

INSTITUTO FEDERAL
CATARINENSE
Câmpus Luzerna

Microcontroladores Experimental

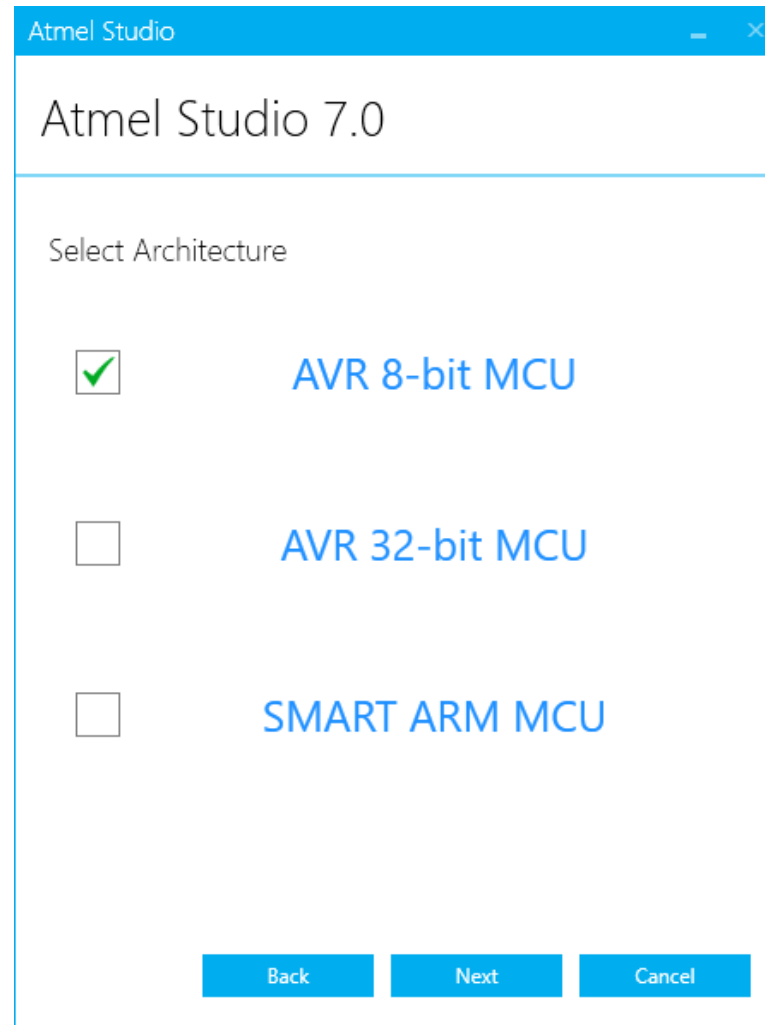
INTRODUÇÃO

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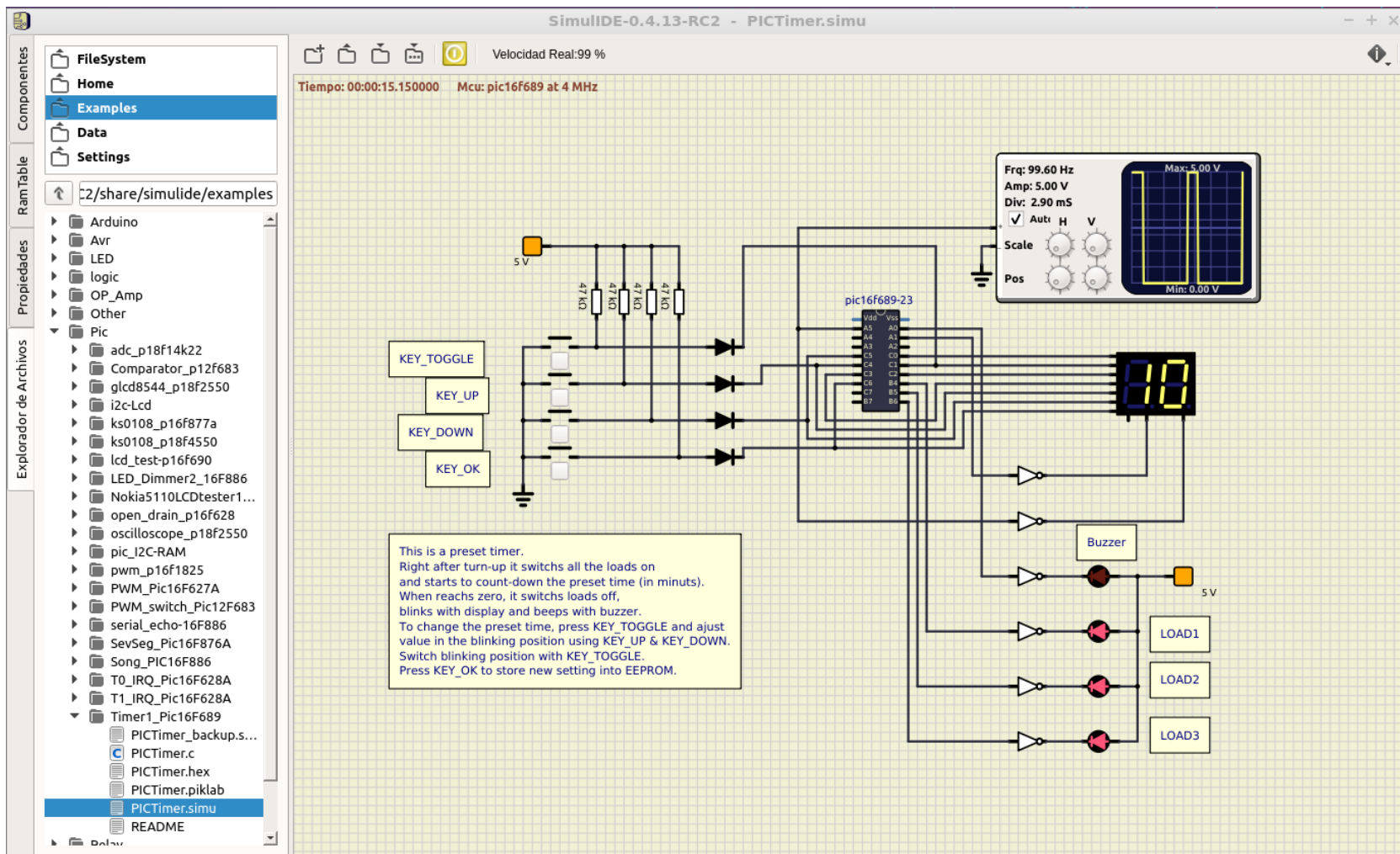
<http://professor.luzerna.ifc.edu.br/ricardo-kerschbaumer/>

