

SEEM3510 Human-Computer Interaction

Information Search

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Spring 2021
Week 13

Outline

1. Introduction
2. Five-phase search framework
3. Dynamic queries and faceted search
4. Command languages and natural language queries
5. Multimedia search & specialized search
6. Social aspects of search

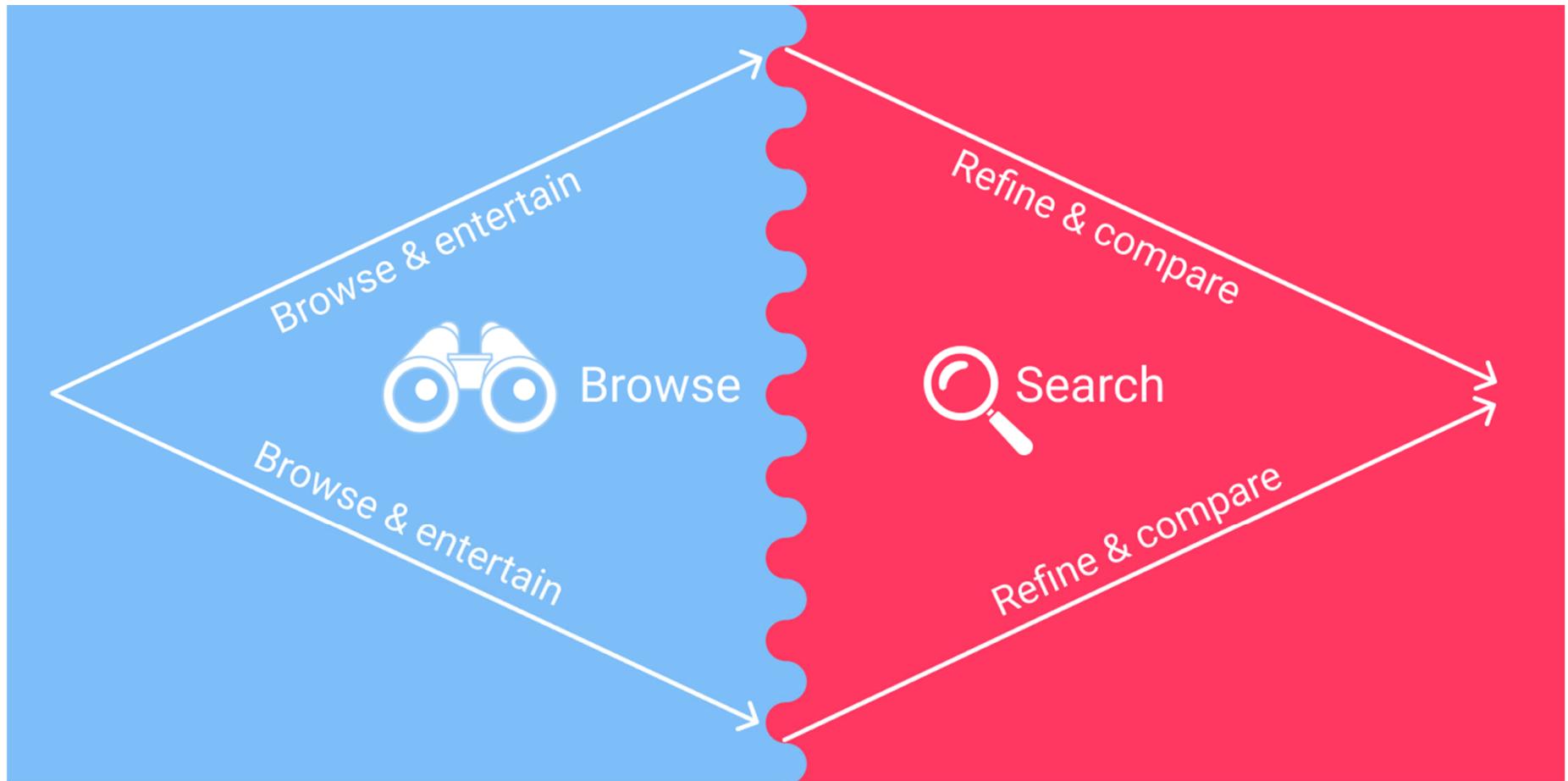
Introduction

- Information search has undergone dramatic changes over the past two decades
 - Broad spectrum of users
 - Search vast archives
 - Every aspect of our everyday lives!
- Focus of current lecture – Web or database search
- Background
 - More traditional terms: information retrieval (esp. textual documents), database management (esp. structured, relational databases with orderly attributes)
 - More recent terms: information seeking, information filtering, collaborative filtering, sense-making, visual analytics, question answering

Introduction (cont)

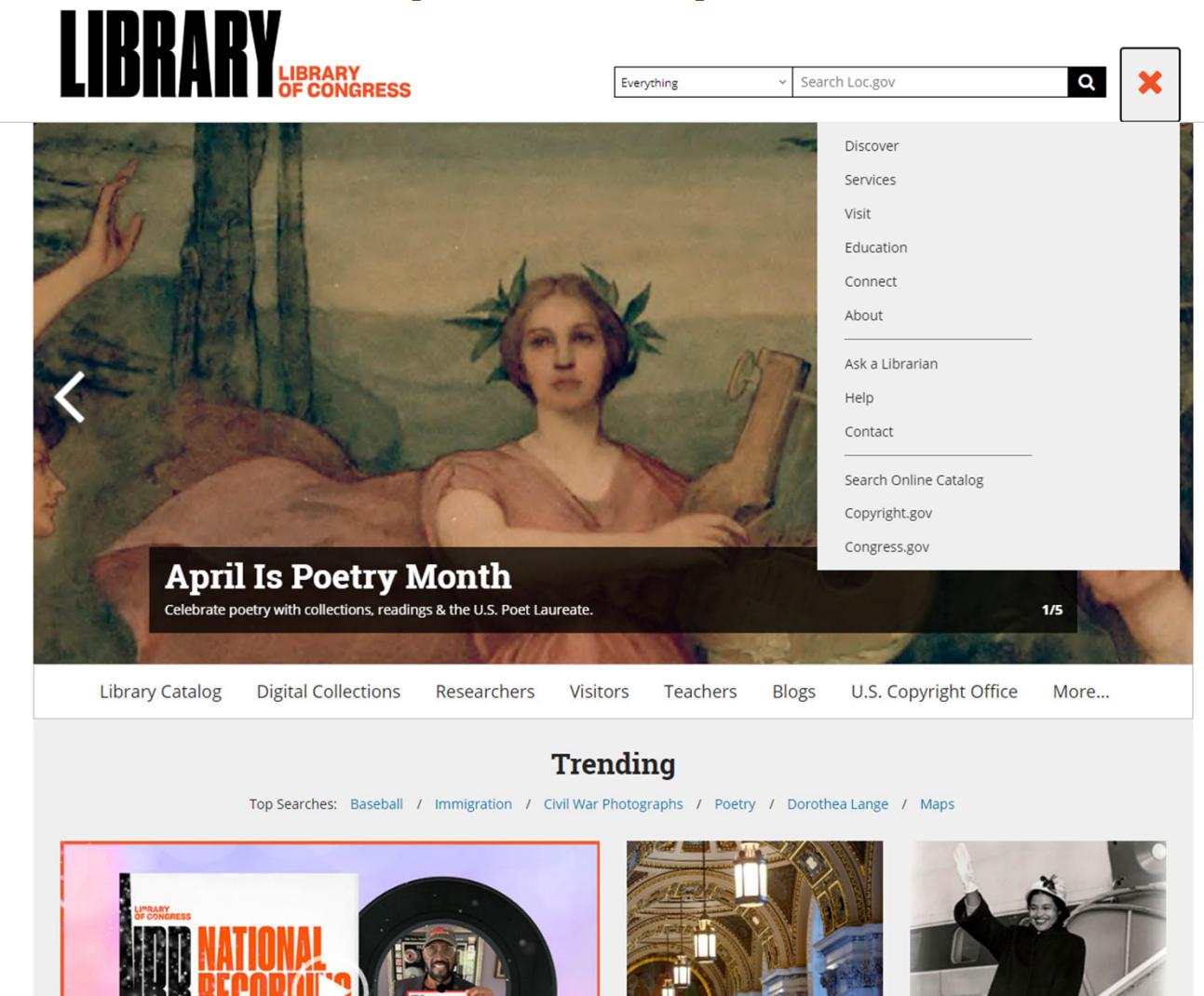
- New technologies emerging in
 - Data mining, text mining, deep learning, etc.
 - Audio information retrieval, spoken document retrieval, video retrieval
- Two general types of behaviours:
 - Browsing vs. Searching
 - What “mode” is your user in?

Browsing and Searching



[Source: uxdesign.cc]

Introduction (cont-1)



- Homepage of the US Library of Congress Catalog (catalog.loc.gov) shows the simple search box, and alternative means of finding items in diverse collections
- Advanced search interfaces are provided to accommodate experienced searchers

Introduction (cont-2)

The screenshot shows the Library of Congress Catalog Quick Search interface. At the top, there is a logo for 'LIBRARY OF CONGRESS' and a 'CATALOG' link. A 'LOGIN' button is in the top right corner. Below the header is a search bar labeled 'LC Catalog Quick Search' with a magnifying glass icon and a 'SEARCH OPTIONS' dropdown.

