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# INVESTIGATING BRUTEFORCE AND TIMING ATTACK IMMUNITY IN PROPOSED WORK

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**ABSTRACT:** This paper discusses the enhancement of security in order to tack the BRUTEFORCE and TIMING ATTACK in networked environment. The proposed work has provided more secure approach as compare to traditional security mechanism. This paper discusses the tools and technology used to implement proposed work. The results of simulations represent that the proposed work is more immune to BRUTEFORCE and TIMING attack as compare to tradition system.

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**Keyword: BRUTEFORCE ATTACK, TIMING ATTACK, JAVA, MATLAB, CRYPTOGRAPHY**

## [1] INTRODUCTION

### SECURITY

It is the term which is used for the protection of digital information in information technology .It protects them from all the different kind of threats. These threats can be internal and external, malicious and accidental threats. This defense includes detection, prevention and response to threats through the use of software tools and IT services. Data security also protects data from corruption. So it has been considered big issues. These security technologies involve data masking, data removal backups.

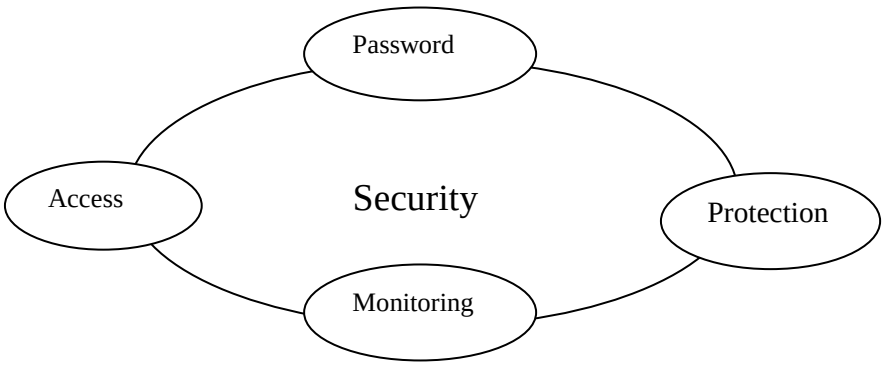


Fig 1 Security

At time of authentication, users must provide a password, code, biometric data, or some other form of data in order to verify his identity.

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Security is important in all types of enterprises and organizations . It also important also in small size industries. Weak security can result in compromised systems. It may be due to either by a malicious unintentional internal threat. Financial penalties will be imposed on the organization if their security standards are not up to the level that are regulated by law.

## [2] TOOLS AND TECHNOLOGY

### JAVA

Java is a programming language. It works on computing platform. It was developed by Sun Microsystems in 1995. Lots of applications websites are there that do not work unless Java is installed.