Obtenção e instalação do **Microchip Studio**

<https://www.microchip.com/en-us/tools-resources/develop/microchip-studio>



Obtenção e instalação do SimulIDE <https://www.simulide.com/>



Software de gravação

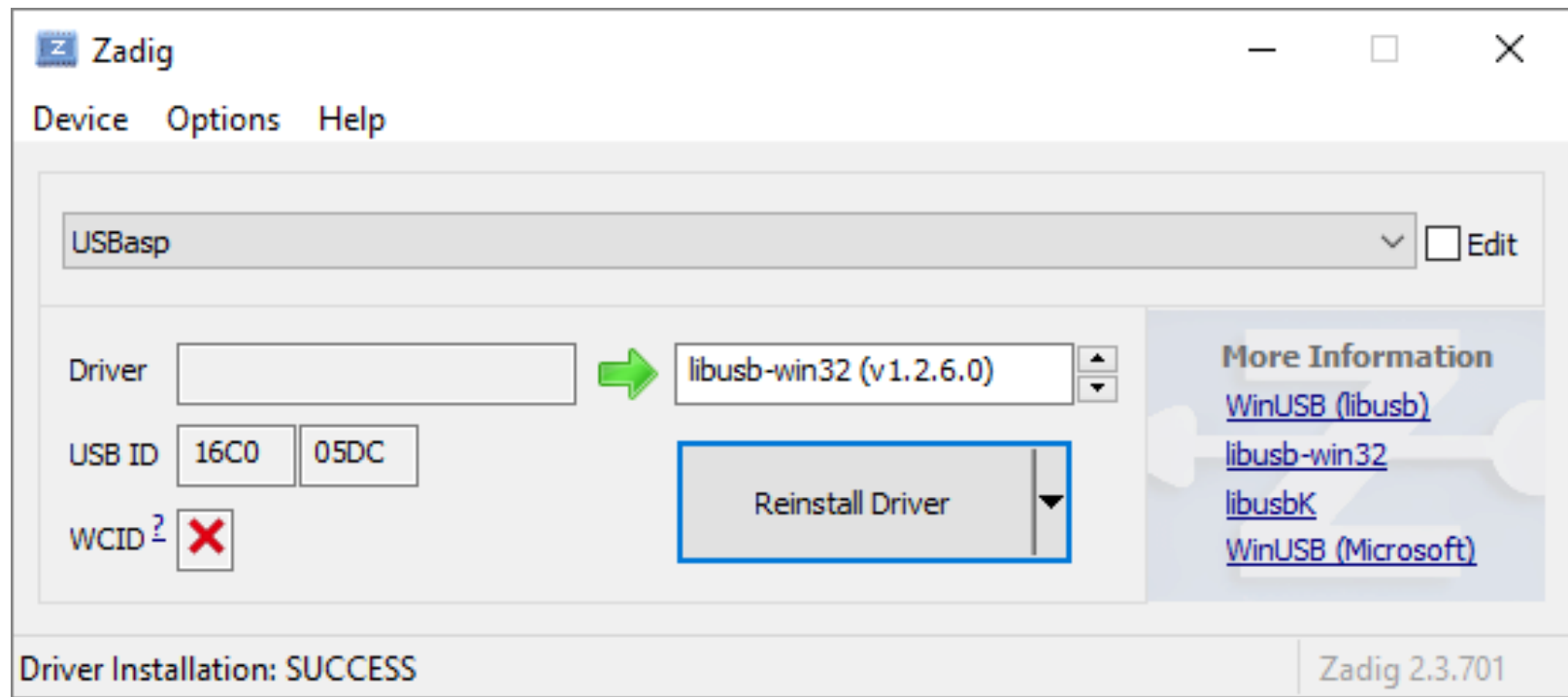
Obtenção e instalação do **AVRDUDESS**

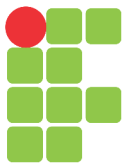
<http://blog.zakkemble.co.uk/avrdudess-a-gui-for-avrdude/>

