Why Am I Seeing This Ad?

Exploring the Secrets
Of Data Analytics

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TRUE LEARNING?

- UNDERSTANDABLE
- MEMORABLE
- ENJOYABLE

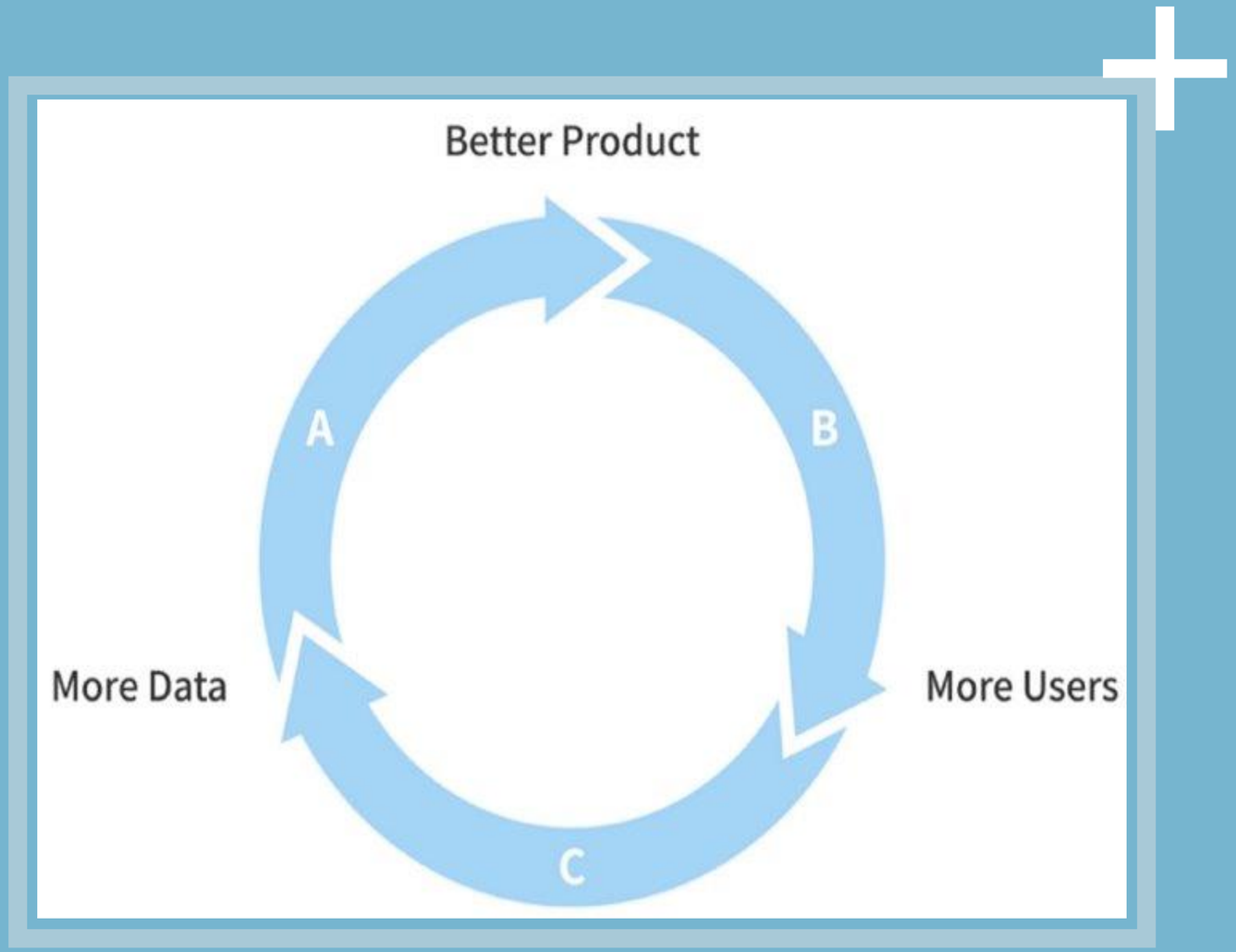
ENJOYMENT TRANSFER

1. ASK YOURSELF QUESTIONS
2. LEARN FROM THE BEST

SET STANDARDS

YOUR OWN STANDARDS INFLUENCE YOUR UNDERSTANDING

The Business Value



BUSINESS VALUE

RECOMMENDERS ARE THE SINGLE MOST IMPORTANT ALGORITHM.

