# Implementation of Shill Bidding for Detection of Fraudulent Users.

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***Abstract*: Shill bidding in common terms means that the price, desirability of an item is raised superficially. Online auctions have increased in recent times and so there is a need to detect shill bidders. Shill bidders create an environment where the price is quite high then actually it should be. These days many online shopping sites organize auctions but sometimes people create an unnecessary demand for the product. Hence forcing the people to pay extra. To maintain the integrity of the online auction our system will be very useful. Our system is designed to effectively recognize the bidders behavior and to stop such a fraud to occur.**

**In the proposed system we will be analyze the behavior and different patterns of the bidders, and hence protect the fraud to not occur in future. Considering the strengths and weaknesses of existing works on combating shill bidding in online auction, in this paper, we propose a reliable software architecture, which includes seperate modules for bidding behavior tracking, IP tracking, user status management and user authorizing to secure and protect auction systems from shill bidders for both forward and reverse auctions**

**The presented system has been validated using some experimental data obtained from real world auction systems and specially generated with application of domain specific tools. Study confirmed that proposed system was able to detect most frauds related to the artificial price inflation.**

**Also previously major work was done in offline shill bidding but many innocent users suffered. We will let the machine learn different fraudulent behaviours by passing them through different layers and they can detect in real time.**

## I. INTRODUCTION

II. Among all online crimes, auction frauds are concurrently one of the most reported, about 35.7% in 2007 (IC3 [ Internet Crime Complaint Center ], 2007), and the top five in 2011 (IC3, 2011). The Internet Crime and Complaint Center (IC3) received over 200,000 complaints of auction related frauds in 2007, and more than 40,000 in 2011 (SecurePuter, 2008; IC3 2011). IC3 classifies auction frauds into six categories: misrepresentation of products, non-delivery of products, triangulation, fee staking, selling of black-market products, multiple bidding, and shill bidding (Jenamani et al. 2007). Shill bidding refers to artificial price inflating in case of forward auctions (Trevathan & Read, 2005) and price deflating in reverse auctions in order to generate an interest for the auctioned item. A case study on shill bidding demonstrates that in 2008 auction users have lost about 250 million dollars because of shilling (Cohen P., 2009). Shill bidding is the hardest to detect among all online auction frauds.

III. Auction is the means of collecting items, ranging from antiques to handmade crafts, which one can't get from market. The bidders have to be present physically for traditional offline auctions, which may not be feasible for some interested bidders situated far from the place of bidding due to time constraints. Online auctions are designed to attract more number of bidders situated geographically far apart from the place of auction by providing everyone equal opportunity to participate in the auction, by clicking mouse buttons only. Also, it provides a user friendly platform to choose and select the item of interest by providing different views of the object of interest to the bidders. Diversity in the community of bidders brings more authenticity in the decision of cost of particular items.

IV. We present the ShillFree auction system, which can protect users from shill bidders in both forward and reverse auctions. The ShillFree auction system is secure, trustworthy and easy to modify as new patterns of shilling are detected. To manage the users, the ShillFree auction system generates and maintains user profiles based on their used period and behavior in previous auctions. It also controls users' behavior during auctions through user limits and authorization of different user requests. The ShillFree auction system monitors the bidding process during auctions, detects shilling attempts, and responses in real time while the auction is still running. To ensure shill free auctioning, our auction system would be able to tracks and examines the behaviors and IPs of the bidders at run time.

## PROPOSED SYSTEM

Considering the limitations of the existing literature, we have proposed a Fake Bidding Detection. Our main target research is to detect shill bidding in real-time and block user. The ShillFree auction system has been proposed to meet the main goal of combating shill bidding. To fulfill the goal we designed three-layer architecture of the ShillFree auction system, first layer will presents information of all auctions and users. For registration and sign in, every user has to be approved by the business layer. The data layer keeps the history of users and auctions. The business layer processes the users' actions performed in the GUI, monitors, detects and takes necessary actions against shill bidding at run time. The architecture is implemented as a multi-agent system, where each agent, based on a set of beliefs, desires and intensions solves a particular problem. All agents cooperate in order to achieve the ultimate goal of protecting the running auctions from shilling. The system conducts both forward and reverse auctions according to the English protocol.

