

KITAB PARAGI NGAJIEUN DOWNLOADER USB

Sabagian tinu
Elektronika Sesat dan Pengamalannya

BALE OPREKAN TASIK INSTRUMENT - 2008

ku
Awam Kartiwam

**Pupuhu Widang Panalungtikan
Puseur Oprekan Parabot Munggaran
Tasik Instrument**

Hatur nuhun ka :
Barudak open source di sakumna alam dunya ieu
Barudak di www.obdev.at
Baraya mamang www.fischl.de di jerman meureun, bisi we dulur keneh ka Heatler....
Nu nyarieun WinAvr, LibUSB, jeung avrdude
Elmuwan sinting nu istiqomah
Persiden Negara Kesatuan Republik 'Daarul ThePanasDalam'

Sing luhur sakola
Elehkeun si bapa
Bagikeun elmuna
Nu balaga moal boga babaturan

Lamun maneh cicing wae teu kabere
Mun teu kabere mendingan cicing wae

Ieu pagawean ngan saukur keur kaulinan wungkul
Bisi ek dijual atawa dipake ngala duit, pikirkeun heula mangpaatna

**TATA CARA NYIEUN
programmer AVR
make USB**

Sadiakeun heula kaperluan pikeun sarat sah na ieu pangamalan

Saacanna kudu boga heula :

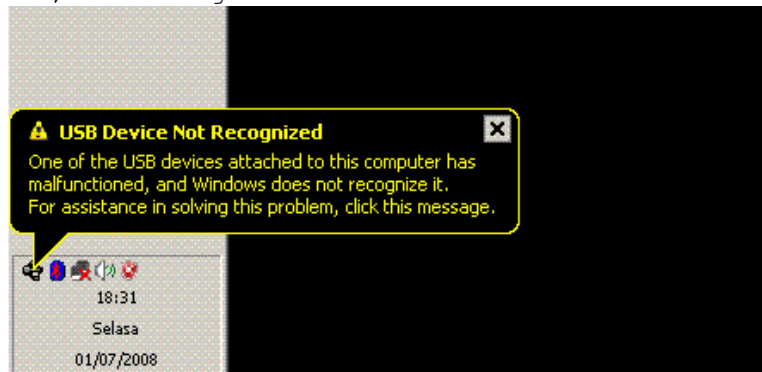
Eagle
Ponyprog
folder_gawean.zip
winzip atawa winrar

SARAT SAH NYIEUN IEU PARABOT AYA DUA PULUH PERKARA

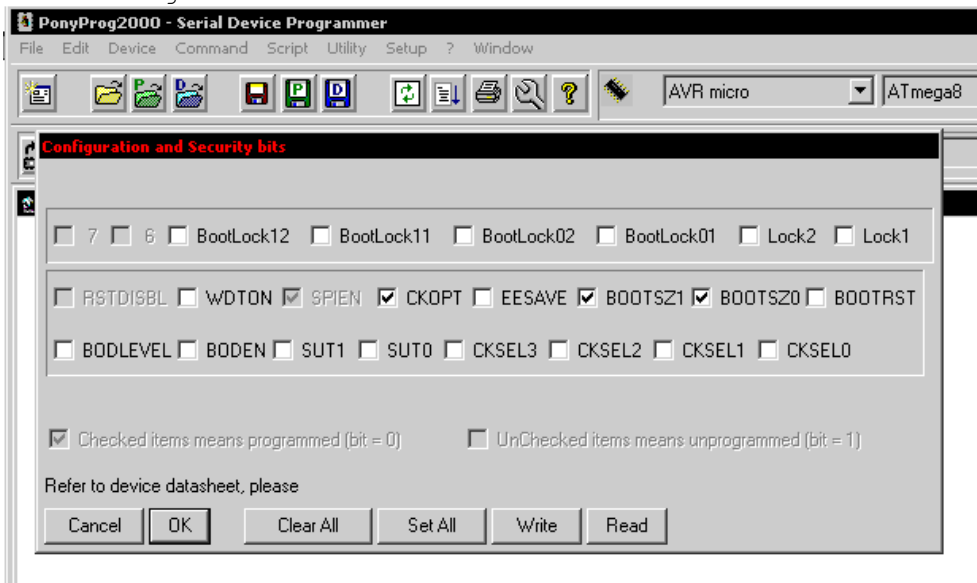
1. Cageur lahir jeung batin, sopwer hadwer
2. Boga niat rek diajar kalayan ikhlas, teu kudu dilafalkeun
3. Bisa sosolderan, pangkat minimal "balad solder"
4. Boga parabot pasolderan atawa mun henteu keukeuh nginjeum!
5. Miboga komputer
6. Aya komputer sejen nu bisa nga-don-lod ieu mikro master (nu aya paralel port-na heula, sarua jeung bohong nya?).
7. Mikaboga PCB, minimal PCB bolong
8. Kagungan IC ATMEGA8
9. Gaduheun AVR nu sejen keur nyobaan, mun bisa minimum sistim
10. Aya kristal 12 MHz
11. Aya kapasitor 20pF nepi ka 30pF
12. Boga konektor USB jeung kabelna
13. Boga soket 14pin 2 siki
14. Boga resistor 10k, 68ohm atawa 100 ohm, 2k2, 560ohm
15. Aya elko 4,7 nepi ka 100 mikro
16. Leuwih hade aya LED 3 siki
17. Pin head singel 40 pin, cacag saperluna
18. Dioda zener 3.3 volt atawa 3.6 volt 2 siki
19. Koleksi program nu kumplit pikeun ngadukung ieu amalan
20. Henteu keur bobogohan kacuali nu geus kawin (nu hayang ?)

