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Classification of Books using Python and Flask

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Abstract: In today's world due to the ever-increasing demand to make computers perform tasks of humans, machine learning is used. It is a tedious task to manually read the entire book and classify it based on its genre. Novice writers find it troublesome to figure out the genre of their book, which can affect its reach to the right audience. Identifying the genre of a book is not a trivial problem since books within a genre can span a spectrum of designs, but with machine learning, we aim to find some patterns between the genres. We attempt to classify books into one or more genres. The baseline is where the genre is randomly chosen. Here it discusses the classification of books purely based on genres without prior knowledge or context of author and origin. Several methods were implemented to assess the ability to distinguish books based on this characteristic (genre). We address the problem of developing approaches that are capable of working with extremely large and complex literary documents to perform Genre Classification. This was confirmed when the accuracy was found to be quite close to human accuracy.

I. INTRODUCTION

The earliest classification schemes organized books in broad subject categories. Classification schemes are used to provide a systematic arrangement of materials. The classification numbers applied to books and other materials are used to arrange items on shelves and to support browsing, filtering, and retrieval of bibliographic information. Classify provides a user interface and a machine service for assigning classification numbers and subject headings. The database is searchable by many of the standard numbers associated with books, magazines, journals, and music and video recordings. During the Renaissance and Reformation era, "Libraries were organized according to the whims or knowledge of individuals in charge". This changed the format in which various materials were classified.[1]

Some collections were classified by language and others by how they were printed. So, the main objective of classification is to arrange the books and display them in sequence for the convenience of both the readers. Classification mechanizes the correct replacement of books after rating and fixes the most helpful order for newly added books or a book amongst the other books available on a similar genre. For this purpose, the books must be coextensive with the genre and popular genres must be individualized to the extent that no other genre must share the same genre.[1]

II. METHODOLOGY

The Solution Approach will have the Classification of Books based on Genres and also Number of pages. It will also have an order of rating given by the reader that will result in a top-rated book of each individual genre. Firstly, the book dataset is uploaded to the program which helps in classifying the books based on genres as well as other attributes if needed. Now the classified book dataset is sorted according to the rating given by the reader for each individual genre.

The results are displayed in the form of each genre classification as well as with the highest rated book of the individual genre at the top of every genre classification. [2]

Time Consumption is the main Benefit of this approach. This Approach will not consume large period of time to access a single book. User can check the rating description and only get the books that match their preferences or personal interests. Here, we use few different languages for different purposes like representation, classification and other things within the research. [2]

III. EXPERIMENTS AND RESULTS

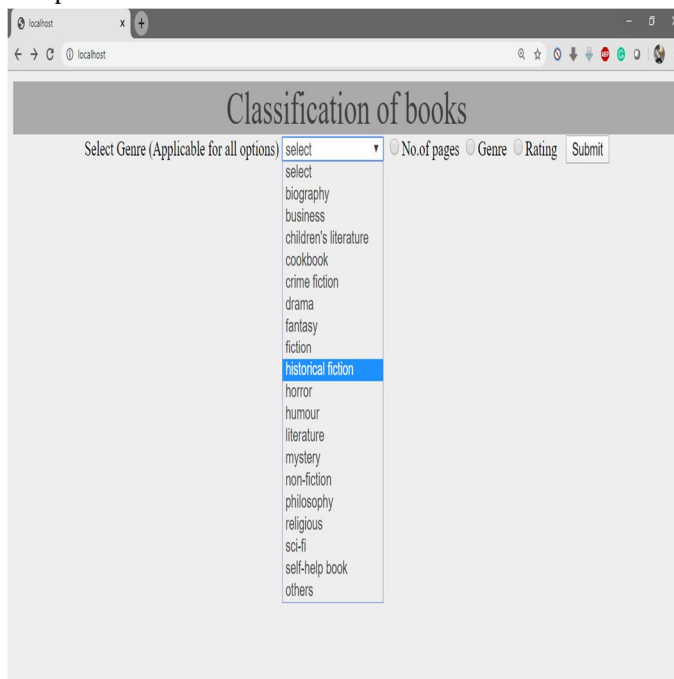
The first step is we upload the dataset to the Spyder IDE. It helps us to read the dataset without any difficulty. [3]

