

Week 1

Introduction to Cybersecurity Tools & Cyber attacks.

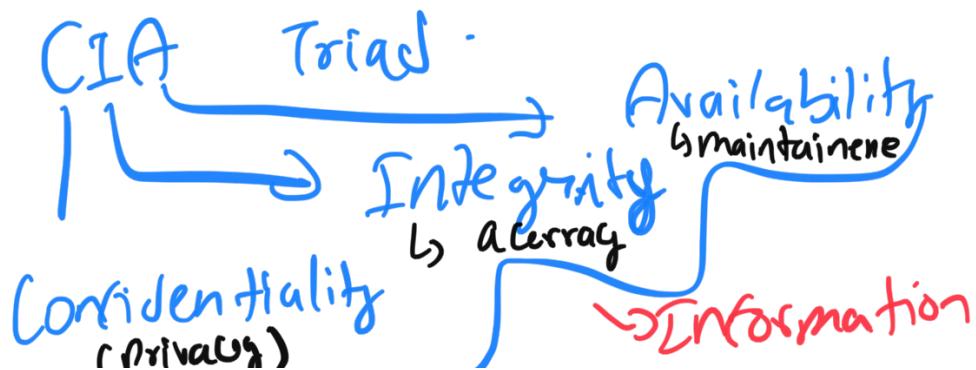
History of cybersecurity.

↳ High demand Job-

By 2025, there will be 1.8 million unfilled jobs.

What are we talking about when we talk about cybersecurity?

Information Security → is the protection of information systems from unauthorized access, use, disclosure, disruption, and provide confidentiality, integrity and availability.



Security.

Key Terms :

Vulnerability → A flaw, loophole, oversight or an error that can be exploited to violate system security policy.

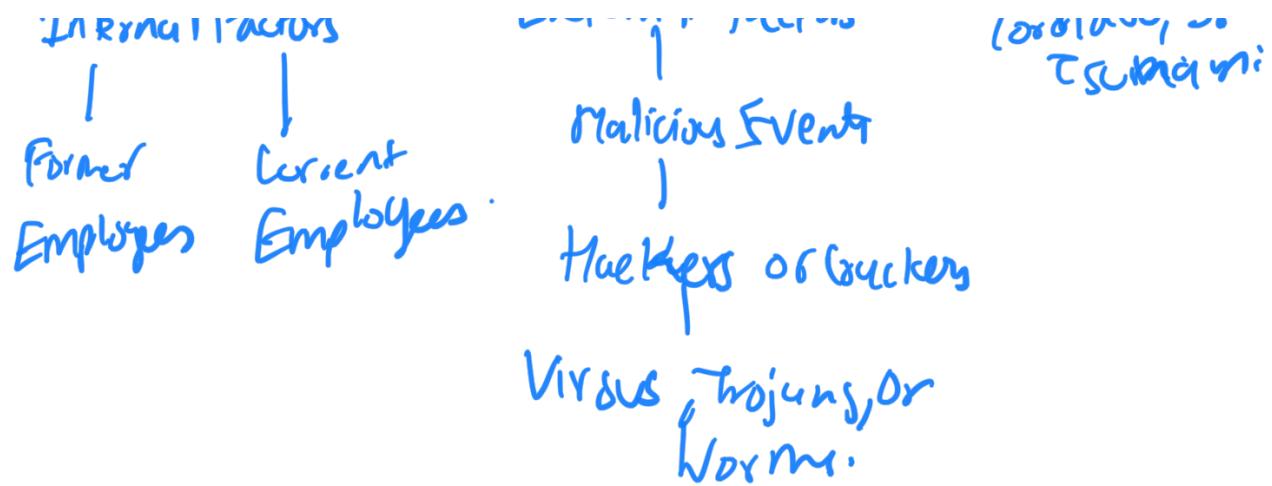
Threat → An event, natural or man-made, to cause negative impact on an organization

Exploit → Is a defined way to breach the security of an IT System.

Risk → Situation involving exposure to danger.

Security Threats:





Vulnerability Assessment - (Search weakness exposure to create security patches).

Roles in Security in Organization .

- ↳ CISO (Chief Information Security Officer).
- ↳ Information Security Architect.
- ↳ // Specialist
- ↳ // Analyst
- ↳ ? Auditor, Developer, Penetration Tester/Ethical Hacker.
- ↳ Vulnerability Assessor.

From Ronald Reagan to where we are today

↳ War games ← Could it be Real.
ask Reagan to
Security Personnel.

So Ronald Reagan asks NSA and other commands to deal with Cyber in USA.

Why → Everyone Owns a Computer and a Smartphone → Orange

9/11 Changed Everything For Security → Operations.

NSA developed SPY Communications
↳ Landline
↳ Email).

