# TITLE: FRAUD DETECTION SYSTEM

## SUBMITTED BY:

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# ABSTRACT


- By considering the problem of building online machine-learned models for detecting auction frauds in e-commerce web sites, we developed a model for preventing the occurrence of fraud activities. This model stops the fraud occurrence at the initial stage by allowing only the reputed and well-known sellers into the website. By considering the User's satisfaction, we allow them to raise complaint against the products purchased if they find any fraud in them. Here, in this project, Admin takes the responsibility of preventing the occurrence of fraud by giving access to the trust worthy sellers. This mini project is implemented by using JAVA, HTTP and MySQL.


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# CHAPTER-1

# 1.INTRODUCTION

## 1.1PROBLEM STATEMENT :

- By considering the problem of building online machine-learned models for detecting auction frauds in e-commerce web sites, we developed a model for preventing the occurrence of fraud activities. This model stops the fraud occurrence at the initial stage by allowing only the reputed and well-known sellers into the website. By considering the User's satisfaction, we allow them to raise complaint against the products purchased if they find any fraud in them. Fraud detection is a set of activities undertaken to prevent money or property from being obtained through false pretenses. Here, in this project, Admin takes the responsibility of preventing the occurrence of fraud by giving access to the trust worthy sellers.

## 1.2 OBJECTIVES:

- To grant the privileges to the seller.
- To minimize the frauds in the product.
- To raise a complaint if the user finds the fraud in the product purchased.
- To give access to the sellers who are trust worthy to the admin.
- To block the products from the sellers side if any fraud detected by the admin.

## 1.3 METHODOLOGY TO BE FOLLOWED:

Our current Fraud detection system is user friendly and can be used effortlessly. It was implemented by using Java, HTTP and MySQL.

We propose an online profit model framework which takes online feature selection, coefficient bounds from human knowledge and multiple instance learning into account simultaneously.

## 1.4 EXPECTED OUTCOME:

- The expected outcome of the present fraud detection system is genuine products from the sellers which is effectively organized by the admin module.
- Admin which acts as interface between seller and user detects the fraud sellers from the entered list and rejects their entry into the website.
- The final outcome of the system is visible genuine products from seller end to user end through admin.

## 1.5 SOFTWARE AND HARDWARE REQUIREMENTS:

- Software Requirements:

  Operating system: Windows95/98/2000/XP

  Front end: Java. Jdk1.6

  Database: MySQL server

  Database Connectivity: JDBC

- Hardware Requirements:

  Speed: 1.1 Ghz

  Ram: 256 MB (min)

  Hard disk: 20 GB

# CHAPTER-2

# 2.DATA

## 2.1 EXISTING SYSTEM AND ITS PROBLEM

The traditional online shopping business model allows sellers to sell a product or service at a preset price, where buyers can choose to purchase if they find it to be a good deal. Online auction however is a different business model by which items are sold through price bidding. There is often a starting price and expiration time specified by the sellers. Once the auction starts, potential buyers bid against each other, and the winner gets the item with their highest winning bid.

## 2.2 PROPOSED SYSTEM AND ITS MERITS

We propose an online profit model framework which takes online feature selection, coefficient bounds from human knowledge and multiple instance learning into account simultaneously. By empirical experiments on a real-world online auction fraud detection data we show that this model can potentially detect more frauds and significantly reduce customer complaints compared to several baseline models and the human-tuned rulebased system. Human experts with years of experience created many rules to detect whether a user is fraud or not.

## 2.3 FEASIBILITY STUDY

The feasibility of the project is analyzed in this phase and business is put forth with a

very general plan for the project and some cost estimates. During system analysis the feasibility study of the proposed system is to be carried out. This is to ensure that the proposed system is not a burden to the company. For feasibility analysis, some understanding of the major requirements for the system is essential.

Three key considerations involved in the feasibility analysis are

- ECONOMICAL FEASIBILITY
- TECHNICAL FEASIBILITY
- SOCIAL FEASIBILITY

## ECONOMICAL FEASIBILITY

This study is carried out to check the economic impact that the system will have on the organization. The amount of fund that the company can pour into the research and development of the system is limited. The expenditures must be justified. Thus the developed system as well within the budget and this was achieved because most of the technologies used are freely available. Only the customized products had to be purchased.

## TECHNICAL FEASIBILITY

This study is carried out to check the technical feasibility, that is, the technical requirements of the system. Any system developed must not have a high demand on the available technical resources. This will lead to high demands on the available technical resources. This will lead to high demands being placed on the client. The developed system must have a modest requirement, as only minimal or null changes are required for implementing this system.

# SOCIAL FEASIBILITY

The aspect of study is to check the level of acceptance of the system by the user. This includes the process of training the user to use the system efficiently. The user must not feel threatened by the system, instead must accept it as a necessity. The level of acceptance by the users solely depends on the methods that are employed to educate the user about the system and to make him familiar with it. His level of confidence must be raised so that he is also able to make some constructive criticism, which is welcomed, as he is the final user of the system.

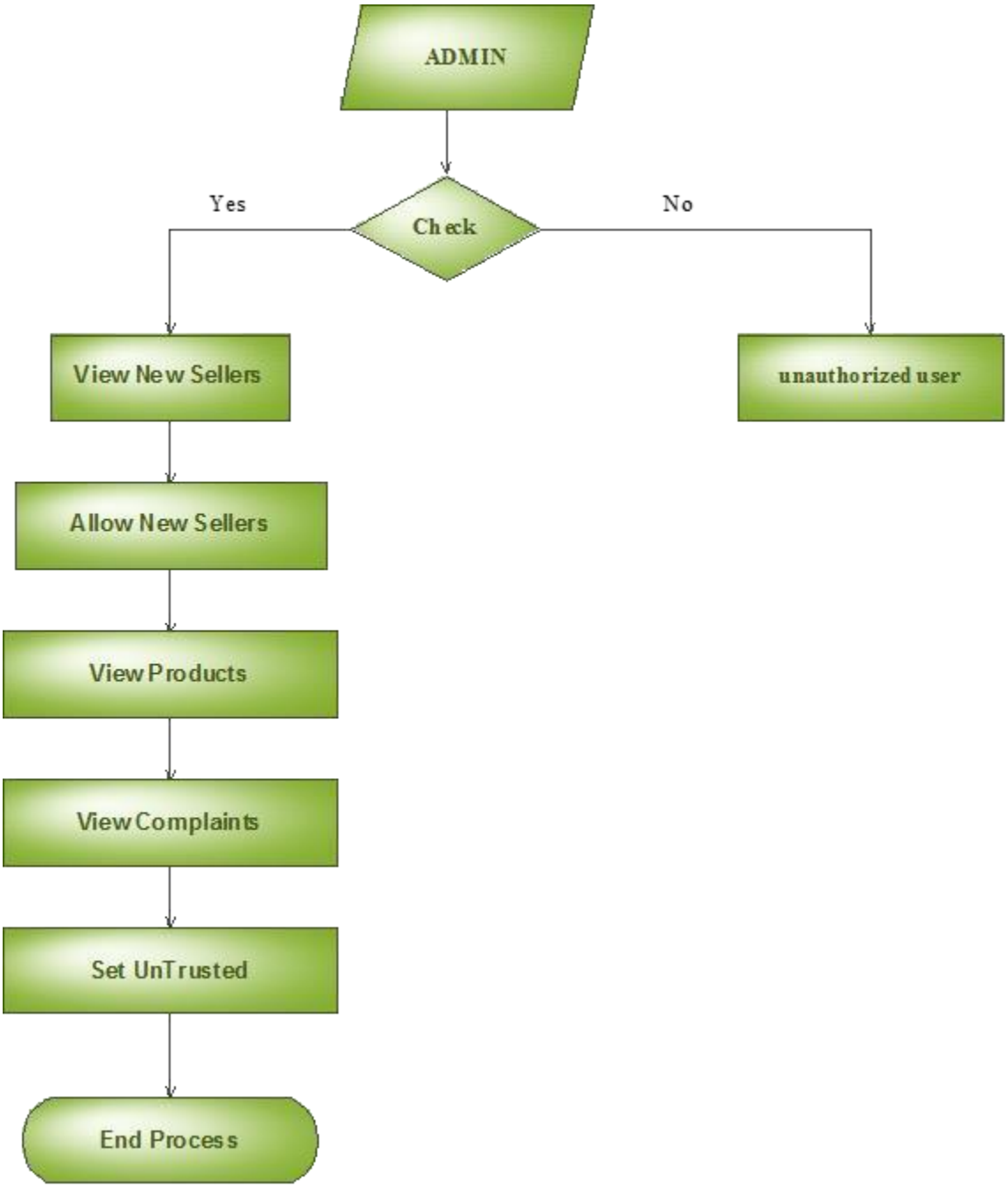
# CHAPTER-3

## 3. SYSTEM DESIGN

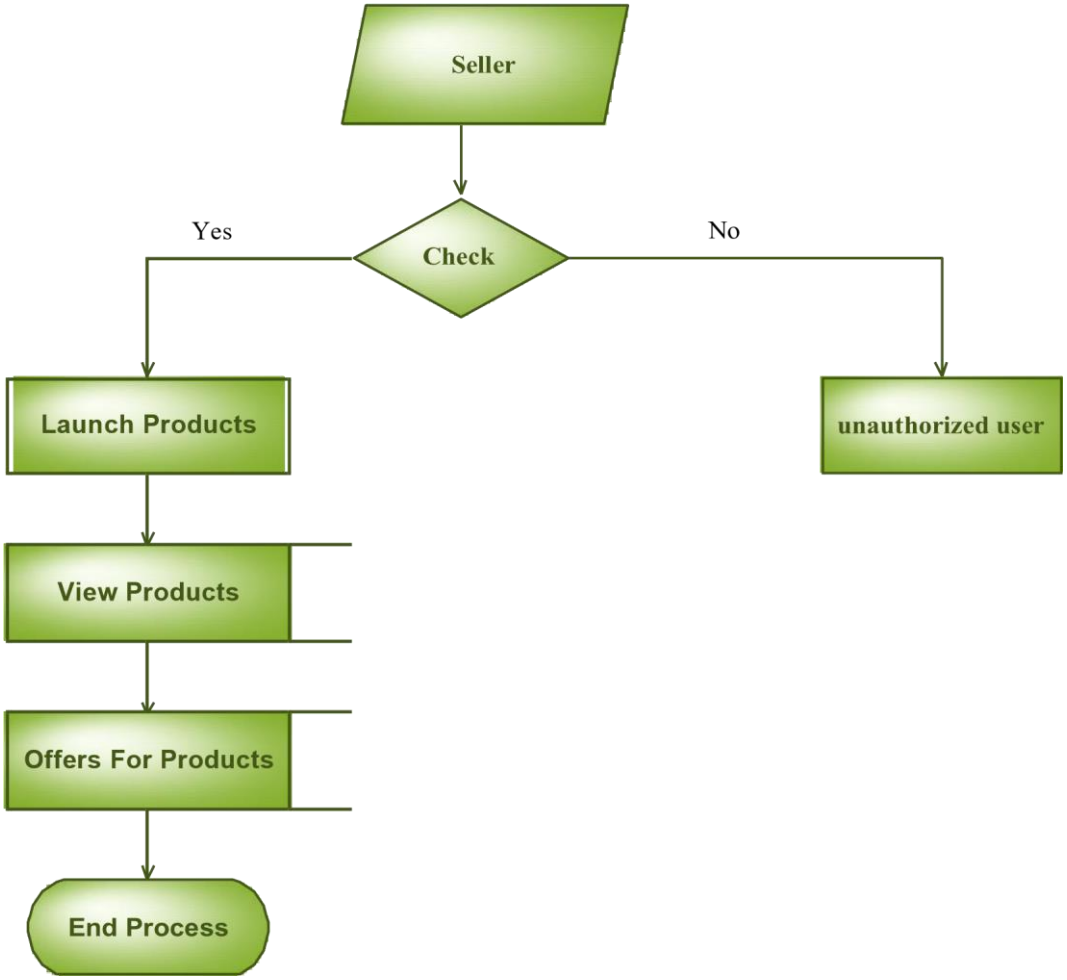
### 3.1 Data Flow Diagram / Use Case Diagram / Flow Diagram

The data flow is also called as the bubble chart. It is a simple graphical formalism that can be used to represent a system in terms of the input data to the system, various processing carried out on these data, and the output data is generated by the system.

