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Algorithmic Alternative Medicine Guidance System

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ABSTRACT: Alternate Medicine System research has made significant advances over the past decades and has seen wide adoption in electronic commerce. However, most of the existing approaches have only investigated the value of a single type of side information at a time, such as social trust, friendship, or item contents. It is necessary to build new theories, techniques, and methods to exploit multi-dimensional (homogeneous and heterogeneous) side information to provide users with better-personalized recommendations. At the same time, the large volume and variety of side data and the velocity of incremental updates in live systems provide challenges for the scalable mining and application of user preferences. The framework used here is Flask, processing involves Tensorflow, keras, Pandas, Numpy, the frontend involves CSS and the backend involves Python, Machine Learning Algorithms.

KEYWORDS: K-Nearest Neighbor (KNN), Support Vector Machine (SVM)

I. INTRODUCTION

In the quest to enhance medical decision-making and patient care, the development of a alternate medicine recommendation system stands as a beacon of hope. This system, by intelligently suggesting alternative medications for prescribed drugs, has the potential to address a critical need in healthcare. Its transparency and accountability should be central to the development and deployment of the system. Users should be encouraged to exercise vigilance and clinical judgement when interpreting and applying the systems suggestions. In the pursuit of advancing medical decision-making and improving patient care, the development of this recommendation system represents a promising frontier. However, like any project, it operates within a defined set of constraints. The foundation upon which the systems recommendations are built, its pharmacological dataset, is not without limitations. This dataset is the backbone of the system, and its quality directly influences the reliability and scope of the recommendations provided. Efforts should be made to ensure that the data is not only accurate but also as comprehensive as possible.

In summary, it holds great promise in healthcare, its success and impact are contingent on addressing the limitations associated with the accuracy and comprehensiveness of the underlying pharmacological dataset. By continually improving and expanding the dataset, all can maximise the benefits of this innovative tool for enhancing medical decision-making and patient care.

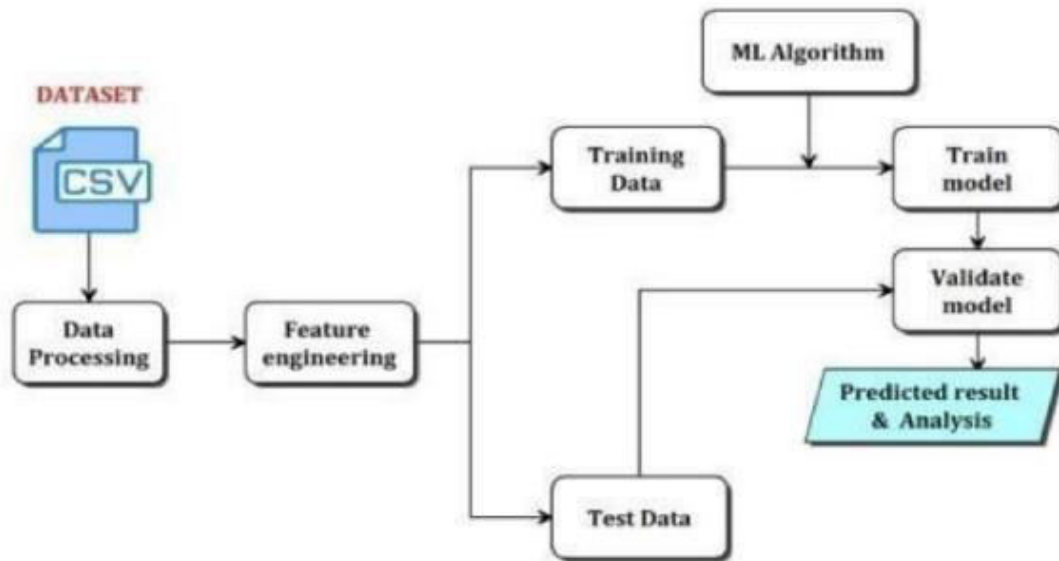
II. RELATED WORK

An item-based hybrid recommender system was created by Bhat and Aishwarya [1] to increase the precision of drug recommendations for recently released pharmaceuticals. To make precise medicine recommendations, the system integrates content-based and collaborative filtering algorithms. The proposed model's accuracy is 75%.

A new system that can assess medical data streams and produce real-time predictions in clinical decision support was introduced by Zhang et al. [2]. This system is based on the VFDT (Very Fast Decision Tree) stream mining technique. The authors also go into some of the difficulties that come with data stream mining, like data size, data complexity, and data accuracy.

A innovative healthcare recommendation system named iDoctor was devised by Zhang et al. [3] and is based on hybrid matrix factorization techniques. Sentiment analysis is employed to eliminate the emotional component of user reviews and to update the actual user ratings.

III. METHODOLOGY



1 Dataset Generation Medicine

Dataset needs to be generated for multiple medicines having the same ratio which can be provided as an alternative to each other. And for cost analysis, it is necessary to know the market cost for such medicines. This dataset will be created for a total of 50 medicines.

