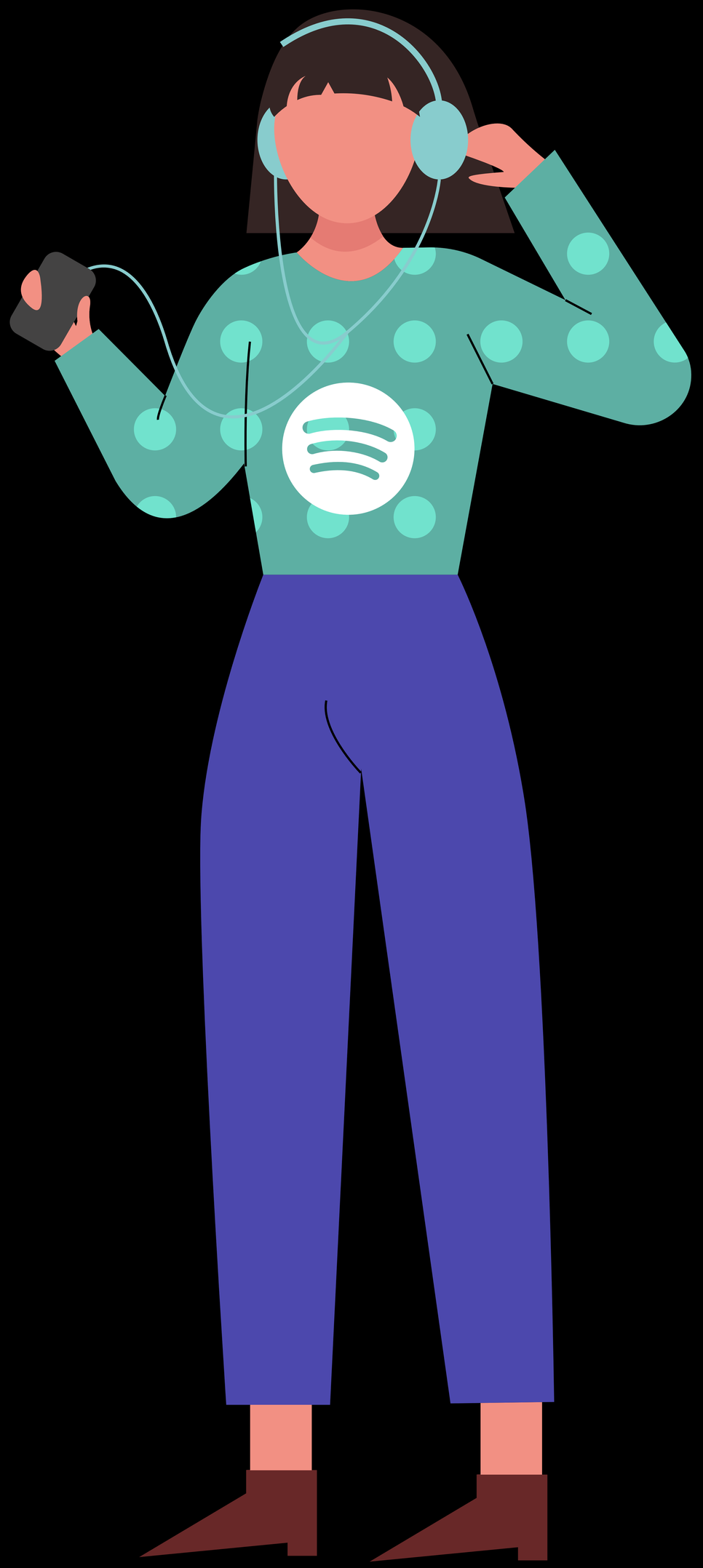
01

THIS IS HOW SPOTIFY USES MACHINE LEARNING



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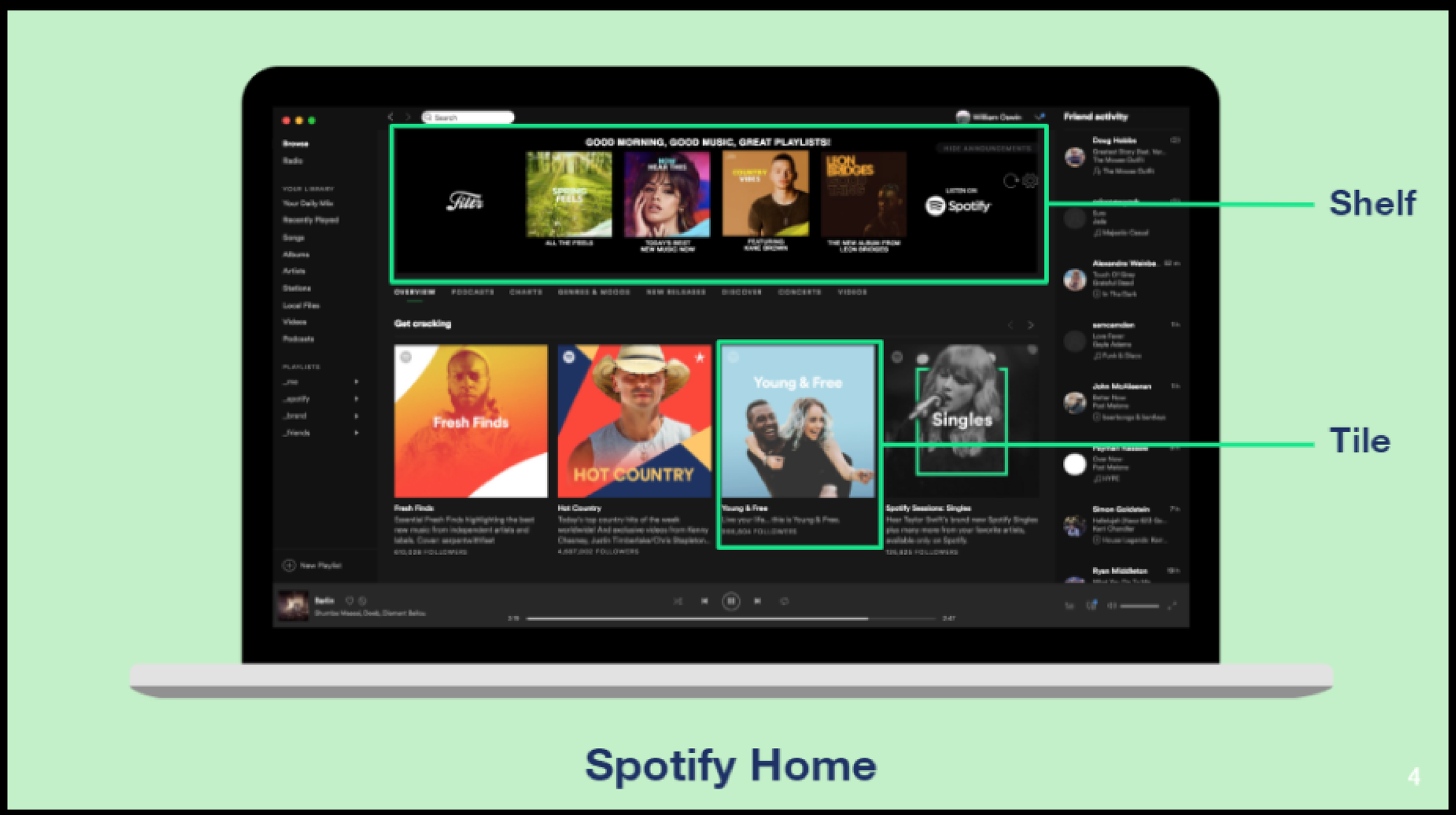
Discover Weekly

One example is ‘Discover Weekly’, which reached 40 million people in the first year it was introduced.

Each Monday individual users are presented with a customised list of fifty songs.

The recommended playlist comprises tracks that users might have not heard before, but the recommendations are generated based on the user’s search/listening history pattern and potential music preference.



