FMU
CENTRO UNIVERSITÁRIO

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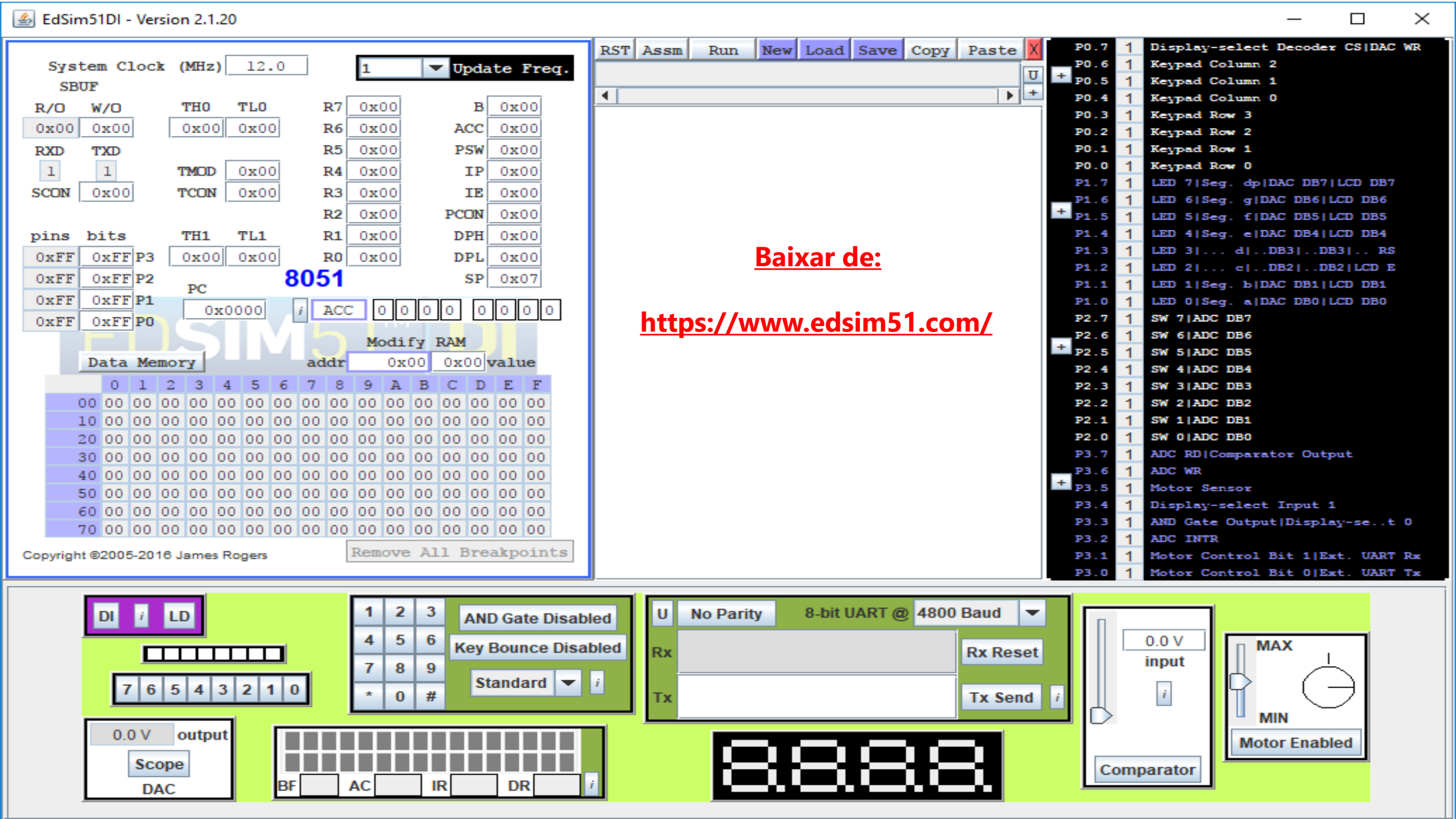
Disciplina:

