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Fake Comment Detection of Products

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Abstract: ***Millions of people all over the world use various kind of websites all over the world, be it Facebook, Twitter or the different shopping websites. They have impacted our life in a great way and specifically the shopping websites have made our life so much easier. To buy different products we don't need to go anywhere. We can just sit at home and access these websites and order any item that we want to buy and it will be delivered at our home. Now one thing that all of us do before buying any product online is that we see the reviews of that product to know if the product is actually good or not. People used to do it long before the internet was even accessible. Then they used to take reviews directly from other people. This has been going on for a long time.***

Nowadays people browse thousands reviews available online before finally buying any product and they buy the product only if most of the reviews about the product are positive. It has happened with all of us that we want to buy a product but when we see that it has got many negative reviews , then we do not buy that particular product. Now the sellers know about this mind set of the people and they tend to play with it. What they do is that they hire people for writing fake reviews. These fake reviews can be of two types: 1) Good reviews using which their own product can be sold in big quantity. 2) Bad review so that they can defame some other product which is giving them competition. Many companies hire people so that they can write fake reviews and pay them good amount of money. Fake reviews weather a positive one or a negative one is bad and should not be entertained as it misleads the customer and it may also cause loss to the sellers. So we would like to know about these fake reviews and the people who write them so that we can protect people as well as the sellers from any kind of financial losses.

Keywords: fake reviews, fake review detection, IP address, seller

I. INTRODUCTION

Different people think in different manners and all of them may have a unique opinion and this has been important for people around the world for decision making. Long before when World Wide Web (WWW) was not there people used to take opinion from their friends or from their seniors that which political party to vote for and which mixer to buy so that they can take the best decision possible. Since the beginning of ecommerce it has become very easy for the sellers to sell large quantity of their goods and they can know about the interest and products that the people want to buy and accordingly send them messages or notifications on mobile phones so that they can check their website and buy that product which in turn will make profit for the seller.

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With the number people who are comfortable with the internet increasing steadily it has become common practise for them to write reviews weather it's a hotel, or some product or some movie which in turn is helpful for other people to make decision. Some products can get huge number of reviews on a shopping website.

Our application will filter the fake reviews and try to provide you the genuine ones so that the common people who want to buy something are not mislead. Reading reviews before actually buying something has become a common practice for the potential customers. They see many reviews before ordering something and if the reviews are mostly positive they will buy the product and if the reviews are mostly negative then they will not buy that particular product.

With the help of our application people will quickly be able to determine if a review is fake or not. If the product that the people receive from the seller is different than what they had expected or the product is not performing on the level on which it was expected to, the customers will feel like they have been cheated. We have been able to know about many sellers in the past who have been hiring people and pay them huge amount of money to write fake reviews.

Review Websites need to defend themselves and design such a system so that they can detect and remove fake reviews so that it can be trusted by sellers and more specifically by the customers. We must give respect in this regards to website like "TripAdvisor" and "Yelp" because they have redefined their algorithms and statements so that they can catch the suspicious or fake reviews. They are on a mission to serve the customers first and protect their rights. So they go on depth to detect a fake review and know if it is actually legitimate or not. One method which they use for doing this is that they detect the IP address of the people who writes the review which is very effective.

II. RELATED WORK

[1] Previously fake review detection was done with the help of sentiment analysis which is a very good for detecting fake review.

[2] The Problem was that it could only detect fake reviews when the meaning of the review is completely different from the product.

[3] The fake reviewers nowadays have become very smart and know how to write it in the proper way so that it can't get detected. So this method can only detect fake reviews if the sentiment of the written review doesn't match the product for which it is written.

[4] Our method in turn uses IP address to detect fake reviews which according to me is more efficient than sentiment analysis.

[5] Our system can help in detecting these fake reviews and then we can delete them and even block the user so that they cannot write any reviews further. User will have to login into the system to write reviews.

