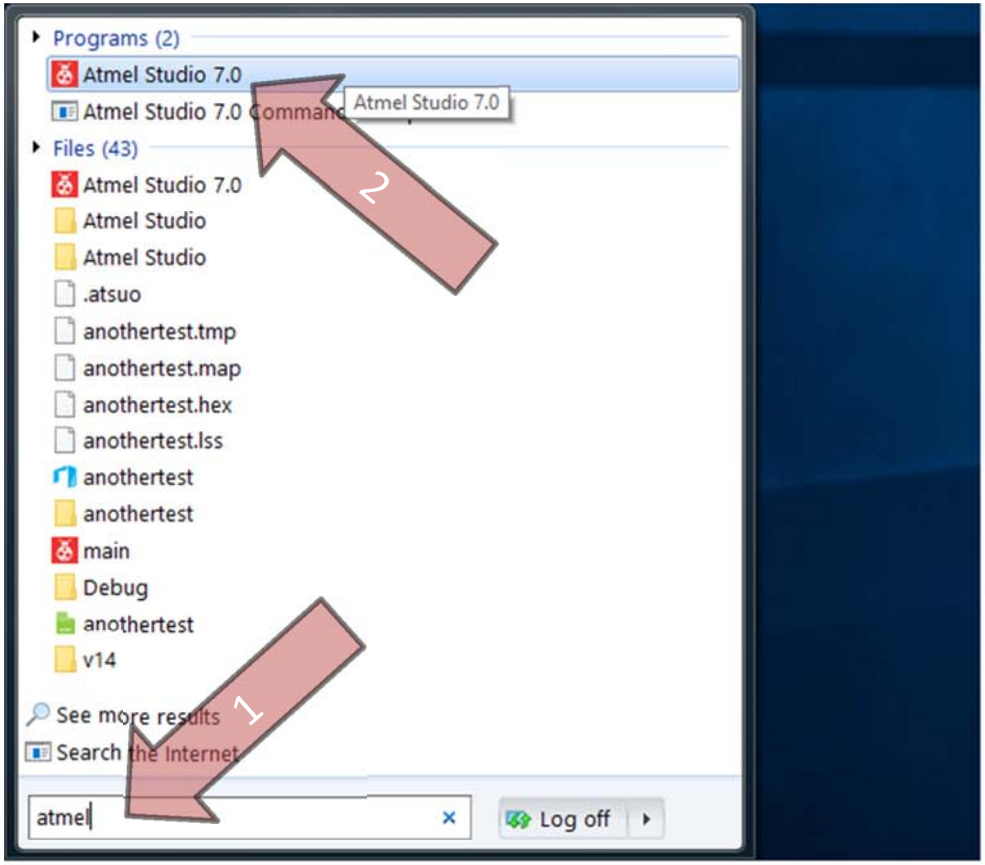
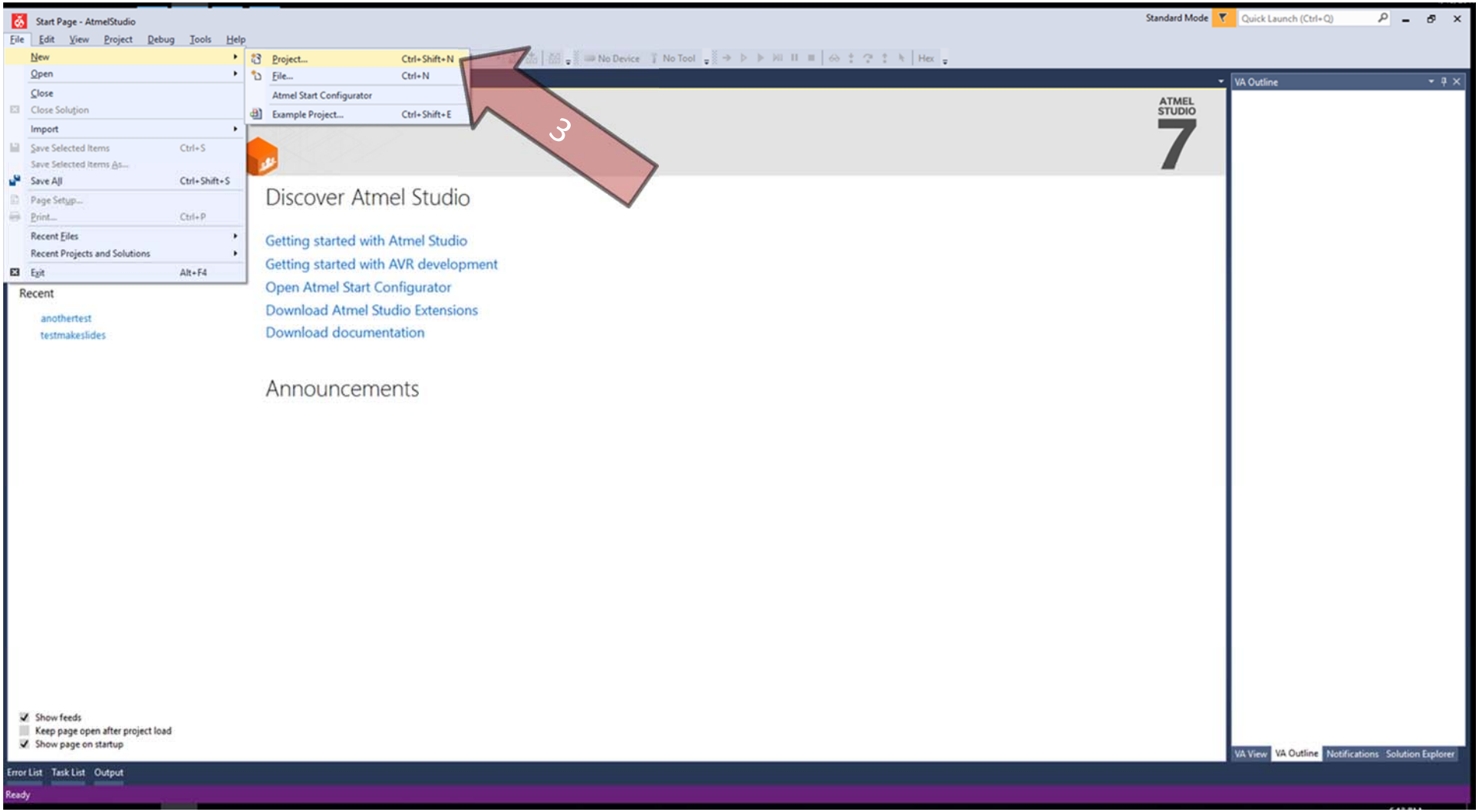
Building Projects and Device Programming using Atmel Studio 7

