Lab 5

School of Architecture, Civil and Environmental Engineering

EPFL, WS 2020-2021

https://disal.epfl.ch/teaching/signals_instruments_systems/

Lab 5 outline

- This lab focuses on C programming
  - Compilation + Makefiles
  - Memory Management (string, structure, pointers)
  - Comparison MATLAB and C
- Tools
  - C compiler + Debugger
  - Geany
  - MATLAB

Getting Started

- Installation
  - Go to moodle and download:

    Installation for the C lab + Lab05
  - Follow the installation steps
  - Last options: use the *online virtual machine*

    https://vdi.epfl.ch/
  - Run the installation tests
- How to …
  - Have quick look first and go back after

Compilation & Functions

- Contents :
  - Implement a temperature sensor that monitor the danger of fire.
- Goals :
  - Recall compilation steps and Makefiles
  - Play with the inputs and output of the program
  - Recall of some basis of C functions

C versus MATLAB

- Contents :
  - Strings manipulation
  - Loop performance
  - Matrix Multiplication
- Goals :
  - Compare compiling and interpreting languages
  - Give rough ideas of main advantages of each languages

Memory Management in C

- Contents :
  - Fixed memory (array, string)
  - Dynamic memory (malloc, free, calloc)
  - Structure Data
  - Pointers
- Goals :
  - Reminds you the key concepts of memory in C
  - Show you some usual issues

C Debugger and Additional Exercises

- Contents :
  - Debugging example with C debugger
  - Additional exercises
- Goals :
  - Bring you tools for the Webots lab and the project
  - Provided you more material if you need it

ENG-270 : Informatique pour l'ingénieur de l'environnement

>> https://coursc.ch/ <<

Feedback for Lab 5

Please help us improve the labs by giving us feedback.

Thank you!