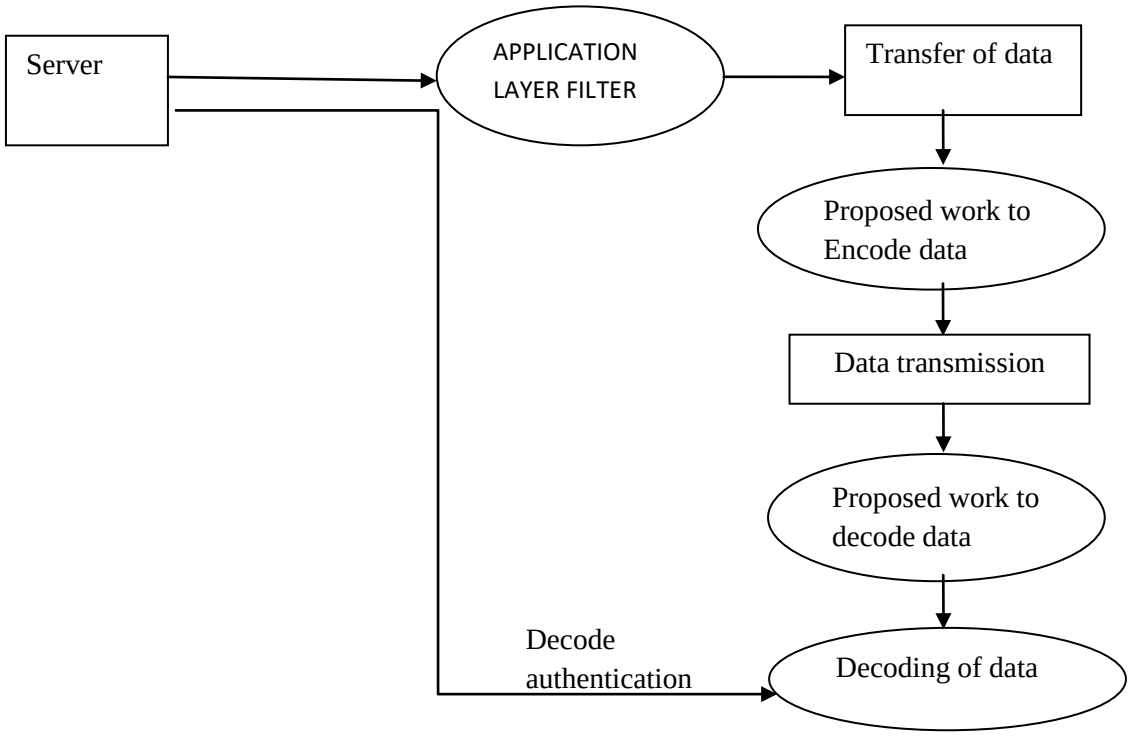
### MATLAB

MATLAB is known as Language of Technical Computing. It is considered as a high-level language within interactive environment. Matlab enables us to perform computationally tasks quicker as compare to other programming languages such as C, C++, & FORTRAN.

## [3] PROPOSED WORK

**We are going to enhance security system in order to protect from attacks at application layer.** There is threat of attack from hacker and we will develop of proposed model to tackle application layer level attack.

**Here we need to develop a server & client application in order to secure data at application layer.**



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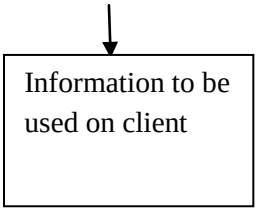


Fig 2 PROPOSED WORK

Encoded data is transmitted to client at receiver end decoded data is captured. Security has been introduced to tackle FTP, HTTP, man in middle, SQL injection attack.

**After development & testing of proposed work comparative analysis between traditional & proposed application layer security mechanism is discussed.**

## [4] RESULT AND DISCUSSION

### GUI INTERFACE FOR CLIENT

**This is the file sender interface that would send data to the server. Here the user id, password, port number, ip address, path of file to be send along with security token and AES CODE.**

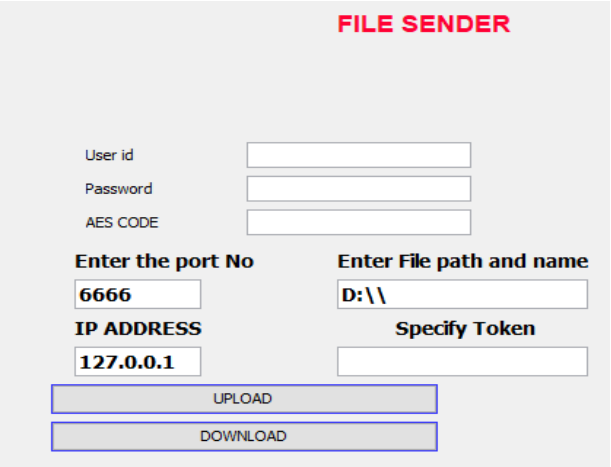


**Fig 3 Sender side application**

### GUI INTERFACE FOR SERVER

This is the file sender interface that would send data to the server. Here the port number, AES CODE, path of file to be received along with security token.

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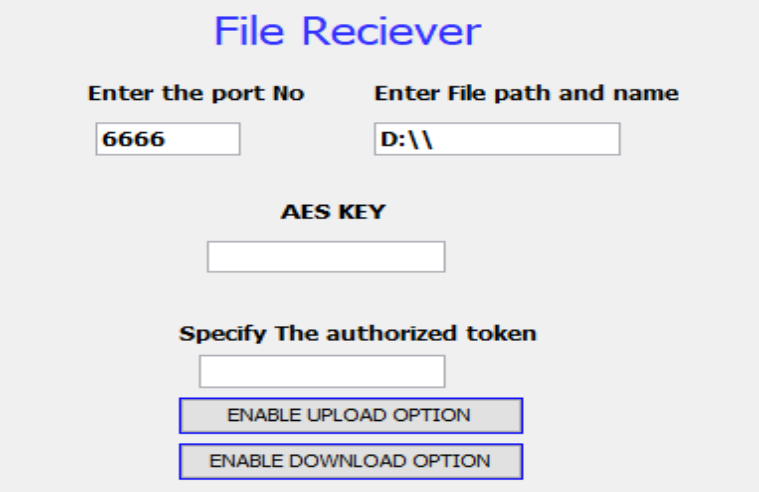