V5.0

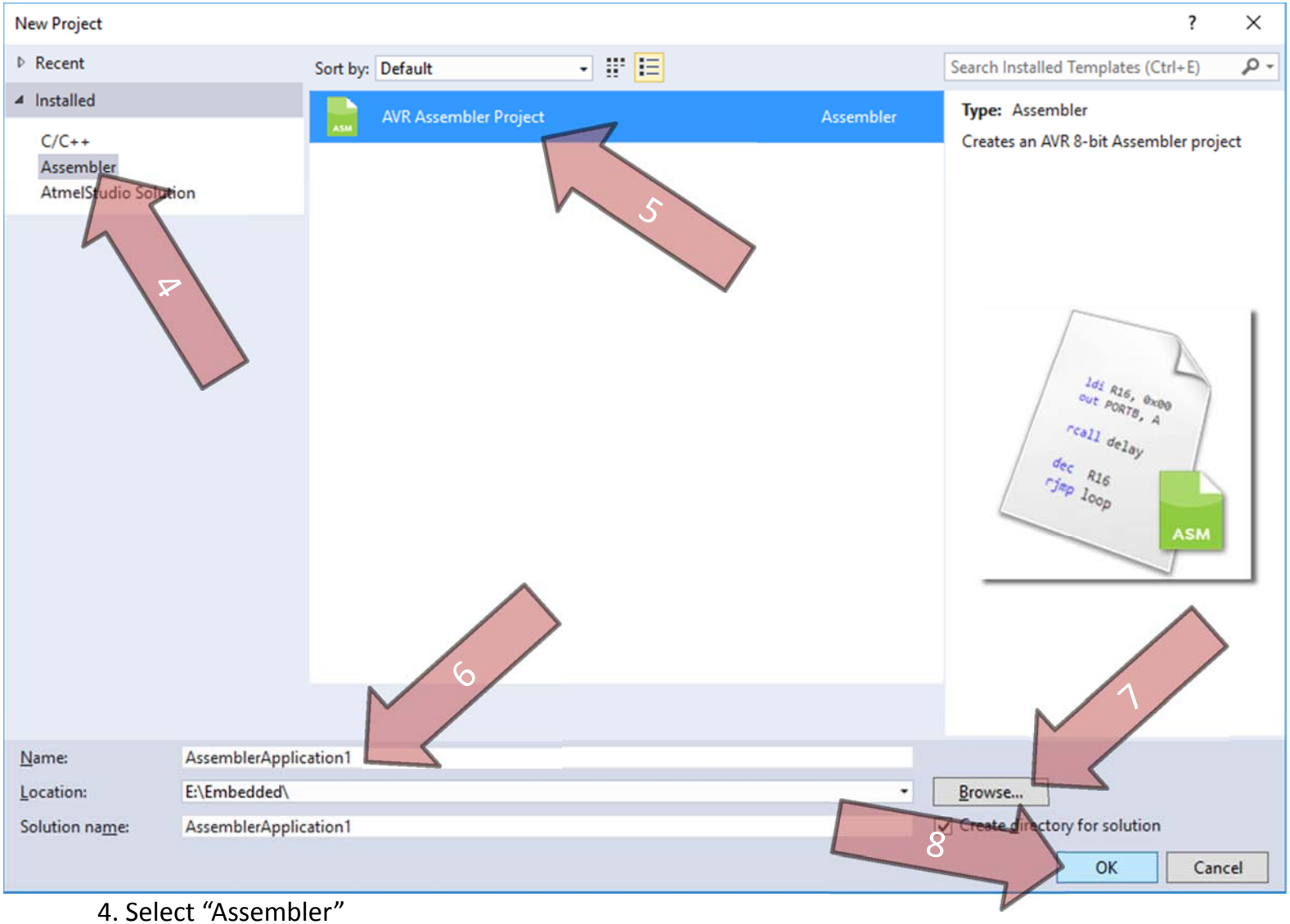
Embedded Systems



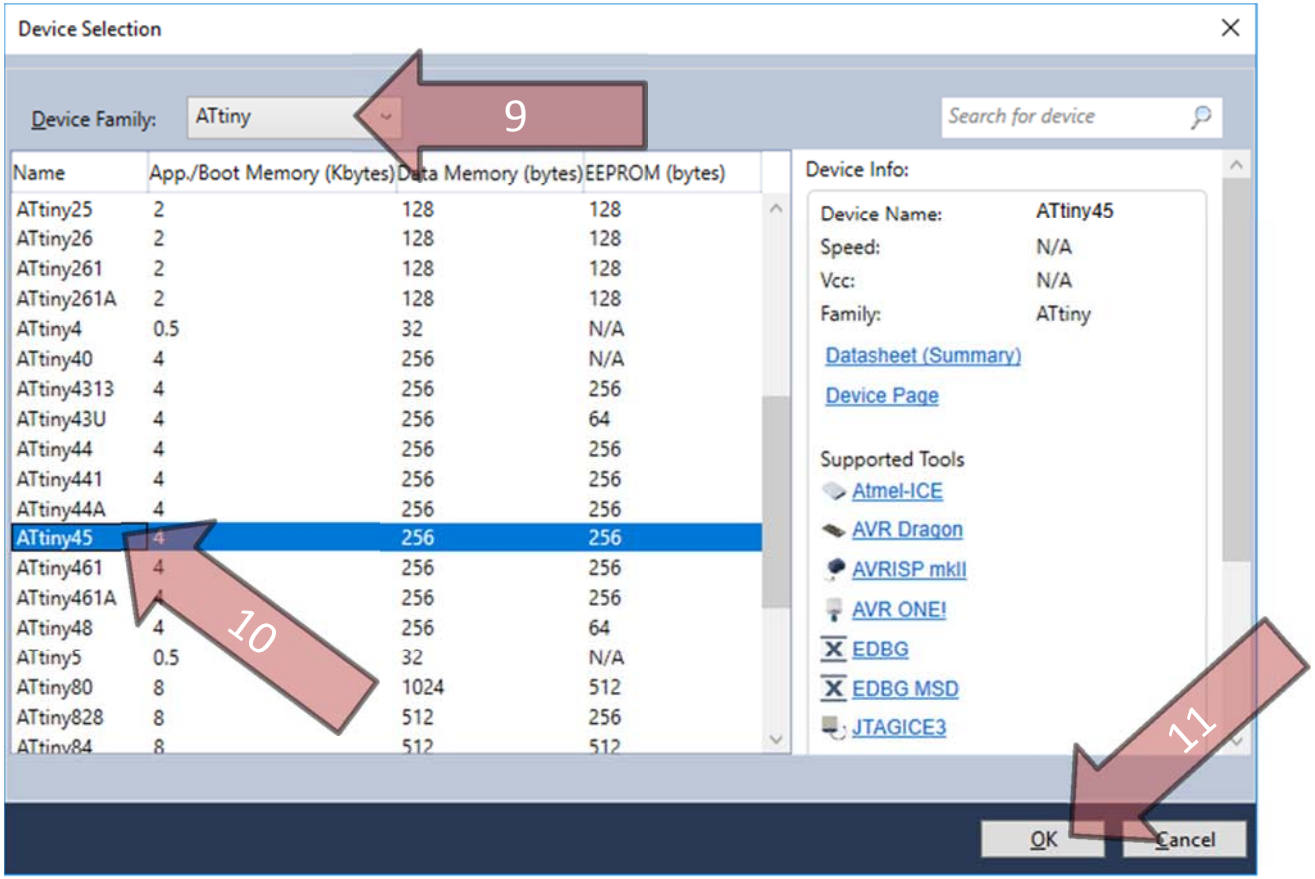
1. Search for Atmel in the start menu
2. Locate Atmel Studio 7.0 and open it



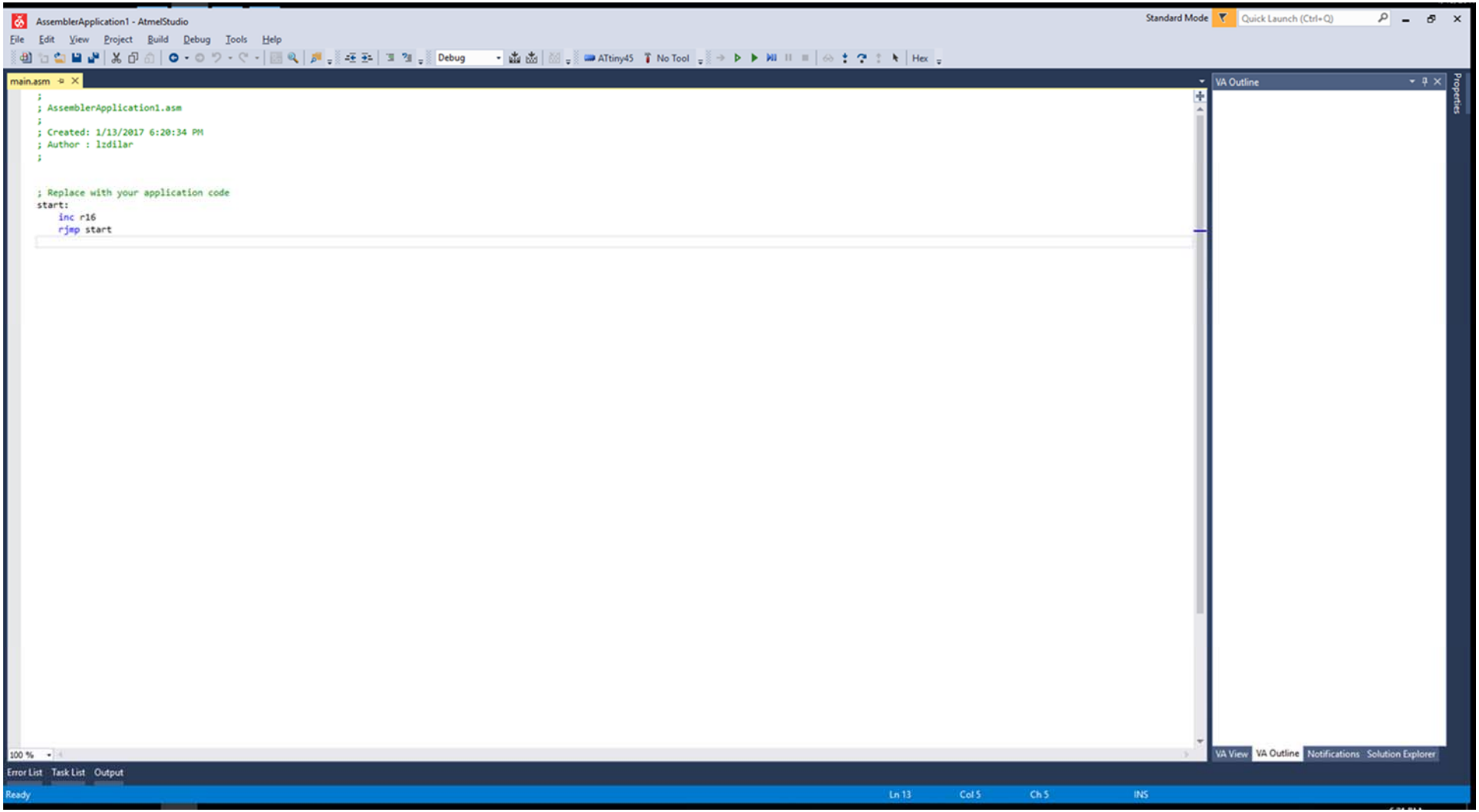
3. When the program opens, navigate to “File” -> “New” -> “Project…” and click it