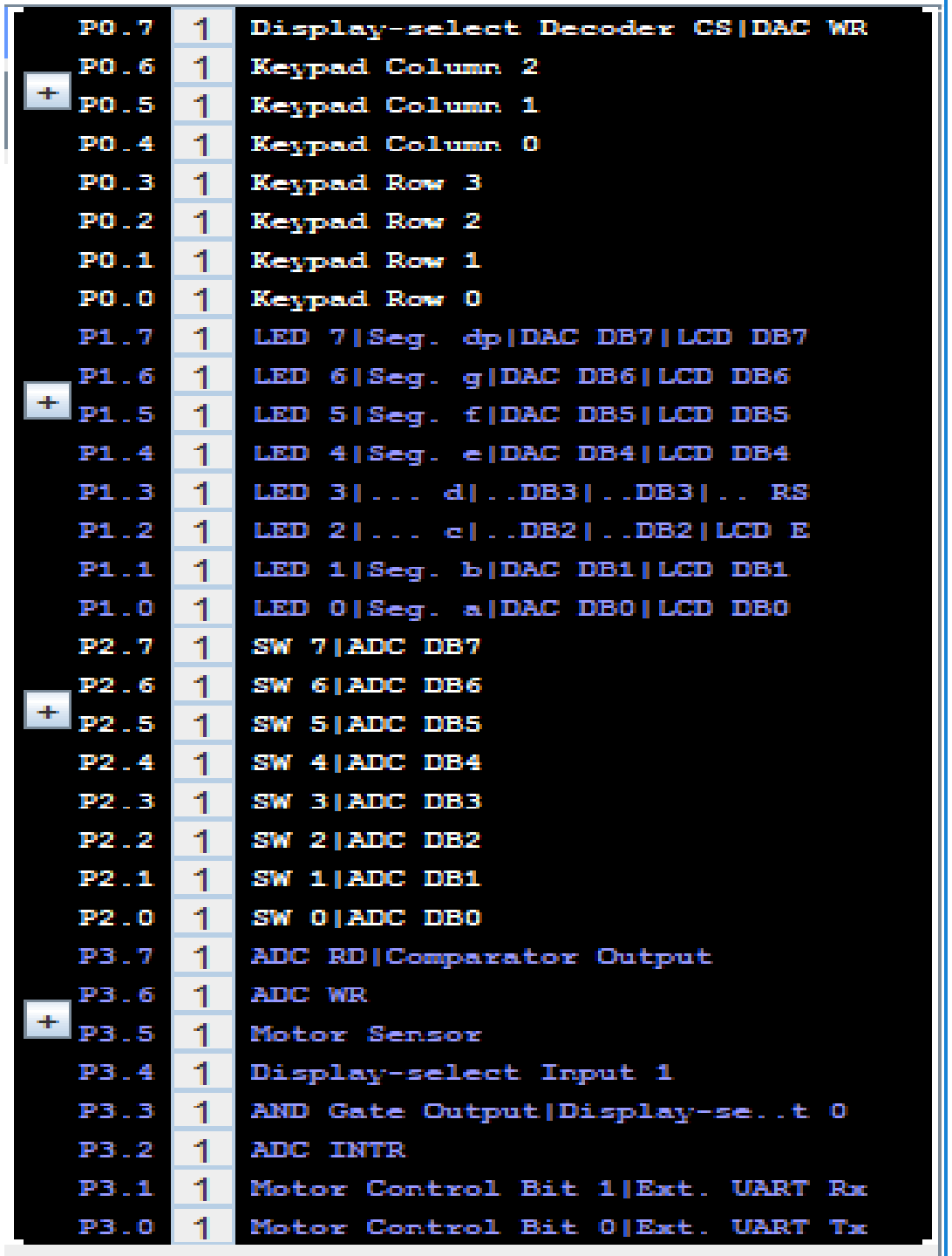
MICROCONTROLADORES

Agenda

- ✓ Apresentação do simulador EdSim51
- ✓ Exemplo de uso e programação em Assembly
- ✓ Atividade
- ✓ Desenvolvimento do projeto para APS

