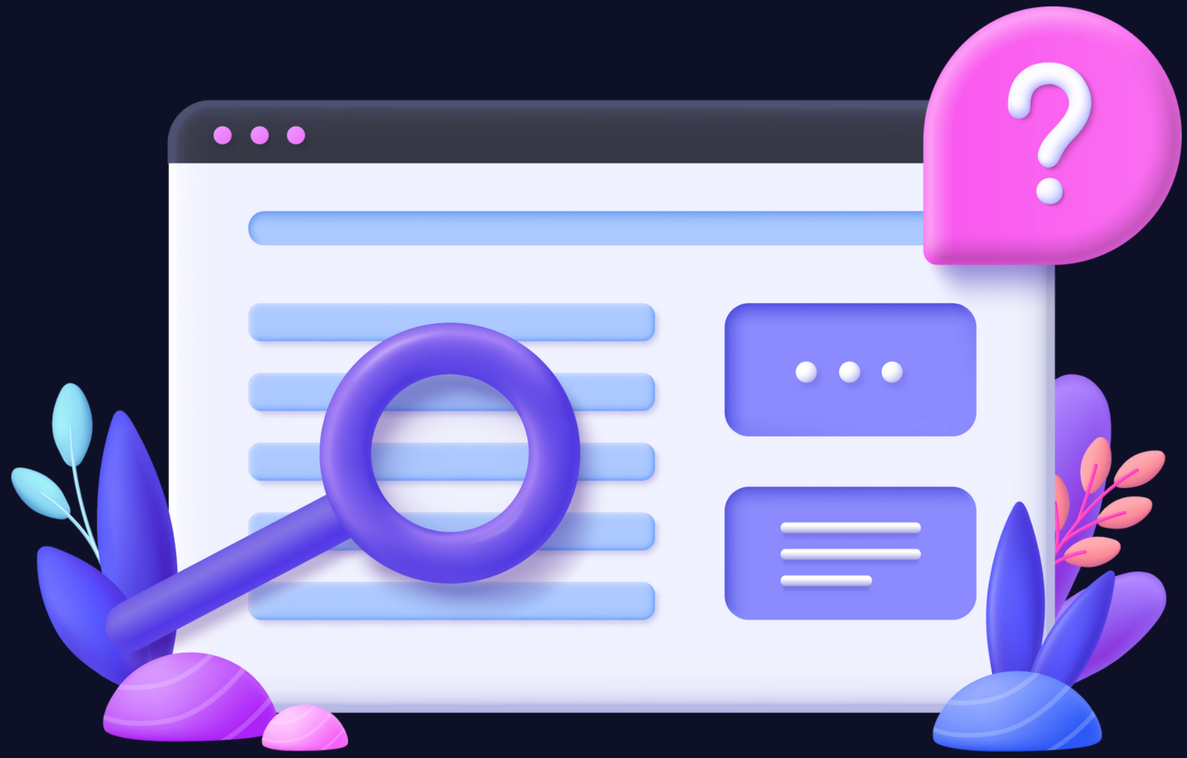
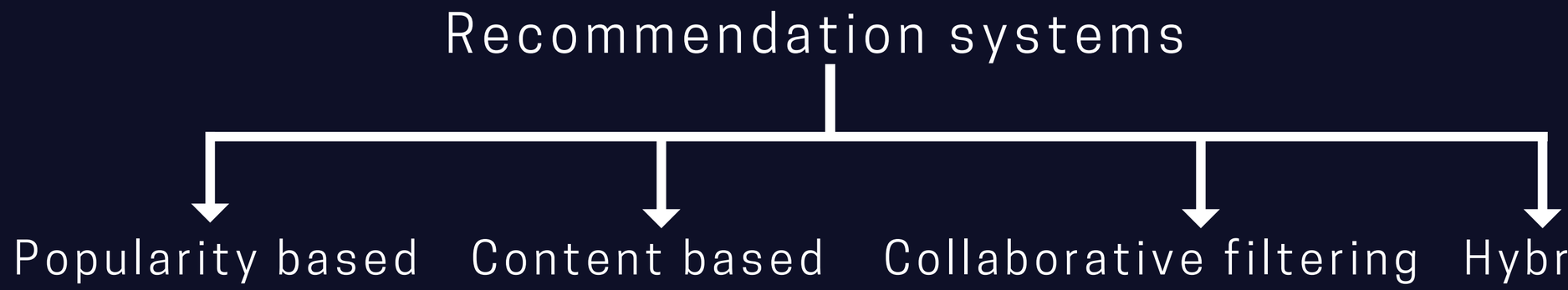
# PRODUCT RECOMMENDATION MODEL

A recommendation model is a piece of code that is intelligent enough to understand the user's preferences and recommend things based on his/her interest



# TYPES OF RECOMMENDATION SYSTEMS




In this project, I'll be implementing popularity-based and collaborative filtering to build a book recommendation system

# POPULARITY-BASED FILTERING

The dataset has three data frames:

1. The ‘books’ data frame has 2 columns ISBN(unique ID for each book) and Book-Title.
2. The ‘users’ data frame has 3 columns User-ID, Location, and Age.
3. The ‘ratings’ data frame has 3 columns User-ID, ISBN, and Book-Rating.

Next, I have merged books and ratings on the column 'ISBN' and merged users and ratings on the column 'USER-ID'

Next, two new data frames with the number of ratings and the average ratings are created, which are then merged into a single data frame 'final_rating'.

To implement popularity-based filtering, books which have more than 250 ratings, sorted in descending order by average ratings are recommended.

# COLLABORATIVE FILTERING

To build a collaborative-filtering-based recommendation system, users who have rated more than 200 books and books which have more than 50 ratings are considered in our model.

Next, a pivot table having ‘Book-Title’ as the index, ‘User-ID’ as the column, and ‘Book-Rating’ as the value is created.

Next, the similarity score between each book is calculated using the cosine_similarity function. 5 books with the highest similarity scores will be recommended by this model