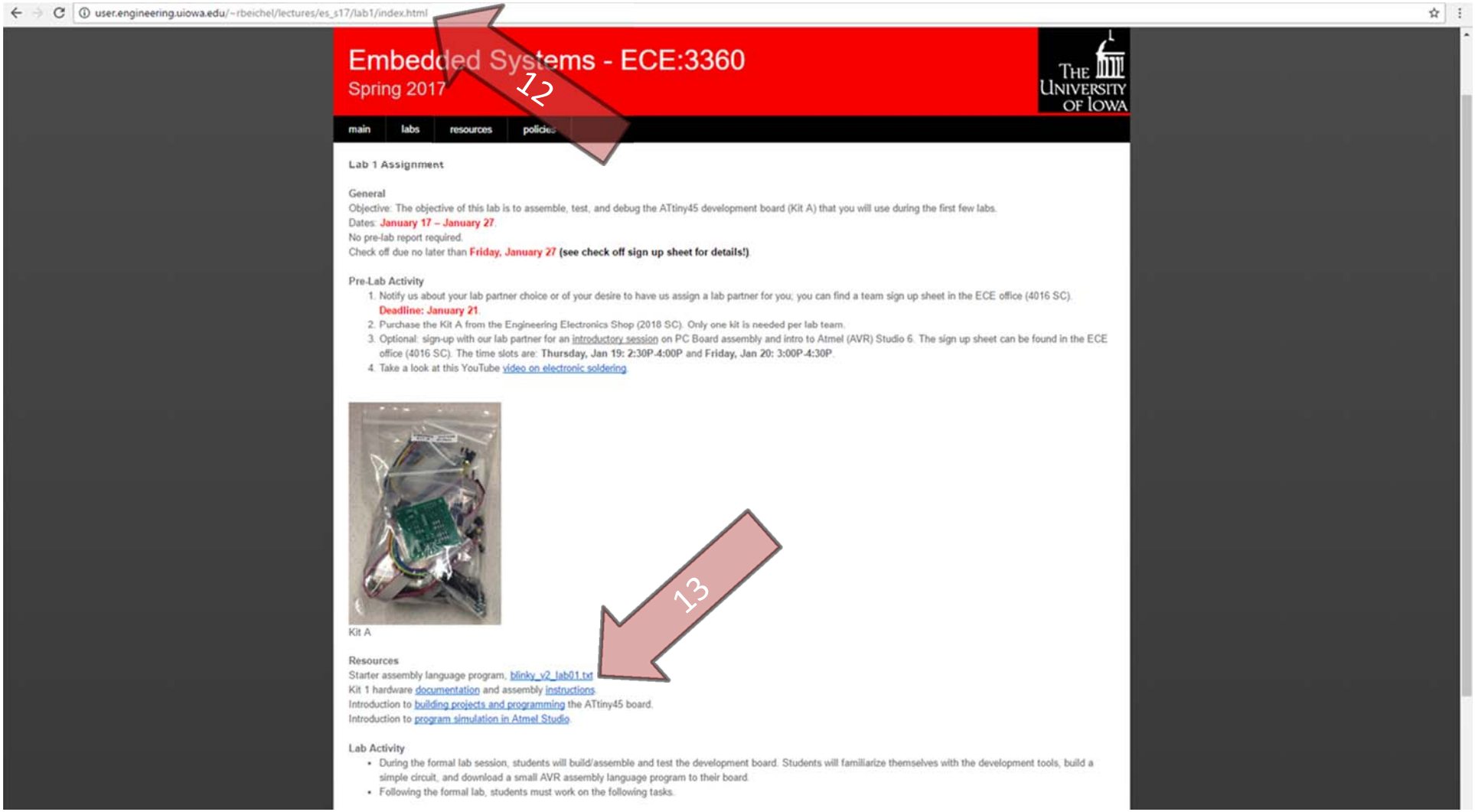
4. Select “Assembler”
5. Select “AVR Assembler Project”
6. Name the Project
7. Select the save location
8. Click “OK”



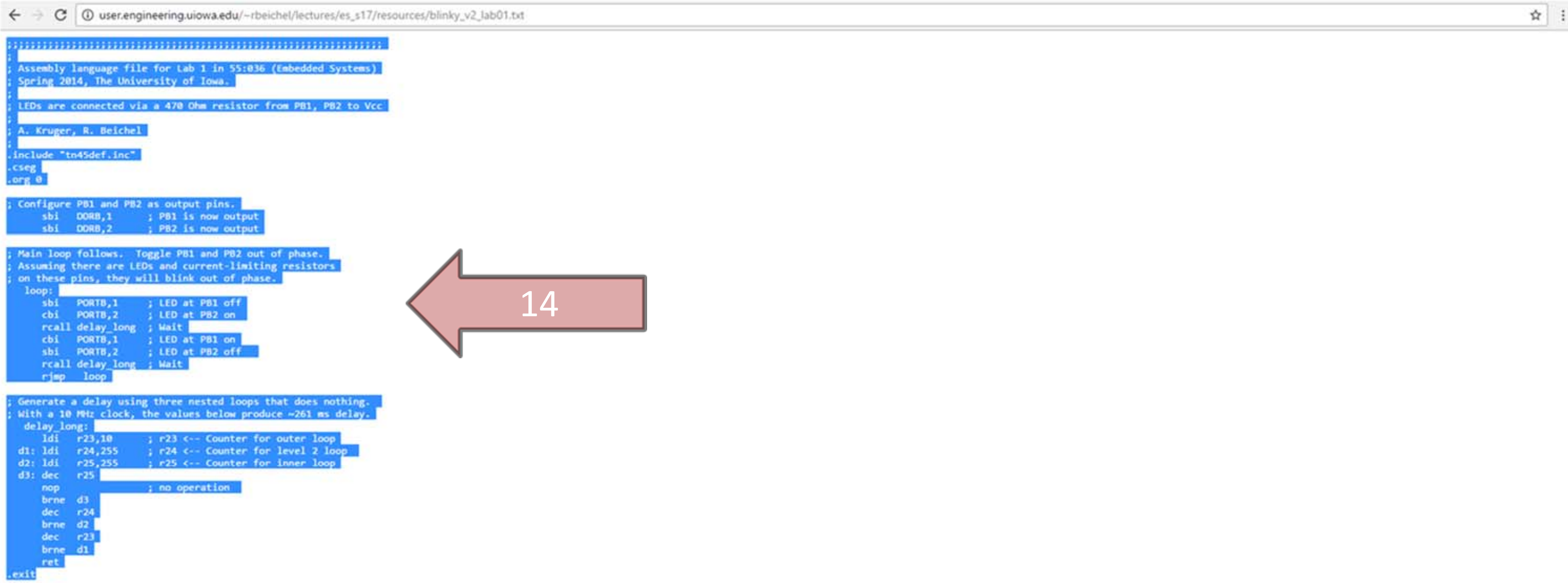
9. Select “ATtiny” from the drop down
10. Select “ATtiny45” from the list
11. Click “OK”



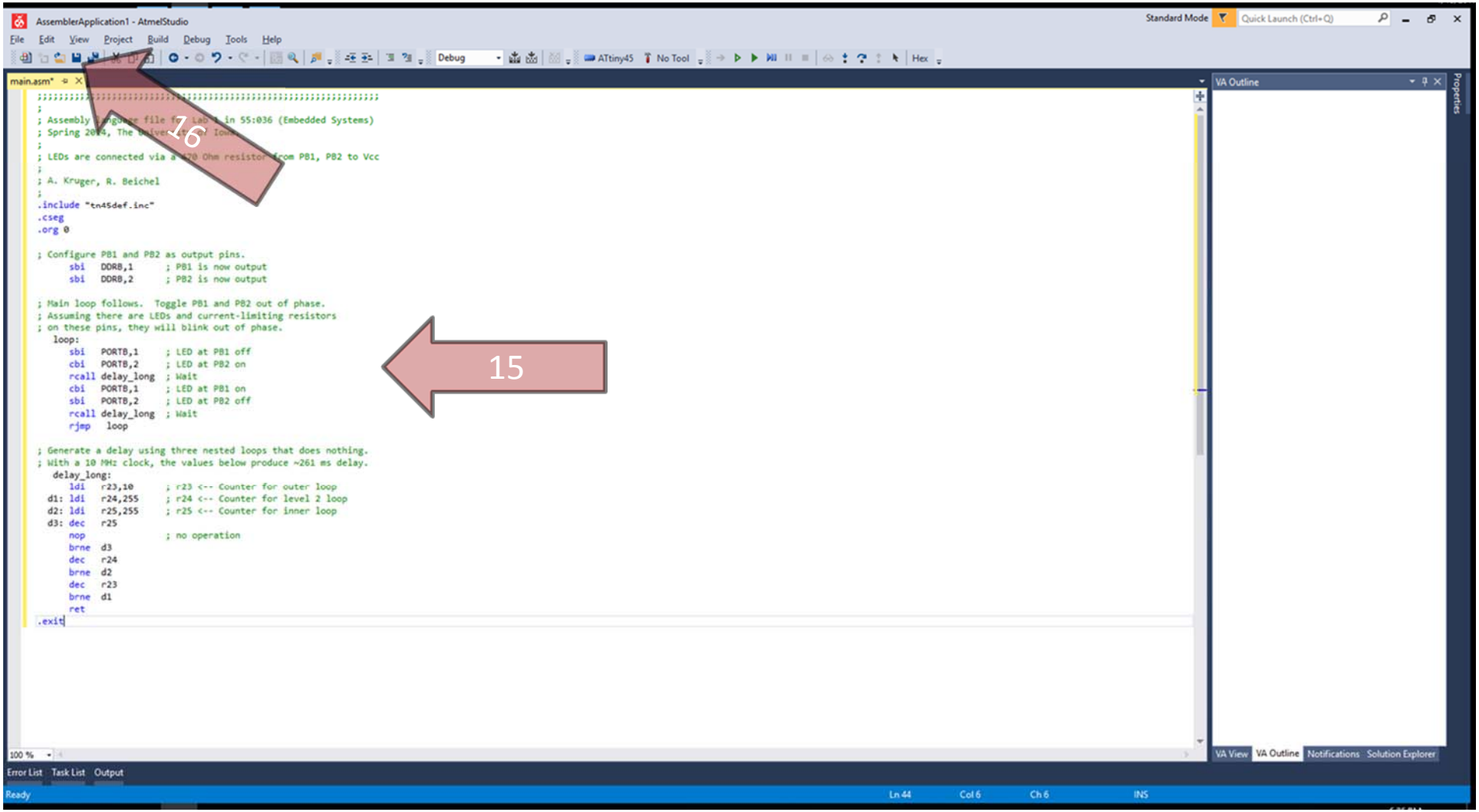
The main.asm file should appear with some default code



