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Evaluation of User Behaviour by Repeated Tracking and Recommendation in Online Booking Transaction

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Abstract— *In an online computing environment trust on the user accessing the resources is the important concept. Since the user behaving in a destructive way can cause trouble to other online application or other users accessing the application, we need to constantly keep track of the user behavior in the online computing environment. In this context it has to be seen that different entities in the internet computing environment build trustworthy relationship among themselves. In this paper a method of evaluating the user is been proposed which is based on two principles that is tracking the user by analyzing his behaviors repeatedly and getting suggestions from other application.*

Keywords— *Online computing environment, trust, behaviour of user, evaluation of behaviour, booking transaction.*

I. INTRODUCTION

Internet is gaining much importance in our day to day life from past few years. Cloud computing is the emerging trend to answer the basic needs of the user. Some of the features of cloud computing such as efficiency, fast and reliable delivery, cheaper, limited energy consumption, scalability and availability has made it an efficient approach.

There has occurred rapid development in the technical and commercial field because of cloud computing. Often there occurs a concept called trust which needs to be handled efficiently. Trust is required among users, service providers, applications. Due to improper management of trust issue often users get trapped in fraud committed by other malicious users within the cloud environment.

Since trust is the important issue in the online application environment evaluating the behaviour of the users plays major role [1].

II. LITERATURE SURVEY

A. Direct trust and Indirect trust

Trust can be broadly classified in to Direct trust and Indirect trust. Direct trust deals with trust obtained by the direct interaction with the user. Trust factor here is obtained by analysing the user behaviour in the current application which is evaluating the user. Indirect trust is the trust obtained from the third party or another

application. It is often seen that Direct trust carries more weight than Indirect trust. In this method which is called as extensible trust evaluation model direct trust is calculated using time variant comprehensive evaluation method and Indirect trust is calculated using space variant evaluation method. [2].

B. An approach for identification of the user in order to manage trust.

This method identifies the suspicious behaviours of the user and gives an early signal to stop them. In the first module various activities of the users such as Login time, usage of the resources, PING value of the user, Operating system used, Antivirus software used, Web browser used is recorded. In the second module user profile is created. In the third module the suspicious identification system is going to identify the suspicious users by matching the actions of the user with the malicious action already recorded in the database of malicious actions. Now the trust management system propagates the result to other entities and instructs to be aware of the user [3].

C. An approach for evaluating the trust by dividing the trust in to sub trusts.

This method follows the rule of divide and treat. Here while analysing the user behaviour, initially trust is divided in to Contract behaviour sub trust, Identity re authentication sub trust, expense behaviour sub trust and Security behaviour sub trust. Contract behaviour sub trust refers to whether user is following the regulations or not. Regulations include using resources according to the contract, not downloading excessively etc. Security behaviour sub trust manages the issues such as whether user behaviour is destructive or not in the cloud environment. Identity re authentication sub trust deals with how the user can be re authenticated when the authentication of the user fails. Expense behaviour sub trust deals with rate of resources consumption of the user in the cloud environment. These four sub trusts are then further divided in to behaviour trust evidences [4].

D. Various types of Attacks.

Accordingly there exists various kinds security threats existing which can be broadly classified in to Inside, Outside attacks, loss of data when organization moves from one place to another place, Attacks which disrupts the service such as fraud, phishing, discovering vulnerable portions of the software etc and Multi tenancy issue. Multi tenancy issue deals with security disruption occurring when the same application and physical hardware is used among multiple users [5].

E. Cloud Computing System Based on Trusted Computing Platform

In this method Trusted Computing Platform is(TCP) is integrated in to cloud computing environment. This results in better data protection, better authentication and role based access. Here parts of the system dealing with sensitive data is cryptographically sealed off and decryption keys are given only to the applications which are judged to be as trusted. [6].

III. MODEL AND ARCHITECTURE

A. Proposed system

This system helps in evaluating the behaviour of the user, by repeated tracking and by recommendation from other system. Repeated tracking helps in avoiding to take quick decisions about the user, and recommendations helps in gaining prior knowledge about the user.

B. System Architecture

System architecture is the concept of handling various objects in the system in such a way that supports the properties of the objects in the system. System architecture consists of behaviors, relationships, properties, various views of the system. The components within the system includes system components, properties of the components and the relationship among them.

