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Recommendation System for Interest Based Interactivity Through Cross Platform in Big Data

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ABSTRACT: Interest - based interactivity as a key component for enhancing user experience, given the ubiquity of social media. Interest based interactivity modeling in a cross platform Big Data repository is extracted from user interaction. The purpose of this study is two things: first, addressing theoretical dilemmas of cross platform user experience; second, implementing a platform to provide user interest based recommendations across different social networks. Use case is based on interest based cross-platform navigation and filtering content across multiple streams of social content. The streams consisted of tags from content on social media through a process of discovery. The application was tested on a stream of social media content to create a Big Data scenario.

KEYWORDS: Interactivity, Interest Based Cross Platform, Big Data Repository, User Experience

I. INTRODUCTION

A large number of social media platform emerged in recent years with services geared towards users through adds-on such as mobile texting, Facebook with increasing popularity of Twitter, Google+ and WhatsApp, especially in entertainment contexts. These social media platforms, predominantly consisting of social networking sites(SNSs), heavily rely on individual user for content creation, in contrast to professionally produced content. With forty-one percent of the US population finding photos and videos online, interest based content discovery became the driving force for new content generation and redistribution. Nowadays data has also become a torrent flowing into every area of the global economy. It has now swept into every industry and business function. Companies churn out a large volume of transactional data, by capturing information about their customers, suppliers, and operations. Also the online users, customer devices including PC's and laptops, various new online applications, networked sensors embedded devices like automobiles and industrial machines, smart-phones, social media sites, etc, have increased explosively, thus increasing the amount of data on web. Such large amount of data is called as Big-Data. Big-Data refers to a dataset, immense in nature and difficult to capture, store, manage, process and analyze with the available current technology within the tolerable speed and time. The growing bulk of multimedia content has played a major role in the exponential growth in the amount of big data. As social media spread throughout spheres of our lives and these applications generate considerable percentage of Internet traffic, content streams remain fragmented thus limiting to discover interest based relevant content to their users. Consider interest an individual experience, continuously stimulated by relevant contents discovery. Single-platform access necessarily leaves a proportion of interest based content underexposed. Single platform SNSs,, even historical ones, varied technologically and scopewise, ranging from user demographics, geographical attributes, or mere maintenance of pre-existing relationships, specialized social networking sites became mainstream, focusing on specific interests such as travelling, activism, religion, photo-sharing, music listening, and video sharing to mention a few. Some of these limitations were addressed to overcome limited content access, platform interoperability issues and lack of relevant content segmentation across multiple platforms. Attempts to facilitate interest based content access thus started to be modeled within a single platform. Some of the techniques within a single platform. Some of the techniques included "like" feature on Facebook; Twitter content following and filtering were implemented by using "hashtages". Regardless of these attempts, interest based content still can be searched solely within a single platform rather than across multiple platforms, not even considering user interaction with other users or content across through various platform.

II. RELATED WORKS

In [1] the author says that detection and retrieval of media related to social events has gained increasing attention in the research community. Usually, researchers differentiate between known and unknown social events. A major challenge in social event detection is to link heterogeneous media and metadata from different platforms to a given social event. In [2] the author

