Inventory Management System and Cart Recommendation using ML

Offer recommendation using apriori and ANN

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Abstract: With current projections regarding the growth of Internet sales, online retailing raises many questions about how to market on the Net. While convenience impels consumers to purchase items on the web, quality remains a significant factor in deciding where to shop online. The competition is increasing and personalization is considered to be the competitive advantage that will determine the winners in the market of online shopping in the following years. Recommender systems are a means of personalizing a site and a solution to the customer’s information overload problem. As such, many e-commerce sites already use them to facilitate the buying process. We present a recommender system for online shopping focusing on the specific characteristics and requirements of electronic retailing. We use a hybrid model supporting dynamic recommendations, which eliminates the problems the underlying techniques have when applied solely. As the World Wide Web becomes increasingly important as an information source and a place to conduct commerce, Web surfers face the daunting challenge on how to sift through a morass of information to get to the needed on. One solution to this information overload problem is the use of Recommendation System. Recommender systems are changing from novelties used by a few e-commerce sites to serious business tools that are re-shaping the world of e-commerce.

Index Terms – electronic retailing, Recommender systems, hybrid model,

I. INTRODUCTION

To develop a Inventory Management system and Cart Recommendation that is solely based on the shopping habits/history of people. With current projections regarding the growth of Internet sales, online retailing raises many questions about how to market on the Net. While convenience impels consumers to purchase items on the web, quality remains a significant factor in deciding where to shop online. The competition is increasing and globalization is considered to be the competitive advantage that will determine the winners in the market of online shopping in the following years. Recommender systems are a means of personalizing a site and a solution to the customer’s information overload problem. As such, many e-commerce sites already use them to facilitate the buying process. In this paper we present a recommender system for online shopping focusing on the specific characteristics and requirements of electronic retailing. It is a tool for small scale local area bounded moderate profit business to maintain and keep a record of stock/products available at hand for sale. Due to certain undesired conditions the profit margin of small scale businesses has considerably been low. So to keep up with globalization and amortization it is imperative to expand these businesses over digital level (For eg. Local grocery shops delivering the commodities at your doorstep due to certain circumstances such as lockdown).

Our Inventory System provides advantage of buying local products such as grocery online and having it delivered to your doorstep without any human interaction, Thus ensuring health safety and provides a better deal economically (due to our recommendation system). In this system, the retailer(host) has the upper hand to display his inventory to a local area in bias of local competition to their customers and providing them with
reasonably swift service along with online services. To Summarize, our system provides faster, better and more reliably efficient service to Potential customers. Tally being the most popular app among the marketing chain (but it needs professional knowledge and learning paid courses), our system provides simple and understandable features to our hosts.

2. Related work

2.1 Survey Existing System:

Previously, customers used to have to leave the comfort of their home in order to buy daily living essentials such as groceries. The pre-digital era was slow and tedious at the same time. The Existing system also causes losses to customers since the customers don’t know about the existing discounts of the clubbed products. Also the pre-existing tech giant systems take a lot of time and extra delivery charges for delivering to your doorstep.

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2.3 Problem Statement

1. To simplify online shopping by introducing this system and personalizing the inventory contents and not risking the global competition by staying regional.
2. To self empower the local retailers for going online with cheap/economical equipments.
3. To provide them with some insurance of income in unfortunate circumstances.
3. System and Implementation

Proposed System

3.1.1 System and Web Architecture
3.1.2 Database Architecture

Our model includes database system, JAVA application, HTML/CSS page, JQuery and Python.

- For JAVA application development, Eclipse IDE is used.
- HTML/CSS page is developed in Notepad++.
- For Python Anaconda Navigator 3’s Spyder IDE is used.
3.2 METHODOLOGY

3.2.1 System Methodology

- First using Eclipse IDE JAVA Applet is designed using content pane.
- Then ActionListener is implemented to the main class.
- mySql database is connected to the class.
- Offer recommendation is then trained on the collected data.

3.2.2 Database Methodology

- First the database is created using mySql sever in mySql Workbench.
  - Different tuples are created using different keywords such as PRIMARY KEY, AUTO INCREMENT, different tuples like DATETIME, INT, VARCHAR(x).
- Database is then put into action.

4. Results and Outputs:

4.1 Administrator Login:

![Figure 4.1 Admin Login](image-url)

Figure 4.1 Admin Login
4.2 Inventory Management

![Image of Inventory Management interface]

**Figure 4.2 Inventory Management**

4.3 Offer Generator

![Image of Offer Generator interface]

**Figure 4.3 Offer Generator**
4.4 Cart Invoice Generator

Figure 4.4 Invoice Generator

<table>
<thead>
<tr>
<th>Sr.no</th>
<th>code</th>
<th>HSN</th>
<th>Item Name</th>
<th>Price</th>
<th>Quantity</th>
<th>Total</th>
<th>Percentage(%)</th>
<th>%self Price</th>
</tr>
</thead>
<tbody>
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<td>1</td>
<td>bh0001</td>
<td>0</td>
<td>Pen</td>
<td>10.0</td>
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</tr>
<tr>
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<td>0</td>
<td>Pen Stand</td>
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<tr>
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</tr>
</tbody>
</table>

Sub-Price: 600.0
- GST18.0: 108.0
Price Payable: 708.0

5. Futurescope:

To provide a marketing opportunity to small scale businesses to go digital without sharing their profits with already built digital businesses, thus giving them the upper hand in their locality.

6. Conclusion

The Inventory Management and Cart Advertising and Recommendation System is to facilitate and enhance management of inventory data and also provide marketing opportunities and online presence of small local businesses economically. Also to provide a better Service to the local area customers such as time efficiency, easy UI, better deals on products.
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