Obtenção e instalação do driver **USBASP**

<http://www.fischl.de/usbasp/> (Zadig)

Com o gravador conectado

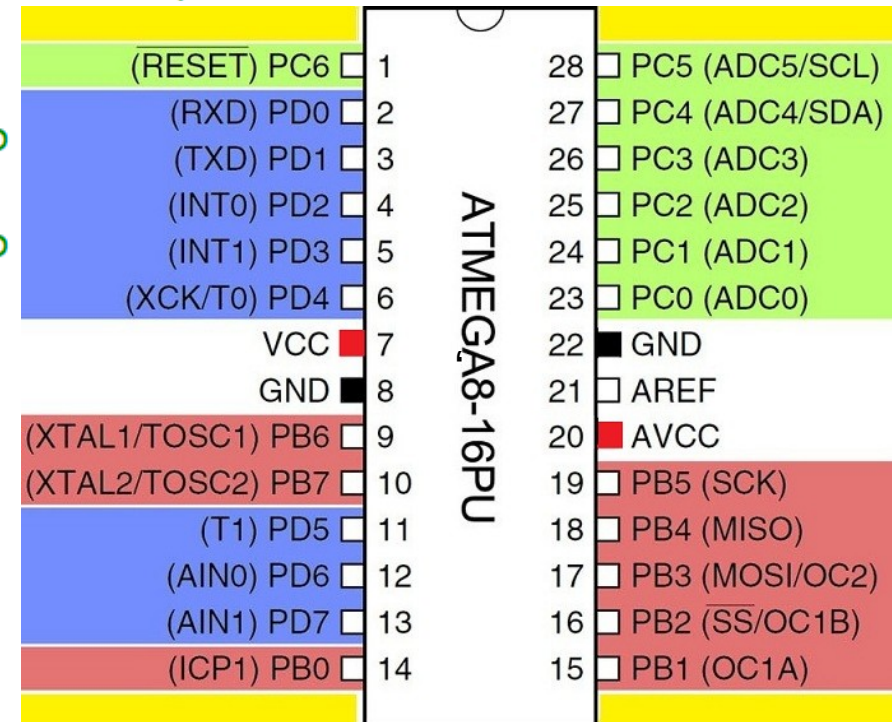


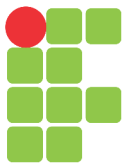


Exemplo

```
#include <avr/io.h>
#define F_CPU 1000000 //define a frequência de clock
#include <util/delay.h>

int main(void)
{
    DDRC = (1<<PC0); // Configura o pino PC0 como saída
    while (1)
    {
        if((PINC&(1<<PC1)) != 0) // verifica o estado do pino PC1
        {
            PORTC|=(1<<PC0); // liga PC0
            _delay_ms(500); //aguarda meio segundo
            PORTC&=~(1<<PC0); //desliga PC0
            _delay_ms(500); //aguarda meio segundo
        }
    }
}
```





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Gravando o Exemplo

AVRDUDESS 2.4 (avrdude version 6.1)

Programmer (-c)
USBasp, http://www.fischl.de/usbasp/

Port (-P) Baud rate (-b) Bit clock (-B)
4 KHz

Flash
D:\Testes\Teste1\Teste1\Debug\Teste1.hex

Write Read Verify Go Format Auto (writing only)

EEPROM

Write Read Verify Go Format Auto (writing only)

Options

Force (-F) Erase flash and EEPROM (-e)
 Disable verify (-V) Do not write (-n)
 Disable flash erase (-D) Verbosity 0

MCU (-p)
ATmega8
Flash: 8 KB
EEPROM: 512 B Detect

Presets
Default Save Delete

Fuses & lock bits
L Read Write
H Set fuses
E [Fuse settings](#)
LB Read Write
 Set lock
Bit selector

Additional settings

Program! Stop Options ?

```
-c usbasp -p m8 -B 187.5 -U flash:w:"D:\Testes\Teste1\Teste1\Debug\Teste1.hex"
```

```
avrdude.exe: input file D:\Testes\Teste1\Teste1\Debug\Teste1.hex auto detected as Intel Hex
avrdude.exe: input file D:\Testes\Teste1\Teste1\Debug\Teste1.hex contains 178 bytes
avrdude.exe: reading on-chip flash data:

Reading | ##### | 100% 1.76s

avrdude.exe: verifying ...
avrdude.exe: 178 bytes of flash verified

avrdude.exe done. Thank you.
```

Ready