Tools installation:

The needed tools are (Tools Chain, IDE, and Flashing Tool).

Tool chain: Preprocessor, Compiler, assembler, linker.
IDE: Source code editor, build automation tools, debugger.
Flashing tool: used to transfer exe files to serial port(USB) to the hardware circuit.

Tool-Chain:
WinAVR Tool

- Arr-gcc as a compiler(customized version from GCC compiler)
- Avr-gdb as a debugger
- Avr-dude as a flashing tool

Run: WinAVR-20100220-install.exe
For windows 8. 10 users only: copy and replace file"**msys-1.0.dll**"
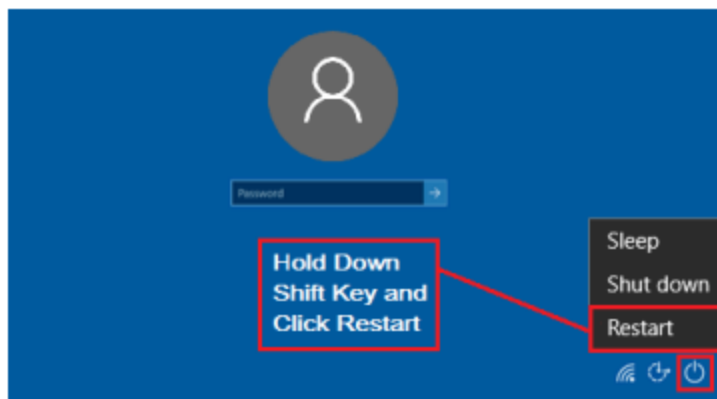 to the path "*c:->WinAVR-20100110->utils->bin*"

IDE:

- Installing Eclipse, we need to install java runtime environment (**JRE**) first.
- Opening Eclipse, it's portable.
- We need to adapt Eclipse to work with **ATMEGA32**, for that we add AVR plugin to it.
  Help->Install new software->Add->Archive-> AVR_Plugin-2.4.2.zip
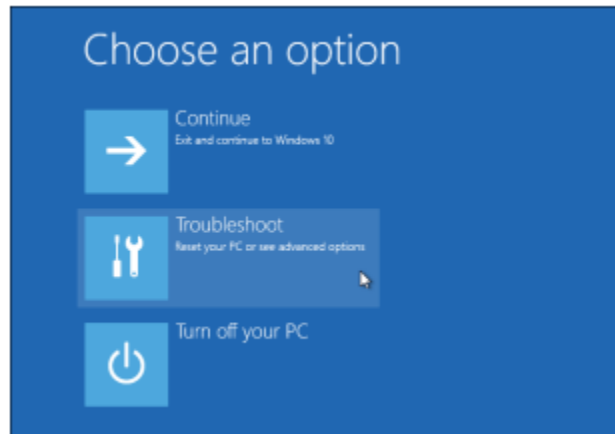
USBasp Driver:
It's a hardware tool used to flash the software to **ATMEGA32**.
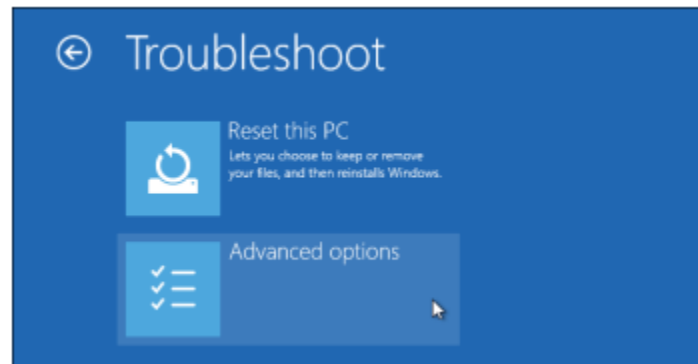For windows 8. 10 users only do the following:

- Before installing the driver, we need to disable the "**Driver Signature Check**" feature first.
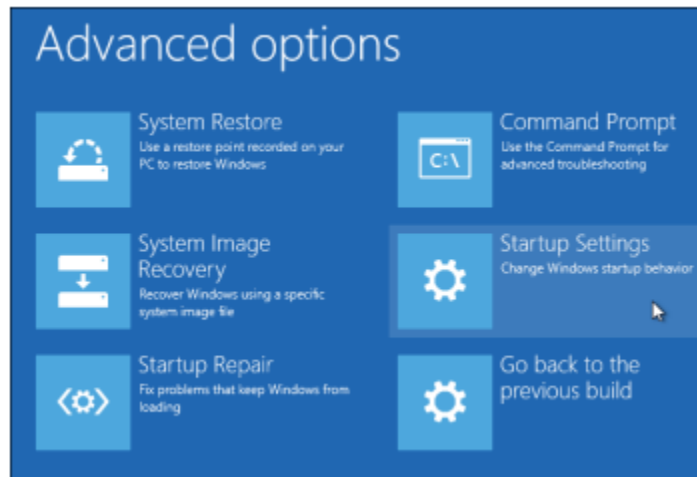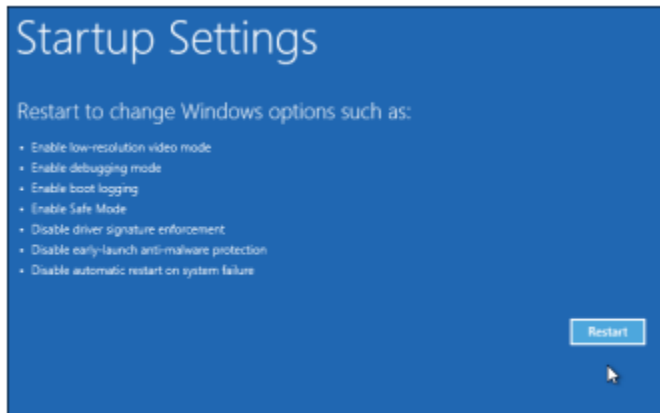- Hold down the shift key while click restart option in windows

- Select "Troubleshoot"

- Select "Advanced options"
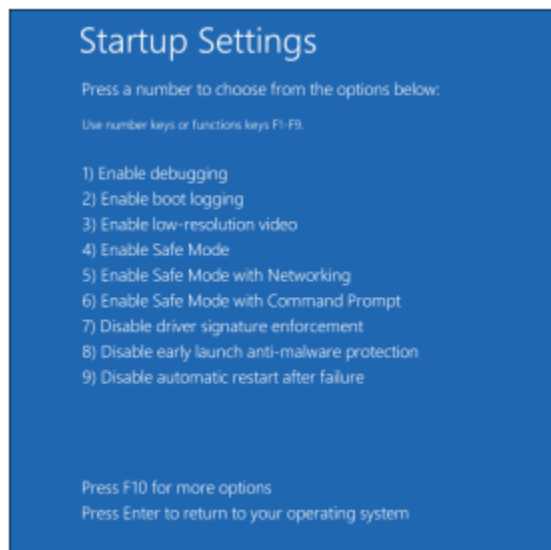

- Click "Startup Settings"

- Click "Restart"

- Type 7, or F7 to choose our option after restart

For all users now open **Device Manager** , You shall find the **USBasp** now click **Update,**
brows computer for the driver "**usbasp-windriver.2011-05-28**", then click install anyway.