

# cuvette

## Welcome



# **Recommender System**

## **Recommender System**

Recommendation systems, or recommender systems, are software engines designed to suggest items to users depending on previous likes, dislikes, interests, product engagement and interaction, etc.

Recommender systems keep users interested in the site.

**We are surrounded with Recommender systems:**

# **Why Recommender Systems :**

1. To Increase Sales
2. To decrease load on the system
3. Increasing engagement and Satisfaction

## **Types of Recommender Systems :**

1. Popularity Based Recommender System
2. Content Based Recommendation System
3. Collaborative filtering system
4. Hybrid Recommendation System

## **Popularity Based Recommender Systems :**

1. Popularity Based Recommender System : Using the avg rating a book got from a user we will find the best book rank and using that rank we will suggest that list of books to all universally.

## Collaborative filtering system :

1. Collaborative filtering system : Based on the ratings given by different user we will try to find similar books and recommend them based on the choice they make

We are using cosine similarity algorithm to find similarity between books.

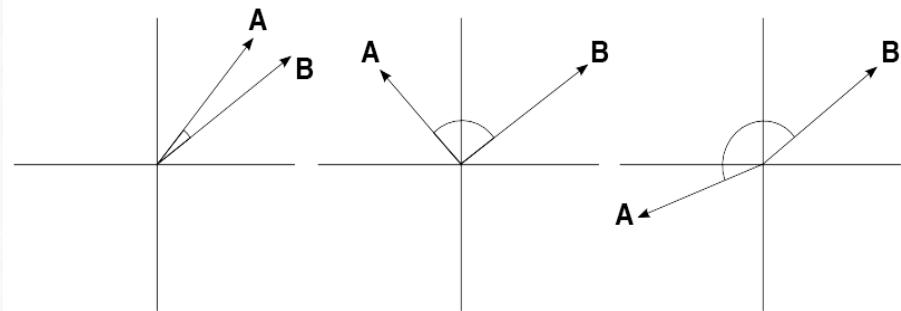
$$\cos \theta = \frac{\vec{A} \cdot \vec{B}}{|A||B|} = \frac{\sum_{i=1}^n A_i B_i}{\sqrt{\sum_{i=1}^n A_i^2 \cdot \sum_{i=1}^n B_i^2}}$$

For each book different user ratings are written as a vector and similarity between each books user vector is calculated using cosine similarity which is the cos value between each vector.

		Users				
		User1	User2	User3	User4	User5
Books	Book 1	4	0	3	5	2
	Book 2	5	2	0	3	0
	Book 3	3	4	2	1	4
	Book 4	0	3	4	2	1
	Book 5	2	5	0	4	3

$$\cos \theta = \frac{\vec{A} \cdot \vec{B}}{|A||B|} = \frac{\sum_{i=1}^n A_i B_i}{\sqrt{\sum_{i=1}^n A_i^2 \cdot \sum_{i=1}^n B_i^2}}$$

Similar      Unrelated      Opposite

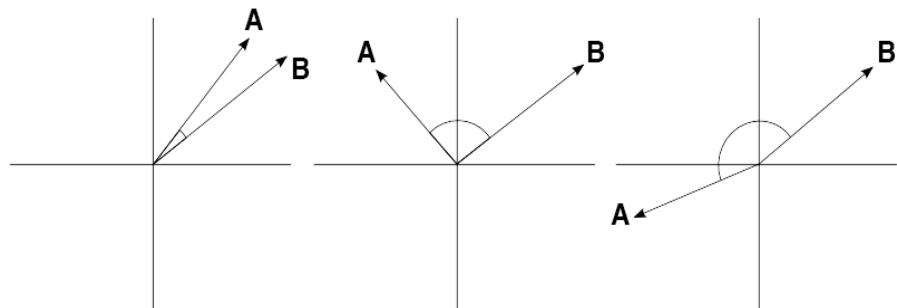


	Users					
	User1	User2	User3	User4	User5	
Books	Book 1	4	0	3	5	2
	Book 2	5	2	0	3	0
	Book 3	3	4	2	1	4
	Book 4	0	3	4	2	1
	Book 5	2	5	0	4	3

	Book 1	Book 2	Book 3	Book 4	Book 5
Book 1	1	0.72	0.78	0.58	0.78
Book 2	0.72	1	0.58	0.86	0.78
Book 3	0.78	0.58	1	0.62	0.62
Book 4	0.58	0.86	0.62	1	0.7
Book 5	0.78	0.78	0.62	0.7	1

$$\cos \theta = \frac{\vec{A} \cdot \vec{B}}{|A||B|} = \frac{\sum_{i=1}^n A_i B_i}{\sqrt{\sum_{i=1}^n A_i^2 \cdot \sum_{i=1}^n B_i^2}}$$