12. Navigate to the class website for Lab 1
13. Click on the blinky.txt

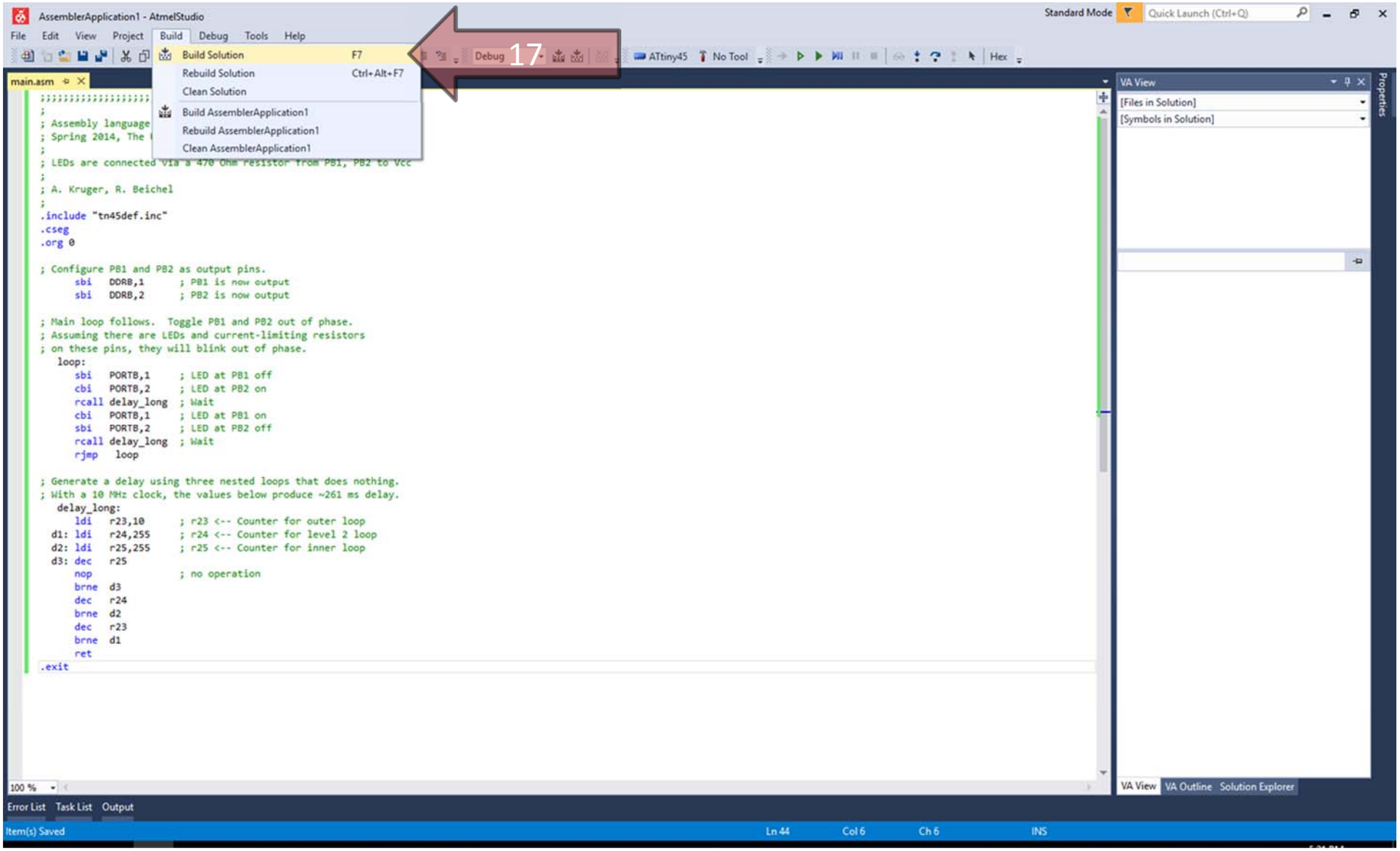


14. Copy all of the code

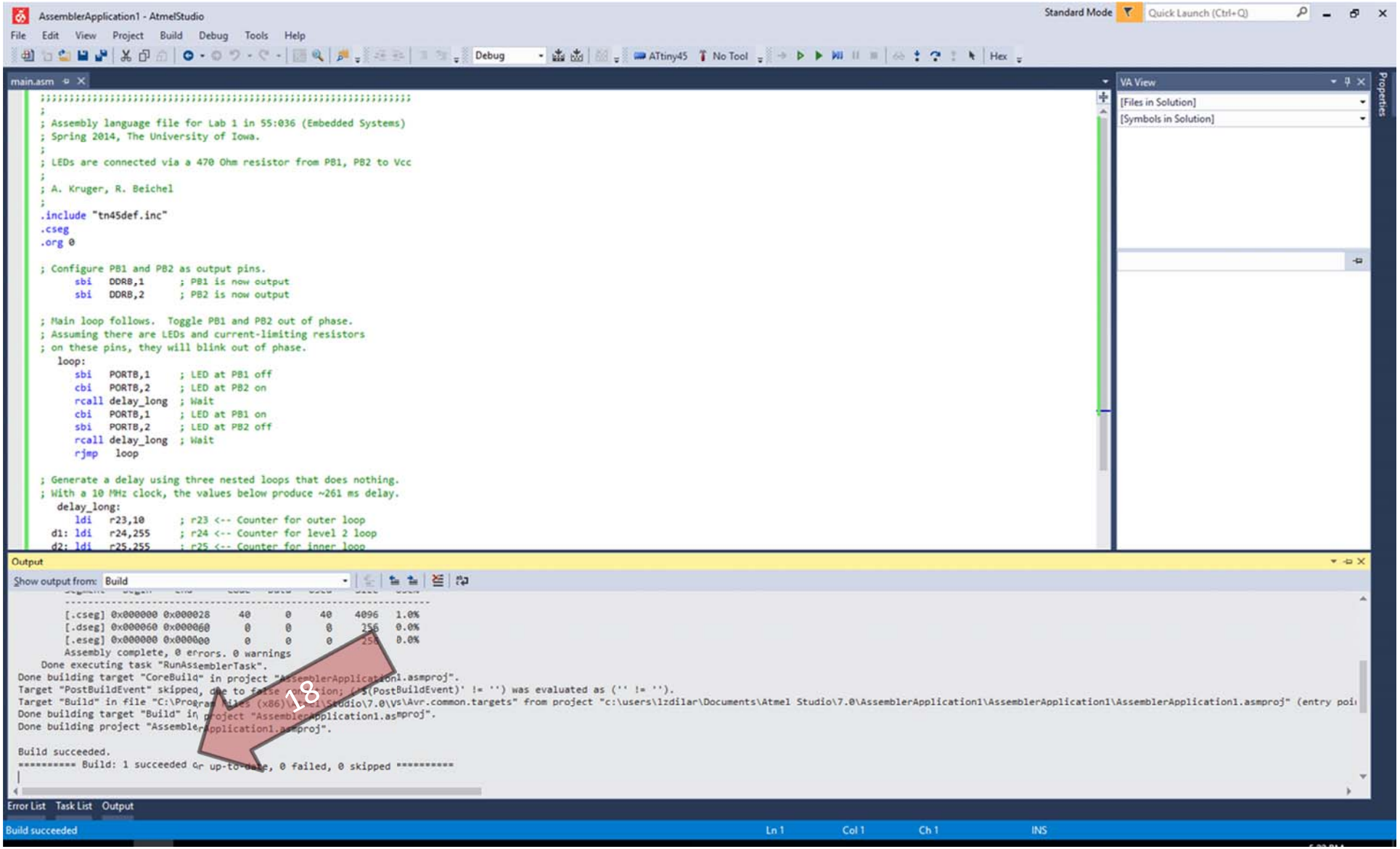


15. Paste the code into main.asm

16. Save main.asm

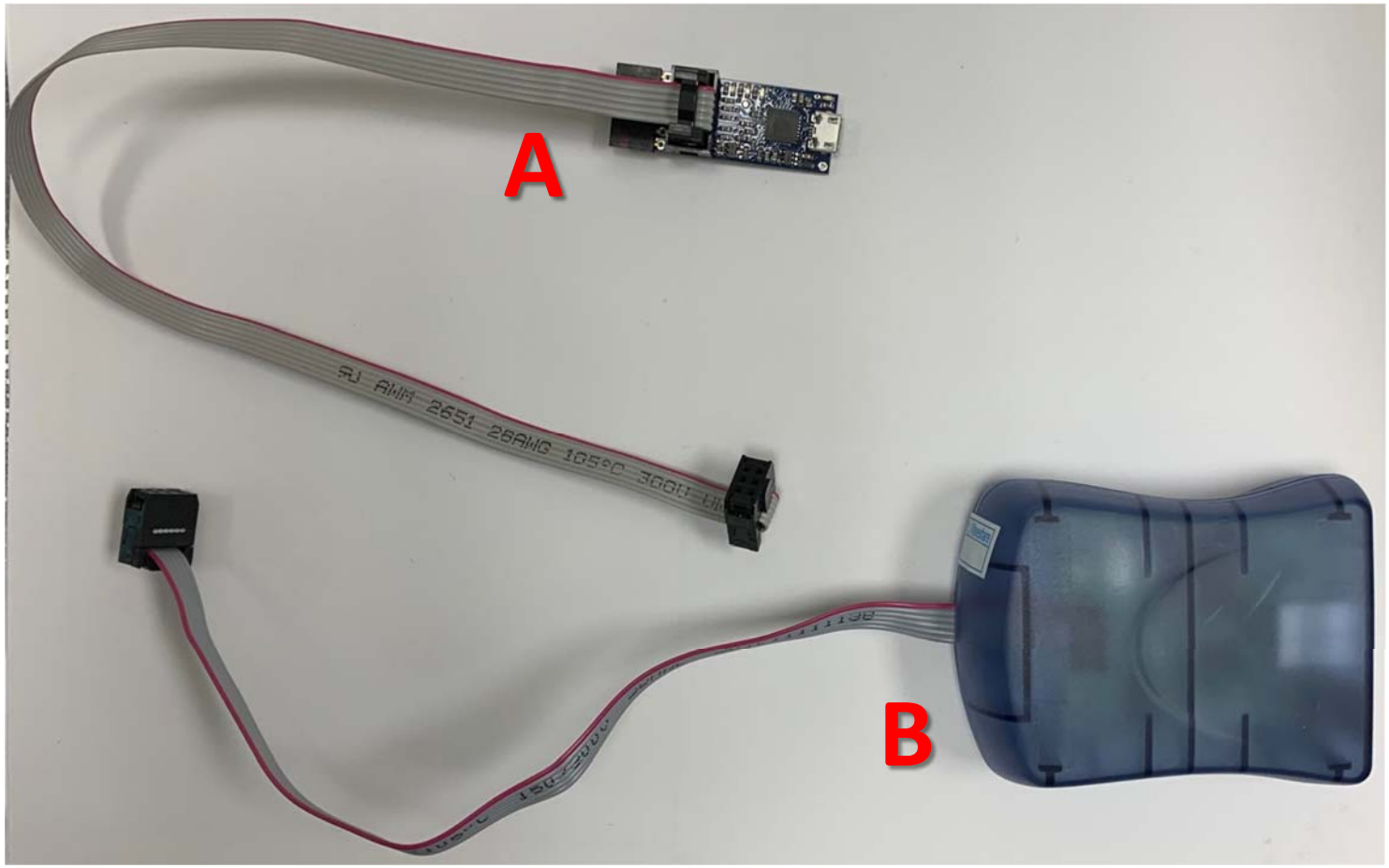


