

The Choice You Should Make Today



# Blockchain

# Cybersecurity

Best Use Cases of Blockchain Applications  
in Cybersecurity

Dr. Rahul

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# INTRODUCTION

- As the world goes online and people rely on the Internet for their routine processes and habits, it is essential to maintain the security of online data. Blockchain, a notable buzzword of recent days has taken charge to secure online data.
- Once blockchain technology has been introduced, the focus is on the fulfillment of the information security properties it provides. Focusing on data integrity, blockchain ledger is immutable.



# BLOCKCHAIN IN CYBER SECURITY



- Blockchain is a booming technology that boosts every business and industry verticals. As the count of cybercriminals increases complex and are endlessly trying to steal valuable data like financial data, health records, intellectual property, and personal identifiable information.

# **TYPES OF CYBER SECURITY**

- Basically the major types of cyber security involve the following :
  1. Cloud security
  2. Application security
  3. Critical infrastructure security
  4. Internet of things (IoT) security
  5. Network security .

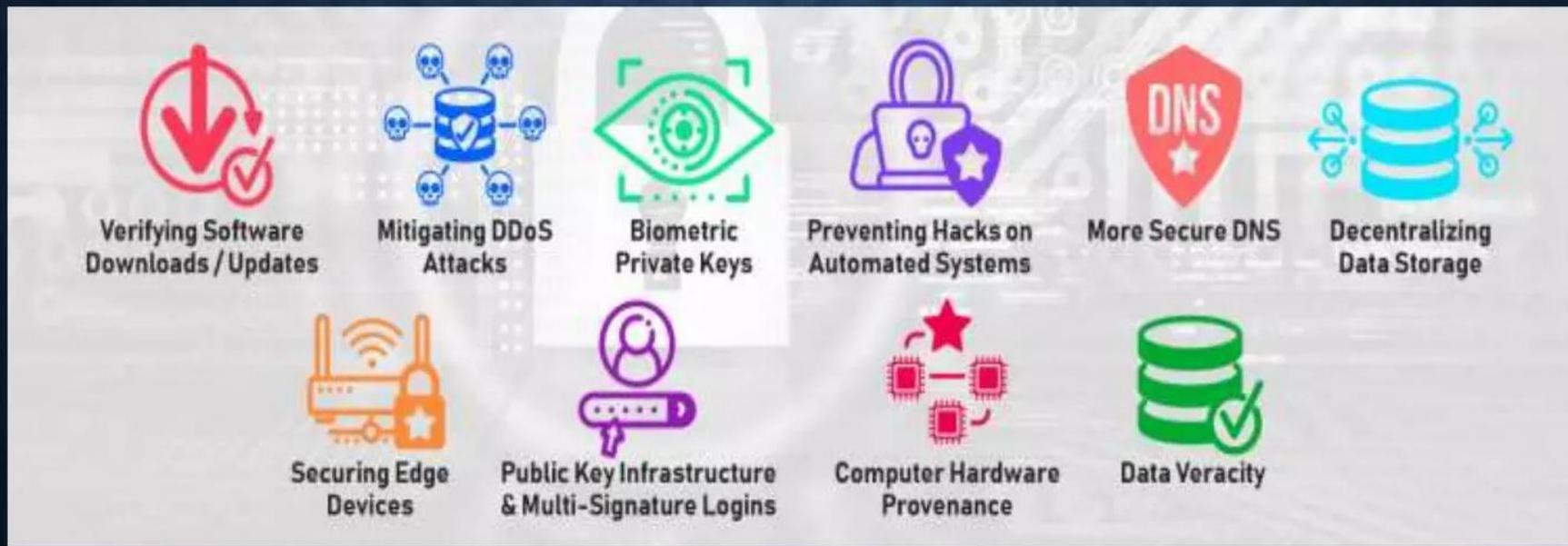
# MAJOR CYBER ATTACKS

- The most common types of cyber attacks that happen often are as follows:
  1. Phishing attacks
  2. Cross-site scripting (XSS) attack
  3. Denial-of-service (DoS) and distributed denial-of-service (DDoS) attacks .

