

<http://poloclub.gatech.edu/cse6242>

CSE6242/CX4242: **Data** & **Visual** Analytics

Data Collection

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Partly based on materials by

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How to Collect Data?

Method

Effort

Download

Low

API

(Application program interface)

Medium

Scrape/Crawl

High

How to Collect Data?

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Effort

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(Application program interface)

Medium



Scrape/Crawl

High



Data you can just download

NYC Taxi data: Trip (11GB), Fare (7.7GB)

StackOverflow (xml)

Wikipedia (data dump)

Atlanta crime data (csv)

Soccer statistics

Data.gov

...

Data you can just download

If you have leads, let us know on Piazza!

More datasets on course website:

CSE6242A,Q Schedule Homework Project Warnings Policies **Datasets** Resources

There are **multiple CSE6242 sections**. This is the course homepage for **campus CSE6242A,Q**

CSE6242A,Q, Spring 2020

Data and **Visual** Analytics

Georgia Tech, College of Computing

4:30 - 5:45pm, **Clough 152**, Tue & Thu

Collect Data via APIs

Google Data API (e.g., Google Maps Directions API)

<https://developers.google.com/gdata/docs/directory>

Twitter (small subset)

<https://dev.twitter.com/streaming/overview>












Last.fm (Pandora has unofficial API)

Flickr

data.nasa.gov

data.gov

Facebook (your friends only)

API	GData Status	See Also
 Google Analytics Data Export API	Replaced by Google Analytics Core Reporting API (starting at version 2.4).	Migration Guide: Migrate APIs to v2.4 & v3.0
 Google Apps Provisioning API	Shut down. Replaced by the Admin SDK Directory API .	Current Google Apps
 Google Base Data API	Not available since June 1, 2011. Replaced by the Content API for Shopping .	New Shopping APIs of the Base API
 Blogger Data API	Replaced by the latest Blogger API .	
 Google Book Search API	Shut down. Replaced by Google Books API Family .	Google books API (on Stack Overflow)
 Google Calendar API v2	Shut down. Replaced by latest Google Calendar API .	
 Google Code Search Data API	Shut down in Jan 15, 2012. No replacement API.	A fall sweep (Google)
 Google Contacts API	GData version is still live. Replaced by Google People API for read-only access.	Google Contacts API & Google People API
 Google Documents List Data API	Shut down. Replaced by Google Drive API .	
 Google Finance Portfolio Data API	Shut down. No replacement API.	Spring cleaning for Google APIs (Google blog post)
 Google Health Data API	The product was discontinued as of January 1, 2013. No replacement API.	An update on Google APIs (Google PowerMeter)

Data that needs scraping

Amazon (reviews, product info)