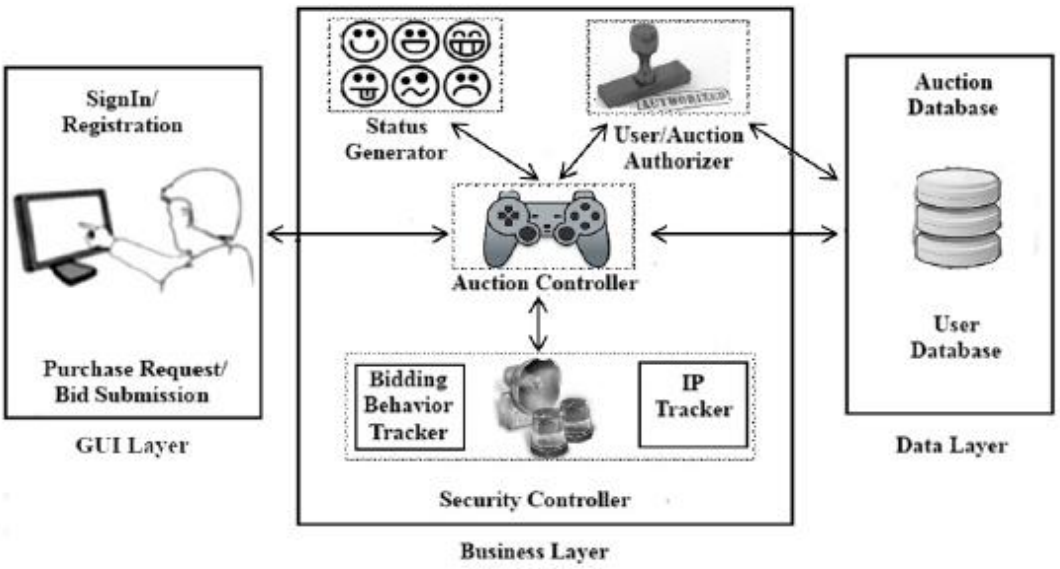



Figure 1. Software Architecture for Online Auctions

**METHODOLOGY**

Shill bidding takes place when a seller in a forward auction wants to sell his item for more, or a buyer in a reverse auction wants to buy the item for less than the usual price. Shill bidders use different approaches to achieve their goal of shilling. By examining real auction data, we can find some common patterns of their approaches of shilling. They include:

P1: to increase or decrease the price, a shill bidder continually bids to outbid his own bid even when he is the top bidder in the auction.

P2: a shill bidder bids within a short interval of time to outbid his own bid or others' to give more time to the other potential bidders.

P3: a shill bidder makes an unnecessarily large price change to increase or decrease the price rapidly.

P4: a shill bidder bids more in the beginning of the auction to make sure that other bidders get more time to bid.

P5: a shill bidder bids more times on average than other bidders.

P6: a shill bidder asks another bidder to bid on the same item.

P7: a shill bidder establishes a bidding ring composed of multiple sellers or buyers bidding on the buyer's or seller's item, with or without the direct involvement of the buyer or the seller.

P8: a group of shill bidders may form a bidding ring composed of multiple sellers or buyers bidding on each other's items.

P9: two or more shill bidders work together in the same auction to inflate or deflate the price, which is also known as collusive shill bidding.