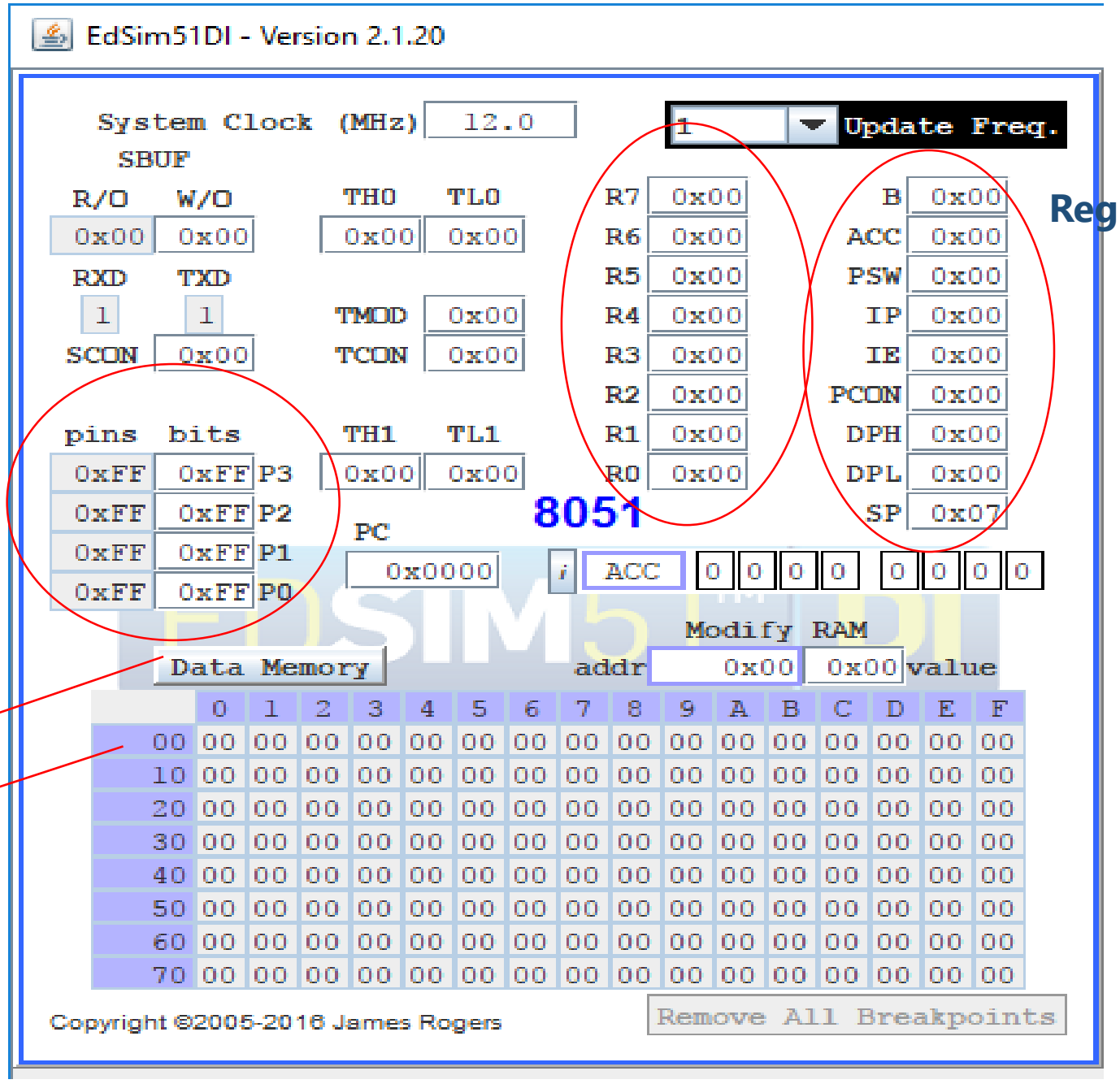

EdSim51DI - Version 2.1.20
System Clock (MHz) 12.0
1 Update Freq.
SBUF
R/O W/O TH0 TL0
0x00 0x00 0x00 0x00
RXD TXD
1 1
SCON 0x00 TMOD 0x00 TCON 0x00
pins bits TH1 TL1
0xFF 0xFF P3 0x00 0x00
0xFF 0xFF P2
0xFF 0xFF P1
0xFF 0xFF P0
8051
PC 0x0000
R7 0x00 R6 0x00 R5 0x00 R4 0x00 R3 0x00 R2 0x00 R1 0x00 R0 0x00
B 0x00 ACC 0x00 PSW 0x00 IP 0x00 IE 0x00 PCON 0x00 DPH 0x00 DPL 0x00 SP 0x07
ACC 0 0 0 0 0 0 0 0
Modify RAM
Data Memory
addr 0x00 0x00 value
0 1 2 3 4 5 6 7 8 9 A B C D E F
00 10 20 30 40 50 60 70
00
Copyright ©2005-2016 James Rogers
Remove All Breakpoints
RST Assm Run New Load Save Copy Paste X
U
Baixar de:
https://www.edsim51.com/
P0.7 1 Display-select Decoder CS|DAC WR
P0.6 1 Keypad Column 2
P0.5 1 Keypad Column 1
P0.4 1 Keypad Column 0
P0.3 1 Keypad Row 3
P0.2 1 Keypad Row 2
P0.1 1 Keypad Row 1
P0.0 1 Keypad Row 0
P1.7 1 LED 7|Seg. dp|DAC DB7|LCD DB7
P1.6 1 LED 6|Seg. g|DAC DB6|LCD DB6
P1.5 1 LED 5|Seg. f|DAC DB5|LCD DB5
P1.4 1 LED 4|Seg. e|DAC DB4|LCD DB4
P1.3 1 LED 3|... d|..DB3|..DB3|.. RS
P1.2 1 LED 2|... c|..DB2|..DB2|LCD E
P1.1 1 LED 1|Seg. b|DAC DB1|LCD DB1
P1.0 1 LED 0|Seg. a|DAC DB0|LCD DB0
P2.7 1 SW 7|ADC DB7
P2.6 1 SW 6|ADC DB6
P2.5 1 SW 5|ADC DB5
P2.4 1 SW 4|ADC DB4
P2.3 1 SW 3|ADC DB3
P2.2 1 SW 2|ADC DB2
P2.1 1 SW 1|ADC DB1
P2.0 1 SW 0|ADC DB0
P3.7 1 ADC RD|Comparator Output