ESPN

eBay

Google Play

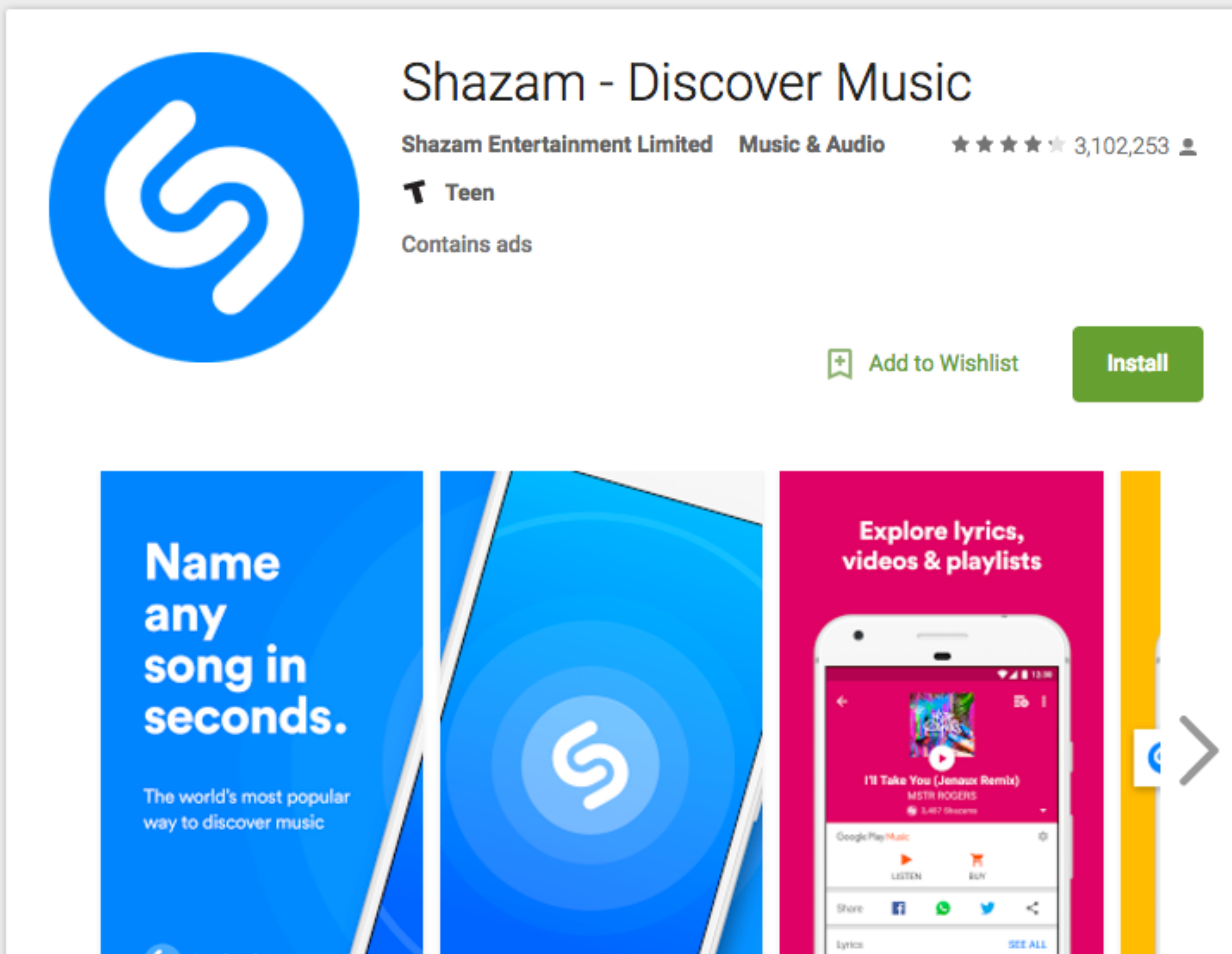
Google Scholar

...

How to Scrape?

Google Play example

Goal: collect the network of similar apps



Shazam - Discover Music
Shazam Entertainment Limited Music & Audio ★★★★★ 3,102,253
Teen
Contains ads