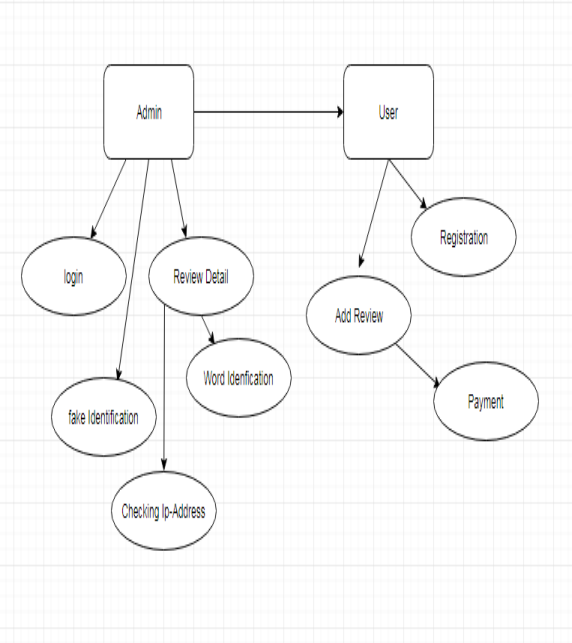
[6] We all can agree that we need to write only one review about any particular product and writing more than one doesn't make any sense. Our system works according to this and so if more than one review comes from the same IP address then we will classify that review as fake.

III. IMPLEMENTATION

Our project is having six modules. These are as follows:

A. Admin Login

In this module the admin can login into the application. It is only after the login when the admin can access the system and the credential details must be kept private.



B. Add product

In this module the admin will be able to add different products and set the price of the products. It is up to the admin that which product he wants to add and which one he wants to remove.

C. Delete Review

In this module admin will be able to delete the review if he detects that the review is fake so that he can protect the interest of the people. It is completely up to the admin that which review to delete.

D. User Login

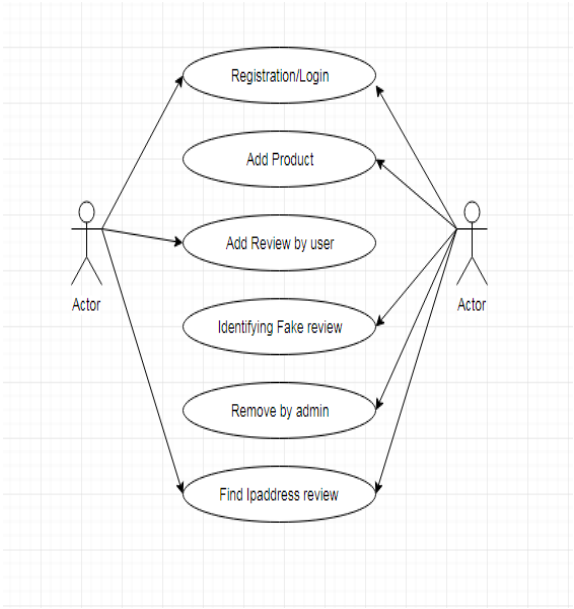
In this module the user can login in the system in order to use the system. Email id of the user will be required. It is compulsory for the user to login to see products and post reviews.

E. View product

In this module the user will be able to see the different products after he/she has logged into the system and they will also be able to see the other reviews.

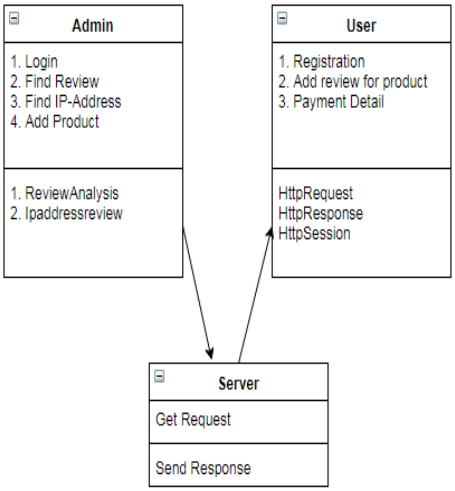
F. Post Review

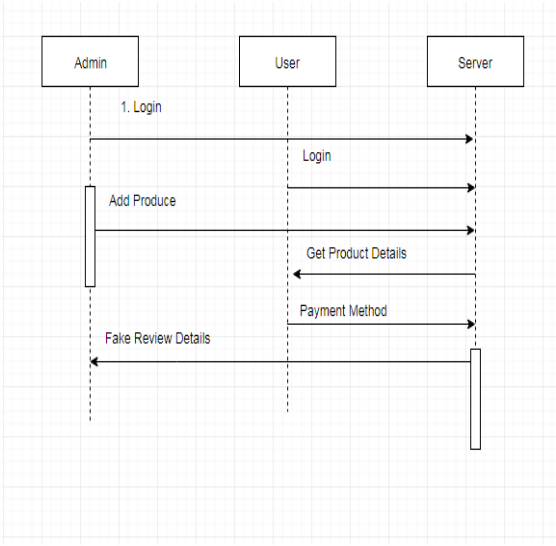
In this module the user will be able to post reviews about the online products. But this feature will only be available to them if they have logged in otherwise they cannot do this.



