SONG RECOMMENDATION SYSTEM

EX.NO : 6

DATE : / /2025

DEVELOP A SYSTEM TO RECOMMEND SONGS BASED ON USER LISTENING HISTORY USING COLLABORATIVE AND CONTENT–BASED FILTERING

AIM:
To write a program to develop a song recommendation system using collaborative filtering and content-based filtering based on user listening history.

ALGORITHM:
Step 1: Start
Step 2: Import necessary libraries.
Step 3: Load and preprocess news dataset.
Step 4: Clean articles (lowercase, remove punctuation, stopwords).
Step 5: Convert text to TF■IDF vectors.
Step 6: Split into train and test sets.
Step 7: Train Logistic Regression model.
Step 8: Evaluate accuracy and classification report.
Step 9: Test with a custom input article.

PROGRAM:

```
import pandas as pd

import numpy as np

from sklearn.feature_extraction.text import

TfidfVectorizer

from sklearn.metrics.pairwise import

cosine_similarity



# Load datasets

songs = pd.read_csv("songs.csv")

# Combine artist and genres into a single text field

songs['content'] = songs['artist'] + " " +

songs['genres']

# TF-IDF Vectorizer

tfidf = TfidfVectorizer(stop_words='english')

tfidf_matrix = tfidf.fit_transform(songs['content'])

# Cosine Similarity Matrix

item_sim = cosine_similarity(tfidf_matrix)

# Function to recommend similar songs

def recommend_content(song_index):
```

```
    sim_scores =
list(enumerate(item_sim[song_index]))
    sim_scores = sorted(sim_scores, key=lambda x:
x[1], reverse=True)
    top_songs = [i[0] for i in sim_scores[1:6]]
    return songs.iloc[top_songs][['title','artist']]
```

RESULT:

Thus, a system to recommend songs using both collaborative filtering and content-based filtering has been successfully developed and executed.