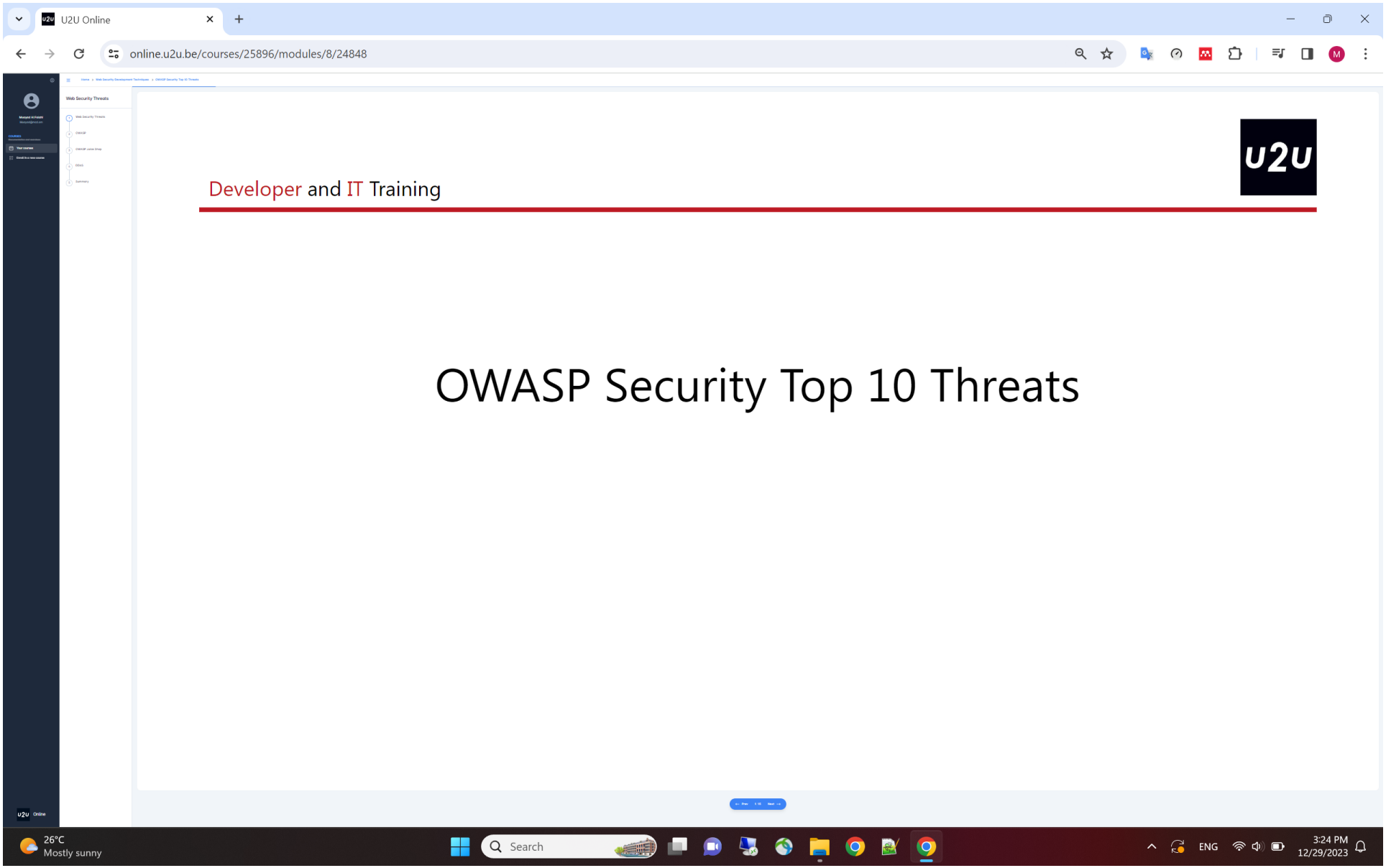
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online.u2u.be/courses/25896/modules/8/24848
Developer and IT Training
U2U
OWASP Security Top 10 Threats
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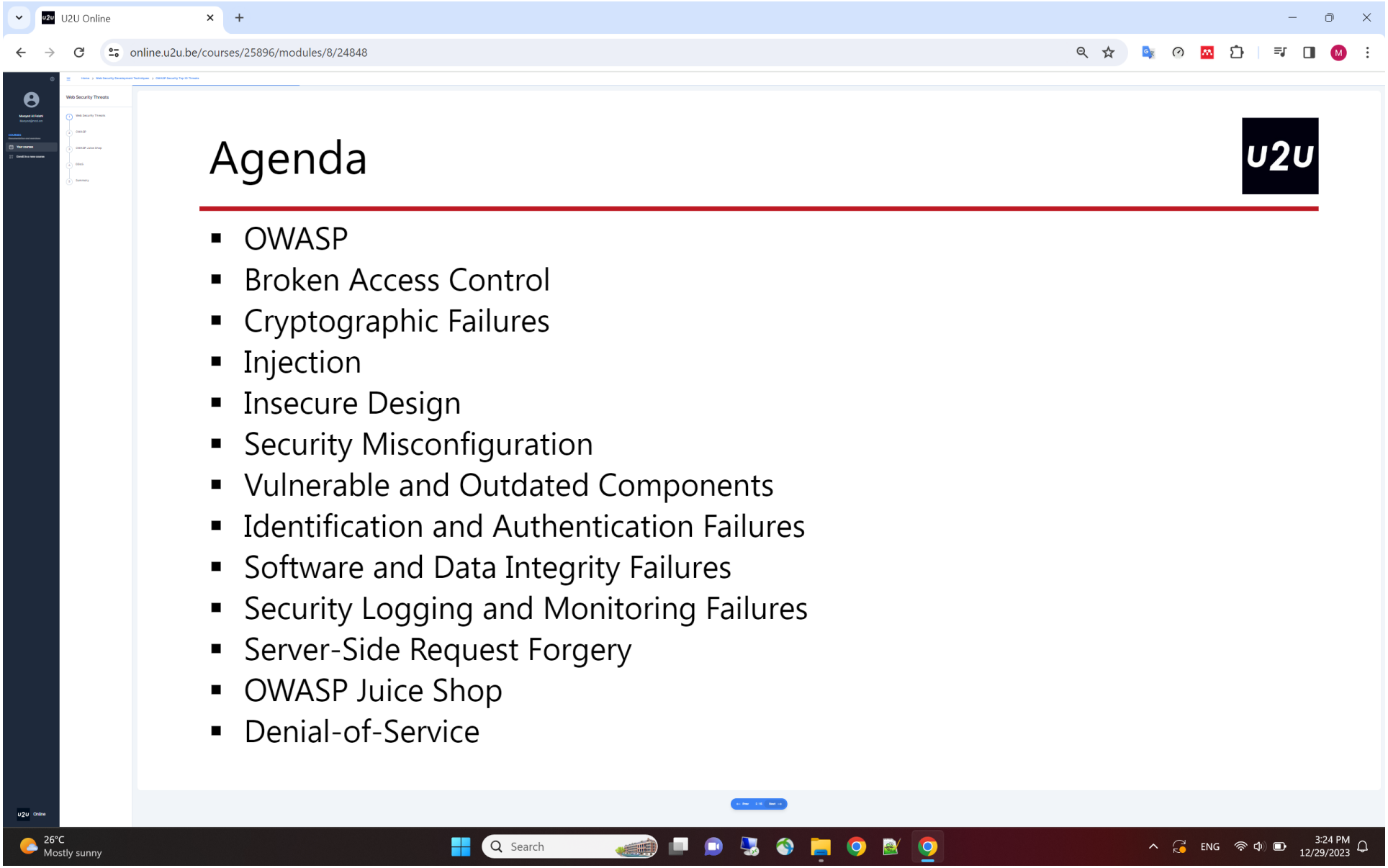
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Agenda
u2u
OWASP
Broken Access Control
Cryptographic Failures
Injection
Insecure Design
Security Misconfiguration
Vulnerable and Outdated Components
Identification and Authentication Failures
Software and Data Integrity Failures
Security Logging and Monitoring Failures
Server-Side Request Forgery
OWASP Juice Shop
Denial-of-Service
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What is OWASP?