# HOW BLOCKCHAIN WILL TRANSFORM CYBER SECURITY?

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These are the following application by which block chain transfer Cyber Security. They are as Follows:



# APPLICATION OF BLOCKCHAIN IN CYBER SECURITY

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## 1. A Decentralized Storage Medium :

As we people move faster with online, it is very necessary to make a safer environment for all the personal information that we share on a medium (computer or internet ). Most of the business still use a centralized medium for its data storage, which makes it easier for hackers to reach data for stealing.

Since Blockchain-based decentralized storage medium can prevent business data theft and hacks.

## What is the difference between decentralized and centralized security?

**Centralized networks are more vulnerable to cyber-attacks and data breaches because all the data is stored in one central location. This makes it easier for hackers to target and steal sensitive information.**

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**On the other hand, decentralized networks use multiple nodes to store data.**

**Decentralized security moves responsibilities and controls away from the center, to the individual areas most vulnerable to attack today. Decentralized security enables risk management and security enforcement right across the business. It empowers every team, and makes security everyone's responsibility.**

# Centralization

Centralization refers to a central location or group of managerial personnel responsible for planning, decision-making, and action-taking activities.

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## Advantages

 An efficient communication chain

 Clear vision

 Economic

 Decision-making is simple

 Increase in productivity

## Disadvantages

 Bureaucratic command

 Remote control

 Workplace delays

 Employee dissatisfaction

# Decentralization

Decentralization is a firm structure in which multiple levels of the organization make choices. It ensures better functioning and easier judgment for the company's success.

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## Advantages

 Quick decision and response times

 Better ability to expand the company

 On-demand training

 Appraisals

 Better utilization of management

## Disadvantages

 Problem coordinating

 Increased expenditure

 Incongruity in operations

 Self-centeredness

 Reliance on hierarchy



Centralized Framework



Decentralized Framework

FIGURE 2. Centralized systems with intermediaries versus decentralized blockchain systems.

## **Benefits of decentralization**

### **Provides a trustless environment**

**In a decentralized blockchain network, no one has to know or trust anyone else. Each member in the network has a copy of the exact same data in the form of a distributed ledger. If a member's ledger is altered or corrupted in any way, it will be rejected by the majority of the members in the network.**

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### **Improves data reconciliation**

**Companies often exchange data with their partners. This data, in turn, is typically transformed and stored in each party's data silos, only to resurface when it needs to be passed downstream. Each time the data is transformed, it opens up opportunities for data loss or incorrect data to enter the workstream. By having a decentralized data store, every entity has access to a real-time, shared view of the data.**

### **Reduces points of weakness**

**Decentralization can reduce points of weakness in systems where there may be too much reliance on specific actors. These weak points could lead to systemic failures, including failure to provide promised services or inefficient service due to the exhaustion of resources, periodic outages, bottlenecks, lack of sufficient incentives for good service, or corruption.**

### **Optimizes resource distribution**

**Decentralization can also help optimize the distribution of resources so that promised services are provided with better performance and consistency, as well as a reduced likelihood of catastrophic failure.**

# CONTINUE....

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## 2. Security in DNS :

Most of the DNS is centralized and hackers can break the connections between a domain name and IP address and can also make the website unavailable. Hackers in recent days try to pair DNS attacks with DDoS attacks to render websites unusable for a certain period of time.

Using blockchain technology can make it difficult for hackers as your data or information are stored immutable on a decentralized, distributed ledger and immutable smart contracts are present to power connections.

# CONTINUE....

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## 3. Securing Edge Devices via Identity Authentication:

Edge devices present especially vulnerable access points into core networks. One example is an employee who logs into their company's servers via their own unsecured phone. For a hacker, penetrating an entire network through a blatant vulnerability via an edge device is like taking candy from a baby. Ensuring that these devices, as well as the core network itself, are insulated with multi-step authentication processes and blockchain-level, decentralized threat mitigation protocols is the first step in patching some of the most obvious network entry points that hackers could exploit.