THE MORE THEY ARE USED, THE MORE VALUE THEY GENERATE.

RECOMMENDERS ARE A RENEWABLE DATA RESOURCE THAT PROVIDES DEEP CUSTOMER INSIGHTS.

WHAT PROBLEMS DOES THIS SOLVE?

SONGS ON SPOTIFY

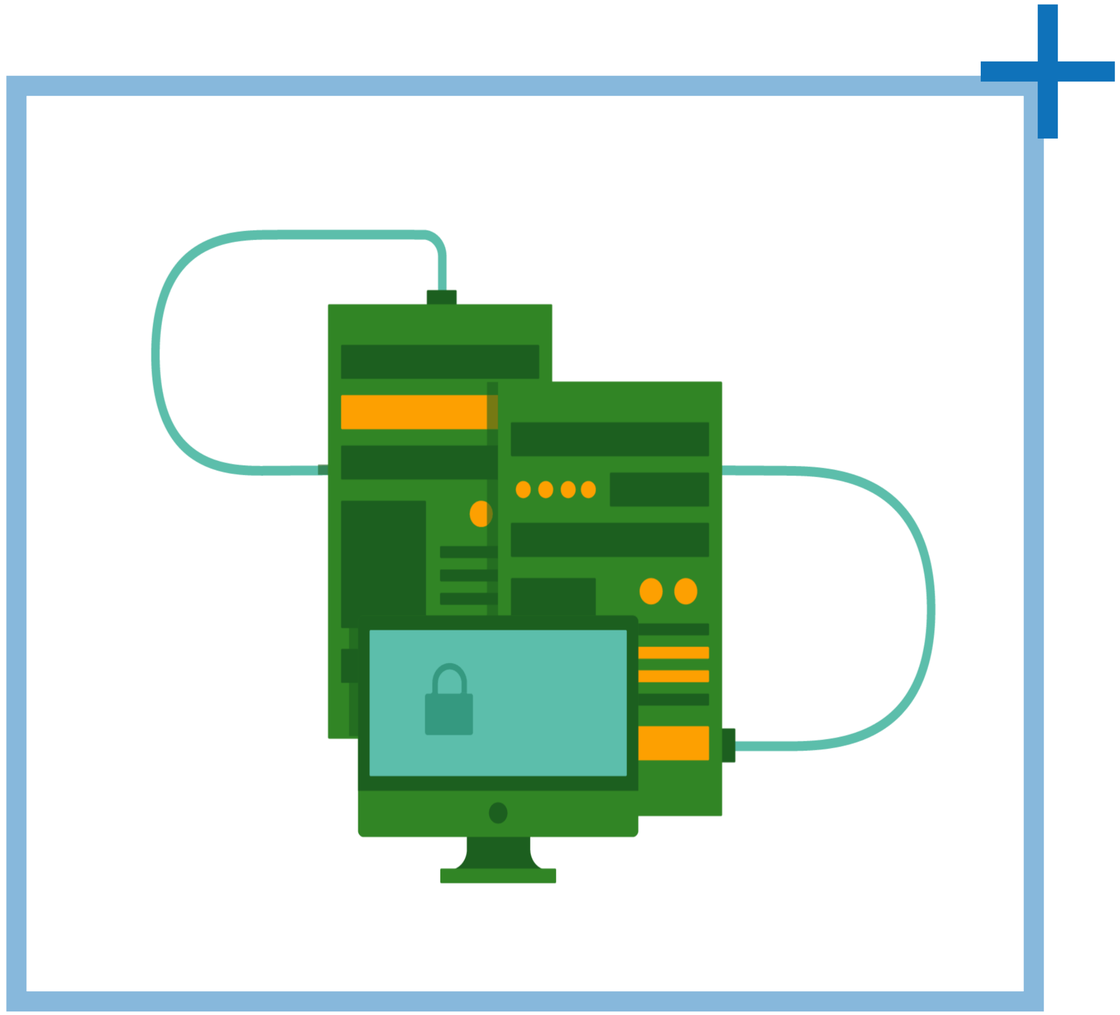