The main area is titled 'Advanced Search'. It features three search fields with dropdown menus for 'all of these' and 'within'. To the right of these fields is a vertical list of search filters:

- Keyword Anywhere (GKEY)**
- Title: All (KTIL)
- LCCN-ISBN-ISSN (KNUM)
- Name: Personal (KPNC)
- LC Control No/LCCN (K010)
- Subject: ALL (KSUB)
- Subject: Authorized (SKEY)
- Publication Info (KPUB)
- Name: All (KNAM)
- Intl Standard No (KISN)
- Series (KSER)
- Name: Corp/Meeting (KCNC)
- Title Uniform (KTUT)
- Notes (KNOT)
- Subject Geographic (KSGE)
- Contents Notes (KCON)
- Credits/Performers (KPRF)
- Holdings Keyword (HKEY)
- Electronic Access (KURL)

At the bottom left of the search form are buttons for '+ Add Limits', 'Search', and 'Clear'. The 'Search' button is highlighted in blue.

List of search filters (from top to bottom):

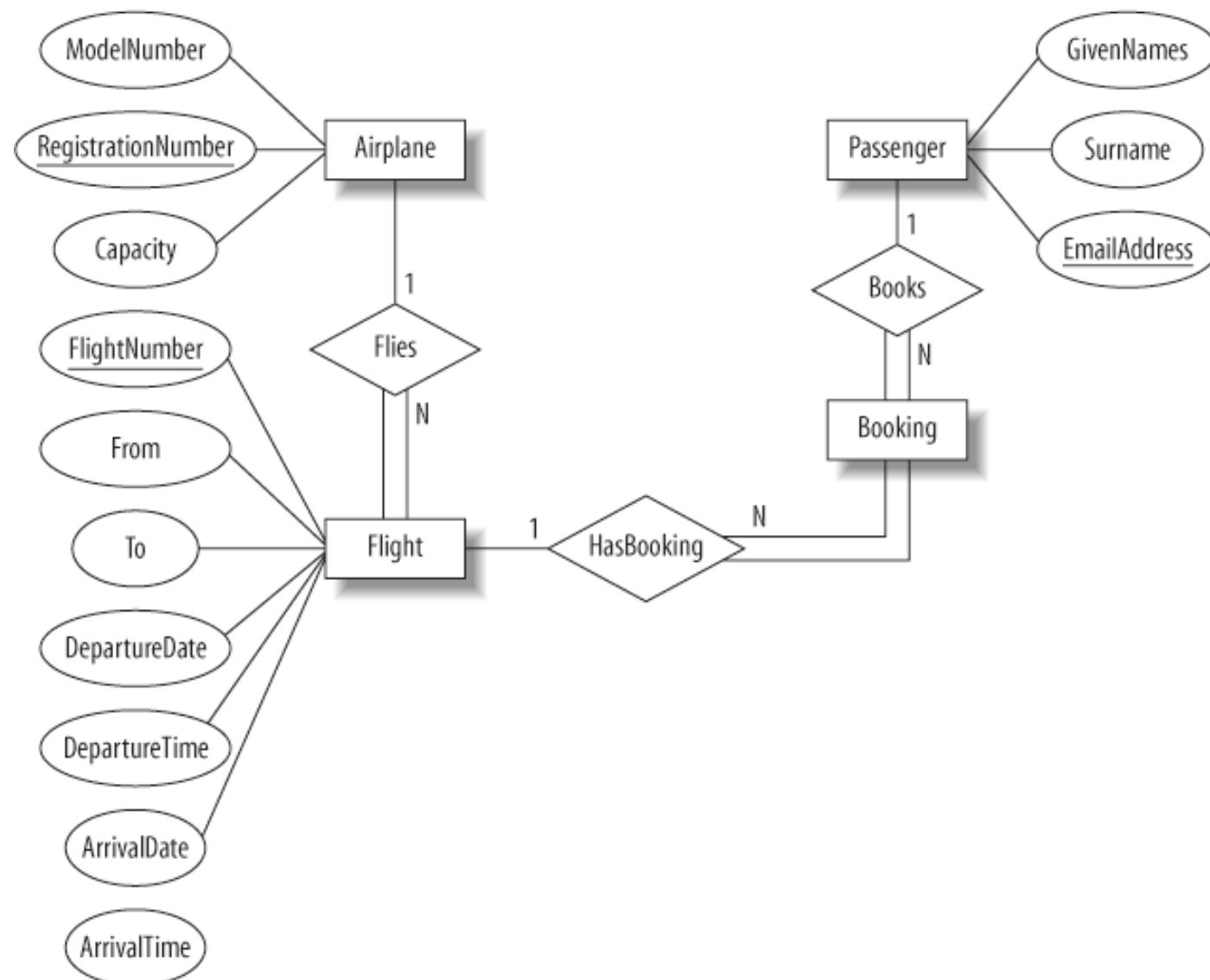
- all of these
- within
- all of these
- within
- all of these
- within
- Keyword Anywhere (GKEY)

- Buttons, text fields and menus, Boolean queries are composed for searching, together will pre-defined filters
- Users can sign up for an account to save results and keep a search history

Search Terminology

- *Objects of interest* (such as movies for rent, airlines for flight, books, reviews to read, etc.) are stored in structured relational databases, textual/multimedia document libraries or unstructured web documents
- A *structured relational database* consists of *relations* with *items/records*, and a *schema* to describe the relations
- *Relations* have *items* (usually called *tuples* or *records*), and each item has multiple *attributes* (often called *fields*), which each have *attribute values*
- A *library* consists of a set of *collections* plus some *descriptive attributes* or *metadata* about the library (for example, name, location, media type)

Search Terminology (illustration)



Source: O'Reilly

Search Terminology (cont)

- *Digital libraries* are sets of carefully organized and cataloged collections
- *Digital archives* tend to be more loosely organized
- *Directories* hold metadata about the items in a library and point users to the appropriate locations
 - E.g. NASA Global Change Master Directory helps scientists locate datasets in the many NASA's archives
- Items in an *unstructured collections* (like the Web) have few attributes, e.g. only format or data created. Metadata maybe be available.

Search Tasks

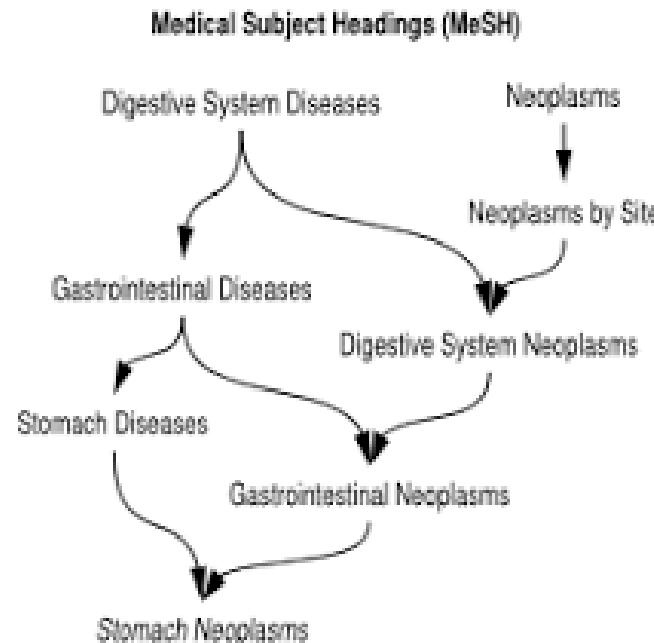
- Two general search behaviors: Browsing and Searching
- Examples of tasks:
 - **Specific fact finding** (known-item search)
 - Find the e-mail address of the President of USA
 - **Extended fact finding** (uncertain but replicable outcome)
 - What other books are by the author of “Jurassic Park”?
 - **Exploration of availability** (relatively unstructured task)
 - Is there new work on voice recognition in the ACM digital library?
 - **Open-ended browsing and problem analysis** (complex analysis in exploratory searches)
 - Is there promising new research on COVID-19 that might help my patient?

Support Search Method

- Need to understand user's information needs, decide where to search
- Cognitively convert information needs (stated in task-domain terminology) to interface actions
- Make use of finding aids, e.g. table of contents, indexes
- Interface elements to facilitate browsing, e.g.
 - Preview and overview
 - Hot topic lists
 - Hierarchy of search (e.g. Medical Subject Headings in National Library of Medicine in US)

Concept	MeSH terms	Keywords
Catastrophizing	Catastrophization; behavioral symptoms; behavioral medicine; stress, psychological; health behavior; psychology, social; mental disorders; anxiety; anxiety disorders; neurotic disorders; personality; attitude to health	Catastrophiz*; emotional; attitud*; coping; pain catastrophizing scale; PCS
Total knee arthroplasty	General surgery; postoperative complications; total knee replacement	Surgery; post-surg*; postsurg*; post-operati*; postoperati*; TKA; TKR
Risk factors	Risk; proportional hazards models; regression analysis; logistic models; risk factors; models, statistical; survival analysis; epidemiologic research design; epidemiology; epidemiologic methods; epidemiologic studies; models, psychological	Risk factor*; predict*
Chronic pain	Pain; postoperative; chronic pain; pain, intractable	Pain

Abbreviations: PCS, Pain Catastrophizing Scale; TKA, total knee arthroplasty; TKR, total knee replacement.