SEDENGKEUN RUKUNNA NYAETA

- sadiakeun komputer, hurungkeun (lain diduruk jang)
- setel lagu ThePanasDalam atawa ceramah Kang Ibing
- ekstrak tuluy buka eusi folder nu ti sim kuring
- tempo rangkeyan dinu program igel. File na **RANGKEYAN.SCH**
- jieun rangkeyan di dinya sakumaha kaum pagawey solder, nepi ka imeut
- pariksa deui pagawean, menta pangnempokeun ku pendekar solder
- siapkeun kabel usb na, kahada palihi, minimal Vcc geung GND ulah nepi ka diaradu, cilaka... USB komputer tarohanana....
- Prak geura asupkeun kabel usb na
- Inget , ieu karek nyobaan keneh, MIKRO CAN DIASUPKEUN KANU SOKET !!!! ulah waka.....
- Mun bener, bakal bijil kieu



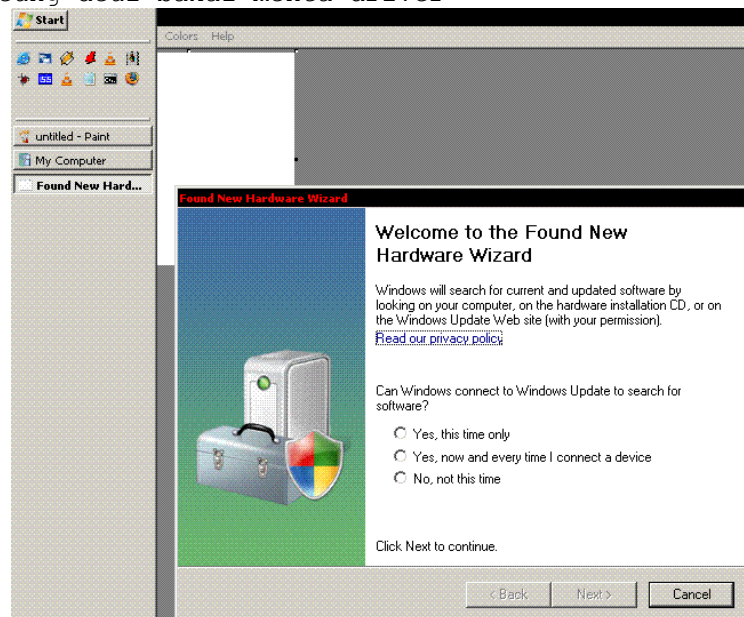
- Tah mun geus aya nu kitu, berarti rangkeyan geus bener, LED power tangtu kudu hurung
- Geus kitu cabut kabel usb na
- Ayeuna tinggal ngadonlod firmware kanu mikro masterna, make poniprogram saperti biasa
- Asupkeun file **USB.HEX**
- Ngan kahade yeuh ngeunaan fuse bit, sabab ieu make kristal eksternal 12 MHz jadi mun make mikro anyar kudu di setting heula
- Yeuh setingan **fuse bit** na



