# How to recommend books with Data Analytics

Data Analytics Bootcamp
Ironhack, Berlin
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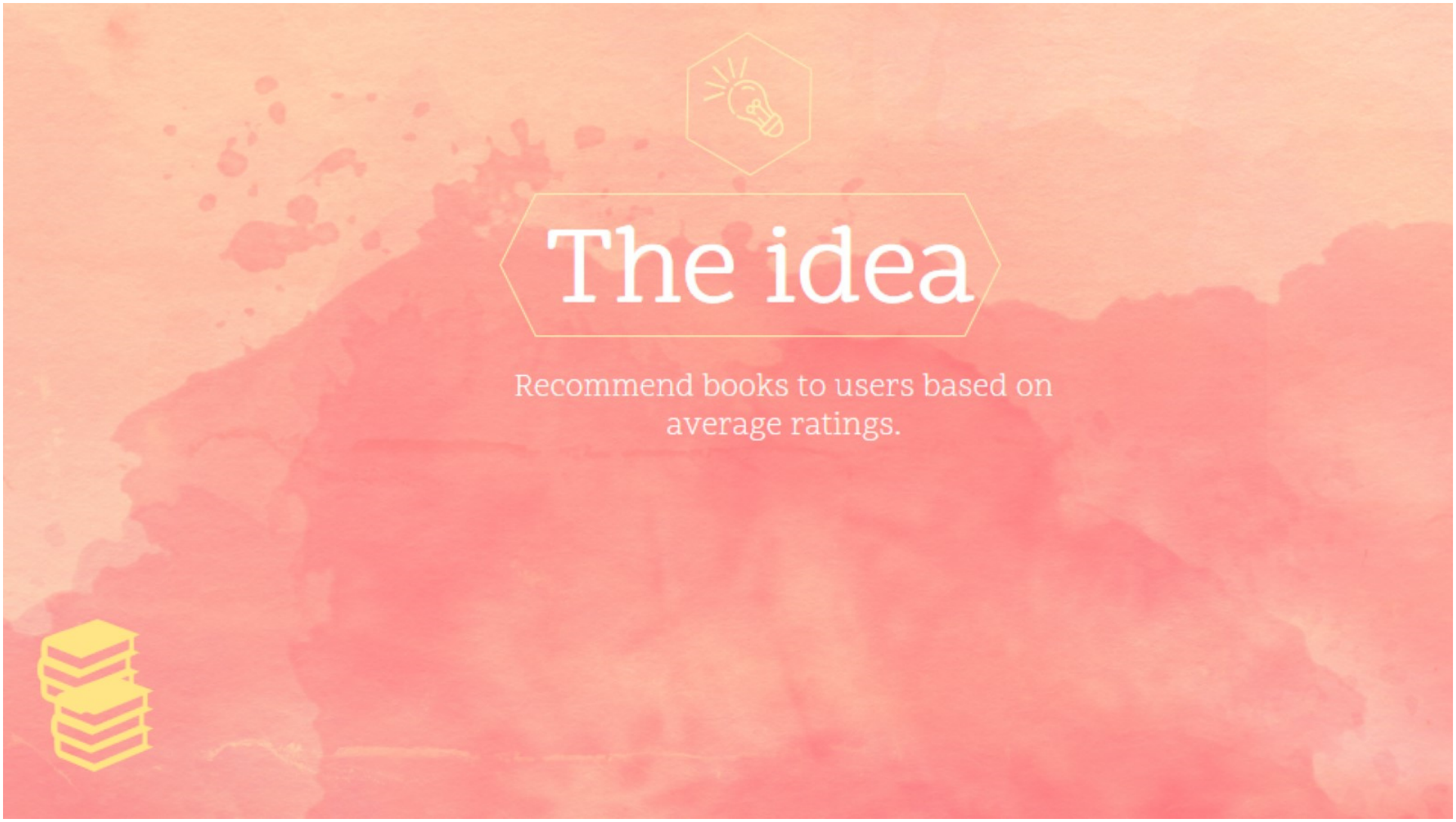
"'Classic' – a book which people praise and don't read."

—Mark Twain


The idea
Recommend books to users based on average ratings.