P3.6 1 ADC WR
P3.5 1 Motor Sensor
P3.4 1 Display-select Input 1
P3.3 1 AND Gate Output|Display-se..t 0
P3.2 1 ADC INTR
P3.1 1 Motor Control Bit 1|Ext. UART Rx
P3.0 1 Motor Control Bit 0|Ext. UART Tx
DI i LD
7 6 5 4 3 2 1 0
1 2 3
4 5 6
7 8 9
* 0 #
AND Gate Disabled
Key Bounce Disabled
Standard i
U No Parity 8-bit UART @ 4800 Baud
Rx
Tx
Rx Reset
Tx Send i
0.0 V output
Scope
DAC
BF AC IR DR i
8.8.8.8
0.0 V
input i
Comparator
MAX
MIN
Motor Enabled

Ligações e pinagens do 8051 no Edsin51



P0.7	1	Display-select Decoder CS|DAC WR
P0.6	1	Keypad Column 2
P0.5	1	Keypad Column 1
P0.4	1	Keypad Column 0
P0.3	1	Keypad Row 3
P0.2	1	Keypad Row 2
P0.1	1	Keypad Row 1
P0.0	1	Keypad Row 0
P1.7	1	LED 7|Seg. dp|DAC DB7|LCD DB7
P1.6	1	LED 6|Seg. g|DAC DB6|LCD DB6
P1.5	1	LED 5|Seg. f|DAC DB5|LCD DB5
P1.4	1	LED 4|Seg. e|DAC DB4|LCD DB4
P1.3	1	LED 3|... d|..DB3|..DB3|.. RS
P1.2	1	LED 2|... c|..DB2|..DB2|LCD E
P1.1	1	LED 1|Seg. b|DAC DB1|LCD DB1
P1.0	1	LED 0|Seg. a|DAC DB0|LCD DB0
P2.7	1	SW 7|ADC DB7
P2.6	1	SW 6|ADC DB6
P2.5	1	SW 5|ADC DB5
P2.4	1	SW 4|ADC DB4
P2.3	1	SW 3|ADC DB3
P2.2	1	SW 2|ADC DB2
P2.1	1	SW 1|ADC DB1
P2.0	1	SW 0|ADC DB0
P3.7	1	ADC RD|Comparator Output
P3.6	1	ADC WR
P3.5	1	Motor Sensor
P3.4	1	Display-select Input 1
P3.3	1	AND Gate Output|Display-se..t 0
P3.2	1	ADC INTR
P3.1	1	Motor Control Bit 1|Ext. UART Rx
P3.0	1	Motor Control Bit 0|Ext. UART Tx

