# Smart Shopping Using ID3 Algorithm and Data Mining

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*ABSTRACT-* **With the advancement of the computer and Internet technology, data mining is playing an important role in Web based information systems. While e-commerce is developing rapidly, it is possible for retail organizations to collect and store massive amounts of sales data. However, this unfortunately causes the explosive growth of data, which requires a more efficient way to extract useful knowledge. On the other hand, people have gradually noticed that data mining not only can offer very meaningful knowledge about customer shopping behaviours by analyzing the transaction data in the past, but also can improve the efficiencient procedure and quality of managerial decision making. In B2C e-commerce, the research for customer shopping pattern not only improves commerce system's design, but also results in better marketing strategy. Smart Shopping is an E-Commerce website which uses the skin tone of the customer and using data mining algorithm ID3(Iterative Dichotomizer 3), classifies and suggest the suitable clothes to the customer. Customer has the choice whether to go with the suggestions or purchase what he wants to buy. The system also provides vendor with the facility that he can do this business through our website. He can register to the site and after getting authenticated by the admin he can display and sell his product on the site.**

## I. INTRODUCTION

While e-commerce is developing rapidly, it is possible for retail organizations to collect and store massive amounts of sales data. However, this unfortunately causes the explosive growth of data, which requires a more efficient way to extract useful knowledge from the transaction processed on the website .SMART SHOPPING an ecommerce website which improves your shopping experience. The Basic idea of the website is that it suggests the cloths based on user skin tone, for that user first need to register, so that we can get personal information and skin colour. Using user's skin colour we send the skin tone colour to the ID3(Iterative Dichotomiser 3), ID3 classifies the sample Data and it generates a Decision tree and on basis of this Decision tree it provides the suggestion for each product depending on user skin tone. We also provide a facility where one can register with us as vendor and can carry out his business through us.

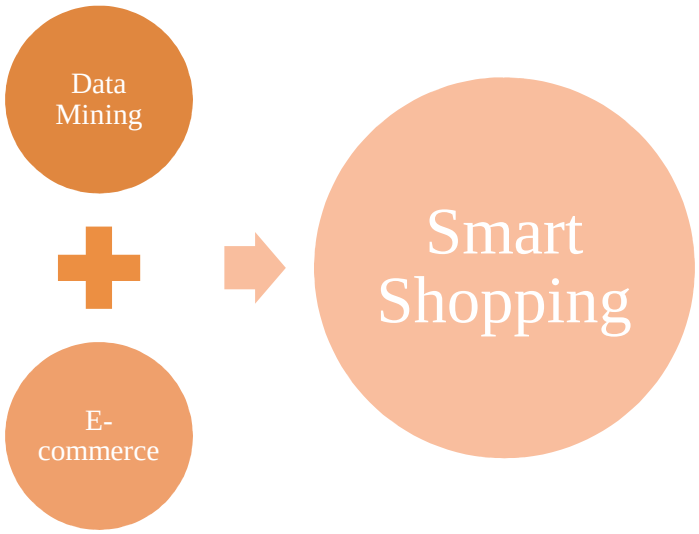


Figure 1 : Smart Shopping

Similar to malls which have many shops of various brands various vendors can sell their products through our site. Vendors need not to create their individual site to run business.

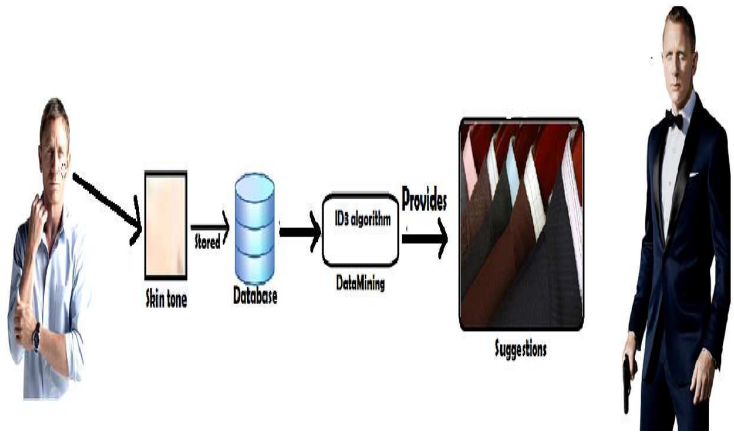


Figure 2 : How it Works

Currently people have to visit shops, do shopping manually. Lots of time is wasted in this tedious process. nowadays showroom 's are such huge one ,that people have to waste lots of time in searching their choice, an even after doing that some are unable to find desired one ,one that could satisfy them match their choice.