- The Open Web Application Security Project
  - Publishes a top 10 security issues every couple of years
- Open community dedicated to help organizations
  - Non-profit organization
  - Technology agnostic
- OWASP publishes free and open
  - Application security tools
  - Complete books on security testing, development, …
  - Cutting edge research
  - …

- https://www.owasp.org

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Top 10 OWASP Security Issues

- First Released in 2003
  - Updates in 2003, 2004, 2007, 2010, 2013, 2017 and 2021

- Goals
  - Raise awareness about application security
  - Identify some of the most critical risks facing organizations

OWASP Top 10

The Ten Most Critical Web Application Security Risks

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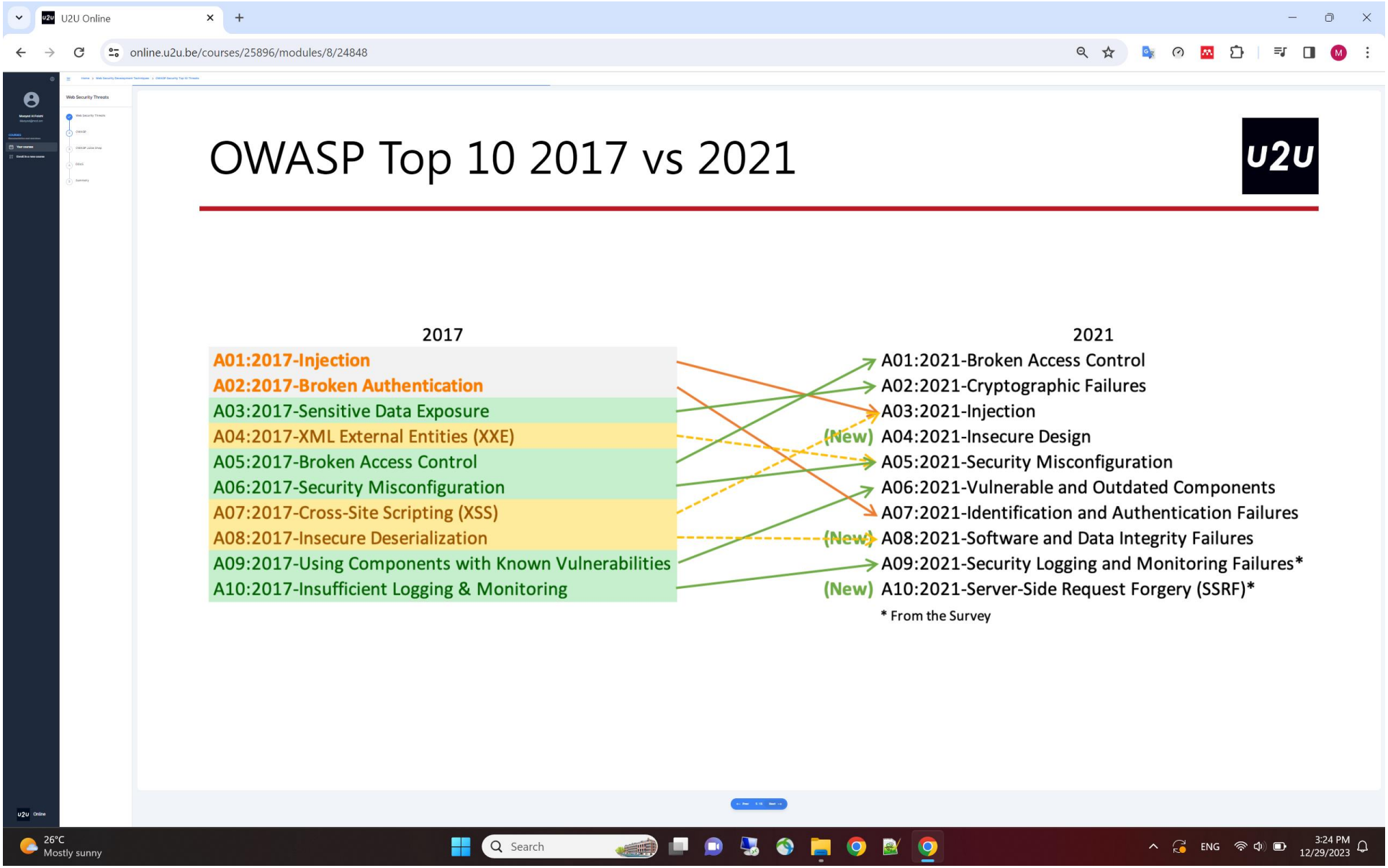
