

Goibibo

Recommendation System

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What are Recommender Systems?

A hotel recommendation system analyzes user preferences, behaviors, and interactions to suggest relevant hotels. It uses algorithms like collaborative filtering and content-based filtering to provide personalized recommendations based on factors such as:

- Search history
- Location preferences
- Budget constraints



Types of Recommender Systems

1. Content-Based Filtering: Recommends items based on user preferences and item attributes.
2. Collaborative Filtering: Suggests items based on the preferences of similar users.
3. Hybrid Approaches: Combines both methods for improved accuracy.



Content-Based Filtering

Content-based filtering focuses on delivering personalized hotel recommendations by analyzing user preferences and hotel attributes.

Key Steps:

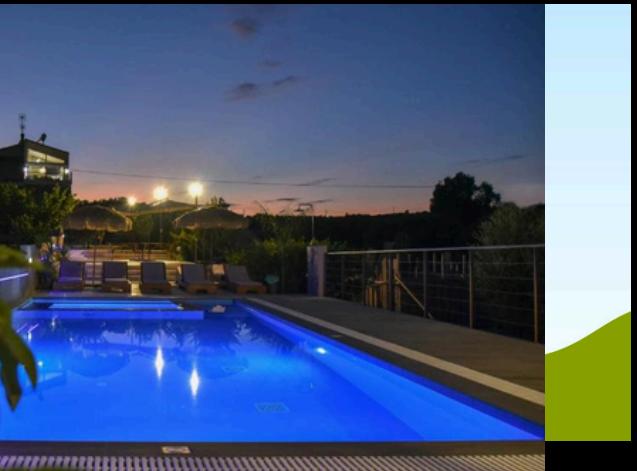
1. User Profile Development: Collect user data such as preferred location, price range, and desired amenities.
2. Hotel Feature Representation: Identify attributes like location, price, star ratings, and amenities.
3. Similarity Calculation: Match user preferences with hotel attributes using algorithms.
4. Recommendation Generation: Rank and suggest hotels that best fit user preferences.



Example: Content-Based Filtering

User Preferences:

- Location: Beachfront
- Budget: \$100-\$200 per night
- Rating: 4+ stars
- Amenities: Pool, Wi-Fi



Hotel Listings:

1. Beach Paradise Hotel: \$150/night, 4.5 stars, Pool, Wi-Fi.
2. City Central Inn: \$120/night, 4.2 stars, Free Breakfast.



Recommendations:

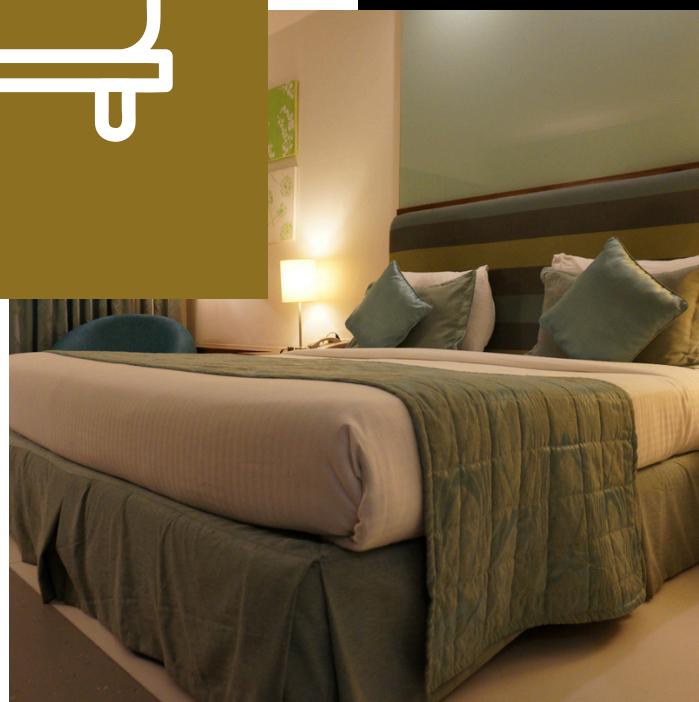
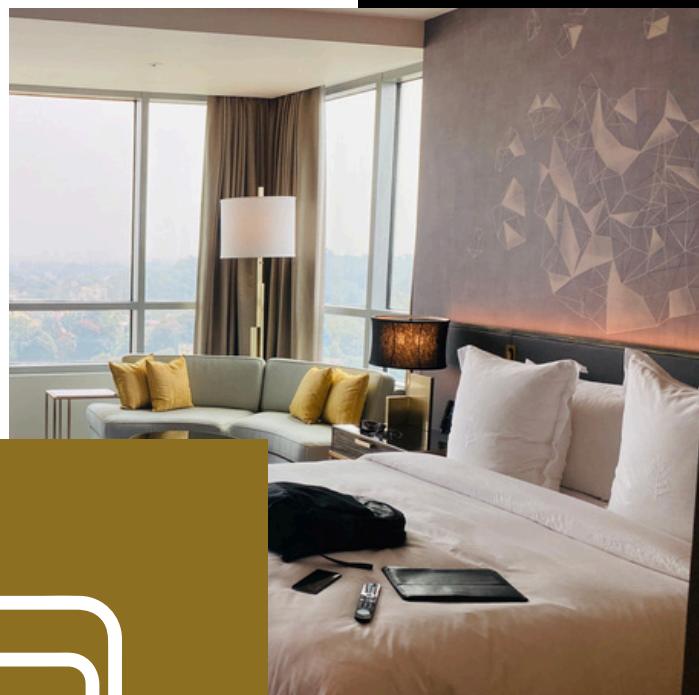
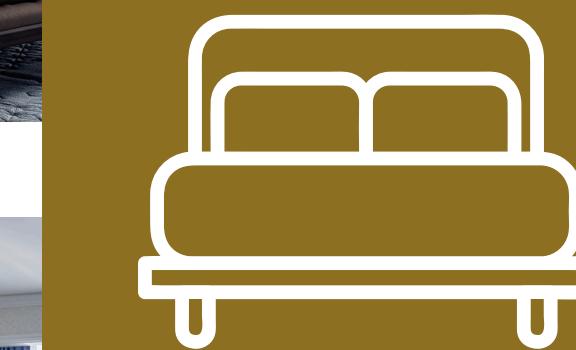
1. Beach Paradise Hotel: Perfect Match.
2. City Central Inn: Close match but a different location.

