



CYBERSECURITY: HOW TO IDENTIFY THREATS AND WAYS TO PROTECT AGAINST THEM

Kiara A. Richardson

Computational Applied Mathematics and Operations Research Department
ENGI 501 - Workplace Communication for Professional Master's Students

Professor Anne-Marie Womack

Using Cybersecurity preventative measures can insure your safety from the 3 most common cyber attacks



Spam and Phishing



Malware and Ransomware

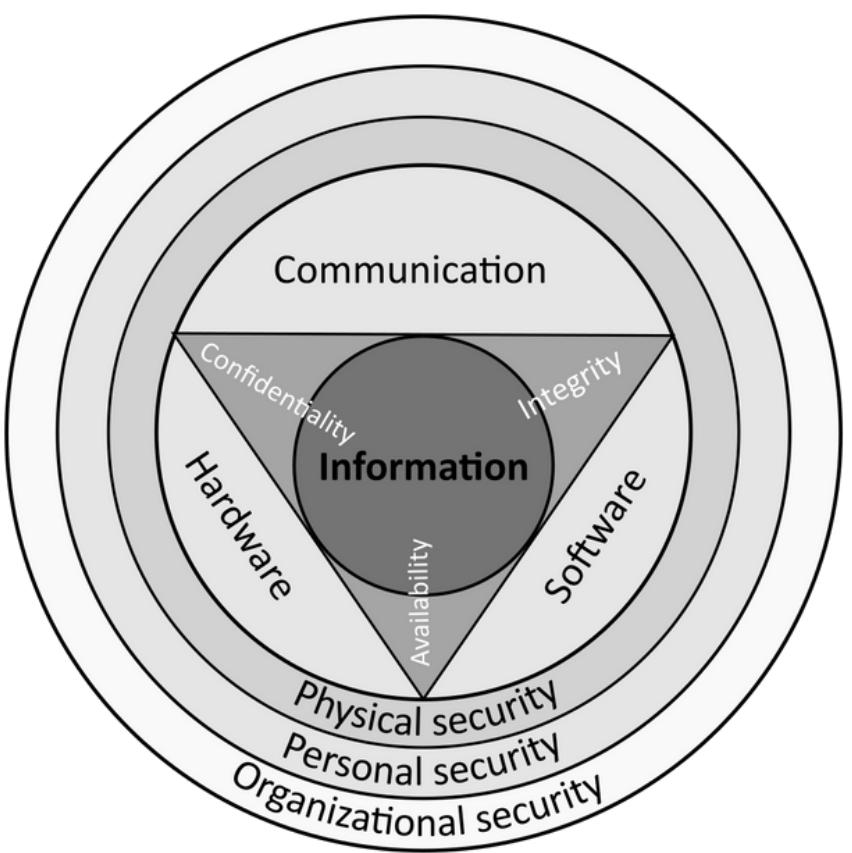


Identity Theft

BEFORE WE GESTARTED

WHY SHOULD YOU CARE ABOUT CYBERSECURITY AND ITS PREVENTATIVE MEASURES?

Being hacked or having your data stolen is not a fun situation to be in. It's better to be prepared ahead of time and take precautionary actions.



WHAT IS SPAM AND PHISHING

SPAM

Spam is any kind of unwanted, unsolicited digital communication that gets sent out in bulk (Malwarebytes, 2022).



PHISHING

Phishing attacks come from scammers disguised as trustworthy sources and can facilitate access to all types of sensitive data (Microsoft, 2022).



The most common form of spam comes in email, ads on webpages, and phone calls labeled "scam likely" by caller ID.

Phishing can take multiple forms and attackers use these to try and get information from users.



WHAT ARE THE STATISTICS THAT COME WITH SPAM AND PHISHING

**22.4
BILLION**

This is the number of emails sent over the internet around the world. Out of these emails, 80% are estimated to be spam mail.

54%

This is the percentage of successful phishing attempts that result in data breaches.

65%

This is the percentage of cyber-attacks that have leveraged spear phishing emails as a primary attack.

\$7,000

This is the amount of money spam email sites earn per day.



CAN THESE ATTEMPTS BE REPORTED

Yes! The United States Government urges people who face types of spam and phishing to report the attempts to the Federal Trade Commission website at ReportFraud.ftc.gov and the Anti-Phishing Working Group at reportphishing@apwg.org.

