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A COLLABARATIVE AGENT IN E-COMMERCE

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Abstract

The Internet is the primary means of trade in current e-shopping models. E-commerce has grown in popularity over the years, mostly because people believe it is beneficial and straightforward to acquire various items calmly from their workplace or home. To improve the automation and efficiency of the online shopping process, the authors of this study offer a customised e-shopping framework that makes use of specialised innovation in the field. Customers' accessibility, response speed, and efficacy are all improved because to the use of expert innovation. e-Shopping specialists are available at any time, from any location, using any device, to provide the specific product requested by the customer, based on exchange cost efficiency and flexibility. Regulator data is controlled by the regulator expert, which is linked to the customer service specialist by way of an association. The regulator expert provides the data to the customer specialist, and the client selects and puts items in the shopping cart. In the end, the framework works well and saves customers a lot of time as they buy online.

1. Introduction

The e-shopping is characterized as the utilization of PCs and electronic organizations to sort out shopping with clients over the web or some other electronic organization. People believe that online shopping is convenient and easy to use since they don't have to leave the comfort of their homes or workplaces to buy a variety of products. Internet shopping, particularly during the Christmas season, eliminates the need to wait in lengthy lines or hunt for a certain item in many stores. It was the unusual growth of Internet clients around the world that opened up a whole new world of business opportunities. Over the last several years, online shopping has taken off in a big manner. E-shopping, where a customer may delegate the responsibility of buying and selling to the professionals rather than perusing the e-shopping himself, is one such situation in which the specialists have an unmistakable vocation. There might be no legal tools to interact with electronic exchange and automate the shopping procedure for customers. So, a human buyer is still responsible for gathering social affair item data from several Internet sources, making selections regarding each product, and finally executing the e-installation. Purchasing anything on the Internet will cost you money. As a result, a multi-specialist environment is used to reduce the time and improve the automation of the e-shopping framework.

Related Work Software expert improvements supply another circumstance that is used to nurture the new generation web-based company framework, in which the most laborious segments of the customers purchasing cycle will be automated. In addition, there are now many purchasing locations on the Internet; nevertheless, the majority of these destinations do not have a user pleasant interface design, which is crucial for the accomplishment of online programming. The interface of e-shopping frameworks should be pleasing to the sight, straightforward to master and simple to employ. Any other way, folks overall will probably turn out to be less fond on e-shopping apps. The JADE innovation might be employed to construct an easy to use, simple to understand and fascinating.

Literature survey

Online business is business cooperation over the web, which can bring down costs drastically and working with new sorts of business exchanges. As the Internet engages residents and democratizes social orders, it is likewise changing exemplary monetary standards. New models of business connection are creating as organizations and purchasers take part in an electronic commercial center and receive the resultant rewards. The Internet can possibly alter trade and different regions. The Internet will alter retail advertising. Trade on the Internet could add up to huge number of dollars by the turn of the century.

Trade has developed throughout the long term. Before the development of cash, it was the straightforward “deal process” where things could be traded, say milk for grains. The development of cash carried with it, the idea of a "commercial center" in a commercial center, Commerce is capacity of 4 P’s Product, Price, Place and Promotions.

This large number of four parts assume a crucial part in an exchange to occurAt the point when the Postal System appeared the merchants chose to take advantage of the new open door and began utilizing mailers giving

depiction of their items. It prompted the idea of "Mail Order Cataloging". From here, the advancement of the "Online shopping" networks was along these lines unavoidable with the improvement of media vehicles. The most recent age of business is one that should be possible over the web. Web gives a virtual stage where venders and purchasers can come in touch available to be purchased and acquisition of labor and products. They can be huge number of miles separated, may have a place with various areas of the planet, could communicate in various dialects, E-Commerce arose as the limit less exchange medium the time of globalization

2. Related Work

Electronic commerce is the practice of doing business through the internet, which may reduce prices and facilitate new sorts of transactions. When people have more access to information, they are more likely to participate in the democratic process. New models of commercial interaction are developing as businesses and consumers participate in an electronic marketplace and reap the resultant benefits. The Internet has the potential to transform a wide range of industries, including commerce and government services. Retail marketing is about to undergo a paradigm shift thanks to the Internet. By the turn of the century, Internet commerce might be worth tens of billions of dollars.