MOVIES ON NETFLIX

VIDEOS ON YOUTUBE

RELATED POSTS ON TWITTER/INSTAGRAM/LI

SIMILAR DISHES ON UBER EATS

AND YES, ADS ON FACEBOOK...



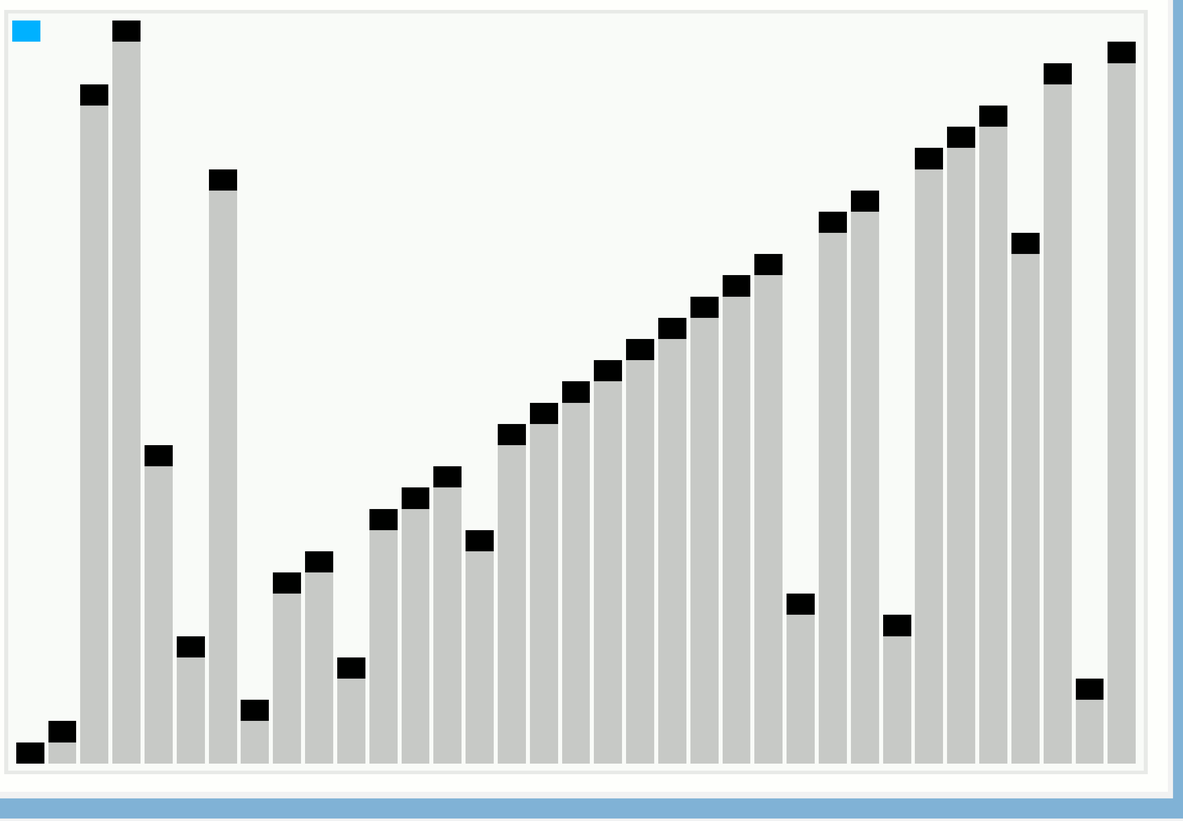
HOW DO YOU GET THE DATA?