A. Attribute Selection

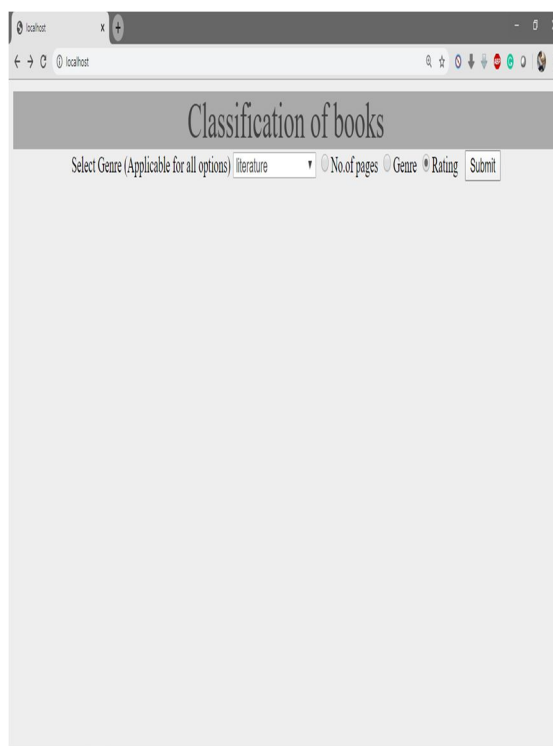
The dataset is taken from kaggle and further edited basing on the requirements. It has totally 10 attributes. We need to perform Attribute selection in such a way that the most relevant attributes are selected which should be helpful to classify the books basing on the individual user preferences. There is an efficient way of selecting Attributes, that is to identify the most independent Attributes and reduce the dimensionality of the data set. [3]

B. User Interface

For the easy access of this application, we have come up with a web interface in order to search and retrieve the books without any difficulty. The User Interface has a dropdown list to select the Genre and radio buttons to select the classification method. [3]



To classify the dataset, the user needs to select the Genre from the dropdown list available and then need to click on the preferred radio button. [3]



Once the user clicks on submit button after selecting the Genre and Classification option. Then the output is produced based on the classification of books. [3]

The screenshot shows a web browser window with the URL 'localhost:success'. The page title is 'Genre: literature'. Below the title is a table with the following data:

SL.NO	Title	Author	average rating
188	We Tell Ourselves Stories in Order to Live: Collected Nonfiction	Joan Didion-John Leonard	4.49
800	In the Name of Jesus: Reflections on Christian Leadership	Henri J.M. Nouwen	4.35
49	Annals of the Former World	John McPhee	4.33
747	Collected Stories 1911-1937	Edith Wharton-Maureen Howard	4.28
53	Rising from the Plains	John McPhee	4.22

IV. RECOMMENDATIONS

Library Genesis: It is a bookstore website to search and download the books. With the help of Advanced System i-e Classification of Books, we can classify the books based on genre and rating which helps the user to search and download a book more quickly. [4]

Google Play Store: It is a store to download applications for android mobiles. With the help of Advanced System i-e Classification of Books, we can retrieve the applications based the higher order of rating in a particular genre. This helps the user to select any application more quickly. [4]

V. CONCLUSION

Classification arranges books in an order most convenient to the readers and the librarians. In today's world more and more users rely on consumer experience and opinions before choosing a book online. Rating system is developed to help readers to know more about the books and its genres. It helps in bibliographic research, which eases to classify a book based on any genre. Classifying based on Rating is the great way to find out the strength and weak point of the books. It helps other people to understand the true characteristics of a book. With the help of Advanced System i-e Classification of Books, we can classify the books based on genre and rating which helps the user to search and download a book more quickly.

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