# Workflow

Data Gathering

↓

Data Exploration

↓

Data Cleaning

↓

Clustering the Data

↓

Fitting the Model

# The Data

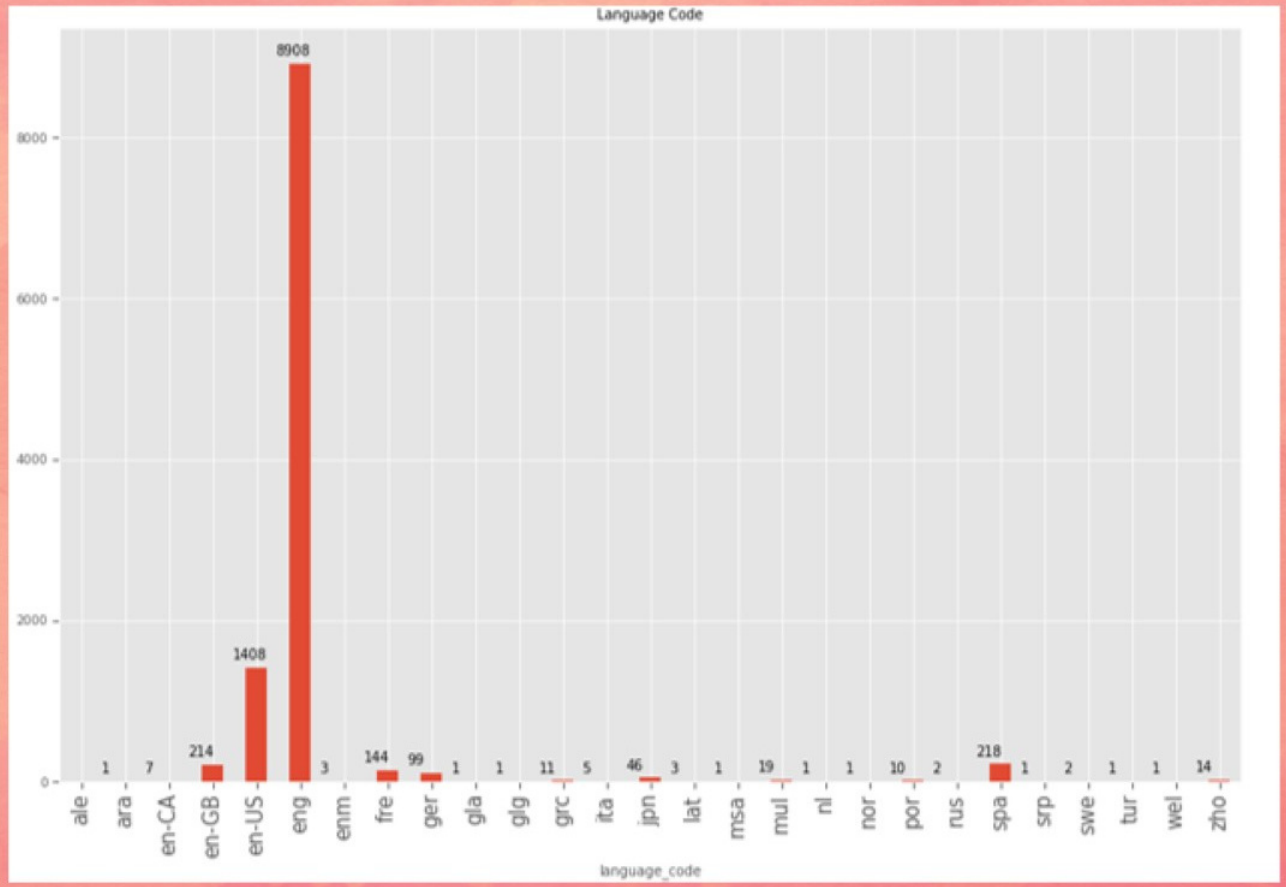
```
df.head()
```

| bookID | bookID | title | authors | average_rating | isbn | isbn13 | language_code | total_pages | ratings_count | text_reviews_count | publication_date | publisher |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | Harry Potter and the Half-Blood Prince (Harry ... | J.K. Rowling | 4.57 | 0439785960 | 9780439785969 | eng | 652 | 2095690 | 27591 | 9/16/2006 | Scholastic Inc. |
| 2 | 2 | Harry Potter and the Order of the Phoenix (Har... | J.K. Rowling | 4.49 | 0439358078 | 9780439358071 | eng | 870 | 2153167 | 29221 | 9/1/2004 | Scholastic Inc. |
| 4 | 4 | Harry Potter and the Chamber of Secrets (Harry... | J.K. Rowling | 4.42 | 0439554896 | 9780439554893 | eng | 352 | 6333 | 244 | 11/1/2003 | Scholastic |
| 5 | 5 | Harry Potter and the Prisoner of Azkaban (Harr... | J.K. Rowling | 4.56 | 043965548X | 9780439655484 | eng | 435 | 2339585 | 36325 | 5/1/2004 | Scholastic Inc. |
| 8 | 8 | Harry Potter Boxed Set Books 1-5 (Harry Potte... | J.K. Rowling | 4.78 | 0439682584 | 9780439682589 | eng | 2690 | 41428 | 164 | 9/13/2004 | Scholastic |

