

Find
New
Music

Capstone

Music Recommendation
Engine

Manutej Mulaveesala

67 %

of Adults have streamed music
in the past month

1 hour, 17 minutes

Average daily time streaming

19 billion

2020 Global Music Revenue

Why Music? ▶

Music connects us

Music tells stories

Music inspires us

Music is Fuel

Recommender Systems

What

Recommender systems are **machine learning** applications that use the collective intelligence of multiple user histories as data in order to make new recommendations of something

Collaborative Filtering recommender systems use ratings or shared quantitative metric to find commonalities between users based on these ratings/metrics

Ex.

Netflix movie recommendations

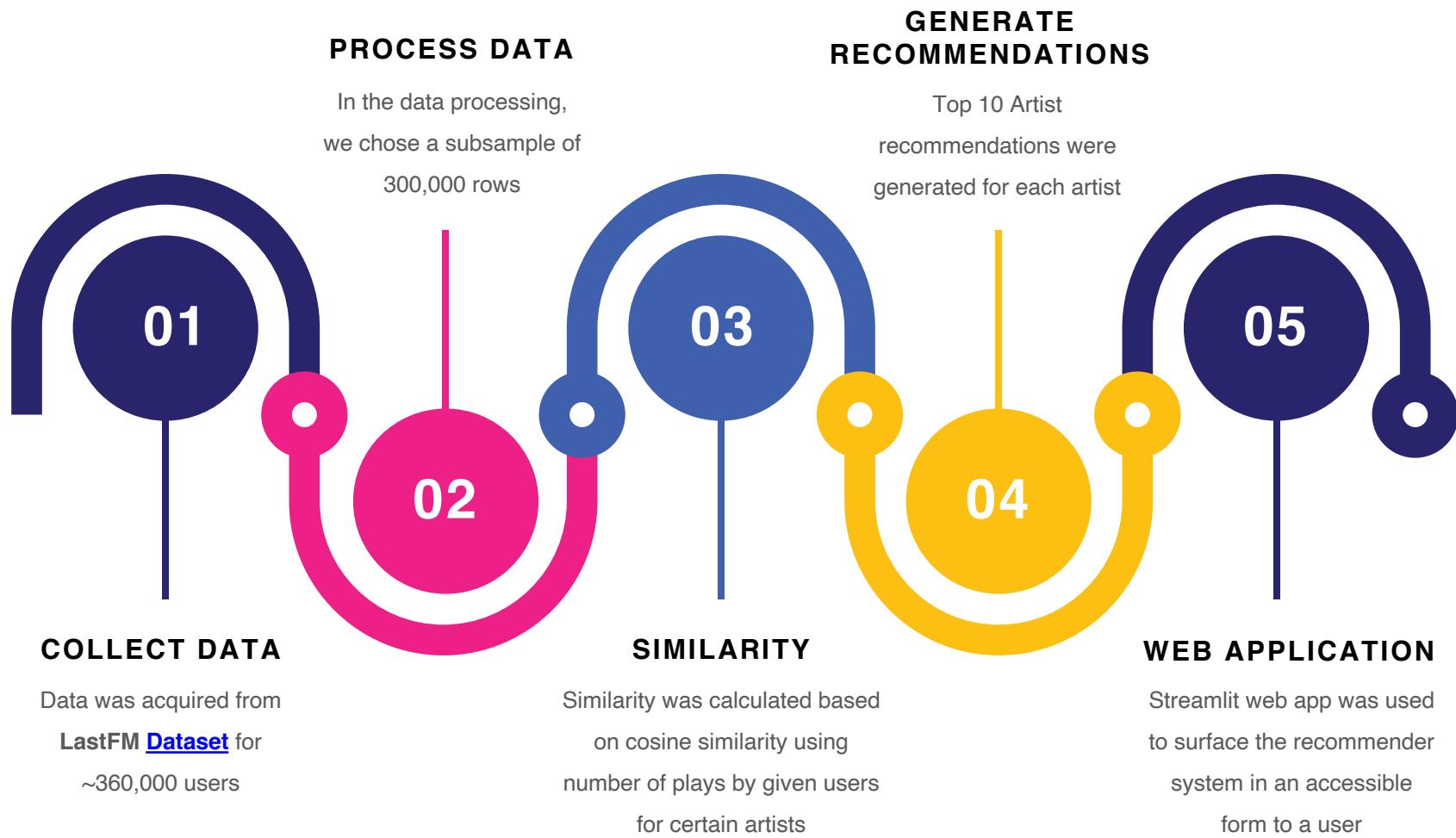
Amazon shopping cart recommendations

Spotify music recommendations

How



The Development Process



Data By The Numbers

Initial Data **~17.3 M Rows**
 ~300 K Rows Sample Data

Initial Data **~160K Artists**
 ~4,000 Artists Sample Data

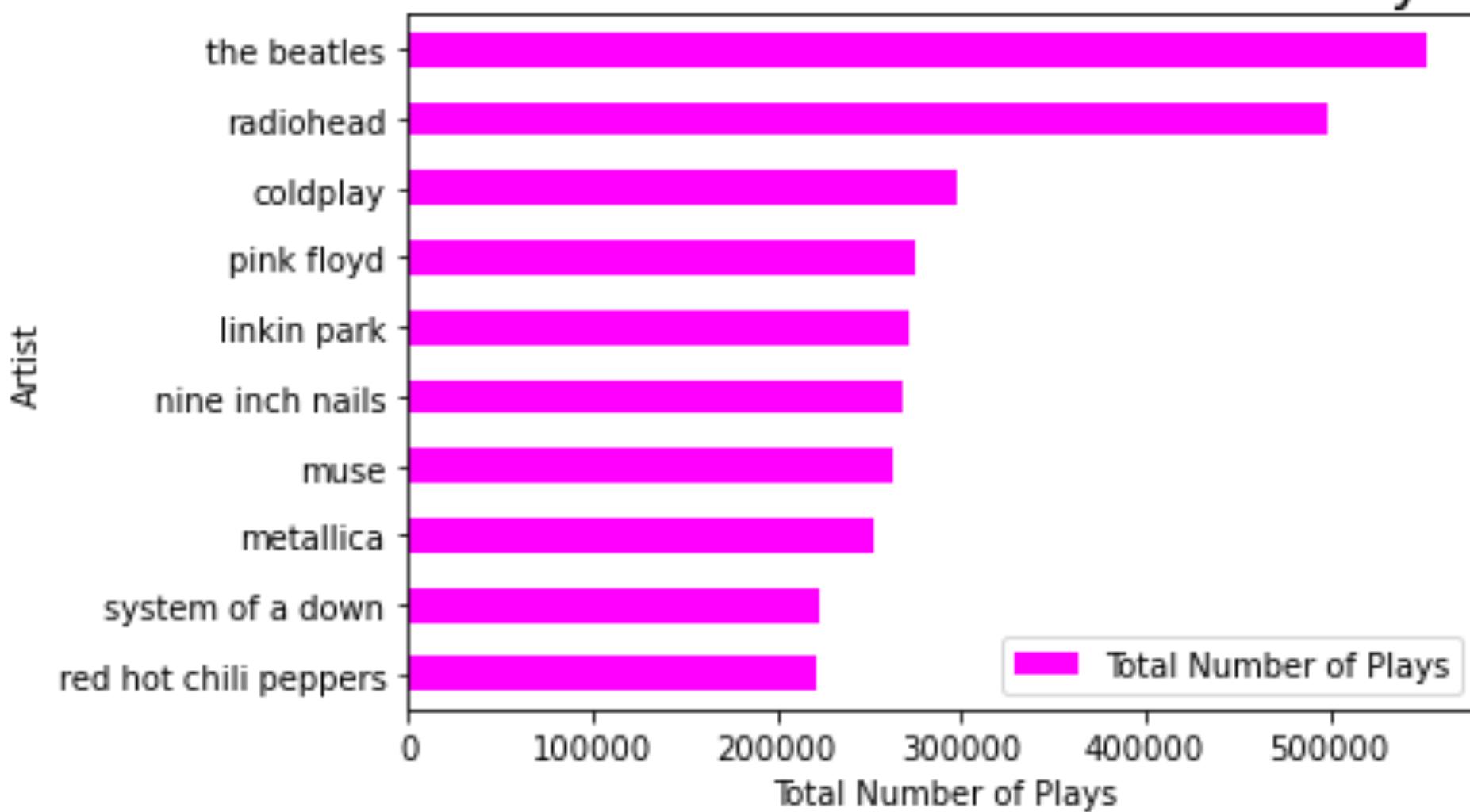
Initial Data **~3.7 B Plays**
 ~65 M Plays Sample Data

