Alexandria University                                          Systems Programming
Faculty of Engineering                                              Second Year
Computer and Systems Engineering Dept.                   2012

# Term Project - SIC/XE Assembler
## Phase (2)

**You should submit a hardcopy of your report and a disk of your source code.**

The term project is to implement a (cross) assembler for (a subset of) SIC/XE assembler, written in **C/C++,** producing code for the absolute loader used in the SIC programming assignments.
In phase 2 of the project, you are going to build on the previous phase and use its output to implement pass2 of the assembler.

**Specifications**
        a) The assembler is to execute by entering
                assemble *<source-file-name>*
        b) The source file for the main program for this phase is to be named assemble.c
        c) The output of the assembler should include (at least):
                1. Object-code file whose format is the same as the one described in the text book in section 2.1.1 and 2.3.5.
                2. A report at the end of pass2. Pass1 and Pass2 errors should be included as part of the assembler report, exhibiting both the offending line of source code and the error.

        d) The assembler should support:
                1. EQU statement.
                2. Simple expression evaluation. A simple expression includes simple (A <op> B) operand arithmetic, where <op> is one of +,-,*,/ and no spaces surround the operation, eg. A+B.

**Your project write-up should include:**
        1. Requirements specifications.
        2. Data flow diagrams or object diagrams.
        3. Main data structures.
        4. Algorithms description.

**Bonus**
        1. General expression evaluation.
        2. Literals (Including LTORG)
        =C'<ASCII-TEXT>' , =X'HEX-TEXT' , =<DECIMAL-TEXT> forms.
        3. Control sections