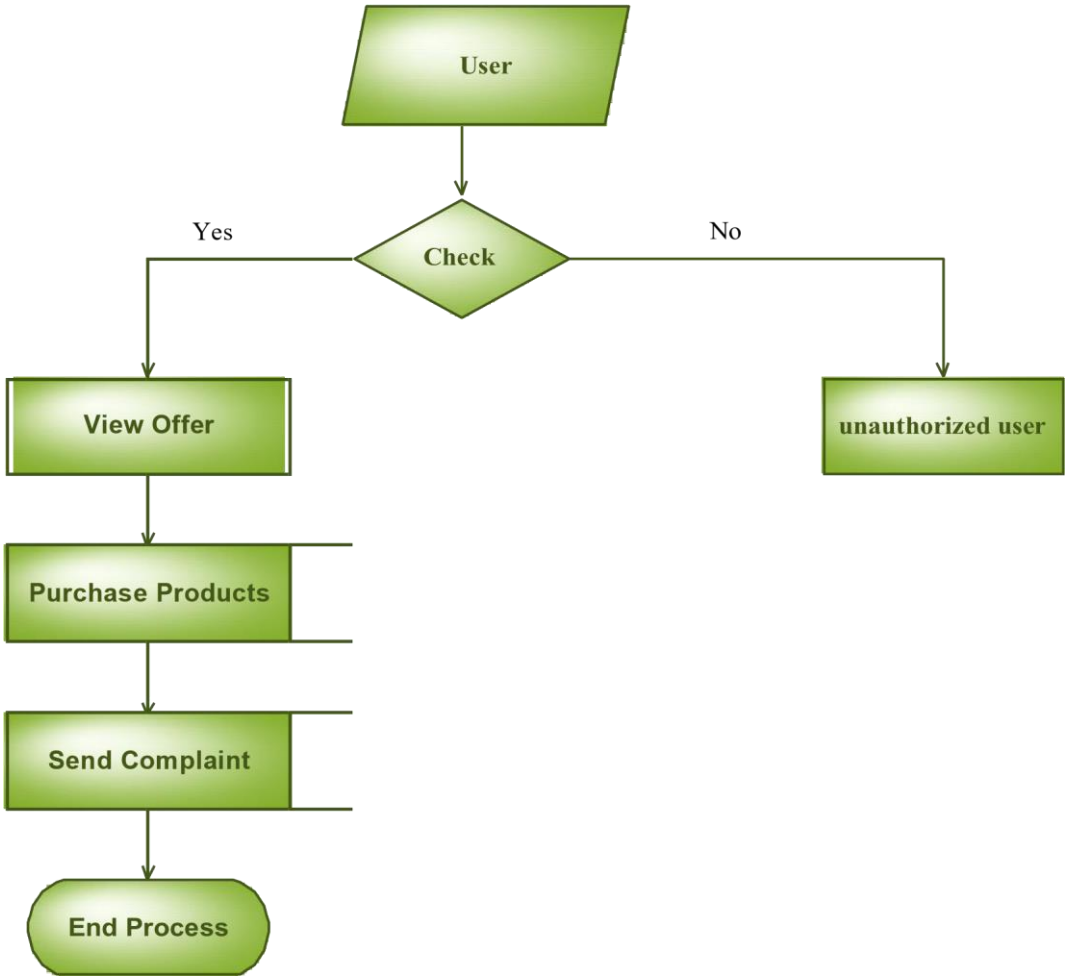
SYSTEM DESIGN :( Admin)



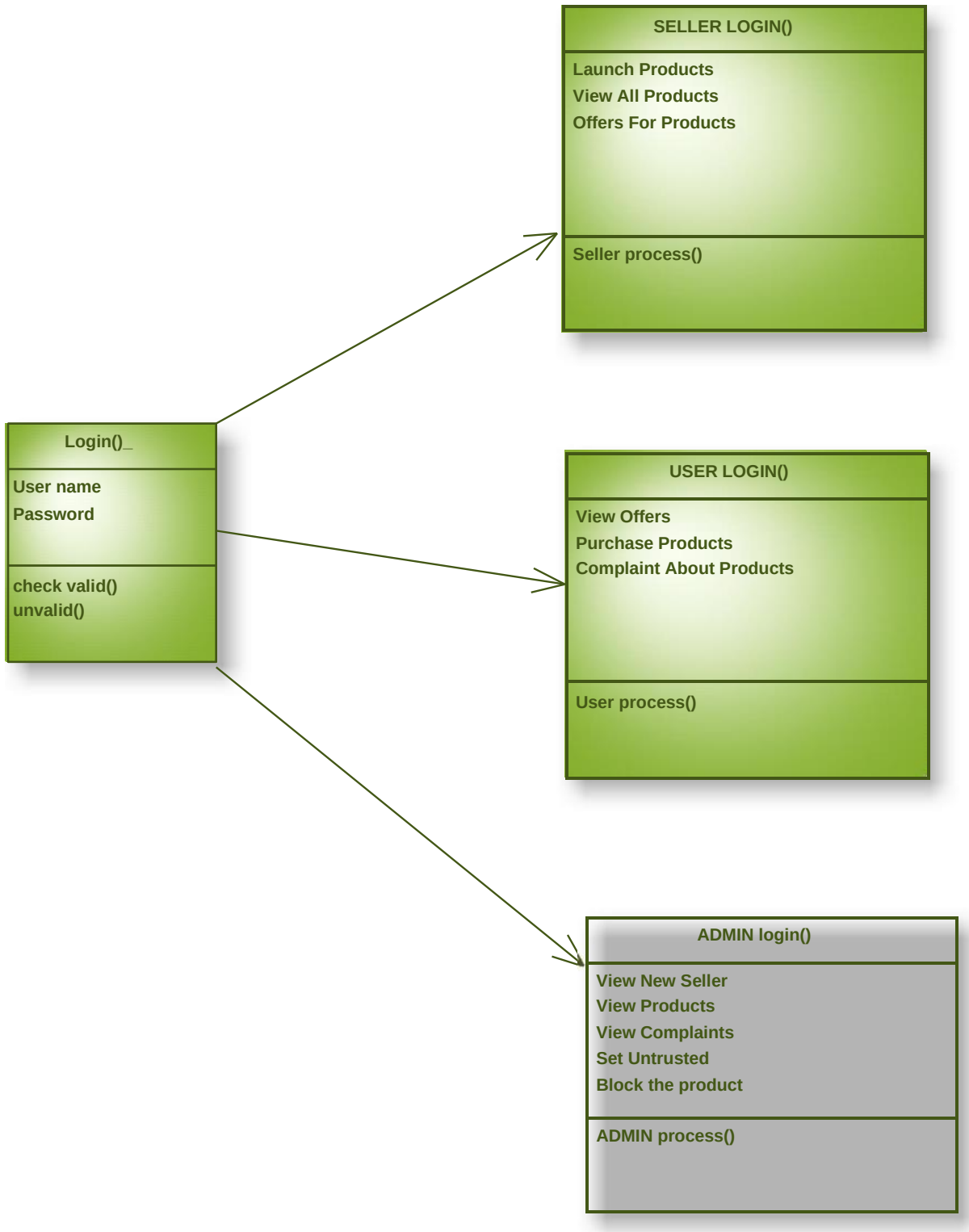
SYSTEM DESIGN:(Seller)



SYSTEM DESIGN:(User)



Class Diagram



# CHAPTER-4

# 4.IMPLEMENTATION

## 4.1 MODULE DESCRIPTION:

- Rule-based features:

Human experts with years of experience created many rules to detect whether a user is fraud or not. An example of such rules is “blacklist”, i.e. whether the user has been detected or complained as fraud before. Each rule can be regarded as a binary feature that indicates the fraud likeliness.

- Selective labeling:

If the fraud score is above a certain threshold, the case will enter a queue for further investigation by human experts. Once it is reviewed,
the final result will be labeled as boolean, i.e. fraud or clean. Cases with higher scores have higher priorities in the queue to be reviewed. The cases whose fraud
score are below the threshold are determined as clean by the system without any human judgment.

- Fraud churn:

Once one case is labeled as fraud by human experts, it is very likely that the seller is not trustable and may be also selling other frauds; hence

all the items submitted by the same seller are labeled as fraud too. The fraudulent seller along with his/her cases will be removed from the website immediately once detected.

- User Complaint:

Buyers can file complaints to claim loss if they are recently deceived by fraudulent sellers. The Administrator view the various type of complaints and the percentage of various type complaints. The complaints values of a products increase some threshold value the administrator set the trustability of the product as Untrusted or banded. If the products set as banded, the user cannot view the products in the website.

## 4.2 DATA DICTIONARY

The logical characteristics of current systems data stores, including name, description, aliases, contents, and organization. Identifies processes where the data are used and where immediate access to information needed. Serves as the basis for identifying database requirements during system design.

### Uses of data dictionary:

1. To manage the details in large systems.
2. To communicate a common meaning for all system elements.
3. To document the features of the system.
4. To facilitate analysis of the details in order to evaluate characteristics and determine where system changes should be made.
5. To locate errors and omission in the systems.

TABLE NAME: Admin registration, it contains all the details about administrators. The following table explains all the fields.

| FIELD | TYPE | NULL | KEY | DEFAULT | EXTRA |
|---|---|---|---|---|---|
| User id | Varchar(255) | NO | | NULL | |
| pass | Varchar(255) | NO | | NULL | |

TABLE NAME: Seller registration , it contains all the details about the sellers. The following table explain all the fields .

| FIELD | TYPE | NULL | KEY | DEFAULT | EXTRA |
|---|---|---|---|---|---|
| uid | Varchar(255) | NO | | NULL | |
| name | Varchar(255) | NO | | NULL | |
| cname | Varchar(255) | NO | | NULL | |
| userid | Varchar(255) | NO | | NULL | |
| pass | Varchar(255) | NO | | NULL | |
| mobile | Varchar(255) | NO | | NULL | |
| webadd | Varchar(255) | NO | | NULL | |
| date | Varchar(255) | NO | | NULL | |
| authorize | Varchar(255) | NO | | NULL | |

TABLE NAME: Offers provided, it contains all the details about the offers. The following table explain all the field.

| FIELD | TYPE | NULL | KEY | DEFAULT | EXTRA |
|---|---|---|---|---|---|
| pid | Varchar(255) | NO | | NULL | |
| comname | Varchar(255) | NO | | NULL | |
| proname | Varchar(255) | NO | | NULL | |
| wardate | Varchar(255) | NO | | NULL | |
| prorate | Varchar(255) | NO | | NULL | |
| offrate | Varchar(255) | NO | | NULL | |
| offdes | Varchar(255) | NO | | NULL | |
| status | Varchar(255) | NO | | NULL | |
| sold | Varchar(255) | NO | | NULL | |
| deliver | Varchar(255) | NO | | NULL | |
| Missmatch | Varchar(255) | NO | | NULL | |
| service | Varchar(255) | NO | | NULL | |
| damage | Varchar(255) | NO | | NULL | |
| feed | Varchar(255) | NO | | NULL | |
| adminact | Varchar(255) | NO | | NULL | |

TABLE NAME: Products, it contains all the details about the products. The following table explain all the fields.

| FIELD | TYPE | NULL | KEY | DEFAULT | EXTRA |
|---|---|---|---|---|---|
| pid | Int(11) | NO | PRI | NULL | Auto_increment |
| comname | Varchar(255) | NO | | NULL | |
| proname | Varchar(255) | NO | | NULL | |
| wardate | Varchar(255) | NO | | NULL | |
| proimage | Longblob | NO | | NULL | |
| prorate | Varchar(255) | NO | | NULL | |
| Status | Varchar(255) | NO | | NULL | |
| adminact | Varchar(255) | NO | | NULL | |

TABLE NAME: Purchased, it contains all the details about the purchased products. The following table explain all the fields.