The overall architecture of the system is as shown below

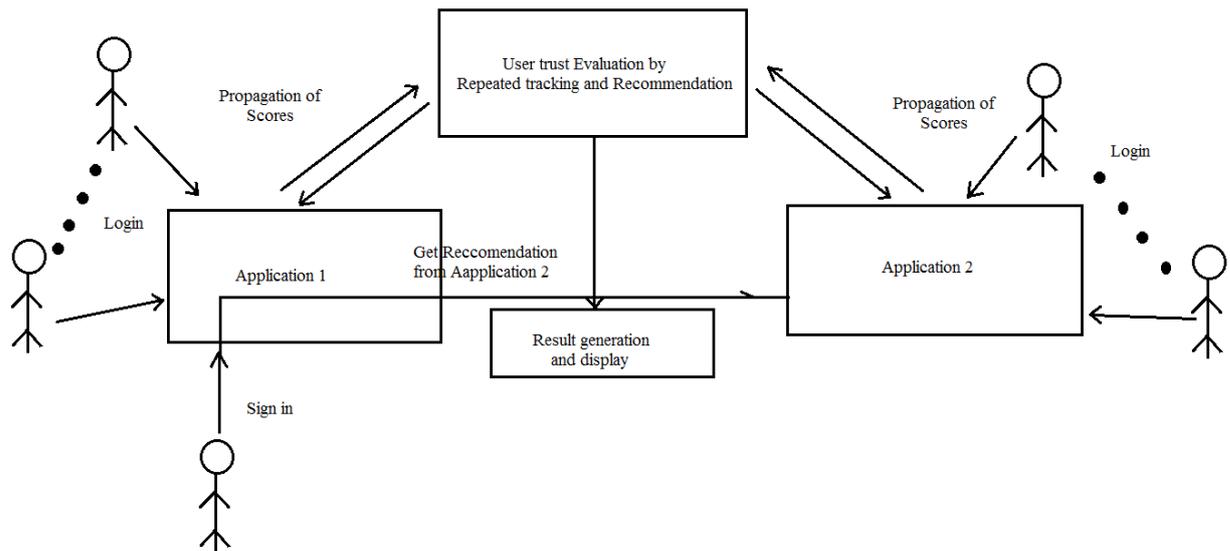


Fig 1: System Architecture

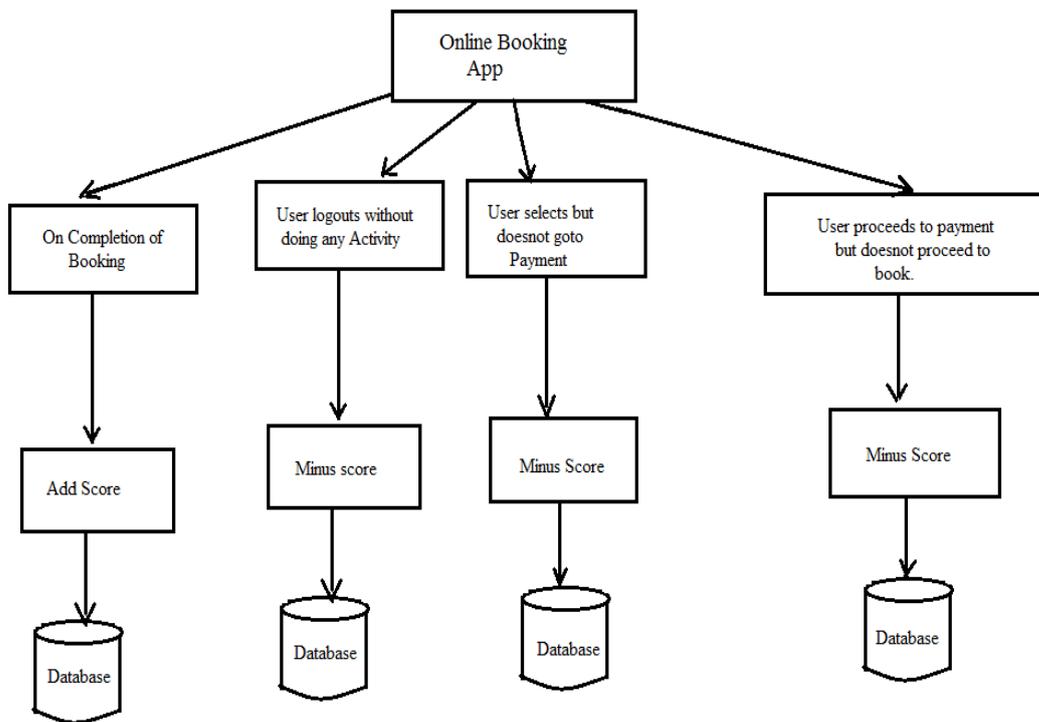


Fig 2: Design of Online booking evaluation system

C. System Implementation

The above system efficiently recognizes the trust worthy criteria of the user. It follows the strategy that if the user commits any mistake, he is given a chance to overcome from his mistake by his genuine behaviours. At the same time it takes recommendation from other application. The user entering the application for the first time needs to sign in. During sign in he is checked to see if he is already an user in another application. If so recommendation from other application is taken. This overall process is as shown in Fig 1.

In the online booking app the working process is as shown in fig 2. Here certain criteria's are taken to recognize the user behaviour. First if he enters wrong password where as it is shown in fig 2 his score gets

reduced. Next if he exits the portal without doing any transaction his score will again get's reduced. If he selects the book but does not book simply blocking, his score will again reduced. He will have positive score when he completes the overall transaction.

IV. CONCLUSIONS

The proposed system includes both the principle of recommendations and repeated tracking. This model efficiently finds the malicious users who are purposefully repeating their disruptive behaviours again and again. This principle is tried to deploy in an online booking transaction environment. Now a day's people choosing to do booking transactions via online is increasing day by day, where there may exist some troublesome users. It helps in efficiently identifying such kinds of users.

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