

CS238 – ASSEMBLY LANGUAGE PROGRAMMING

PROGRAMMING ASSIGNMENT 4

DUE DATE: 04/11/2011

1. Write a program to calculate the sum or difference of two SQUARE MATRICES.

The flow of the program should be:

- a. Ask the user for the size (n) of the matrix. Example: If $n = 2$, then its 2 X 2 matrix, if $n = 3$, then it's a 3 X 3 matrix
- b. Then user should be asked for Matrix Values. For Example, if $n=2$, then user should input 4 Values for each matrix; total 8 values. If $n=3$, then 9 values for each matrix. Values are entered in row by row fashion.
- c. Then ask the user to add or subtract; based on users input, perform the arithmetic operation and store the result in destination matrix.
- d. Draw the flow chart for the above program.

Programming Steps (Example):

- i. Ask the user for the size of the matrix (N)
- ii. Then get the inputs for matrix A and then for matrix B (row by row).
 1. A =
A₁₁, A₁₂, ... , A_{1N}
A₂₁, A₂₂, ... , A_{2N}
..
..
A_{N1}, A_{N2}, ... , A_{NN}
 2. The above matrix can be written in the data segment as follows:
MatrixA BYTE A₁₁, A₁₂, ... , A_{1N}, A₂₁, ... , A_{2N}, ..., A_{N1}, A_{N2}, ... , A_{NN}
 3. Similarly MatrixB will be entered as follows
MatrixB BYTE B₁₁, B₁₂, ... , B_{1N}, B₂₁, ... , B_{2N}, ..., B_{N1}, B_{N2}, ... , B_{NN}
 4. Result is stored in MatrixC as follows (example for addition only)
MatrixC BYTE C₁₁, C₁₂, ... , C_{1N}, C₂₁, ... , C_{2N}, ..., C_{N1}, C_{N2}, ... , C_{NN}
Where C₁₁ = A₁₁ + B₁₁, C₁₂ = A₁₂ + B₁₂, ...
- iii. The result is stored in matrix C.