Designing Search Interfaces

Five stages of search:

1. **Formulation**: expressing the search
2. **Initiation of action**: launching the search
3. **Review of results**: reading messages and outcomes
4. **Refinement**: formulating the next step
5. **Use**: compiling or disseminating insight

Information seeking is an iterative process.

1. Formulation

- Use simple and advanced search
- Limit the search using structured fields such as year, media, or location (scoping, but users may forget about the constraint)
- Recognize key phrases to allow entry of names, such as *George Washington*
- Permit variants to allow relaxation of search constraints (e.g. phonetic variations, capitalizations, word stemming)
- Control the size of the initial result set
- Use scoping of source carefully
- Provide suggestions, hints, common sources (mobile applications making use of location to narrow down the search, e.g. shopping)
- Seamless integration between search and browsing

2. Initiation of action

- *Explicit actions* are initiated by buttons with consistent labels (such as “Search”)
- *Implicit actions* are initiated by changes to a parameter and search results updated immediately
- Guide users to successful or past queries with auto-complete



3. Review of results

- Keep search terms and constraints visible
- Provide an overview of the results (e.g. total #)
- Categorize results using metadata (by attribute value, topics, etc.)
- Provide descriptive previews of each result item
 - Highlight search terms in results
- Allow examination of selected items
- Provide visualizations when appropriate (e.g. maps or timelines)
- Allow adjustment of the size of the result set and display fields
- Allow change of sequencing (alphabetical, chronological, relevance ranked, etc.)

4. Refinement

- Guide users in progressive refinement with meaningful messages
- Make changing of search parameters convenient
- Provide related searches (e.g. “*do you mean <suggestion>?*”)
- Provide suggestions for error correction (without forcing correction)

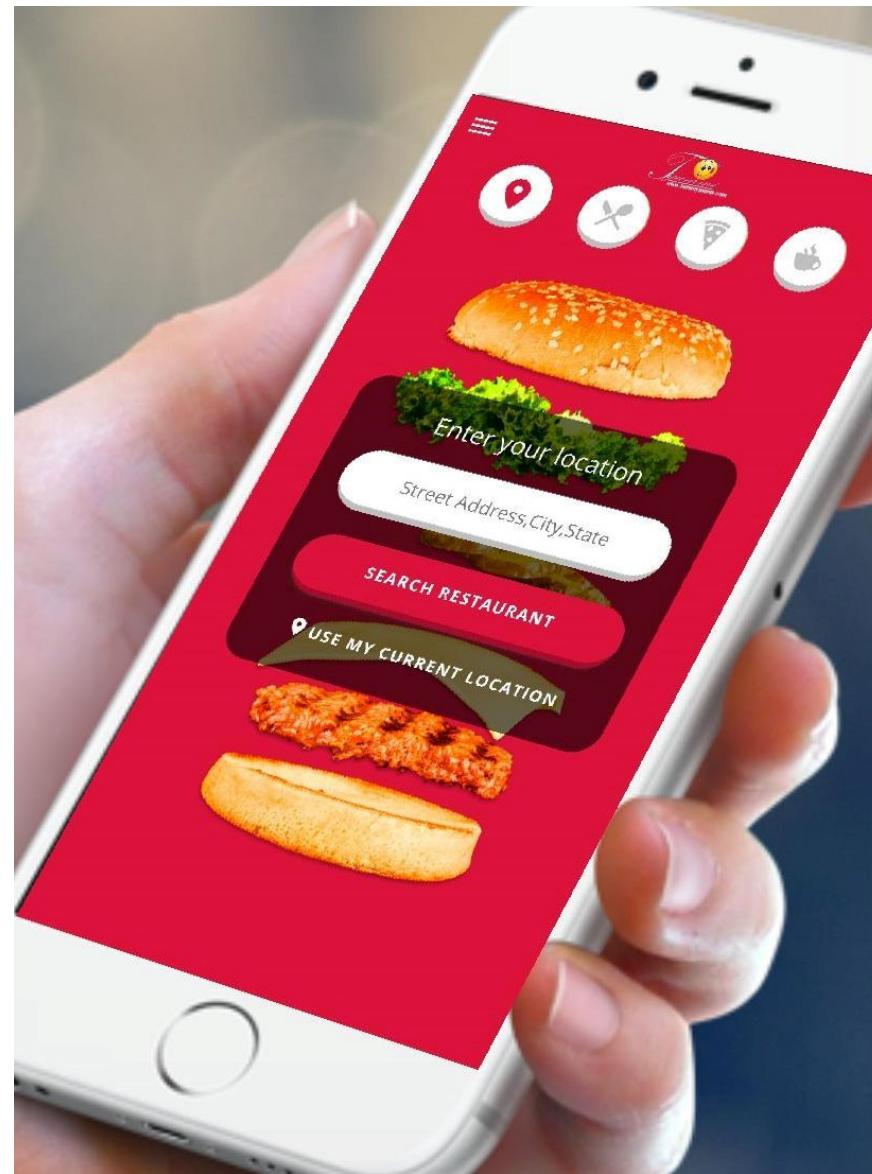
5. Use

- Embed actions in results when possible
- Allow queries, settings and results to be saved and annotated, sent to other applications
- Explore collecting explicit feedback (ratings, reviews, like, etc.)

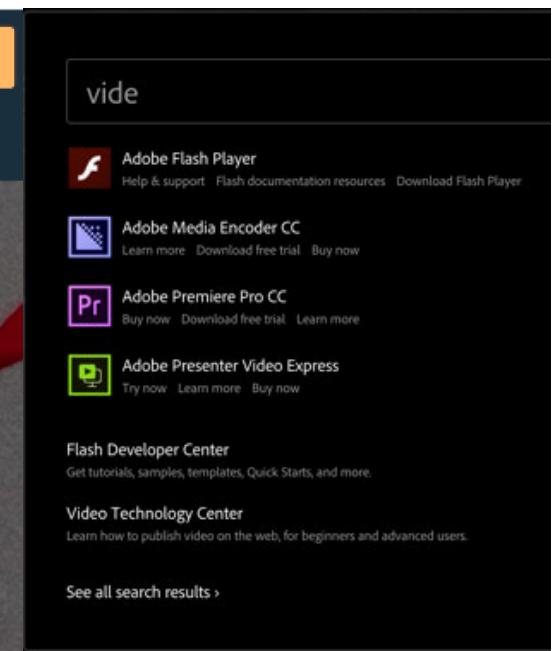
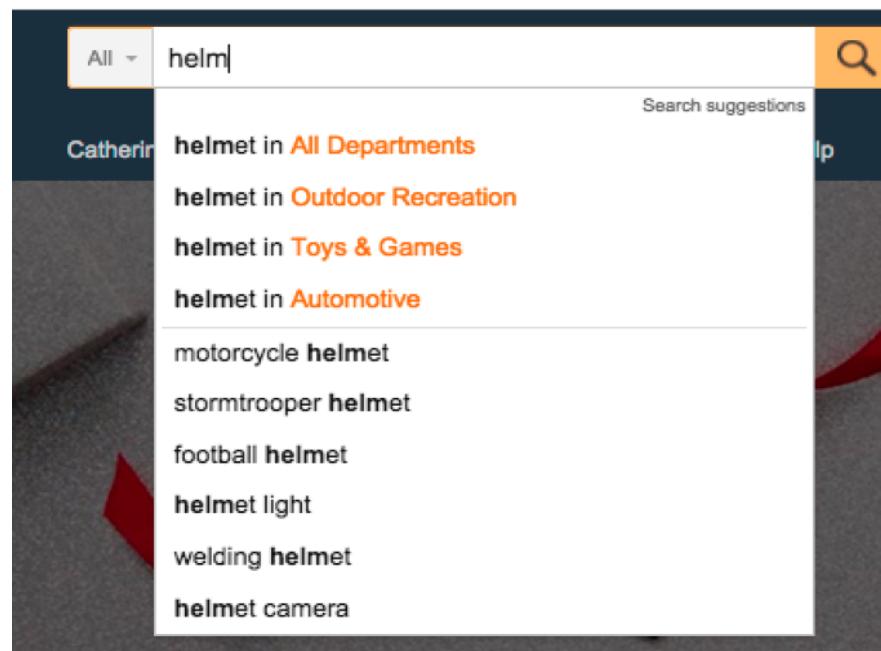
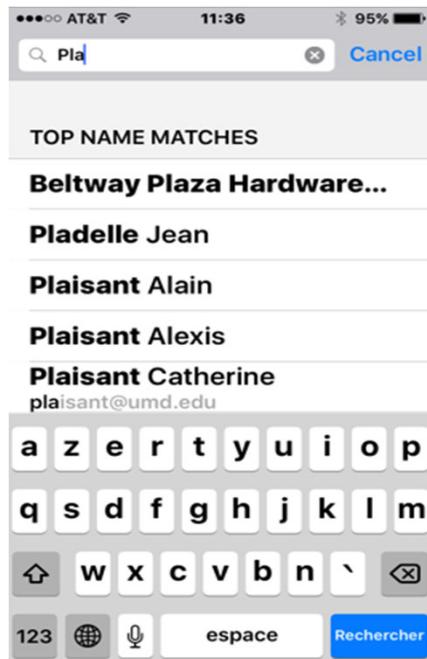
Stage 1: Search Formulation