# **ADVANTAGES OF BLOCKCHAIN IN CYBER SECURITY**

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- Let me list a lot more benefits of using blockchain technology to prevent cyber attacks/crime.
  1. Distribution of Public Key and Multi-Signature Logins.
  2. Provides Decentralizing Data Storage that Removes Honey Pot.
  3. Mitigating Denial-of-Service (DDoS) Attacks.
  4. Easy Verification of the Validity of Software Downloads / Updates.
  5. Provenance for Computer Hardware for Prevention of Foreign Intrusion.

# FUTURE OF BLOCKCHAIN-BASED CYBER SECURITY

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- Blockchain technology can be utilized to prevent any type of data breaches, identity thefts, cyber-attacks or false transactions ensuring data privacy and security.
- As days pass, the rate of Cybercriminals is raising which In turns create jobs for security professionals over the next few years. It is the blockchain technology that tends to be the saviour of data security.
- Cyber Security will be boosted double the amount of cybercriminals rate, only when blockchain technology has been used as a medium of data storage.

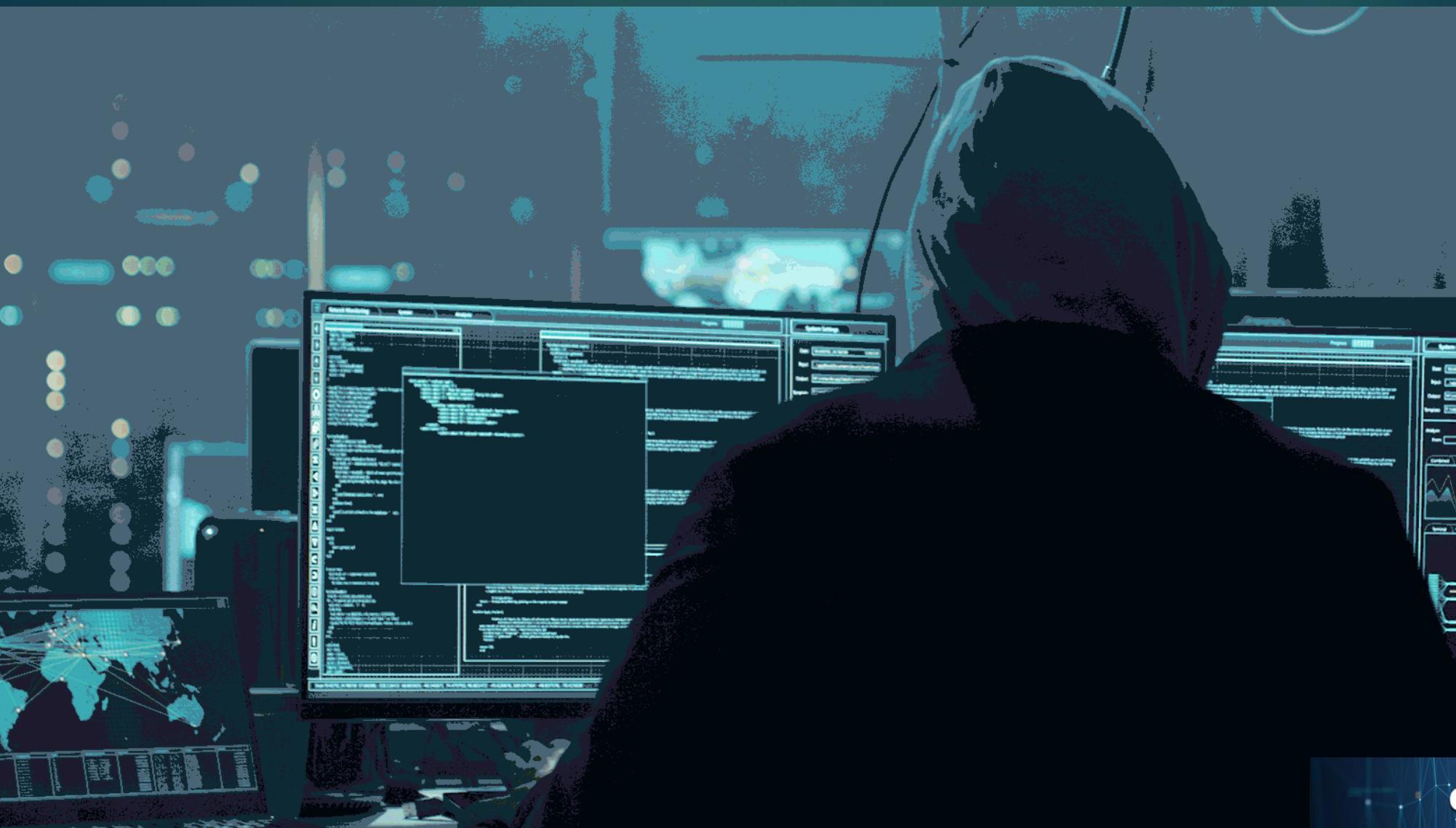
# CONCLUSION

- Blockchain technology is a breakthrough in cyber security, as it can ensure the highest level of data confidentiality, availability, and security. However, the complexity of the technology may cause difficulties with development and real-world use.



