

# Online Recommendation of Electronic Goods

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## ABSTRACT

*This is a web based Shopping Web Application which gives diverse functionalities to User and Admin. Administrator can Login to the framework, Add another item, Add new item class. Related items will get prescribed to clients based high positive appraisals of items. The framework gives the survey of any item. To require a diminished the over-burden of the item, businessperson, related sites. We present a semantic proposal technique which is more proficient.*

**Keyword :** - Web portal, online recommendation, and product recommendation.

## 1. Introduction

We will build up a framework to give proposal about gadgets item from nearby market in type of warnings. Suggesting Systems are new age dynamic web instruments that assistance client for proficient item seek by means of Information on the web and get data identified with their inclinations. To defeat the item over-burden of Internet customers, we present a semantic proposal methodology which is more proficient. The recommended technique prescribes the semantic items to the clients and is initially in light of semantic investigation and item arrangement. The framework will have item data from neighborhood advertise. All item related information will be put away with it.

This is a web based Shopping Web Application which gives diverse functionalities to User and Administrator. Administrator can Login to the framework, Add new item, Add new item classification. Client can Search item by item name, cost and classification, buy item, Compare items, add remarks to items (Positive, Negative, and Neutral). Related items will get prescribed to clients based high positive appraisals of items.

## 2. Motivation

The main motivation of this framework is to keep up all related data about the merchandise which is suggested by the online framework. This framework is gets proposal of all looked item which is sought by the client. Framework gives the audit on any item. This proposed framework has a diminished the over-burden of the item, businessperson, related sites. Framework present a semantic suggestion methodology which is more productive.

## 3. Objective

The system will have product information from local market. All product related data will be stored with it. Depending upon customers product search recommendations will be given to him using NLP process. Also the recommendations will be formed on the base of reviews of product and while giving recommendation to customer his product range will be considered

This system gives a proper desired output to the customer according to the searched product. It will consider all the circumstances which is related to the product, person, review, comparison between products and range

The main objective of this system is to provide a feasibility to the customer.

#### 4. LITERATURE SURVEY

The past Recommendation framework or web based shopping entryways are not practical to demonstrate the conclusion based electronic item which has higher (Positive) suggestion or the higher survey. Those framework are not ready to send the data of the item which is close-by accessible and furthermore moderate as per the client's item go. Be that as it may, this framework evacuates the downside with a Sentiment suggestion Procedure for Electronic and also different items. The Principal components incorporate demonstrating of web objects, order of the web objects, coordinating between and crosswise over question and assurance of the arrangement of the activity to be prescribed for personalization.

Assumption examination is a sort of normal dialect handling for following the state of mind of general society about a specific item or theme. Notion investigation, which is likewise called feeling mining, includes in building a framework to gather and inspect suppositions about the item made in blog entries, remarks, surveys or tweets.