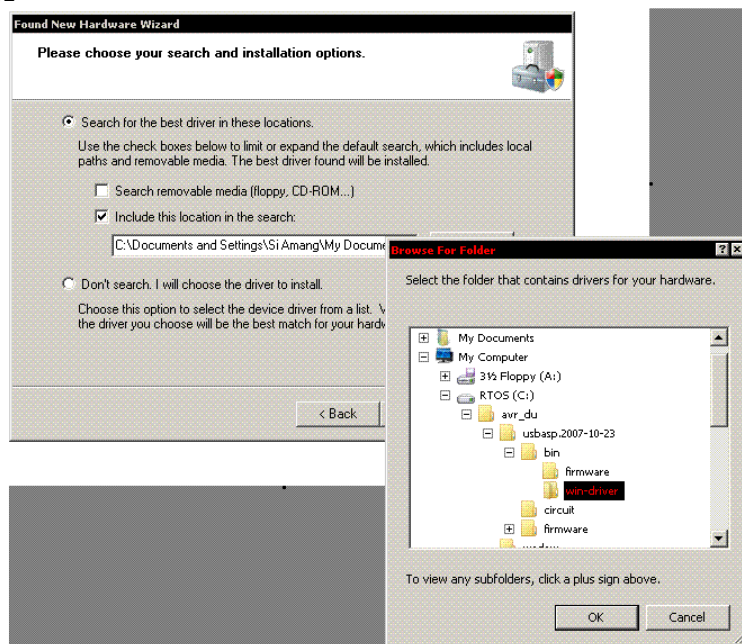
- Tah mun geus beres ngadonlodna, pasangkeun kanu soket, tuluy asupkeun deui kabel usb, mun bener bakal kieu



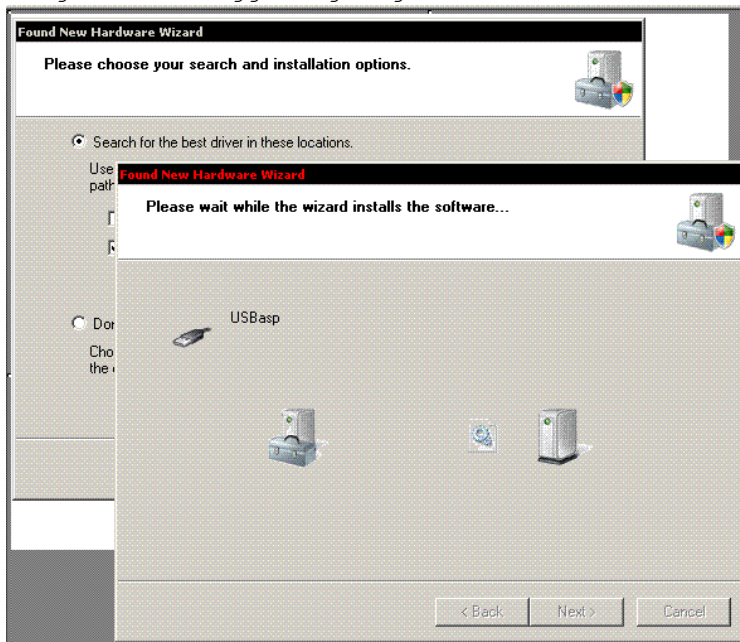
- sakeudeung deui bakal menta driver



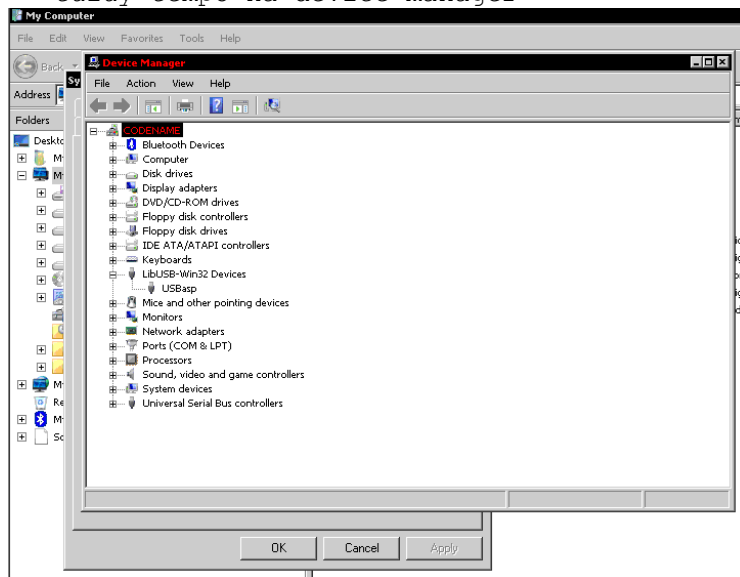
- biasa we kawas nginstal: next next next.....
- Tah tunjukeun kanu folder pamere kuring, folder_gawean\win-driver