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## Cyber Security



**Cyber security** is the practice of defending computers, servers, mobile devices, electronic systems, networks, and data from malicious attacks. It's also known as information technology security or electronic information security.

### Need of cyber security

- Cyber security is necessary since it helps in securing data from threats such as data theft or misuse, also safeguards your system from viruses.



## Major security problems

□ Virus

□ Hacker

□ Malware

□ Trojan horses

□ Password cracking



## Viruses and Worms

- A Virus is a “program that is loaded onto your computer without your knowledge and runs against your wishes”



## Solution

- Install a security suite that protects the computer against threats such as viruses and worms.





**VIPRE**  
from SUNBELT SOFTWARE



pctools

**McAfee**

KASPERSKY



ca

**eset**

 AVG

The AVG logo, which features a colorful graphic of overlapping triangles in green, yellow, and blue.

**PANDA**  
SECURITY

Ahn AhnLab

 avast!

The avast! logo, featuring a stylized orange and yellow gear-like shape.

**Norton**  
from symantec

 F-Secure

The F-Secure logo, featuring a blue and white stylized 'S' shape.

Microsoft  
**Security**  
Essentials

 webroot

The webroot logo, featuring a purple circle with a keyhole icon.

Quick Heal

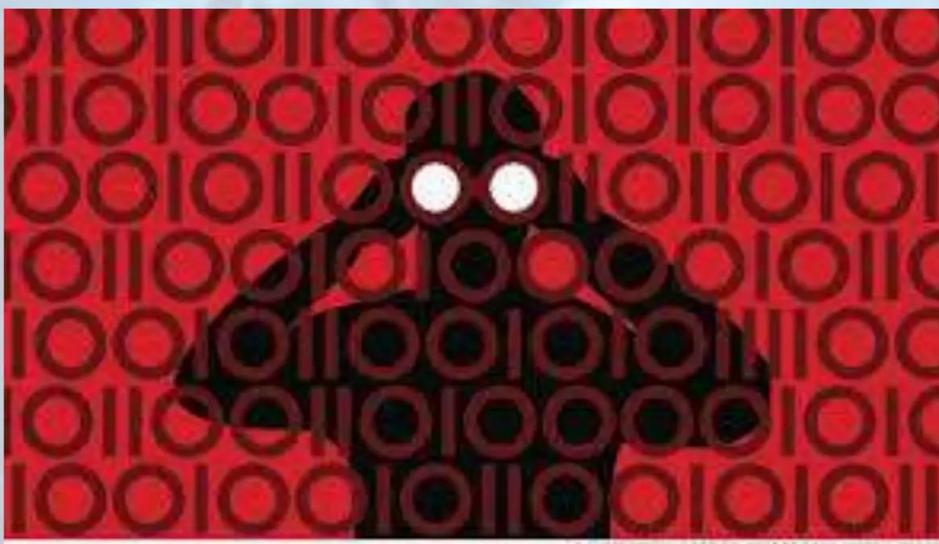
RISING

 bitdefender

The bitdefender logo, featuring a red and white stylized 'b' shape.

