Running The Emulator (emu806)

Intro

8086 Microprocessor Emulator, also known as EMU8086, is an emulator of the program 8086 microprocessor. It is developed with a built-in 8086 assembler. This application is able to run programs on both PC desktops and laptops. This tool is primarily designed to copy or emulate hardware. These include the memory of a program, CPU, RAM, input and output devices, and even the display screen.

There are instructions to follow when using this emulator. It can be executed into one of the two ways: backward or forward. There are also examples of assembly source code included. With this, it allows the programming of assembly language, reverse engineering, hardware architecture, and creating miniature operating system (OS).

The user interface of 8086 Microprocessor Emulator is simple and easy to manage. There are five major buttons with icons and titles included. These are “Load”, “Reload”, “Step Back”, “Single Step”, and “Run”. Above those buttons is the menu that includes “File”, “View”, “Virtual Devices”, “Virtual Drive”, and “Help”. Below the buttons is a series of choices that are usually in numbers and codes. At the leftmost part is an area called “Registers” with an indication of either “H” or “L”. The other side is divided into two, which enables users to manually reset, debug, flag, etc.

What is 8086 emulator

emu8086 is an emulator of Intel 8086 (AMD compatible) microprocessor with integrated 8086 assembler and tutorials for beginners. emulator runs programs like the real microprocessor in step-by-step mode. it shows registers, memory, stack, variables and flags.

Running the Emulator

1. Download and install emu8086(www.emu8086.com)
   It is usually installed in C:\EMU8086 subfolder in the “Windows” directory
2. Run d emu8086 icon (on the desktop or in the c:\EMU8086 folder of window)
   It has green color
3. If it requests for “Registration key, just ignore it by closing that window
   You will be left with the emulator (emu8086) IDE
4. Copy and paste an Assembly Language program like the “Hello World” program and
   paste it on editor of emulator
5. Compile
6. Run (once there is no syntax error)
7. Click OK to see/view the output of your program on the Emulator screen.
8. After running the program, another menu screen will be displayed, where you have the
   option to “View” symbol table, variables, listing (containing the object code and source code), emulator screen, etc
Sample AI program that displays “Hello World”

.model tiny ;com program, Code Data & Stack in one 64k Segment
.code ;code segment
org 100h ;code starts at offset 100h

main proc near

    mov ah,09h ;function to display a string
    mov dx,offset message ;offset of message string terminating with $
    int 21h ;dos interrupt

    mov ah,4ch ;function to terminate
    mov al,00
    int 21h ;dos interrupt
endp

message db "Hello World $" ;message to be displayed terminating with a $

end main
.model tiny ;com program, Code Data & Stack in one 64k Segment
.code ;code segment
org 100h ;code starts at offset 100h

main proc near

    mov ah,09h ;function to display a string
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    int 21h ;dos interrupt
endp
message db "Hello World $" ;message to be displayed terminating with a $
end main

Figure 1: Hello World program in Assembly language

Output of the above program is as shown below
Figure 2: Output of the program in Figure 1