17. Navigate to “Build” -> “Build Solution” and click it



18. Wait for the build to complete

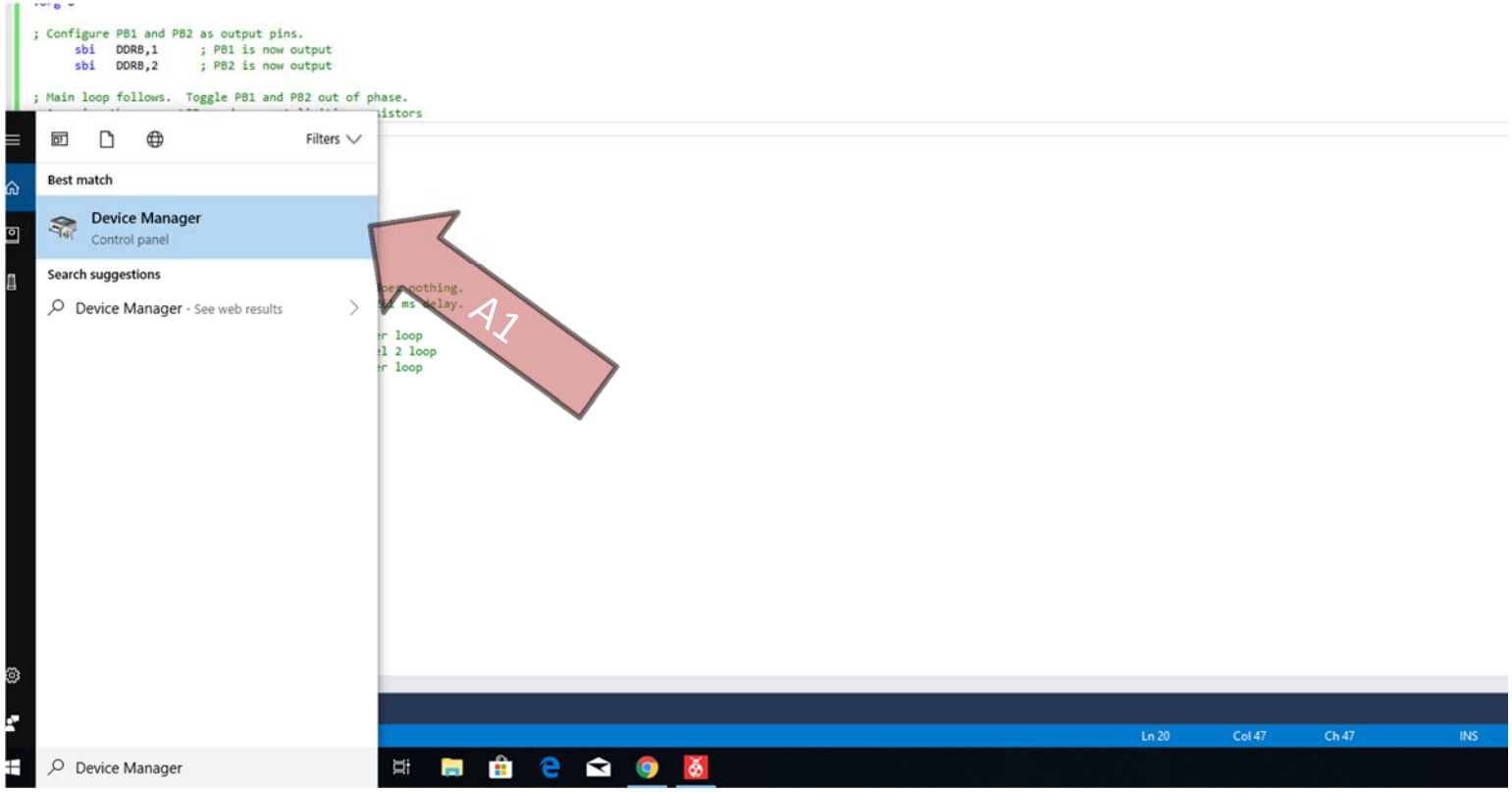
AVR ISP: Two Options



Option A – Pololu ISP: Follow A1-A6, then proceed to Step 19

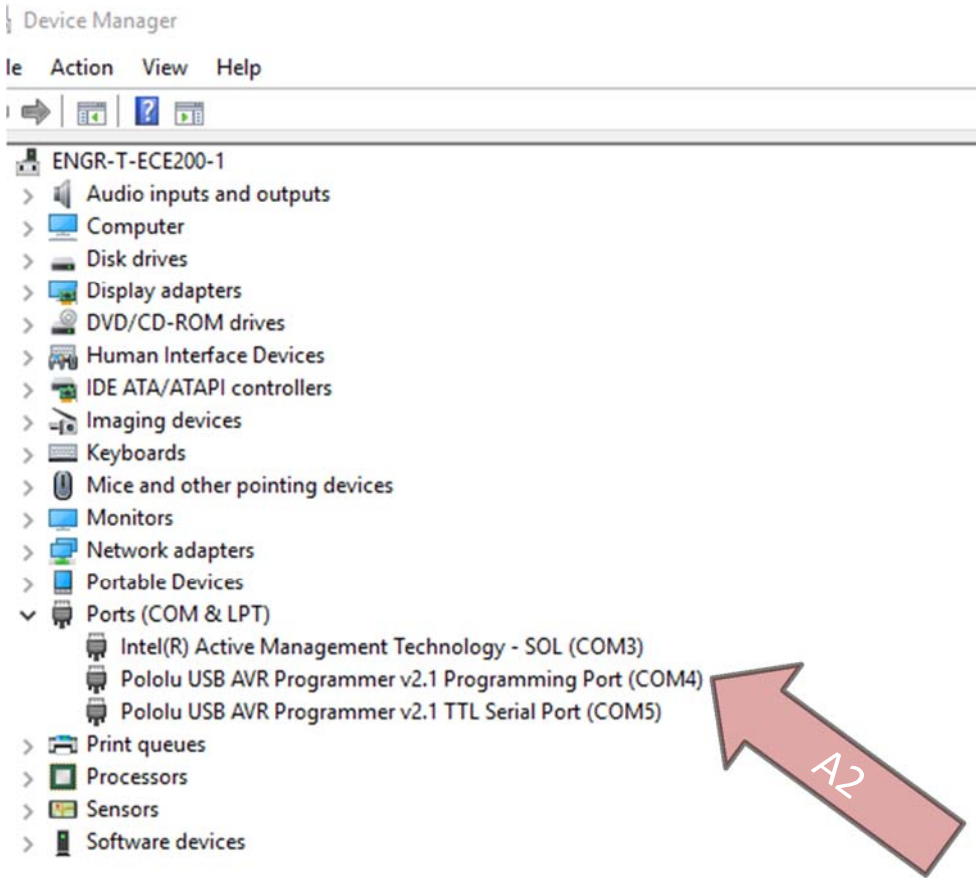
Option B – AVRISP : Go directly to Step 19

