NAZARBAYEV UNIVERSITY
SCHOOL OF SCIENCE AND TECHNOLOGY

Laboratory Assignment #4

ROBT 305 – EMBEDDED SYSTEMS

Fall Semester 2015

EMBEDDED LINUX BASICS WITH BEAGLEBONE BLACK

DURATION

- 1 lab session;

LEVEL OF COLLABORATION ALLOWED

You will be working in groups

REFERENCES

Derek Molloy,"Exploring BeagleBone. Tools and Techniques for Building with Embedded Linux", Wiley, 2015 (available in Moodle)

INTRODUCTION

Read Chapter 1 of the "Exploring BeagleBone" textbook (available in Moodle)

GET FAMILIAR WITH THE SAFETY RULES ON PAGE 21 OF THE TEXTBOOK

TASK 1: EMBEDDED LINUX COMMANDS PRACTICE ON BBB

1. Connect and login to your BBB board as explained in Lab #3 manual.
2. Practice on BBB basic file editing with Nano editor using instructions on Pages 41- 42.
3. Study Chapter 3 of the textbook for introduction to Embedded Linux and practice basic Linux commands on you BBB as shown on Pages 82 -89.
4. Study Linux Processes section (Pages 89 - 94), run HelloWorldSleep.c code on BBB.

TASK 2: BBB PROGRAMMING PRACTICE

1. Study Chapter 5 and practice C/C++ programming on your BBB on Pages 167- 186.
2. Run HelloWorld.c , HellowWorld.cpp, sizeofvariables.c, pointers.c, pointerarray.c, cstrings.c, makeLED.c, cppstrings.cpp and other codes on your BBB.
3. Study POSIX Threads section on Pages 236 – 238 and run pthreads.cpp code.

SUBMISSION REQUIREMENTS

You group is required to prepare and submit the report with Linux terminal screenshots for all major tasks and steps from this lab.