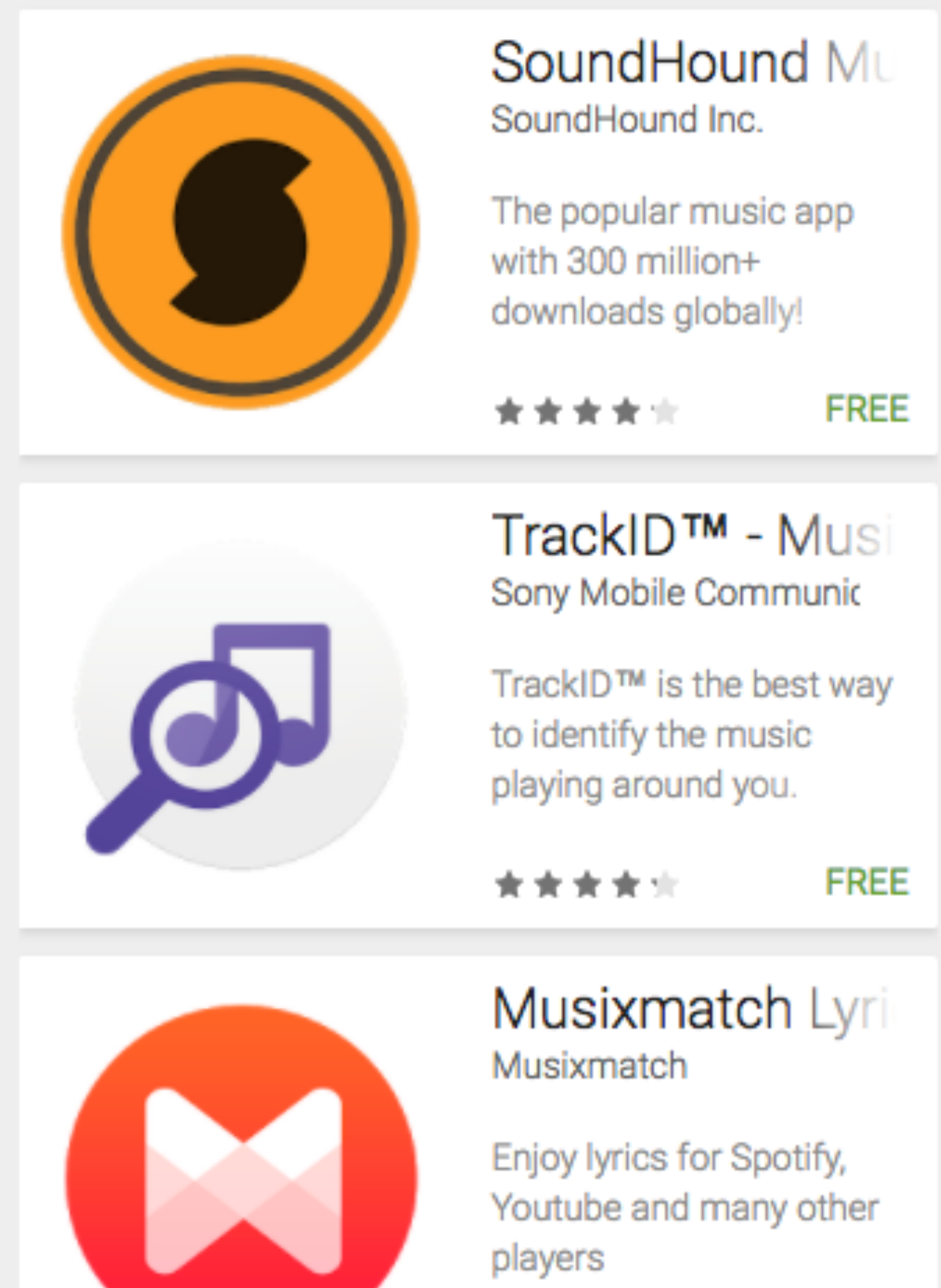
Add to Wishlist **Install**

Name any song in seconds.
The world's most popular way to discover music

Explore lyrics, videos & playlists

Similar

[See more](#)



SoundHound Music
SoundHound Inc.
The popular music app with 300 million+ downloads globally!
★★★★★ FREE

TrackID™ - Music
Sony Mobile Communications Inc.
TrackID™ is the best way to identify the music playing around you.
★★★★★ FREE

Musixmatch Lyrics
Musixmatch
Enjoy lyrics for Spotify, Youtube and many other players