- geus we tinggal ngadagoan finish

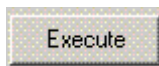
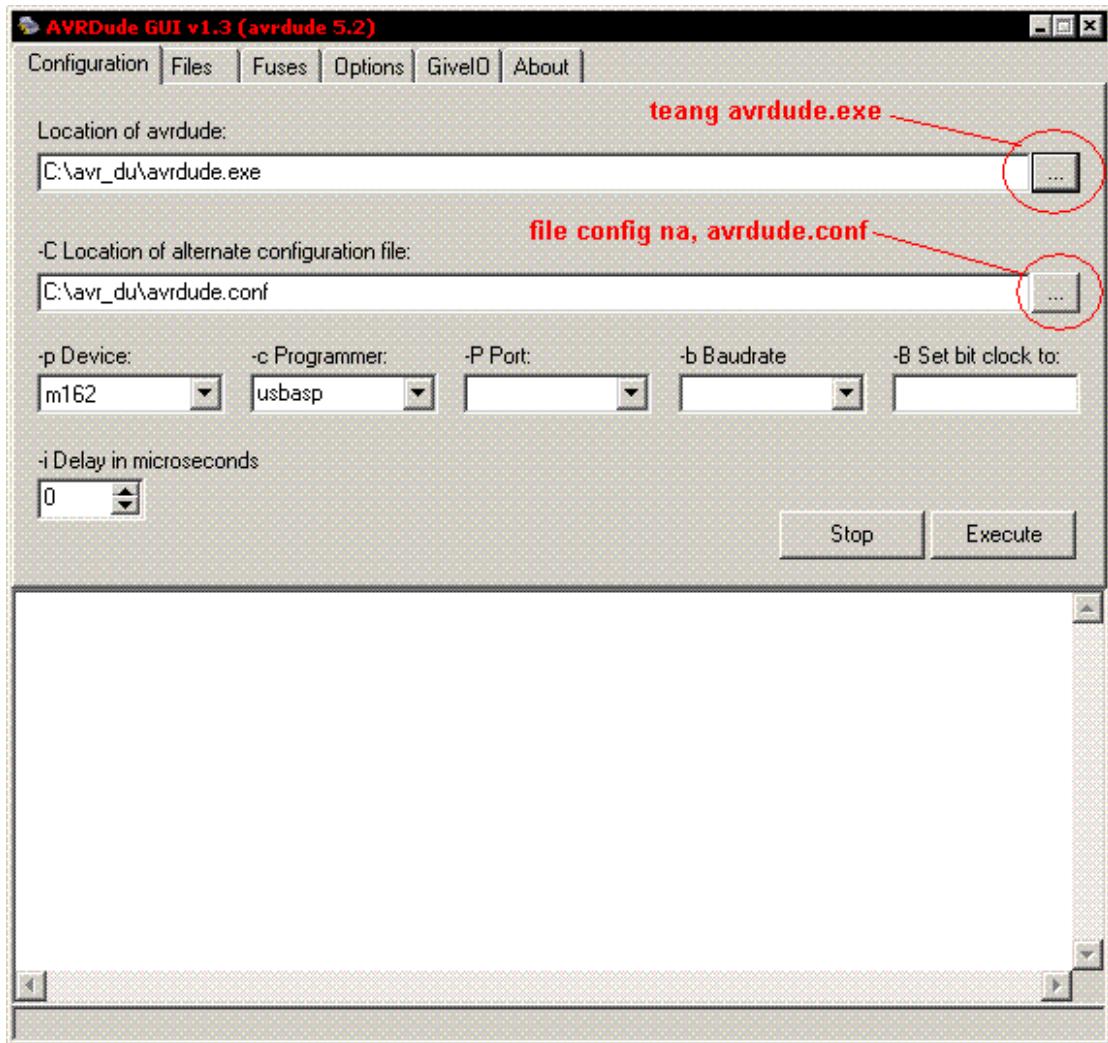


- mun geus finish, cabut kabel usb na
- pareuman heula the panas dalam na, Kang Ibing na sina reureuh heula
- saenggeus jempling, asupkeun deui kabel USB
- tah bakal disada jiga urang ngasupkeun flash disk
- tuluy tempo na device manager



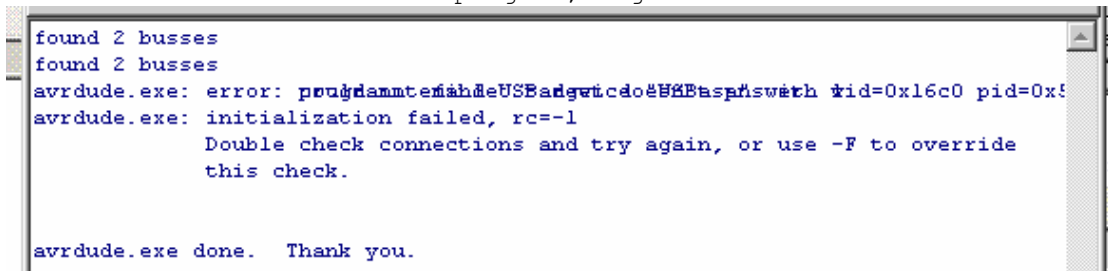
- tangtu bakal aya **LIBUSB USBasp**, berarti alat geus jadi
- Ayeuna tinggal nyobaan
- Tempo LED, power jeung nu hiji deui, standby / suspend hurung, aya hiji nu pareum, tah nu pareum ieu (busy) tandana keur mikir mun hurung
- Ayeuna buka program **USBheheh.EXE**

