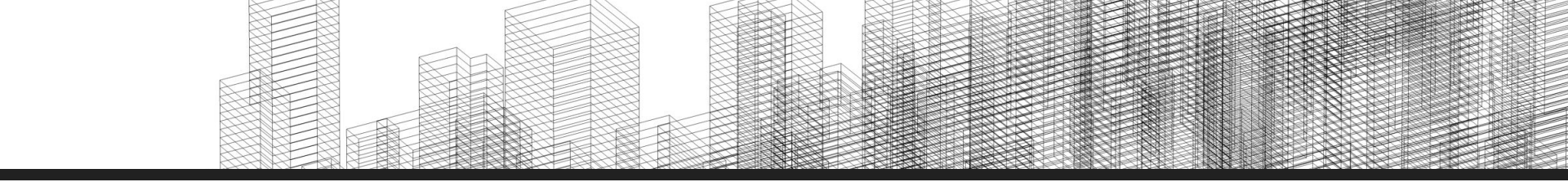
Recommendation Systems (RS)



Flow

Why is a Recommendation System required?

What is a Recommendation System?

What are different types of Recommendation Systems?

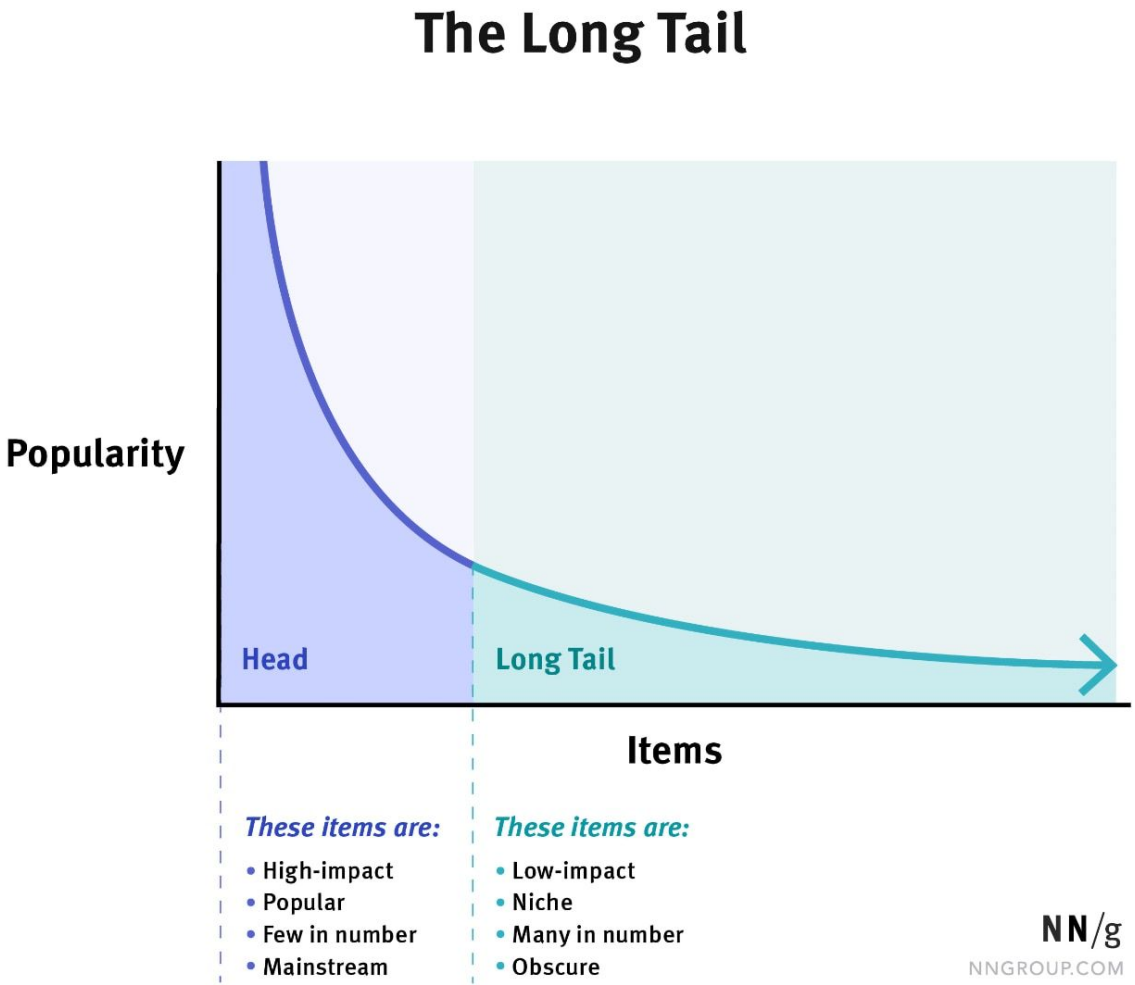
Why is a recommendation system required?