Option A: Pololu USB AVR Programmer



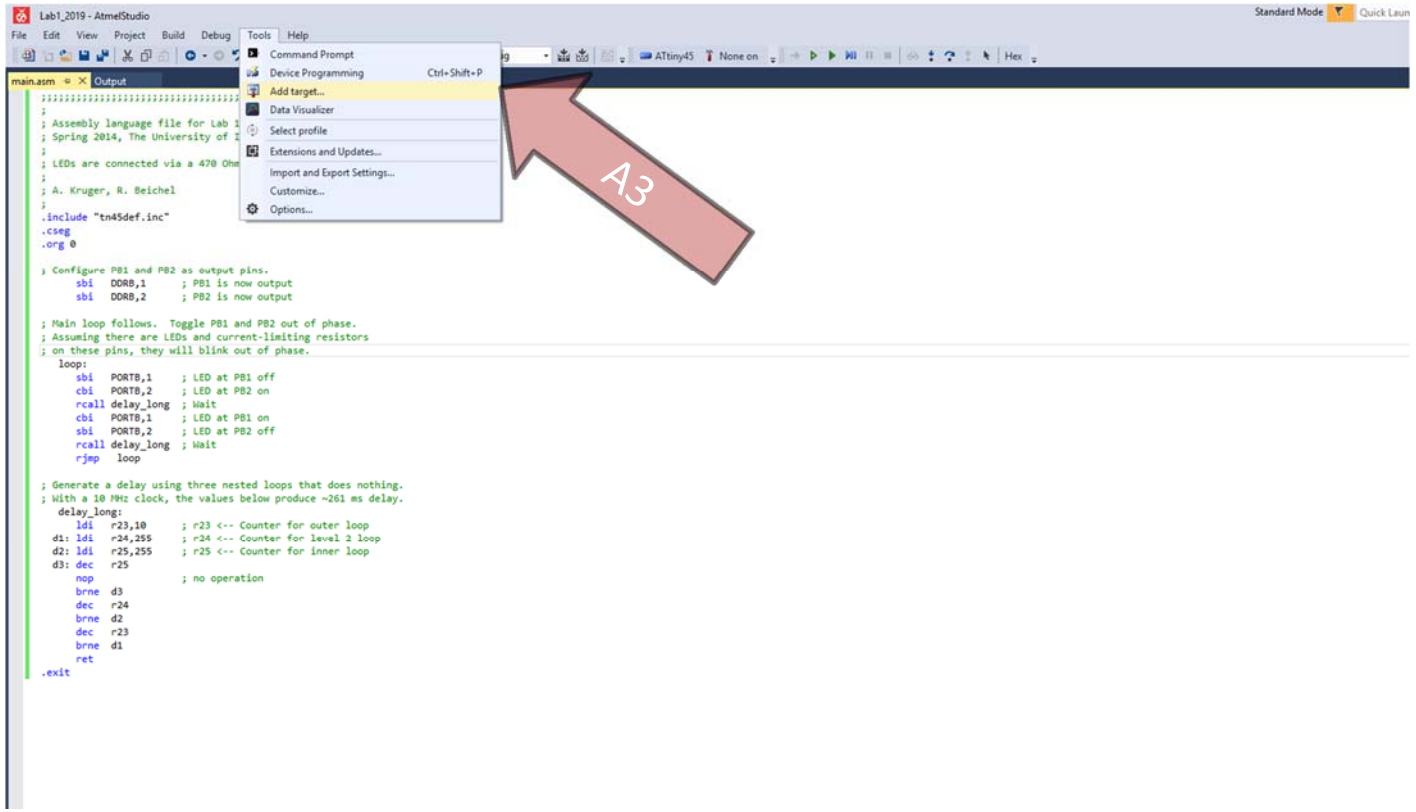
A1) Open "Device Manager" and navigate to "Ports(COM & LPT)"

Option A: Pololu USB AVR Programmer



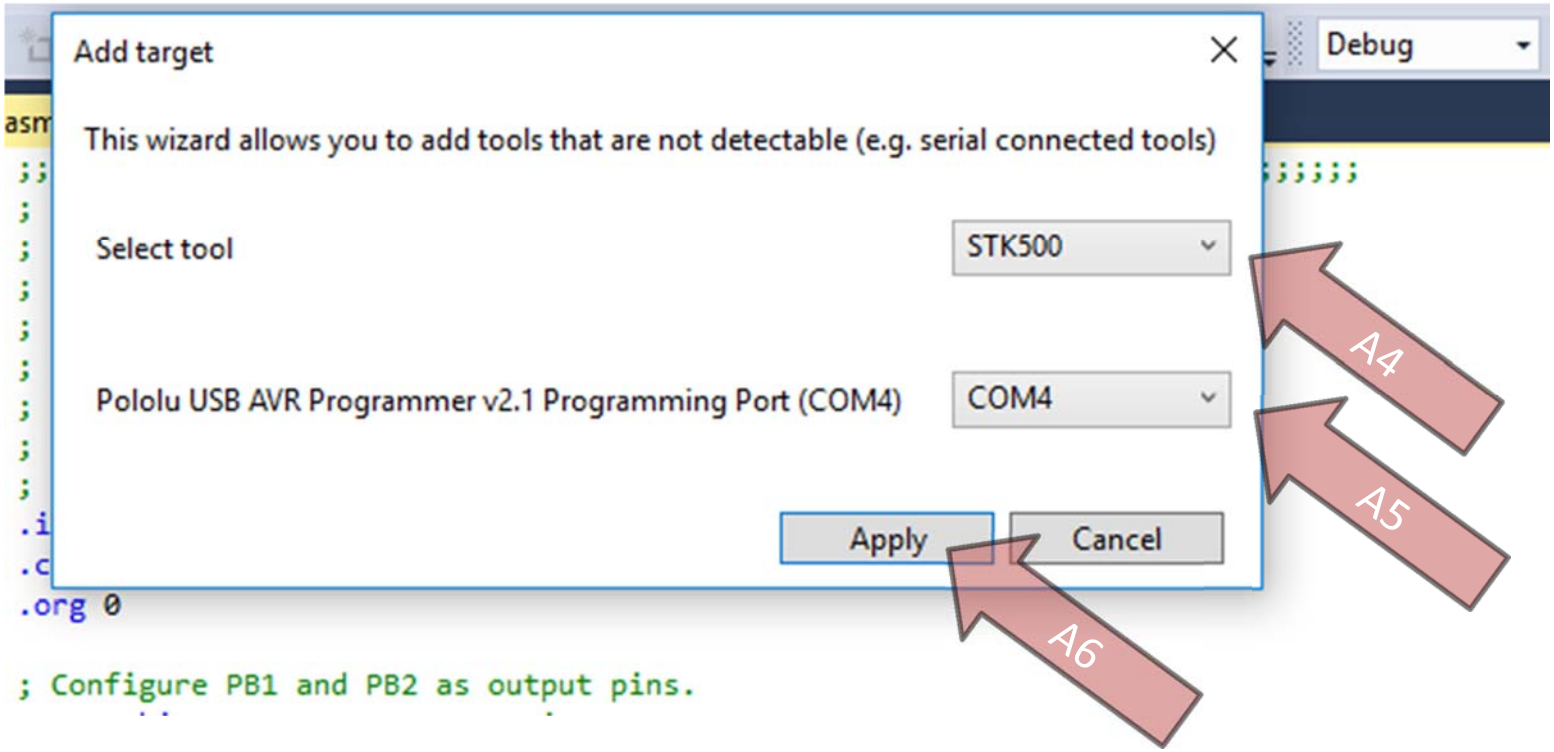
A2) Remember the Programming Port number(COM 4)