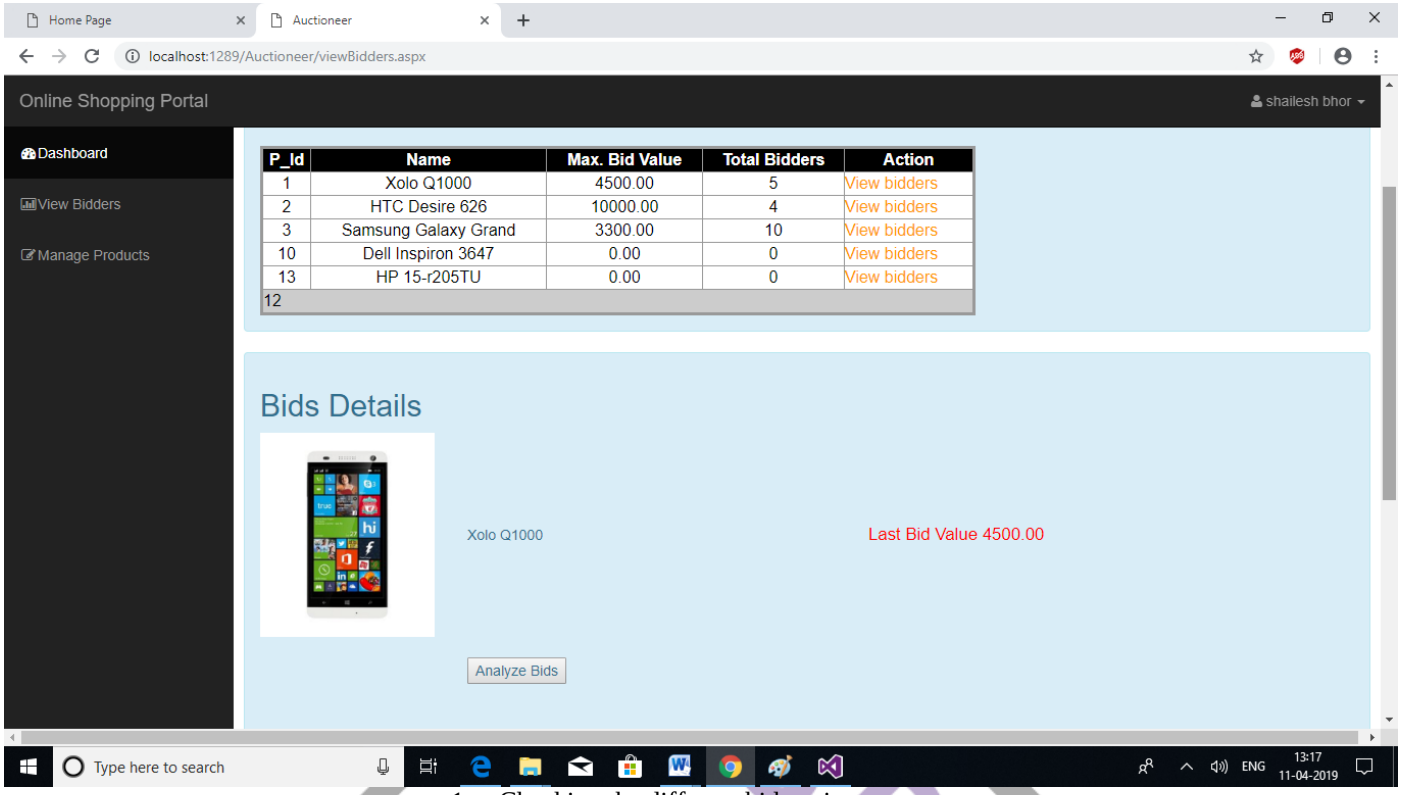
P10: a shill bidder bids exclusively only on one or few users' items.

P11: a shill bidder creates multiple identities and bids on his own item using a single computer with the same IP address.

