



Security

Kickoff

T7 - MSc Pool

T-POO-700

What is computer security?

- protect the integrity of information technologies against attacks, damages and unauthorized access ;
- based on a regular system feedback managed through automated checkpoints ;
- needs to be integrated right from the design stage.



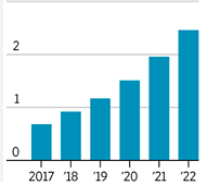
Figures from 2019

Growing Threat

Estimated increases in data-breach costs and global cybersecurity spending over the next five years

Annual cost of data breaches

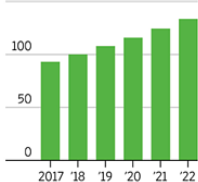
\$3 trillion



Source: Juniper Research

Annual cybersecurity spending

\$150 billion



THE WALL STREET JOURNAL

- 1.1 million bank card fraud victims per year ;
- 65 data leaks per second ;
- 140 phishing attacks per hour ;
- ~30 cyberattacks per year per company ;
- 96% of websites have vulnerabilities.



Figures for the future

Figures from [cybersecurityventures](#):

- \$1.75 trillion spend for cybersecurity from 2021-2025.
- ransomware damage costs should exceed \$265 billion by 2031.
- cyberinsurance market: \$14.8 billion annually by 2025.
- 3.5 million unfilled cybersecurity jobs worldwide in 2023.
- 30% of cybersecurity positions held by women by 2025.



Old-fashioned VS new way

- Traditionally, IT security was about strengthening, maintaining and patching. Experts reviewed codes and systems to secure them.
- But attackers are getting fast and plentiful, some attacks are automated and weaknesses can become very costly.
- Now security programs are adapted to be continuous, integrated, flexible. It is a shared concern amongst all the IT actors.



Vulnerability

Weakness of a system that could be:

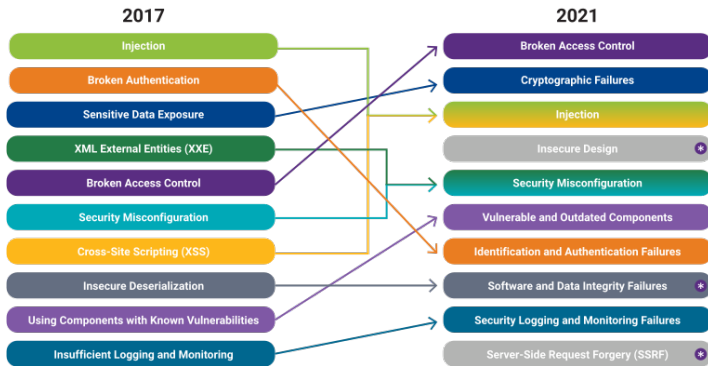
- design flaw ;
- implementation bug ;
- unsanitized user input ;
- irrelevant access restriction ;
- ...

There is an unlimited number of vulnerabilities.

Organizations, like the OWASP, have identified the most common.



Most common vulnerabilities

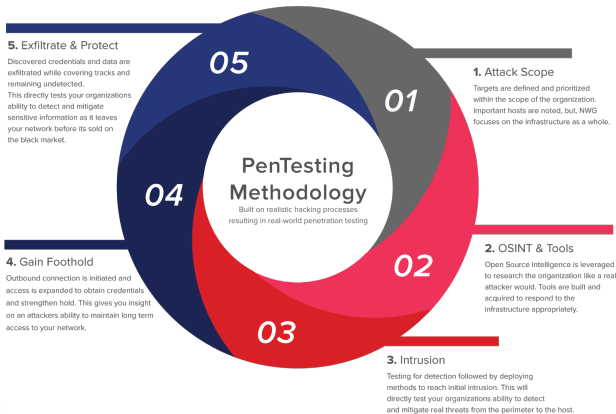


PENetration TESTING

- use of tools to simulate cyberattacks in real life ;
- ethical hacking (vs real hackers) ;
- you only have a few days to compromise the systems ;
- document and explain your methods and results.



Methodology



Any questions

?