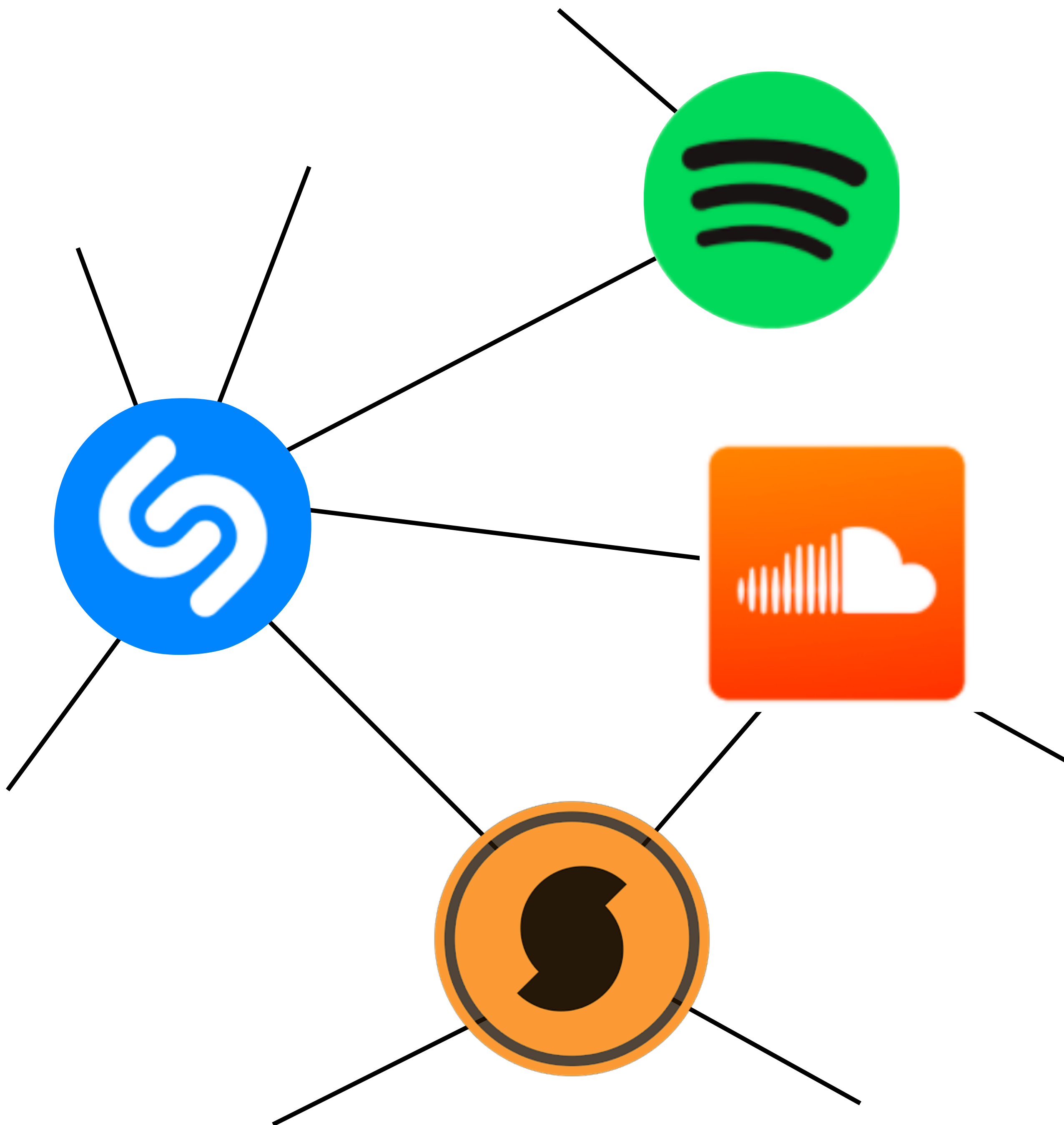
Name any song in seconds

Shazam will identify any music playing around you.

GET IT NOW

How to Scrape?

Goal: Write a **program/algorithm** to scrape Google Play to **collect a million-node network** of similar apps



Each **node** is an app

An **edge** connects two similar apps

Hint: start with some apps (e.g., Shazam), and go from there.

How to Scrape?

Google Play example

Goal: collect the network of similar apps

<https://play.google.com/store/apps/details?id=com.shazam.android>



<https://play.google.com/store/apps/details?id=com.spotify.music>

Popular Scraping Libraries

Selenium. Supports multiple languages. <http://www.seleniumhq.org>

Beautiful Soup. Python. <https://www.crummy.com/software/BeautifulSoup>

Scrapy. Python. <https://scrapy.org>

JSoup. Java. <https://jsoup.org>

Important considerations:

Different web content shows up depending on web browsers used
Scraper may need different “web driver” (e.g., in Selenium), or browser “user agent”

Data may show up after certain user interaction (e.g., click a button)

- Scraper may need to simulate the actions.
- Selenium supports more actions than beautiful soup:
<http://www.discoversdk.com/blog/web-scraping-with-selenium>