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"SMART SOLUTION OF ANTIVIRUS IMPLEMENTATION WITH AUTO-UPDATE USING JAVA FRAMEWORK TO GUARD THE COMPUTERS"

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Abstract— **Polymorphic virus Redlof embeds itself without any connection to every e-mail sent from the infected system. When an email message with infection is seen, it starts executing. The virus HTML.Redlof.A is a very annoyance virus. It actually comes in the emergence of a script. The script is copied onto a variety of other .asp, .htt, .jsp, .htm, .html, .vbs files on hard drive. The virus also infects files with extensions "asp", "php", "jsp", "htm", "html", "htt" and "vbs". Then no matter what time any of these files are affected, the script is reproduced onto more files which create more files and so on. This application is scheme to build a smart solution which will guard the computer only against HTML.Redlof.A, Folder.htt & Desktop.ini Virus and will insure that none of the data is deleted and all the infected files are cleaned. There is wide range of antivirus available in the market for detecting virus but they delete all the files infected with HTML.Redlof.A virus, these files include "HTML", "ASP", "XML", "JSP" and "PHP" therefore if antivirus available in the market is used then user will lose all web based files which may result into huge losses. Therefore through this application user will clean all the web files infected with HTML.Redlof.A virus without deleting them. This paper intend to build a compact yet powerful platform independent solution using java language which will prove to be a breakthrough for computer security.**

Keywords— **network, virus, antivirus, computer, HTML, XML, ASP, JSP**

I. INTRODUCTION

As computers are getting connected to the network alongside there is a growing threat of viruses. These Viruses get connected to your computer and destroy the data or either gets access to your personal information and misuses it. The application intends to scan and detect the presence of viruses in HTML, ASP, JSP, XML, PHP files and to further ensure that the infected files are cleaned up and not deleted from the memory. The application will further scan and detect the presence of malicious files and delete them. The product also intends to implement the feature of auto-updating and spyware detection.

The use of antivirus software has become amazing of an act of faith. People seem to feel more safe not with a more protected operating system, or with the latest patch, but with some antivirus software installed in their systems. A recent study shows that 81 percent of all computer users have antivirus software installed on their computers. To a certain extent clearly, antivirus software is a must-have for the majority users. There are various ways for finding the viruses from the system. This type of deep knowledge can help us to choose the best antivirus for the system so that we can provide an efficient security to our PC. There are hundreds of antivirus products but two to be the best are: Bitdefender's and Kaspersky lab's. Bitdefender is very well-built because it is a grouping of signature -based exposure, analytic detection, and

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performance detection. Products from avast, avira, Eset, F secure, BullGuard, G Data are also perform well.

This application is initiative to build a smart solution which will guard the computer only against HTML. Redlof.A, Folder.htt & Desktop.ini Virus and will assure that none of the data is deleted and all the infected files are cleaned.

There is large range of antivirus available in the market for this purpose but they delete all the files infected with HTML.Redlof.A virus, these files include “HTML”, “ASP”, “XML”, “JSP” and “PHP” therefore if antivirus available in the market is used then we will lose all our web based files which may result into huge losses. Therefore through this application we will clean all the web files polluted with HTML.Redlof.A virus without deleting them.

Therefore paper intend to build a compact yet powerful platform independent solution using java language which will prove to be a breakthrough for computer security. The software developed has responsibilities as

- Scan the files on the system for viruses, identical against the virus dictionary and thereby detecting the presence of viruses if any then take appropriate action of cleaning up the files in case of web pages or deleting the malicious files.
- Provide a feature of auto-updating by having a server base connected to the computer, where the server base looks out for new viruses based on the method of veracity checkers and behavior checkers.
- Provide a feature of Anti-spyware, which is run to detect the spyware software that has been installed on the computer.
- Which also include Auto - updating if it finds any new things in existing things and automatically its update with new things from given server.
- There are plenty of antivirus available in market but those antivirus only anxious with particular functions it's not update if anything new find, but in this system it update functions according to requirements.