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OWASP Top 10 2017 vs 2021
U2U
2017
A01:2017-Injection
A02:2017-Broken Authentication
A03:2017-Sensitive Data Exposure
A04:2017-XML External Entities (XXE)
A05:2017-Broken Access Control
A06:2017-Security Misconfiguration
A07:2017-Cross-Site Scripting (XSS)
A08:2017-Insecure Deserialization
A09:2017-Using Components with Known Vulnerabilities
A10:2017-Insufficient Logging & Monitoring
2021
A01:2021-Broken Access Control
A02:2021-Cryptographic Failures
A03:2021-Injection
(New) A04:2021-Insecure Design
A05:2021-Security Misconfiguration
A06:2021-Vulnerable and Outdated Components
A07:2021-Identification and Authentication Failures
(New) A08:2021-Software and Data Integrity Failures
A09:2021-Security Logging and Monitoring Failures*
(New) A10:2021-Server-Side Request Forgery (SSRF)*
* From the Survey
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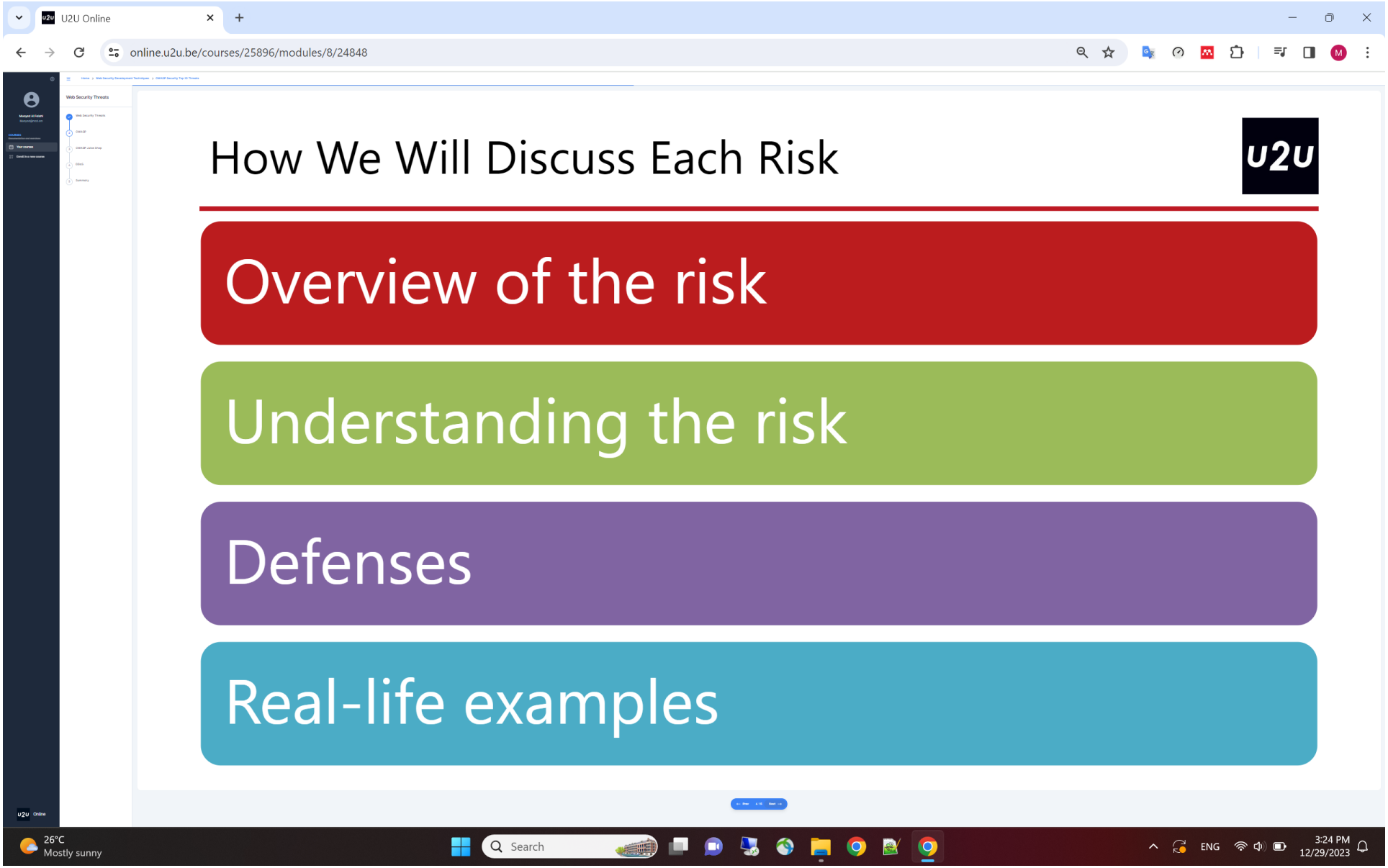
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How We Will Discuss Each Risk
U2U
Overview of the risk
Understanding the risk
Defenses
Real-life examples
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Current Top 10
U2U
Broken Access Control
Cryptographic Failures
Injection
Insecure Design
Security Misconfiguration
Vulnerable and Outdated Components
Identification and Authentication Failures
Software and Data Integrity Failures
Security Logging and Monitoring Failures
Server-Side Request Forgery
Bonus: Denial-of-Service