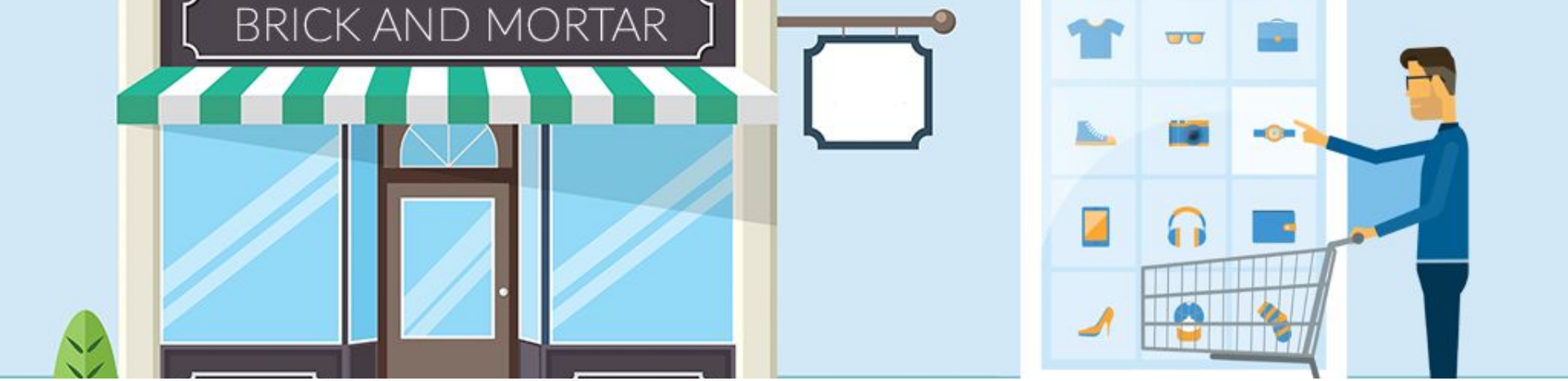
How did you choose the movie you watched recently?

Abundance of choice

- Prime offers over 20,000 titles
- Every minute over 500 hour videos are uploaded to Youtube
- Every day over 50 Million images are uploaded to Instagram
- Amazon carries over 3 Million books
- Spotify hosts over 20 Million songs

Long tail distribution





Long tail distribution

- Brick and mortar Vs Web stores
- Sell many products but only a few of each
- How can users find what they want?

Utility of Recommender systems

- RS help users in four key dimensions
  - Discover options users have not imagined
  - Explore a variety of contextually relevant options
  - Compare those options
  - Decide

Impact of Recommender Systems

- 31% of global e-commerce industry revenues
- Salesforce study found online shoppers are 4.5 times more likely to add items to their shopping cart and complete a purchase after clicking on any product recommendation
- Netflix observes that 75 percent of what people watch on the service comes from their personalized product recommendations

Impact of Recommender Systems

- Independent research strongly suggests recommenders directly and indirectly account for roughly a third of Amazon's sales by revenue
- China's largest ecommerce platform disclosed that from Q1 2015 to Q1 2016—a single year—its machine learning–enhanced recommenders more than tripled their impact on the company's gross merchandise volume (GMV) sales.

