

x86 Microprocessor Simulator for students of low level programming.

sms32v50.exe is a Microprocessor Simulator based on the x86 architecture. It is intended for students learning low level programming for the first time. It is written for Windows 95/98/NT/2000/XP.

The simulator is based on the low eight bits of the 8086 chip. It can be single stepped or continuously run. The CPU registers, and RAM contents are made visible.

The simulator is programmed in 8086 like assembly code. This is assembled into machine code that is NOT the same as 8086 code.

It is possible to control simulated traffic lights, seven segment displays, a heater and thermostat, a stepper motor, a lift and a snake in a maze. CALL, RET, INT, AND IRET are available in the registered version. Serious programming problems like multiplexing, procedures, parameter passing, interrupts and recursion can be tackled.

There is on-line help stored in a Windows Help file.

This upgrade from V2.3 adds a keyboard and numeric keypad. Several bugs have been fixed and no doubt some new ones created. The user interface had been updated.

It is recommended that students are not given all the example files. Students should be given all the numbered examples such as 02tlight.asm and 99snake.asm. They should also have demo.asm.

Teachers can use the other examples as they wish. Many examples are solutions to the student exercises.

Network Installation

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On a network, the program should be installed in a read only directory and run from a directory with write permission for the user. User preferences are saved in the student's working directory in sms32v50.ini. The program looks for help and user

registration files in the program's exe file directory. The shareware version has no user registration file. If sms32v50.ini does not exist, it will be created with default values.

Educational institutions are encouraged to register. Students may use the registered or un-registered software free of charge. The registered version is unlocked by purchasing a software key. If you have a key for a previous version, it will work with this version also.

Students should, whenever possible, obtain the registered version from their school, college or university. Registered sites have permission to run unlimited instances of the program on their site. They may also print and photocopy any of the documentation.

As an encouragement to register, four extra machine instructions are available in the registered version. Complete beginners do not need these instructions but serious low level programmers do. The bonus instructions are CALL, RET, INT and IRET. A simulated hardware timer interrupt is also available in the registered version.

The complete unmodified shareware file set may be distributed freely. Re-packaging for different media is permitted.

How to contact the author in case of questions or problems

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Please check the website before mailing this

address. It was correct in October 2003.

Disclaimer

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This simulation software is not guaranteed in any way. It may differ from reality. It might not even work at all. Try it out and if you like it, please register.