focuses on the technology used for supporting knowledge creation and distribution. It examines the problem area through three case studies: birdwatchers, virtual stables and ice-hockey fans. In [3] the author provides huge potentials to solve many challenging problems which cannot be well explored in one single platform. It investigates into cross-platform social relation and behavior information to address the cold-start friend recommendation problem. The goal of paper [4] is to educate about two aspects: First, to address the dilemmas of cross platform user experience theoretically. Second, By using an android based mobile application and an cloud architecture is designed for an account of theoretical parameters of big data user centric approach and interactivity. In [5] the author proposed a model to enhance user experience. Their adaptive user-centric model capitalizes on fluidity of online and offline realms and autonomous environments that are sensitive to the changing data fluxes. This model is based on a prototype of an ad hoc media company which for a more than a decade has been using social media to enhance user experience. In [6] the author emphasized the importance of customization. According to them customization is so appealing because the content is tailored or because the user feels greater agency. They have conducted number of tests to check the preferences of different types of users. In [7] the author has specified the importance of cross platform which is a solution to a challenge to deploy in different platforms using a single SDK tool and maintaining the same performance as the native application. In [8] the author has mentioned the objective of an information search system based on interest center and the user profile is to return, the elements that are relevant to specific user needs from a collection of documents. They are selecting only the documents interesting a user is done on the basis of interest center, calculated from the information about the user named user profile. The information retrieval systems here converge towards a semant. In [9] the author has mentioned that it is important to understand the variation in how users reveal themselves across multiple platforms to assess the predictive value of different social media platforms. Paper[10] describes RUM, a data extraction tool which allows researchers to easily extract several types of content and structure that are available on Facebook pages. Consequently, the extracted data can be saved and analyzed. RUM Extractor is easy to set up and use, and it gives flexible options to users to specify the type and amount of content and structure they want to retrieve. The paper also demonstrates how RUM can be exploited by collecting and further analyzing data collected from two popular Arabic news pages. Paper [11] mainly concentrates on extracting data like tweets, user information from Social networking site i.e. Twitter. It gives a comprehensive process of extraction this in turn helps students to learn how the vibrant and formless data can be mined from the Social networking site. Further it helps to develop an algorithm for analysis that suits better to improve the marketing tactics.

III OBJECTIVES

1) To provide a cross platform based on user experience
2) Implement an application which contains information retrieval, information filtering and rank filtering processes.
3) Design virtual cloud to account for theoretical parameter of big data user centric approach and interactivity .

IV.PROJECT DESIGN METHODOLOGY

Considering the aspects and following objectives of the project work is planned with following methodology

A. PROBLEM STATEMENT

Design a platform for providing recommendation based on user interest across different social networks

B. PROPOSED SYSTEM

1) A cross platform web application which is purely based on the user interest and interactivity
2) Obtain big data based on the user interactivity and use it for future recommendations
3) Content is recommended based on user interest

C. SYSTEM ARCHITECTURE

System architecture is the conceptual design that defines the structure and behaviour of a system. Content/ Subscription management of user is done in the registration phase. The interests are extracted from different web sites like youtube, facebook, twitter by using the web API's such as youtube data API protocol, Public content solution API, Twitter JSON API respectively and stored in the information extraction repository. User browsing behaviour is extracted and stored in the interest mining repository. Content matching can be done between the information extraction and the interest mining repository and finally content recommendation is given to the user.

The system architecture is shown below :