Over time, commerce has developed. It was a basic "barter procedure" prior to the development of money, such as exchanging milk for grain. Commerce is based on the four Ps: product, price, place, and promotion. The evolution of money brought with it this concept of a "marketplace."

All four of these elements are necessary for a transaction to go through. Different combinations of 4Ps determine different forms of Commerce. For a few pioneers, it became clear that customers were willing to pay more for things that could be delivered directly to their doorsteps. The ease of having things delivered to their doorsteps was made possible by a little adjustment in pricing and location. "Street Vendors" were created as a result of this concept's success. When the postal service was established, retailers took advantage of the new opportunity and began sending out mailers that described their items in more detail. The notion of "Mail Order Cataloguing" was born as a result of this. Because of this, it was only a matter of time until "Tele-shopping" networks were born. Online commerce is now the most common kind of trade in today's world. The Internet serves as a virtual marketplace where merchants and buyers may meet and conduct business. They may live on opposite sides of the globe, speak a different language, or be thousands of miles apart. In the age of globalization, e-commerce evolved as a boundary-less trading channel.

3. The Framework High Level Architecture

The framework's creation necessitates the creation of three separate communicative agents. This includes developing the agents, the communication protocols, and the graphical user interfaces (GUIs). All the agents built using generic and reusable architecture (Bellota et al., 2004), (Bartolini et al., 2005). In the system, each agent has a profile-based local database. Customers' preferences are stored on the BA's profile, whereas things to be provided are stored on the SA profile. It is necessary for the BA to submit a query to the MA when it is looking for a certain product. The MA will then respond by providing a list of SAs that match the one it has received. Upon the satisfaction of the buyer, the BA may begin direct negotiations with the SA.

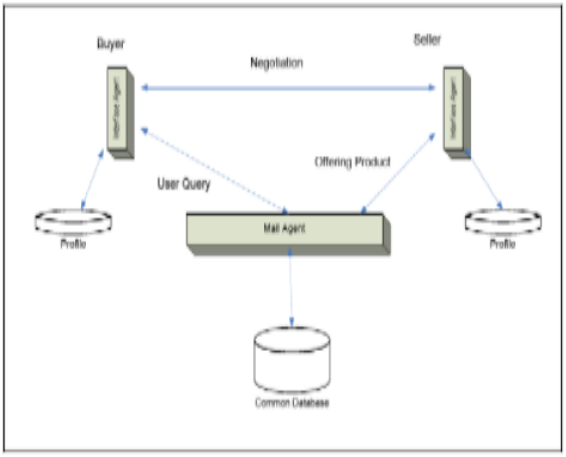


Figure 1: Overall system architecture

The Buyer/Seller Agent Architecture

Agents all have similar design, but each has a unique architecture that reflects the specific functions it does. Main components of the BA/SA architecture in the proposed framework are as follows (Figure 2). In order to enter into talks with the consumer, the BA brings the requested goods and interacts with the MA (if they do not have a pre-known SAs with a relevancy to the current request). Once the BA has been given admission, they continue to negotiate with a SA of their choice (Figure 1). The BA notifies the client of the outcome of the discussions. A SA provides BA with items and services that they have to offer (directly or through a MA). The SA replies to enquiries regarding its owner's goods or services, reacts to XML messages, and negotiates with BAs.