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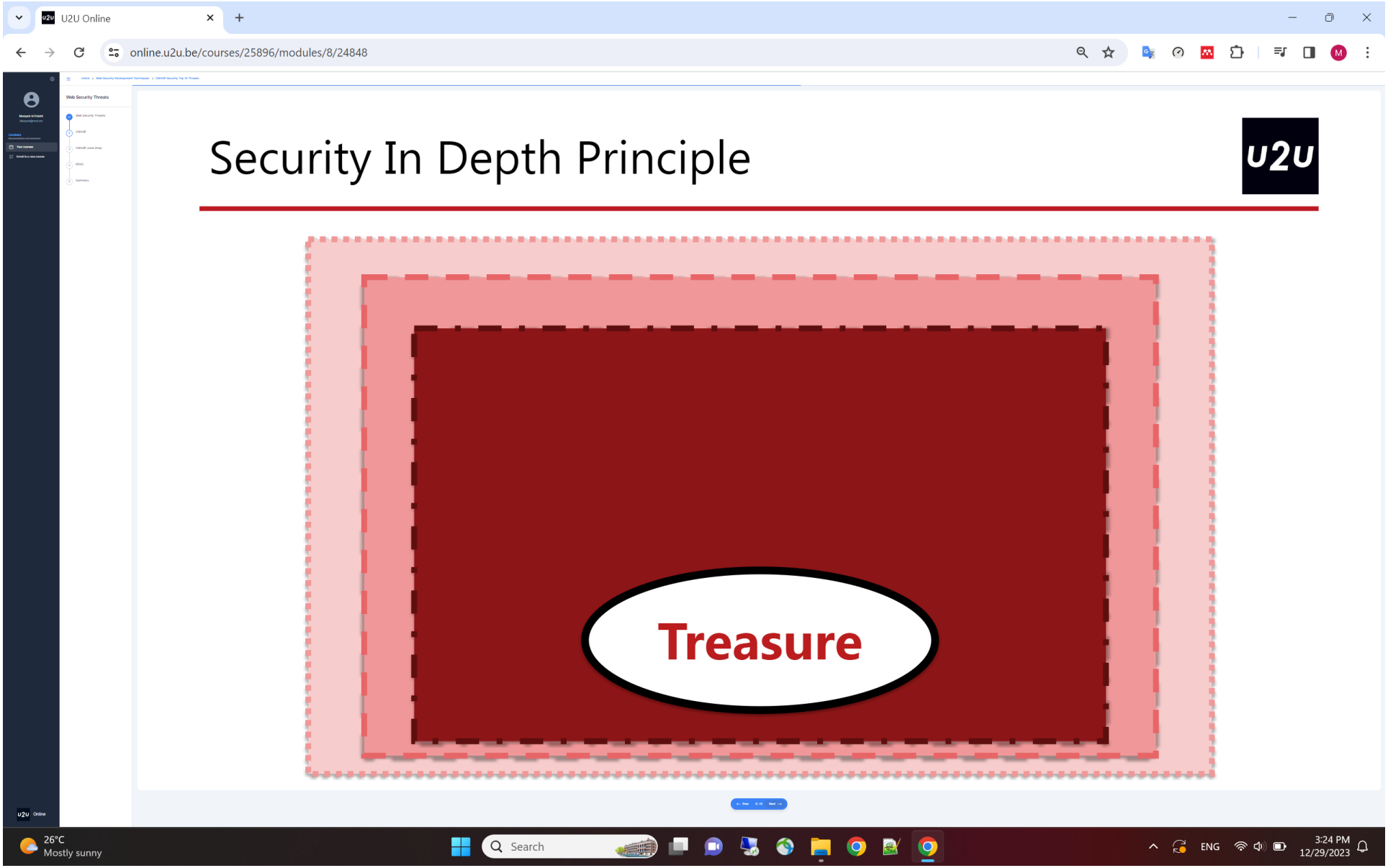
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Web Security Threats
Security In Depth Principle
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Treasure
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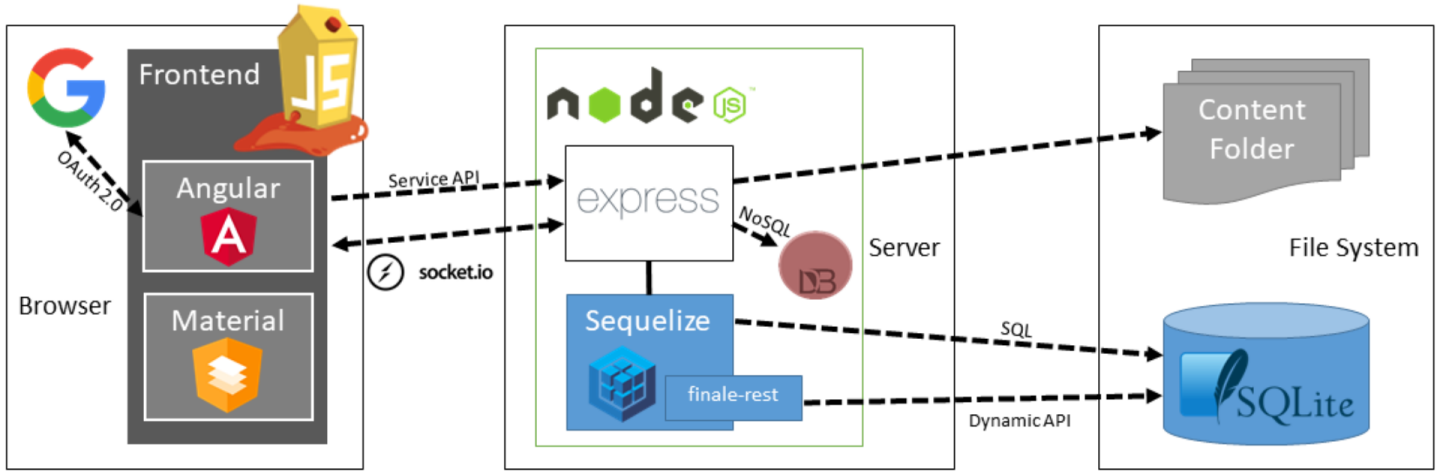
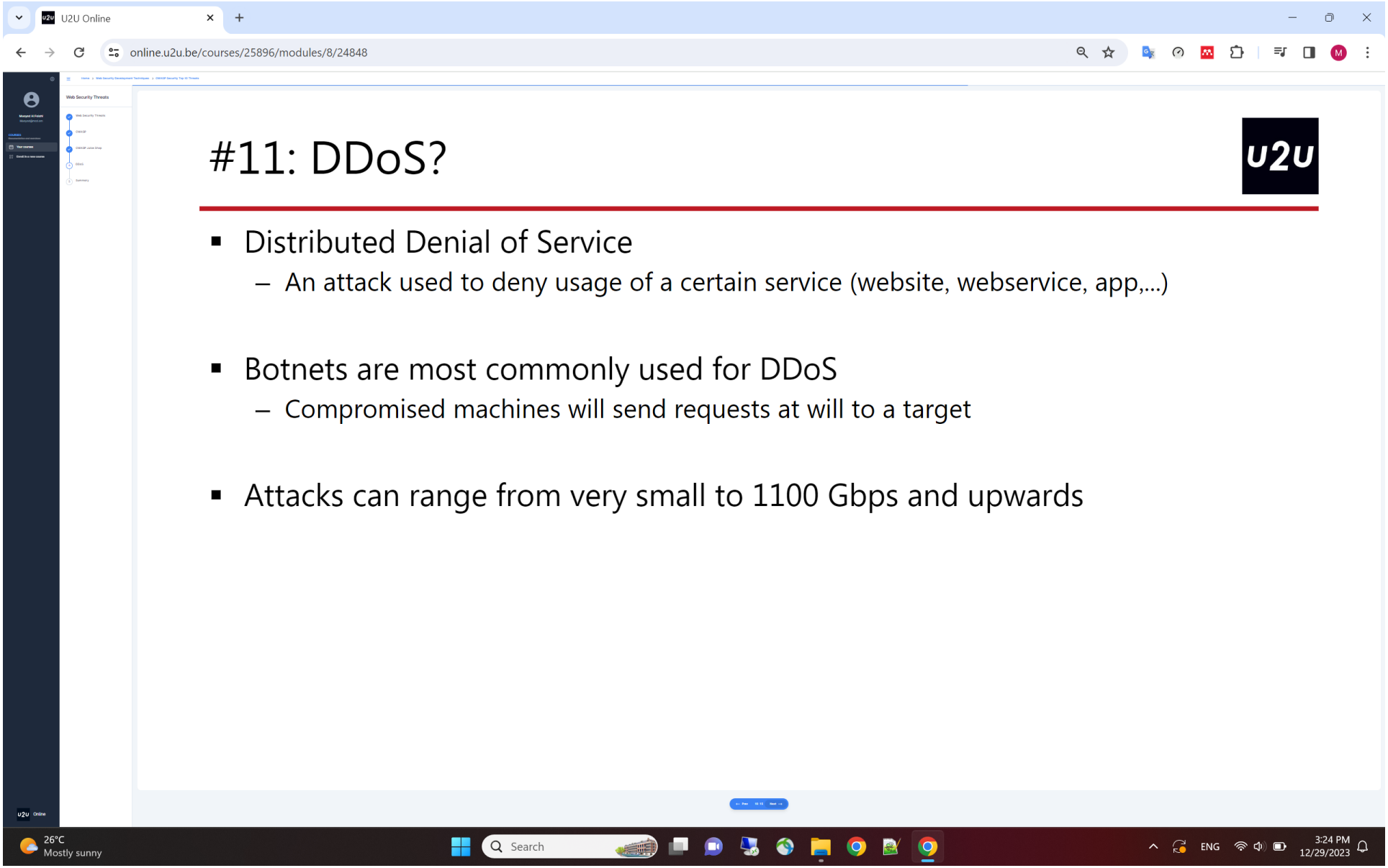
OWASP Juice Shop

- Demo application containing tons of vulnerabilities
- Notifies you when you solved a challenge and keeps track on a scoreboard

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#11: DDoS?
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Distributed Denial of Service
An attack used to deny usage of a certain service (website, webservice, app,...)
