Concept hierarchy tree

**Introduction:**

With the rapid growth in size and number of available databases in commercial, industrial, administrative and other applications, it is necessary and interesting to examine how to extract knowledge automatically from huge amount of data.

When mining of data is happening at such a huge scale, the hierarchical representation of data can be very helpful in accessing the needs and requirements of the users. A hierarchy is an organizational structure in which items are ranked according to levels of importance. Making recommendation systems far more advanced than they are presently. The concept hierarchy has application in many fields mainly, e-commerce, recommendation systems, be it for movies, videos, songs, video games, books, research.

The concept hierarchy software named “Recommendarchy” uses a clustering algorithm which will place a new domain entry to the set of clusters based on similarities with properties of already existing clusters. Based on the input given to Recommendarchy, it identifies which cluster to search in and generates the hierarchical tree for the input. At each stage, the tree’s leaves are displayed as potential recommendations for the user, with the top most recommendation having the highest probability of being a useful recommendation to the user, based on which of the recommendations the user chooses, the weights of the properties are re-assigned and a new set of recommendations are generated, and repeatedly the subsequent recommendations for each choice get generated based on the user’s preference at each stage.

A simple UI is designed for Recommendarchy using Python.

**Motivation:**

Across many platforms and domains the present day recommending tools provide options to user based of the most recent searches, For example, the e-commerce companies like Amazon recommend a phone similar to the one which the user has recently purchased, which makes no sense as the user has already purchased the phone and is most likely not going to purchase another one. With Recommendarchy, we hope to make recommendations much more intelligent and learn from each recommendation what the user’s preference and make useful recommendations for the user.