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Smartphone Recommendation System
using 91 Mobiles Rating with YouTube Reviews

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Abstract:

The project aims to develop an advanced smartphone recommendation system by integrating comprehensive data from the 91mobiles website and YouTube review videos. This system provides users with detailed and accurate smartphone ratings to help them make informed purchasing decisions. Key components include web scraping, API utilization, data normalization, machine learning, and web development. Firstly, web scraping extracts detailed specifications and expert ratings of smartphones from 91mobiles, a reputable source for smartphone reviews. This data includes features, performance, and expert reviews, offering a solid foundation for evaluating each smartphone. Additionally, the system gathers user feedback from YouTube review videos via the YouTube API. Metadata such as likes and views are collected to gauge public reception. A unique YouTube rating is calculated by taking the ratio of likes to views, multiplying by 10, and normalizing the result to a scale of 10, accurately representing the smartphone's popularity and positive reception. The final smartphone rating combines the 91mobiles rating (70%) and the YouTube rating (30%), ensuring a balanced consideration of expert opinions and user feedback. To recommend the best-rated smartphones based on user criteria, the system employs a Random Forest classifier. This machine learning model predicts the highest-rated smartphones by analyzing user-specified input specifications, enhancing prediction accuracy by averaging multiple decision trees. The entire system is implemented as a web application using Flask, a popular Python web framework. This enables users to interact with the recommendation engine through an intuitive interface, allowing even non-technical users to easily navigate and utilize the system. Users input their preferences and receive tailored recommendations quickly. By combining data from professional reviews and popular opinion, the platform provides a holistic view of smartphone ratings. The integration of diverse information sources ensures reliable and accurate recommendations. Robust data analysis and machine learning techniques guarantee comprehensive evaluations of each smartphone's merits. In summary, this project delivers a powerful tool for smartphone shoppers, aggregating expert reviews and user feedback to present well-rounded, data-driven recommendations. The use of web scraping, YouTube API, Random Forest classifier, and a user-friendly Flask web application ensures users can make informed decisions with ease, offering a balanced perspective from both experts and users.

Technology and Frameworks used: ML Algorithms, Scikit-learn, Pandas, Selenium, Flask.

Keywords: Smartphone recommendation system, 91mobiles website, Web scraping, YouTube API, 91mobiles rating, YouTube rating, Final rating, Machine learning model, Random Forest classifier, Flask.