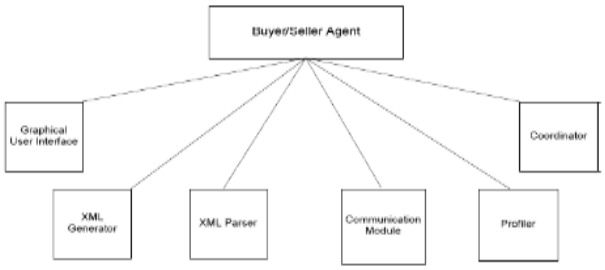


Figure 2: BA/SA module view

Profiler Database

For all customer transactions, the profile module is responsible. In addition, the consumer may recover and modify his or her own profile. The local database contains all of the user profiles. It is necessary for a profile to interact with the responsible agent in order to store or retrieve it. Pictured in Figure 4 are the BA and SA databases used to store the historical items (s/he purchased) and their associated keywords. Figure 5 depicts the system's common database, which contains all of the relevant data about products and agents.

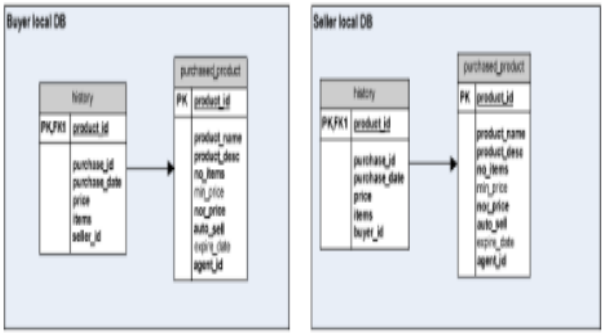


Figure 4: Buyer/Seller agent's local databases

4. System Implementation

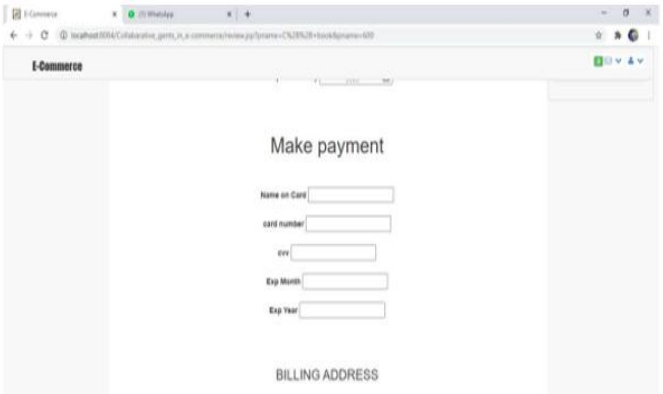
A functioning prototype of the system is currently available. Three separate types of agents are included in this prototype, as previously mentioned. The role of the agents is determined by whether they are working for the buyer or the seller. The agents are written and run using a Java Virtual Machine (JVM) JDK 1.4 with Windows XP. Accessing and manipulating tables in relational databases is possible via the use of agents. XML technology, which was previously mentioned, may be used to encode and deliver data and services in an intelligible format. In hierarchical communities of agents, a portal-agent model is used. The MA performs the role of a gateway agent in this scenario. Instead of acting independently, the MA represents the interests of all BAs and SAs in the community as a whole. Another high-level portal agent (MA) may be responsible for overseeing the MA in a community. A MA may broadcast a message to all BAs and SAs in a group. Messages may be disseminated by any BA/SA in the community by contacting the MA. This paradigm is implemented using the agent middleware. Agent communication protocol is used by both BA and MA to get in touch with one another, and the BA then reacts by getting in touch with its MA counterpart. The MA replies to the BA's contact with the agent middleware. Responses are accepted or rejected by the MA when the BA is recognized. • The BA communicates to the MA the original/refined request of the consumer. • The MA distributed the task to registered SAs in order to meet the customer's needs. SAs attempt to comprehend requests on their own when they get them. The SA will offer the MA with a certainty value for their report if they successfully interpret the data. An SA will provide a report with a 0% confidence score if it cannot comprehend a request. The SA returns the result to the MA.

Request Routing by the MA

In order to take into account, the changing popularity of each SA, the MA builds its own characteristics database and updates it on-the-fly when new SAs are added. For routing purposes, these SA's characteristics will be taken into consideration. The MA will do the routing based on the following criteria: For future relevant requests, depending on the customer's prior replies (how much the SA has serviced this BA's previous demands), the MA learns about each SA and forms a community of SAs.