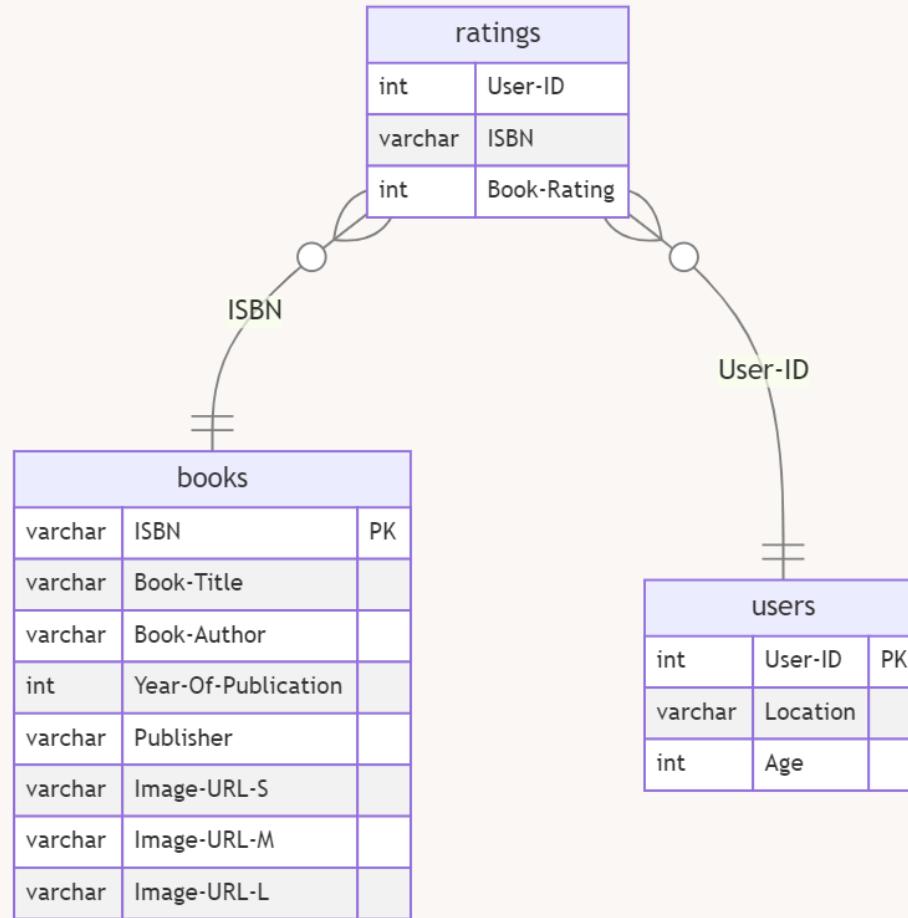
Similar      Unrelated      Opposite



	Book 1	Book 2	Book 3	Book 4	Book 5
Book 1	1	0.72	0.78	0.58	0.78
Book 2	0.72	1	0.58	0.86	0.78
Book 3	0.78	0.58	1	0.62	0.62
Book 4	0.58	0.86	0.62	1	0.7
Book 5	0.78	0.78	0.62	0.7	1

## Data

- 3 Files



# Data Used Section

## Data Used

Show Data

## Top 50 Books

SHOW

## Recommend Books

Type or select a book from the dropdown

2nd Chance

Recommend Me

## Book Recommender System

This site has the book recommendation system where you can select a book from our catalog and it will suggest books accordingly.

Based on our data we have the top 50 books based on the user feedback.

The Recommender system is based on Collaborative filtering.