# Hackers

- In common a **hacker** is a person who breaks into computers, usually by gaining access to administrative controls.



# Types of Hackers

- White Hat Hacker
- Grey Hat Hacker
- Black Hat Hacker



## How To prevent hacking

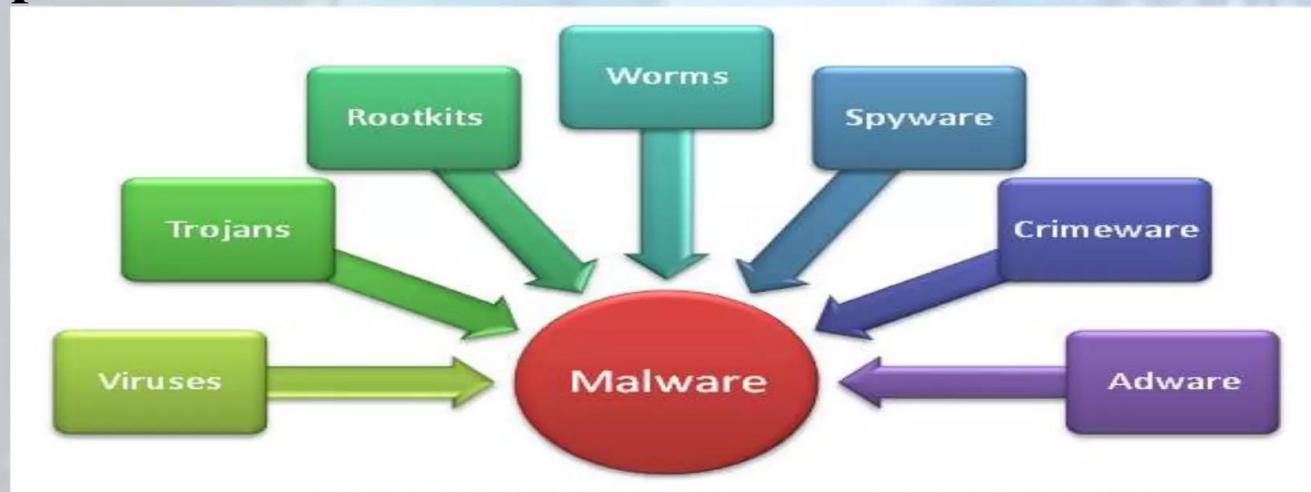
- It may be impossible to prevent computer hacking, however effective security controls including strong passwords, and the use of firewalls can help.



http  
www  
@

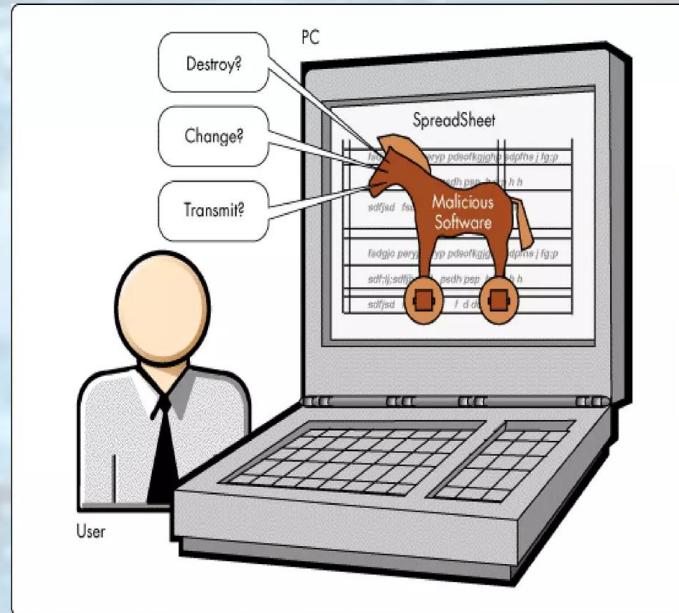
# Malware

- The word "malware" comes from the term "**MALicious soft**WARE**.**"
- Malware is any software that infects and damages a computer system without the owner's knowledge or permission.