- Help users identify or limit the source of information, i.e. where to search – *scoping (with constraints)*
 - Advantage: lead to more relevant search results
 - Disadvantage: users may forget about the constraint as the search progresses
- Allow users to specify constraints
 - Keywords and key phrases (e.g. New York City, Tai Po Kau)
 - Structured fields (e.g. year of publication, volume, language, etc.)
 - Textbox, menus, form fillins
 - Boolean operations, proximity restrictions, combining strategies
- What if user are unsure of search terms?
 - Allow variants, e.g. case sensitivity (ibm, IBM), stemming (teacher, teaching, teachers), partial matches (e.g. biology, sociobiology and astrobiology), synonyms (e.g. cancer, malignant), abbreviations or acronyms (e.g. CUHK, Mass.), phonetic variants (e.g. Johnson, Jonson)

Step 1. Search Formulation: Example



Step 1. Search Formulation: Example



a) Apple iPhone contacts,

b) Amazon.com

c) Adobe webpage

- Autocomplete suggestions speed up data entry, limits mis-spelling and guides successful queries
- a) In smartphone address book, typing a character will list all relevant names, and list updates continuously as users type
- b) Typing “helm-” in Amazon’s search box suggests to narrow the scope of search to some depts and also suggests “helmet light” or “welding helmet”
- c) Adobe website suggests products, e.g. typing the beginning of the word “video” suggests several video editing tools

Step 1. Search Formulation: Example

The screenshot shows the official website of Accenture. At the top, there is a navigation bar with the Accenture logo, a search icon, and links for Insights, Businesses, Industries, Careers, and About Accenture. A sign-in link and a flag icon are also present. Below the navigation, a large purple banner with a diagonal gradient effect contains the text "NEW APPLIED NOW." in bold black letters. Underneath the banner, a subtext reads: "Discover how you embrace innovation to drive new value for your organization. Explore new insights. See tangible outcomes." A "LEARN MORE" button is located below this text. To the right of the banner, there is a graphic of a 3D cube composed of many smaller purple triangles, with a bright light source at its center. In the bottom left corner of the main content area, there is a sidebar with the heading "Artificial Intelligence" and the sub-section "AI: Built to scale". Below this, a brief description states: "A landmark study of C-suite leaders around the world outlines the three critical success factors for scaling AI." At the very bottom right of the page, there is a "Cookie Settings" button.

accenture Insights Businesses Industries Careers About Accenture SIGN IN

NEW APPLIED NOW.

Discover how you embrace innovation to drive new value for your organization. Explore new insights. See tangible outcomes.

LEARN MORE

Artificial Intelligence

AI: Built to scale

A landmark study of C-suite leaders around the world outlines the three critical success factors for scaling AI.

Cookie Settings

Step 1. Search Formulation: Example

The screenshot shows the Kayak website interface. On the left, a vertical sidebar menu lists various travel categories: Sign in, Flights, Stays, Cars (selected), Packages, Restaurants, Explore, KAYAK@Home (NEW), Essentials (NEW), Guides, Road Trips (NEW), Deals, Trip Huddle, Flight Tracker, and Trips. The main content area features a large banner with the text "Search hundreds of car sites at once." Below this, there's a search bar with the placeholder "Enter an airport or city" and date fields set to "Tue 9/1" and "Thu 9/3" with "Noon" times. A red search button is on the right. A COVID-19 travel safety section includes a shield icon, the text "COVID-19 Everything you need to know to travel smart and stay safe.", links to "Travel restrictions", "Flexible airline policies", and "Health and safety policies", and a "View Travel Guide" button. At the bottom, three travel-related images are displayed: a road trip scene, an airplane wing above clouds, and two people walking outside an airport.

Step 2: Initiation of Action

- Explicit initiation
- Implicit initiation, e.g. dynamic queries where the users adjust query widgets to produce continuous updates.



Step 2. Initiation of Action: Example

The screenshot shows a software interface with a blue header bar containing three colored dots (red, yellow, green). Below the header, the title "Java Developer" is displayed in a rounded rectangle. To the left, there are two vertical lists of checkboxes. The top list is for locations: Berlin, Dusseldorf, and Amsterdam. The bottom list is for roles: Developer, Admin, and Designer. To the right, three rounded rectangles represent job listings:

- ABC Entreprise**
Lorem ipsum dolor sit amet, consectetur adipiscing elit. Java Developer sed do eiusmod tempor incididunt ut labore et Java Developer.
- CDE Bank**
Lorem ipsum dolor sit amet, consectetur adipiscing elit. Java Developer sed do eiusmod tempor incididunt ut labore et dolore.
- FGH Enterprise**
Fullstack Java & JavaScript Developer dolor sit amet, Berlin consectetur adipiscing elit. Sed do eiusmod.

At the bottom center, there are navigation icons: a left arrow, a square containing the number 1, and a right arrow.

Step 2. Initiation of Action: Example

The screenshot shows a software interface with a blue header bar. In the top right corner of the header, there is a message: "Press Esc to exit full screen". On the far left of the header, there are three colored dots (red, yellow, green). Below the header, a search bar contains the text "Java Developer".

On the left side of the main content area, there is a sidebar containing a list of cities with their respective counts:

- Berlin 22
- Dusseldorf 18
- Amsterdam 21

To the right of this sidebar, there is a larger rounded rectangular box containing the following information:

FGH Enterprise
Fullstack Java & JavaScript Developer dolor sit amet, Berlin consectetur adipiscing elit. Sed do eiusmod.

Below the sidebar, another sidebar contains a list of roles with their respective counts:

- Developer 11
- Admin 8
- Designer 5

At the bottom center of the page, there are navigation icons: a left arrow, a square containing the number 1, and a right arrow.

Step 2. Initiation of Action: Example

The screenshot shows a web interface for a job search platform. At the top, there are three colored dots (red, yellow, green) in a blue header bar. Below the header, the title "Java Developer" is displayed in a rounded rectangle. To the left, there are two vertical lists of job categories with counts: one for cities (Berlin 22, Dusseldorf 18, Amsterdam 21) and one for roles (Developer 11, Admin 8, Designer 5). To the right, three job listings are shown in rounded rectangles: ABC Entreprise (Berlin), CDE Bank (Developer), and FGH Enterprise (Fullstack Java & JavaScript Developer). Each listing includes a placeholder text block. At the bottom, navigation icons for back, forward, and search are visible.

Java Developer

<input type="checkbox"/> Berlin	22
<input type="checkbox"/> Dusseldorf	18
<input type="checkbox"/> Amsterdam	21

<input type="checkbox"/> Developer	11
<input type="checkbox"/> Admin	8
<input type="checkbox"/> Designer	5

ABC Entreprise
Lorem ipsum dolor sit amet, consectetur adipiscing elit. Java Developer sed do eiusmod tempor incididunt ut labore et Java Developer.

CDE Bank
Lorem ipsum dolor sit amet, consectetur adipiscing elit. Java Developer sed do eiusmod tempor incididunt ut labore et dolore.

FGH Enterprise
Fullstack Java & JavaScript Developer dolor sit amet, Berlin consectetur adipiscing elit. Sed do eiusmod.

< 1 >

Step 3: Review of Results

- Return list of search results
- Case of no results – recommendations?
- List ordering – relevance ranked, popularity?
- Provide preview of listed items (e.g. snippets)
- Highlighting search terms
- Use metadata to build filters
- Help users identify items of interest

3. Review of Results: Example

A screenshot of a Google search results page. The search bar at the top contains the query "HCIL twinlist". Below the search bar, there are tabs for "Web", "Maps", "News", "Shopping", "Images", "More", and "Search tools". A user profile icon is visible on the right. The search results summary below the tabs says "About 560 results (0.84 seconds)". The first result is a link to a University of Maryland page about "Twinlist and Medication Reconciliation Interfaces". The second result is about Ben Shneiderman, Catherine Plaisant, and HCIL Twinlist. The third result is about "ManyLists" from the University of Maryland. The fourth result is about "Novel user interface design for medication reconciliation". The fifth result is a YouTube video titled "TwinList - AMIA 2011 demo". Several links in the results are circled in blue.

Google HCIL twinlist

Web Maps News Shopping Images More Search tools

About 560 results (0.84 seconds)

Twinlist and Medication Reconciliation Interfaces
www.cs.umd.edu/hcil/sharp/twinlist/ ▾ University of Maryland, College Park ▾
Novel User Interface Design for ... June 2015: Story on our Twinlist prototype for
medication reconciliation appears in User Experience, the Magazine of the User
Experience Professionals Association. ... Those interfaces were built on the substratum
of a novel medication reconciliation ...
You've visited this page many times. Last visit: 10/19/15

Ben Shneiderman, Catherine Plaisant and HCIL Twinlist ...
<https://www.cs.umd.edu/.../ben-shn...> ▾ University of Maryland, College Park ▾
Nov 21, 2013 - Ben Shneiderman, Catherine Plaisant and HCIL Twinlist Team receive
Distinguished Paper Award at the American Medical Informatics ...

