

## Visual Scriptable CPU Emulator

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A scripting language extension for modeling CPU instruction set and architecture: register set, opcodes, assembly and machine language, memory and I/O.

The scripting language should enable writing scripts to:

1. Run assembly or machine language code and visually track program progress (break points, watches, register value trackers, etc ...)
2. Launch groups of parameterized assembly programs (meta programming)
3. Report output and error conditions
4. Execute performance and accuracy tests
5. Enable dynamic instruction set extensions

A Graphic User Interface for

1. visualizing register set memory and IO states
2. Visualization of CPU progress from stage to stage
3. Visual controls for controlling program parameters and execution progress

System Goals:

1. Speed is not important! The system is designated for small programs for initial and simple use cases.
2. Instructional and educational: system should be simple and intuitive in order to demonstrate the CPU architecture clearly and vividly.
3. As such, GUI (Graphich User Interface) should be very intuitive and clear
4. Can be useful for OS and CPU architecture class for instructional purposes