#### 5. Architectural Diagram

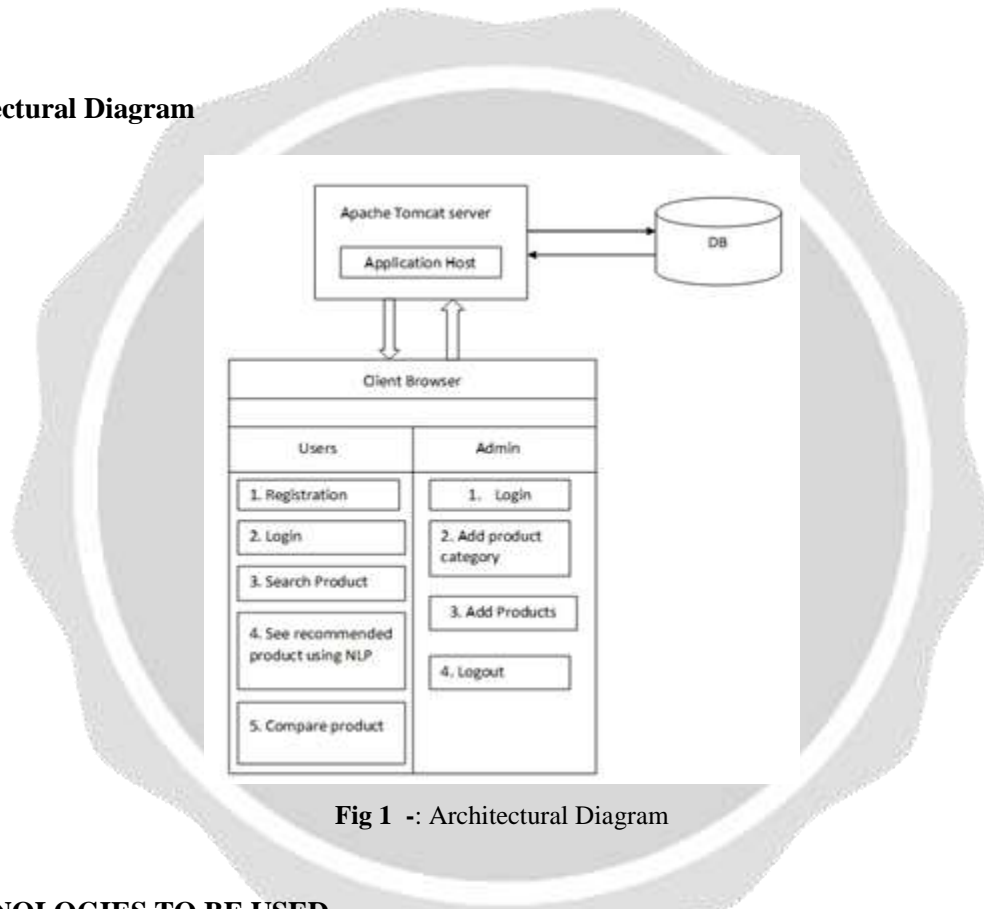


Fig 1 -: Architectural Diagram

#### 6. TECHNOLOGIES TO BE USED

- About Java: Java has been tested, refined, extended, and proven by a dedicated community of Java developers, architects and enthusiasts. Java is designed to enable development of portable, high-performance applications for the widest range of computing platforms possible. By making applications available across heterogeneous environments, businesses can provide more services and boost end-user productivity, communication, and collaboration—and dramatically reduce the cost of ownership of both enterprise and consumer applications.

- Sentiment Analysis Using NLP:

Sentiment analysis also known as opinion mining refers to the use of natural language processing, text analysis and computational linguistics to identify and extract subjective information in source materials. Sentiment analysis is widely applied to reviews and social media for a variety of applications, ranging from marketing to customer service. Generally speaking, sentiment analysis aims to determine the attitude of a speaker or a writer with respect to some topic or the overall contextual polarity of a document. The attitude may be his or her judgment or evaluation, affective state, or the intended emotional communication (that is to say, the emotional effect the author

wishes to have on the reader). Sentiment is not analyzed via artificial intelligence, as some people may be tempted to think. Rather, it is analyzed via a systematic process that involves the use of a sentiment lexicon. This lexicon assigns a degree of positivity or negativity to a word by itself that is then used to give meaning to the entirety of the article. This is a way of analyzing sentiment, then, by considering a type of inherent positivity or negativity of each word that would be used by someone to talk about your business or products. For example, “happy “would be deemed a positive word, as well as “like” and “love”. At the opposite end of the spectrum we can see words like “hate”, “dislike”, etc.

• **Content Based Algorithm:**

A content based recommended works with data that the user provides, either explicitly (rating) or implicitly (clicking on a link). Based on that data, a user profile is generated, which is then used to make suggestions to the user. As the user provides more inputs or takes actions on the recommendations, the engine becomes more and more accurate.

The concepts of Term Frequency (TF) and Inverse Document Frequency (IDF) are used in information retrieval systems and also content based filtering mechanisms (such as a content based recommender). They are used to determine the relative importance of a document / article / news item / movie etc.

**MYSQL:**

MySQL is the most popular Open Source Relational SQL Database Management System. MySQL is one of the best RDBMS being used for developing various web-based software applications. MySQL is developed, marketed and supported by MySQL AB, which is a Swedish company. MySQL is the most popular Open Source Relational SQL Database Management System.

MYSQL Enterprise edition includes the most comprehensive set of advanced features & management tools for MYSQL.

MYSQL is the world's most popular open source database. Whether you are a fast-growing web property, technology ISV or large enterprise, MYSQL can cost-effectively help you deliver high performance, scalable database applications

MYSQL is popular choice of database for used in web application & is a central component of widely used LAMP open source web application software stack.

MYSQL Query Analyzer: To optimize performance by visualizing query activity and fixing problem SQL code.

## **7. Overall Description**

### **7.1 PRODUCT PERSPECTIVE:**

The past Recommendation framework or web based shopping entryways and isn't possible to demonstrate the area based electronic item which has higher proposal or the higher survey.

Principle point of view of the proposed framework is to build up a suggestion framework which precisely gives item list based on client's pursuit which incorporates Reviews, Categories, Price extend, Comparisons between items and so on.

### **7.1 REQUIREMENTS:**

#### **SOFTWARE REQUIREMENTS:**

Operation system: Windows 7

Language: JAVA

Software with version: 1) Java 1.7

2) MySQL 5.5

3) Tomcat 7

#### **HARDWARE REQUIREMENTS:**

4 GB RAM or More

Minimum 80 GB Hard disk

Core 2 dual or above

### 7.3 PRODUCT FUNCTION:

#### 1. Admin:

- Admin can Login to system.
- Admin can add product category
- Admin can add new product

#### 2. User:

- User can Login to system
- User can search products by product category, product range and product name.
- User can see comparison of products.
- User can User can add comments to the product according to their likes or dislikes.

#### 3. System:

- System will show recommended products according to users search by using Content-Based algorithm and NLP.