Initial Data **360K Users**
 ~6,200 Users Sample Data

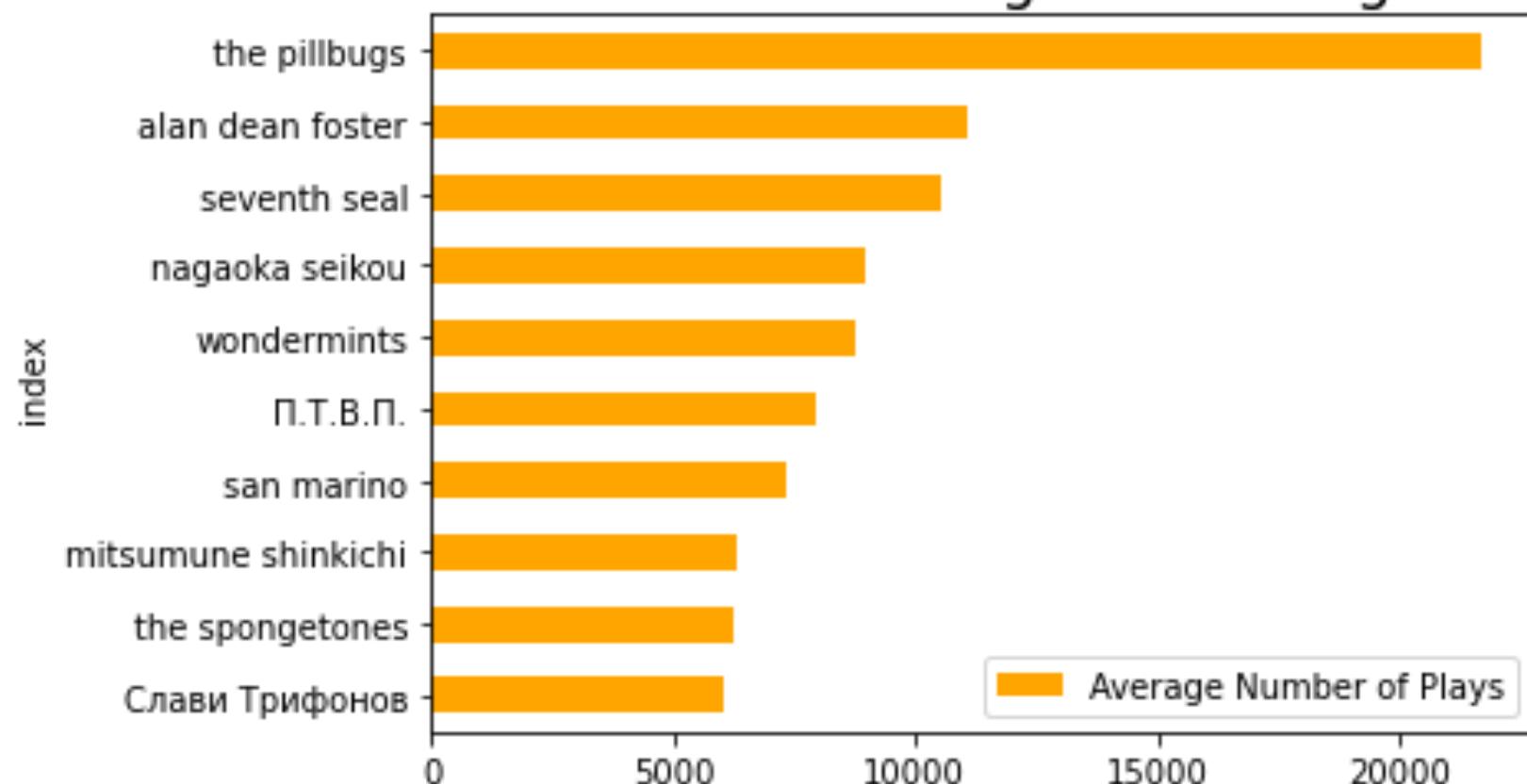
EDA



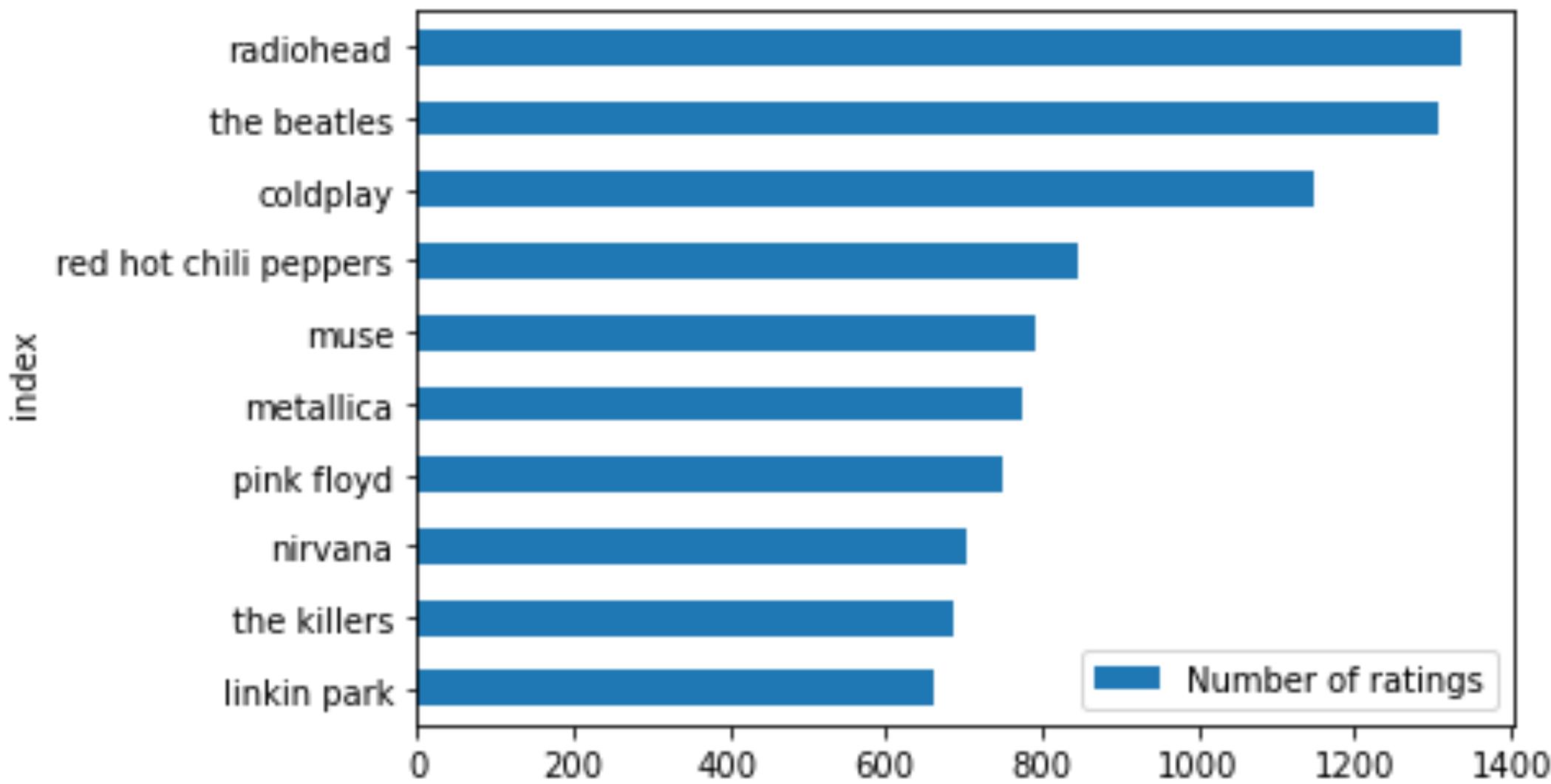
Horizontal Bar Chart of Artists with Most Plays in Sample Data



Horizontal Bar Chart of Artists with Highest Average Plays in Sample Data



Horizontal Bar Chart of Most Rated Artists in Sample Data



Sample Output

10 closest artists

Top 10 Artists	Similarity Score
paul mccartney	0.846231
the fireman	0.791990
the mellomen	0.791459
thenewno2	0.791459
stackridge	0.791459
wondermints	0.791459
the foreign films	0.791459
pugwash	0.791459
chad & jeremy	0.791459
the pillbugs	0.791459