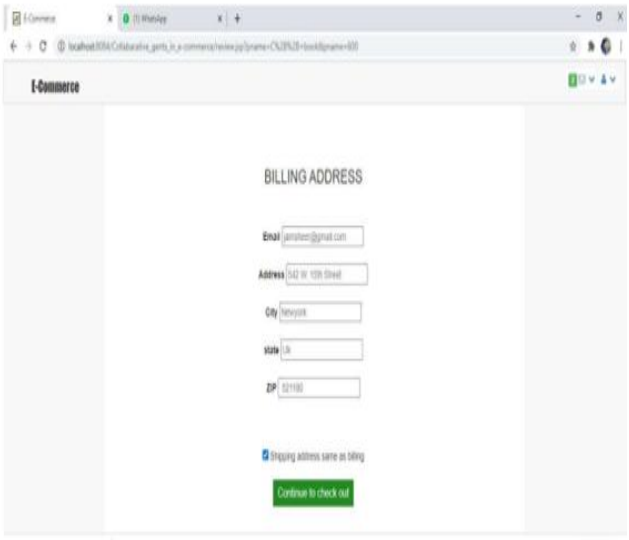
5. Results

PAYMENTGATEWAYINE-COMMERCESYSTEM:



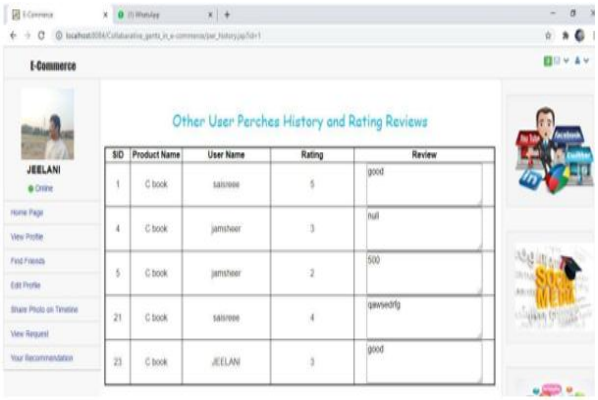
Here the customer needs to enter the card details for the payment.

USERADDRESSINE-COMMERCESYSTEM:



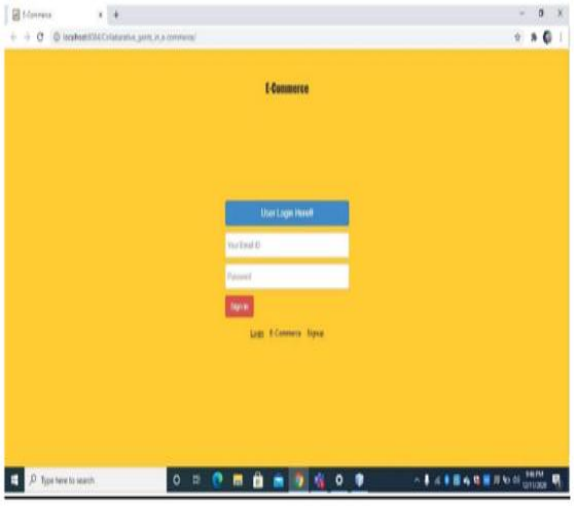
This slot for billing address is added to know the address to be printed on the bill.

USERREVIEWPAGE:



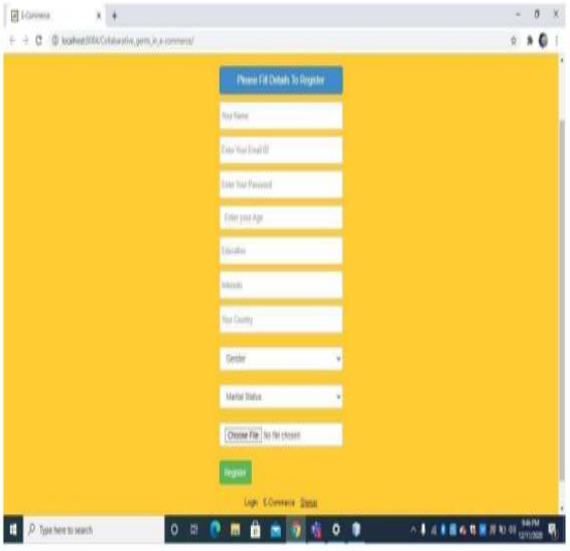
User reviews whether all the information is correct before he proceeds with the final confirmation.