Collaborative Filtering

Collaborative filtering suggests hotels based on the preferences of users with similar tastes.

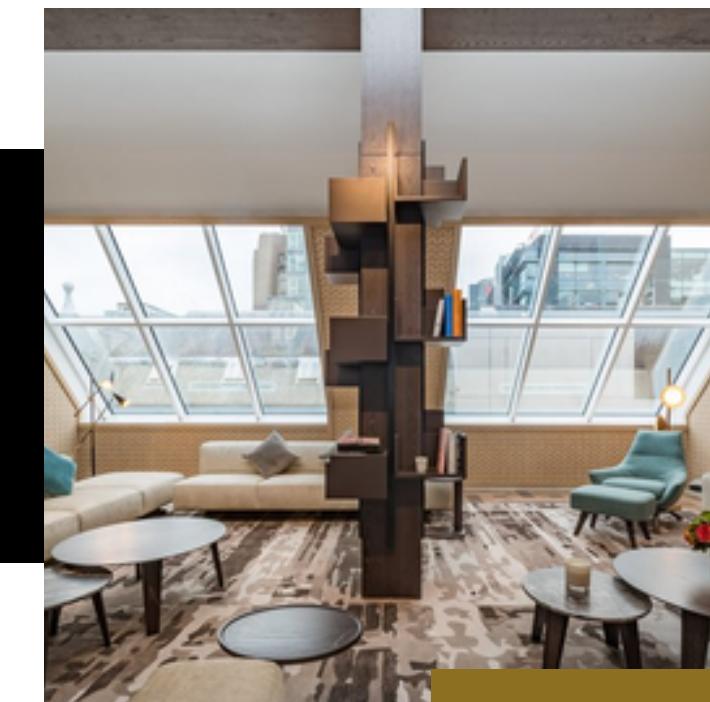
Key Steps:

1. User-Item Interactions: Analyze booking, rating, and search patterns.
2. Similarity Calculation: Identify similar users using methods like cosine similarity or Pearson correlation.
3. Recommendation Generation: Recommend hotels highly rated or chosen by similar users.



Example: Collaborative Filtering

- User A and User B both prefer luxury hotels in urban areas.



If User A recently booked 'Downtown Grand Hotel,' User B may receive this recommendation based on shared preferences.

Implementation in Hotel Apps

Hotel booking platforms can improve their recommendation systems using:

Step 1

Real-Time Data: Analyze search and booking behaviors instantly.

Step 2

Feedback Loops: Use user reviews and ratings to refine recommendations.

Step 3

Hybrid Models: Combine content-based and collaborative filtering for better accuracy.



Thank You