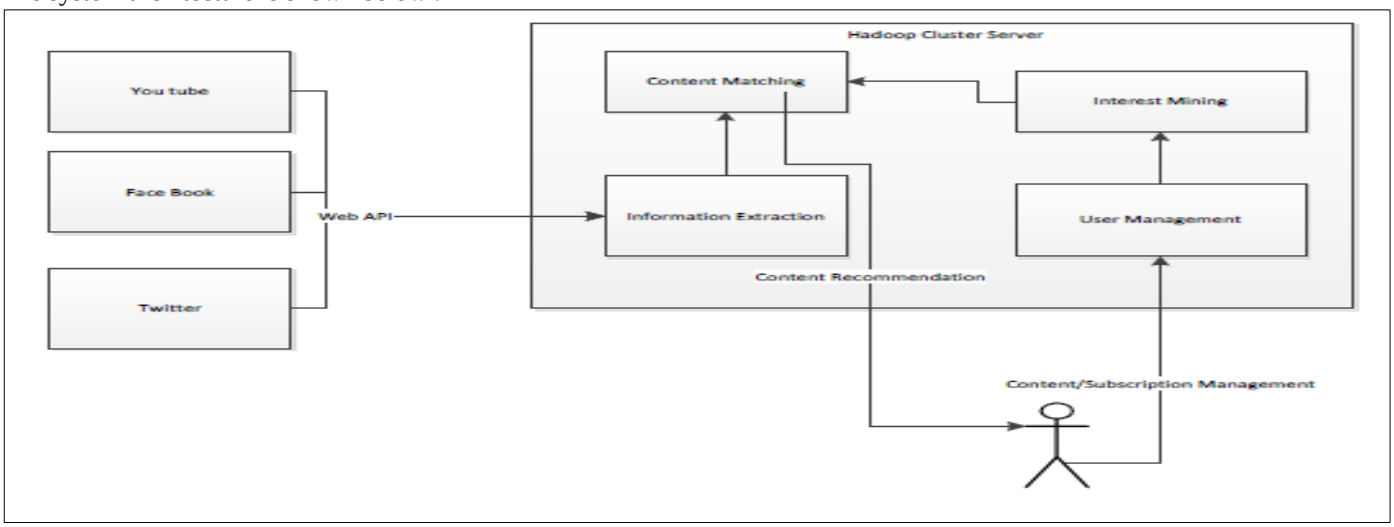

Fig 4.1 System Architecture

1) Subscription Management: Defines a set of features necessary to subscribe (or unsubscribe) to specific topics and user related activities. Subscription topics are subdivided into two categories : Topics expressed through well-defined user search rules (example: Expression matching), which can also employee the use of tags-tag subscription;

2)Information Extraction : The contents are extracted from different websites like youtube facebook, twitter are stored Information Extraction Repository.

3)Interest Mining: Based on user browsing behaviour on contents, this module learns the user interest and constructs user profiles grouping user of similar interest.

4) Content Filtering : Through this feature user can define priority schems for processing a subset of information while ignoring its complementary set, that is, to prioritize or exclude content using a set conditional rules.

The main objective is to provide, A cross platform based on user experience. Implement an application which contains information retrieval, information filtering and rank filtering processes. Design virtual cloud to account for theoretical parameters of Big Data user centric approach and interactivity.

D. DATA FLOW DIAGRAM

Pictorial description of moving of information through an information system is called as data-flow diagram.1) Level 1: Data flow diagram

