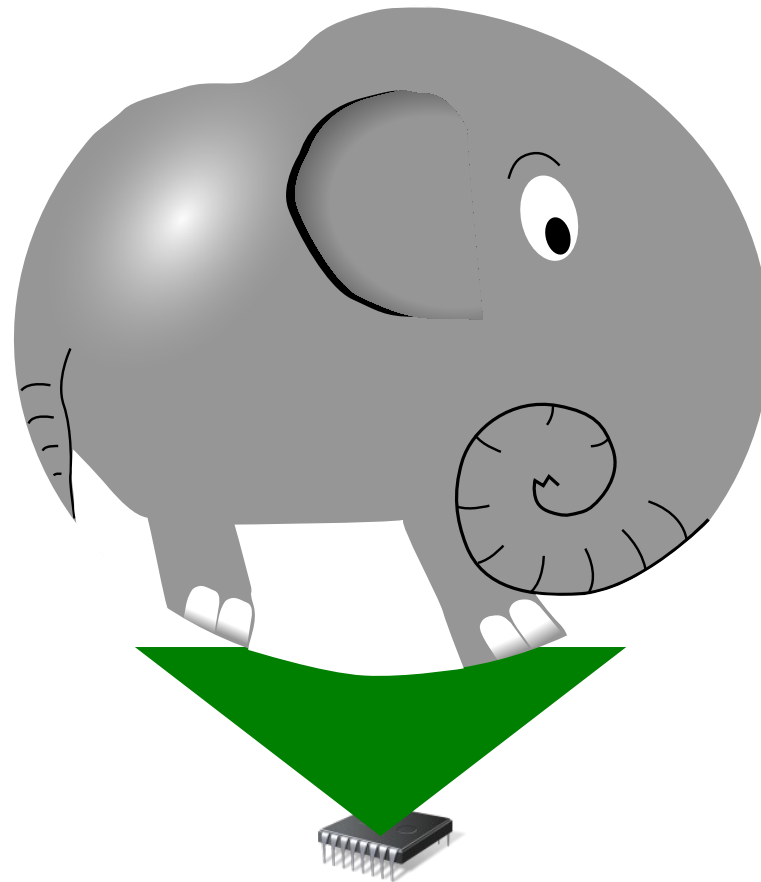# Professional Seminars II:
Operating Systems for Embedded Systems

Syllabus

2022/2023
Ángel Perles

Contents

- Staff

- Seminar focus

- Prerequisites

- Session distribution

- Lab

- Evaluation

Staff

Ángel PERLES

Departament d'Informàtica de Sistemes i Computadors (DISCA)

Building 1G, office 2S-13.

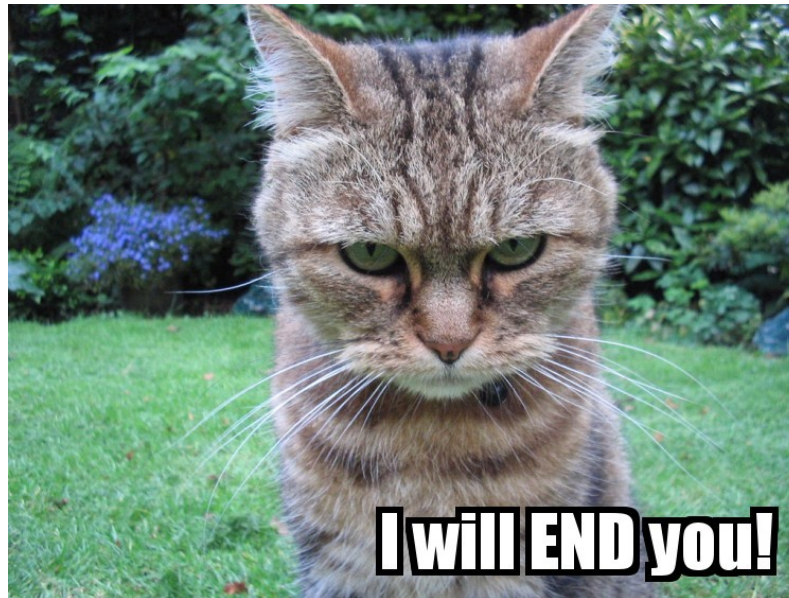E-mail: aperles@disca.upv.es

Seminar focus

- Market is plenty of amazing computer-based systems

- **But** the developers need to deal with

    - Increasing complexity

    - Reduced time-to-market

Seminar focus

- In order to meet these requirements, an Operating System is a **MUST** or ...

I will END you!

- Of course, additionally you need ...
  - programming languages, tools, tons of libraries, etc.

Seminar focus

- Different kind of problems require different approaches

- David
  - agile
  - weak
  - doesn't eat too much

- Goliath
  - strong
  - slow movements
  - eats a lot

Seminar focus

- David: microcontrollers, DSPs

  - airbag, ABS brakes, wearables, wireless sensors/IoT, washing machines, ovens, ...

  - no need for an OS, but helps a lot! (uCos, FreeRTOS, ...)

- Goliath: general purpose processors

  - smartphones, tablets, routers, smartTV, NAS, ...

  - always need an operating system: Linux, M. Windows , QNX, vxWorks, ...
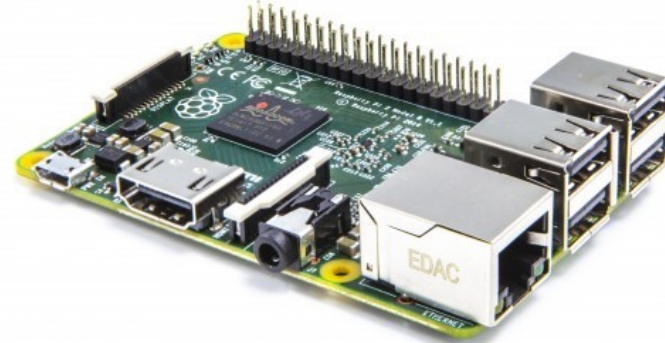
Session distribution

- 0.9 credits -> 9 hours

- Mixing lectures and lab: as practical as possible

- Contents available at

    - https://aperles.blogs.upv.es/oses/

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Lab

- "Goliath" example
  - Raspberry Pi: ARM Cortex-A based SoC
  - Linux operating system
  - Software defined radio (SDR)

- Low cost
  - Your own lab at home is feasible

Evaluation

- According official subject guide

Professional Seminars II

Evaluación

Tipo	Descripción	Actos	Peso
Trabajo académico	Desarrollo de un proyecto que puede ir desde trabajos breves y sencillos hasta trabajos amplios y complejos propios de últimos cursos y de tesis doctorales.	3	100%

- Assistance, work at the classroom, ... 5 points
- Extra work for extra marks

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Prerequisites

- Let's talk about your skills ...

  - Programming languages: C, …

  - Operating Systems basics, …

  - … and motivation …

(Google questionnaire available in Poliformat)