

Experiment No 7

Objective:

Write an assembly language code to find the minimum/maximum number from an array

Prerequisite:

TASM assembler

Algorithm: (minimum no)

1. Start
2. Initialize data segment through AX register in the DS register.
3. Initialize the SI to 5000h
4. Initialize total elements of array as a count in CX(e.g 0005h)
5. Preserve the above count in a temporary variable.
6. Display the message as "Enter an array elements"
7. Read first digit in AL register through keyboard (e.g. AL=31h)
8. Call Input procedure to make a number from ASCII hexadecimal to a normal hexadecimal number.AL=01h
9. Move AL contents to BL
10. Rotate BL contents by 4 in left direction.
11. Read second digit in AL register through keyboard (e.g AL=32h)
12. Call Input procedure to make a number from ASCII hexadecimal to a normal hexadecimal number.AL=02h
13. Add BL and AL contents ($BL \leftarrow BL + AL$)
14. Store the BL (current accepted number) to location pointed by SI
15. Increment SI by 1 to point to next location for the next number
16. Repeat step no. 7 to 15 till CX count reaches to 0.

17. Initialize SI again to 5000h and CX also with total number of elements.
18. Initialize AL with first element pointed by SI for the next comparison
19. Compare number pointed by SI from an array with AL register
20. If carry is generated (i.e. if number in AL > number pointed by SI) then goto step no. 22 else goto step no. 21
21. Make a unconditional jump to step no. 23
22. Move number pointed by SI to AL
23. Incremented SI by 1
24. Decrement CX by 1
25. Compare CX with 0000h (i.e. Repeat step no.19 to 25 till all numbers of array are not covered for the comparison)
26. If Zero flag is not set then jump to step no.19
27. Finally minimum number will be available in AL register.
28. Display the contents of AL register.
29. Stop.

Algorithm: (maximum no)

1. Start
2. Initialize data segment through AX register in the DS register.
3. Initialize the SI to 2000h
4. Initialize total elements of array as a count in CX(e.g 0005h)
5. Preserve the above count in c temporary variable.
6. Display the message as "Enter an array elements"
7. Read first digit in AL register through keyboard (e.g. AL=31h)

8. Call Input procedure to make a number from ASCII hexadecimal to a normal hexadecimal number.AL=01h
9. Move AL contents to BL
10. Rotate BL contents by 4 in left direction.
11. Read second digit in AL register through keyboard (e.g AL=32h)
12. Call Input procedure to make a number from ASCII hexadecimal to a normal hexadecimal number.AL=02h
13. Add BL and AL contents ($BL \leftarrow BL + AL$)
14. Store the BL (current accepted number) to location pointed by SI
15. Increment SI by 1 to point to next location for the next number
16. Repeat step no. 7 to 15 till CX count reaches to 0.
17. Initialize SI again to 2000h and CX also with total number of elements.
18. Initialize AL with first element pointed by SI for the next comparison
19. Compare number pointed by SI from an array with AL register
20. If carry is not generated (i.e. if number in AL < number pointed by SI) then goto step no. 22 else goto step no. 21
21. Make a unconditional jump to step no. 23
22. Move number pointed by SI to AL
23. Incremented SI by 1
24. Decrement CX by 1
25. Compare CX with 0000h (i.e. Repeat step no.19 to 25 till all numbers of array are not covered for the comparison)
26. If Zero flag is not set then jump to step no.19
27. Finally maximum number will be available in AL register.

28. Display the contents of AL register.
29. Stop.