Option A: Pololu USB AVR Programmer



A3) Select tools menu and Add Target

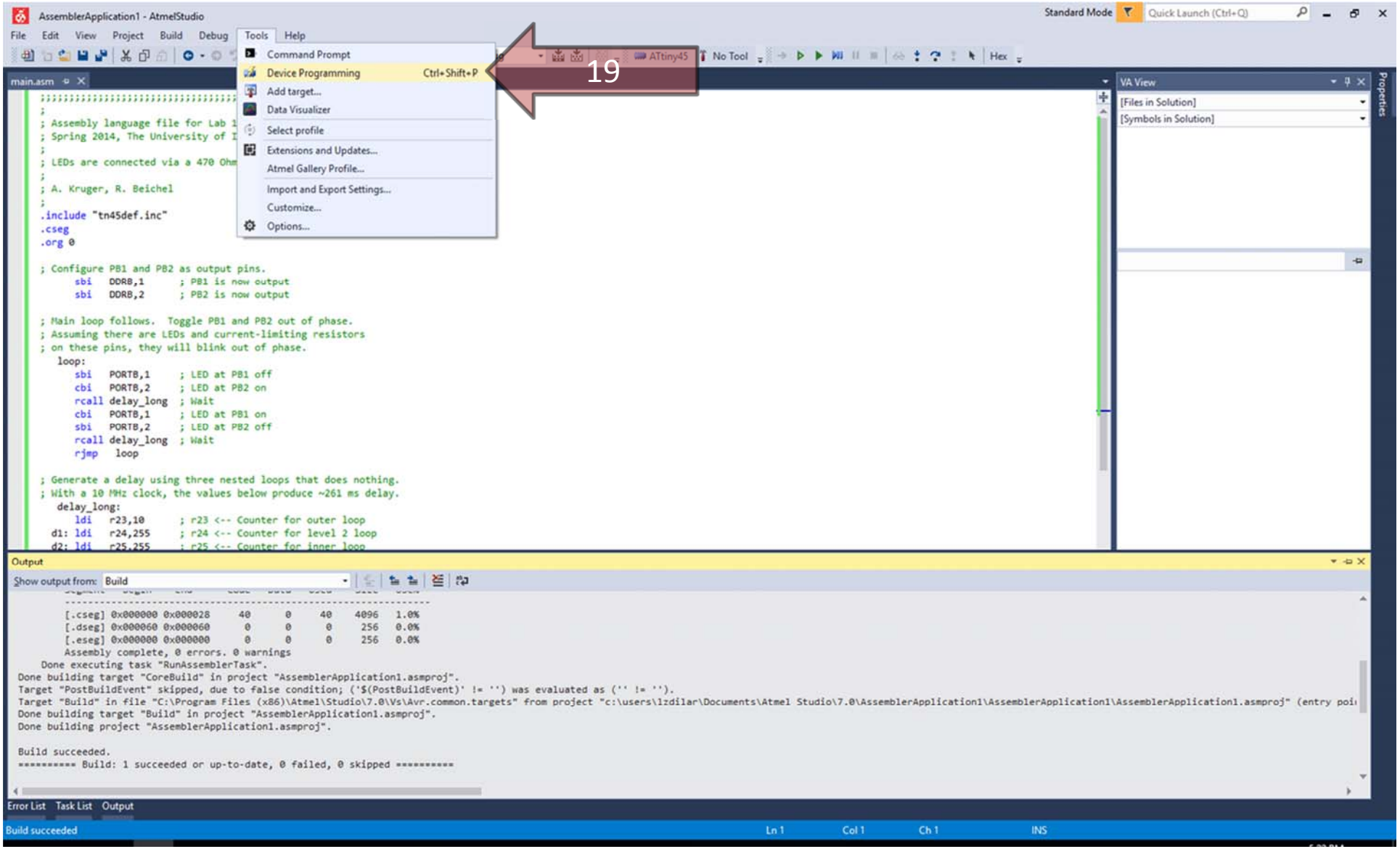
Option A: Pololu USB AVR Programmer



A4) Select STK500 Tool

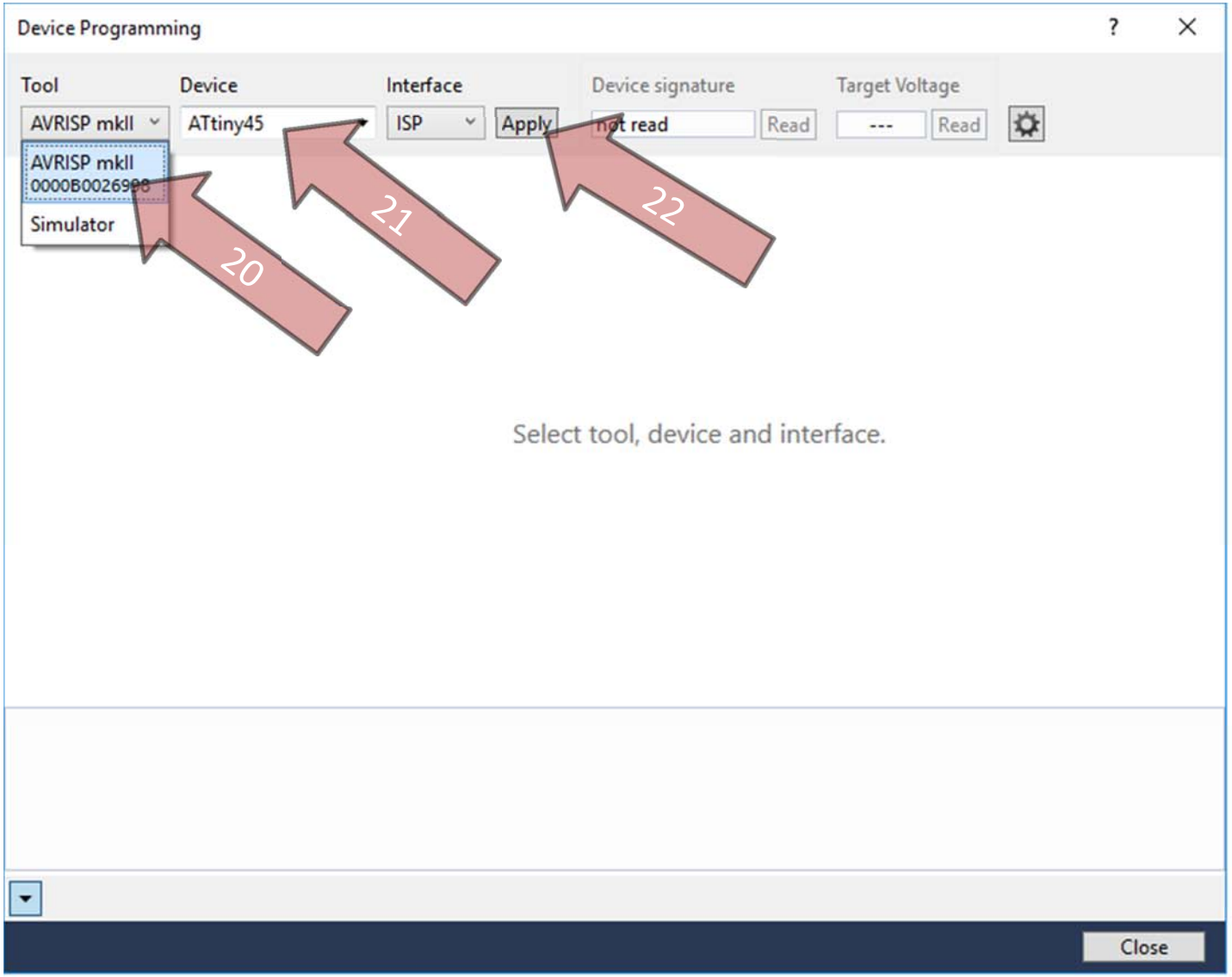
A5) Select the corresponding COM Port

A6) Select Apply