- Kieu cenah



- ayeuna cobaan pencet Execute

- mun euweuh mikro nu ek diprogram, bijil kawas kieu :

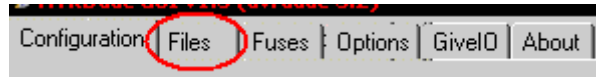


- mun ieu mah error, mikro na teu waras atawa rangkeyan salah

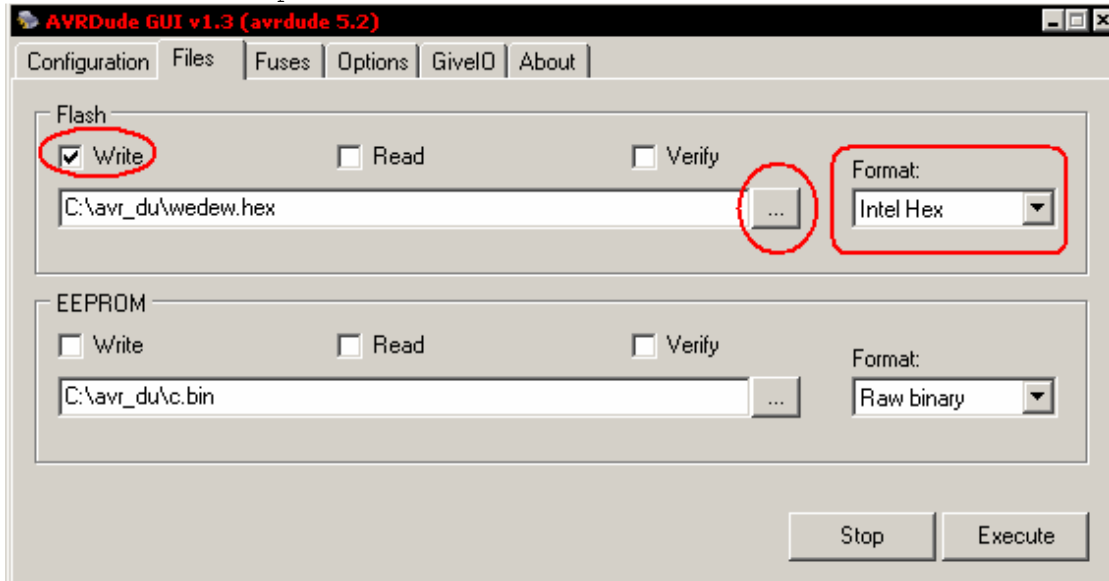


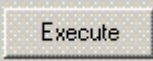
- mun waras, asupkeun target mikro nu ek diprogram

