SECR/SCSR 2033

COMPUTER ORGANIZATION & ARCHITECTURE

PROJECT

CASE 4

Instructions:

1. The grade for the project is 15%.
2. This project is done by a group of maximum 3 students.
3. Each group must provide and submit through:

   E-learning:

   a) a formal report (Cover page, Member responsibilities, Table Of Contents, Coding, Example of inputs & outputs, Discussion, References). 9%

   b) The full coding (.asm). 1%

   c) a demo video (Screen capture with oral explanation). 4%

   Google form:

   d) a peer review survey (each member must fill in). 1%

4. The submission date is _____.

Twos_Complement_with_Hexadecimal

Write an assembly program converting a 4-digit Hexadecimal integer to its Two's Complement. An implementation of Two's Complement is suggested here:

- Receive a 4 char Hex digits
- Loop through each char digit from right to left
  - Get a Hex char digit
  - Make it upper case if necessary
  - Convert char digit to a number value
  - Reverse every bit in Hex digit
  - Plus one to the lowest digit (may cause a carry to propagate)
  - Convert each number value back to char digit
- A single loop should be enough without nested one

```
Please Enter 4-digit Hexadecimal integer (e.g., A1B2): A0Bc
Two's Complement of Hex A0Bc is 5F44
Try again? (y/n) y

Please Enter 4-digit Hexadecimal integer (e.g., A1B2): 5f44
Two's Complement of Hex 5f44 is A0BC
Try again? (y/n) y

Please Enter 4-digit Hexadecimal integer (e.g., A1B2): AoBC
Two's Complement of Hex AoBC is Error
Try again? (y/n) y

Please Enter 4-digit Hexadecimal integer (e.g., A1B2): 0001
Two's Complement of Hex 0001 is FFFF
Try again? (y/n) n
Press any key to continue . . .
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