EXPLICIT DATA: HOW YOU INTENTIONALLY INTERACTED WITH THE SITE. (WHAT YOU LIKED, PURCHASED, ETC.)

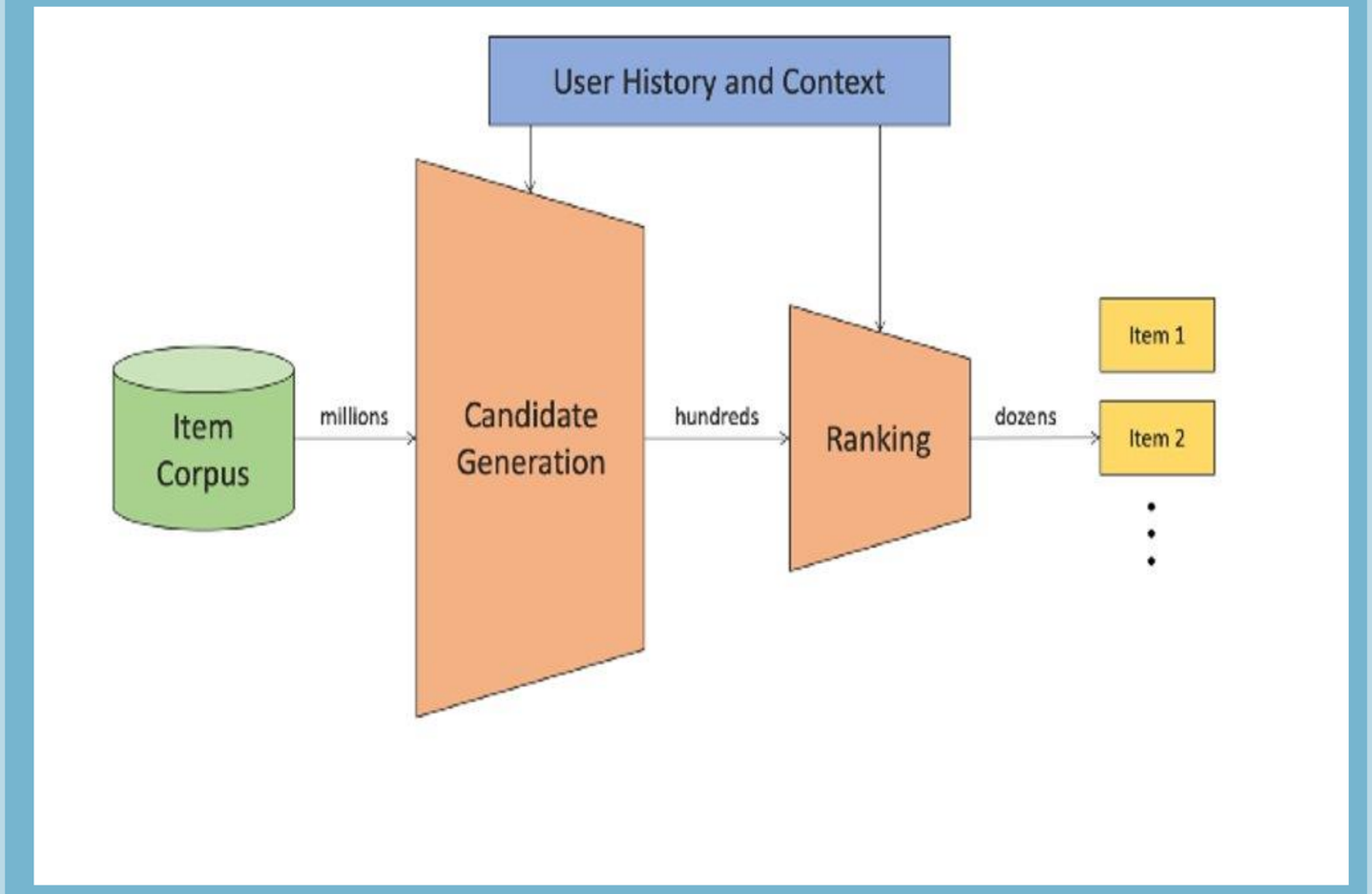
IMPLICIT DATA: DATA FROM THE ITEMS AND HOW YOU IMPLICITLY INTERACTED WITH THE STIE (WHAT YOU CLICKED ON, SEARCH LOGS, ETC.)