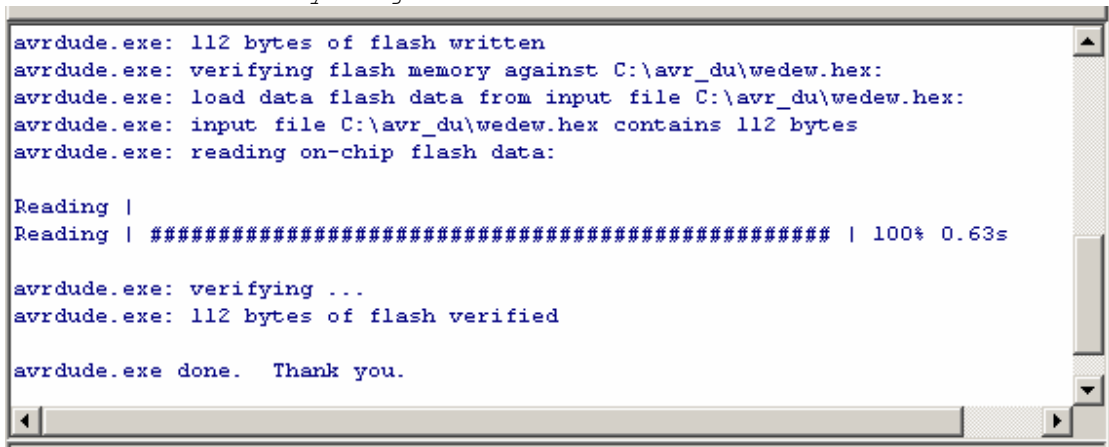
- tempo TAB Files



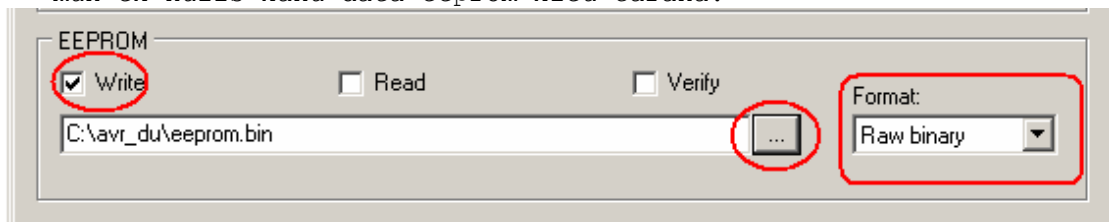
- di dinya aya lokasi file nu ek ditulis atawa keur bacaeun kanu flash atawa eeprom data



- geus ditangtukeun file mana nu ek dituliskeun kanu mikro, tinggal pencet  wae
- kahade type format file kudu cocok, atawa di autodetect keun
- mun sukses kieu yeuh jadina.....:



- mun ek nulis kanu data eeprom kieu carana:



- mun bisaeun, kieu jadina:

```

avrdude.exe: 31 bytes of eeprom written
avrdude.exe: verifying eeprom memory against C:\avr_du\eeeprom.bin:
avrdude.exe: load data eeprom data from input file C:\avr_du\eeeprom.bin:
avrdude.exe: input file C:\avr_du\eeeprom.bin contains 31 bytes
avrdude.exe: reading on-chip eeprom data:

Reading |
Reading | ##### | 100% 0.18s

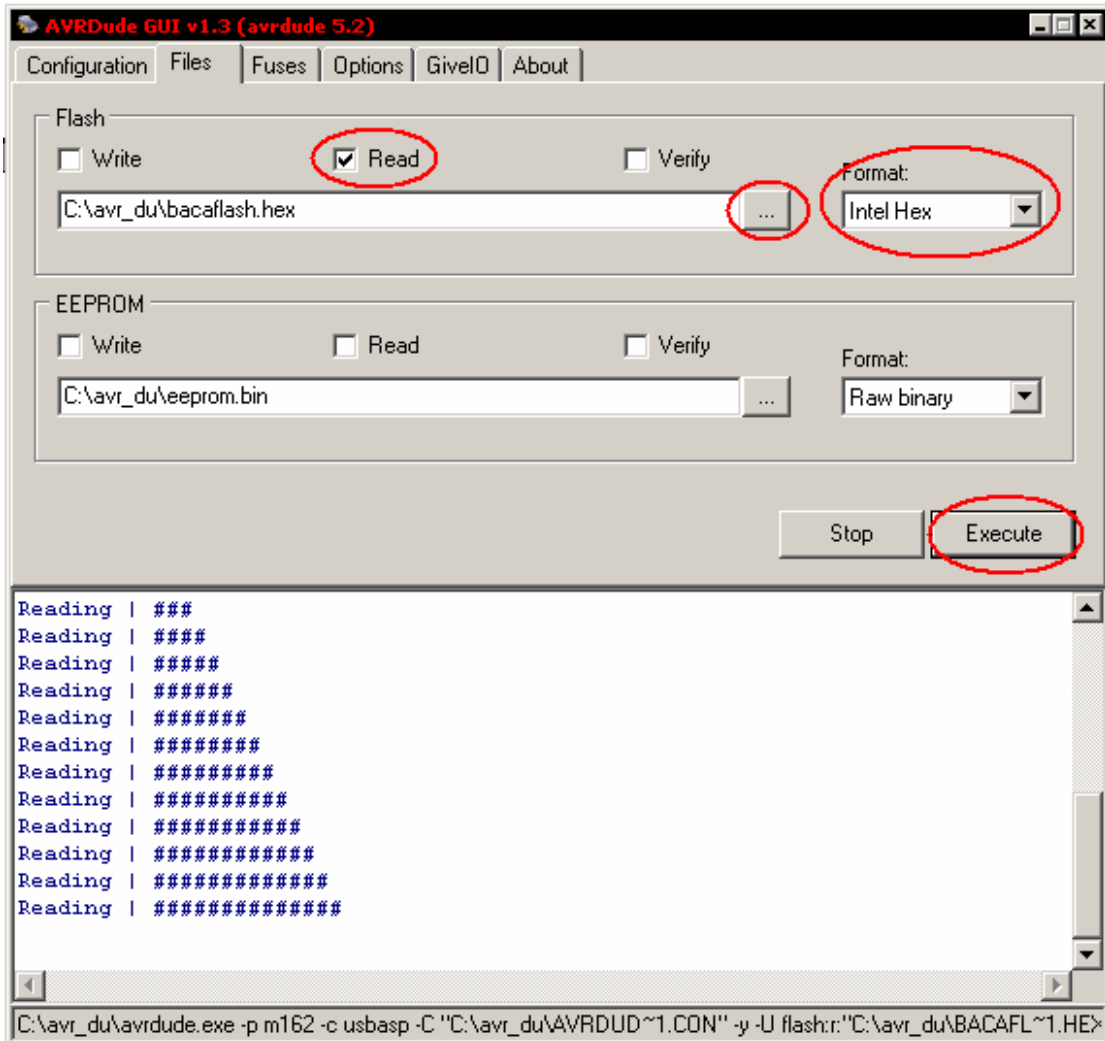
avrdude.exe: verifying ...
avrdude.exe: 31 bytes of eeprom verified

avrdude.exe done. Thank you.

C:\avr_du\avrdude.exe -p m162 -c usbasp -C "C:\avr_du\AVRDUD~1.CON" -y -U eeprom:w:"C:\avr_du\eeeprom.bin"

