

CyberSecurity: Principle and Practice

*BSc Degree in Computer Science
2022-2023*

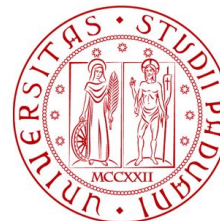
Lesson 2: Intro to Exercise Settings

Prof. Mauro Conti

Department of Mathematics
University of Padua
conti@math.unipd.it
<http://www.math.unipd.it/~conti/>

Teaching Assistants

Pier Paolo Tricomi
pierpaolo.tricomi@phd.unipd.it
Tommaso Bianchi
tommaso.bianchi@phd.unipd.it



UNIVERSITÀ
DEGLI STUDI
DI PADOVA



SPRITZ
SECURITY & PRIVACY
RESEARCH GROUP



DIPARTIMENTO
MATEMATICA

- highly recommended Ubuntu
 - a Virtual Machine is enough
 - it allows you to focus on the exercises and not on installation issues



- set of CTF provided in each lesson
- CTF = Capture the Flag
 - a code / program with security vulnerabilities
 - by exploiting a vulnerability, you obtain a flag
- several languages to study
 - Python, js, C, ...



- each set of exercise focuses on a specific vulnerability threat
 - different difficulty levels
- we provide additional hints
 - help you if you are stuck



1. You are given a challenge
2. You identify the macro-area
 - a. e.g., web, crypto
 - b. they can be also combined
3. You define a set of suitable vulnerabilities (injection, ...)
4. You search on Google how to do it
(how to SQL injection,...)
5. Repeat until you solve it



- Sometimes there are multiple ways to hack
- Try to keep open multiple solutions
- In particular for complex systems

Additional games are available online at [PicoCTF](#)



Questions? Feedback? Suggestions?



UNIVERSITÀ
DEGLI STUDI
DI PADOVA