ManyLists
www.cs.umd.edu/hcil/manylists/ ▾ University of Maryland, College Park ▾
We applied the design concept from our recent comparison tools: Twinlist. It aims to
meet the following three goals: 1. Support the comparison of at least four ...
You've visited this page 4 times. Last visit: 9/8/15

Novel user interface design for medication reconciliation: an ...
www.ncbi.nlm.nih.gov/... ▾ National Center for Biotechnology Information ▾
by C Plaisant - 2015 - Related articles
Feb 8, 2015 - (2)Human-Computer Interaction Lab and Department of Computer ...
www.cs.umd.edu/hcil/sharp/twinlist) compared to a Control interface ...
You've visited this page 3 times. Last visit: 9/29/15

TwinList - AMIA 2011 demo - YouTube
<https://www.youtube.com/watch?v=YoSxIKI0pCo>
Oct 28, 2011 - Uploaded by Catherine Plaisant
TwinList is a user interface prototype developed at the University of ... on this ONC SharpC (NCCD) project see:
www.cs.umd.edu/hcil/sharp...

Search result list

- Summary at the top (the total number of results)
- Overall top n results (depend on bandwidth and display size)
- Each result includes preview information (or **snippet**)
- Search terms are highlighted, including “Human-Computer Interaction Lab” which is the expanded variant of the search term HCIL
- Name of the top-level organization (here “National Center for Biotechnology Information”) helps users judge the information



COVID

[All](#) [Images](#) [News](#) [Maps](#) [Videos](#) [More](#) [Settings](#) [Tools](#)

About 3,720,000,000 results (0.98 seconds)

Top stories >

**South China Morning Post**

Health experts warn Hong Kong not doing enough to keep out Covid-19 threats

10 hours ago

**Hong Kong Free Press**

Covid-19: Hong Kong bans flights from India, Pakistan, Philippines over mutated virus strain

17 hours ago

**The Standard (HK)**

Man receives three doses of Covid-19 vaccines

1 day ago

**COVID-19 vaccine**

See updates and local info

COVID-19

Coronavirus disease

Overview

Statistics

Health Info

Coping

News

Share

Top results

<https://www.coronavirus.gov.hk>**COVID-19 Thematic Website - Together, We Fight the Virus ...**

COVID-19 Thematic Website- Together, We Fight the Virus - Home.

Inbound Travel

COVID-19 Thematic Website -
Together, We Fight the Virus ...

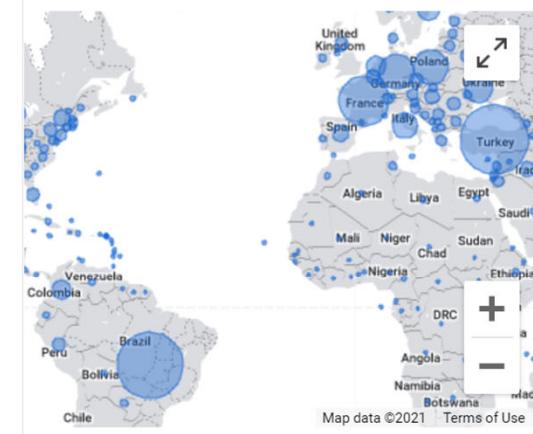
[More results from coronavirus.gov.hk »](#)

COVID-19

COVID-19 Thematic Website -
Together, We Fight the Virus ...

Map of cases (last 14 days)

From Wikipedia and others



Cases overview

From Wikipedia · Last updated: 1 day ago

WorldwidePress **I** to jump to the search box

on Novel Coronavirus Infection in Hong Kong



Coronavirus disease

Overview

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Share

Together, We Fight the Virus ...

[More results from coronavirus.gov.hk »](#)

Together, We Fight the Virus ...

<https://chp-dashboard.geodata.gov.hk> > covid-19 ▾

Latest Situation of Novel Coronavirus Infection in Hong Kong

Coronavirus Disease (COVID-19) in HK. 中文. Confirmed/Probable. 11,654. △ 18. Discharged. 11,258. △ 5. Hospitalized. 138. △ 12. Critical. 4. Death. 209. △ 0 ...

Health information

Symptoms

Prevention

Treatments

COVID-19 affects different people in different ways. Most infected people will develop mild to moderate illness and recover without hospitalization.

Most common symptoms:

- fever
- dry cough
- tiredness

Less common symptoms:

- aches and pains
- sore throat
- diarrhoea
- conjunctivitis
- headache
- loss of taste or smell
- a rash on skin, or discolouration of fingers or toes

[Learn more on who.int](#)

For informational purposes only. Consult your local medical authority for advice.

[MORE HEALTH INFORMATION](#)

Cases overview

From Wikipedia · Last updated: 1 day ago

[Worldwide](#)

Total cases	Recovered	Deaths
141M	80.4M	3.01M

[More locations and statistics](#)

'+' shows new cases reported yesterday · [About this data](#)

Coronavirus disease (COVID-19) is an infectious disease caused by a newly discovered coronavirus.

Most people who fall sick with COVID-19 will experience mild to moderate symptoms and recover without special treatment.

HOW IT SPREADS

The virus that causes COVID-19 is mainly transmitted through droplets generated when an infected person coughs, sneezes, or exhales. These droplets are too heavy to hang in the air, and quickly fall on floors or surfaces.

You can be infected by breathing in the virus if you are within close proximity of someone who has COVID-19, or by touching a contaminated surface and then your eyes, nose or mouth.

[Learn more on who.int](#)



COVID

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COVID-19
Coronavirus
disease

Overview

Statistics

Health Info

Coping

News

Share

[Learn more on who.int](#)

For informational purposes only. Consult your local medical authority for advice.

[MORE HEALTH INFORMATION](#)

Videos

[COVID-19 vaccine for all above 18 starting from May 1](#)

YouTube · IndiaTV
2 hours ago

[Home Minister Amit Shah On Covid Crisis, Vaccine Politics ...](#)

YouTube · India Today
1 hour ago

[Rising local, imported Covid-19 cases; expert expresses worry ...](#)

YouTube · The Straits Times
7 hours ago

[View all](#)

Vaccines

[BioNTech, Pfizer vaccine](#)[CoronaVac vaccine](#)

These drugs are being used as vaccines for COVID-19. Limited to specific populations. Source: [coronavirus.gov.hk](#)
For informational purposes only. Consult your local medical authority for advice.

[More about the COVID-19 vaccine](#)

You can be infected by breathing in the virus if you are within close proximity of someone who has COVID-19, or by touching a contaminated surface and then your eyes, nose or mouth.

[Learn more on who.int](#)

For informational purposes only. Consult your local medical authority for advice.



COVID

X |



Coronavirus disease

[Overview](#)[Statistics](#)[Health Info](#)[Coping](#)[News](#) [Share](#)

⚠ Local and health authorities on Twitter



Hong Kong SAR ...
@newsgovhk

The Centre for Health Protection says it is investigating 12 additional #COVID19 cases, one of which is locally transmitted and epidemiologically linked with a local case
www.news.gov.hk/eng/202...

...



Hong Kong SAR ...
@newsgovhk

Sewage holds virus clues
dlvr.it/RxtsCq



Hong Kong SAR ...
@newsgovhk



Secretary for the Civil Service Patrick Nip announces the #COVID19VaccinationProgramme will be expanded to cover people aged 16 to 29 and the #CommunityVaccinationCentres are expected to operate until the end of September #COVID19
www.news.gov.hk/eng/202...

>

Twitter · 6 hours ago

Twitter · 2 days ago

Twitter · 4 days ago

<https://www.scmp.com/coronavirus>

Coronavirus Pandemic latest news and updates

Global Covid-19 cases hit weekly record, topping 5.2 million. The worst outbreaks are accelerating in many countries that are ill-equipped to deal with them.

<https://www.news.gov.hk/eng/categories/covid19>

COVID-19 - news.gov.hk



COVID

X



COVID-19 - news.gov.hk



Coronavirus
disease

Overview

Statistics

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Coping

News



About 1,017,600 doses of COVID-19 vaccines have been administered to the public, with about 671,700 people receiving their first dose and about 345,900 ...

https://www.chp.gov.hk/pdf/building_list_eng.pdf

List of buildings with confirmed / probable cases of COVID-19

4 days ago — List of Buildings With Confirmed / Probable Cases of COVID-19. List of Residential Buildings in Which Confirmed / Probable Cases Have ...

<https://www.dh.gov.hk>

Department of Health | Home

Recent Press Release · CHP investigates 12 additional confirmed cases of COVID-19 · DH invokes flight-specific suspension mechanism to prohibit landing of ...

Yesterday - CHP investigates 12 additional confirmed cases of COVID-19

2 days ago - DH invokes flight-specific suspension mechanism to prohibit landing of flights operated by two airlines

5 days ago - CHP investigates six additional confirmed cases of COVID-19

5 days ago - Update on latest MERS situation in Saudi Arabia

<https://hongkongfp.com/Archive>

Covid-19: Hong Kong bans flights from India, Pakistan ...

18 hours ago — Covid-19: Hong Kong bans flights from India, Pakistan, Philippines over mutated virus strain. A 31-year-old woman contracted the N501Y ...

