Raspberry PI Laboratory

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Introduction

- The purpose is to practice with Raspberry's GPIO
  - with 32 and 64 bits
- Test on bouncing properties of a button:
  - done by using an oscilloscope
- Test on interrupts with Operating System:
  - a signal (hardware interrupt) is sent to Raspberry on a GPIO pin; O.S. answers on another GPIO pin, with a latency
  - if the system is (over)loaded, what happens to interrupt latency?
  - oscilloscope and signal generator are used
  - library based code & kernel based code
- Test on interrupts without Operating Systems
  - bare metal, as in the ARM board (used in LABINF)

Info

- Introduction and button (Elisa Chiapponi, Carolina Bianchi) 32 and 64 bits:
  - https://github.com/elisa2995/RaspberryGPIO_LAB
- Raspberry interrupt, with O.S. (Damiano Franzò)
  - https://github.com/damianofranzo/raspberry_cas_sp2.git
- Raspberry Interrupt (bare metal) (Giulio Roggero, Enrico Rovere):
  - https://github.com/enricorov/Pinterrupt.git

- YouTube videos are available, as well as the full software

THANKS to the authors!

Labs

- Only one lab (3h) in four teams:
  - 6 november Ladispe 14,30-17,30
  - 8 november Ladispe 11,30-14,30
  - 12 november Ladispe 16-19
  - 18 november Ladispe 8,30-11,30
- Booking with a Doodle available starting from 31/10 evening
  - https://doodle.com/poll/pm8adgizq47isdku
  - maximum 50 persons for each day
- Ladispe can be found in:
  - http://www.ladispe.polito.it/flatpages/location