

Secure Software Design



UNIVERSITÀ
DELLA
CALABRIA

il Campus per eccellenza

Introduction

Mario Alviano

About me

- Mario Alviano
 - First and second degrees in Computer Science
 - PhD in Computer Science
 - <https://alviano.net/>
- Consultation hour
 - Tuesday 16:00-17:00
 - Contact by email
- Never refused to supervise a thesis student
 - Average of 6-7 points
 - Compilative theses are also welcome (but max 5 points by CdL rules)

About you?

Please, fill in this Google Form

<https://forms.gle/o4utD9BbRP391uMx5>

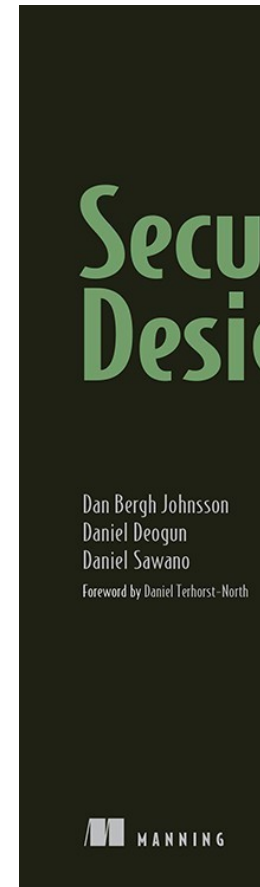
Webpage

- Me, waiting for the new website of the CdL
- Let's use the old one
- Good enough for us!



Teaching materials

- Slides and other stuff on the webpage
- Book
 - Secure by Design - Dan Bergh Johnsson, Daniel Deogun, Daniel Sawano - Manning



Programme

- Introduction to secure software design
 - Confidentiality, integrity and availability
 - Why design matters for security
 - Deep modeling
- Common vulnerability
 - SQL Injection
 - Cross Site Scripting
 - path traversal
 - OWASP Top 10
 - OWASP ZAP
- Pattern for secure software design
 - Domain-Driven Design
 - Constructs promoting security
 - Domain primitives
 - Ensuring integrity of state
 - Reducing complexity of state
 - Test-Driven Design
 - Handling failures securely

Goal

- Learn how to avoid common weak programming habits
- Learn common state-of-the-art attack and defence methods of information systems
- Ability to analyze common vulnerabilities
- Ability to apply basic techniques of computer attacks

Schedule

- When?
 - Thursday 14:30-16:30
 - Friday 11:30-14:30
- What?
 - Lectures and exercises
 - PC exercises
 - Student projects
- Where?
 - MS Teams for sure
 - Me, waiting to know the classroom



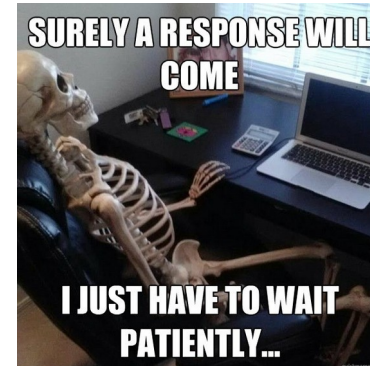
- 01/10/2020 14:30-16:30 - Introduction: Why design matters for security
- 02/10/2020 11:30-14:30 - Deep modeling
- 08/10/2020 14:30-16:30 - OWASP Top 10 - Part 1
- 09/10/2020 11:30-14:30 - OWASP Top 10 - Part 2
- 15/10/2020 14:30-16:30 - OWASP Top 10 - Part 3
- 16/10/2020 11:30-14:30 - Core concepts of Domain-Driven Design
- 22/10/2020 14:30-16:30 - Code constructs promoting security
- 23/10/2020 11:30-14:30 - Test-Driven Design - Part 1
- 29/10/2020 14:30-16:30 - Test-Driven Design - Part 2
- 30/10/2020 11:30-14:30 - Test-Driven Design - Part 3
- 05/11/2020 14:30-16:30 - Domain primitives - Part 1
- 06/11/2020 11:30-14:30 - Domain primitives - Part 2
- 12/11/2020 14:30-16:30 - Ensuring integrity of state
- 13/11/2020 11:30-14:30 - Exercises
- 19/11/2020 14:30-16:30 - Reducing complexity of state
- 20/11/2020 11:30-14:30 - Handling failures securely
- 26/11/2020 14:30-16:30 - Exercises
- 27/11/2020 11:30-14:30 - Student Project
- 03/12/2020 14:30-16:30 - Student Project
- 04/12/2020 11:30-14:30 - Student Project
- 10/12/2020 14:30-16:30 - Student Project
- 11/12/2020 11:30-14:30 - Student Project
- 1 hour to be added

Likely, something will change!

(It's the first edition.)

Exam

- 4 hours session in the lab
- Quiz and exercises
- Computer exercises
- Points declared ahead for every question and exercise
- Student project avoid part of the first exam (10 points)
- Exam dates to be announced
(you know, me waiting for the dates)



Study now, **do the first exam,**
go back to enjoy your life!



