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History of Data Breaches

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- When we think of data breaches, the act of extracting sensitive information from a data source, we usually think that it all started a few decades ago when computers became available to the general population.
- However, hacking has been around long before that. It can be traced as far back as 1836 when Francois and Joseph Blanc were caught stealing signals from the optical telegraph system between Paris and Bordeaux.



Fall 2024

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History of Data Breaches

- The optical telegraph system, a line of semaphore towers, was a series of towers placed on hilltops throughout France. Each was equipped with a series of movable arms that were used to create different combinations to form numbers and characters.
- The system originated in Paris and stretched down to Bordeaux. Using a telescope, the next tower would read the code and send it down to the next tower. The Blanc brothers bribed a few of the tower operators, man-in-the-middle, to alter the codes.

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YouTube. (2018). YouTube. Retrieved January 11, 2023, from <https://www.youtube.com/watch?v=cPeVsniB7b0>.

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- This method of hacking was not as sophisticated as today's, but some of the techniques are still used today. It also proves that data has always been at risk, especially in today's world.

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- Jump ahead another 150 years to the late 1980's when the world witnessed the first computer virus, the Morris Worm. Created as an experiment according to Robert Tappan Morris it affected millions of computers worldwide. To measure the vastness of the cyber world, Tappan wrote a self-replicating program that would jump from one computer to another on its own. Within 24 hours of it being injected into the internet at least 10% of the connected computers were affected.



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Generations of Cyber attacks

- Gen. 1: Late 1980's – Virus attacks

These were viruses that were created and were mostly harmless and had to be passed manually from one PC to another via a floppy disk. The remedy for these was the creation of the Anti-Virus. This started the cybersecurity industry.

- Gen. 2: Mid 1990's – Networks

These network attacks were launched via the internet. These viruses started to become much more malicious. The remedy for these was the creation of Firewall 1 in 1993. This firewall was created by Gil Schwed, CEO of Check Point Software Technologies.

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Generations of Cyber attacks

- Gen. 3 Early 2000's – Applications

These attacks started to exploit vulnerabilities in applications which allowed access to the internet. These could be the browsers, web servers, database servers etc. The malware used here was more advanced but was still easy to find and disinfect. The remedy for these were Intrusion Prevention (IPS).

- Gen. 4: 2010 - Payload

This is the turning point in cybercrime. The malware starts to hide itself inside documents etc. The remedy for these were Sandboxing and Anti-Bots.

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Generations of Cyber attacks

- Gen. 5 2018 – Mega

The fifth and current generation was created when the underground economy was formed, and illegal services are bought and sold. The attacks are multi-vectored, they also target mobile devices. A lot of these attacks are State-sponsored groups. You can now rent botnets by the hour; malware now has tech support.

The remedy for this is not only protection but prevention, real-time-action and securing the weakest points- mobile and cloud.

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Brief Cybercrime Dateline

- ✓ 1834 – The Blanc brothers hack the French Telegraph system and steal financial information.
- ✓ 1903 – During John Ambrose Fleming's demonstration of Marconi's secure wireless telegraphy technology, Nevil Maskelyne disrupts it by transmitting Morse code messages discrediting the invention.
- ✓ 1940 – First ethical hacker, Rene Carmille volunteers his punch card computer to the Nazis to track process and track down Jews. He then hacks their system to thwart their plans.

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Brief Cybercrime Dateline

- ✓ 1970-1995 – Kevin Mitnick begins hacking into very highly guarded networks including Nokia, and Motorola and tricking users to hand over passwords and using them to access internal computer systems. He becomes the most-wanted cyber-criminal of the time.
- ✓ 1971- Steve Wozniak and Steve Jobs mass produce and sell a “blue box designed to hack into phone systems to fellow classmates.
- ✓ 2010 – The Stuxnet Worm, a malicious virus was used to target control systems used to monitor industrial facilities. The specific target was the Iranian nuclear plant in Natanz. This became the first digital weapon.

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Brief Cybercrime Dateline

- ✓ 2020 – SolarWinds, a US Information technology firm was the subject of a nation-state cyber attack that went undetected for several months. The hacked code was transmitted to SolarWinds clients through routine software updates.
- ✓ 2021 - Colonial Pipeline, a US energy company pays a \$5 million ransomware demand to restore the gasoline and jet fuel distribution along the east coast.

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Takeaways

Our data has been a target since the early 1800's and continues to be targeted today. Early data breaches just involved the stealing of information and most of that was market related or just early hackers experimenting. Later these attacks were targeting personal and financial data and later even became weaponized. Malware and viruses are now for sale or rent on the dark web.