of the page

## Does not reload

IMDb Find Movies, TV shows, Celebrities and more... All

Movies, TV & Showtimes | Celebs, Events & Photos | News & Community | Watchlist

FULL CAST AND CREW | TRIVIA | USER REVIEWS | IMDbPro | MORE | SHARE

**The Big Lebowski (1998)** ★ 8.2 609,031 Rate This

R | 1h 57min | Comedy, Crime | 6 March 1998 (USA)

Watch Now From \$2.99 (SD) on Prime Video

"The Dude" Lebowski, mistaken for a millionaire Lebowski, seeks restitution for his ruined rug and enlists his bowling buddies to help get it.

Directors: Joel Coen, Ethan Coen (uncredited)  
Writers: Ethan Coen, Joel Coen  
Stars: Jeff Bridges, John Goodman, Julianne Moore | See full cast & crew >

Metascore 69 From metacritic.com | Reviews 1,075 user | 257 critic | Popularity 515 (32)

Top Rated Movies #167 | 4 wins & 17 nominations. See more awards >

## Reloads

Search

Lydia Chilton What's on your mind, Lydia?

News Feed | Messenger | Watch | Marketplace

Explore | Events | Pages | Groups | Fundraisers | Friend Lists | On This Day | Pages Feed | Photos | Games | Live Video | See More...

Create | Ad · Page · Group · Event · Fundraiser

**Charles Morton** 15 hrs · 11

Charles: Age 41; Personal Space None

Like Comment

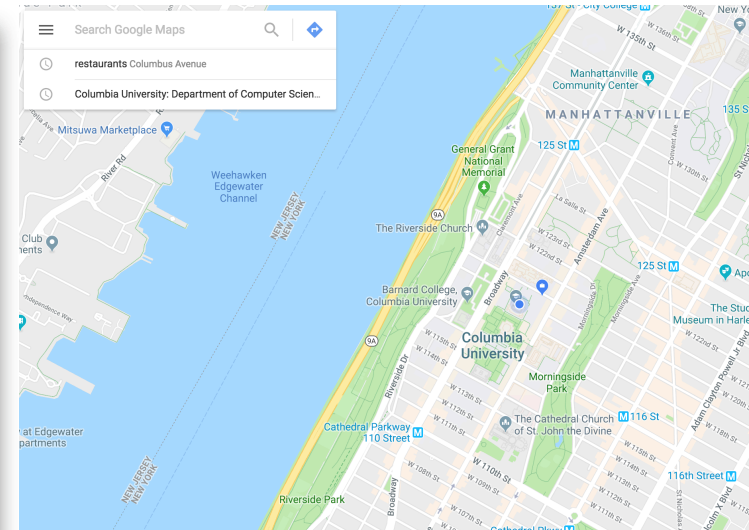
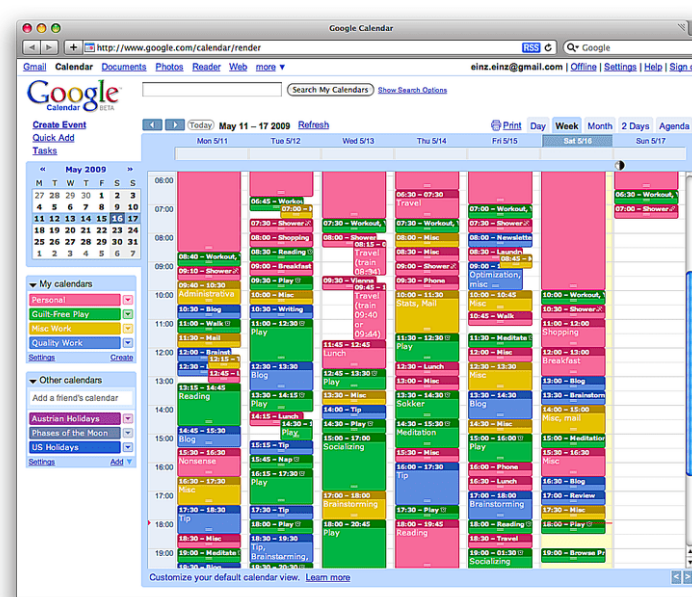
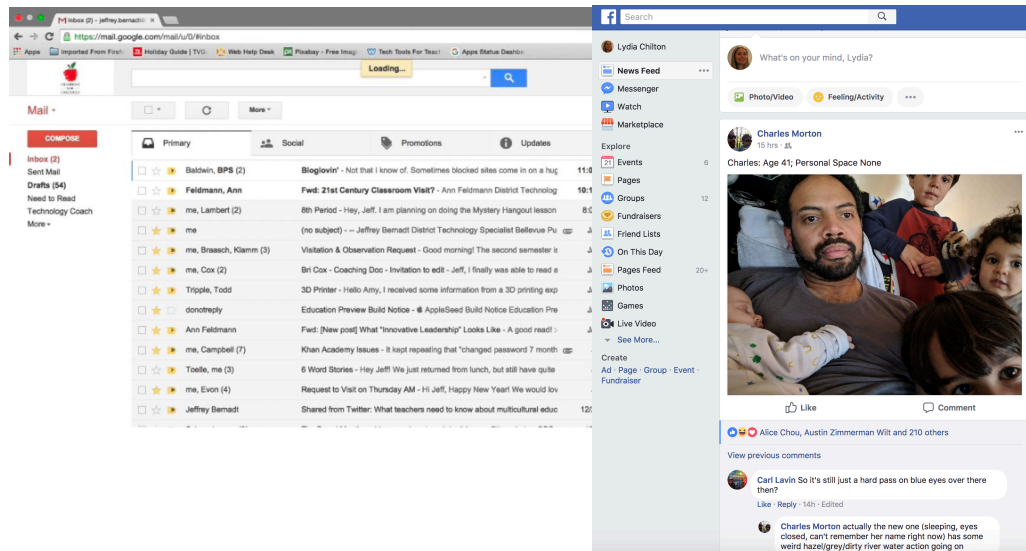
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Charles Morton actually the new one (sleeping, eyes closed, can't remember her name right now) has some weird hazel/grey/dirty river water action going on

# From a back-end perspective Database-backed websites are very similar.



## But they serve different data and different information needs