This is the Books data we used in our model

	ISBN	Book-Title	Book-Author	Year-Of-Publication	Publisher	Image-URL-S	Image-URL-M
0	0195153448	Classical Mythology	Mark P. O. Morford	2002	Oxford University Press	<a href="http://images.amazon.com/images/P/0195153448.01.THUMBZ.jpg">http://images.amazon.com/images/P/0195153448.01.THUMBZ.jpg</a>	<a href="http://images.amazon.com/images/P/0195153448.MI.jpg">http://images.amazon.com/images/P/0195153448.MI.jpg</a>
1	0002005018	Clara Callan	Richard Bruce Wright	2001	HarperFlamingo Canada	<a href="http://images.amazon.com/images/P/0002005018.01.THUMBZ.jpg">http://images.amazon.com/images/P/0002005018.01.THUMBZ.jpg</a>	<a href="http://images.amazon.com/images/P/0002005018.MI.jpg">http://images.amazon.com/images/P/0002005018.MI.jpg</a>
2	0060973129	Decision in Normandy	Carlo D'Este	1991	HarperPerennial	<a href="http://images.amazon.com/images/P/0060973129.01.THUMBZ.jpg">http://images.amazon.com/images/P/0060973129.01.THUMBZ.jpg</a>	<a href="http://images.amazon.com/images/P/0060973129.MI.jpg">http://images.amazon.com/images/P/0060973129.MI.jpg</a>
3	0374157065	Influenza: The Story of the Great Influenza Pandemic of 1918 and the Search for the Virus That Caused It	Gina Bara Kolata	1999	Farrar Straus Giroux	<a href="http://images.amazon.com/images/P/0374157065.01.THUMBZ.jpg">http://images.amazon.com/images/P/0374157065.01.THUMBZ.jpg</a>	<a href="http://images.amazon.com/images/P/0374157065.MI.jpg">http://images.amazon.com/images/P/0374157065.MI.jpg</a>
4	0393045218	The Mummies of Urumchi	E. J. W. Barber	1999	W. W. Norton & Company	<a href="http://images.amazon.com/images/P/0393045218.01.THUMBZ.jpg">http://images.amazon.com/images/P/0393045218.01.THUMBZ.jpg</a>	<a href="http://images.amazon.com/images/P/0393045218.MI.jpg">http://images.amazon.com/images/P/0393045218.MI.jpg</a>
5	0399135782	The Kitchen God's Wife	Amy Tan	1991	Putnam Pub Group	<a href="http://images.amazon.com/images/P/0399135782.01.THUMBZ.jpg">http://images.amazon.com/images/P/0399135782.01.THUMBZ.jpg</a>	<a href="http://images.amazon.com/images/P/0399135782.MI.jpg">http://images.amazon.com/images/P/0399135782.MI.jpg</a>
6	0425176428	What If?: The World's Foremost Military Historians Imagine What Might Have Been	Robert Cowley	2000	Berkley Publishing Group	<a href="http://images.amazon.com/images/P/0425176428.01.THUMBZ.jpg">http://images.amazon.com/images/P/0425176428.01.THUMBZ.jpg</a>	<a href="http://images.amazon.com/images/P/0425176428.MI.jpg">http://images.amazon.com/images/P/0425176428.MI.jpg</a>
7	0671870432	PLEADING GUILTY	Scott Turow	1993	Audioworks	<a href="http://images.amazon.com/images/P/0671870432.01.THUMBZ.jpg">http://images.amazon.com/images/P/0671870432.01.THUMBZ.jpg</a>	<a href="http://images.amazon.com/images/P/0671870432.MI.jpg">http://images.amazon.com/images/P/0671870432.MI.jpg</a>
8	0679425608	Under the Black Flag: The Romance and the Reality of Life Among the Pirates	David Cordingly	1996	Random House	<a href="http://images.amazon.com/images/P/0679425608.01.THUMBZ.jpg">http://images.amazon.com/images/P/0679425608.01.THUMBZ.jpg</a>	<a href="http://images.amazon.com/images/P/0679425608.MI.jpg">http://images.amazon.com/images/P/0679425608.MI.jpg</a>
9	074322678X	Where You'll Find Me: And Other Stories	Ann Beattie	2002	Scribner	<a href="http://images.amazon.com/images/P/074322678X.01.THUMBZ.jpg">http://images.amazon.com/images/P/074322678X.01.THUMBZ.jpg</a>	<a href="http://images.amazon.com/images/P/074322678X.MI.jpg">http://images.amazon.com/images/P/074322678X.MI.jpg</a>

This is the Books Ratings data we used in our model

	User-ID	ISBN	Book-Rating
0	276,725	034545104X	0
1	276,726	0155061224	5
2	276,727	0446520802	0
3	276,729	052165615X	3
4	276,729	0521795028	6

# Top 50 Recommendation

Data Used

Show Data

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SHOW

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Type or select a book from the dropdown

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Harry Potter and the Prisoner of Azkaban  
J. K. Rowling  
Ratings: 428  
Avg. Rating: 5.85



Harry Potter and the Goblet of Fire (I)  
J. K. Rowling  
Ratings: 387  
Avg. Rating: 5.82



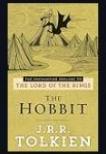
Harry Potter and the Sorcerer's Stone  
J. K. Rowling  
Ratings: 278  
Avg. Rating: 5.74



Harry Potter and the Order of the Phoenix  
J. K. Rowling  
Ratings: 347  
Avg. Rating: 5.5



Harry Potter and the Chamber of Secrets  
J. K. Rowling  
Ratings: 556  
Avg. Rating: 5.18



The Hobbit : The Enchanting Prelude to  
J.R.R. TOLKIEN  
Ratings: 281  
Avg. Rating: 5.01



The Fellowship of the Ring (The Lord of the Rings, #1)  
J.R.R. TOLKIEN  
Ratings: 368  
Avg. Rating: 4.95



Harry Potter and the Sorcerer's Stone  
J. K. Rowling  
Ratings: 575  
Avg. Rating: 4.9



The Two Towers (The Lord of the Rings, #2)  
J.R.R. TOLKIEN  
Ratings: 260  
Avg. Rating: 4.88



To Kill a Mockingbird  
Harper Lee  
Ratings: 510  
Avg. Rating: 4.7

# 5 Similar Book Recommendation

## Data Used

Show Data

## Top 50 Books

SHOW

## Recommend Books

Type or select a book from the dropdown

1984

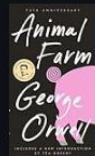
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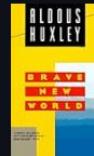
Animal Farm

George Orwell



The Handmaid's Tale

Margaret Atwood



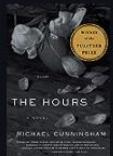
Brave New World

Aldous Huxley



The Vampire Lestat (Vampire Chronicle)

ANNE RICE



The Hours : A Novel  
MICHAEL CUNNINGHAM

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ALL THE BEST