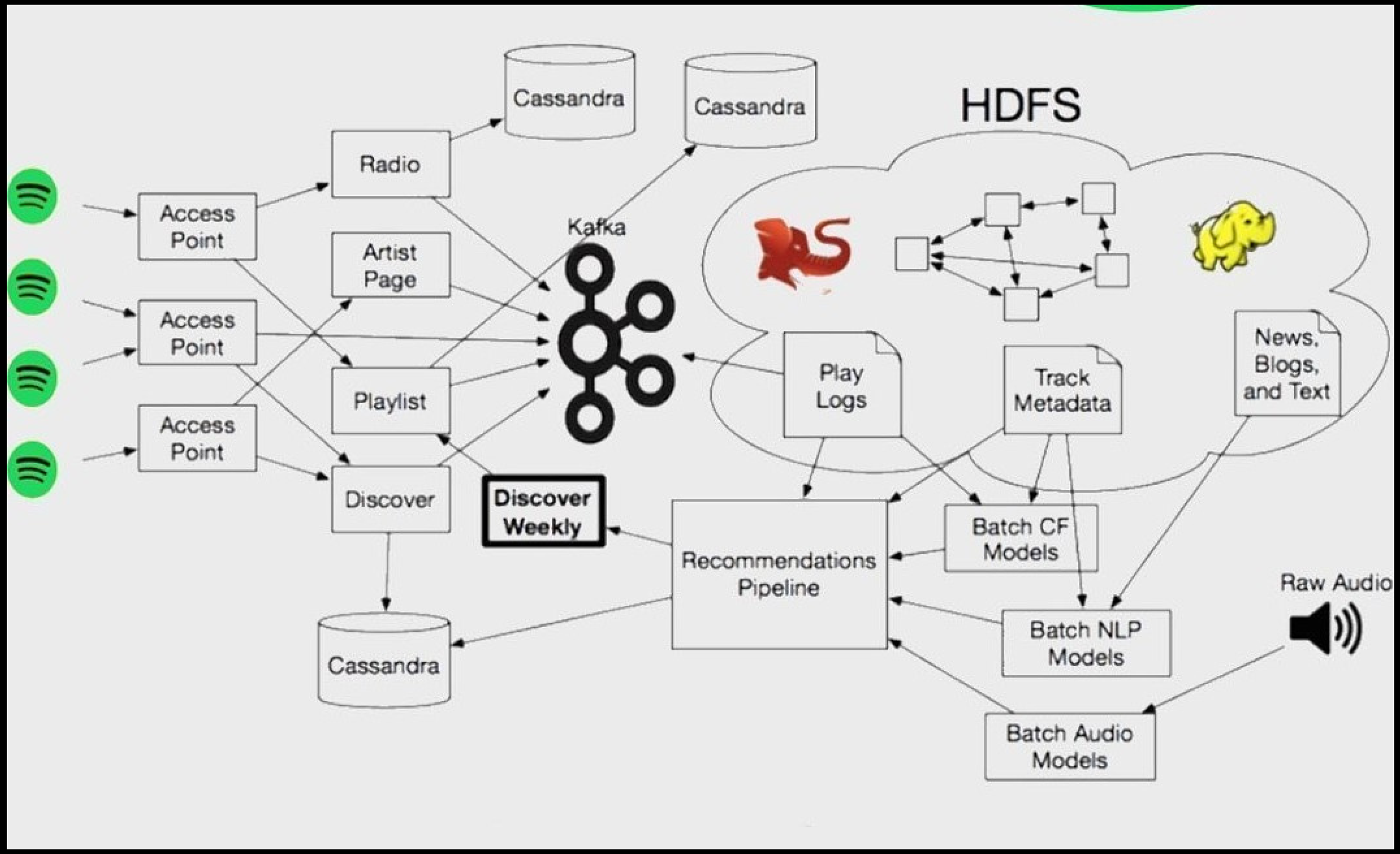
Spotify Home

How does Spotify's Recommendation engine work?

Spotify uses a combination of three models to generate the "Discover Weekly" model that is;