Search term:
the beatles

Average Plays:
423.732

Total Plays:
553394.0

Number of ratings:
1306



Sample Output

10 closest artists

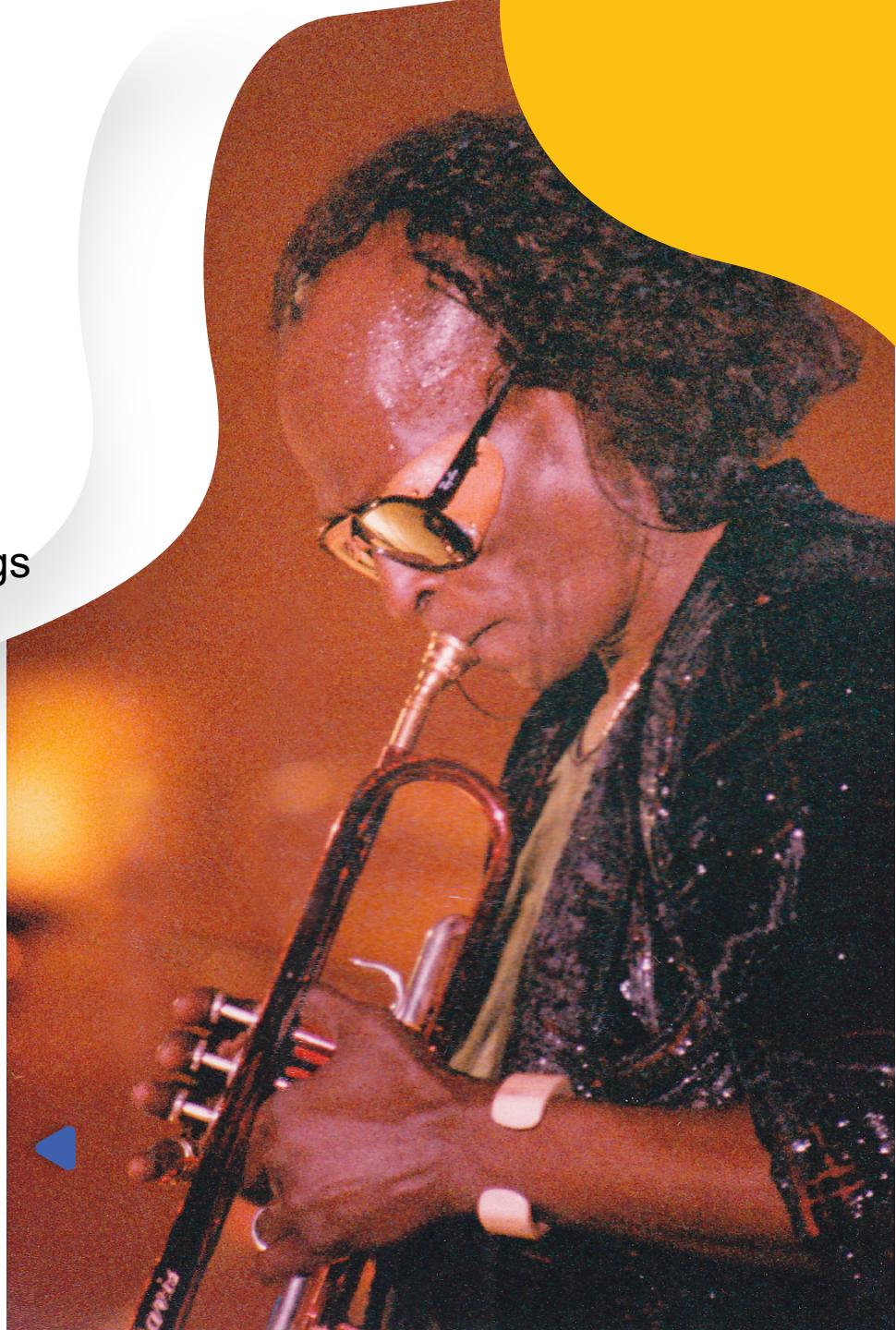
Top 10 Artists	Similarity Score
John coltrane	0.526510
art blakey & the jazz messengers	0.456534
christian lindberg	0.425103
chick corea & origin	0.425103
charlie parker quintet	0.425103
thad jones and mel lewis	0.425103
the clifford brown-max roach quintet	0.425103
nicholas payton	0.425103
kodály quartet	0.425103
duke ellington & his famous orchestra	0.425103

Search term:
miles davis

▼ Average Plays:
189.085

Total Plays:
44057.0

Number of ratings
233



Streamlit Demo of Music Recommender System

Live Demo

Music Recommender System

Finding new artists based on the artists you love

Choose an artist to explore other related Artist?

Artist Name

Enter the artist name here

Analyze!



THANK
YOU

X