

BIL 101 – Introduction to Computer Science

HW 5

Due to 28.10.2015, 13:00

Submit your hardcopies to Necmeddin Çarkacı (Lab 122). **Strictly no hardcopy will be accepted after 13:00!!!**

For the questions about homework, you can use BIL 101 News Form.

PART 1

- a) What is the difference between embedded operating systems and computer operating systems?
- b) What are differentiates between a program, an executable, and a process?

PART 2

- a) Watch [Fernando Corbato video](#) which explains timesharing system. Summarize the timesharing system as the video. Draw simple time sharing system architecture.
- b) What is open source philosophy? Explain differences between open source and free software products. (Give at least two points.) If you had an effective product, do you distribute this product open source license? Why, why not?
- c) Consider a system in which a program can be separated into two parts: code and data. The CPU knows whether it wants an instruction (instruction fetch) or data (data fetch or store). Therefore, two base-limit register pairs are provided: one for instructions and one for data. The instruction base–limit register pair is automatically read-only, so programs can be shared among different users. Discuss the advantages and disadvantages of this scheme. (Hint: search for what is logical address, physical address and segmentation)

PART 3

- a) Write linux command which show the all process running by administrator root.
- b) Write a python script which gets portable executable any *.exe file as parameter from console line and read file byte by byte and produce hex, binary, decimal value of the byte. You can use python bin(), ord() functions. Another point, if the file extension is not exe, your program give warning and stop running.