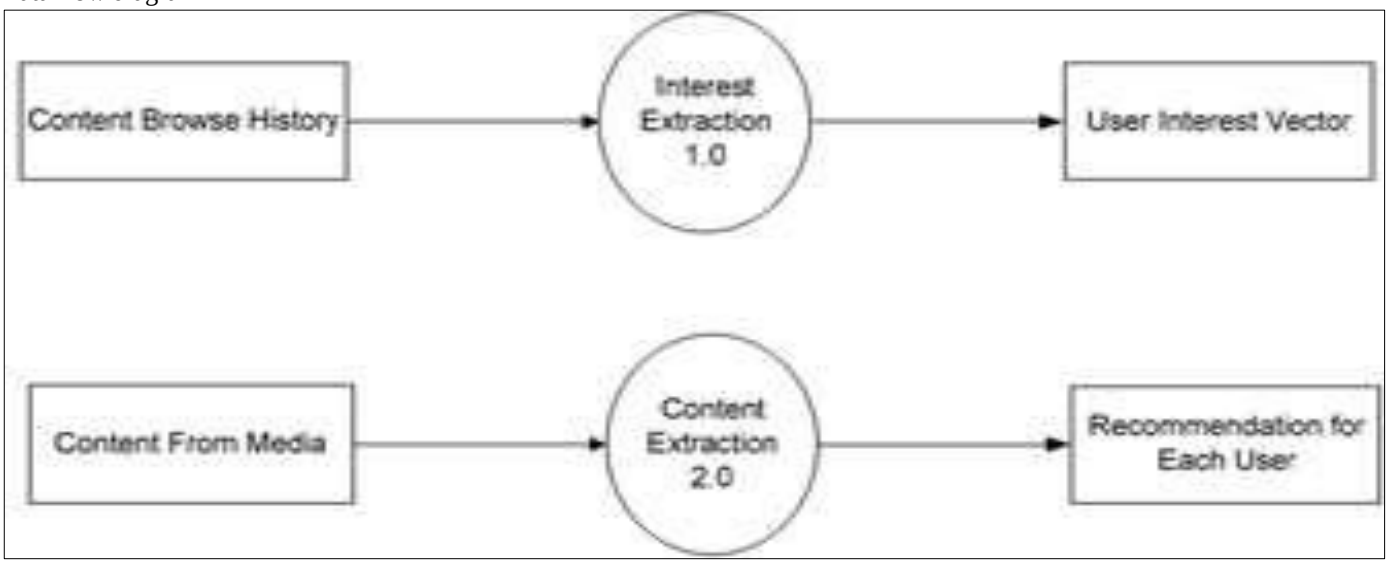

Fig 4.2 : Level 0 Interest And Content Extraction Data Flow Diagram

A setting level or level 0 information stream graph demonstrates the communication between the outer operators and framework which go about as information sinks and information source. On the situation of the frameworks connections with the outer world are demonstrated effectively regarding information transmission streams over the frame work limit. The graphical representation gives no piece of evidence to its internal organization and shows the entire system as a unit process.

A Figure 4.2 explains Level 0 the content browse history and content from media where the two systems. Building user interest vector and recommendation for each user where the two external agents. Interest and content extraction provides the interaction between the system and the external agents.

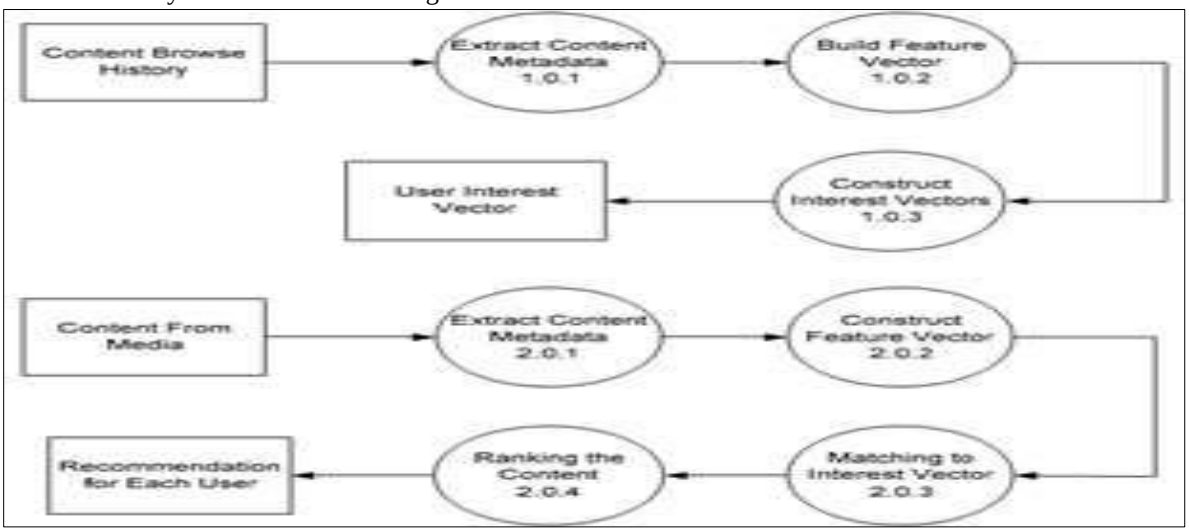

Fig 4.3: Level 1 Interest and Content Extraction Data Flow Diagram

The level 1 data stream graph speaks how the framework is isolated into sub-framework, each of which manage information transmission streams to or from an outside operator, which together give each operations of the ramework as single. It demonstrates inward information and demonstrates the stream of data between the diverse parts of the framework.

Figure 4.3 explains level 1 system content browse history divided into subsystem such as extracts content metadata, built feature vector, user interest vector which together provide very functions of the system as the whole. System content from media is divided into subsystem such as extract content metadata, construct feature vector, matching to interest vector, ranking the content which together provide every operations of the system as a single and finally provide the recommendation to the user.

V. RESULTS

User Registration Page

The very first step is registration. In order for the user to get recommendation of different platform in a single platform , the user has to register to the web application by giving information such as username, email, password and priorities.