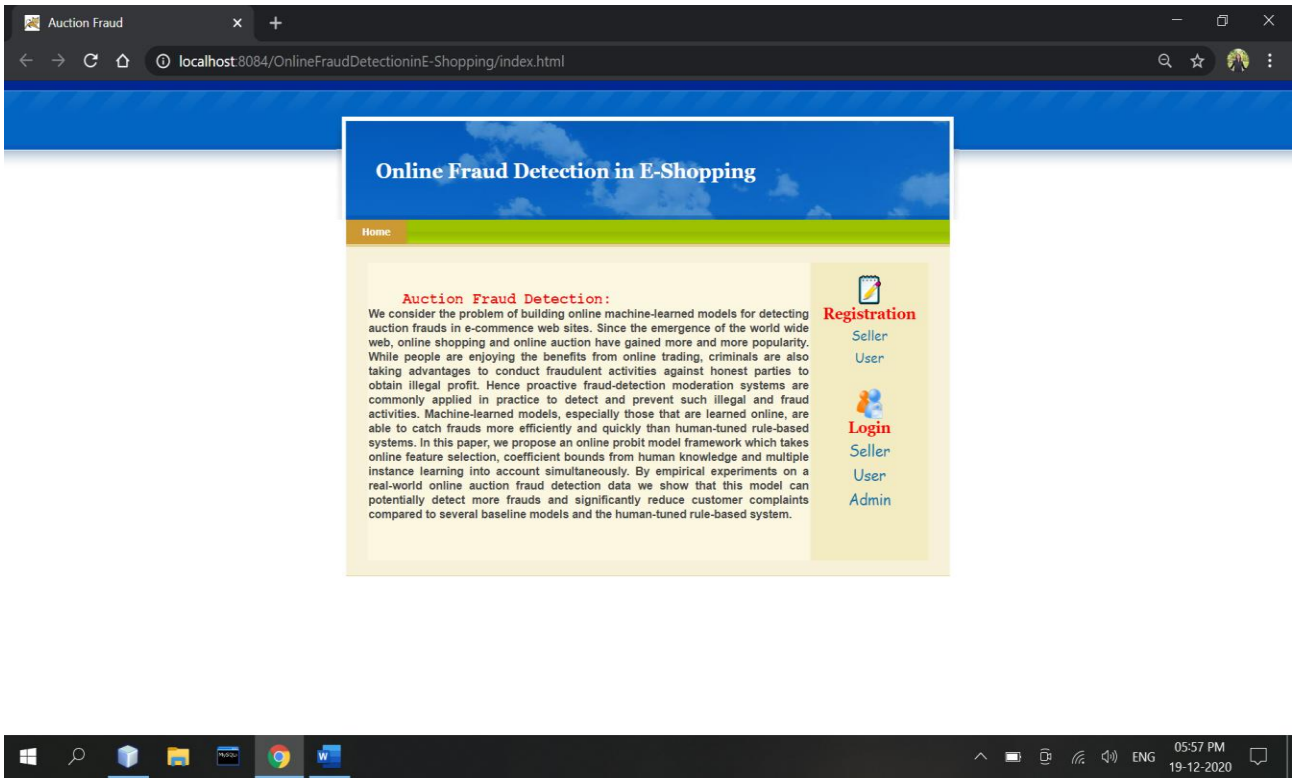
| FIELD | TYPE | NULL | KEY | DEFAULT | EXTRA |
|---|---|---|---|---|---|
| Pur_id | Int(11) | NO | PRI | NULL | Auto_increment |
| Uid | Varchar(255) | NO | | NULL | |
| uname | Varchar(255) | NO | | NULL | |
| Pid | Varchar(255) | NO | | NULL | |
| Comname | Varchar(255) | NO | | NULL | |
| Proname | Varchar(255) | NO | | NULL | |
| Wardate | Varchar(255) | NO | | NULL | |
| Prorate | Varchar(255) | NO | | NULL | |
| Offrate | Varchar(255) | NO | | NULL | |
| Offdes | Varchar(255) | NO | | NULL | |
| status | Varchar(255) | NO | | NULL | |

TABLE NAME: User, it contains all the details about the user. The following table explains all the fields.

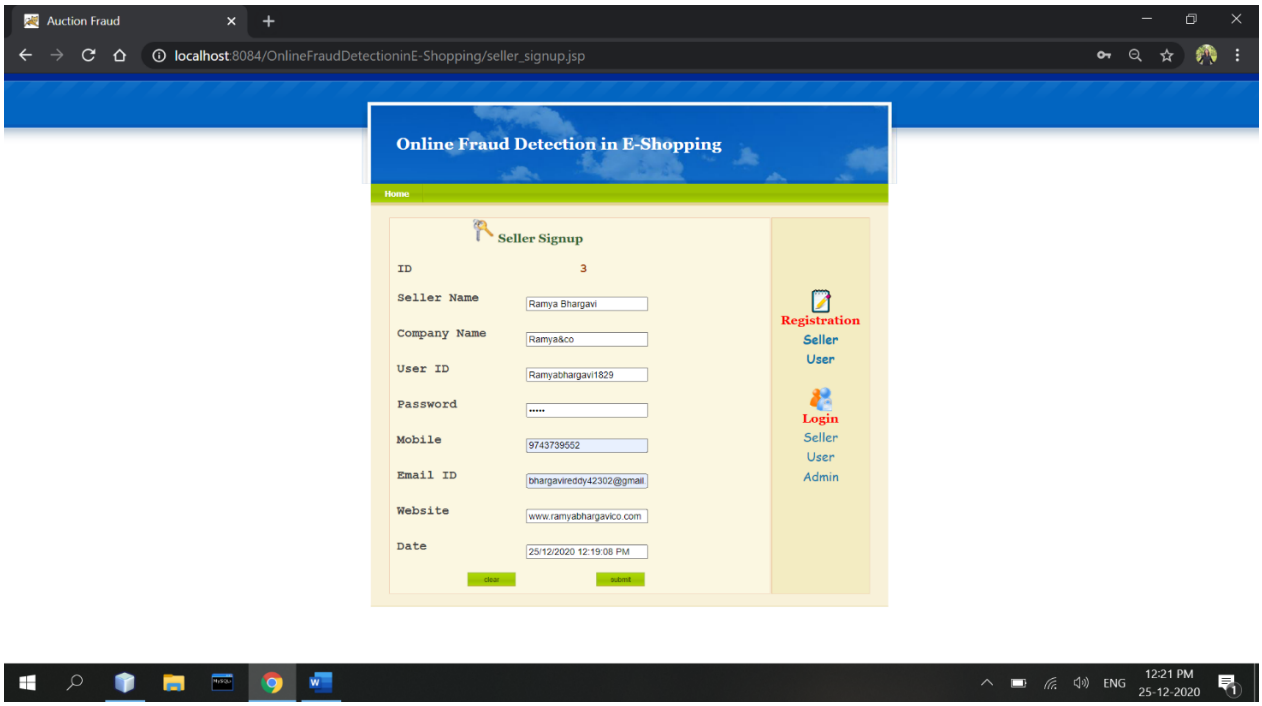
| FIELD | TYPE | NULL | KEY | DEFAULT | EXTRA |
|---|---|---|---|---|---|
| uid | Varchar(255) | NO | | NULL | |
| Name | Varchar(255) | NO | | NULL | |
| Userid | Varchar(255) | NO | | NULL | |
| Pass | Varchar(255) | NO | | NULL | |
| Mobile | Varchar(255) | NO | | NULL | |
| Email | Varchar(255) | NO | | NULL | |
| date | Varchar(255) | NO | | NULL | |