HOW CAN YOU PROTECT YOURSELF FROM PHISHING AND SPAM ATTEMPTS

- Use security software to protect computers.
 - ESET, TOTAL AV, norton, and NordVPN are great options to have installed on your personal computer.
- Have settings software updated automatically for phones.
- Protect accounts by using multi-factor authentication.
 - Duo Mobile is the most common app that schools, businesses, and companies use.
- Protect data by backing it up.



WHAT IS MALWARE AND RANSOMWARE

MALWARE

Malware is software that is specifically designed to disrupt, damage, or gain unauthorized access to a computer system (Oxford Dictionary, 2022).



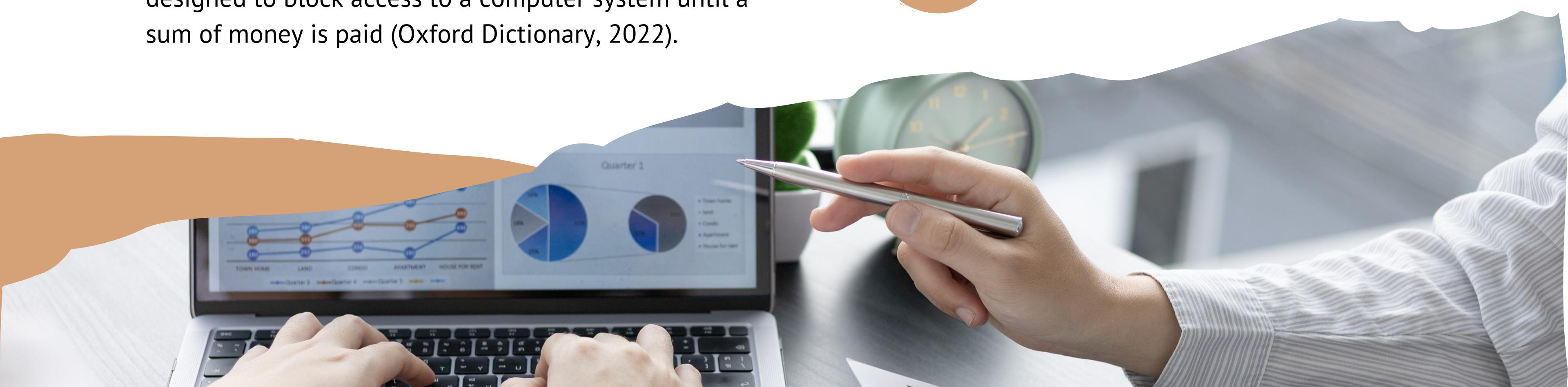
Malware can be downloaded onto your computer when you click on suspicious links.



Types of payment in Ransomware attacks can be cryptocurrency or USD credit.

RANSOMWARE

Ransomware is a type of malware software that is designed to block access to a computer system until a sum of money is paid (Oxford Dictionary, 2022).



WHAT ARE THE STATISTICS THAT COME WITH MALWARE AND RANSOMWARE

**\$5
TRILLION**

This is the amount of money malware effects have been projected to cost the USA government by 2021.

92%

This is the percentage of malware that is delivered by email.

50%

This is the percentage of ransomware victims who have been known to pay the ransom.

57%

This is the percentage of businesses that are successful in recovering their data using a backup.



CAN THESE ATTEMPTS BE REPORTED

Yes! The United States FBI urges people to report Malware and Ransomware attacks to the Internet Crime Complaint Center at www.IC3.gov.

HOW CAN YOU PROTECT YOURSELF FROM MALWARE AND RANSOMWARE

- Regularly back up data and verify the integrity of those backups.
- Ensure backups are not connected to the computers and networks they are backing up.
 - Examples might include securing backups in the cloud or physically storing them offline.
- Only download software—especially free software—from trusted sites.
- If you're suspicious of a website, copy the URL and paste it into www.ipvoid.com or other domain checkers to see if a site has malicious code.



WHAT IS IDENTITY THEFT

IDENTITY THEFT

Identity Theft is the fraudulent acquisition and use of a person's private identifying information, usually for financial gain (Oxford Dictionary, 2022).



Identity thieves target children the most because they are the most unlikely to check their credit until they apply for jobs or go to college.



Identity Theft encompasses many forms of cyberattacks.



The Experion App can check your personal data and alert you when it ends up on the dark web for sale.

A dark-themed screenshot of a computer monitor displaying a code editor with multiple lines of colorful CSS or JavaScript code. The code includes various properties like font-size, display, height, float, margin, and max-width, along with numerical values and units.

WHAT ARE THE STATISTICS THAT COME WITH IDENTITY THEFT

**\$5.8
BILLION**

This is the amount of money identity theft cost Americans in 2021.