<https://www.aic.cuhk.edu.hk/covid19>

COVID-19 Information - Department of A&IC, CUHK

COVID-19 Infomation. Our Aim. This webpage openly shares an airway management infographic incorporating infection control procedures to reduce the ...

<http://www.med.hku.hk/covid-19>



COVID

X |

<https://www.aic.cuhk.edu.hk/covid19>

Coronavirus
disease

Overview

Statistics

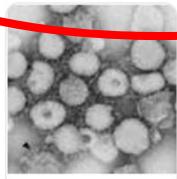
Health Info

Coping

News



People also search for



SARS
outbreak



2012 Middle
East...
Since 2012



Epidemiology
of HIV/AIDS
Since 1981



Spanish flu
1918 – 1920



West African
Ebola virus...
2013 – 2016



Swine flu
pandemic
2009 – 2010

Related searches

covid test hong kong

covid-19 timeline hong kong

covid-19 dashboard hk

chp hk

hong kong virus cases today

latest situation of cases of
covid-19

covid vaccine gov hk

covid-2019

Step 3. Review of Results: Example (cont)

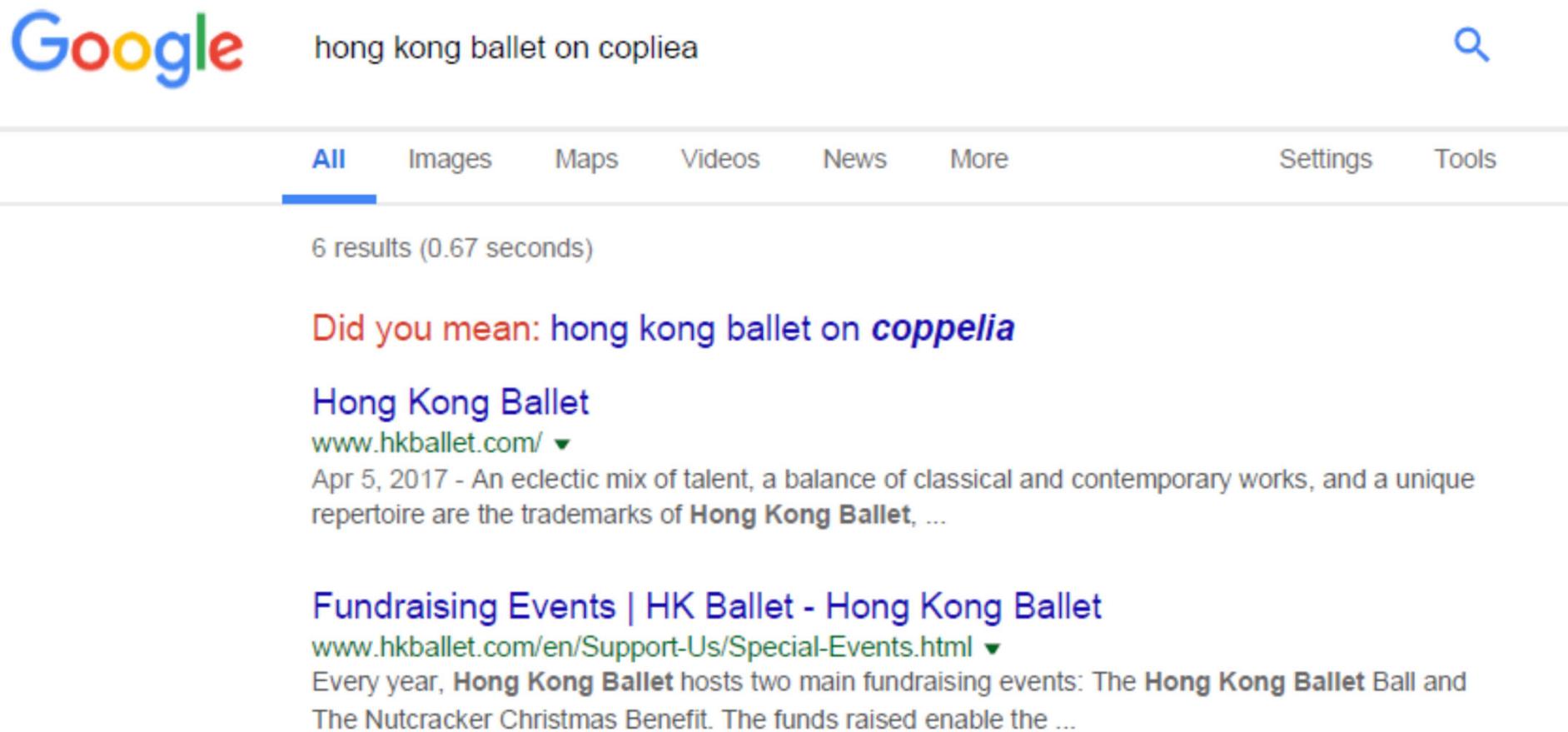
Annapolis MD Real Estate
489 results. 1 unmapped

Featured Newest More

- 856 Barbud Dr, Crownsville**
● **HOUSE FOR SALE**
\$325,589
4 bds · 2 ba · 1,976 sqft
Special Offer: \$6,500
- 234 Main St, Annapolis, MD**
● **HOUSE FOR SALE**
\$275,000
3 bds · 2 ba · 1,364 sqft
Open: Sun. 3-5pm
- 2161 Greenway Crossing, Annapo...**
● **FORECLOSURE**
\$299,900
5 bds · 1 ba · 1,456 sqft
Less than 1 day on Zillow
- 9458 Doug's Court APT 302, Annapo...**
● **CONDO FOR SALE**
\$249,000
3 bds · 2 ba · 1,328 sqft
1 day on Zillow
- 5421 Mossy Parkway, Annapolis, MD**

- Search on Zillow for real estate in Annapolis
- Coordinated windows -- when the cursor hovers over a house in result list, the location of the house is indicated on the map
- A click on the house would bring all the details displayed in an overlapping window³³

Step 4. Refinement: Example



Google hong kong ballet on coplia

All Images Maps Videos News More Settings Tools

6 results (0.67 seconds)

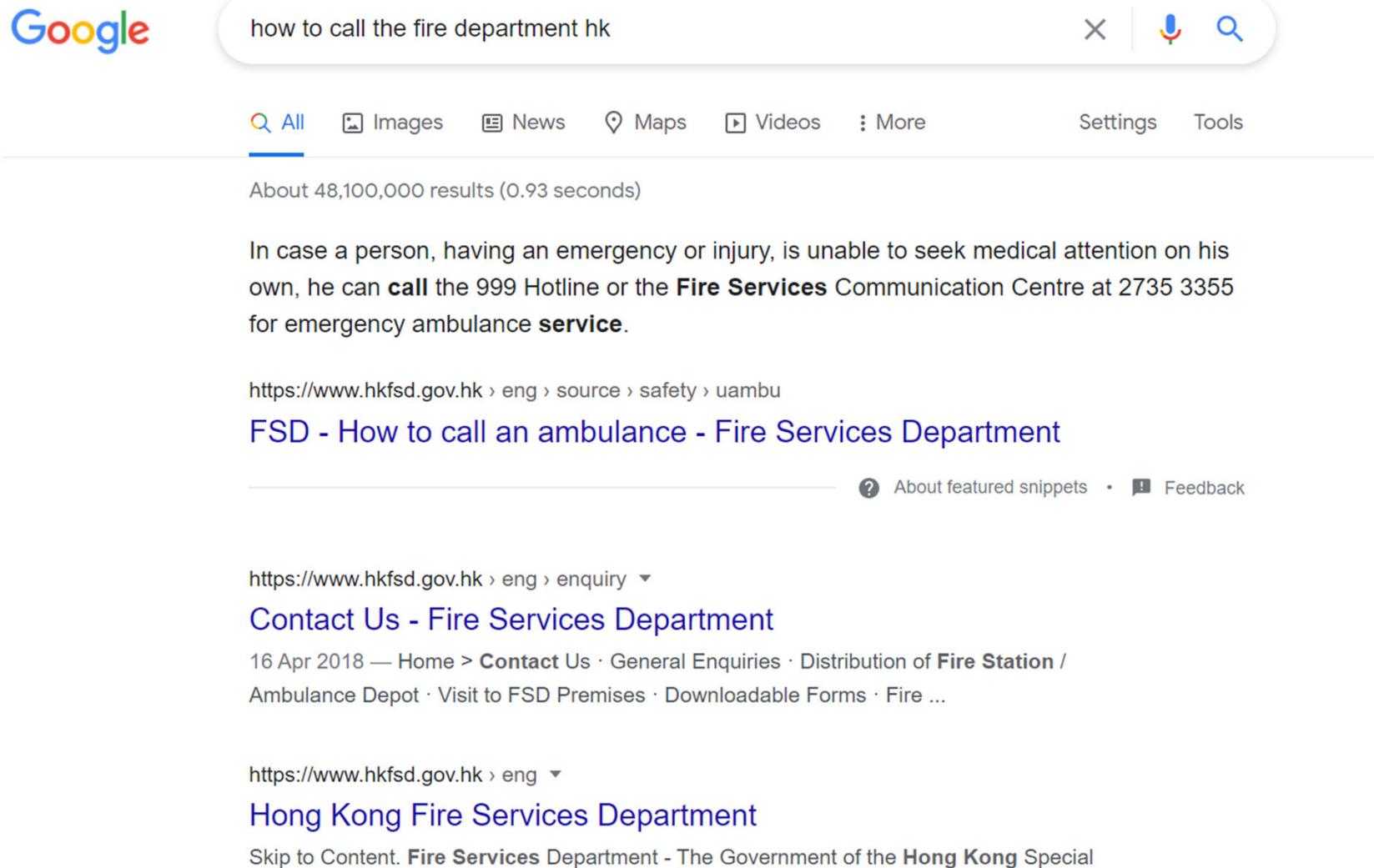
Did you mean: hong kong ballet on *coppelia*

Hong Kong Ballet
www.hkballet.com/ ▾
Apr 5, 2017 - An eclectic mix of talent, a balance of classical and contemporary works, and a unique repertoire are the trademarks of Hong Kong Ballet, ...