Painel com registradores E memória

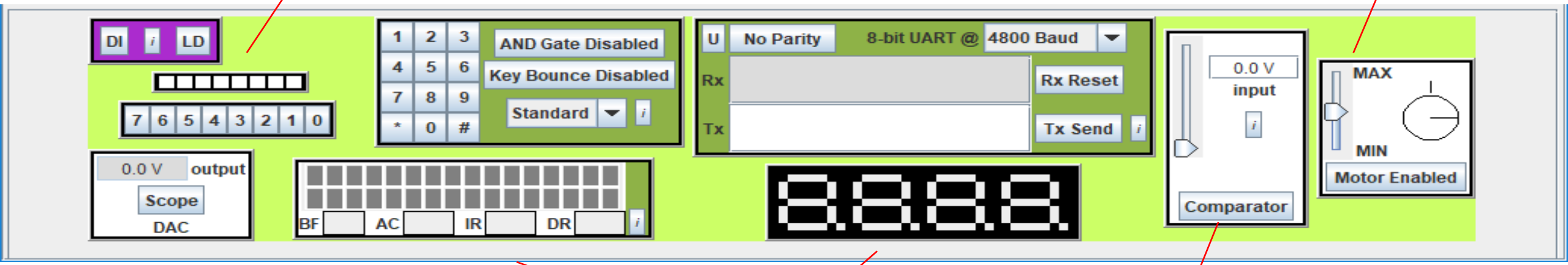


Registradores

Ports de I/O