2000 → Moon Maze operation.
In 8 months no work from Intel

Solar Sunrise → attacks on Defense of
computer networks to find
vulnerabilities.

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Cybersecurity Today → Tensions in US.

Software Vulnerabilities

2010 → 800+

2016 → 10,000+

↓
9/11

↓ Create sentiment
New Freedom Act

Massive surveillance
systems.

Cyber Crime US → \$100 billion Cyber into great
wars.

Data lost cost → \$2.1 billion 2014

\$400 billion

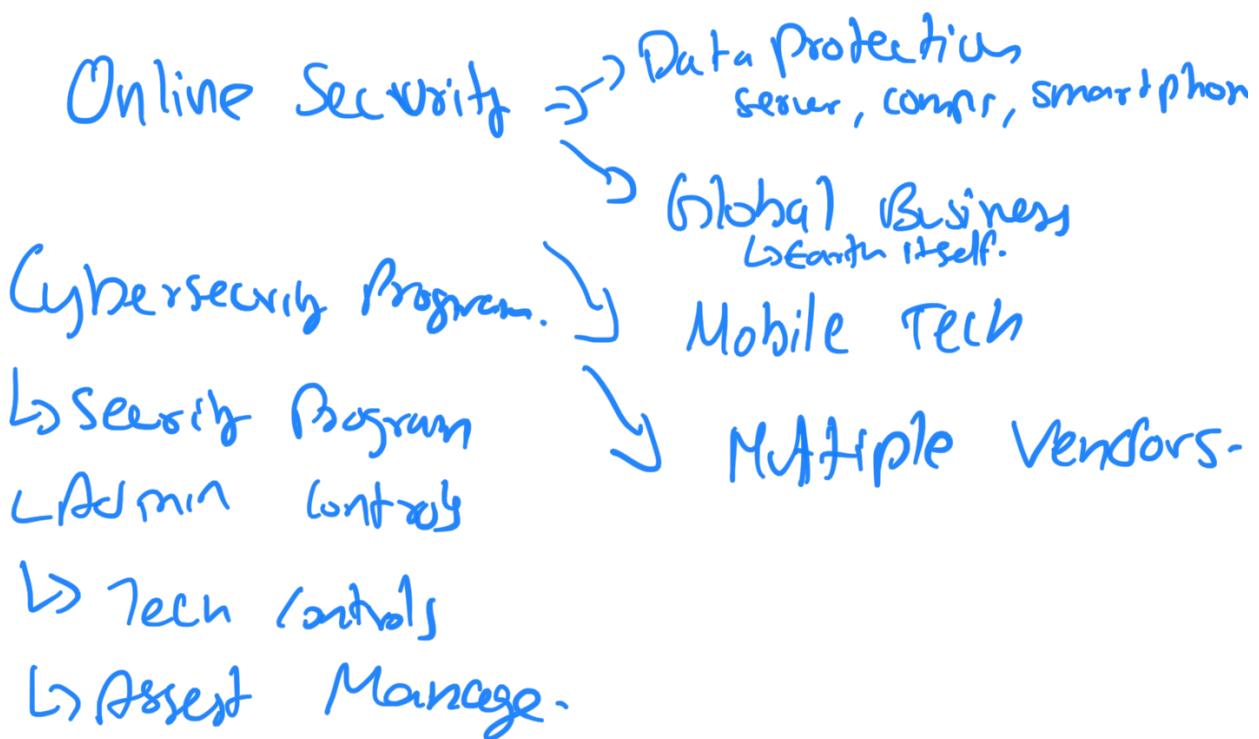
Cyber Attack Loss Years one

the globe.

→ Huge.

Cybersecurity Introduction.

datum value → data of apps
around the world.



Cybersecurity → Security Architect's
Perspective.

- ↳ Confidentiality
- ↳ Authentication
- ↳ Message Integrity
- ↳ Access and Availability.

Computer Security → The protection afforded
to automate info system.

Security challenges → Not simple as it seems.

Easy Requirements, Tough solution.

Solutions can be attacked themselves.

Critical Thinking in Cybersecurity

Beyond Technology -

In Cybersecurity.

↳ diverse, multifaceted
Field.

Controlled, purposeful
thinking directed toward
a goal or solution.

- constantly changing environment.
- fast-paced
- multiple stakeholders
- Adversary personnel

Critical Thinking 'A Model'

The Elevator Problem.

1. 2. 3. Technical skills.

Cybersecurity - The Techniques

Intrusion Detection

Reverse Engineering

Programming

Virtualization

Cryptography

Networking

Operating System

Database Modelling.

5 Key Skills in Critical Thinking.

- 1.) Challenge your Assumptions
- 2.) Consider Alternatives
- 3.) Evaluate Data
- 4.) Identify Key Drivers.

5) Understand the context.