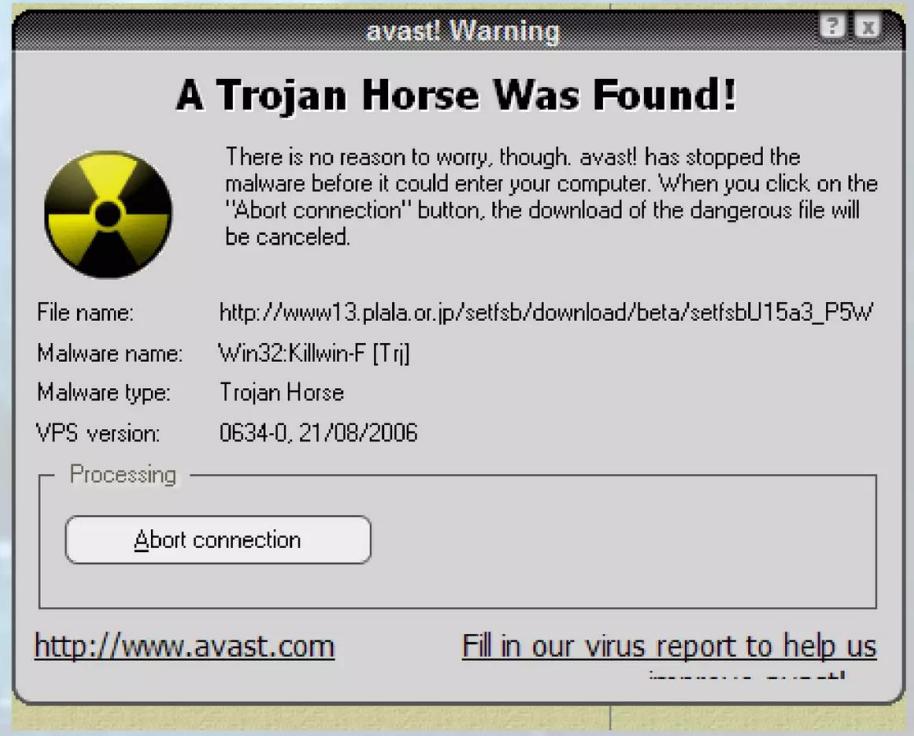
# Trojan Horses

- Trojan horses are email viruses that can duplicate themselves, steal information, or harm the computer system.
- These viruses are the most serious threats to computers



# How to Avoid Trojans

□ Security suites, such as Avast Internet Security, will prevent you from downloading Trojan Horses.



## Password Cracking

- Password attacks are attacks by hackers that are able to determine passwords or find passwords to different protected electronic areas and social network sites.



# Securing Password



- Use always Strong password.
- Never use same password for two different sites.

A large magnifying glass is positioned over a dense grid of green text. The word "password" is highlighted in red, appearing twice within the magnified area. The surrounding text is a mix of random letters and numbers.

```
kshdofy5w784cngui kn gco h43ymbkog jpb1kfdmg o if dgnm  
hsd i yugfuy cbrh jnhodrtu5vh lf dgmuoyhg i ov dnhugosho  
.ub43g i umgois fmcohsu4ohmu i ht i5...  
uy i gsfbuy4tq5f iu i yhf i6y6hgu segt r...  
atv7icqirhc i acshr17denuc...  
zh9d8o1z8s3cyh87f zs74chf...  
hgr i 3wche9ikch9kseru73ih...  
78csyu i hhguzf heyrg icgr...  
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pauvbuovn i tgv378nc irusdt isyav...  
b985489eygre9 i usghyewicngfuqucu enbg twiths...  
b397675nivorgs1egyrincyefiemkxg i cgyugtr iuuuuu...  
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## Cyber Security Is Everyone's Responsibility