II. LITERATURE SURVEY

Your personal information and money can be steeled by scammers, hackers, and identity thieves. But there are steps you can take to protect yourself from these thieves, like keeping your computer software up-to-date and giving your personal information only when you have a good reason. No system is completely secure so we can copy important files onto a hard disc or an external hard drive and stock it in a safe place. If your computer is compromised, you’ll still have access to your files [12].

Powerful web applications can be created using modern web application frameworks. Developing a secure web application, wants a developer to possess an insightful understanding of security vulnerabilities and attacks. It is tedious even for experienced developers, to find and eliminate all vulnerabilities. GuardRails is a source-to-source tool on rails for Ruby that helps developers build protected web applications. GuardRails works by attaching safety measures policies defined using observations to the data model itself. GuardRails produces a description of the input application that automatically applies the specified policies. GuardRails supports developers prevent a countless of security problems including cross-site scripting occurrences and contact control violations while providing a large amount of flexibility to support a range of policies and development styles [3].

Antivirus software security draws our attention to security products such as IPS, IDS, firewalls and others. Security products are invented to protect users, what if they not succeed? What if they just open a new door for attackers in our system? We are not implying that antivirus is worthless. Nor are we suggestive of a substitute invention. We only desire to describe awareness to the fact that the vulnerabilities of antivirus software are being an actual danger. Antivirus solutions are now a common element of computer systems. However, safety measures causes for the antivirus software have not got sufficient individual dealing of antivirus vendors and computer users [2].
User can get detail information of antivirus accelerator about system and method for examining a file_1 associated with a digital computer_2 to determine whether a computer virus is present within the file_1. The file_1 having at least one numbered sector. When the file_1 is checked for an initial time, the file_1 is scanned by an antivirus part 3 and 5. At that time, the numbers of the sectors being scanned and a hash value for each scanned sector are stored into a critical sector file_4. The hash values can be planned by an antivirus accelerator module_5. When the file_1 is checked a subsequent time, all of the file_1 sectors that were scanned the initial time are checked by the antivirus accelerator module_5. Within the critical sector file_4, each of these sectors again has its hash value calculated and composed with the hash value of the corresponding sector as stocked. When any calculated hash value fails to match a corresponding stoked hash value for any sector, the antivirus scan module_3 is commanded to rescan the entire file_1 [1].

The method and system for providing automated updating and upgrading of antivirus applications using a computer network, explains a method for updating antivirus files on a computer using push technology. In a chosen embodiment, updated virus autograph files or other restructured antivirus information is loaded onto a central antivirus server, while local push representative software is installed on the client

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computer. The push agent software operates in the background to accept updated antivirus files from the central antivirus server from corner to corner of the Internet, in a manner which is considerably opaque to the user. In another preferred method, antivirus files on a numerous client computers on a corporate computer network are routinely updated using push technology and programmed network installation scripts. Client computers obtain batches of updated antivirus from central antivirus server of internet using push technology. An automatic setting up script is executed to install the antivirus updates on the client computers of the corporate computer association systems having minimum or no involvement from a corporate system administrator [7].

Artificial intelligence (AI) techniques have played progressively more important role in antivirus discovery. At present, some principal artificial intelligence techniques useful in antivirus detection are proposed, including heuristic technique, mining of data, agent procedure, artificial impervious and artificial neural network. It believes that it will improve the presentation of antivirus recognition systems, and promote the production of new artificial intelligence algorithm and the application in antivirus exposure to incorporate antivirus detection with artificial intelligence. It introduces the important artificial intelligence technologies, which have been valuable in antivirus system. Meanwhile, it also points out a detail that combining all kinds of artificial intelligence technologies will become the main progress style in the field of antivirus [8] .
Sophos Antivirus is usable in number of positive and negative assepects. A user survey, cognitive walkthrough and heuristic evaluation were performed in order to collect suitable information and recognize problem areas. The assessment of how first time users experience about the usability of Sophos Antivirus compared to other security software provided using a statistical representation. The intellectual rehearsal features the ways in which Sophos helps or interfere users' tasks by looking at a few common task scenarios. The heuristic assessment brings to light the flaws recognized in Sophos' interface, and assigns a level of strictness to each, considering the collision that these issues have on users. A brief assessment with other antivirus software is made, to be aware of how other providers contract with usability in their applications [10].

