

Recommendation System

Contributors:

Jatin Tyagi - 2020381

Jaideep Guntupalli - 2020378

Cyrus Monteiro - 2020368

Tejdeep Ch - 2020253

Introduction:

We built a shopping recommendation system for customers looking for electronic gadgets, household items, furniture. We take the details of the customer, what they want to buy and what they already have in the section they want to buy and recommend a bunch of products based on that. Users can vary the range of budget according to the available prices, choose preferred brands and browse through various sub categories in the given category.

Description:

The program bases itself on the big data base that has been scraped from an online retail platform. The data base consists of around 4,300 products across various categories and subcategories. The required sections were divided into many subsections on the basis of what users might require and what might be most helpful to be incorporated into the system. The subcategories were again divided into a host of categories of product types so as to cater to a wide range of uses. These specific subsections deal with a less broader area and cater to give more length wise complexity to the data while also reducing the time complexity while searching through it. The data scraping was done using a python script that went to the online retail site and searched for the category specified, then it took the data from the website and put it in a json file. The data was then formatted into form that could be used with prolog and fed into the prolog file using the include command.

The program generally asks about the name of the user and then the category they want to buy in. The category page then asks about the employment status of the user so as to recommend stuff in a generalised budget for the employment categories, this budget can then be changed though if the user feels that it does not suit them. Then the user chooses the sub category of product to get recommended the best rated product and other statistics on average price and ratings. The user's budget is set to a fixed amount based on employment status and a prompt to continue with the budget or change it appears. The user after altering or not the budget then gets showed the items in the category that suit the budget or if nothing suits the budget then the next best fit is displayed. The user can then choose to get recommended items based on a particular brand. The program then prompts the user to choose if they want to look for other products or end the program. We have made use of multiple helper functions which aid main function in searching, printing etc. These functions make use of recursion, backtracking, binding and other basic concepts. Some of the examples of such helper functions are searching ith element of list, searching through ith list in a list and etc.

Contributions:

All the group members were actively involved in all the phases of the assignment. The data scraping, ideation on general program flow and prolog code writing were done equally by all the members of the team.