ALGORITHMS

1. Collaborative Filtering
2. Content-based Filtering
3. Social and Demographic recommenders
4. Contextual recommendation



https://www.cs.umd.edu/~samir/498/Amazon-Recommendations.pdf



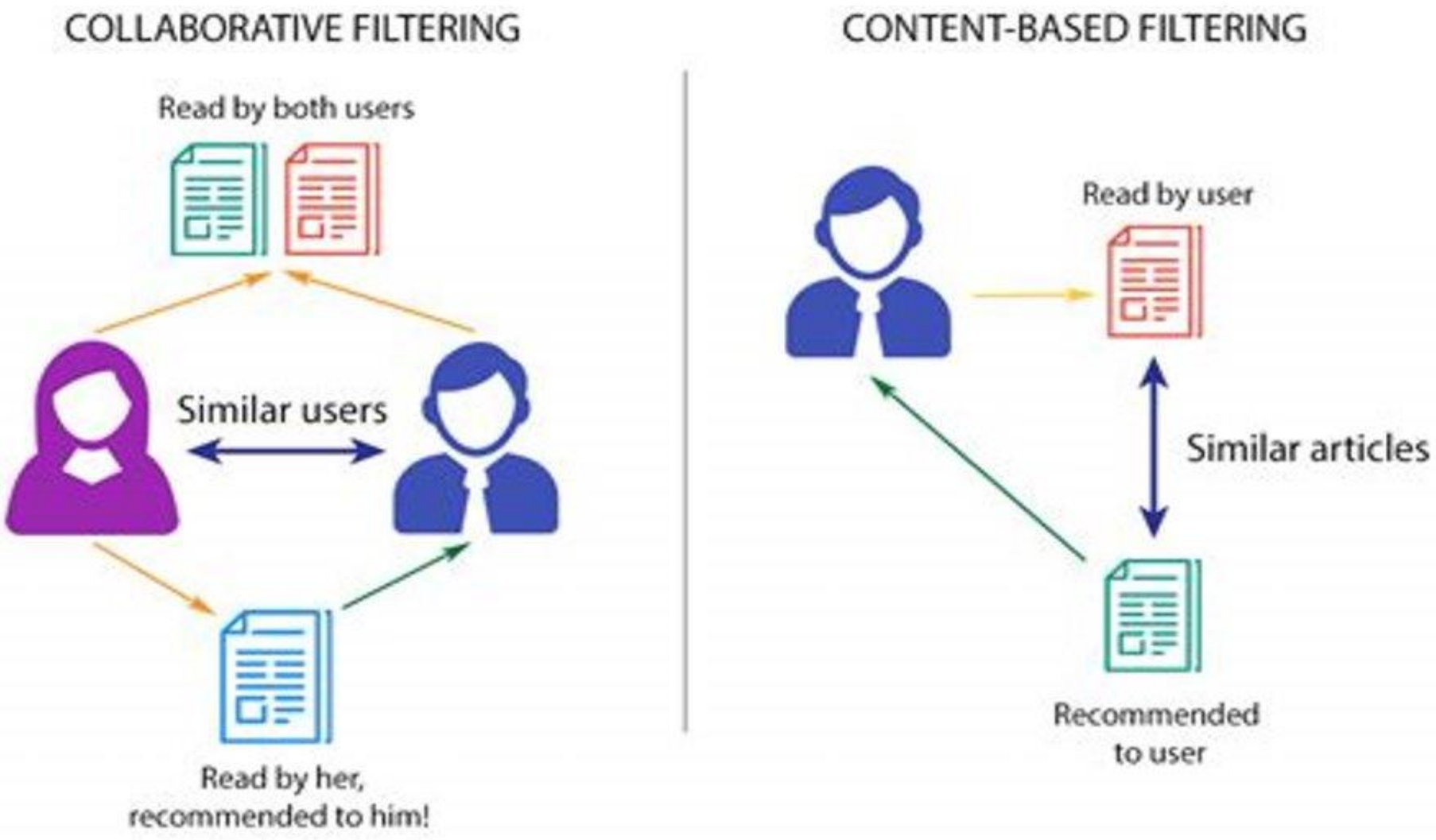
THE ESSENCE OF RECOMMENDERS

ALL RECOMMENDERS HAVE TWO THINGS IN COMMON:

- THEY GENERATE CANDIDATES
- THEY RANK THE CANDIDATES

DEMO | Content Based Recommender

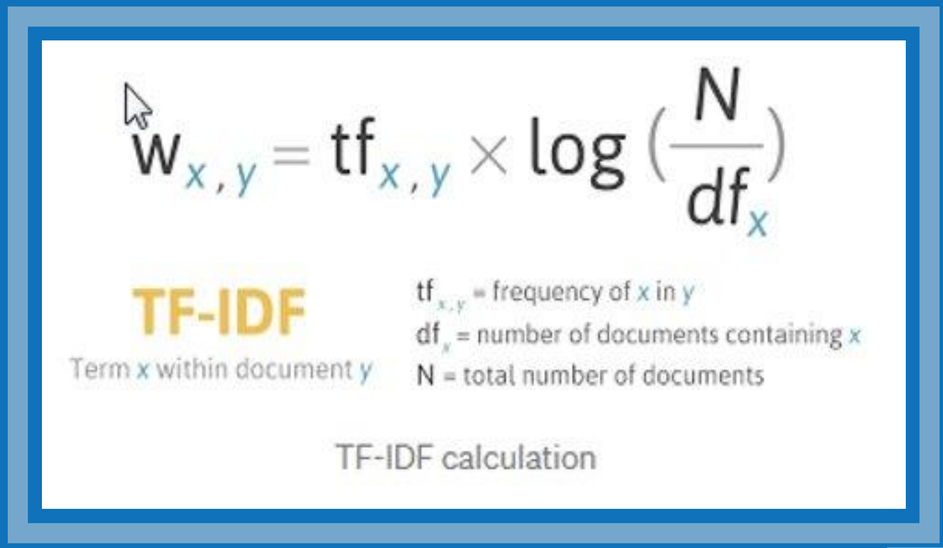
HTTPS://REPL.IT/@IMMANUELKANT/CONTENTRECOMMENDEREXAMPLE


COLLABORATIVE FILTERING
Read by both users
Similar users
Read by her,
recommended to him!
CONTENT-BASED FILTERING
Read by user
Similar articles
Recommended
to user

TF-IDF VECTORIZER

TF (TERM FREQUENCY) OF A WORD IS THE NUMBER OF TIMES IT APPEARS IN A DOCUMENT. WHEN YOU KNOW IT, YOU'RE ABLE TO SEE IF YOU'RE USING A TERM TOO OFTEN OR TOO INFREQUENTLY.

IDF (INVERSE DOCUMENT FREQUENCY) OF A WORD IS THE MEASURE OF HOW SIGNIFICANT THAT TERM IS IN THE WHOLE CORPUS.



TF-IDF calculation

Julie loves John more than Linda loves John

Jane loves John more than Julie loves John

John	2	2
Jane	0	1
Julia	1	1
Linda	1	0
likes	0	1
loves	2	1
more	1	1
than	1	1

The two vectors are:

Item 1: [2, 0, 1, 1, 0, 2, 1, 1]

Item 2: [2, 1, 1, 0, 1, 1, 1, 1]

The cosine angle (the smaller the angle) between the two vectors' value is 0.822 which is nearest to 1.

