4th Year Communications

Embedded Systems

UP2 Lab Assignment #1 (10 marks)

Start date: Saturday 3rd March 2018

Due date Saturday 17th March 2018

External RAM memory interface to 8051 Microcontroller

Each group is asked to connect 64K Byte SRAM (single 64KB chip or two 32KB chips) to their AT89C51ED2 microcontroller board. The connection should be as illustrated in the lectures. In case of using two chips, A15 will be used to select the lower memory chip (when low) or the higher memory chip (when high). Using a single 64KB SRM chip would facilitate connection so much.

1- Draw your design (preferably on the computer).
2- Write a Keil C code (or Assembly code) that waits for either character 'p' or 't' from the terminal, when **'p'** is received, the microcontroller fills even memory addresses with the byte **0X55** and odd addresses with the byte **0XAA**. When finishing writing all the 64k locations, it sends the string **"Finished"** to the terminal.
3- When character**'t'** is received, the microcontroller reads back each memory location and compares its contents with the estimated value. If all match, sends to the terminal the string **"Verification with no errors"** otherwise sends the string **"Errors found"**. You may impose and error by removing one of the data lines.
4- Delivery will be directed to Dr. Hossam's office by the office hours listed on his door.

Delay in delivering the assignment by the due time will result in penalty of two marks per each week.

Good Luck Dr.Hossam Eldin Mostafa