

# Content Exploration Assistant Using Deep Learning

## User Requirement Analysis

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## 1 Introduction

Before starting to build any system we must first know what the users want and to create a set of requirements based on those findings. So, user requirement analysis is essential for a successful project.

## 2 Methodology

The methods that we used to gather User Requirement information are:

- Questionnaire (Google Form)
- Phone Call Interviews

There are many pros to using questionnaires as a form of gathering user information. As a result of using questionnaires to conduct the survey we were able to reach a large number of people given the short amount of time we had. We were able to get 50 responses to our survey in a matter of 24 hours. Apart from that, given the current pandemic circumstances it was not possible to conduct face-to-face interviews with people which is another reason behind choosing Google Forms as a medium of conducting the survey. Our questionnaire started with closed-ended questions and concluded with open-ended questions thus following a pyramid structure.

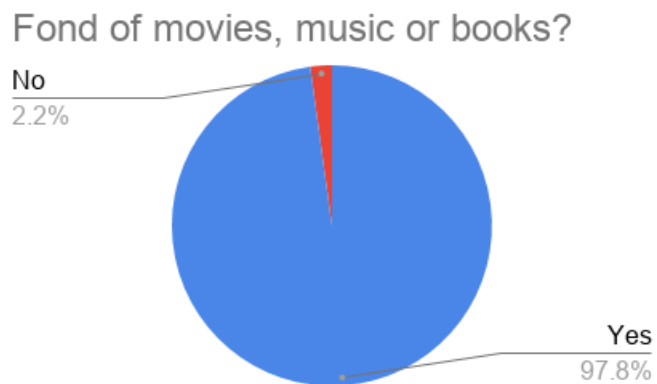
We also conducted 5-6 phone interviews to get more detailed information about what the users want. Even though our questionnaires provided us with valuable data we wanted to ask some of our users some extra questions to get some more comprehensive particulars. We were able to achieve some valuable suggestions through this process.

Although our potential users are anyone who is fond of movies, music and books. But we provided our survey to people of age ranged **18 - 34** years old as a study[1] shows that half of all internet users belong to this group.

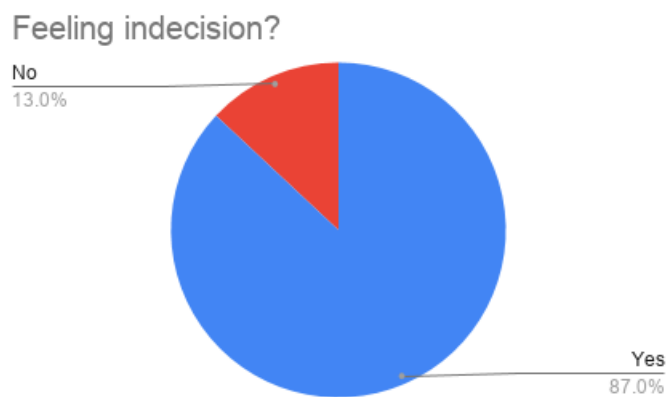
### 3 Raw Data

The following are the most salient discoveries of our survey:

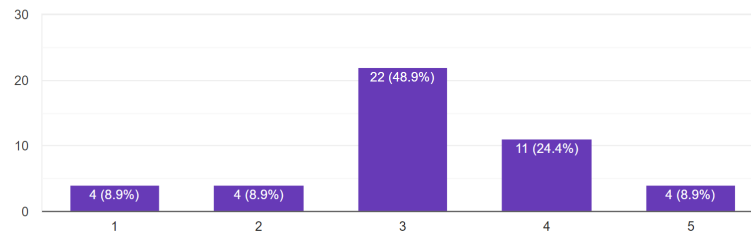
- 97.8% of the people have said that they are fond of movies, books, or songs.



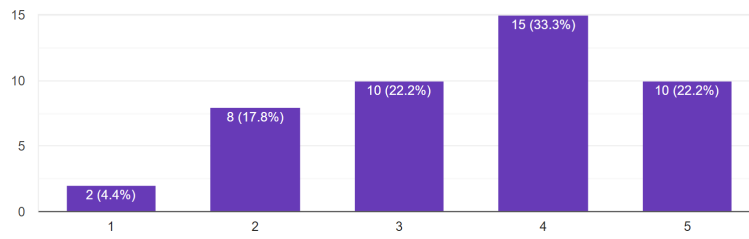
And 86.7% people have said they have felt indecision while choosing what to watch, read, or listen to.



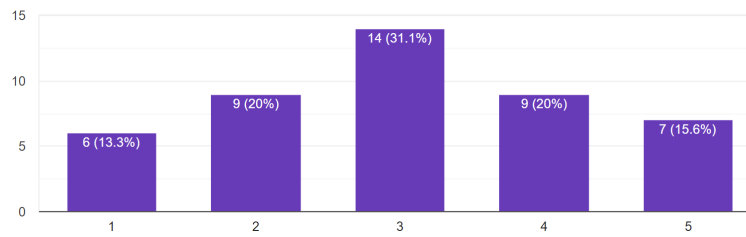
- The following set of histograms show that majority of our users are either moderately satisfied (satisfaction value of 3) or not too satisfied (satisfaction value of less than 3) with the current recommendation systems they are using.