Visualizar memória de dados ou de programa

Periféricos
Dispositivos de I/O



Configuração e mapeamento do Edsim

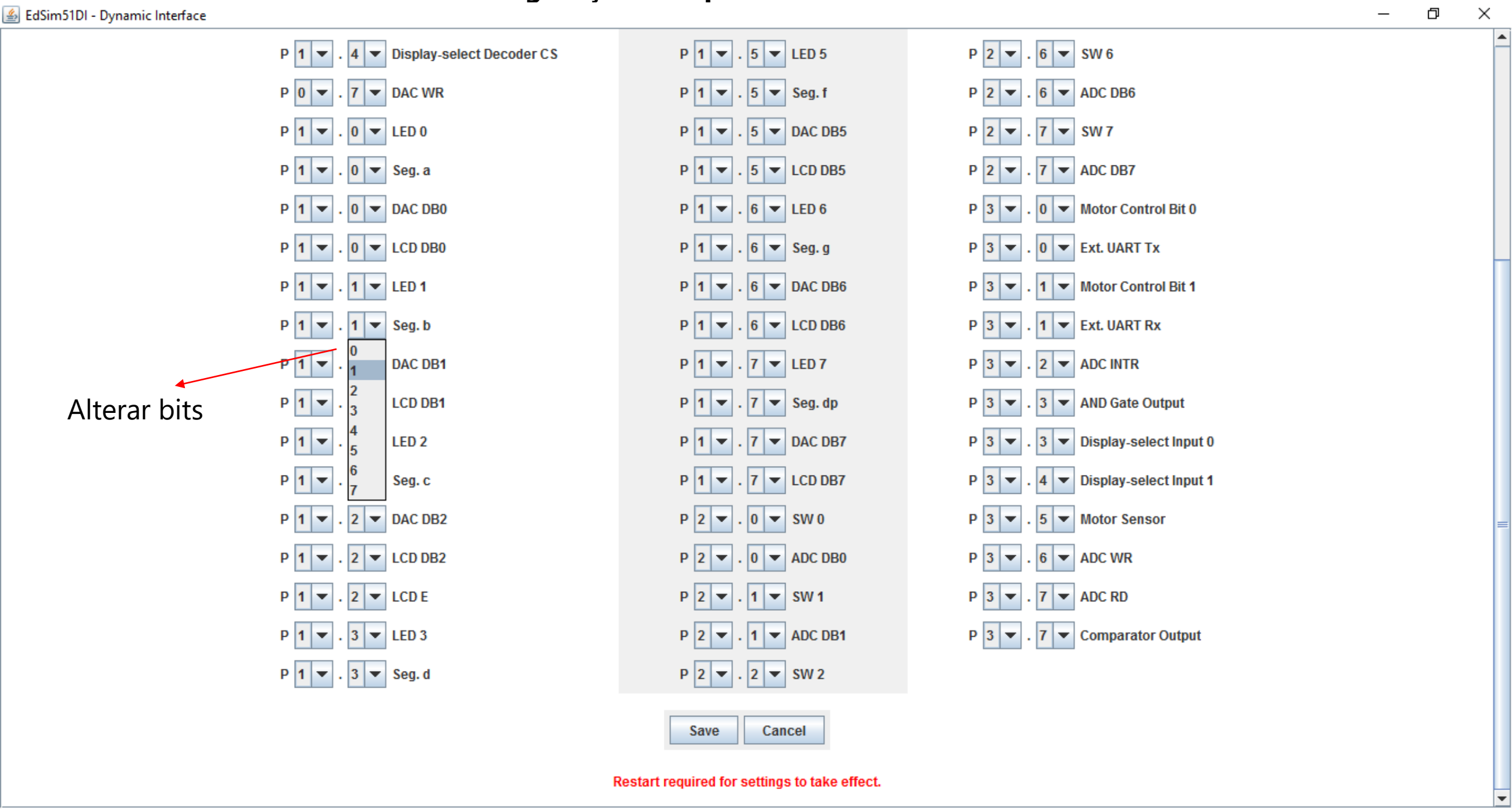
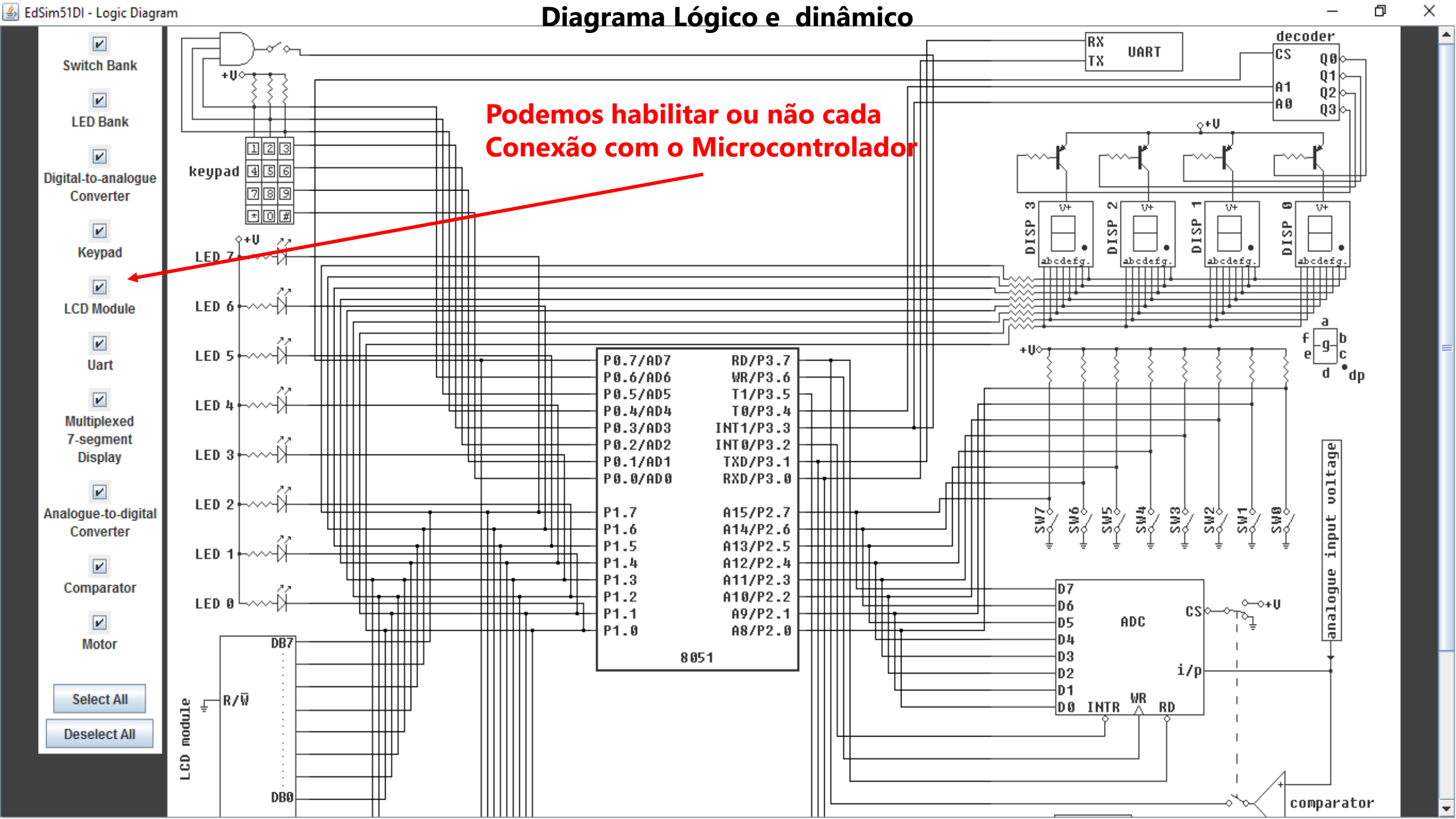
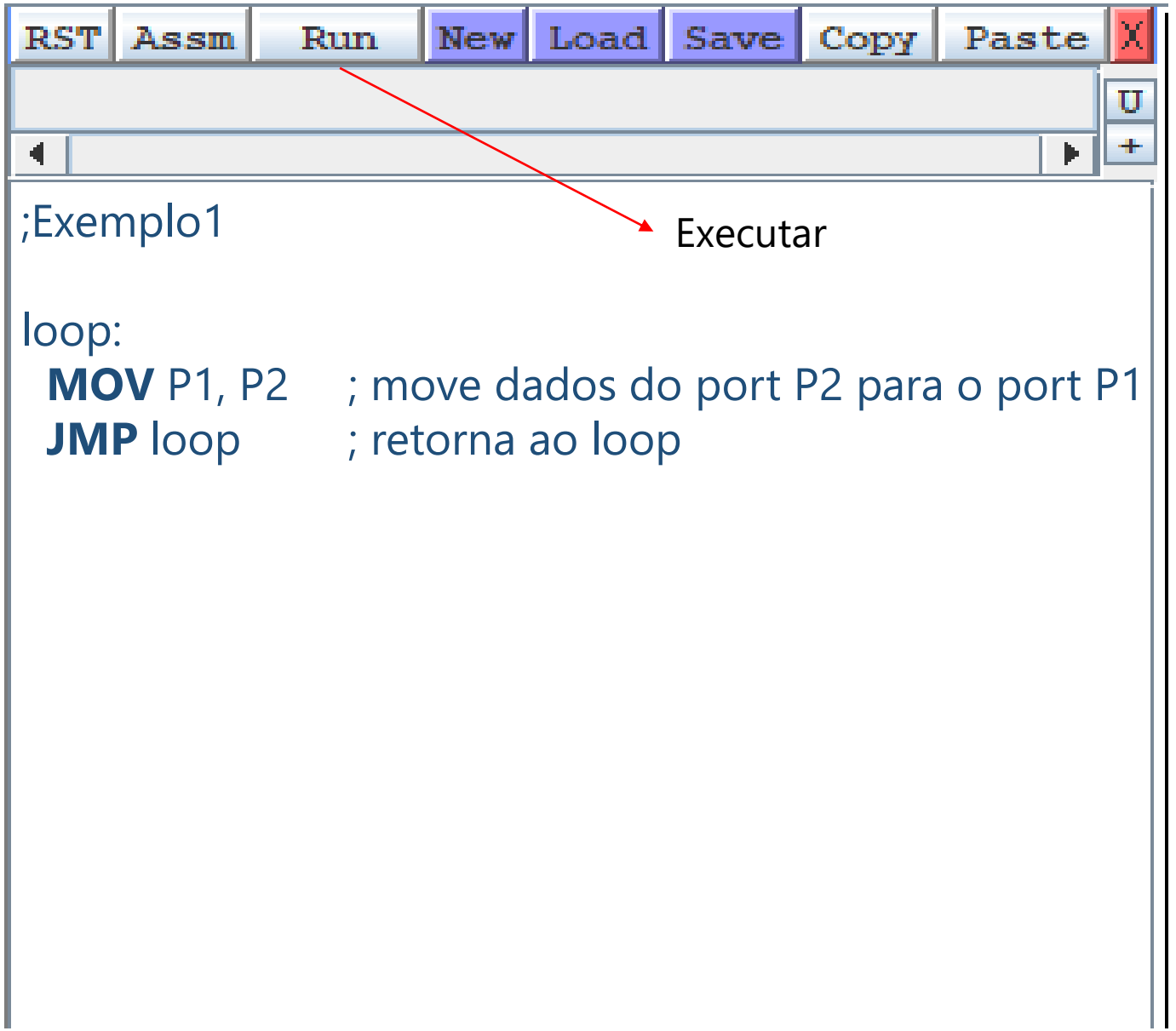