```

- mun ek maca, jieun heula file anyar, nu kosong. Pas dinu folder gawean, klik katuhu, new - text file, jieun file anyar misal program.txt, ganti txt ku .hex, ieu jadi file kosong. Engkena jadi target tulisen tinu mikro kana ieu file
- conto urang jieun heula file "kosong" bacaflash.hex jeung bacaeeprom.bin



- memang **rada lila** mun maca mah da di baca sakabehna

- mun enggeus kieu:

```
Reading | #####
Reading | #####
Reading | #####
Reading | #####
Reading | #####
Reading | #####
Reading | #####
Reading | #####
Reading | ##### | 100% 92.69s

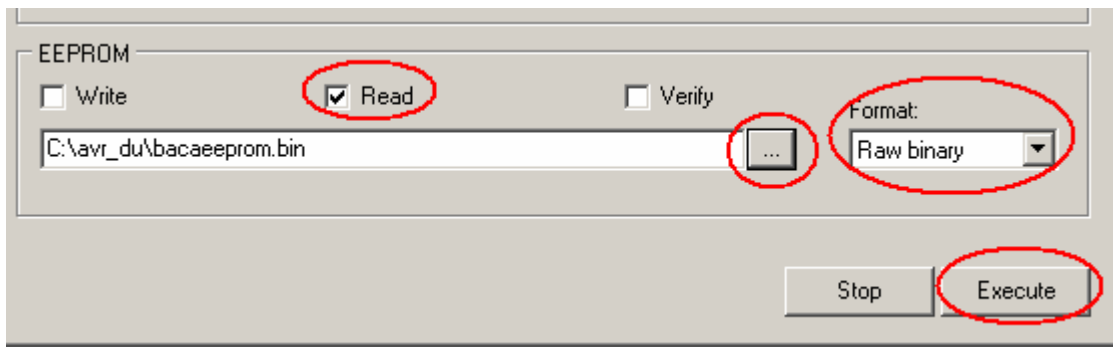
avrdude.exe: writing output file "C:\avr_du\BACAFL~1.HEX"

avrdude.exe done. Thank you.

C:\avr_du\avrdude.exe -p m162 -c usbasp -C "C:\avr_du\AVRDUD~1.CON" -y -U flash:r:"C:\avr_du\BACAFL~1.HEX"
```