**22
SECONDS**

This is the number of seconds an Identity Theft Case occurs.

**2.8
MILLION**

This is the number of credit card fraud cases, the most common type of fraud, that was reported among users dealing with Identity Theft in 2021.



CAN THESE ATTEMPTS BE REPORTED

Yes! The United States government urges people to report Identity Theft to the Federal Trade Commission online at IdentityTheft.gov or by phone at 1-877-438-4338.

HOW CAN YOU PROTECT YOURSELF FROM IDENTITY THEFT

- Keep Social Security numbers secure.
- Review credit reports once a year.
 - Order it for free from Annualcreditreport.com.
- Review credit card and bank account statements.
 - Compare receipts with account statements and watch for unauthorized transactions.
- Place a hold on mail when away from home for several days.
- Do not share personal information (birthdate, Social Security number, or bank account number) because someone asks for it.



THIS PROBLEM AFFECTS US ALL



Number of internet and email users in 2022

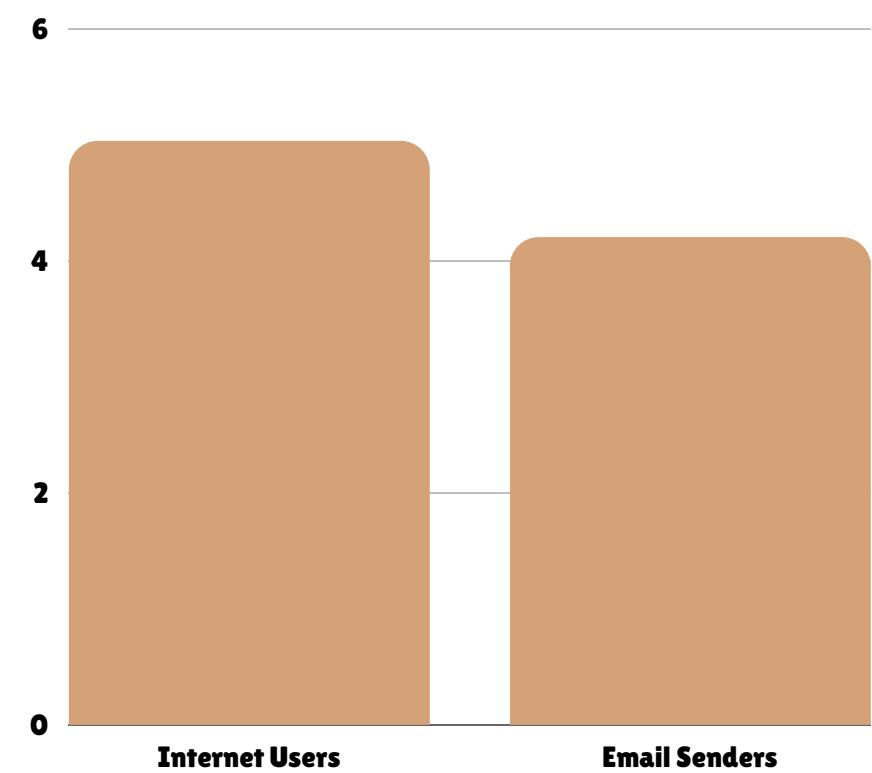


Figure 1: (in the billions) 5.03 billion people use the internet daily and 4.25 billion people have a registered email account



RICE

Thank you!

kar15@rice.edu

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REFERENCES

Slide 2

- Ransomware 101: What is ransomware and How can you protect your business? - Security Intelligence
- Learn about identity theft and what to do if you become a victim - VPNoverview.com
- Protect from spam and phishing. Protect From Spam/Phising !! | University of Moratuwa

Slide 3

- Computer security - Wikipedia

Slide 4

- What is Phishing? | Microsoft Security
- What is Spam? | Definition & Types of Spam (malwarebytes.com)

Slide 5

- What's On the Other Side of Your Inbox - 20 SPAM Statistics for 2022 (dataprof.net)
- Top 5 phishing statistics of 2022 - Atlas VPN
- Phishing attack statistics 2022 (cybertalk.org)

Slide 6

- Best Antivirus Software for the USA - Nov 2022 - Cybernews.com

Slide 7

- Oxford Dictionary 2022

Slide 8

- 44 Must-Know Malware Statistics to Take Seriously in 2022 (legaljobs.io)
- ransomware statistics - Search (bing.com)

Slide 10

- Oxford Dictionary 2022

Slide 11

- 2022 Identity Theft Facts and Statistics

Slide 13

- Internet and social media users in the world 2022 | Statista