After selection process, they have to wait in a queue for trail's to see whether selected clothes would match them or not .even after this whole time consuming process some screening takes place. To obtain the final selected one they have to wait in long queue's for payment at point of sale terminals or payment counter.
After the whole procedure of selection, suppose the user doesn't get his required size then there is no alternate solution for him to get that one.
After shopping some people are not satisfied, as they were unable to find their choice in such a huge showrooms.
This is the main disadvantage in existing system to avoid this problem we are introducing "Smart Shopping".

## II. LITERATURE REVIEW

The first existing system in consideration is Flipkart Online Shopping site.


Figure 3:Flipkart

The Second is Amazon and there are many more shopping sites available but proposed system is better than these as it has many new features like it gives suggestions based on skin tone a helps people to shop more efficiently and they get a better idea of what to shop and what will suit them more.it helps them to shop efficiently.

*Smart Shopping System.*

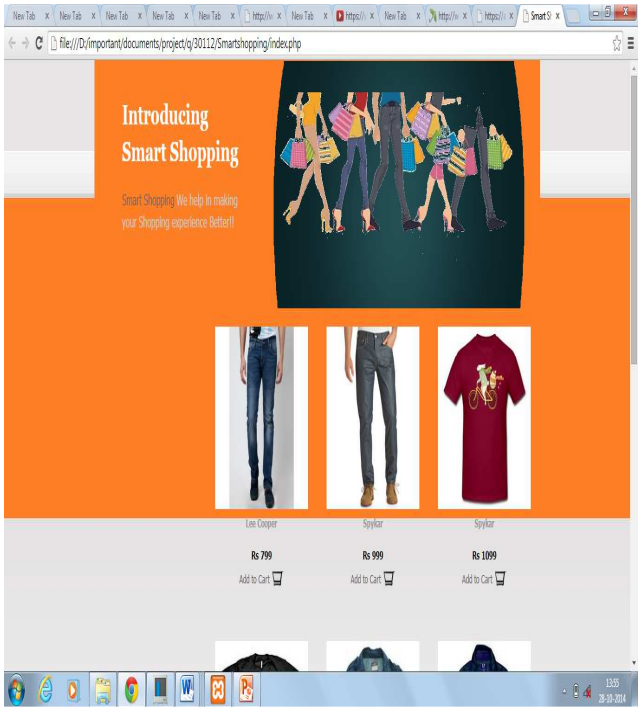


Figure 4:Proposed System

Second Feature in line is it provides customers to become vendors and put their that clothes online for selling just like olx. So it's a combination of olx,quicker and shopping sites like flipkart along with an added benefit of giving suggestions to customers based on their skin tone so that they get a better idea of what to shop i.e it gives an optimistic solution of how to shop efficiently.

## III. PROPOSED SYSTEM

With the advancement of the computer and Internet technology, data mining is playing an important role in Web based information systems. While e-commerce developing rapidly, it is possible for retail organizations to collect and store massive amounts of sales data. However, this unfortunately causes the explosive growth of data, which requires a more efficient way to extract useful knowledge. On the other hand, people have gradually noticed that data mining not only can offer very meaningful knowledge about customer shopping behaviours by analyzing the transaction data in the past, but also can improve the efficiency and quality of managerial decision making. Thus, business intelligence research in e-commerce becomes a major area

for applying Web mining that aims at capturing and discovering novel, interesting, and useful customer knowledge. In B2C e-commerce, the research for customer shopping pattern not only improves commerce system's design, but also results in better marketing strategy.

One of the most common applications using data mining techniques for e-commerce is finding association relations between a set of co-purchased commodities, namely the present of some commodities in a particular transaction implies that of other commodities. Based on such mechanism, the recommendation system.

Online smart shopping will contain a database which includes samples of skin tone (called as principle components) in different conditions. The online shopping site targets at the difficulties faced by the customers in shopping. The site aims at making shopping a easier task.

The online smart shopping will perform the following functions:

- Take skin input.
- Give suggestions on basis of skintone,sex,age.
- Store in the database.
- Customers can become vendors

*Advantages:*

1. **Maintainability :**

The developed software will require any further efforts to maintain it.

2. **Usability :**

The overall functionality of the system will not be affected with change in users.