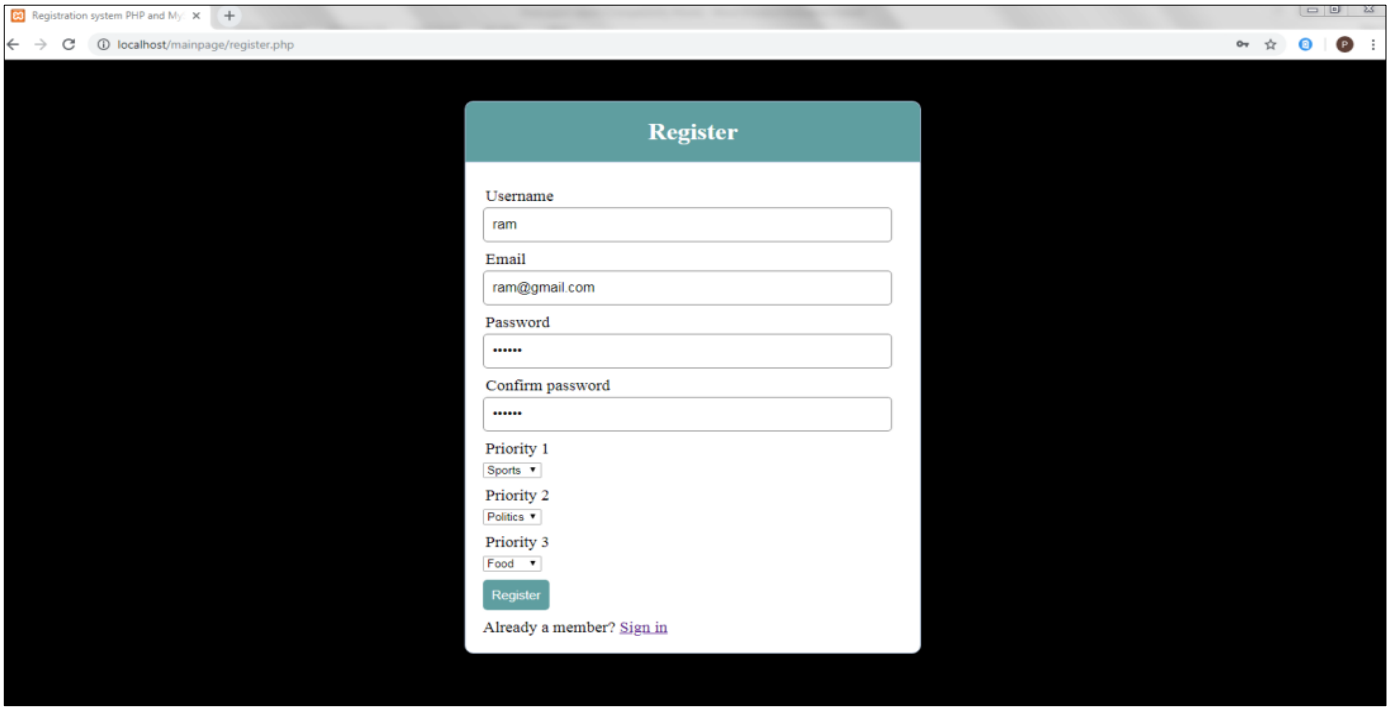

Fig 5.1: User Registration Page

User Login Page

The next step after registration is Login, only registered user can login. If in case any user tries to login without registration a pop up message will appear telling the user has register before login. On successful login the user can view recommendations based on the users interest.

