Lab 3: Accessing Data from Memory Locations

1 Problem Statement

In this lab, we will write assembly language programs to:

1. Move a block of data stored in 'n' consecutive memory locations to another 'n' consecutive memory locations.
   (a) Store 'n' 8-bit numbers in consecutive locations starting from 7501H. Append with 00H to show the end of data.
   (b) Move this block of data to memory location starting from 7601H, with same order as the saved data.
2. Arrange the block of data in the above memory locations in ascending order
   (a) Store ten 8-bit numbers in consecutive locations starting from 7501H
   (b) Sort this data in ascending order starting from the memory location

2 Procedure

You may use the following logic to perform the above operations

2.1 Sequence of steps for moving block of data

Flowchart:

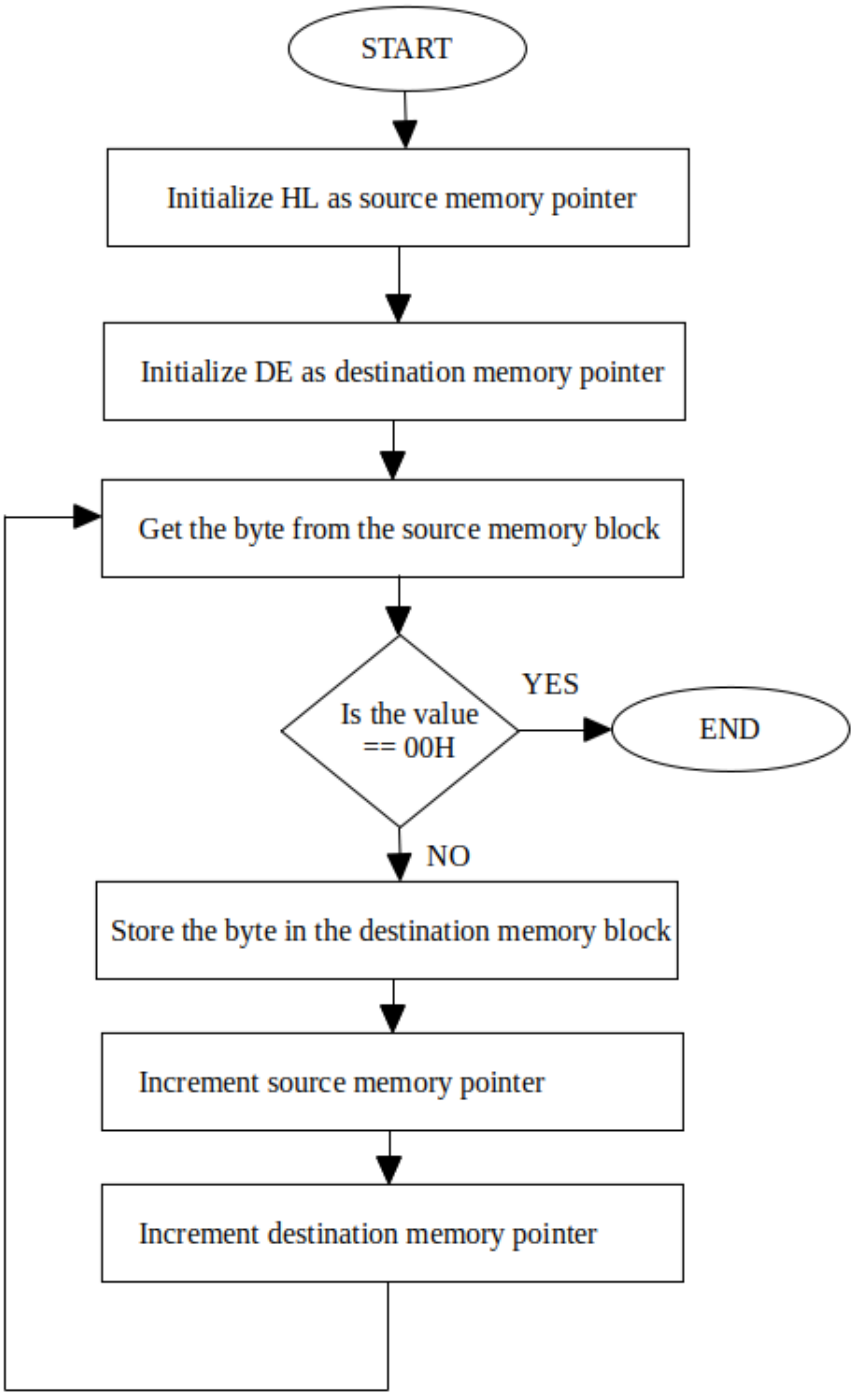

Figure 1: Flowchart for moving block of data

2.2 Sequence of steps for arranging the block of data in ascending order

Pseudocode:

```
# ORG 7000H
      //Initialize outer counter c1
      Until c1=0 do,
        //Load HL pair with starting memory location of the data
        //Initialize inner loop counter c2
        Until c2=0 do,
           //Fetch consecutive data d[c2], d[c2+1]
           //Compare and swap if required
           //Decrement the inner loop count(c2)
        //Decrement outer loop count(c1)
STOP

#ORG 7501H
      // Get ten 8 bit no. in successive location
```