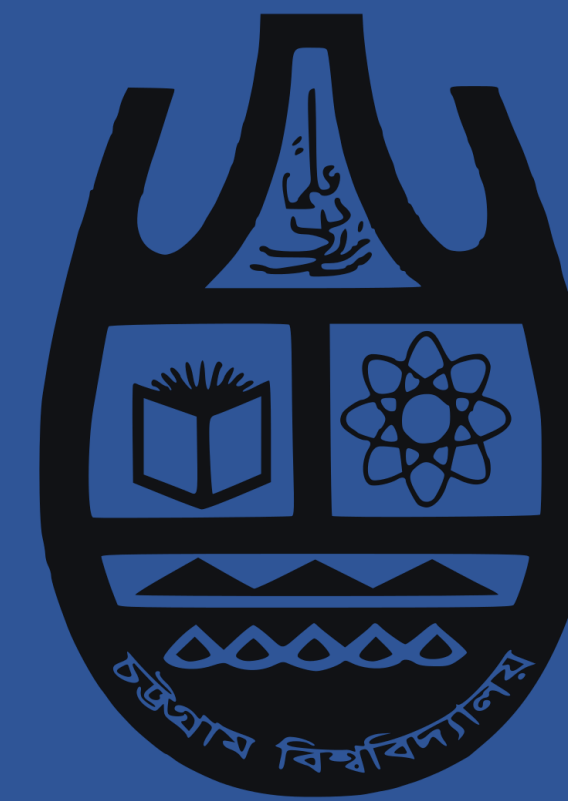


Book Recommendation System

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Introduction

In our current world, we have lots of kinds of recommendation system like food, cloth, etc.

Every system utilizes the user data and generates proper response.

In order to process such huge amount of data we need expert systems which can learn from user behavior. Now-a-days AI is everywhere.

So to familiarize ourselves to the state of the art of AI we used logical programming language like prolog to develop our project.

Design

In this part, the system recommends book based on the language of the book and the writer's name of the book.

If the writer's name is not in the knowledge base then the system shows that the name is not in the knowledge base.

There is another part in this system. This part recommends book based on the language and genre of the book.

Methodology

The system is divided into three parts.

- Knowledge Base
- Rules
- Expert System

Knowledge Base: It contains facts about the system.

Rules: It contains the conditional rules of the system.

Expert System: It is the main interactive system that interact with the user

Design

The Book Recommendation System is designed into two parts. In one part, the system recommend genres based on the age and mood of the user.

If a user is below 18 years the expert system will suggest Child Story to him.

Another part of our system is to recommend books to the user. The system can recommend books using genres or the book's writer.

Please run `?- license.` for legal details.

For online help and background, visit <https://www.swi-prolog.org>
For built-in help, use `?- help(Topic).` or `?- apropos(Word).`

```
?- start.
Expert System - Book Recommender
What is your name?
|: shovon.
```

```
Hello shovon
Do you like us to recommend genres or recommend book?
write genres/book
|: genres.
```

```
What is your age?
|: 24.
```

```
What is your mood?
1.sad
2.happy
3.normal
|: sad.
```

You can read books in the following genres: Romance, Comedy, Thriller
true.

```
?- ■
```

Figure 1 : Snapshot of the system

```
?- start.
Expert System - Book Recommender
What is your name?
|: shovon.

Hello shovon
Do you like us to recommend genres or recommend book?
write genres/book
|: book.
```

```
What do you like to read?(Foreign/Bengali book)
1.Foreign
2.Bengali
|: Foreign.
```

```
Do you have any favourite writer?
1.yes
2.no
|: yes.
```

```
yes
Write the name of your writer:(In CamelCase format)
|: 'Lewis Carroll'.
```

You should read this book written by himAlice's Adventures in Wonderland
true.

```
?- ■
```

Figure 2 : Snapshot of the system

```
?- start.
Expert System - Book Recommender
What is your name?
|: shovon.

Hello shovon
Do you like us to recommend genres or recommend book?
write genres/book
|: book.
```

```
What do you like to read?(Foreign/Bengali book)
1.Foreign
2.Bengali
|: Bengali.
```

```
Do you have any favourite writer?
1.yes
2.no
|: no.
```

```
no
Write the name of your favourite genre:
|: ChildStory.
```

You can read this book The Little Prince by Antoine de Saint-Exupry
true.