Botnets are most commonly used for DDoS
Compromised machines will send requests at will to a target
Attacks can range from very small to 1100 Gbps and upwards
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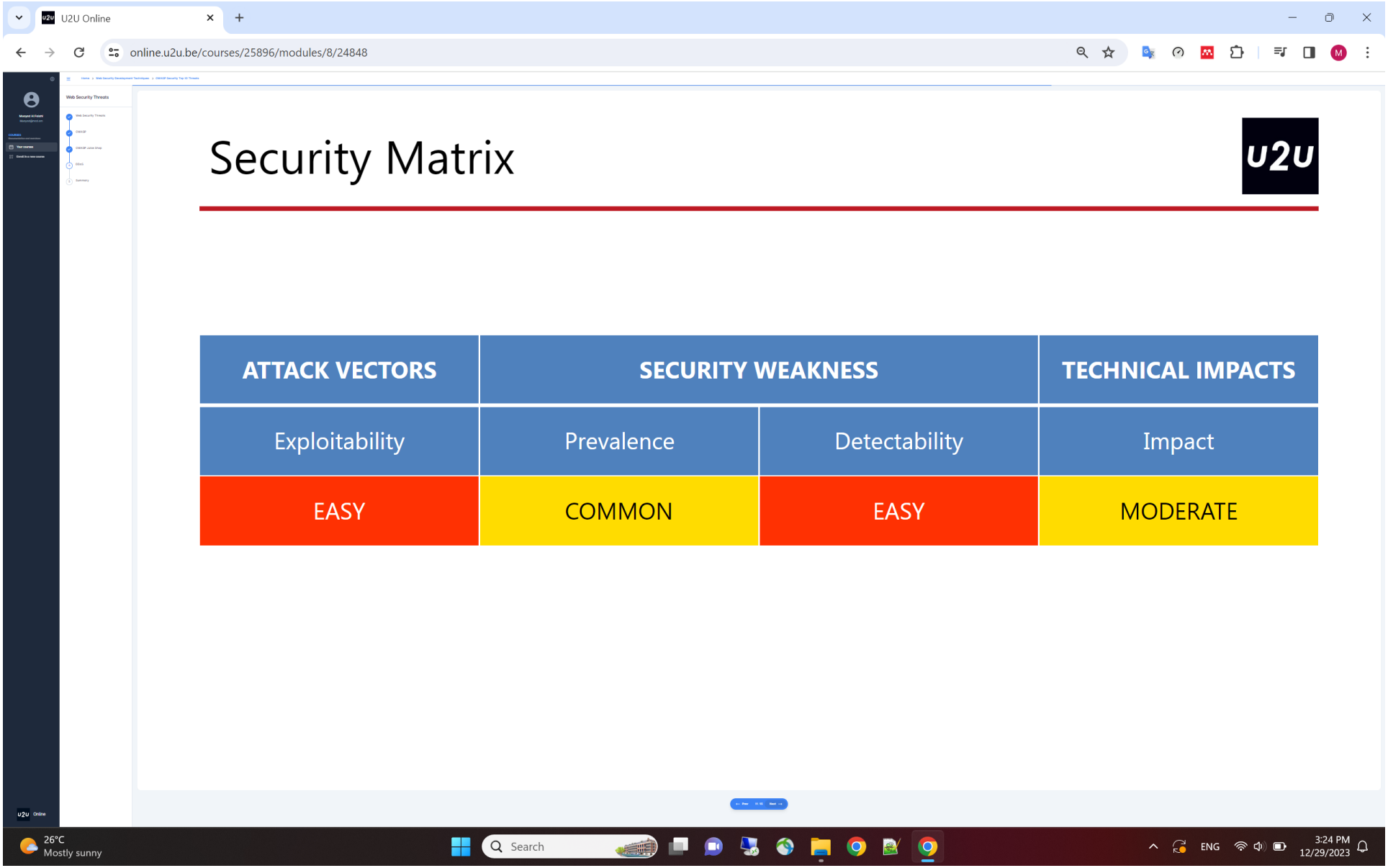
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Security Matrix
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ATTACK VECTORS
SECURITY WEAKNESS
TECHNICAL IMPACTS
Exploitability
Prevalence
Detectability
Impact
EASY
COMMON
EASY
MODERATE
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Search
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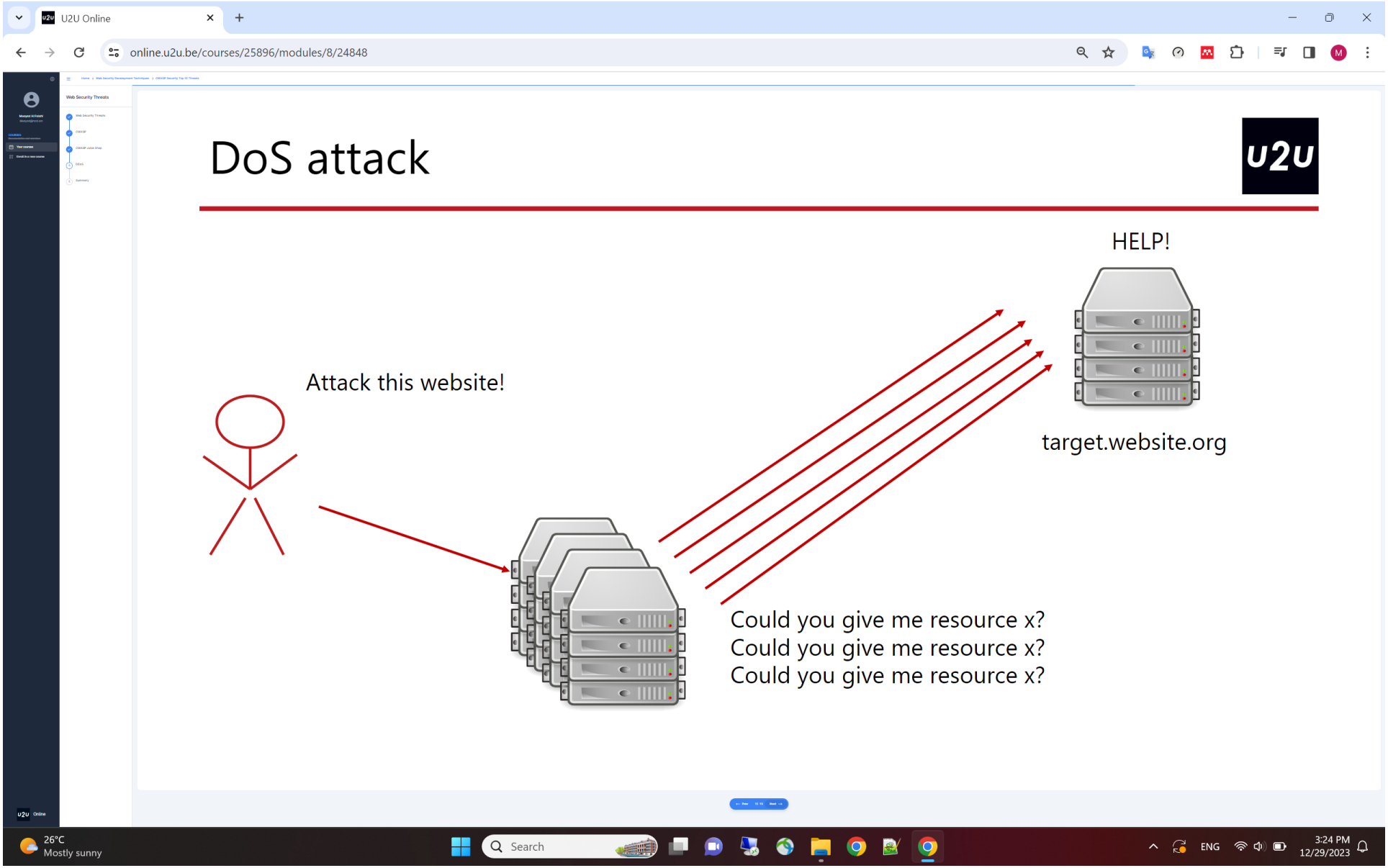
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DoS attack
HELP!
target.website.org
Attack this website!