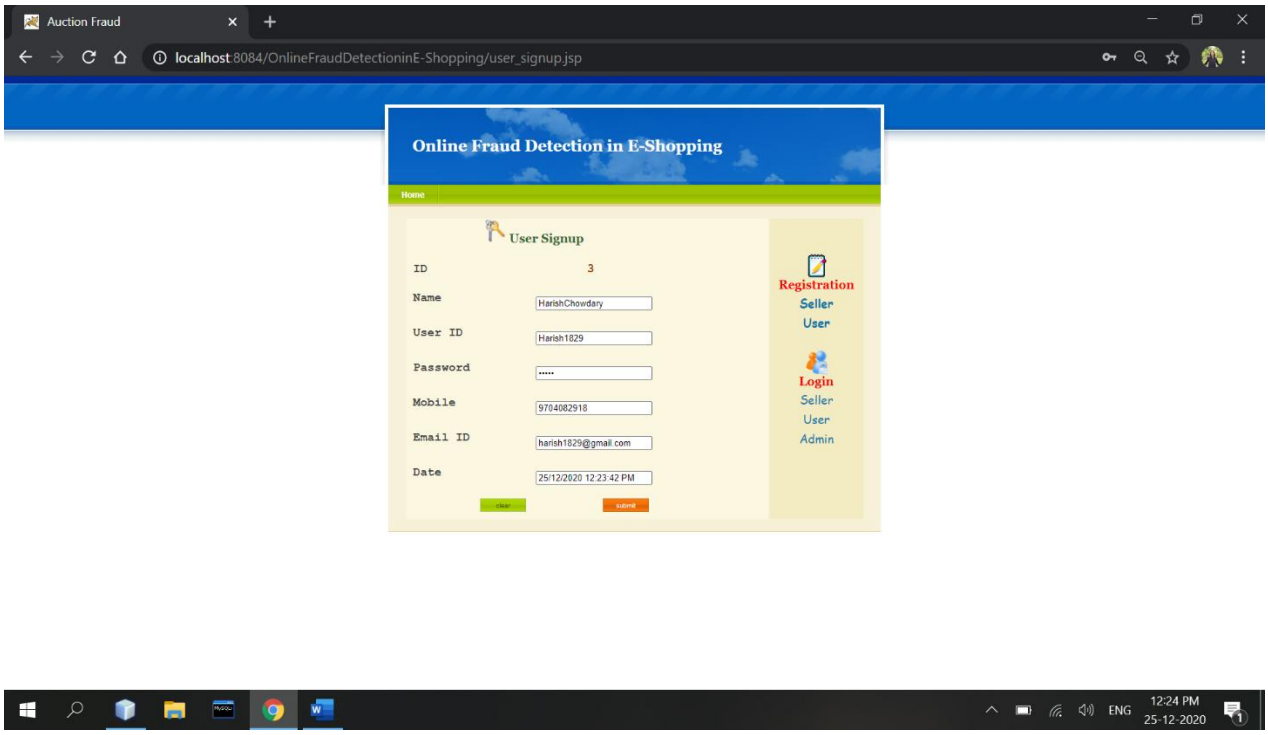
# Results

1. Home Page: It contains registration for seller and user. And Login for seller, User and admin.

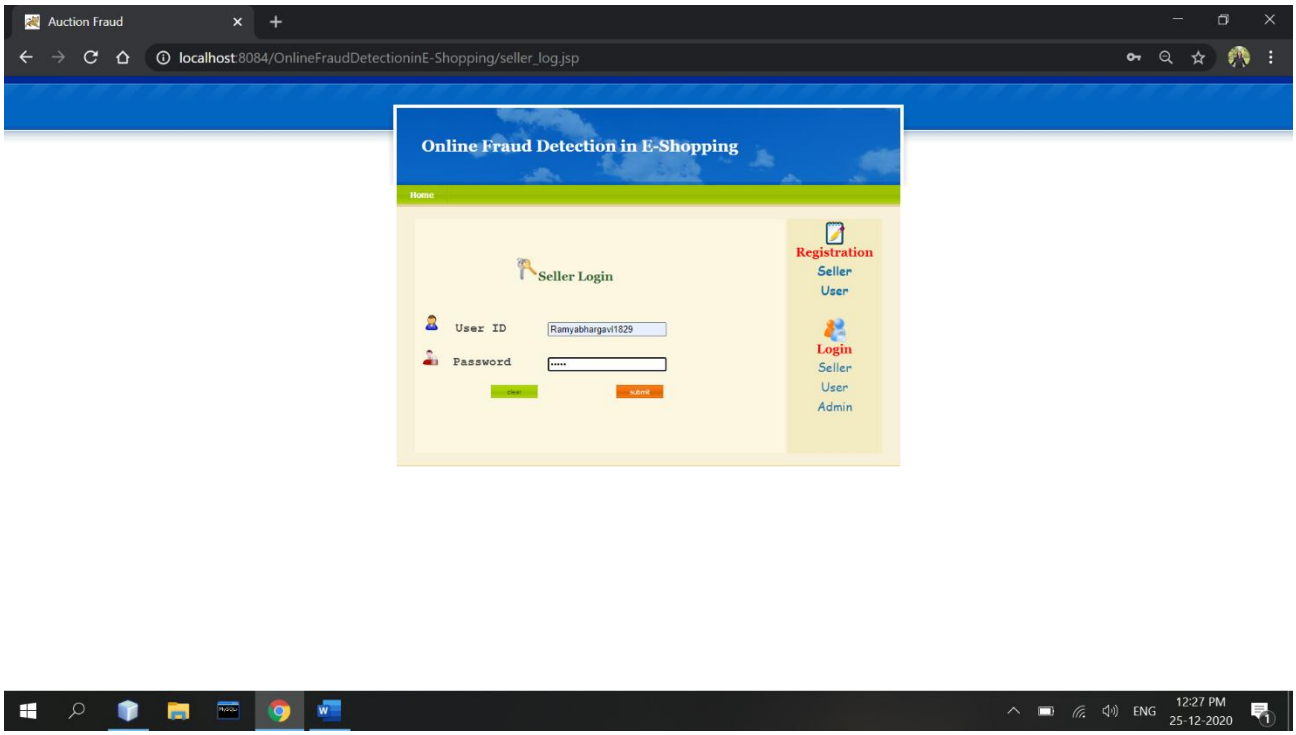


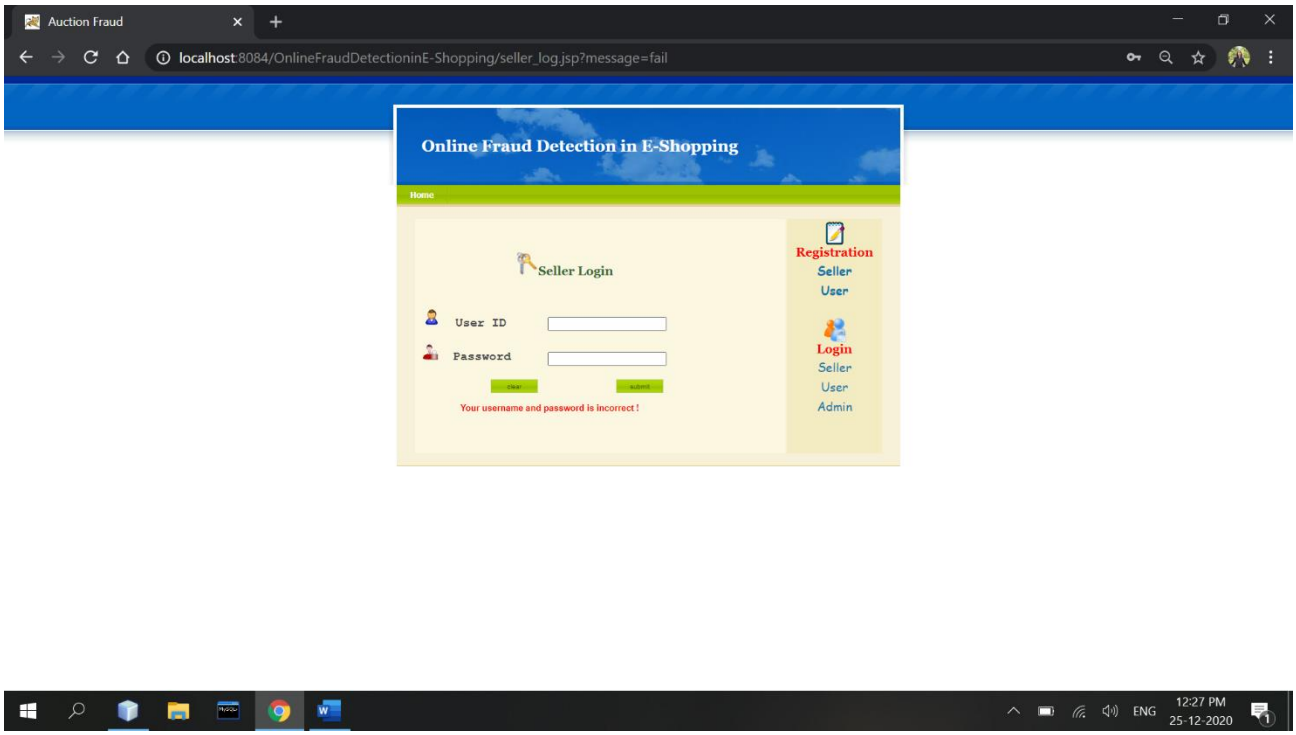

2. Registration: Seller signup asks for Seller Name, Company Name, User ID, Password, Mobile number, Email ID, Website, Date and Time will be recorded automatically and then submit. And User signup asks for the credentials like User name, User ID, password, Mobile number and email ID and then Submit.

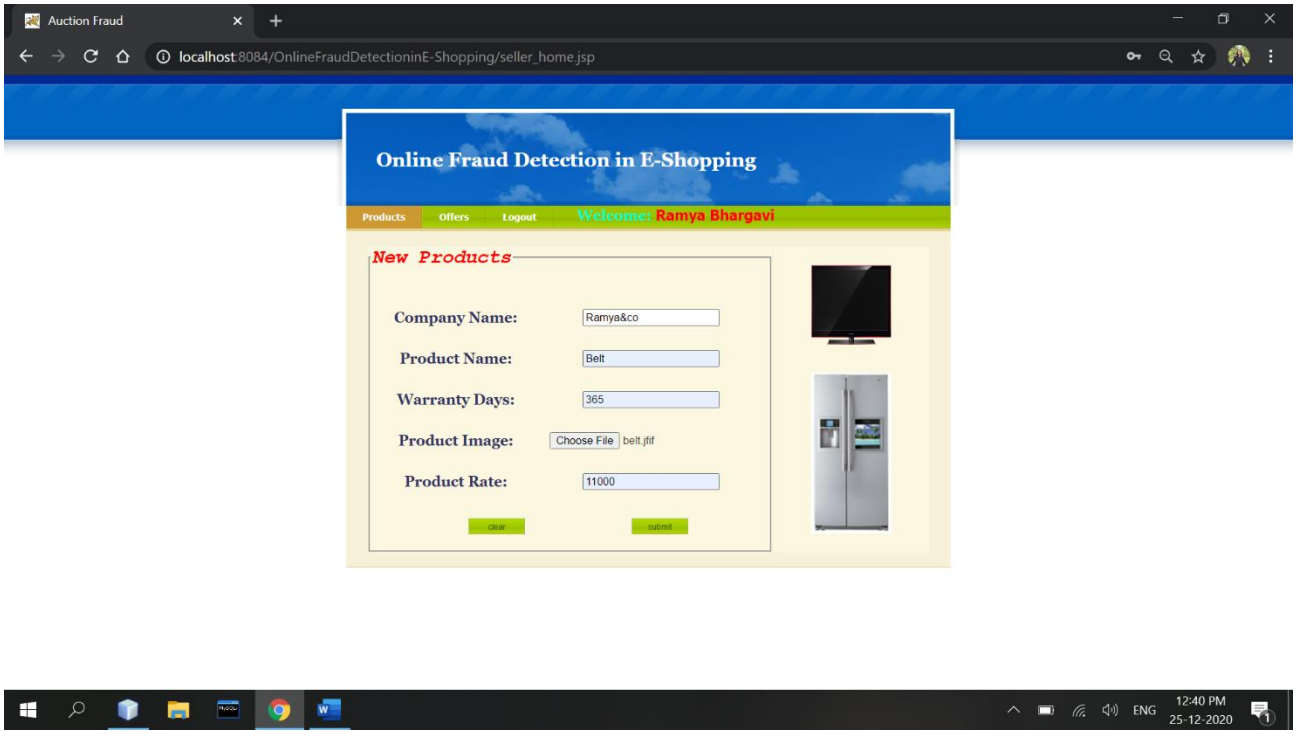

Auction Fraud
localhost:8084/OnlineFraudDetectioninE-Shopping/seller_signup.jsp
Online Fraud Detection in E-Shopping
Home
Seller Signup
ID 3
Seller Name Ramya Bhargavi
Company Name Ramya&co
User ID Ramyabhargavi1829
Password
Mobile 9743739552
Email ID bhargavireddy42302@gmail
Website www.ramyabhargavico.com
Date 25/12/2020 12:19:08 PM
clear
submit
Registration
Seller
User
Login
Seller
User
Admin
ENG
12:21 PM
25-12-2020

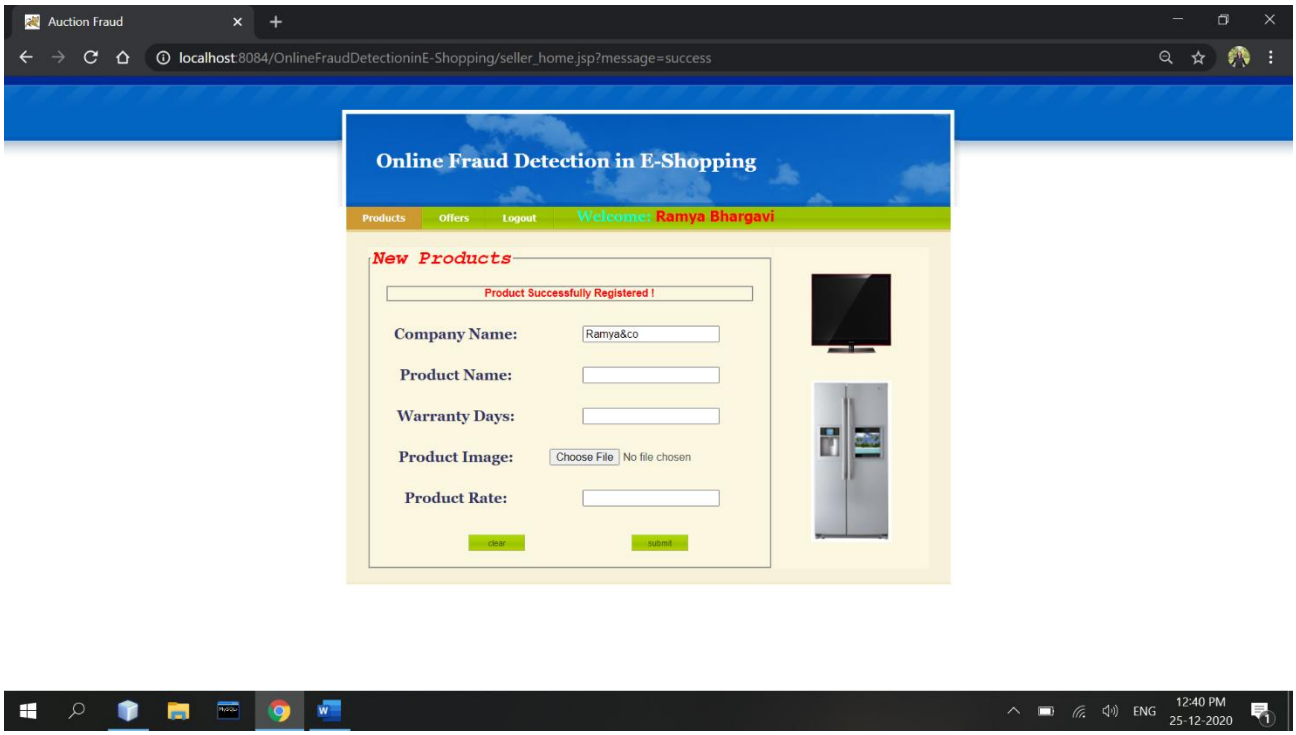

Auction Fraud
localhost:8084/OnlineFraudDetectioninE-Shopping/user_signup.jsp
Online Fraud Detection in E-Shopping
Home
User Signup
ID 3
Name HarishChowdary
User ID Harish1829
Password
Mobile 9704082918
Email ID harish1829@gmail.com
Date 25/12/2020 12:23:42 PM
clear
submit
Registration
Seller
User
Login
Seller
User
Admin
ENG
12:24 PM
25-12-2020

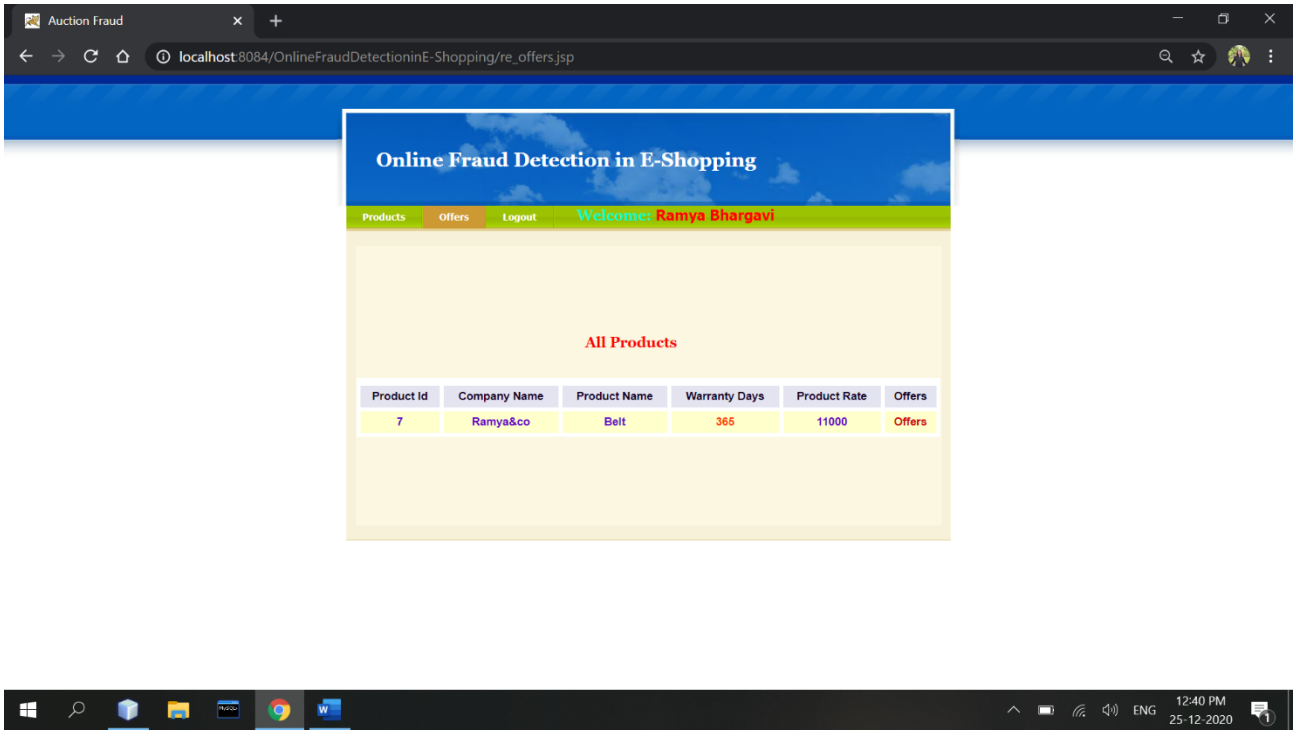
3. Login (seller): Seller login is provided with ID and password. This login Step can be done after the successful completion of the Registration process. And when the seller tries to login with his/her credentials, it shows Username and password is incorrect. This is because, the seller cannot until the admin authorizes the seller. Once the admin authorizes the seller, the seller can login with his/her credentials and sell the products. The seller can also provide offers on the product. The detailed process is shown below respectively.