Figure 3 : Snapshot of the system

```
1 % Knowledge Base
2 %Story
3 book('The Little Prince','Antoine de Saint-Exupry',ChildStory,Foreign).
4 book('Harry Potter and the Sorcerer's Stone',ChildStory,Foreign).
5 book('Alice's Adventures in Wonderland','Lewis Carroll',ChildStory,Foreign).
6 book('The Lion, the Witch and the Wardrobe','C. S. Lewis',ChildStory,Foreign).
7 book('The Adventures of Pinocchio','Carlo Collodi',ChildStory,Foreign).
8
9 %novels
10
11 book('Deyal','Humayun Ahmed',Novel,Bengali).
12 book('Mehmed-din','Sadat Hossain',Novel,Bengali).
13 book('Misir Ali Sonogro','Humayun Ahmed','Thriller',Bengali).
14 book('Kishore Golpo Sonogro','Robindra Nath Tagore',ChildStory,Bengali).
15
16 book('To Kill a Mockingbird','Harper Lee',Novel,Foreign).
17 book('Lolita','Vladimir Nabokov',Novel,Foreign).
18 book('The Lord of the Rings','J.R.R. Tolkien',Novel,Foreign).
19 book('The Brothers Karamazov','Fyodor Dostoevsky',Novel,Foreign).
20
21 book('The Great Gatsby','F. Scott Fitzgerald','Tragedy',Foreign).
22
23 book('Grown Ups','Marin Keyes',Comedy,Foreign).
24 book('A Very Punchable Face: A Memoir','Colin Hoot',Comedy,Foreign).
25 book('Slouchers: The Novelization','Mike Sacks',Comedy,Foreign).
26
27 book('Little Miss Little Compton: A Memoir','Arden Myrin','Biography',Foreign).
28
```

```
1 %Rules
2
3 foreign_book(X,Y) :- book(X,_,Y), Y == Foreign.
4 bengali_book(X,Y) :- book(X,_,Y), Y == Foreign.
5
6 writer_by(X,Y) :- book(X,Y,_).
7
8 genre(X,Y) :- book(X,_,Y).
9
10 % X = book Y = writer Z = genres K = Language A = age
11
12 suggest_book(X,Y,Z,K) :- book(X,Y,_).
13
14 recommendation(X,Y,O) :- X <= 18, Y == 'sad', O = 'ChildStory, Comedy, Biography'.
15 recommendation(X,Y,O) :- X <= 18, Y == 'happy', O = 'ChildStory, Novel, Thriller'.
16 recommendation(X,Y,O) :- X <= 18, Y == 'normal', O = 'ChildStory, Comedy, Novel'.
17 recommendation(X,Y,O) :- X > 18, Y == 'sad', O = 'Romance, Comedy, Thriller'.
18 recommendation(X,Y,O) :- X > 18, Y == 'happy', O = 'Biography,Story,Novel'.
19 recommendation(X,Y,O) :- X > 18, Y == 'normal', O = 'Romance,Tragedy,Travelling'.
20
```

Figure 4 : Code of the system

```
1 %
2 %
3 % Expert System
4 %
5 %start:
6 write('Expert System - Book Recommender'),nl.
7 write('What is your name? '),nl.
8 read(Name),nl.
9 write(Name),nl.
10 write(Name),nl.
11 write('Do you like us to recommend genres or recommend book? '),nl.
12 read(Dec),nl.
13 Dec == genres => write('What is your age? '),nl.
14 read(Age),nl.
15 write('What is your mood? '),nl.
16 write(1.sad),nl.
17 write(2.happy),nl.
18 write(3.normal),nl.
19 read(Mood),nl.
20 recommendation(Age,Mood,genre).
21 write('You can read books in the following genres: '),
22 write(genre).
23
24 write('What do you like to read?(Foreign/Bengali book)'),nl.
25 write(1.Foreign),nl.
26 write(2.Bengali),nl.
27 read(Language),nl.
28 write('Do you have any favourite writer? '),nl.
29 write(1.yes),nl.
30 write(2.no),nl.
31 read(Favourite),nl.
32
33 write('You can read this book '),
34 write(Language),nl.
35 write('By the way here are your favourite writer'),nl.
36 write(1.yes),nl.
37 write(2.no),nl.
38 read(Favourite),nl.
39 write(Favourite),nl.
40
41 (Favourite == yes) => write('Write the name of your writer:(In CamelCase format)'),nl.
42 read(Writer),nl.
43 write('You should read this book written by him '),
44 write(Writer),nl.
45 ; write('Writer is not present in our knowledge base.').
46
47 write('Write the name of your favourite genre'),nl.
48 read(Genre),nl.
49 (genre(Genre) => suggest_book(X,Y,Genre,Language)).
50 write('You can read this book '),
51 write(X),write(' '),
52 write('by '),write(Writer),nl.
53 ; write('This genre is not in our KB').
54
55 }
```

Figure 5 : Code of the system

Conclusions

The objective of this project is to build an expert system that can recommend books depending on small number of factors.

In future, we may build a robust system depending on a large number of factors.