- tah hasil bacaan diteundeun dinu **bacaflash.hex**

- ayeuna nyobaan maca tinu EEPROM, hasilna kanu **bacaeeprom.bin**



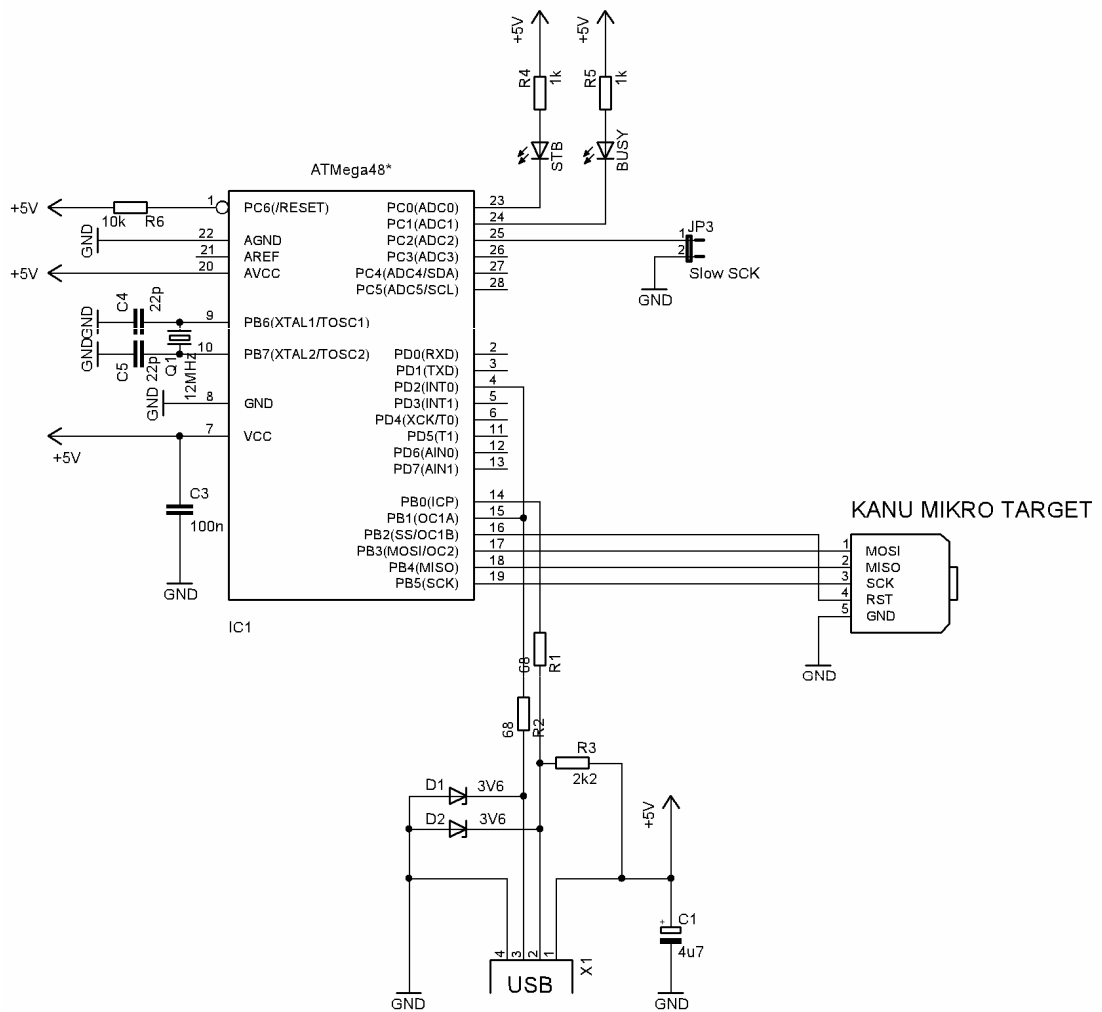
- kahade, maun aya pesen error kawas kieu :

```
found 2 busses
found 2 busses
avrdude.exe: error: poubdamntemahdeUSBadgwtcdo@HKBasp#sweth wid=0x16c0 pid=0x!
avrdude.exe: initialization failed, rc=-1
Double check connections and try again, or use -F to override
this check.

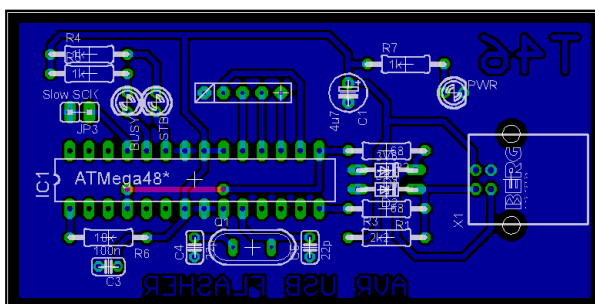
avrdude.exe done. Thank you.
```

- cek jumper di pin PORT C2, sim kuring parantos nyobian nganggo jumper tapi teu guna keur mikro nu klok / kristalna kurang gancang, jadi leuwih hade lamun ieu pin di GROUND keun wae

Rangkaian



PCB



leuwih hade diteang dinu file igel na

Kuliah mah lain keur jadi sarjana
Sabab mun sarjana diadukeun jeung maung,
kuring nyekel maung
sok sanajan maung teu sakola

Hidup PERSIB !!!

Leuwih hade lamun dijieun deui keur mrogram mikro nu sejen
Contona seri MCS51, PIC, atawa kagok edan jadikeun programmer universal nepi ka bisa kanu EEPROM
sagala rupa, teu ngan saukur make serial programming wae, tapi make cara paralel

Alhamdulillah beres,
mugi ieu ilmu sing mangpaat dunya aherat