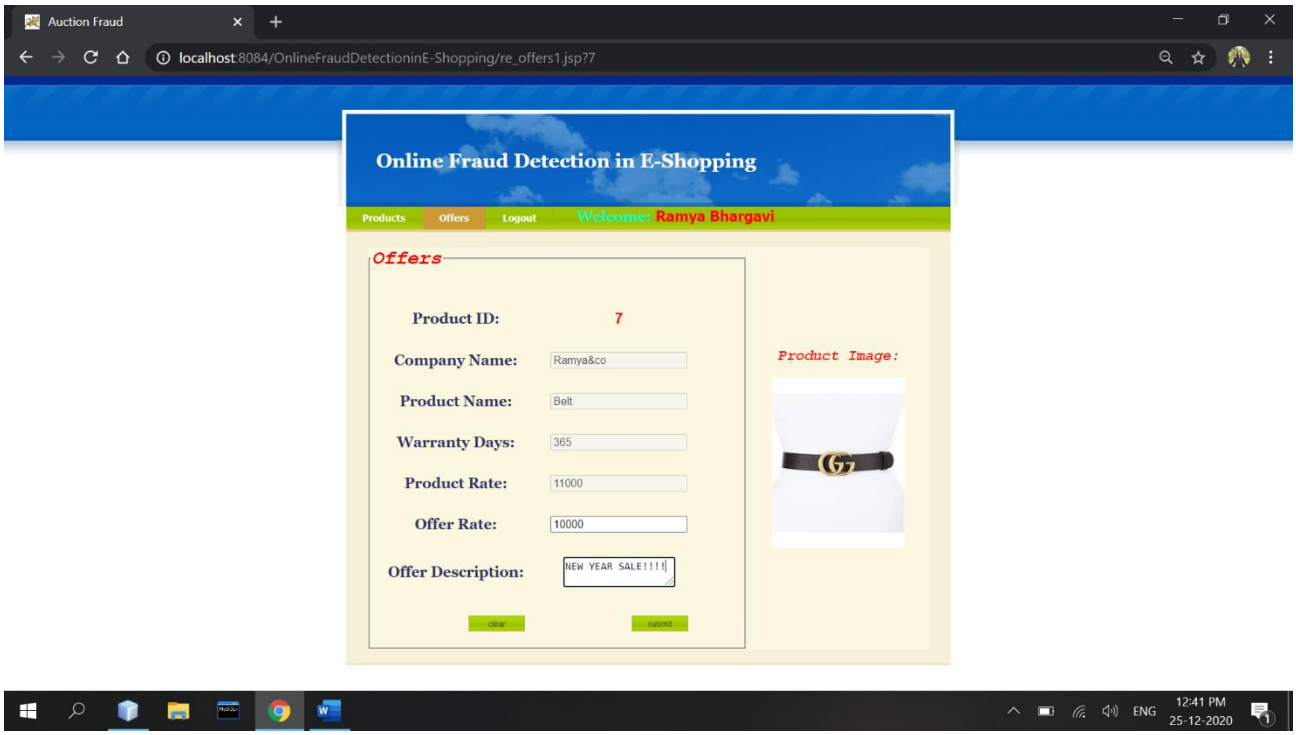



Auction Fraud
localhost:8084/OnlineFraudDetectioninE-Shopping/seller_log.jsp?message=fail
Online Fraud Detection in E-Shopping
Home
Seller Login
User ID
Password
clear
submit
Your username and password is incorrect !
Registration
Seller
User
Login
Seller
User
Admin
ENG
12:27 PM
25-12-2020

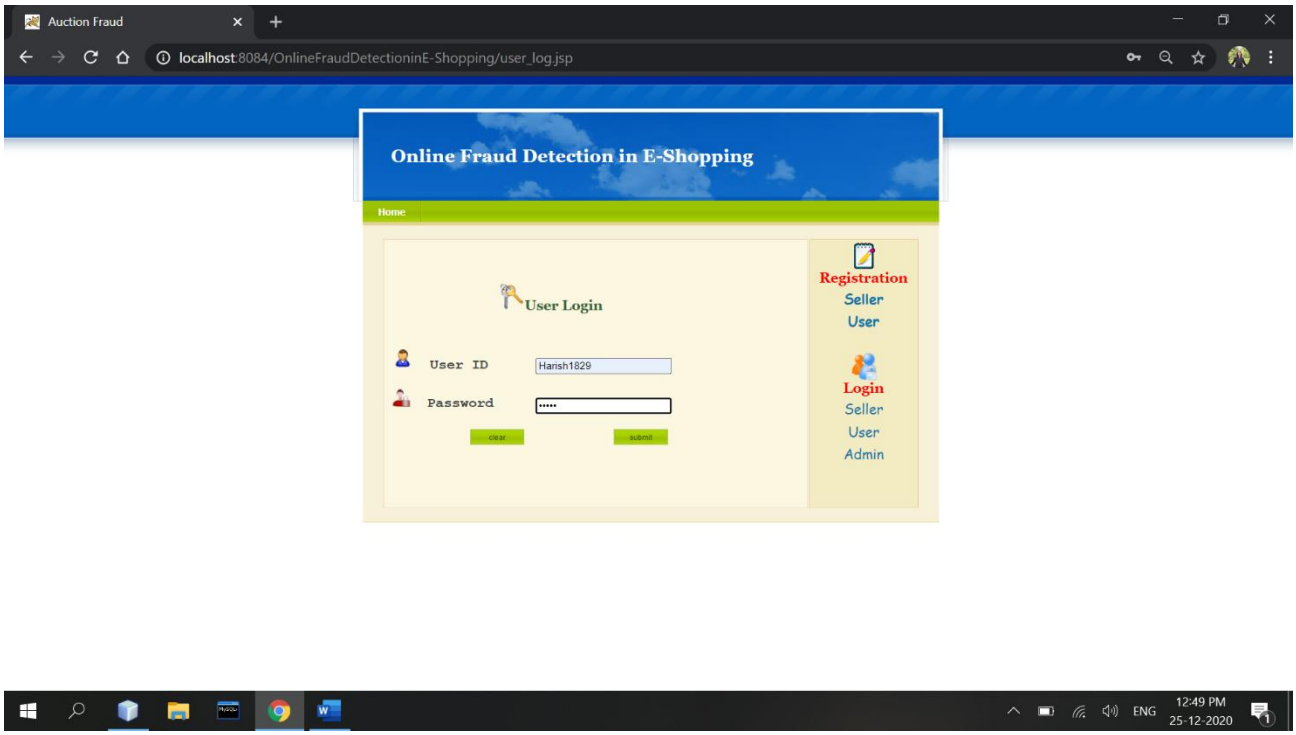

Auction Fraud
localhost:8084/OnlineFraudDetectioninE-Shopping/seller_home.jsp
Online Fraud Detection in E-Shopping
Products
Offers
Logout
Welcome: Ramya Bhargavi
New Products
Company Name:
Ramya&co
Product Name:
Belt
Warranty Days:
365
Product Image:
Choose File
belt.jfif
Product Rate:
11000
clear
submit
ENG
12:40 PM
25-12-2020


Auction Fraud
localhost:8084/OnlineFraudDetectioninE-Shopping/seller_home.jsp?message=success
Online Fraud Detection in E-Shopping
Products
Offers
Logout
Welcome: Ramya Bhargavi
New Products
Product Successfully Registered !
Company Name:
Ramya&co
Product Name:
Warranty Days:
Product Image:
Choose File
No file chosen
Product Rate:
clear
submit
ENG
12:40 PM
25-12-2020

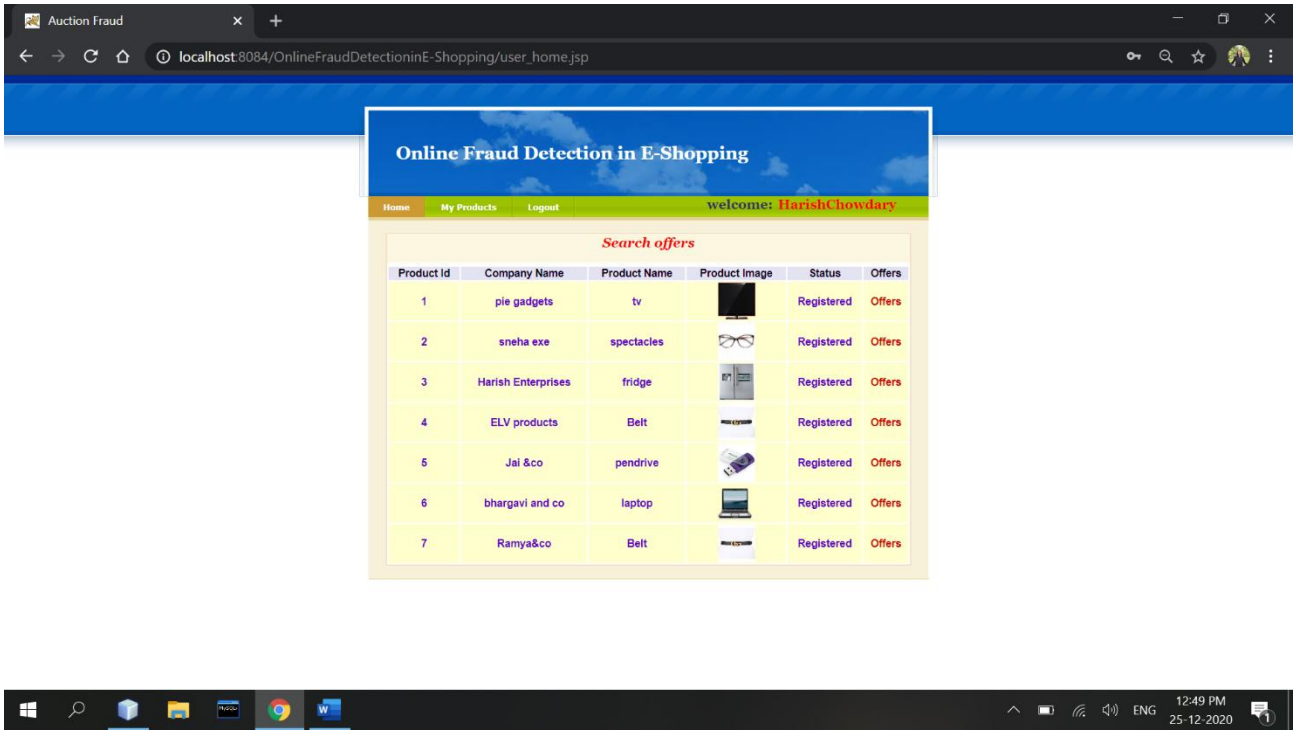

Auction Fraud
localhost:8084/OnlineFraudDetectioninE-Shopping/re_offers.jsp
Online Fraud Detection in E-Shopping
Products
Offers
Logout
Welcome: Ramya Bhargavi
All Products
Product Id
Company Name
Product Name
Warranty Days
Product Rate
Offers
7
Ramya&co
Belt
365
11000
Offers
ENG
12:40 PM
25-12-2020