There are many papers giving information related with virus and antivirus applications as discussed above. Therefore, there is a need for an approach to providing a smart solution of antivirus implementation with Auto-Update using Java framework to guard the computers for secure applications. Such an approach would preferably provide scan and detect the presence of viruses and to further ensure that the infected files are cleaned up and not deleted from the memory. It also provides a variety of services, such as folder analysis and reporting, could be flexibly installed for use of secure applications. There is advance need for a security application structure providing a common user interface for composing and managing both local and inaccessible remote security applications.

As per our study currently there exists no system at cheaper rates. The purpose of this system is to scan and detect the presence of viruses in HTML, ASP, JSP, XML, PHP files and to further ensure that the infected files are cleaned up and not deleted from the memory.
The software proposes the challenge to explore and obtain the different virus signatures and their functioning which forms the basis for developing the antivirus software. The software contributes opportunity for compassionating the various forms of viruses, their working and the methods of recognition. Antispyware software can also be refined alongside the antivirus software.

III. TOOLS AND TECHNOLOGIES USED

- **J2EE And J2SE (Java Standard Edition) :** It is a one of the technology tool used in various designing server side and scripting side code.
- MySql are used as the back-end tools for creating the database and data storage and manipulation.

J2EE And J2SE
It is one of the portable applications of java programming language, which is useful for both programmer and operators to doing more operation on particular program. It defines many numbers of API's and their functions.
One of the main implementation of java standard edition is Oracle which implementing by using the JDK(Java Development tool kit). J2SE provides standard edition of various programs and their functionality which also helpful for scripting for client side as well as server side.
It introduced many version 1.2 , 1.6 etc which gives more effective functions and effective programs and features about various version jdk 1.6 portable application in java which is user friendly and version 1.2 is not supportable for some software installation and there works. In this system mainly we using two main concepts that is Swings and RMI.
Swings are helps to build to AWT technology and uses Graphical User Interface which helps select effective component for AWT Technology.

Advantages:
1. It improve Performance: J2EE make improvement in program or way of program execution, Which helps to both client and server side.

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2. Monitor and Manageability: It Manages computers and their efficiency and managing very well when system unable to execute a particular information or program.
3. Faster: it is faster comparable to other languages.
4. As so many number of factors improved J2EE speed that may be series of objects or doing programs in Java Beans which helps to execute program clearly and fastly without any confusion. It helps to build so many interfaces and applications.
5. Reduce startup time: It reduces startup time for programmer to implement extra programming code and functions.

IV. DESCRIPTION OF SYSTEM

Malicious code is one of the largest problems in the world of networks. There exist a variety of methods and techniques stating that they guard user. For fairly some time the most popular security method against viruses was on demand scans. Various attempts to execute on access or real time scanning mechanisms were either uncontrollable too much valuable system resources such as memory or contribution too little security. Since the field of on contact or real time antivirus scanners are one of the most significant elements when stopping malicious software, on entrance antivirus scanning engines were reviewed and analyzed. Positive and negative aspects of methods were analyzed and reviewed. After reviewing real time monitoring and scanning engines, it is clear that there is still plenty of room for development and this field is the viewpoint one while talking about antivirus software. Monitoring, malware and anomaly exposure engines for mobile technologies were reviewed and their positive and negative aspects described. Number of patented, commercial or closed source techniques was obtainable in order to recognize the reader with variety of methods and techniques used in real time scanning [5].

Data flow diagram provides information about input and output of system; illustrate where information go and how it will work with particular process and showing particular output. It shows particular information and data flowing parallel and vertically. DFD provides a logical map of problem before suggesting a specific solution and they have proved to be a fast and effective method of communication among system analyst and are effective means of conduction dialog with users. Below diagram_1 shows the Data flow diagram of the system.