- 11.123 books
- Features:
  - title, isbn, author, rating, average rating, language, number of pages, publication data, publisher

# Exploratory Data Analysis

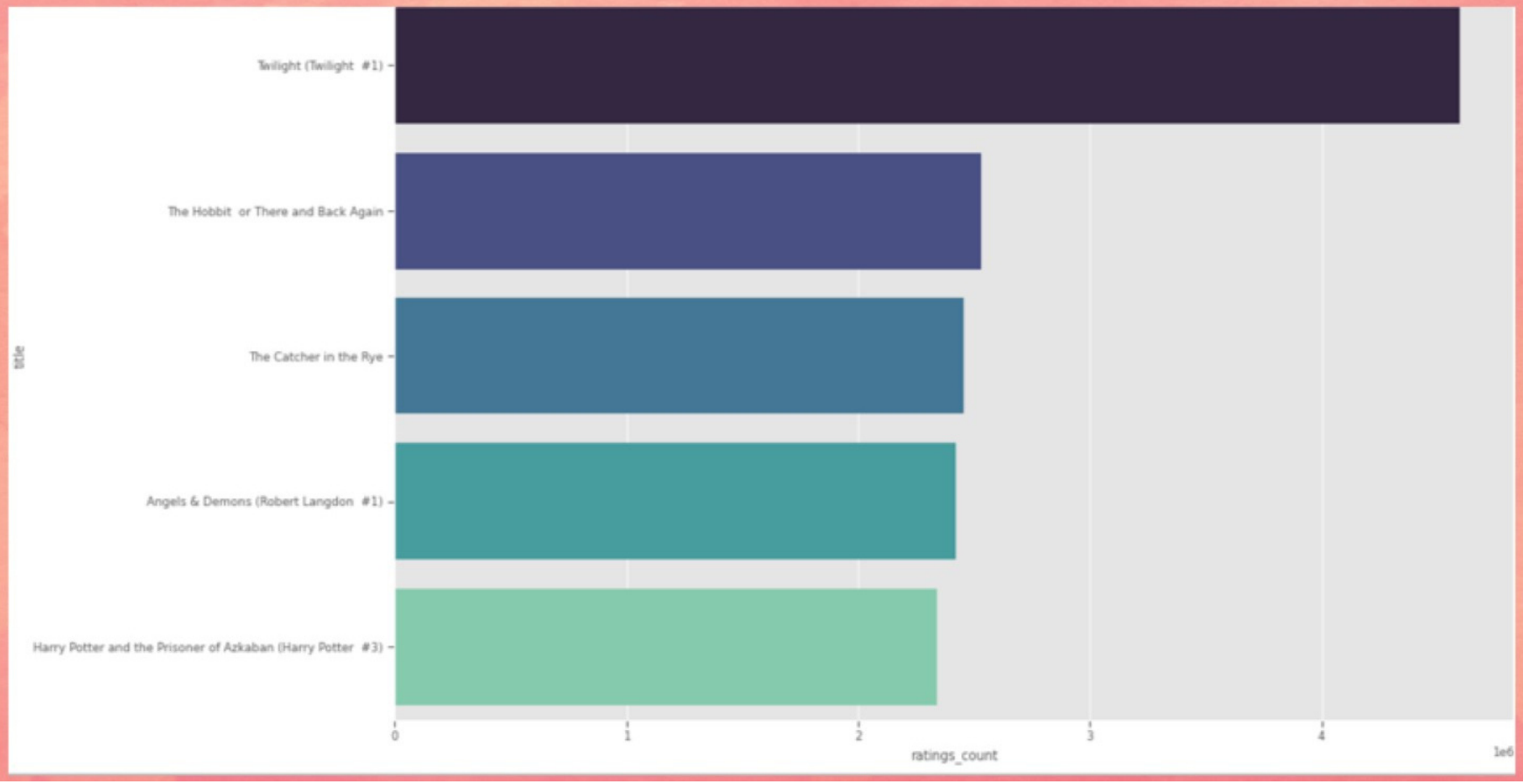
- Most of the books in the dataset written in english