**Fig 4 Receiver side Application**

**FILE FOR TRANSFER**

**Following file would be transferred to the receiver from sender end. It may be notepad file.**

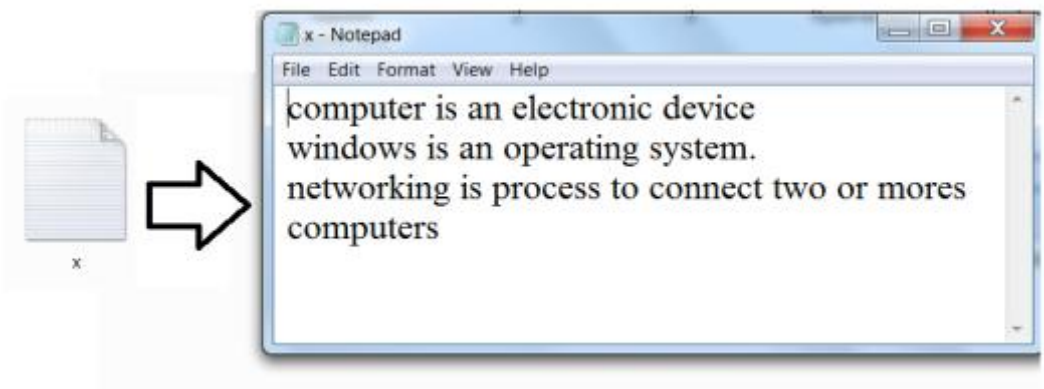


**Fig 5 Transfer for file**

**FILE RECEIVED**

**Following file would be received at the receiver end. The content of that file would be same as file sent from sender end.**

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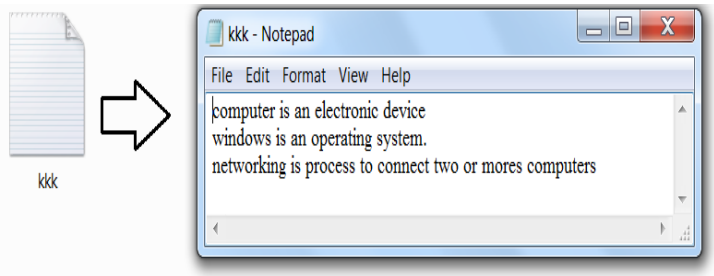


**Fig 6 File Received**

**ENCRYPTED FILE**

Here we have represented the content of file during transmission. It is cipher text that is not readable. If any person is going to hack that information then he would be unable to understand it.

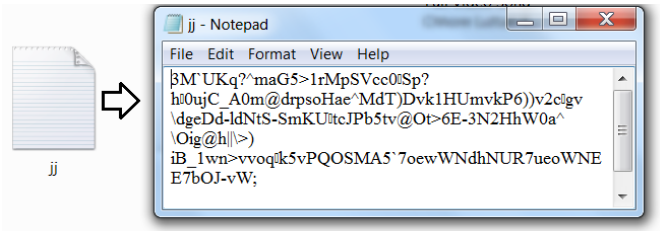


**Fig 7 encrypted file**

**COMPARATIVE ANALYSIS OF TRADITIONAL AND PROPOSED WORK IN CASE OF BRUTE FORCE**

| No of packets | TRADITIONAL | PROPOSED WORK |
|---|---|---|
| 100 | 6 | 1 |
| 200 | 8 | 2 |
| 300 | 12 | 4 |
| 400 | 15 | 6 |
| 500 | 22 | 9 |
| 600 | 31 | 13 |
| 700 | 42 | 18 |
| 800 | 51 | 23 |
| 900 | 63 | 28 |
| 1000 | 72 | 32 |

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**TABLE 1** TABLE TO COMPARE TRADITIONAL AND PROPOSED WORK IN CASE OF BRUTE FORCE