Your colleague,
studying tomorrow



Statistics

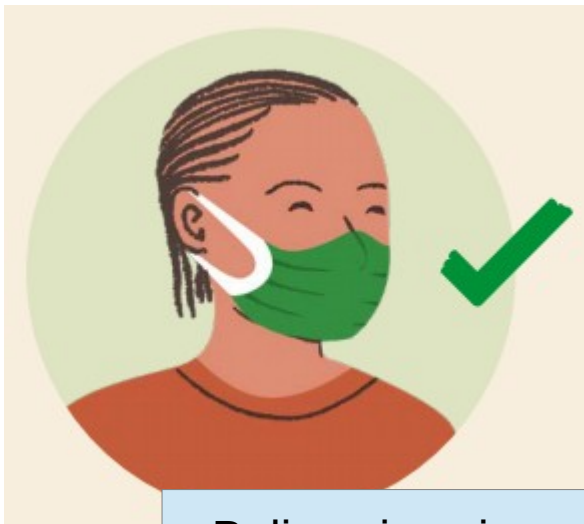
EXAM SCORE	30 JAN 2020
RETIRED	1
FAIL	0
18	1
19-23	2
24-26	0
>= 27	5

- ISO-DID usually positive
- Some complaints on the study load
- Act soon, let me know if you need help with some portion of the program

Other exams were desert

Attendance

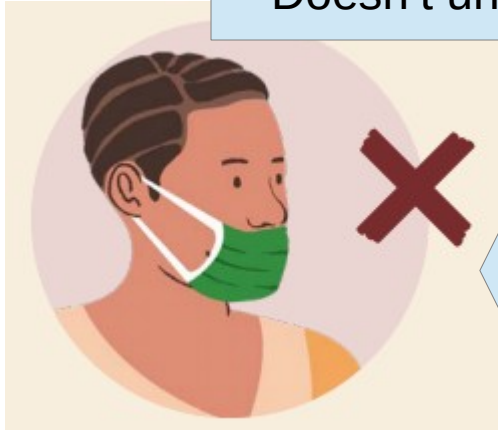
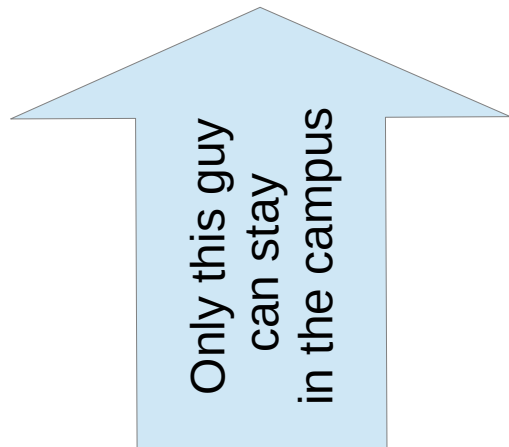
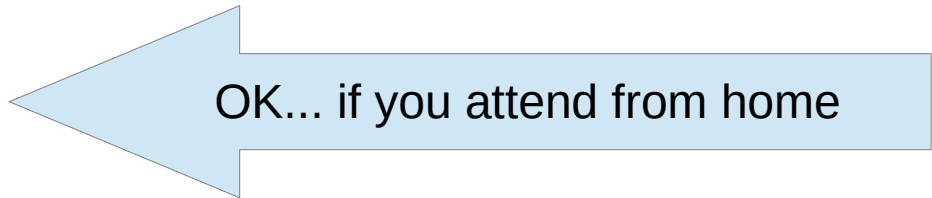
- Mandatory
- Attend at least 70% of the course to take part to exams
- You are very welcome to attend from home
- Active attendance, we don't need bodies, we need minds



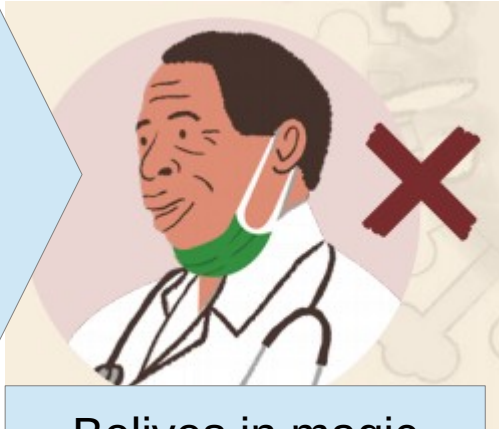
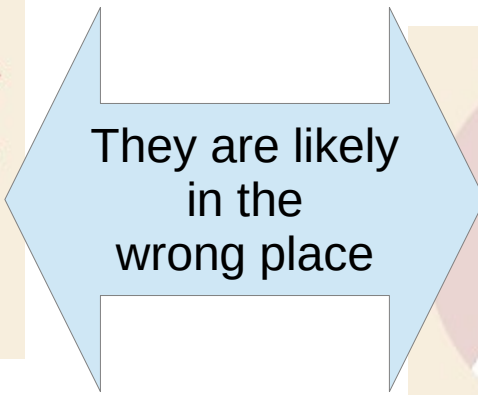
Belives in science



Doesn't belives in science



Doesn't understand science



Belives in magic

Questions