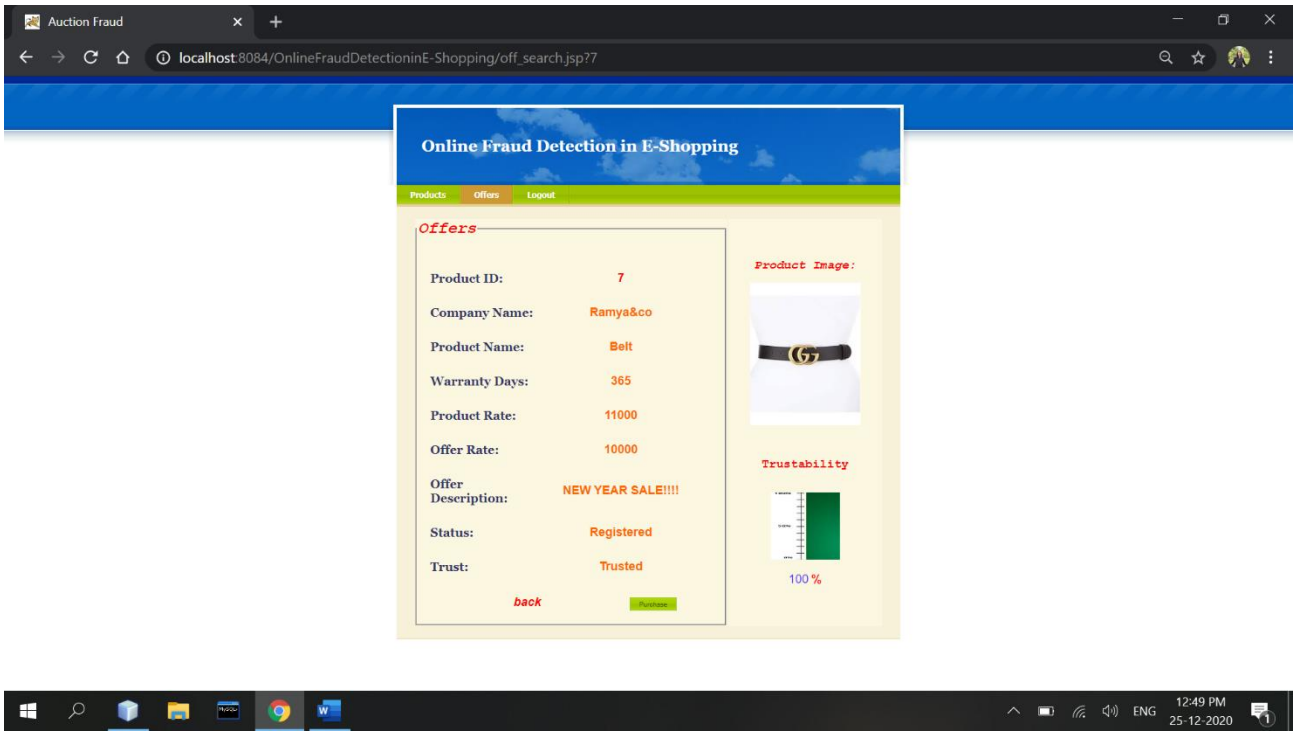

4. Login (User): User login is provided with User ID and password. After the successful login of the user, He/she can see the available products and offers on them to purchase. When the user selects the product that he/she wants to purchase, It shows all the product details like Company name, Product name, Warranty days of the product, Product rate, Offer rate, Offer description, Statues whether the Seller is registered successfully or not, Trust whether the seller is trust-worthy to the admin or not, And then after checking all the provided information, the user can purchase the product. The user can view his/her purchased products from My products column and can raise a complaint if he/she were unsatisfied with the product. The available options under complaint raise are 1. Not delivered, 2. Product Missmatch, 3. Poor service and 4. Product damaged. The User can select any one of the among option and then submit. Then it shows complaint Registered. The detailed process is shown below respectively.

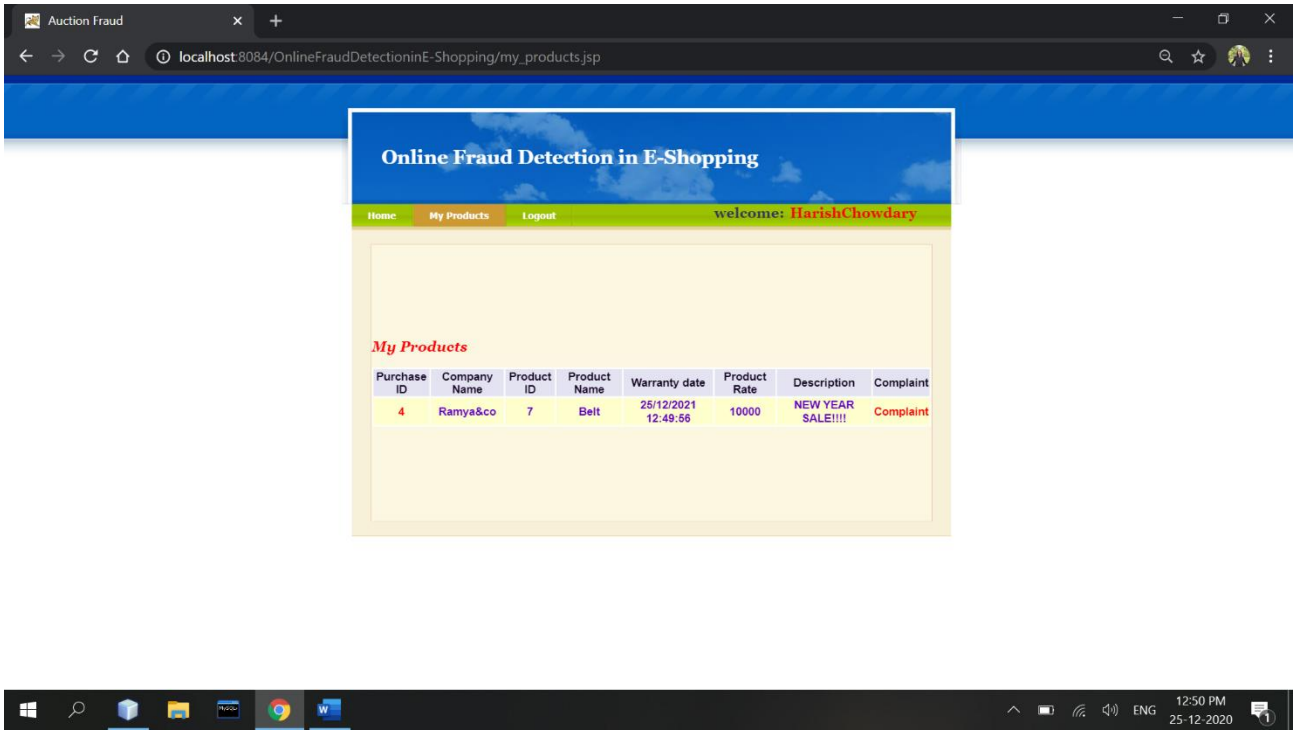

Auction Fraud
localhost:8084/OnlineFraudDetectioninE-Shopping/user_log.jsp
Online Fraud Detection in E-Shopping
Home
User Login
User ID
Harish1829
Password
clear
submit
Registration
Seller
User
Login
Seller
User
Admin

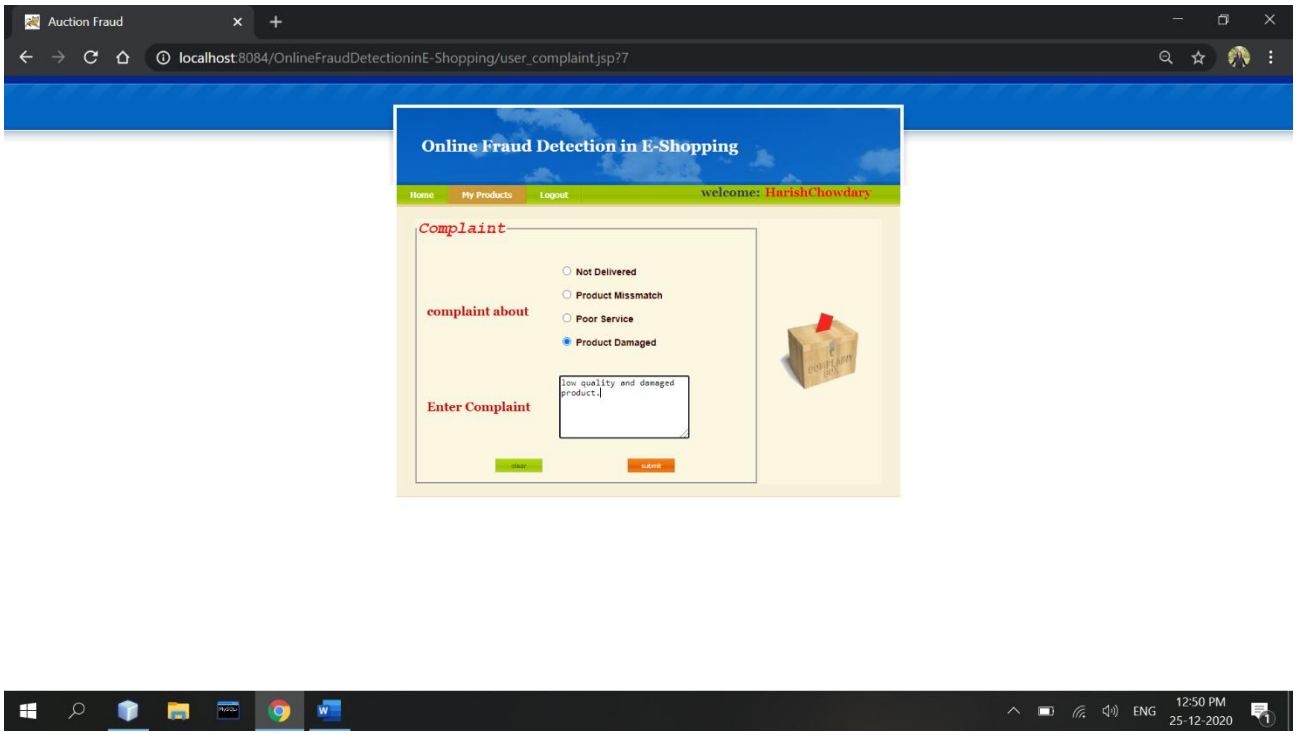

ENG
12:49 PM
25-12-2020

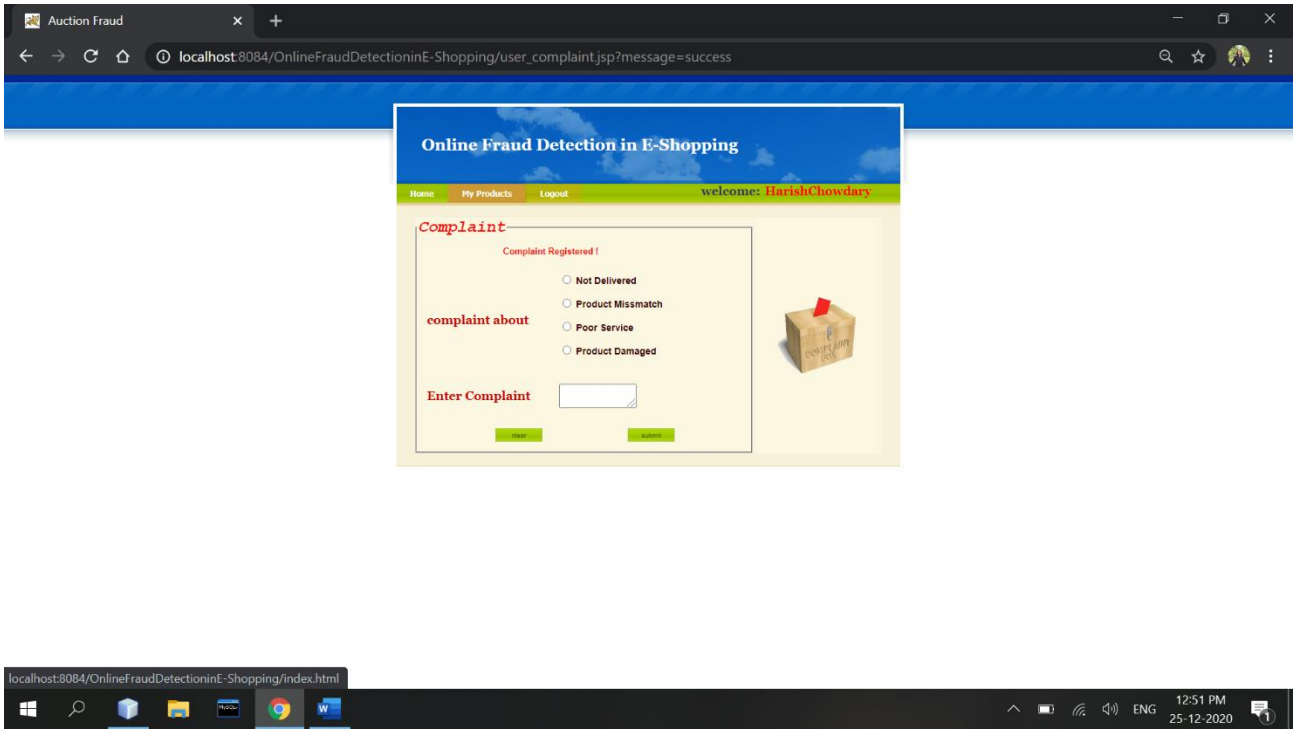

Auction Fraud
localhost:8084/OnlineFraudDetectioninE-Shopping/user_home.jsp
Online Fraud Detection in E-Shopping
Home
My Products
Logout
welcome: HarishChowdary
Search offers
Product Id
Company Name
Product Name
Product Image
Status
Offers
1
pie gadgets
tv
Registered
Offers
2
sneha exe
spectacles
Registered
Offers
3
Harish Enterprises
fridge
Registered
Offers
4
ELV products
Belt
Registered
Offers
5
Jai &co
pendrive
Registered
Offers
6
bhargavi and co
laptop
Registered
Offers
7
Ramya&co
Belt
Registered
Offers