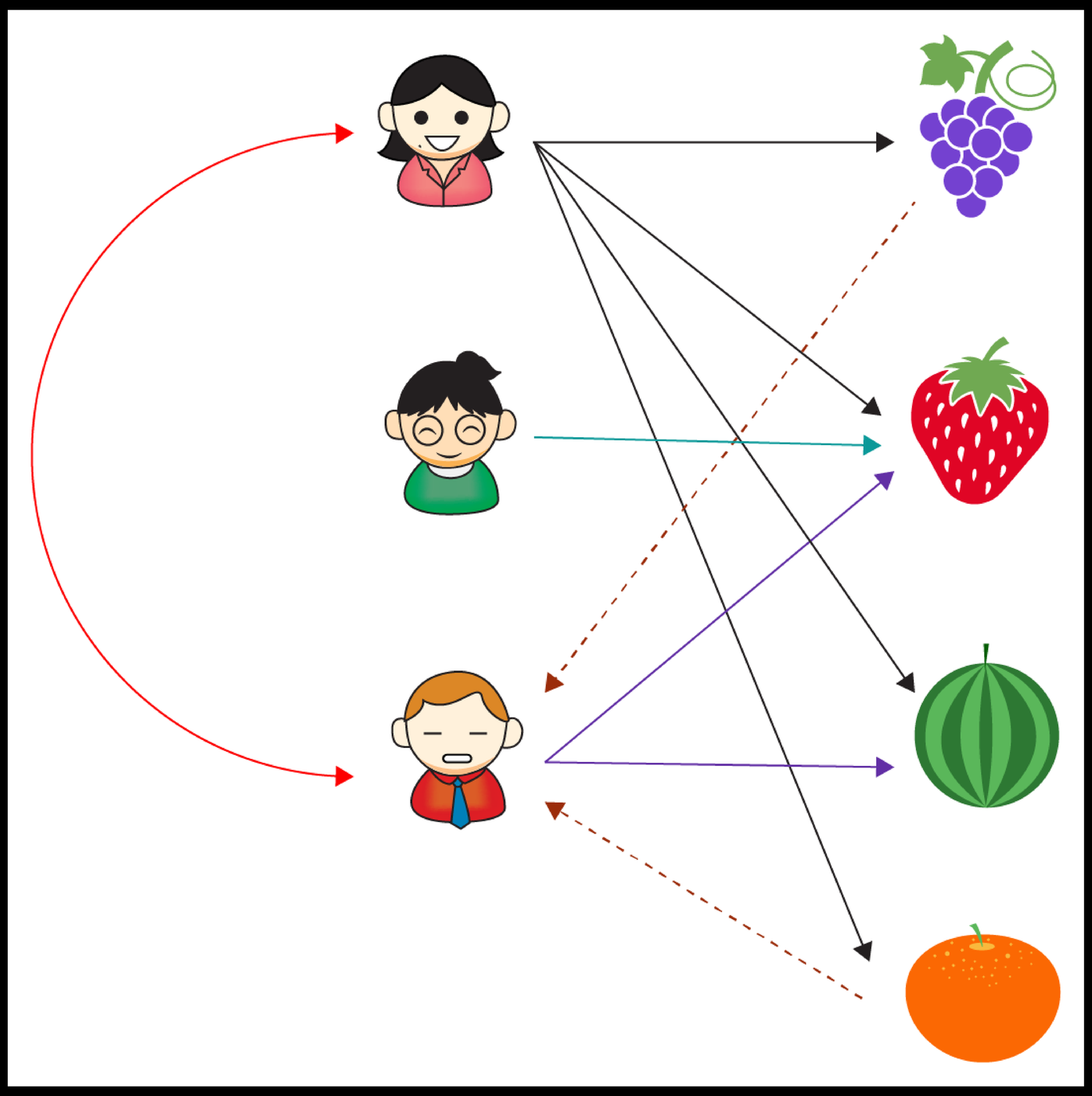
- Collaborative Filtering
- Natural Language Processing
- Audio models

Discover Weekly Data Flow



What is Recommendation Engine?

Recommendation engines are data filtering tools that work in the interest of a particular user. For this purpose, they use algorithms and searched data and then mention it as a recommendation in the sidebar of a particular platform.



Collaborative Filtering:

Spotify analyzes what type of music you currently like by evaluating your actions towards particular songs.

It compares your music preferences to either users, finds those with similar tastes, and recommends songs they like to you.

Natural Language Processing:

Spotify scans thousands of online discussions about an album or a song on the internet. The algorithm analyzes what language people use to describe them and matches it with similar songs

Now Spotify has the related keywords that are put up under the shed of “cultural vectors” and “top terms”, and then the songs and their artists associated with these terms.

n2 Term	Score	np Term	Score	adj Term	Score
dancing queen	0.0707	dancing queen	0.0875	perky	0.8157
mamma mia	0.0622	mamma mia	0.0553	nonviolent	0.7178
disco era	0.0346	benny	0.0399	swedish	0.2991
winner takes	0.0307	chess	0.0390	international	0.2010
chance on	0.0297	its chorus	0.0389	inner	0.1776
swedish pop	0.0296	vous	0.0382	consistent	0.1508
my my	0.0290	the invitations	0.0377	bitter	0.0871
s enduring	0.0287	voulez	0.0377	classified	0.0735
and gimme	0.0280	something's	0.0374	junior	0.0664
enduring appeal	0.0280	priscilla	0.0369	produced	0.0616

Cultural Vectors and Top Terms with respective assigned weights
Source:https://notes.variogr.am/2012/12/11/how-music-recommendation-works-and-doesnt-work/

Specific weight is also calculated for the terms that are imperative than others (it shows the number of times individuals will be associated with their artists or songs). It also allows Spotify to recognize trending music terms.

Audio Model:

Audio models are used to analyse data from raw audio tracks and categorize songs accordingly.

This helps the platform evaluate all songs to create recommendations, regardless of coverage online.

Spotify uses convolutional neural networks on audio data (Song's BPM, musical key, loudness and other parameters) instead of on pixels.

Turn on post notifications

What do you think about the Spotify ML algorithm?

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