Recommendation system makes mostly sense for english books

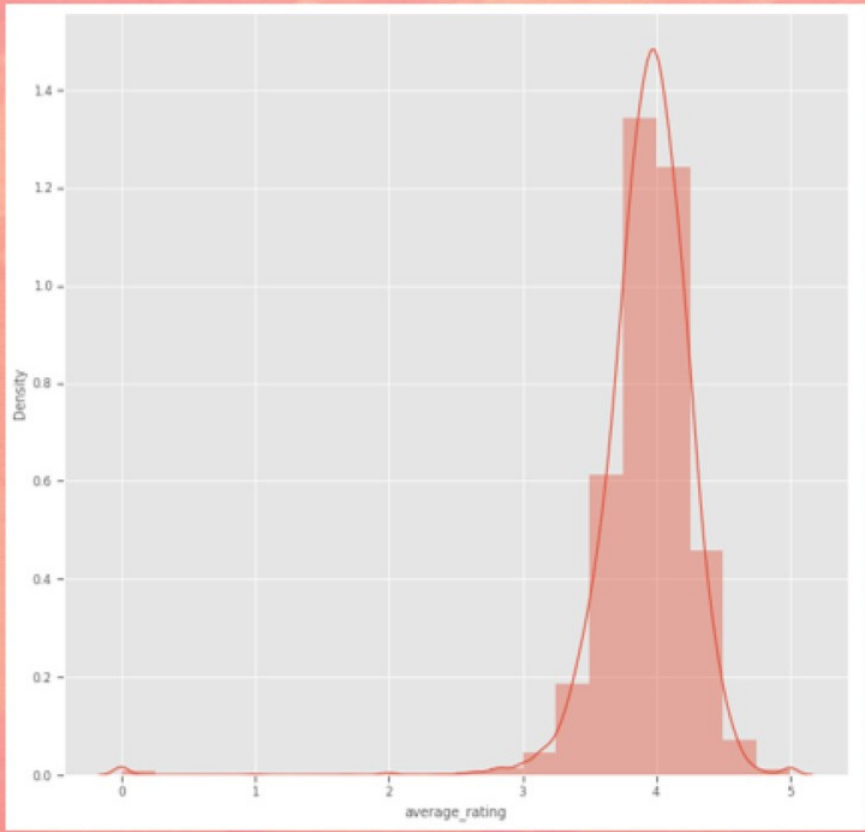
# Exploratory Data Analysis

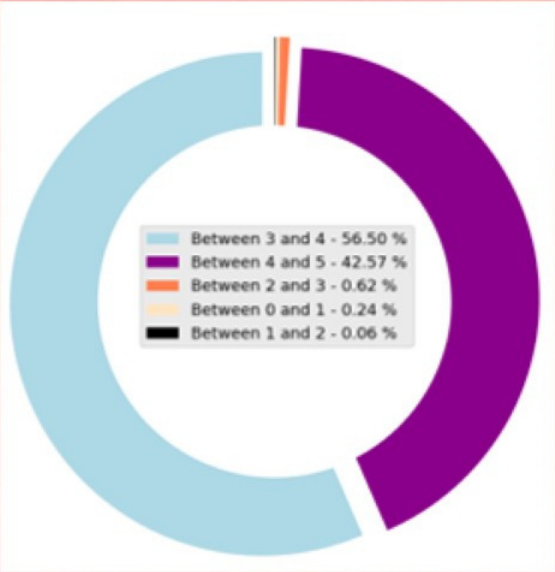
- most rated book: „Twilight“, Stephenie Meyer



# Exploratory Data Analysis

- How are the ratings distributed?




- Most of the ratings scatter around 4
- 56.5% are between 3 and 4
- 42.57% are between 4 and 5

# The Model

## KMeans clustering

Finding groups in the data, to find relationships between rating counts and average rating

Clusters

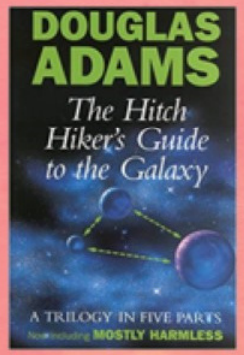
7

## Recommendation Engine

The recommendation system works with the algortihm of K Nearest Neighbors (KNN)

# How does it work?

Type in the book you like and get recommendations of five other books you may like.




```
[318]: book_rec("The Hitchhiker's Guide to the Galaxy (Hitchhiker's Guide  #1)")

       If you like:

       The Hitchhiker's Guide to the Galaxy (Hitchhiker's Guide  #1)

       we recommend you also the following five books:

       Cat Breaking Free (Joe Grey  #11)
       A Life in Letters
       Nabokov's Pale Fire: The Magic of Artistic Discovery
       Selected Speeches and Writings
       Return of the Straight Dope
       The Beleaguered City: The Vicksburg Campaign
```

# Thanks!

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