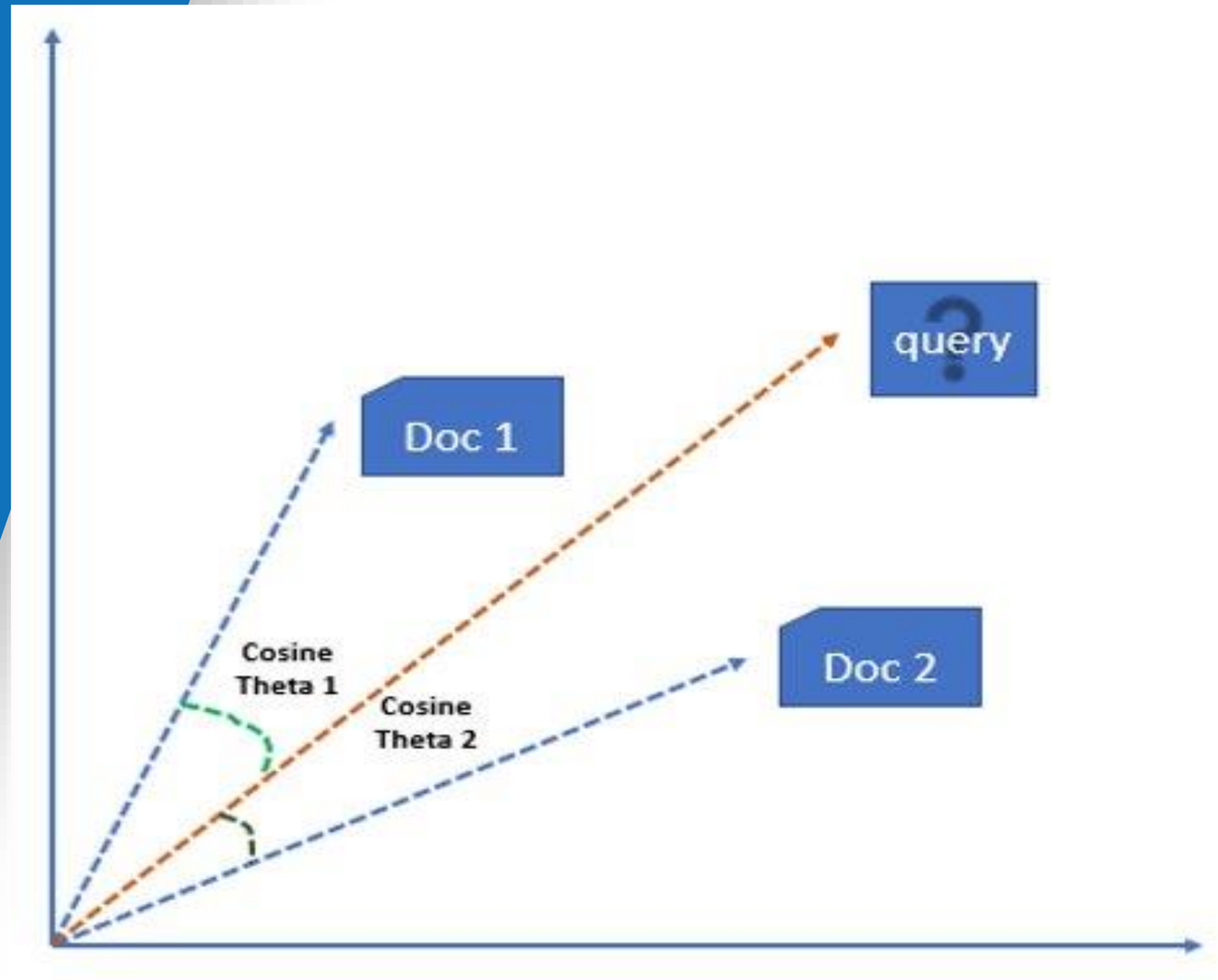
(i.e.: the sentences are similar)

