

# Exercise Sheet 1

(10 Points)

Thursday, November 2, 2017

Please use the provided user name and password for login to the virtual machine *Ubuntu\_12.04* and for your svn account. You can find some useful information in the file *info\_RTOS* on the main directory.

## 1.1 Version Control with Subversion (svn) (2 points)

- What are *version control system* and *subversion*?
- What is the meaning of the following terms: *repository*, *working copy*, *trunk*, *tags* and *branch*?
- Please use the provided svn directory of your group to practice mainly the following svn commands and submit your answers for each exercise: *add*, *checkout*, *commit*, *copy*, *delete*, *diff*, *export*, *import*, *info*, *list*, *log*, *revert*, *status* and *update*.

## 1.2 Raspberry Pi and Pibrella (2 points)

- Raspberry Pi
  - Which model of the Raspberry Pi do you have?
  - Which processor and peripherals does it have?
- Pibrella
  - What is the Piberella board used for?
  - Please find the mapping between the GPIO pins and the Pibrella peripherals.

## 1.3 FreeRTOS (6 points)

Please familiarize yourself with the files in the *FreeRTOS\_RaspPi* and *bootloader* directories in the *Shared* folder for the following tasks:

- What are the 3 core files of the FreeRTOS?
- Where are the files specified for the processor architecture located?
- What does the *bootloader* do? Which file is loaded first and which one contains the configuration parameters?

- Please follow the steps below to install FreeRTOS:
  - a. Copy all the files in the *bootloader* directory to the SD card after formatting it.
  - b. Run the *make* command in the *FreeRTOS\_RaspPi* directory to generate the kernel.
  - c. Copy the *kernel.imp* file to the SD card.
  - d. Place the SD card into its slot on the Raspberry Pi and connect the micro USB power supply to the Piberella in order to turn the Raspberry Pi on.
- Write a code to use all the LEDs, the buzzer and the button on the Piberella board.