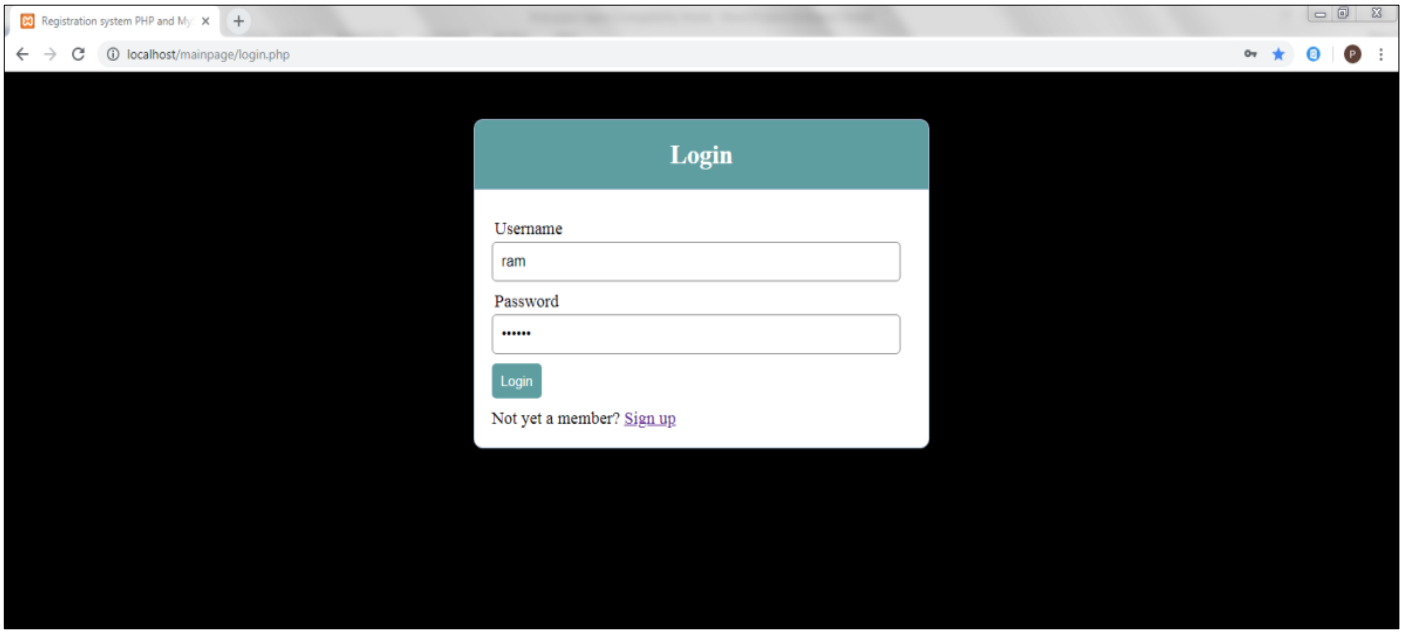

Fig 5.2: User Login Page

Recommendation Page

On successful login, the user can view recommendation based on the users interest were the interest of user would be collected from the user and display recommendation based on user's priority as specified during registration.