### 8. Mathematical Model:

$S = \{s, e, X, Y, T, F_{main}, NDD, DD, Success, Failure\}$

- $S$ (System) = Is our proposed system which includes following tuple.
- $s$  (initial state at time  $T$ ) = GUI of search engine. The GUI provides space to enter a query/input for user.
- $X$  (input to system) :- Input Query. The user has to first enter the query. The query may be ambiguous or not. The query also represents what user wants to search.
- $Y$  (output of system) :- List of URLs with Snippets. User has to enter a query into search engine then search engine generates a result which contains relevant and irrelevant URL's and their snippets.
- $T$  (No. of steps to be performed) :- 4. These are the total number of steps required to process a query and generates results.
- $f_{main}$ (main algorithm) :- It contains Process  $P$ . Process  $P$  contains Input ,Output and subordinates functions. It shows how the query will be processed into different modules and how the results are generated.
- $DD$  (deterministic data):- It contains Database data. Here we have considered MySQL, MySQL which contains number of queries. Such queries are user for showing results. Hence, MySQL is our  $DD$ .
- $NDD$  (non-deterministic data):- No. of input queries. In our system, user can enter numbers of queries so that we cannot judge how many queries user enters into single session. Hence, Number of Input queries are our  $NDD$ .
- Memory shared: - MySQL. MySQL will store information like User Authentication, Performing Operations like Shop details, Product details, User details, Product category. Since it is the only memory shared in our system, we have included it in the MYSQL.
- CPUcount: - 1. In our system, we require 1 CPU for server.
- Success = successfully recommended best system as per user's interest
- Failure = If application will not send the notification to user it will fail.

Subordinate functions:

$S = \{s, e, X, Y, F_{main}, NDD, DD, Success, Failure\}$

Where

$s$ =Start State

$e$ =End State

$X$ ={Set Of Inputs}

=  $\{x_1, x_2, x_3, x_4\}$

Where  $x_1$ = Shop details

$x_2$ = Product details

$x_3$ = User details

$x_4$ = Product category.

$Y$ ={Set of Outputs}

=  $\{y_1, y_2, y_3\}$

Where  $y_1$ = Searched product

$y_2$ = Recommend product based on their previous history

$y_3$ = Notification is received by customer on mobile when they are coming to that area.  
 $F_{main} = \{ \text{Set of procedure} \}$

$= \{ f_1, f_2, f_3, f_4 \}$

Where

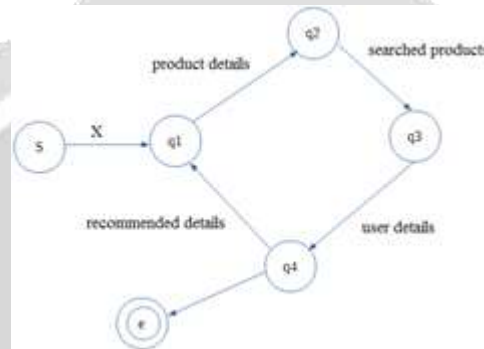
$f_1$ = Take  $x_1, x_2$  Input

$f_2$ = Give  $y_1$  Output

$f_3$ = Take  $x_3, x_4$  Input

$f_4$ = Give  $y_2, y_3$  Output

### 8.1 State Transition Diagram:



**Fig 2** -: State Transition Diagram

#### Explanation:

- The  $q_1$  state accept the ambiguous query 'x' from the state 's' which is our initial state .
- The  $q_2$  state is meant for Shop details, Product details which stores the query x which is accept in state  $q_1$ . The query stores in state  $q_2$  searched product and send to state e.
- Then state  $q_3$  for Recommend product based on their previous history, Notification is received by customer on mobile when they are coming to that area. Then send to state  $q_4$ .

### 9. Conclusion

Recommender System are new age web device that assistance client in exploring through data on the web and get data identified with their inclinations. To conquer the item over-burden of Internet customers, framework present a semantic suggestion technique which is more productive. Utilizing this application client get the item data and furthermore give the notice to the client through E-mail or SMS.

### 6. REFERENCES

- [1].R. Bell, Y. Koren, and C. Volinsky, "Modeling relationships at multiple scales to improve accuracy of large recommender systems" KDD '07: Proceedings of the 13th ACM SIGKDD international conference on Knowledge discovery and data mining, New York, NY, USA, 2007, ACM.
- [2]. O. Celma and P. Herrera, "A new approach to evaluating novel recommendations", RecSys '08: Proceedings of the 2008 ACM conference on Recommender systems, New York, NY, USA, 2008, ACM
- [3]. G. Adomavicius and A. Tuzhilin, "Toward the next generation of recommender systems: A survey of the state-of-the-art and possible extensions," IEEE Trans. Knowl. Data Eng.

- [4]. Michael Hashler, "Recommender Lab: A Framework for Developing and Testing Recommendation Algorithms" Nov. 2011.
- [5]. G. Linden, B. Smith, and J. York, "Amazon recommendations: Itemto- item collaborative filtering," IEEE Internet Comput., Feb. 2003.
- [6]. Hiral Y. Modi, Meera Narvekar, "Enhancement of online web recommendation system using a hybrid clustering and pattern matching approach", 2015 International Conference on Nascent Technologies in the Engineering Field (ICNTE-2015), Year-2015.
- [7]. Nursultan Kurmashov, Konstantin Latuta, Abay Nussipbekov, "Online Book Recommendation System", 2015 Twelve International Conference on Electronics Computer and Computation (ICECCO), Year-2015.