Could you give me resource x?
Could you give me resource x?
Could you give me resource x?
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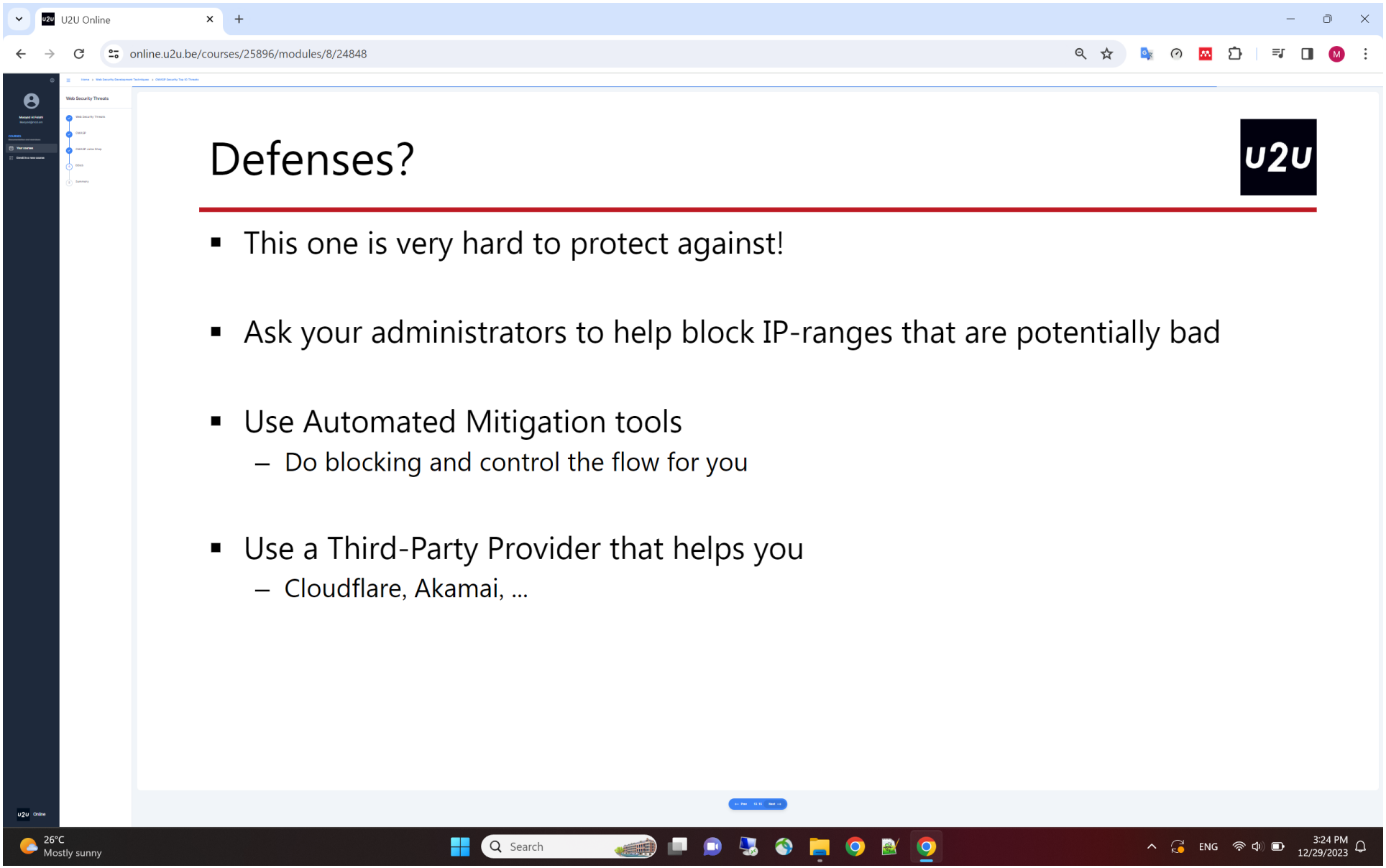
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Defenses?
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This one is very hard to protect against!
Ask your administrators to help block IP-ranges that are potentially bad
Use Automated Mitigation tools
Do blocking and control the flow for you
Use a Third-Party Provider that helps you
Cloudflare, Akamai, ...