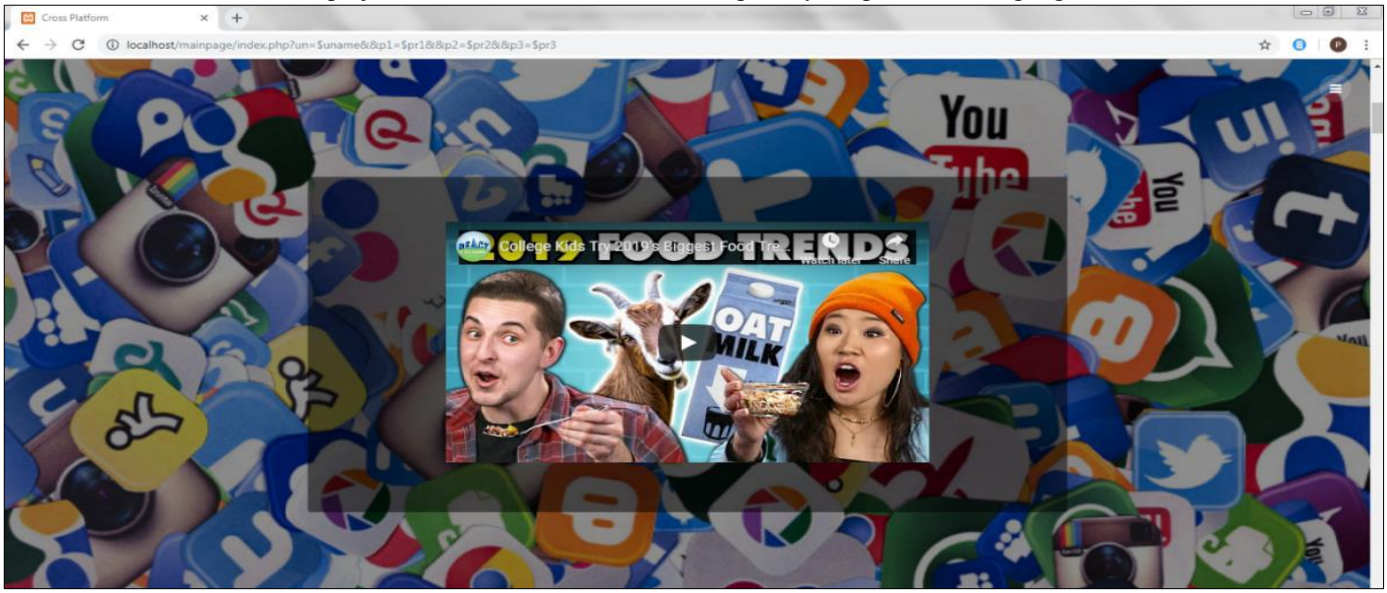

Fig 5.3: Recommendation Page

Category Selection Page

Initially, during registration the user would be asked to specify his priorities based on which the user would be getting recommendations. Since user's interest change from time to time the user has been a facility to select a category, were the user would be getting recommendations based on the particular category the user has selected.

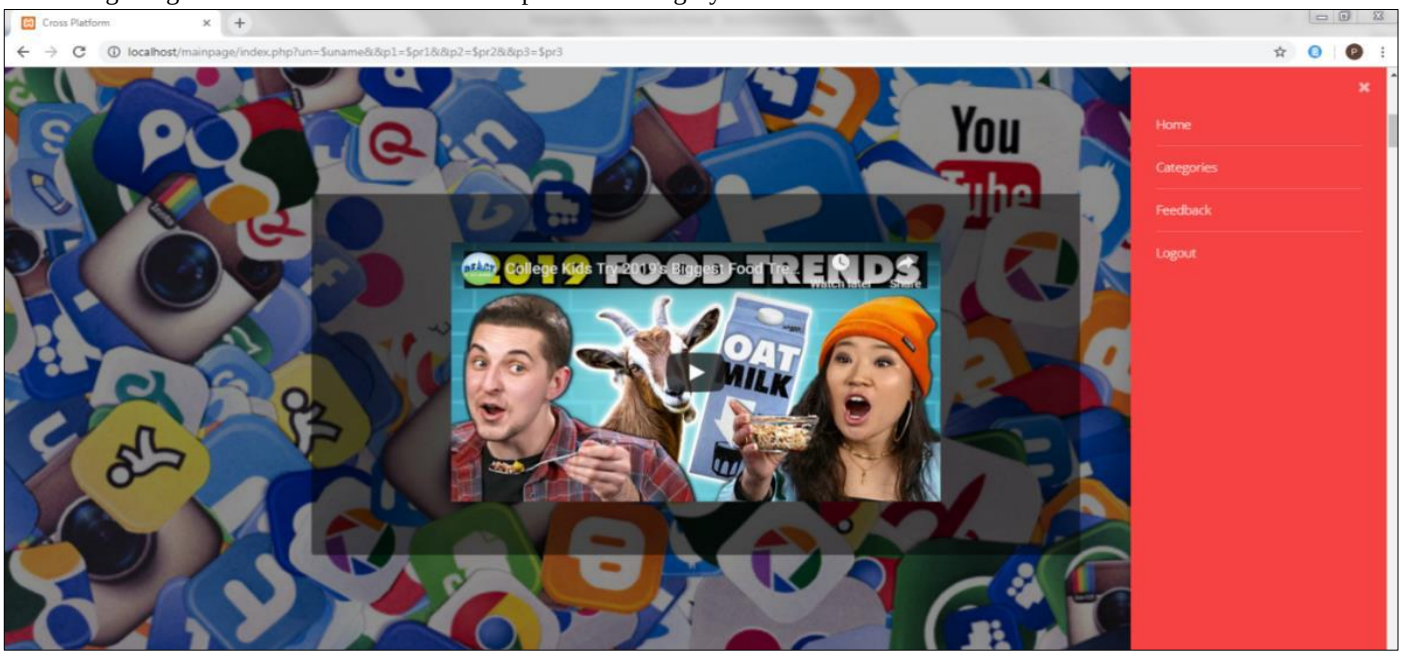

Fig 5.4: Category Selection Page

Category Page

Since the users interest change from time to time, the user can select categories were the user will be directed to category page and select categories based on the users interest.