OUTLINE-COMMERCESYSTEMTHELOGINPAGE:



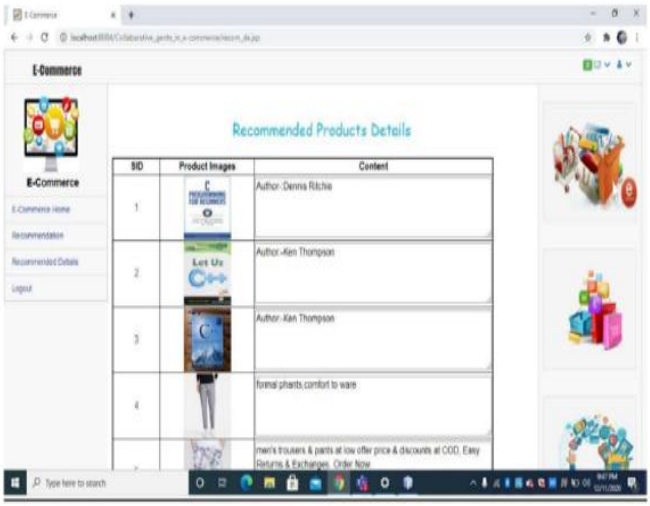
This is the outline of the login page

SIGNUPPAGEFORNEWUSER:



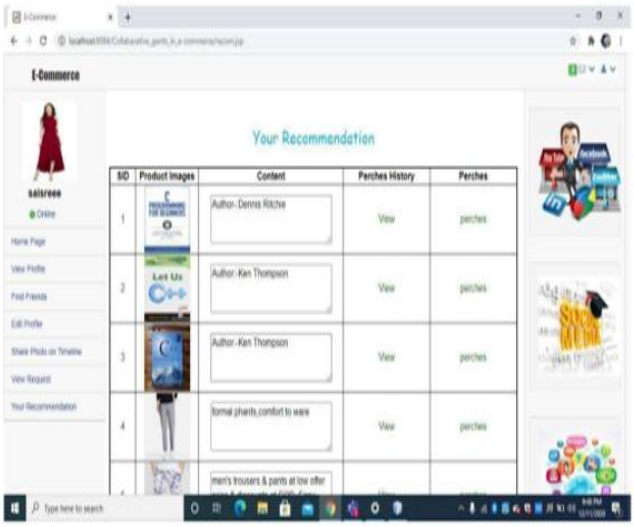
If it is a new customer. They need to sign up into the E-commerce page.

PRODUCTPAGEIN E COMMERCESYSTEM:



All the products available will be displayed to the customer in an order.

PURCHASEOFTHEPRODUCTS:



Customer adds the required items as per the wish to buy. And finally has a chance to review all the items.

6. Conclusion

Online shopping and e-commerce in general have grown tremendously in recent years, making the demand for more tailored information services for clients even more critical. Agent-based e-shopping systems outperform those that don't use agent technology, according to the results of this study. In terms of execution time, it outperforms the conventional web-based e-shopping system. An intelligent shopping system might be built in the future. Commodities that are not regularly purchased by consumers will be served by a multi-agent system in this study. The system uses a multi-attribute decision-making process to propose the best items based on a combination of the system's own expert knowledge and the current demands of the consumer. Customer-based collaboration filtering is used by the system to propose items that are less time-consuming for customers. In addition, the commodity ontology is used to allow the sharing of information format and representation in order to continue a semantic discussion with sellers.

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