

# Arquitetura de Computadores 2

## Important information about practical test 1

### DETPIC32 board

To allow the functional verification of the programs, a DETPIC32 board will be available during the test (the same as the one used in practical classes).

|                         |   |              |
|-------------------------|---|--------------|
| LED                     | LED7 ... LED0                                       | RE7 ... RE0  |
| Switches                | DS4 ... DS1   | RB3 ... RB0  |
| Display segments        | Seg G ... Seg A                                     | RB14 ... RB8 |
| Display control         | Most significant display, Least significant display | RD6, RD5     |
| Test points             | OC5 ... OC1   | RD4 ... RD0  |
| Analog input (0 - 3.3V) | Potentiometer (R30)                                 | RB4          |
| Communications          | RS-232  | UART2        |
| Clock frequency         | Core Timer, PBCLK                                   | 20MHz        |

### Test setup

1. The test will be done during the practical class, in an individual manner, and its duration will be 75 minutes. The distribution per session will be available in the AC2 moodle page, in the "assessment" section.
2. The test is carried out on the classroom PCs. The login and password of the test session will be revealed at the begin of the test.
3. In the Desktop of the computer, you will find the "prova" directory (Desktop/prova). Inside this directory you will find all the necessary files for carrying out the test. **It is mandatory to answer the questions using those files.**
4. File names and file locations cannot be changed. It is not allowed to delete any file, especially outside the working directory (Desktop/prova).
5. It is mandatory to fill in the name and the student number in the header of the files, in the place indicated therein.
6. At the end of the test, the editor(s) must be closed and a "logout" must be performed - **the computer must not be turned off (see the "logout" sequence on the next page).**

### Reference material

1. The Microchip manuals, the MIPS instruction table (which includes the list of System Calls) and the introduction to practical guides 3 to 6 will be available as reference information.
2. For programming with the A/D converter, the configuration sequence, as shown on page 4 of practical guide n.º 6, will be provided. For using the displays, the 7-segment code table will be provided, possibly with some codes not defined.

### Test evaluation

1. During the correction process, all programs will be compiled. The detection of syntax errors implies the attribution of a penalty on the grade given to the exercise. The detection of warning errors will also be evaluated.
2. For programs that do not have syntax errors, the evaluation of their operation (on a DETPIC32 board) is part of the correction process, during which compliance with the specifications of each exercise will be verified.
3. The test will have one question to be solved in assembly language. The file that should be used to answer that question already includes an incomplete program with the basic structure of the exercise, which must be completed and tested on the DETPIC32 board. This question (and only this one) will be corrected exclusively by functional analysis of the various aspects of the program (executed on the DETPIC32 board). This means that manual correction will not be performed. It is, therefore, essential that the program does not present any syntax errors when assembled. If syntax errors exist, this question will automatically be graded with zero.

(please go to the next page)

## "logout" sequence