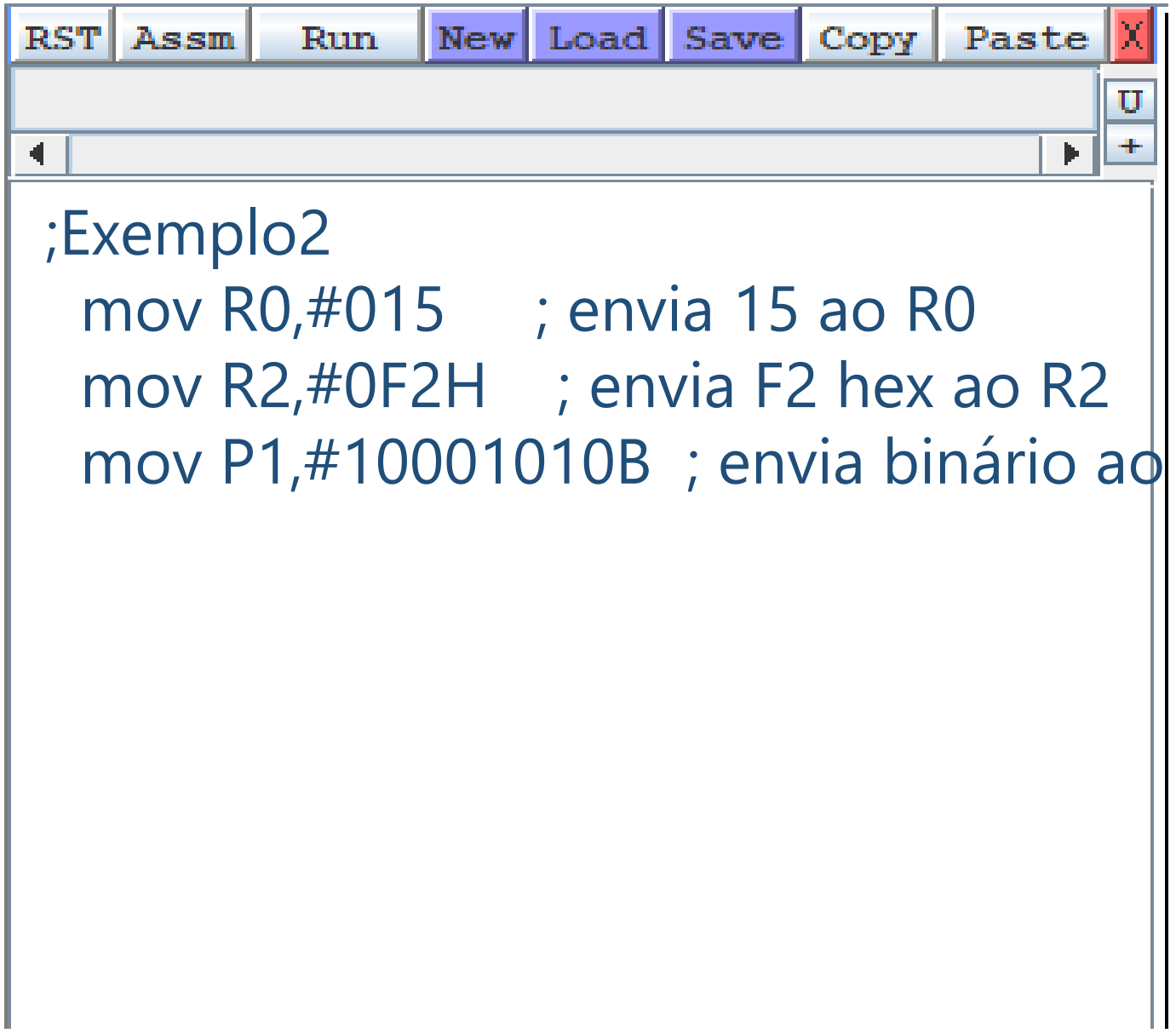
Diagrama Lógico e dinâmico



Exemplos de códigos em Assembly



Exemplos de códigos em Assembly



Atividade

- Testar os programas e promover ajustes dos registradores, portas e valores e observar as variações na memória de dados, memória de programa, dos registradores, portas de I/O e demais componentes.

Te espero na próxima aula!

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