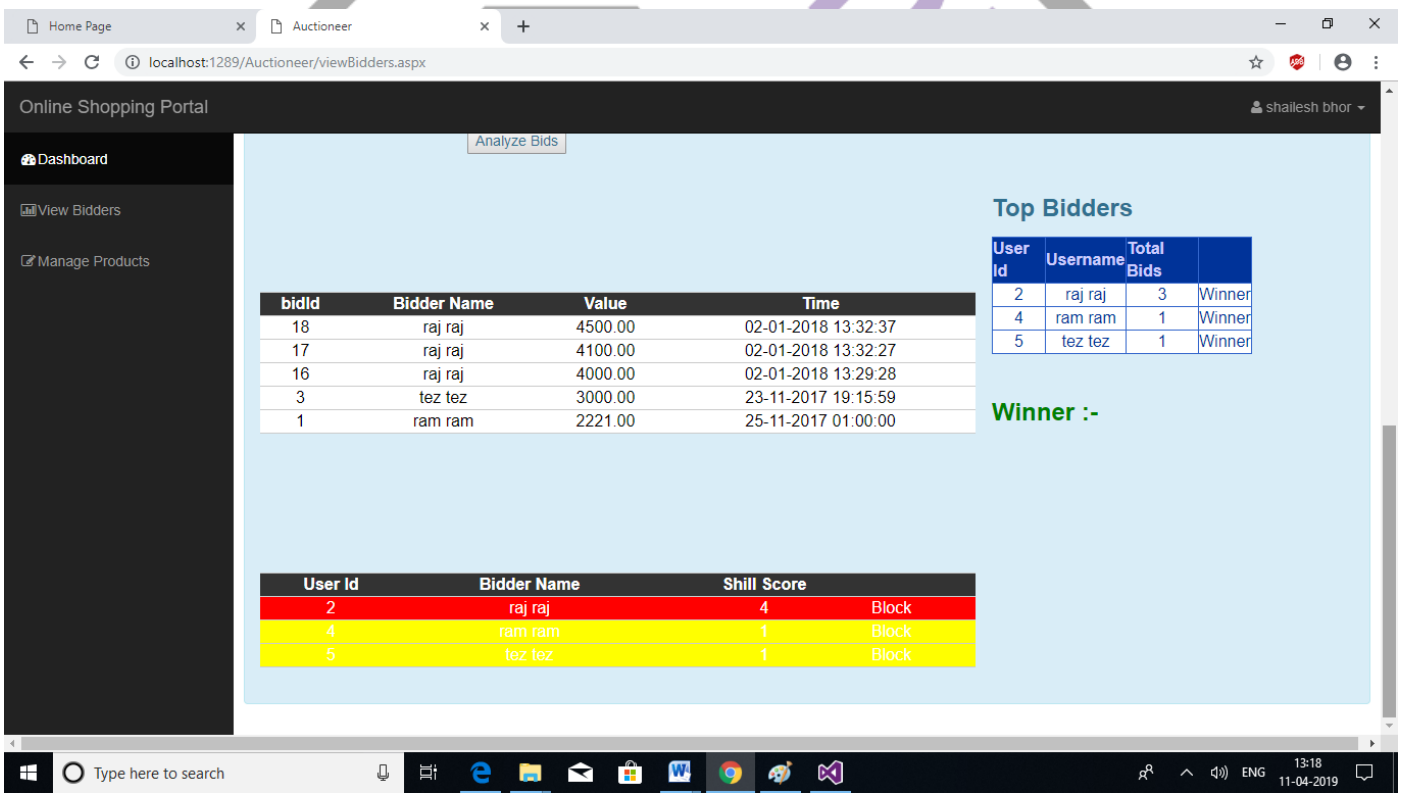
P12: a shill bidder bids multiple times on the same item while changing both his identity and IP address of his computer.

For registration and sign in, every user has to be approved by the business layer. The data layer keeps the history of users and auctions. The business layer processes the users' actions performed in the GUI, monitors, detects and takes necessary actions against shill bidding at run time and block user.

## SCREENSHOT




1. Checking the different bids going on




2. Manage the bid ( Block or unblock a user)
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## CONCLUSION

Fraudulent activities like shill bidding are damaging the reputation of online auctions, and have already become a serious problem in e-commerce in terms of security and trust. In this paper, we presented an auction system to secure online auctions from shill bidding at run-time and block user.

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