ENG
12:49 PM
25-12-2020

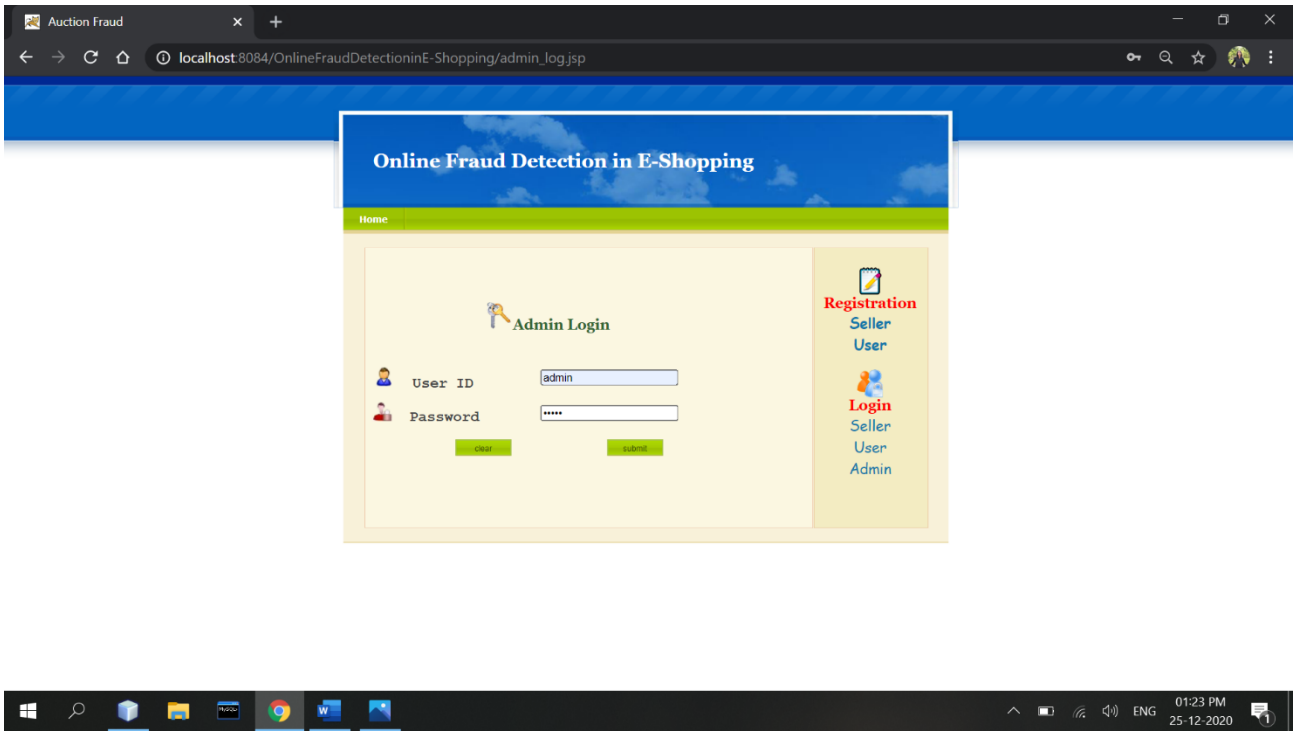

Auction Fraud
localhost:8084/OnlineFraudDetectioninE-Shopping/off_search.jsp?7
Online Fraud Detection in E-Shopping
Products
Offers
Logout
Offers
Product ID: 7
Company Name: Ramya&co
Product Name: Belt
Warranty Days: 365
Product Rate: 11000
Offer Rate: 10000
Offer Description: NEW YEAR SALE!!!!
Status: Registered
Trust: Trusted
back
Purchase
Product Image:
Trustability
100 %
ENG
12:49 PM
25-12-2020

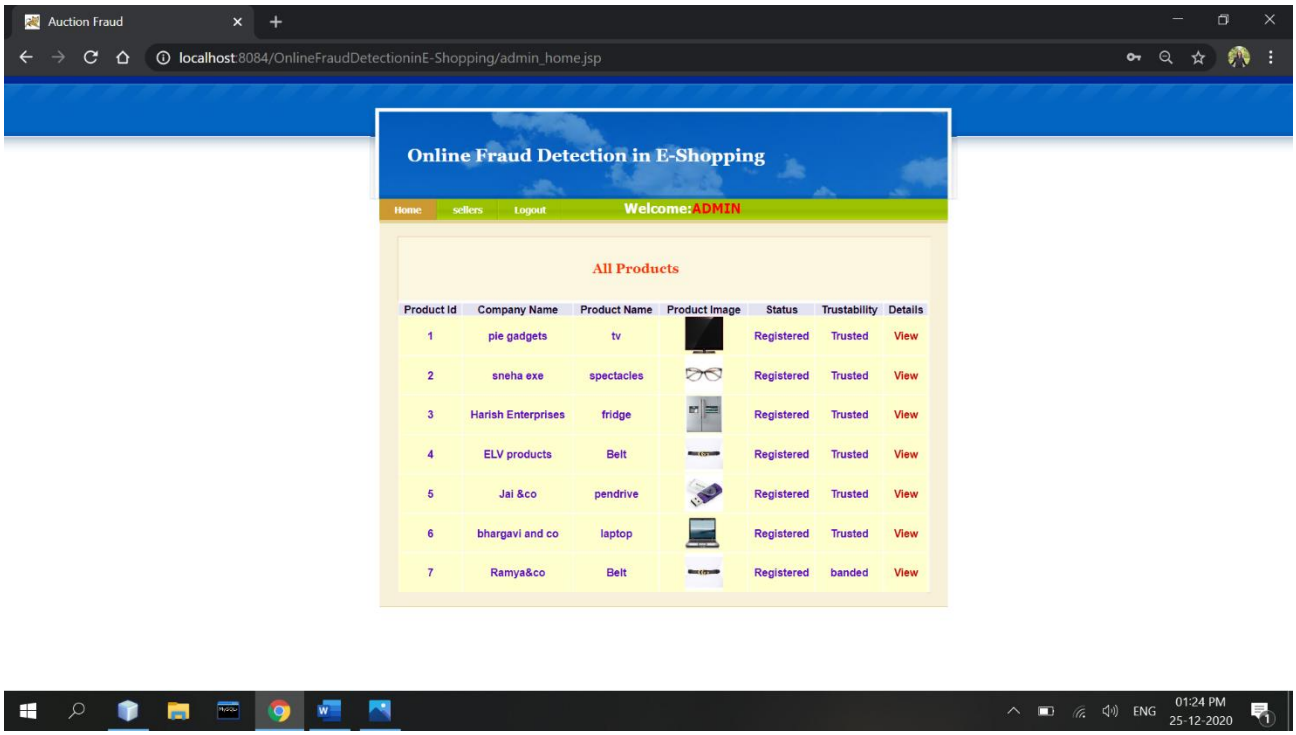

Auction Fraud
localhost:8084/OnlineFraudDetectioninE-Shopping/my_products.jsp
Online Fraud Detection in E-Shopping
Home
My Products
Logout
welcome: HarishChowdary
My Products
Purchase ID
Company Name
Product ID
Product Name
Warranty date
Product Rate
Description
Complaint
4
Ramya&co
7
Belt
25/12/2021 12:49:56
10000
NEW YEAR SALE!!!!
Complaint
ENG
12:50 PM
25-12-2020

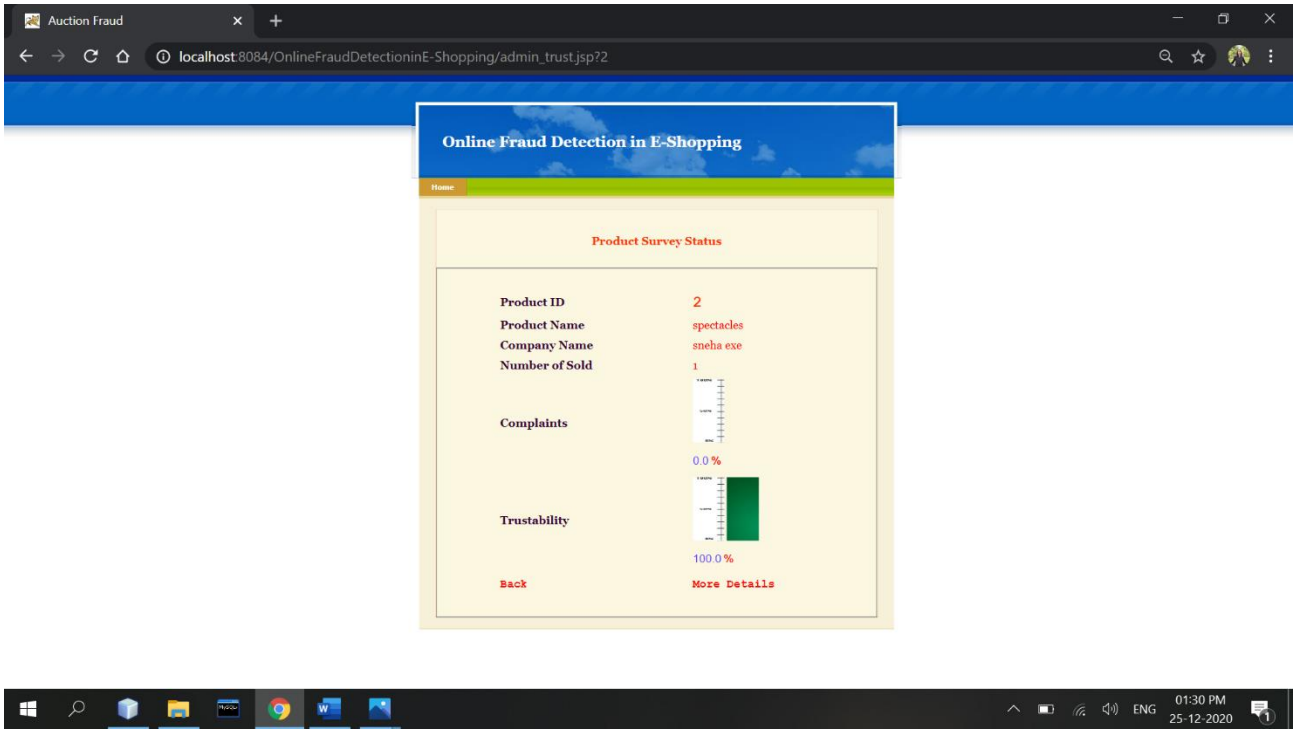

Auction Fraud
localhost:8084/OnlineFraudDetectioninE-Shopping/user_complaint.jsp?7
Online Fraud Detection in E-Shopping
Home
My Products
Logout
welcome: HarishChowdary
Complaint
complaint about
Not Delivered
Product Missmatch
Poor Service
Product Damaged
Enter Complaint
low quality and damaged product.
clear
submit
ENG
12:50 PM
25-12-2020