Fundraising Events | HK Ballet - Hong Kong Ballet
www.hkballet.com/en/Support-Us/Special-Events.html ▾
Every year, Hong Kong Ballet hosts two main fundraising events: The Hong Kong Ballet Ball and The Nutcracker Christmas Benefit. The funds raised enable the ...

Step 5: Use of Results: Example

- Merge of results, facilitate actions



Google search results for "how to call the fire department hk". The search bar shows the query. Below it, the navigation bar includes All (selected), Images, News, Maps, Videos, More, Settings, and Tools. It displays approximately 48,100,000 results found in 0.93 seconds. A featured snippet provides information on calling emergency services. Three links from the Hong Kong Fire Services Department are listed below.

how to call the fire department hk

All Images News Maps Videos More Settings Tools

About 48,100,000 results (0.93 seconds)

In case a person, having an emergency or injury, is unable to seek medical attention on his own, he can **call** the 999 Hotline or the **Fire Services** Communication Centre at 2735 3355 for emergency ambulance **service**.

<https://www.hkfsd.gov.hk/eng/source/safety/uambu>
FSD - How to call an ambulance - Fire Services Department

<https://www.hkfsd.gov.hk/eng/enquiry/>
Contact Us - Fire Services Department
16 Apr 2018 — Home > **Contact Us** · General Enquiries · Distribution of **Fire Station** / Ambulance Depot · Visit to FSD Premises · Downloadable Forms · Fire ...

<https://www.hkfsd.gov.hk/eng>
Hong Kong Fire Services Department
Skip to Content. **Fire Services** Department - The Government of the Hong Kong Special

Step 5. Use of the Results: Example

hyatt shatin - Google Search

Page 1 of 2

Google hyatt shatin

All Maps Images News Videos More Settings Tools SafeSearch on

About 334,000 results (0.46 seconds)

hyatt.com - Hong Kong Hyatt Hotels
Ad www.hyatt.com/HongKong ▾
Enjoy low rates on Hyatt.com. Free WiFi. No Hidden Charges.
24-7 customer service · Free WiFi · No Booking Fee

Hyatt Regency Sha Tin
A 5-star luxury urban resort in HK.
Convenient location, next to MTR.

Regency Tsim Sha Tsui
Great views over Victoria Harbour.
Near Harbour City Shopping Mall.

香港沙田凱悅酒店 - ctrip.com.hk
Ad www.ctrip.com.hk/香港酒店 ▾
香港酒店折扣低至2折 Ctrip幫您訂酒店，即時確認，快速無憂
即時確認 · 用戶評價 · 免費取消 · 至抵價
Ctrip客製中文網站 · 會員限定優惠 · 120萬家酒店任您挑 · 香港機場附近的酒店 · 香港熱門酒店

5 Star Family Resort Hotel | Hyatt Regency Hong Kong, Sha Tin
<https://hongkongshatin.regency.hyatt.com/> ▾
Enjoy 5 star resort stay experiences in a hotel's rooms & suites at our Shatin hotel, conveniently located next to the University MTR Station.

Dining
A stylish all-day dining restaurant with show kitchens featuring ...

Room
Standard - Long Stay - Regency Club - ...

Hotel info
Find great deals and enjoy 5 star resort hotel at Hyatt Regency ...
[More results from hyatt.com »](#)

Offers
Enjoy unforgettable 'Family time' during your vacation in Sha Tin ...

Weddings
Weddings. To create a remarkable and memorable wedding for ...

Sha Tin 18
Make an online dining reservation at Sha Tin 18 - an award ...

 See photos See map

Hyatt Regency Hong Kong, Sha Tin

Website Di

4.3 265 Google reviews
5-star hotel

Address: 18 Chak Cheung St, Ma Liu Shui
Phone: 3723 1234

Check availability

Sun, 30 Apr Mon, 1 May

B Booking.com HK\$198
Read Real Guest Reviews Get Instant Confirmation

H Hyatt.com HK\$198
Official website

H Hotels.com HK\$198

A Agoda.com HK\$198

View more rates

Hyatt Regency Hong Kong, Sha Tin - UPDATED 2017 Hotel Reviews

Faceted Search

- Integrates browsing (i.e. category browsing) with searching (i.e. attribute searching)
- Uses hierarchical faceted metadata presented as simultaneous menus and dynamically updated counts as preview of results
- Can navigate along multiple conceptual dimensions add or relax constraints on the search
- Organizes results in recognizable structure, gives control and flexibility of which to navigate and when to search
- Avoids empty sets

Faceted Search: Example

The screenshot shows a web-based faceted search interface. At the top, there is a blue header bar with three colored dots (red, yellow, green) on the left. Below the header, the title "Java Developer" is displayed in a rounded rectangular box. To the left of the main content area, there are two vertical lists of filter options. The first list, under the heading "Berlin", contains three checkboxes for "Berlin", "Dusseldorf", and "Amsterdam". The second list, under the heading "Developer", contains three checkboxes for "Developer", "Admin", and "Designer". To the right of these filters are three search results, each enclosed in a rounded rectangular box. The first result is "ABC Entreprise" with placeholder text about Java Developers. The second result is "CDE Bank" with placeholder text about Java Developers. The third result is "FGH Enterprise" with placeholder text about Fullstack Java & JavaScript Developers.

Java Developer

Berlin
 Dusseldorf
 Amsterdam

Developer
 Admin
 Designer

ABC Entreprise
Lorem ipsum dolor sit amet, consectetur adipiscing elit. Java Developer sed do eiusmod tempor incididunt ut labore et Java Developer.

CDE Bank
Lorem ipsum dolor sit amet, consectetur adipiscing elit. Java Developer sed do eiusmod tempor incididunt ut labore et dolore.

FGH Enterprise
Fullstack Java & JaavaScript Developer dolor sit amet, Berlin consectetur adipiscing elit. Sed do eiusmod.

< 1 >

Faceted Search: Example

The interface features a blue header bar with three colored dots (red, yellow, green) on the left. Below the header, the search term "Java Developer" is displayed in a rounded rectangle. The main content area contains three facets on the left and their corresponding results on the right.

Location Facet:

City	Count
Berlin	22
Dusseldorf	18
Amsterdam	21

Role Facet:

Role	Count
Developer	11
Admin	8
Designer	5

Results:

- ABC Entreprise**
Lorem ipsum dolor sit amet, consectetur adipiscing elit. Java Developer sed do eiusmod tempor incididunt ut labore et Java Developer.
- CDE Bank**
Lorem ipsum dolor sit amet, consectetur adipiscing elit. Java Developer sed do eiusmod tempor incididunt ut labore et dolore.
- FGH Enterprise**
Fullstack Java & JavaScript Developer dolor sit amet, Berlin consectetur adipiscing elit. Sed do eiusmod.

Navigation icons at the bottom include a left arrow, a page number (1), and a right arrow.

Faceted Search: Example

The screenshot shows a web-based faceted search interface. At the top, there's a blue header bar with three colored dots (red, yellow, green) on the left and a message 'Press Esc to exit full screen' on the right. Below the header, the search term 'Java Developer' is displayed in a search bar. The main content area is divided into two sections: one for location filters and one for job type filters.

Location Filters:

- Berlin 22
- Dusseldorf 18
- Amsterdam 21

Job Type Filters:

- Developer 11
- Admin 8
- Designer 5

Result Preview:

FGH Enterprise
Fullstack Java & JavaScript Developer dolor sit amet, Berlin consectetur adipiscing elit. Sed do eiusmod.

