

Lab 2 - Exercises - Assembly - Emu8086

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Ex_07

Using emu8086 program, write a program in Assembly language that **performs** the following tasks, showing the contents of the affected **registers** and flags:

1. **Initialize** the **AX**, **BX**, and **DI registers** with the immediate values 1020H, 3040H, and 0200H respectively.
2. One's complement the low byte of **AX register**.
3. Two's complement the high byte of the **BX register**.
4. **Save** the high byte of **AX** and the low byte of **BX** at the data segment memory locations addressed by **DI** respectively.

Ex_08

Write a program that **performs** the following:

1. **Initialize** the **AX** and **BX registers** by 100h and 200h respectively.
2. **Add** 50h to the contents of **AX register** then increase the result by one. **Subtract** 50h from the contents of **BX register** then decrease the result by one. Finally, **swap** the data in the previous **registers**.
3. **Save** a data of 300h and 400h into the data segment memory locations addressed by 600h and its consecutive addresses respectively. **Add** the contents of the previous memory locations and **save** the result into the **CX register**.
4. Run the program and show the affected **registers**, flags and memory locations.

Ex_09

Write a program to **perform** the following tasks, showing the contents of **registers**, memory locations and the affected flags:

1. **Initialize** the **AX register** by FF00h, **set** the rightmost 8 bits of **AX**, **clear** bits 8 and 9 of **AX** and **invert** the leftmost 6 bits of **AX** with the result stored in **BX register**.
2. **Initialize** the low order byte of the **CX register** by EFh as well as **save** its one's complement at the high order byte of the **CX register**.
3. **Initialize** the low order byte of the **DX register** by EFh as well as **save** its 2's complement at the high order byte of the **DX register**.

Ex_10

Write an assembly program that calculates a rectangle area, which has 7h and 3h dimensions. Also, calculates the half of the rectangle area. **Save** the results into area and half_area variables.

Ex_11

Write a program that calculates the factorial of 5 (5!). **Save** the result into factorial5 variable.