BIM303 MICROCOMPUTERS
LAB EXPERIMENT #5

Objective(s)

- Become familiar with **Procedures, Program Flow Control**, **Memory, and Nested Loop** operations in 8086 emulator software.

Lab Work

Write an assembly program that is able to mirror, copy, and print the elements of a char array. You must define procedures for each operation (Mirror, Copy, and Print).

1. Define a char array as given in the example below.
2. Transform the initial array by using the MIRROR procedure. The first half of the array must be swapped with the second half.
3. Copy the ordered array to the address **ES:2000H** by COPY procedure **without using LOOP instruction** (See MOVSB and REP instructions).
4. Print the ordered array on the screen by the PRINT procedure.

Example:

Define an array of characters as follows,
ARRAY DB 'C','O','M','P','U','T','E','R','|','1','2','3','4','5','6','7','8'

Finally, the content of your array and ES:2000H must become,
'1','2','3','4','5','6','7','8','|','C','O','M','P','U','T','E','R'

Hint-1: Use "**INT 10h / AH = 0Eh"** for printing to the screen

Hint-2: You can use the following code block for sorting.

```
void Mirror(char A[], int N) {
   for(int j = 0; j < 1; j++) {
      int l = 0;
      int r = (N / 2) + 1;
      for(int i = 0; i < 8; i++) {
         SWAP(&A[l], &A[r]);
         l++;
         r++;
      } //end-for-inner
   } //end-for-outer
} //end-Mirror
```

Evaluation

- You must complete your work until lab hour. You will be evaluated during the lab session. **Your code should not contain any comment lines.**
- **NOTE:** Students who do not submit tasks through **ESTUOYS** will receive **0 (zero)** points. **Late submissions will not be accepted.**