2 Dataset Preprocessing

As dataset gets generated it is necessary to preprocess it for any null values if provided and the data should be cleaned and stored into Database for further processing.

3 Data Clustering based on contents and costing Data

Clustering needs to be done for grouping similar medicines based on their contents and also it is required for cost-based analysis as well.

4 Medicine classification and recommendation

At last, ones the user inputs some medicine, there is a requirement of finding alternate medicines for users which can only be done using a classification of input medicines using some classification algorithm.

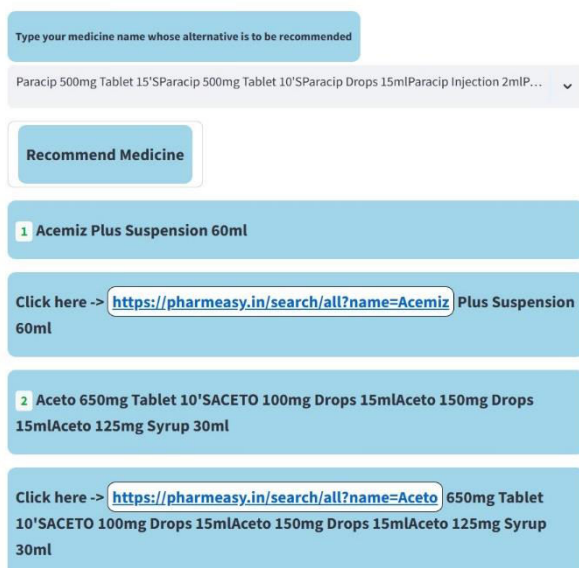
IV. EXPERIMENTAL RESULTS

Figure shows the output of our system. Fig(a): It shows the output when the program is executed. If a medicine is recommended at the given drop down list and click on recommend medicine, then there will be the list of medicines with the same drug quantities with the given medicine.



(a)

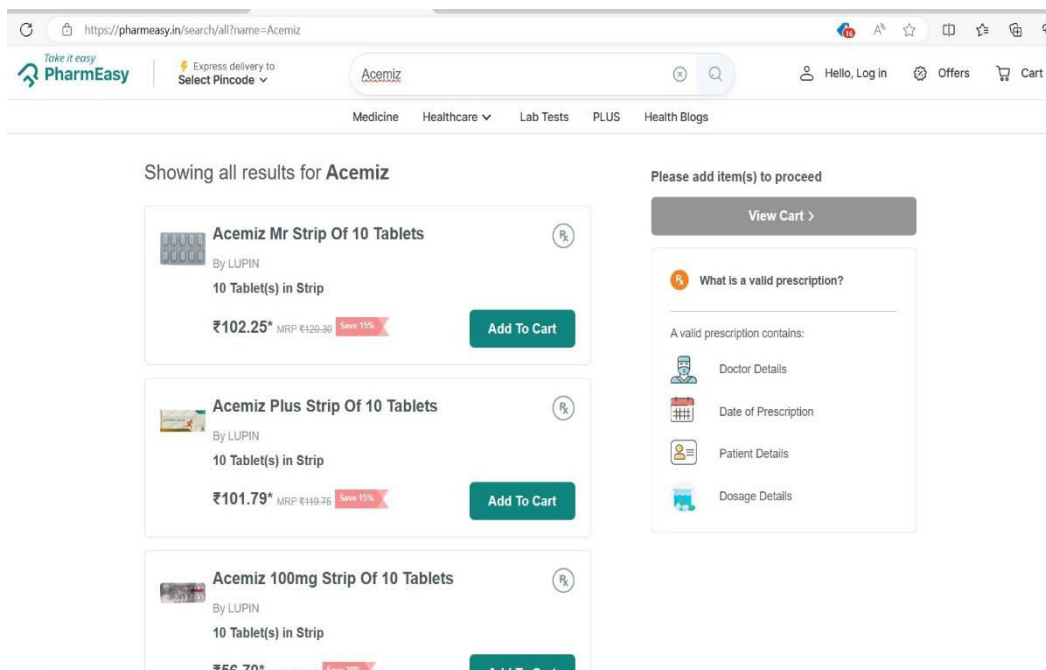
Figures given below (b), (c), (d) are the outputs of the given paracetamol medicine. Fig(b) and fig(C) shows the related recommended medicines for the paracetamol medicine and fig(d) is the output link given in each of the recommended medicines which shows the add to cart option.



(b)



(c)



(d)

V. CONCLUSION

This recommendation method used to compare the symptom data and characteristics of various drugs will provide a better understanding and recommendations to people seeking treatment for their condition. Overall, the use of cosine similarity in alternative medicine recommendations has the potential to increase the accuracy and effectiveness of naturopathic recommendations, providing people with a better value for conventional medicine.

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