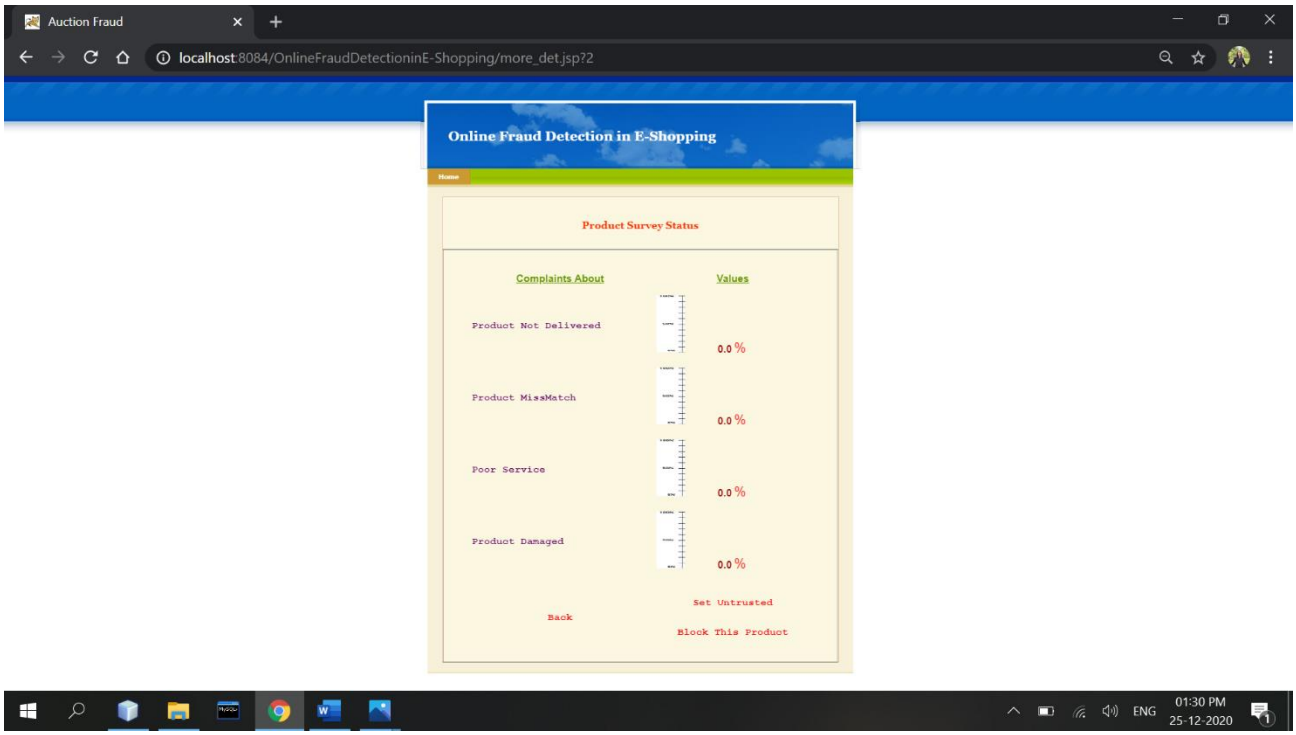

Auction Fraud
localhost:8084/OnlineFraudDetectioninE-Shopping/user_complaint.jsp?message=success
Online Fraud Detection in E-Shopping
Home
My Products
Logout
welcome: HarishChowdary
Complaint
Complaint Registered !
complaint about
Not Delivered
Product Missmatch
Poor Service
Product Damaged
Enter Complaint
clear
submit
localhost:8084/OnlineFraudDetectioninE-Shopping/index.html
ENG
12:51 PM
25-12-2020

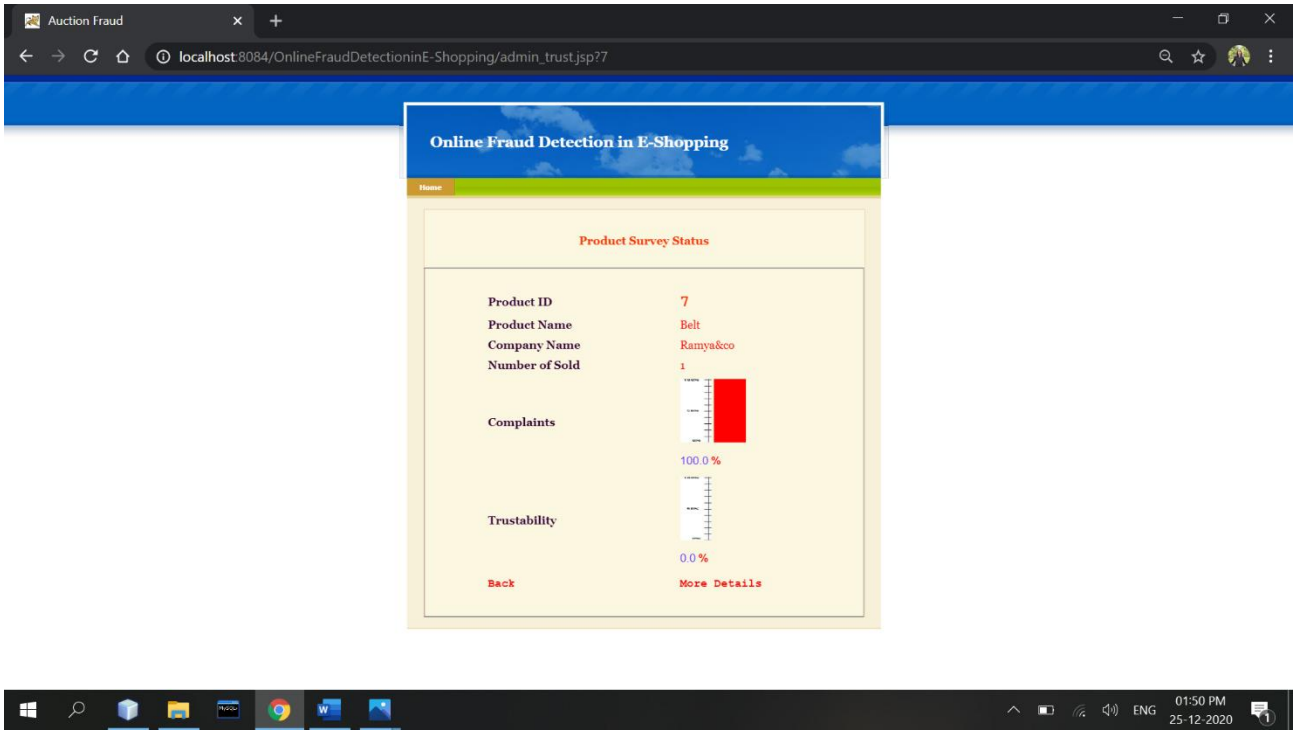
5. Login(admin): The admin login is provided with ID and password. After the successful login, It displays the Home page Where it shows, WELCOME: ADMIN. It displays the list of products from various companies with all the product details. When the admin tap the view button of particular product, it shows the product survey status. The product survey status displays the product ID, Product Name, Company Name, Number of products sold, Complaints and Trustable or not. The product survey status also provide more details such as values of product not delivered, Value for product mismatch as well as values for poor service and product damaged. By keeping this all in mind, the admin can set the seller as untrusted and can also block the product. The detailed process is shown below.

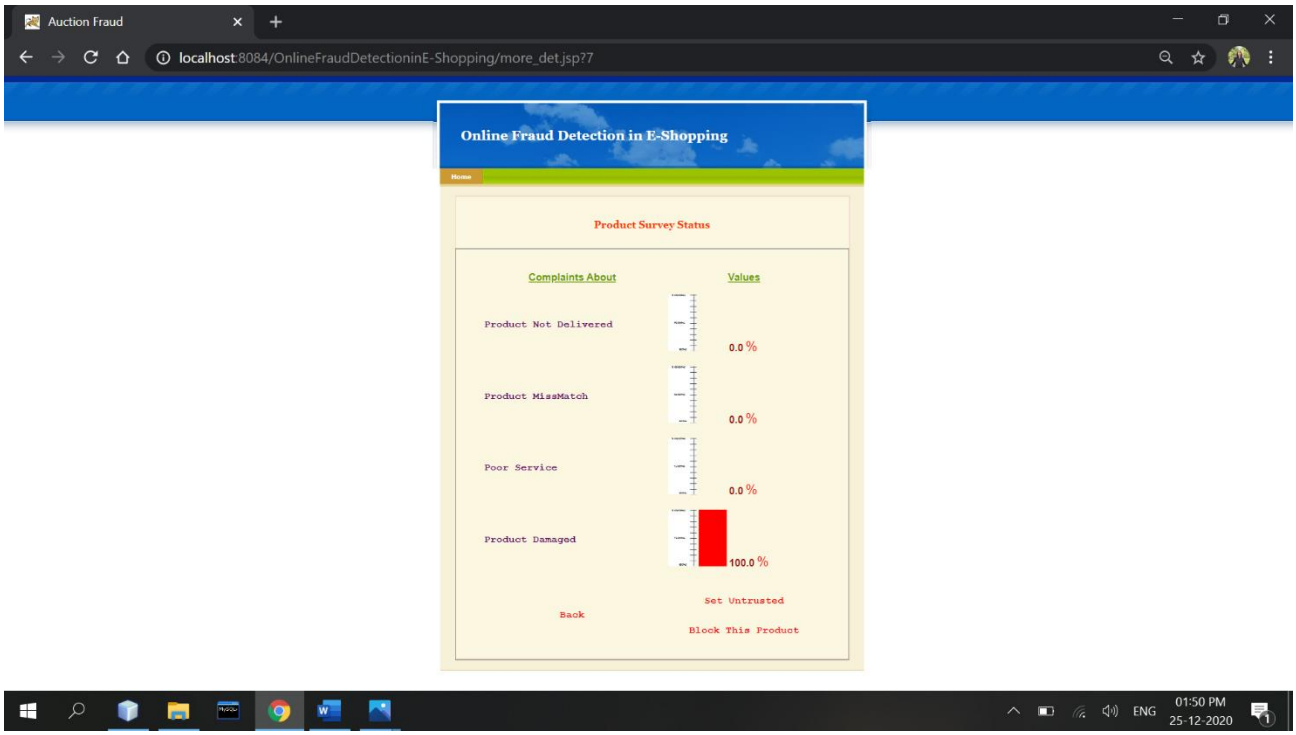



Auction Fraud
localhost:8084/OnlineFraudDetectioninE-Shopping/admin_home.jsp
Online Fraud Detection in E-Shopping
Home
sellers
Logout
Welcome:ADMIN
All Products
Product Id
Company Name
Product Name
Product Image
Status
Trustability
Details
1
pie gadgets
tv
Registered
Trusted
View
2
sneha exe
spectacles
Registered
Trusted
View
3
Harish Enterprises
fridge
Registered
Trusted
View
4
ELV products
Belt
Registered
Trusted
View
5
Jai &co
pendrive
Registered
Trusted
View
6
bhargavi and co
laptop
Registered
Trusted
View
7
Ramya&co
Belt
Registered
banded
View
ENG
01:24 PM
25-12-2020


Auction Fraud
localhost:8084/OnlineFraudDetectioninE-Shopping/admin_trust.jsp?2
Online Fraud Detection in E-Shopping
Home
Product Survey Status
Product ID
2
Product Name
spectacles
Company Name
sneha exe
Number of Sold
1
Complaints
0.0 %
Trustability
100.0 %
Back
More Details
ENG
01:30 PM
25-12-2020


Auction Fraud
localhost:8084/OnlineFraudDetectioninE-Shopping/more_det.jsp?2
Online Fraud Detection in E-Shopping
Home
Product Survey Status
Complaints About
Values
Product Not Delivered
0.0 %
Product MissMatch
0.0 %
Poor Service
0.0 %
Product Damaged
0.0 %
Set Untrusted
Back
Block This Product
ENG
01:30 PM
25-12-2020


Auction Fraud
localhost:8084/OnlineFraudDetectioninE-Shopping/admin_trust.jsp?7
Online Fraud Detection in E-Shopping
Home
Product Survey Status
Product ID
7
Product Name
Belt
Company Name
Ramya&co
Number of Sold
1
Complaints
100.0 %
Trustability
0.0 %
Back
More Details
ENG
01:50 PM
25-12-2020


Auction Fraud
localhost:8084/OnlineFraudDetectioninE-Shopping/more_det.jsp?7
Online Fraud Detection in E-Shopping
Home
Product Survey Status
Complaints About
Values
Product Not Delivered
0.0 %
Product MissMatch
0.0 %
Poor Service
0.0 %
Product Damaged
100.0 %
Back
Set Untrusted
Block This Product
ENG
01:50 PM
25-12-2020

# CONCLUSION

I finally conclude that this mini project named " FRAUD DETECTION SYSTEM" is user friendly by providing genuine from seller end to user end. It prevents the fraudulent sellers from entering into the website. In case any fraud detects in the products, it helps in raising a complaint against the product as well as seller.

# REFERENCES

**1**. “The Java Programming Language” by Arnold.

**2.** “Java: The complete Reference” by Herbert Schildt.

**3.** Website: “GeeksForGeeks”.