What is a recommendation system?

Wikipedia Definition of Recommendation System

A subclass of information filtering systems that seeks to predict the ‘rating’ or ‘preference’ that a user would give to an item

Amit Sharma -
Microsoft Researcher

Recommendation Systems are *Similarity Hunters*

MIT Press

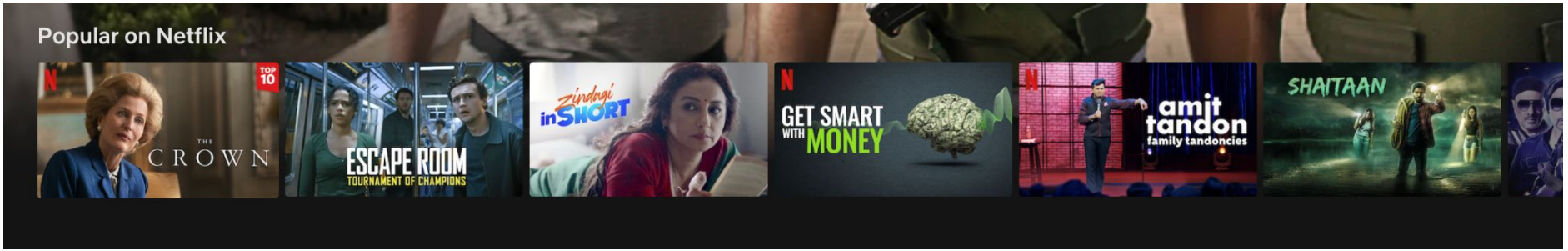
The essential function of recommender systems is mathematically *predicting personal preference*

Manning definition of Recommendation System

A recommender system calculates and provides relevant content to the user based on knowledge of the user, content, and interactions between the user and the item.

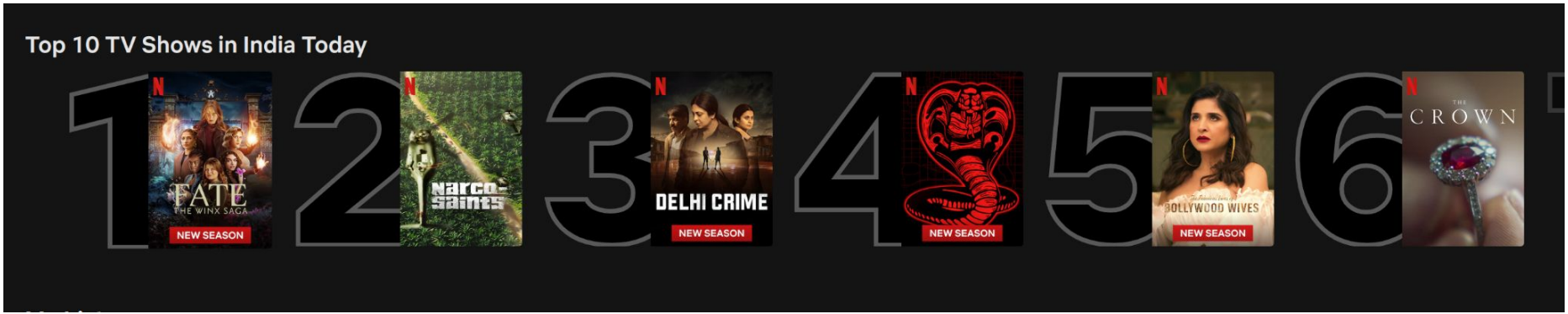
Different types of recommendation system?