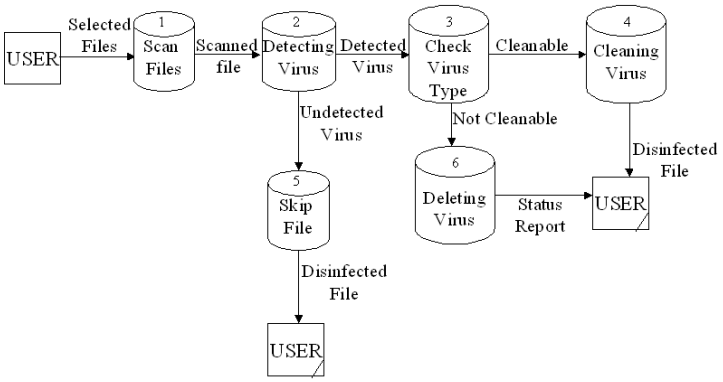

Diagram_1

According to diagram user select file and scan file. After scanning, on detecting virus user checks virus type and then cleans the detected virus. If virus not found in particular file then that is skipped. If virus found then system gives status report.

Data flow diagram is used to give suggestion to an analyst, identify where information originate, how it processed and result go. It also acts as a graphical communication between user and analyst. To do conversation between analyst and organization planner is helpful. The DFD expansion starts with one DFD given reply of the organization to be considered. This is called a context illustration. The context illustration is extended into a sequence of DFDs, each relating a exact purpose. This technique of top down analysis and breaking down DFDs give extra feature is known as level.

The system can be used in Government agencies, military organization, Business organization and last but not the least, by the common man, to protect sensitive information.

The main objective of the system is to remove viruses from the system and make our PC protective. It includes Hacking which delete hacked files from system. Main function of this system is to remove dummy information from dummy folder and provide security, scan the files on the system for viruses, matching against the virus dictionary and thereby detecting the presence of viruses if any then take appropriate action of cleaning up the files in case of web pages or deleting the malicious files. It provides a feature of auto-updating by having a server base connected to the computer, where the server base looks out for new viruses based on the method of integrity checkers and behavior checkers. It has a feature of Anti-spyware, which is run to detect the spyware software that has been installed on the computer.

While developing the system following points are considered as requirement of the system

- Performance: How system give response to user query and support to multiple users is seen in performance. If

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performance is not good then user is not going to use that particular system. If performance good multiple users able to do or ready to taking use of that particular system.

- Availability: System should be available all time whenever user wants to do some operations within it.(24*7).
- Safety: System should be given safety to the information. Sometime there is chance to misuse information. Some time that harmful to society also. If server fails while doing work it should not affect to the information what programmer has done?
- Reusability: It gives tech called reusability from this tech so many modules and there functionalities can be reused.
- Portability: System should be portable in which program should be open in any browser within the system and it should be run on any system..
- Reliability: Verification and Validation should be done in this step. It helps to produce information according to after updating certain things within the program.
- Testability: After designing certain program it need to be test, weather the designing information is working properly or no, still any modification required etc.
- Software Quality: Software quality gives good debugging facility and user requirements which user should be satisfied. It should provide necessities requirements for modules.

If user find virus in folder first he/she have to check virus and also way to find hacking file. Before check virus, he /she have to select option called Scan for virus or Hacking, in Hacking there are two options available Quick Scan and Complete Scan (Figure 2). Figure 2 is a screen shot showing page for hacking. Here when user enters the information for scanning the particular file, he has to select either quick scan or complete scan depending on the option selected, the system starts scan the file for checking virus infection.

Figure 1: Main page

Figure 2: Page for Hacking

Figure 3: Folder scan using virus option

Figure 1 is a screen shot of main page for checking virus or Hacking files and for an updating antivirus, here we select particular files or folder for virus scan using listed options available in figure 1. For example if we select option viruses in figure 1, the screen looks like as shown in screen shot of figure 3 which shows scanning a particular drive with particular folder. Here we select a specific folder or file from button to do virus scanning. In Scanned file panel it shows which all particular information scanning from recycle bin or bin and Scan progress and clean progress completes scan with 100%. It shows result in panel as shown in screen shot Figure 4. Here we will get the result may be as infection found or infection not found. It shows the detailed report of number of files scanned, number of files infected, number of files cleaned and number of files deleted. The Hacking main page, also helps user to find hacked files or folders using complete scan

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as shown in screen shot of Figure 5. It also gives detailed information about the folder scanned path, number of files scanned, current status of the scanned files and current status of the cleaned files in percentage.