ITEM'S RANKING METHOD

In this project we would like to see the items in some order of preference and so we will be ranking the items. We can use different methods of ranking the items or the products, for example we can rank the items according to the number of units sold etc. But in our system we will be using the List Rank method and it will see the rating score. For example if the item 'x' has higher rating score than item 'y' ,then it's ranking order would be higher than 'y'. This method is very efficient and also very useful.





SYSTEM ANALYSIS FEASIBILITY:

It is the study to find the strength and weakness about the present system or something which you are going to do in the future. We will also be able to know about the threats and the resources that will be required to complete the project or the system. This is measured by the value or the input needed and the amount of money that is to be earned. A well-defined study of this type is going to give us details like the history of the project, the amount that needed to be invested, and the kind of work to be done and also about the accounting details, management, legal measures, ,money information etc. They are three forms of feasibleness

- Economical feasibleness
- Technical feasibleness
- Operational feasibleness

ECONOMICAL:

This assessment is done on the basis of input, output, procedures, programs, knowledge, working etc. All these things are checked in order to ensure that the particular system can work properly or not.

This kind of study is done in order to ensure that a particular corporate can complete this project or not in order of hardware, code written, level of employees working on it etc.

- Whether the specified technology is obtainable or not
- whether the specified resources area unit obtainable
- Manpower- programmers, testers & debuggers
- Software and hardware

Once the technical feasibleness is established, it's necessary to contemplate the financial factors additionally. Since it would happen that developing a selected system is also technically attainable however it's going to need immense investments and advantages is also less. For evaluating this, economic feasibleness of the projected system is allotted.

OPERATIONAL

This kind of study is very important to check whether a particular application will be used by the people or not even if it's completed. We will have to make the system such that it is completely user friendly and the users face no problem in using the application. If all these rules are not satisfied by the developer then he/she needs to bring the required changes in their system. The questions that are needed to be asked in operational study are:

- Is management supporting the project or not?
- If the users are finding it easy to use the application or not?
- If the efficiency or the runtime of the application is good or not?
- Are few of the users involved in developing the project or not?
- Does the project actually have some good return value to offer?

IV. RESULTS AND DISCUSSION

With the help of this project we will be able to detect the IP address from where fake reviews are coming and we will be able to delete those fake reviews and delete it. With this we can ensure that the customers will be able to see the genuine reviews and decide if to buy a particular product or not. It will also be very helpful for the seller so that he/she can get the actual reviews of the product. We will also be able to detect the IP address and then we will block the user with that IP address. We can detect that how many reviews the customer has been writing and we can all benefit from this system.

V. CONCLUSION AND FUTURE WORK

Finding the fake reviews from such large and unstructured amount of reviews has become very important to protect both the customers as well as the sellers. Currently many companies and even many ecommerce websites are trying to develop efficient system so that they can know and detect the fake reviews, but it is not very easy task and it will take time to become efficient in this.

No single method or technique right now is fully efficient in detecting the fake reviews. Every method has some advantages and disadvantages. In the future we may get that one efficient method for this problem but the fake reviewers will also get smart with time and they find some other technique to write the fake reviews that will be more difficult to detect.

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T. Manoranjitham, Assistant Professor (S.G) in the Department of Computer Science and Engineering at SRM Institute of Science and Technology. She has many years of teaching and research experience and has published more than 10 research papers. She has done B.E in Electronics and Communication Engineering in 1991 and done M.E in Computer Science and Engineering in 2002. Her research interest includes Wireless sensor networks, Network security, Software Defined Network, Internet of Things, Cloud Computing, and Mobile Ad Hoc Network. She always teaches the students in a very detailed and nice manner and she is very knowledgeable.

Kumar Ankit, currently pursuing Bachelor of Technology in Computer Science and Engineering at SRM Institute of Science and Technology. This paper is one of his beginning works in research area. His main area of interest includes Machine learning, image processing, internet of things and cloud computing. He has done two internships, one in TATA services where he along with other employees did a project on Flexi timing implementation in the company and another in BIT Mesra where he did a project on library management system. He is very interested in computer science and is ready to learn anything related to it.