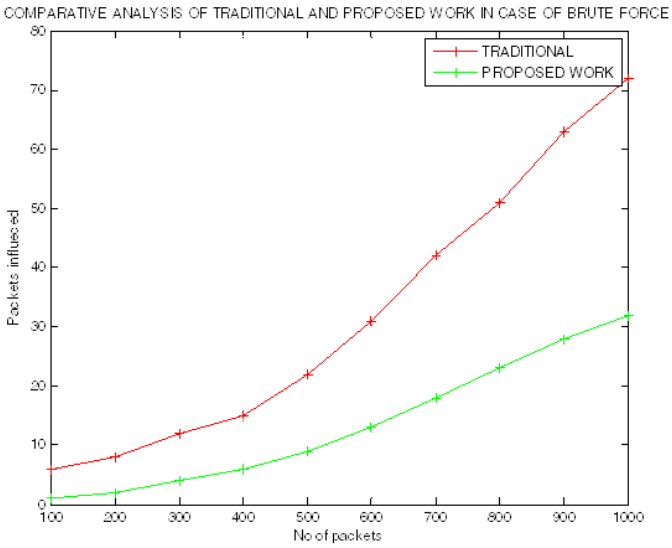


**Fig 8** COMPARATIVE ANALYSIS OF TRADITIONAL AND PROPOSED WORK IN CASE OF BRUTE FORCE

**COMPARATIVE ANALYSIS OF TRADITIONAL AND PROPOSED WORK IN CASE OF TIMING ATTACK**

| No of packets | TRADITIONAL | PROPOSED WORK |
|---|---|---|
| 100 | 7 | 2 |
| 200 | 10 | 4 |
| 300 | 15 | 5 |
| 400 | 21 | 8 |
| 500 | 29 | 10 |
| 600 | 39 | 14 |
| 700 | 49 | 19 |
| 800 | 62 | 25 |
| 900 | 72 | 30 |
| 1000 | 83 | 35 |

**TABLE 2** TABLE TO COMPARE TRADITIONAL AND PROPOSED WORK IN CASE OF TIMING ATTACK

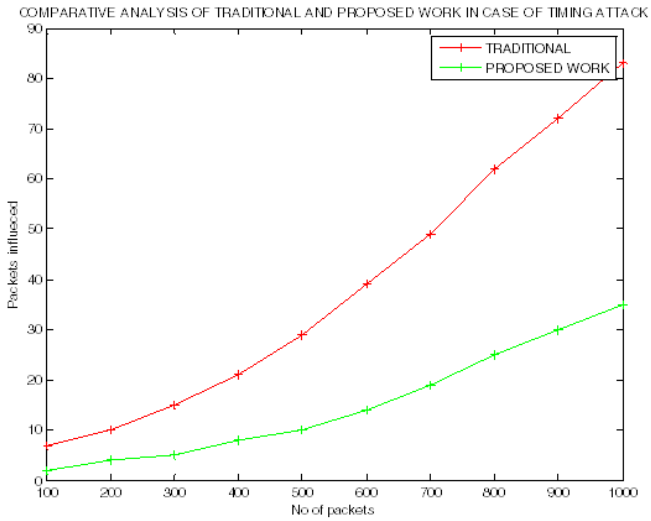


**FIG 9** COMPARATIVE ANALYSIS OF TRADITIONAL AND PROPOSED WORK IN CASE OF TIMING ATTACK

## [5] CONCLUSION

The Conclusion of above research is that in case of secure transmission speed of data transmission is reduced. The speed of data transmission may increase in contrast of secure traditional work if packet size is reduced then. Proposed work provides better approach in order to tackle the issues related to brute force and timing attack.

Network Security is the vital field. It is gaining attention on an increasing basis with the expansion of internet. The internet protocol of security threats was examined. It was tested to decide the important security technology. The technology of Security is based on software. Here numerous hardware devices have been used. Today development in the field of Security of network is not so affective. Hacking has both its benefits and risks. There is a variety of Hackers. They are very diverse. They might bankrupt company or might protect data, increasing revenues for company. Ethical & creative hacking had been significant in Security of network, in order to ensure that company's data had been well protected secure. At the same time the security permits a company to identify. It has to take remedial actions to solving loopholes. These loopholes persist in the security system. It might allow nasty hacker for breaching their security system.

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