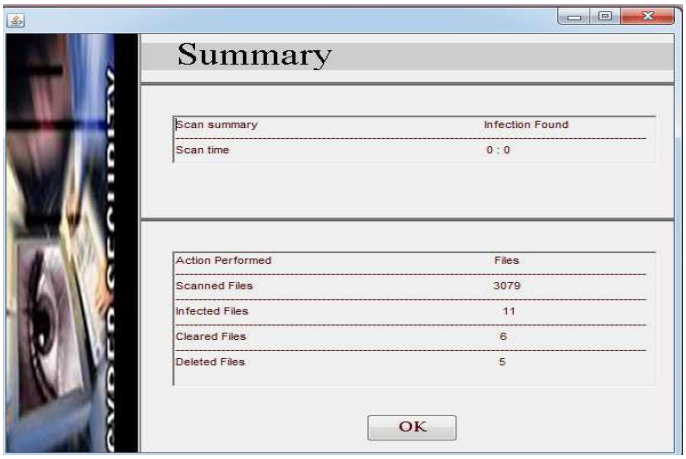

Figure 4: Shows Summary about virus

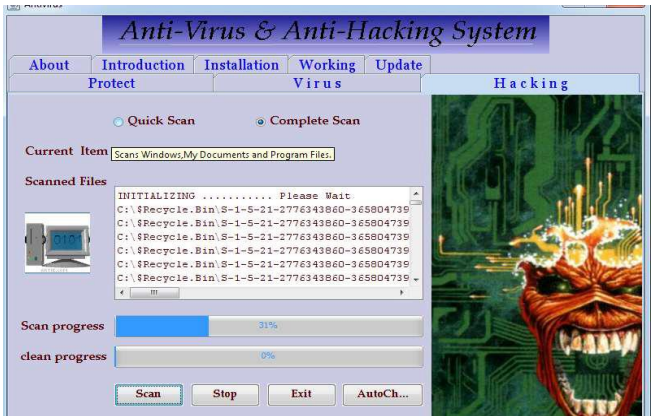

Figure 5: Checking Hacking files by using complete scan

User can get detail information of the system by selecting the option about on main page (Figure 1) . System also gives the information of current status of the scanning and when to update again. It also gives detailed information of how to do installation easily.

Discussion and Future Enhancement

This system can be used in Government agencies, military organization, Business organization and last but not the least, by the common man, to protective sensitive information. It also uses to find Hacking who tried to misuse the personal information and provides facility called as Update. It updates automatically if it finds any new virus or any new things in the virus. Provide Auto-Updating that we can implement in future enhancements which also protect to create an dummy information through internet. Therefore we indent to build compact powerful Platform independent solution using Java language which will prove to break through for computer security.

- The software presently takes care of only few virus and hacking tools which in future can be made to take care of almost all virus and hacking tools.
- The software does not have Quarantine and Auto-protect options, which can be added in future.
- Delete file automatically, when user tried to hack.
- Remove virus after auto-updating.
- Helps to protect information and data without losing in the memory.
- Totally it's protective to computers.
- It provides feature like Auto - Updating which updated automatically.

V. CONCLUSION

The software has been designed and developed using J2SE and J2EE. It is one of the user friendly and very interactive Language. It scans virus, folder wise and initiative to build a smart solution, which will guard the computer not only against viruses but will also prevent the hackers from hacking the system. This paper gives knowledge about the application to build a smart solution which will guard the computer only against HTML.Redlof.A, Folder.htt & Desktop.ini Virus and will insure that none of the data is deleted and all the infected files are cleaned.

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