(a) Movie Recommendation Satisfaction

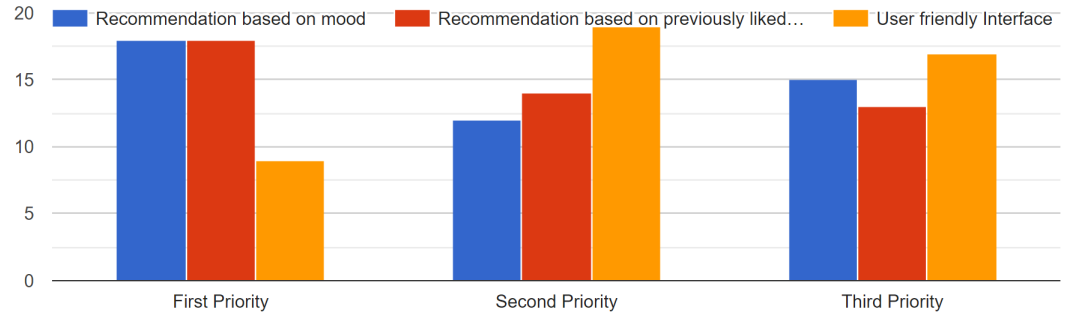


(b) Music Recommendation Satisfaction



(c) Book Recommendation Satisfaction

- In one of our questions the user was asked to rank the features of our system according to what they felt was the most important. The given graph visualizes the result of this query. It can be seen that as first choice there has been a tie between "recommendation based on mood" feature and "recommendation based on previously viewed content". And an user friendly interface has been chosen as a second most prioritized feature.



## 4 Personas & Scenarios

Some personas and scenarios that represent our users and requirements are :

### 4.1 Persona: Eduardo

**Name :** Eduardo

**Age :** 20

**Work :** Student

#### Goals :

- Spend the least amount of time searching for content
- Discover new songs of his interest

#### Motivation :

- Staying up to date with technology
- Spending time with family
- Discovering new movies and music

### 4.2 Scenario : Eduardo

Eduardo has just finished his semester final exams yesterday. The total stress of the whole set of exams took a toll on him and a little break is well deserved in his opinion. He has a week off from university until the next semester begins.

So, he has decided that in these 7 days he wants to watch a lot of cheerful comedy movies that may ease up a little tension. But Eduardo doesn't use any movie streaming platforms since most of them are paid services. Consequently, he doesn't have the service of any recommender systems that can suggest him any movie according to his likings. So, to list some movies of his liking he takes half an hour or so to do some research about the most popular and trending comedy movies that he may like.

One evening, Eduardo wasn't feeling the urge to watch any movies. Rather he was in the mood for some music. But even though he knew that he wanted to listen to some music, he didn't know exactly what he was in the mood for. So, he randomly shuffled his playlist and started to play it in hopes of stumbling on to something that he might like at the moment.

### 4.3 Persona: Lily

**Name :** Lily

**Age :** 26

**Work :** Service holder

**Goals :**

- Finding easy-to-use apps
- Discover new books of her interest

**Motivation :**

- Reading Books
- Eating healthy
- Annual family trip

### 4.4 Scenario: Lily

Lily likes things a little old fashioned. That is, she is very picky about the tech she uses. She only uses tech for things that don't kill a bunch of her time. Apart from that it is a bit difficult for her to find her way around tech. So, if any application in her phone isn't simple to use she would rather not use it. Given the fact that she is old fashioned, it is probably an easy guess to say that her favorite media of reading books is buying a hardcopy of the book. She has tried reading books from PDFs and softcopies but those cannot top the feel of reading off of real paper.

Recently, she decided to try reading a book of the horror genre since she has never tried out this genre before. So, she grabbed Stephen King's "The Shining" from the store and started reading it. A week after starting the book she finished it and she was amazed by the writing of Stephen King. So much so that she would love to read some more books of similar type. But since she

is new to the genre she doesn't know the names of any similar books. So, she started asking her friends and colleagues in order to find anyone with similar interests so that she can get recommendations from them. "It is so hard to find another bookworm these days!", she thought to herself.

## 5 Current Situations

We already have seen some variations of our system being used. Some of them are:

- Netflix
- YouTube
- Kindle
- Spotify

From the given services, all but YouTube are paid services. But our system will be a free service. There are no existing systems where users can get suggestion of movies, songs and books using the same system. Lastly, no other system provides the feature of content based on mood recognition which is a favorite of a lot of our potential users as our survey showed.

## 6 Requirements

### 6.1 Primary Requirements

We have established some primary requirements for our project. The first requirement is the proper implementation of recommendation based on previously liked content. This requirement can be seen in the scenarios described in section 4.2 and 4.4 where Eduardo and Lily both require the need of a recommender system given the current situation they are facing.

The second requirement is the implementation of recommendation based on the user's mood. This requirement was established from our questionnaire where the users chose this feature to be of highest priority. The necessity of this feature can be seen in the scenario 4.2 where Eduardo can't decide what song he is in the "mood" for.

An user-friendly interface is the third requirement. A complex user interface makes a system hard to navigate thus rendering it operationally infeasible. The necessity of an user friendly interface can be seen in scenario 4.4. People like Lily who prefer easy-to-use interface are the reason why this feature is a requirement.

The system must be secured and data entered by every user needs to be kept private. Failing to do so will result in huge customer dissatisfaction. Since our system requires user information it is trivially expected by the users that their data will be protected.

## 6.2 Wish List and Want List

The aforementioned points are the must have's of our project. Our questionnaire had an open-ended question where the users suggested some other features that they would like to see in the system. Based on the most popular answers we divided their suggestions into a wish list and a want list. The wish list is a list of features that we have no plans of implementing currently but might do so in the future. The want list is a list of features that we had not thought of at first but now think that these features will improve the system.

### **Wish List:**

- A way to connect with people with the same taste
- Adding anime to the list of content
- Multiple languages
- Linking movies, songs and books

### **Want List:**

- Ad free service
- Manually choosing mood

## 6.3 What our system will not be providing

It may seem that we will also provide the content as well as recommendations, but our system only aims to recommend content. It will not be a streaming service or a reading platform.

## 7 References

- 1 <https://www.statista.com/statistics/272365/age-distribution-of-internet-users-worldwide/>