Netflix Popular Recommendations

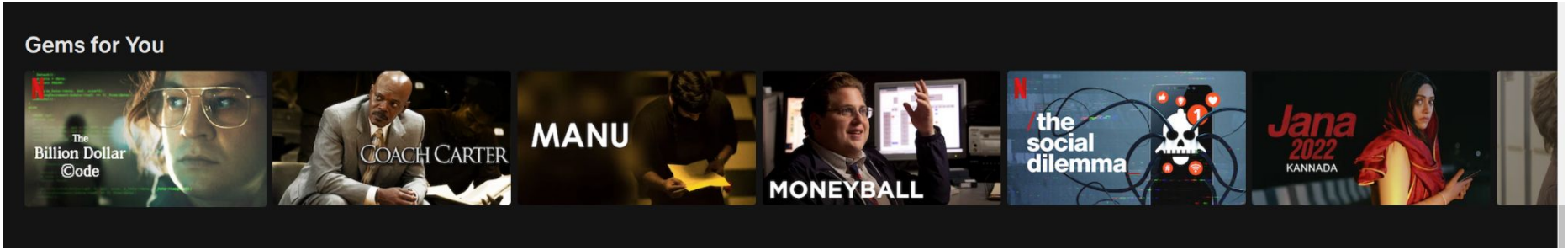


Can you guess if these recommendations are Personalized?

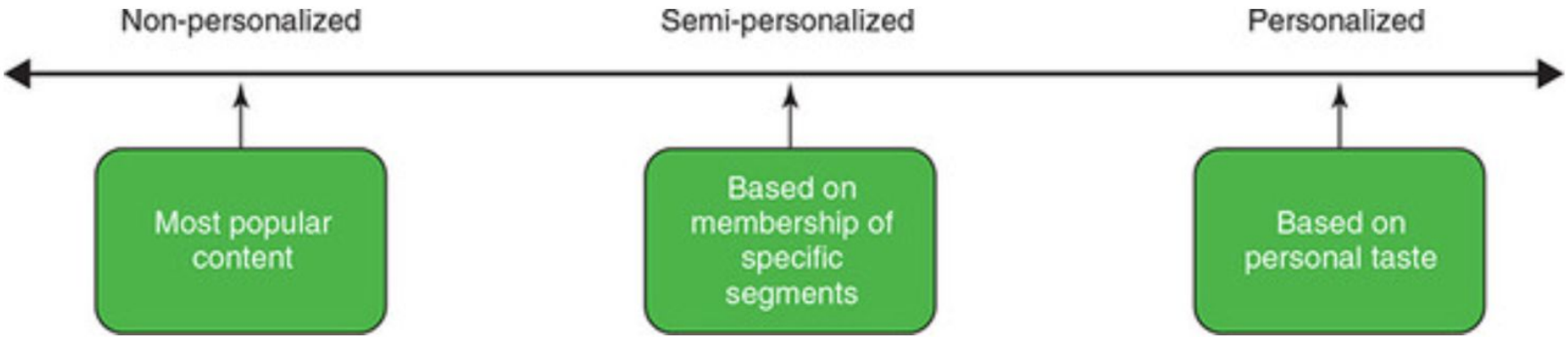
Netflix Top Recommendations in India

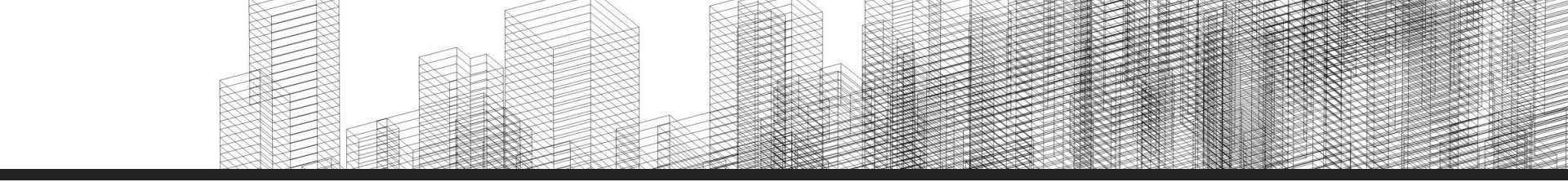


‘For You’ Recommendation



Different Types of Recommenders





Summary

Use of Recommendation Systems

Recommendation System definition

Different types of Recommendation Systems