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Protecting Privacy in Online Trading System

Ragunath.N[1], Sairaj.R[2], Praveen Kumar.S[3]

Student, B.E. Computer Science and Engineering, Anand Institute of Higher Technology, Chennai, India[1,2]

Assistant Professor - CSE, Anand Institute of Higher Technology, Chennai, India[3]

Abstract: E-commerce websites are being used in our day-to-day life. Users' sensitive data are being stored and shared in these websites and its databases. The project aims at encoding data of the user and showing partial information to the person who manages them. A viable mechanism to protect sensitive publications and subscriptions is to encode the data before it is disseminated through the brokers. The encoding of data reduces spam and also encodes user's sensitive information. Base 64 encoding scheme is used to encode the users' information from untrusted entities or intruders or third parties.

Keywords: Encoding scheme, E-commerce websites, Spam, Intruders.

I. INTRODUCTION

Publish and Subscriber (pub/sub) systems enable spread of data from publishers to interested subscribers in a loosely-coupled manner, where the data is transmitted without establishing direct contacts between publishers and subscribers. Despite its benefits in [1], pub/sub systems present several security and privacy challenges as the data is routed through a set of brokers in a multi-party distributed system. Publishers (or subscribers) may send (or receive) sensitive information and the brokers could collect sensitive information about the publishers and subscribers. In [2], it shows several measures are implemented in this Publish and Subscriber systems to protect the users' sensitive data [3]. The project implements an encoding scheme that ensures confidentiality to the user and provides more security to the user. The aim at providing a pub/sub service that could protect publications and Subs' interests from curious brokers in the presence of malicious Subs and Pubs is to protect the publications from unauthorized entities.

II. EXISTING SYSTEM

Common E-commerce websites present several security and privacy challenges as the data is routed through a set of brokers in a multi-party distributed system. Untrusted entities collect sensitive information about the publishers and users. These brokers are able to collect sensitive information by accessing user's interests. Some untrusted entities may gather data and sell them to third parties. This may lead to several security issues,thus the brokers could collect sensitive information about the publishers and subscribers.

III. PROPOSED SYSTEM

In our system, we allow at most two types of brokers to collude and still be able to protect the content of the interests. Each type of broker only knows some partial information, from which sensitive information about users' interests cannot be inferred. The usage of Base64 encoding scheme is helpful in hiding the user information partially. It ensures in hiding sensitive data about the user and publisher and collection of sensitive data is drastically reduced in our implementation. It acts to stop the untrusted entities to gather data and sell them to third parties. It also reduces spam by encoding the users' data.

IV. SYSTEM ARCHITECTURE

The E-commerce website aims at providing confidentiality to both users and publishers. New users and publishers are able to sign-up to a new account whereas exiting users and publishers can sign-in to their account. Users can purchase products from the website whereas publishers can publish their product with appropriate description for the users to buy. Admin/Possible Untrusted entities are able to approve the product published by the publisher, as well as can see the information about the user and the publisher. But the information is encoded with the help of Base64 encoding scheme, if the admin/possible untrusted entities tries to access the information an alert message/mail is sent to the users' or publishers' email address. Publishers use ISO code to sign-in to their account and each publisher have unique ISO code.

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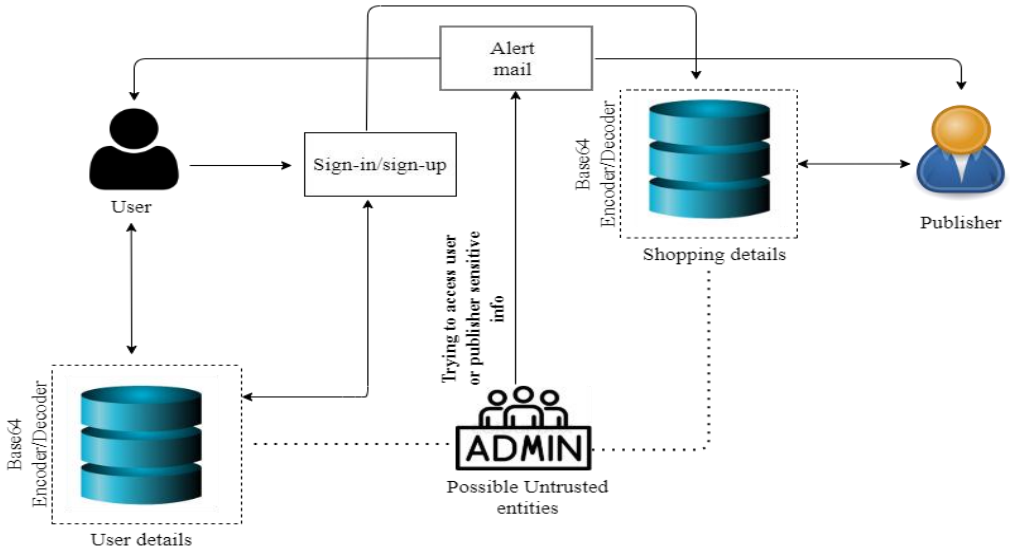

Fig. Architecture of Proposed E-Commerce Website

V. SYSTEM IMPLEMENTATION

A. Authentication Module: Existing users or new users can sign in to their accounts in this module. The data given by the users are encoded and stored in the database. User's mail id and password are the encoded data. After logging in to their account users can see the available products to purchase. The products shown to the user is based on fishing algorithm. Existing publishers or new publishers can sign in to their account. Publishers can upload their product with a image and description suitable for that image. Publishers also use an ISO code for signing in and these publishers' details are encoded and stored in the database.

B. Enlisting Product Module: Publisher can upload n number of items to the website but can upload only one at a time. The published products will be approved by the admin before showing it to the users. Publisher should upload the products' image in JPG or JPEG format. Publisher should give appropriate description for the uploaded product. The price of the product should be in number format. Publisher can edit their products' information anytime they want.

C. Product Approval Module: Admin(s) can approve or refuse the product uploaded by the publisher and can see the details about the users and publishers. But the details are encoded so that the privacy is ensured to both publisher and subscriber. If the admin tries to see more about the user like the user's address or bank details, an automated message is sent to the user's email and an alert is shown to the admin to not repeat it again.

D. Encoding module: The data that are being stored in the database are shown as encoded data to admin/possible untrusted entities. The data shown to the user or publisher will be decoded and the original data is shown to them.

VI. CONCLUSION

Although, many data encoding methods are being used in E-commerce websites this project ensures privacy for both the publisher and subscriber with the help of Base64 encoder and decoder and an optimisation algorithm is used for better accessibility of website for users. It ensures confidentiality and reduces spam for users.

VII. FUTURE ENHANCEMENTS

In future, admin can be replaced with an automated mechanism and better encoding schemes/algortihms will be available to increase the security of the users and publishers.

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