Navigation at the bottom: < 1 >

Faceted Search – Example

Categories

Backpacking Tents (9)

Sleeping Capacity

[Remove](#)

1-person (5)
 2-person (7)
 3-person (1)
 4-person (1)

Brand

REI (9)

Seasons

3 - 4-season (1)
 3-season (8)

Best Use

[Remove](#)

Backpacking (9)
 Camping (3)

Features

Ultralight (2)

Price

\$100.00 to \$199.99 (3)
 \$200.00 to \$499.99 (7)

Weight (Lbs)

Results for “REI tents” (9 matches)

3-person 4-person 2-person Backpacking [Remove all filters](#)

Sort by Relevance

View: 30 | 60 | 90



ONLY AT REI

★★★★★ (194)
REI Passage 2 Tent
\$159.00
[Compare](#)



ONLY AT REI

★★★★★ (26)
REI Half Dome 2 Plus Tent
\$219.00
[Compare](#)



ONLY AT REI

★★★★★ (34)
REI Quarter Dome 2 Tent
\$299.00
[Compare](#)



ONLY AT REI



ONLY AT REI



ONLY AT REI

- Searching for “REI tents” and browsing different tents by attribute values
- Filters clearly indicated and can easily add / relax constraints

Command Language vs Natural Language Search

```
SELECT DOCUMENT#
  FROM JOURNAL-DB
 WHERE (DATE >= 2015 AND DATE <= 2021)
   AND (LANGUAGE = ENGLISH OR FRENCH)
   AND (PUBLISHER = ASIST OR HFES OR ACM)
```

- Thus far – users adapt to search
 - Learn keywords, search terms, facets
- Natural language (natural UI) – system adapts to user
 - Users determine the queries

Command Language vs Natural Language Search

- “*I’d go for one that is reasonably priced, with a good sized hard drive and ram*”
- Out-of-vocabulary words
- User-generated content?
- Facets based on search lists or user needs?
- Natural language matching backend information repository

Command Language vs Natural Language Search

Google What other books are by the author of "Harry Potter" X Microphone Search

All Images News Shopping Maps More Settings Tools

J. K. Rowling > Books

Fantastic Beasts and Where to Find Them (2001)
The Ickabog (2020)
Harry Potter and the Philosopher's Stone (1997)
The Casual Vacancy (2012)
Harry Potter and the Deathly Hallows (2007)
The Tales of Beedle the Bard (2008)
The Cuckoo's Calling (2013)
Quidditch Through the Ages (2001)
Harry Potter and the Order of the Phoenix (2003)

https://en.wikipedia.org/wiki/J._K._Rowling

J. K. Rowling - Wikipedia

... K. Rowling, is a British author, philanthropist, film producer, television producer, and screenwriter. She is best known for writing the Harry Potter fantasy series, ...
[Harry Potter prequel](#) · [Harry Potter influences](#) and · [Legal disputes over the Harry...](#)

People also ask

What books has JK Rowling write other than Harry Potter?

J. K. Rowling Share

Multimedia Search

- Image search
- Video search
- Audio search
- Geographic information search
- Multilingual search
- Examples: using AI technologies
 - <https://www.youtube.com/watch?v=e-WB4Ifg30M>
 - <https://www.youtube.com/watch?v=eltraK8wF6g>
 - <https://bddax.org:11443/>

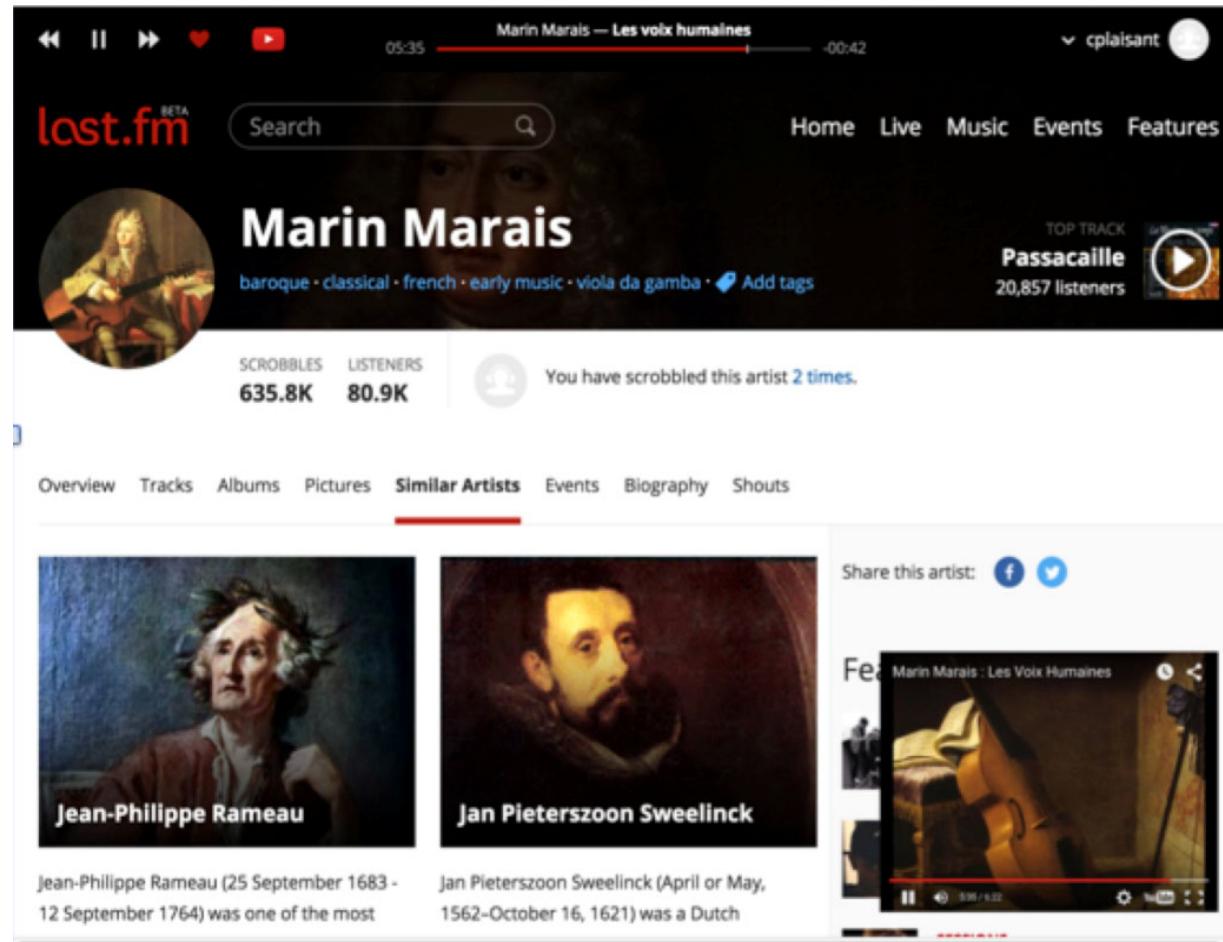
Multimedia Document Search Example



Social Aspects of Search

- Social search -- search acts making use of social interactions
 - Social bookmarking and ranking, e.g. Reddit can collect recommendations from thousands of people, most shared, most viewed etc.
 - Personalized search built on user profiles, e.g. past site visits to build personal profile
 - Collaborative filtering and recommender systems, e.g Netflix
 - Music recommendation, e.g. Pandora

Personalized Search



- [Last.fm](#) is an example of online radio using playlists created automatically based on the user's listening habits

At root, the retail giant's recommendation system is based on a number of simple elements: what a user has bought in the past, which items they have in their virtual shopping cart, items they've rated and liked, and what other customers have viewed and purchased. Amazon ( **AMZN -0.59%**) calls this homegrown math "item-to-item collaborative filtering," and it's used this algorithm to heavily customize the browsing experience for returning customers. A gadget enthusiast may find Amazon web pages heavy on device suggestions, while a new mother could see those same pages offering up baby products.

Amazon's Recommendation Secret [Fortune 2012]

Judging by Amazon's success, the recommendation system works. The company reported a 29% sales increase to \$12.83 billion during its second fiscal quarter, up from \$9.9 billion during the same time last year. A lot of that growth arguably has to do with the way Amazon has integrated recommendations into nearly every part of the purchasing process from product discovery to checkout. Go to Amazon.com and



Steve Jobs [Kindle Edition]
Walter Isaacson (Author)
Like (799)
Print List Price: \$36.00
Kindle Price: \$16.99 includes free wireless delivery via Amazon Whispernet
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Sold by: Simon and Schuster Digital Sales Inc
This price was set by the publisher

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Format	Amazon Price	New from	Used from
Kindle Edition	\$16.99		
Hardcover	\$17.99	\$17.99	
Audio, CD, Abridged, Audiobook	\$19.79	\$19.79	

Customers Who Bought This Item Also Bought

- One Click: Jeff Bezos and the Rise of Amazon... by Richard L. Brandt
- The Presentation Secrets of Steve Jobs: How to Be... by Carmine Gallo
- Einstein by Walter Isaacson
- iWoz: Computer Geek to Cult Icon by Steve Wozniak
- The End of Normal by Stephanie Madoff Mack



Frequently Bought Together

Price For All Three: \$30.25

This item: Roots, Shoots, Buckets & Boots: Gardening Together with Children + Toad Cottages and Shooting Stars: Grandma's Bag of Tricks by Sharon Lovejoy + Trowel & Error: Over 700 Tips, Remedies and Shortcuts for the Gardener by

Customers Who Bought This Item Also Bought

- Toad Cottages and Shooting Stars: Grandma's Bag of Tricks by Sharon Lovejoy
- Gardening with Children (Brooklyn Botanic Garden...) by Monika Hanneman
- Sunflower Houses : Inspiration from the Garden... by Sharon Lovejoy

Concluding Remarks

- User interface, user experience
- All-round considerations
- New technologies
- Iterative improvement

Thank you!