3. **Reliability :**

The system will give reliable results irrespective of the varying skin tones, light conditions and face outlines.

4. **Throughput :**

The software system will ensure that the user will get notification of the transaction state.

*Description of the Project:*

Online smart shopping consists of the following part:

- Registration.
- Providing suggestions and offers.
- Storing the transactions and information about user in the database.

The relationship between these parts and the modules included in them can be seen in the system architecture.

*System Architecture:*

System Architecture is the overall description of the system. It tells us about the information of the system. In our project we have implemented four tier architecture for the system. The middle tier has been divided into

Web tier and business tier. The ID3 algorithm that is the main backbone of our system is going to be implemented in the business tier.

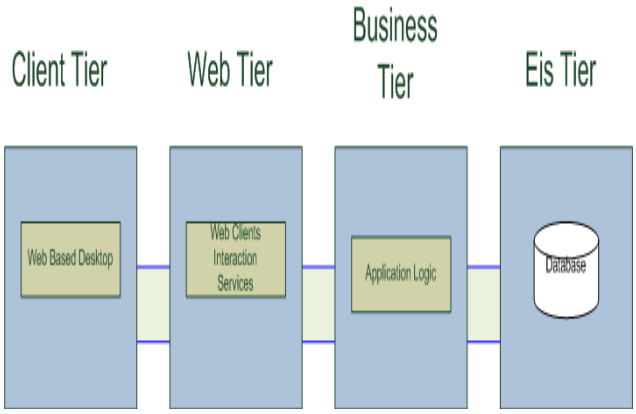


Figure 5: System Architecture

**Module 1**: Web based desktop.

**Module 2**: Database.

**Module 3** : Web clients ,interaction services(ID3 implementation).

- **Client tier:** The client tier mainly consists of the website which is the GUI that is going to be interacting with the customer. The client tier is mainly located at the browser of the client.
- **Web tier :** This tier mainly consist of the web clients and interaction services. It is located on the server side of the system. It does the work of PHP file execution and sends the HTML code to the client side
- **Business tier:** This tier mainly consists of application logic .It is this tier where execution and implementation of ID3 algorithm is going to be performed.
- **EIS tier:** This tier is mainly the database of the system. It consists data about the registered customer, skin tones, and information about colour of clothes.

## IV. METHODOLOGY USED

Our site will be aiming at providing suggestion of clothes using the ID3 algorithm.

Many decision tree algorithms are present like CHAID, CART but ID3 was chosen because it much more efficient than other algorithms and works well with smaller sample set.

Data mining is applied using the ID3 algorithm.

*Strengths of ID3 algorithm:*

- Understandable prediction rules are created from the training data.
- Builds the fastest tree.
- Builds a short tree.
- Only need to test enough attributes until all data is classified.
- Finding leaf nodes enables test data to be pruned, reducing number of tests.

Whole dataset is searched to create tree PHP My Admin is used for database storage and server used is XAMPP. The look of the database:

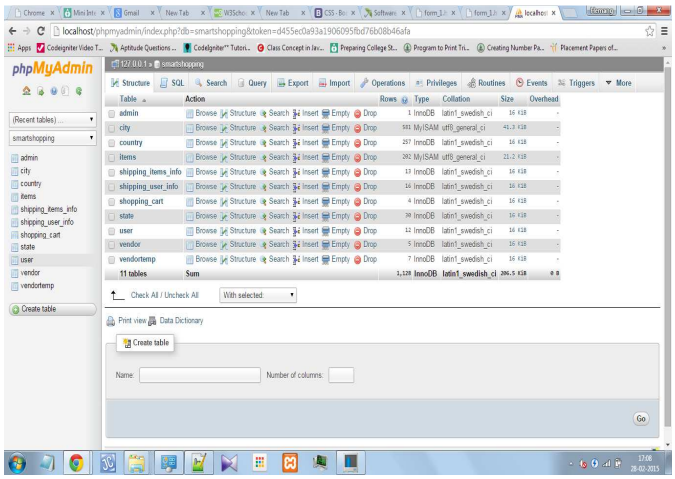


Figure 6 : Database View

## V. OUTCOMES

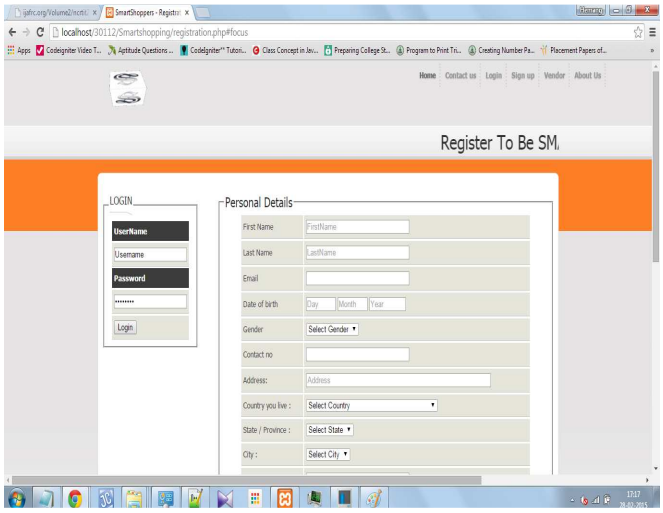


Figure 7: Registration page

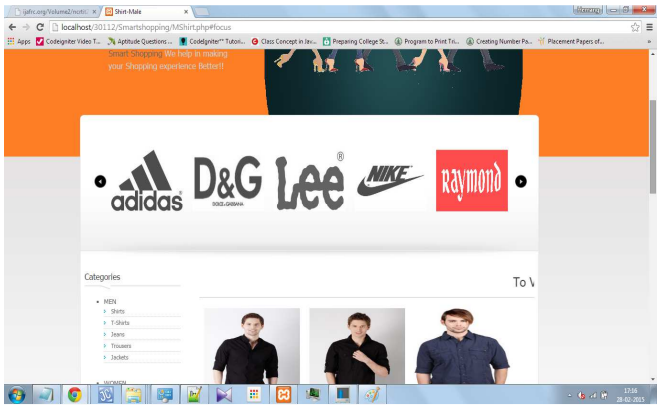


Figure 8 : User Interface while searching

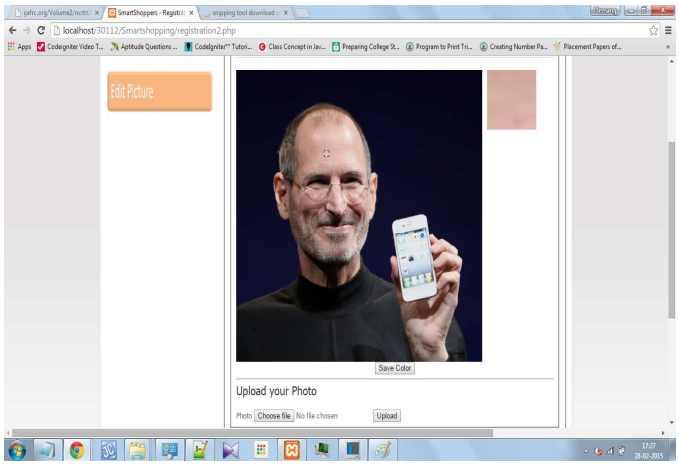


Figure 9 : Selection of tone while creating account

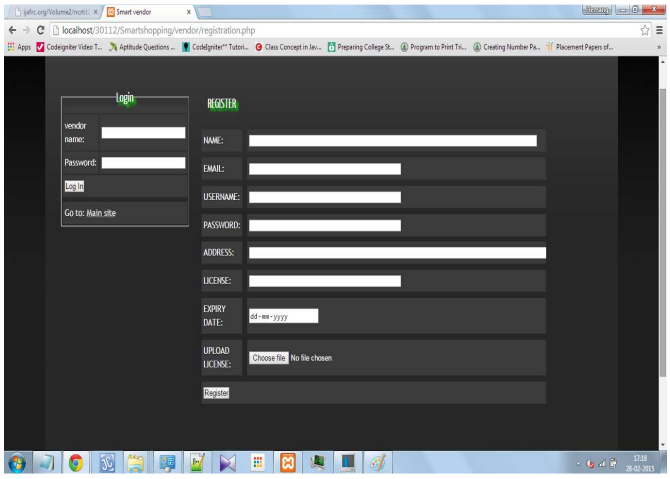


Figure 10: Vendor Registration

Customers can register as vendors if they want to keep their products online so if someone wants then can buy them

## VII. CONCLUSION

Thus Proposed System provides a logistic solution for shopping with added features like suggesting clothes based on skin tone and giving customers an advantage of being a vendor and sell their products .As it helps users to shop smartly and efficiently hence name Smart Shopping.

## VIII. REFERENCE

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