HOW TO MAKE A VECTOR FROM SENTENCES

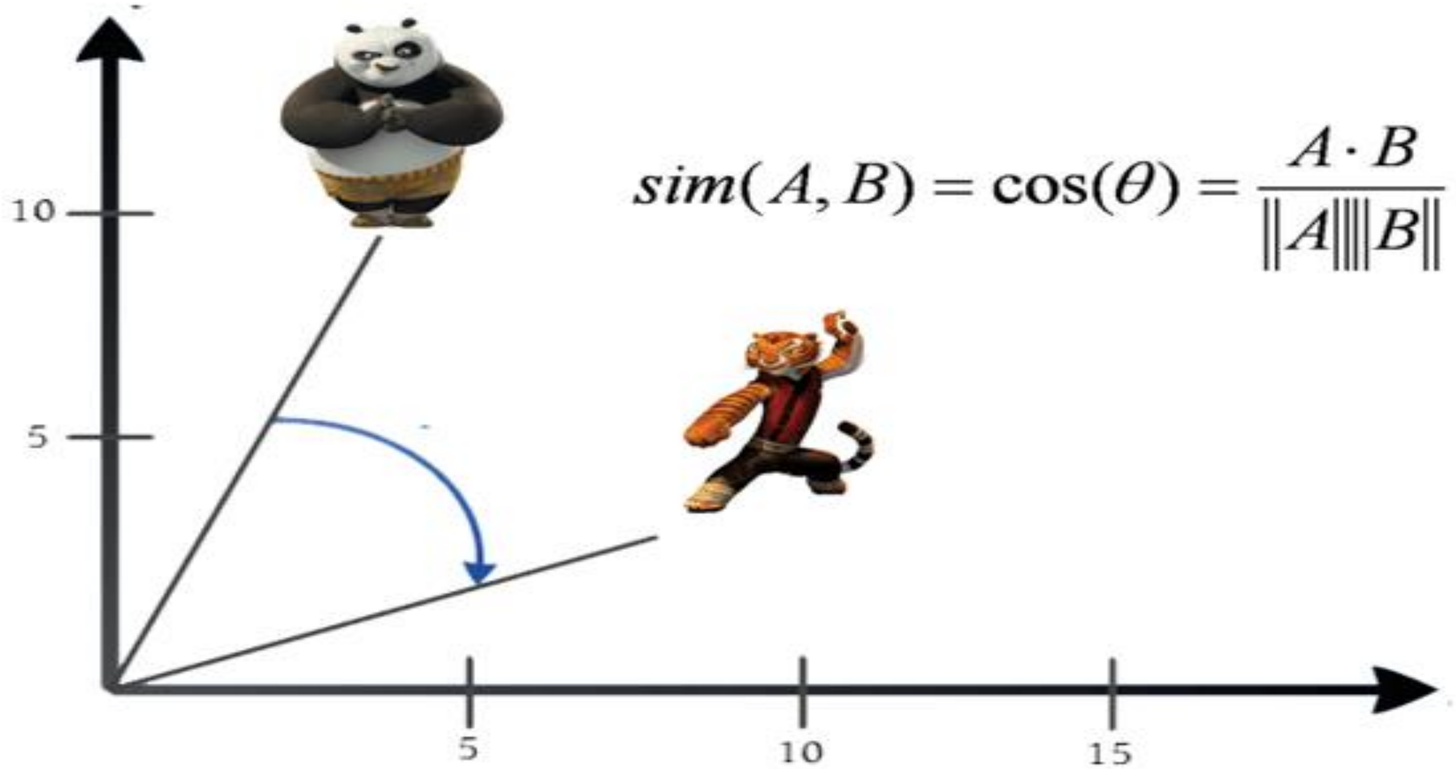
THE BIG IDEA

Every item in your set is a unique vector.

By calculating the cosine between the vectors, you can create a score that determines how “similar” the items are.



Cosine Similarity



$$sim(A, B) = \cos(\theta) = \frac{A \cdot B}{\|A\| \|B\|}$$

COSINE SIMILARITY

RECOMMENDATION

T H A N K
Y O U