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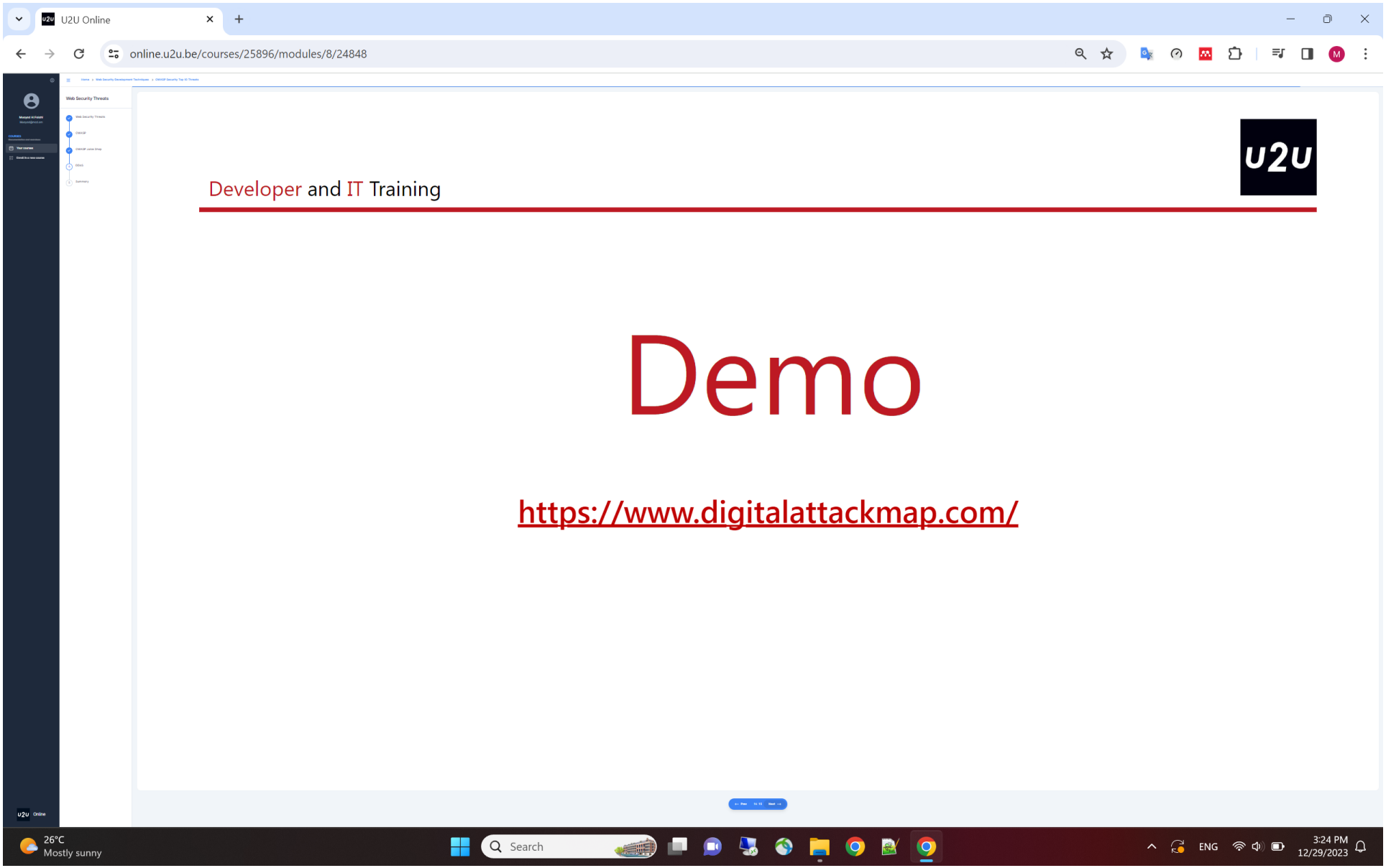
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Developer and IT Training
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Demo
https://www.digitalattackmap.com/
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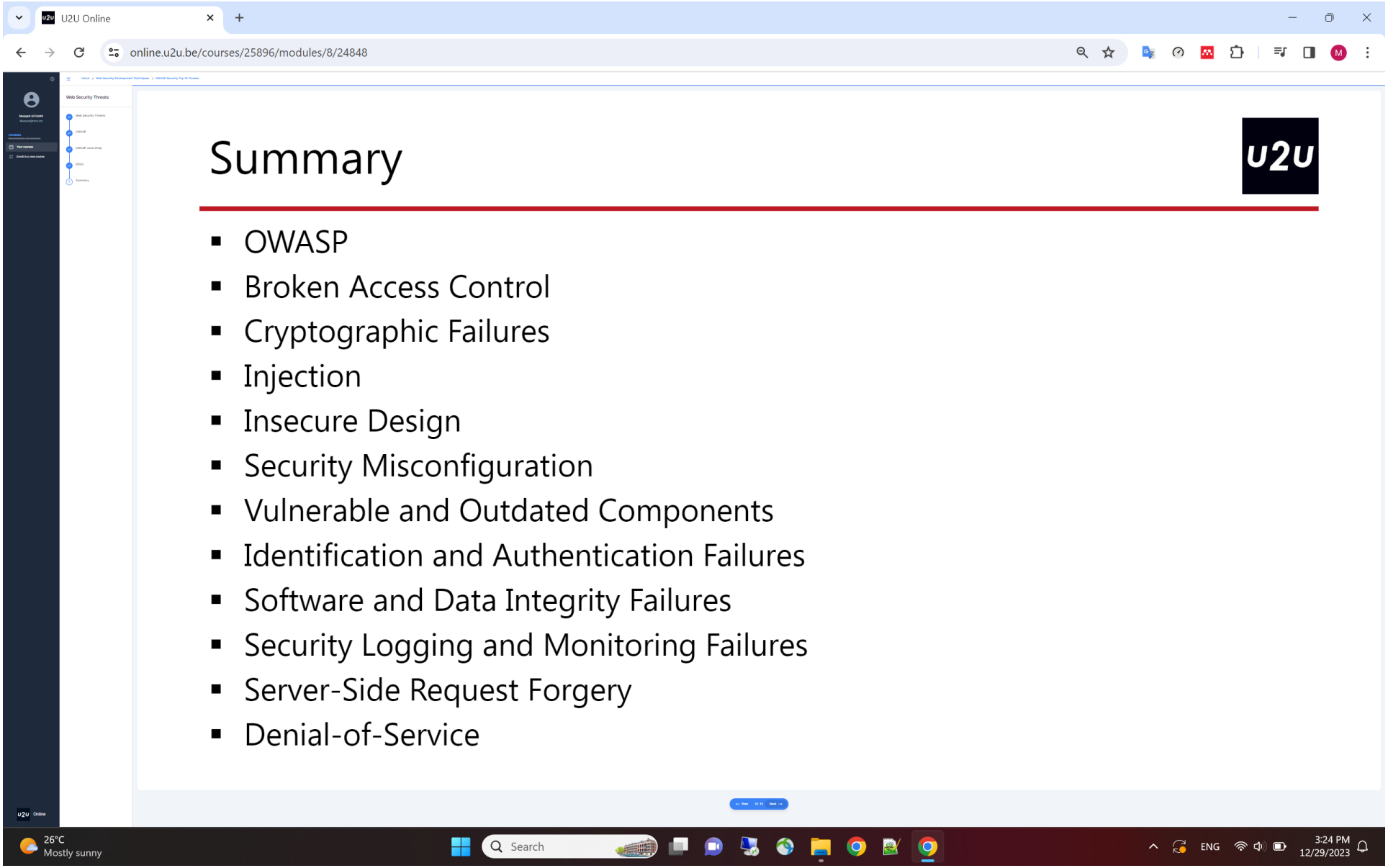
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Summary
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OWASP
Broken Access Control
Cryptographic Failures
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Insecure Design
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