Example: If the user is selecting food category ,then the will be getting recommendation only on food.

Fig 5.5: Category Page

Feedback Page

Finally, the user can give feedback by providing the username, email id and subject. Once, the submit button has been clicked, the admin will get a mail of the feedback given by user.

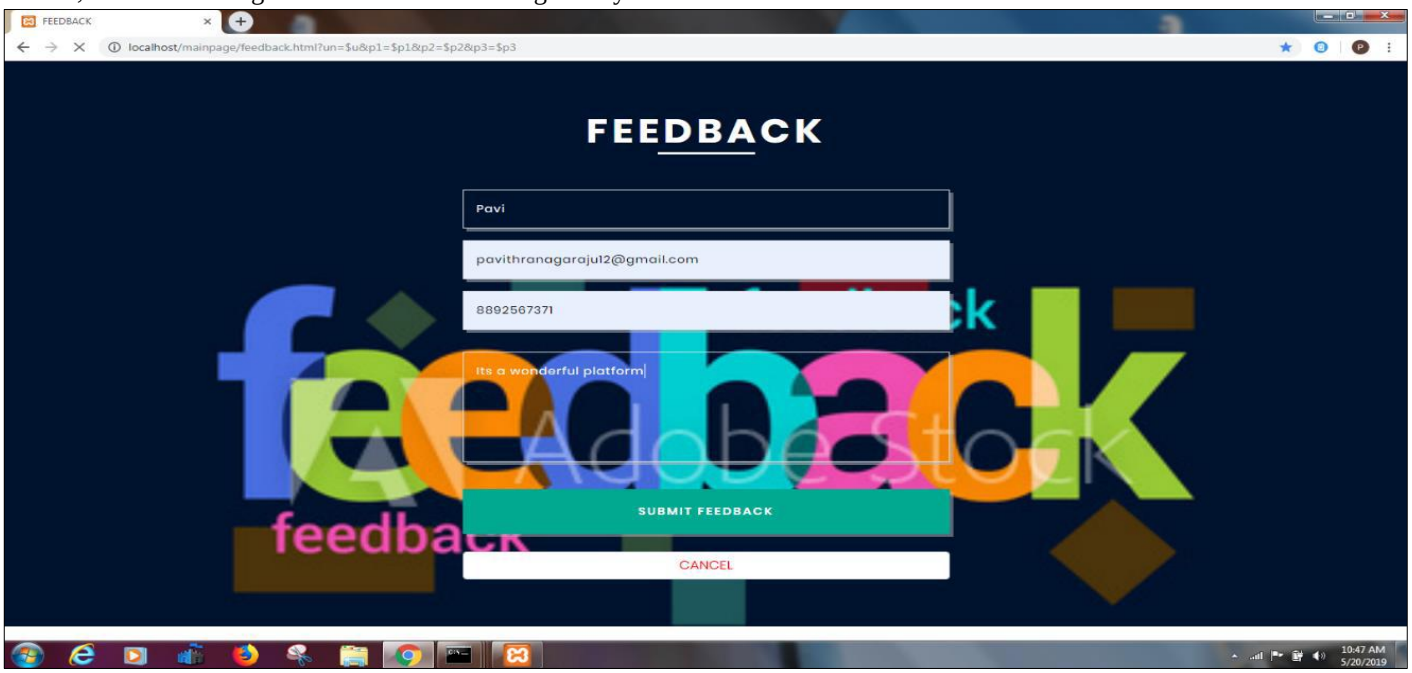

Fig 5.6: Feedback Page

VI . CONCLUSION

To provide the cross-platform based on user experience. Implement an application which contains information retrieval, information filtering and rank filtering processes. Design virtual cloud to account for theoretical parameters of Big Data user-centric approach and interactivity. Provide user friendly based on the user history and profile.

VII. FUTURE WORK

The proposed schemes are preliminarily focused on single user. In the future work, the proposed system will be used for multi user experience.

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