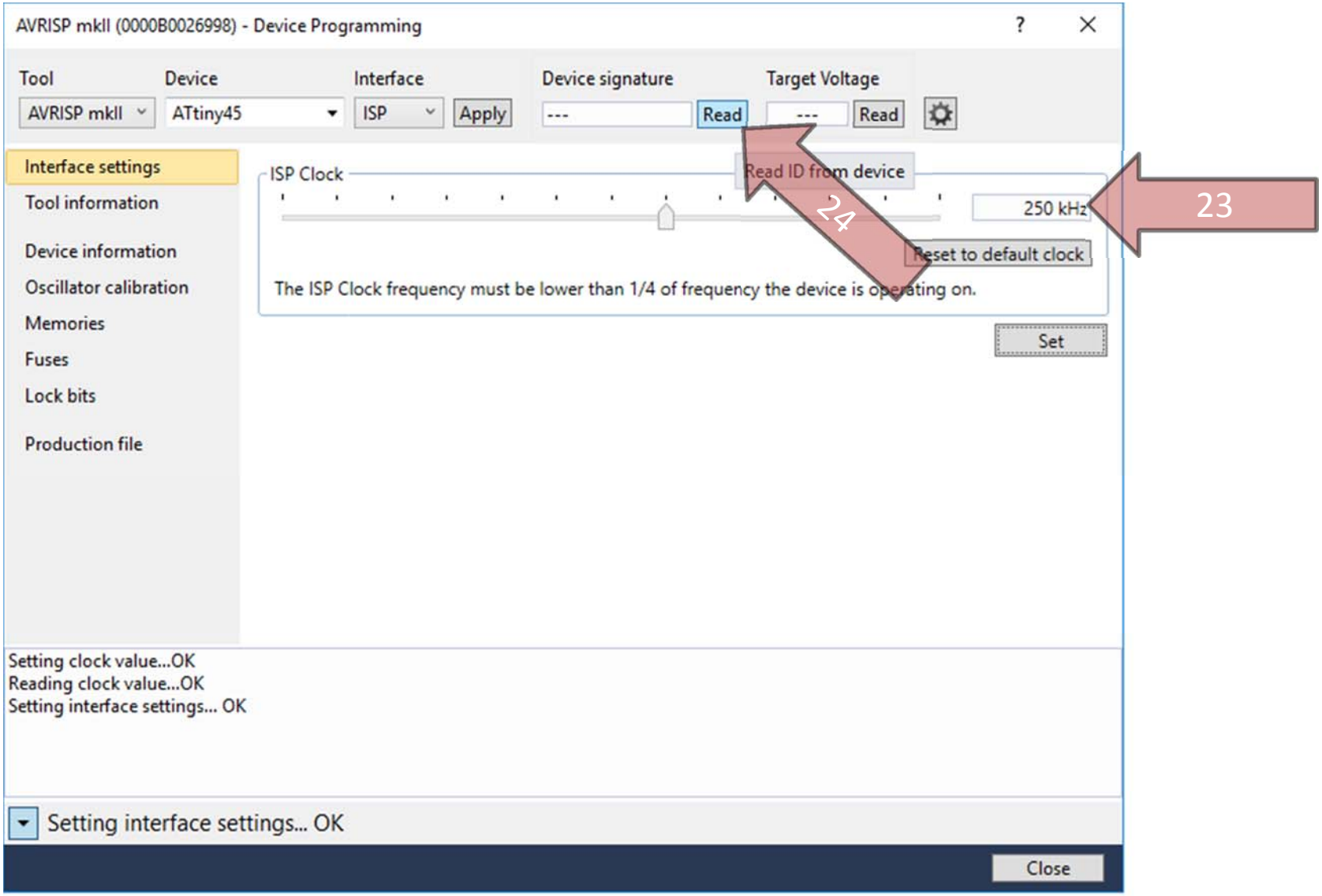


19. Navigate to

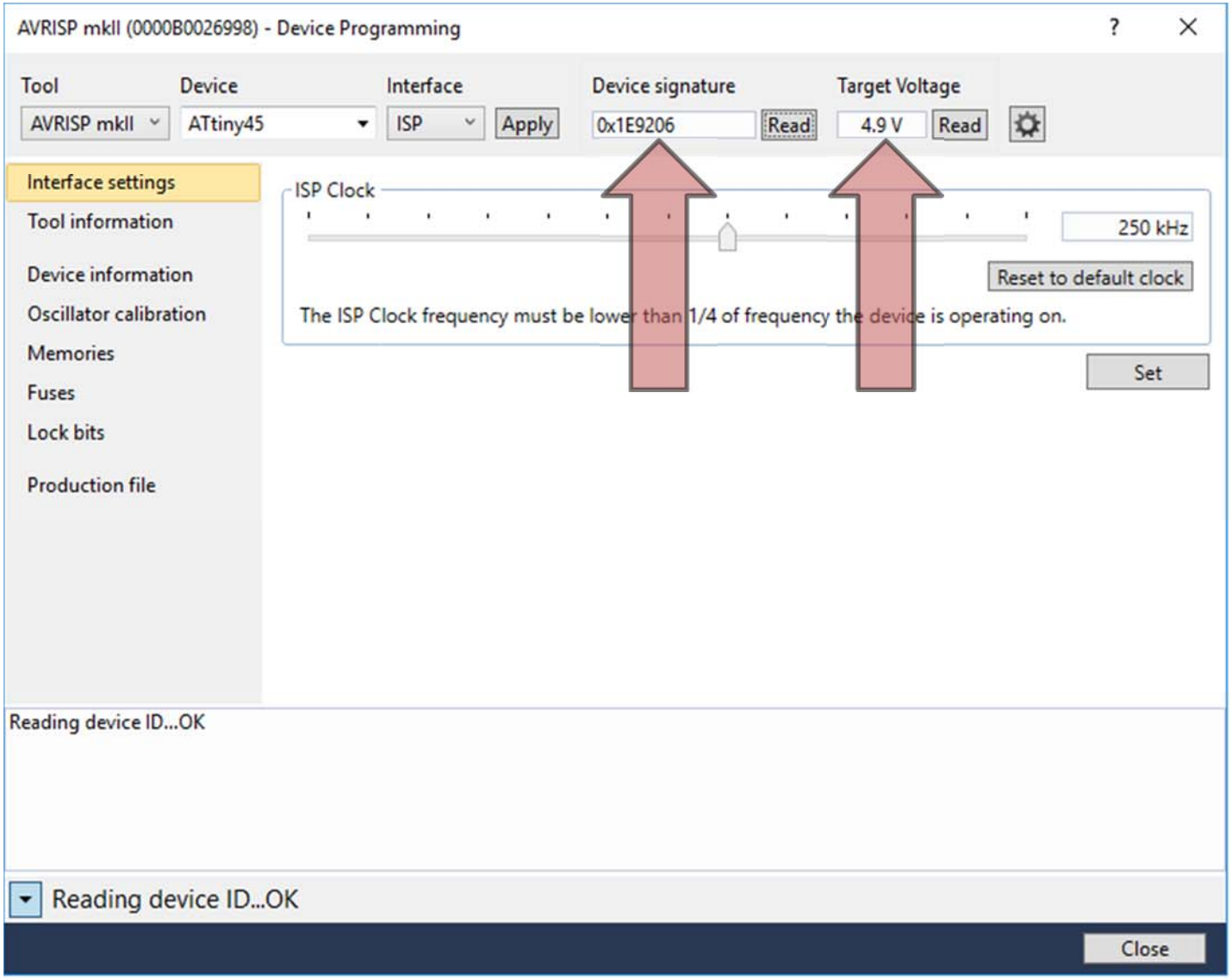
“Tools” -> “Device Programming” and click it



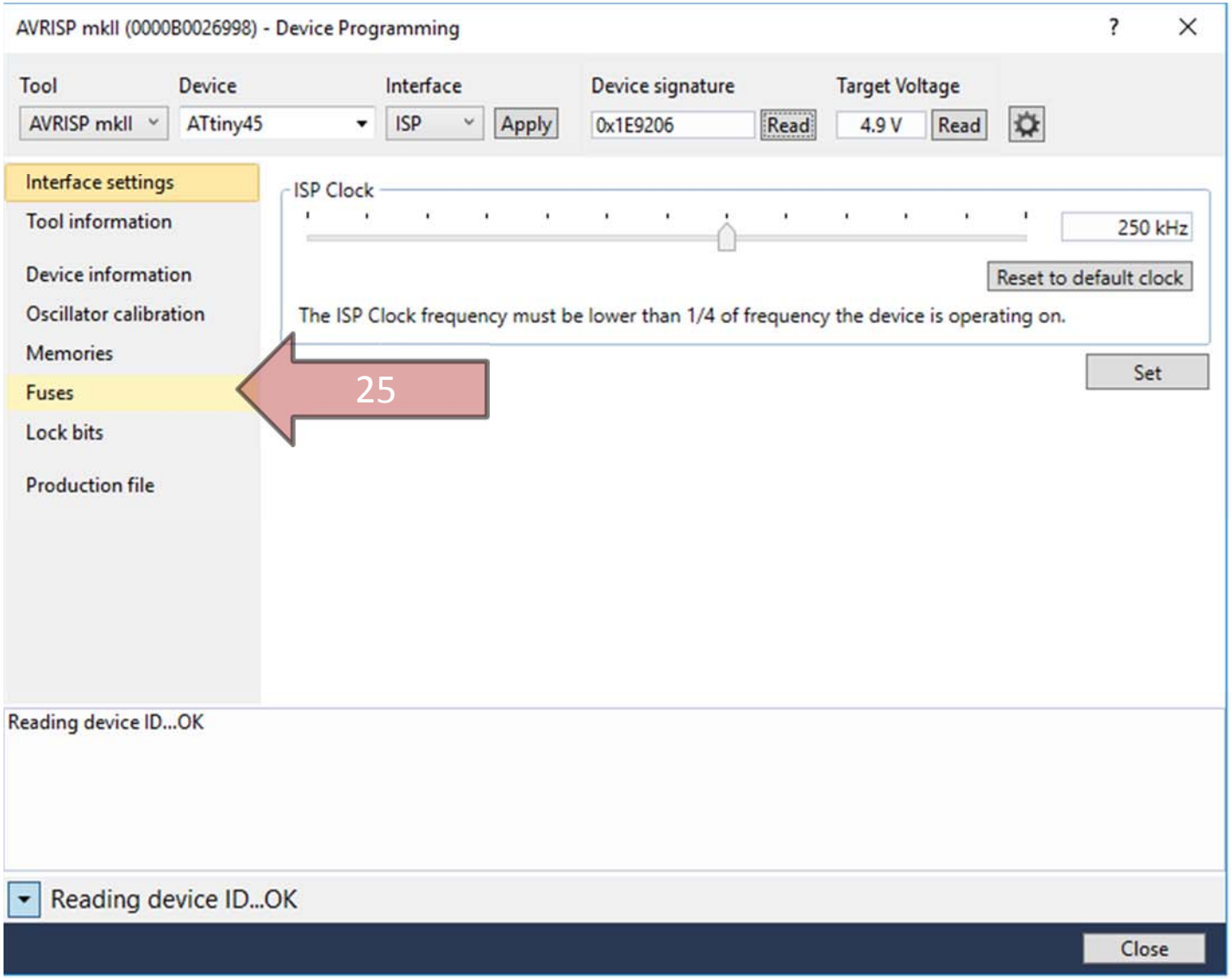
20. **Select (A)"STK500 COM4" (B) "AVRISP" as the “Tool”**
21. Select “ATtiny45” as the “Device”
22. Click “Apply”



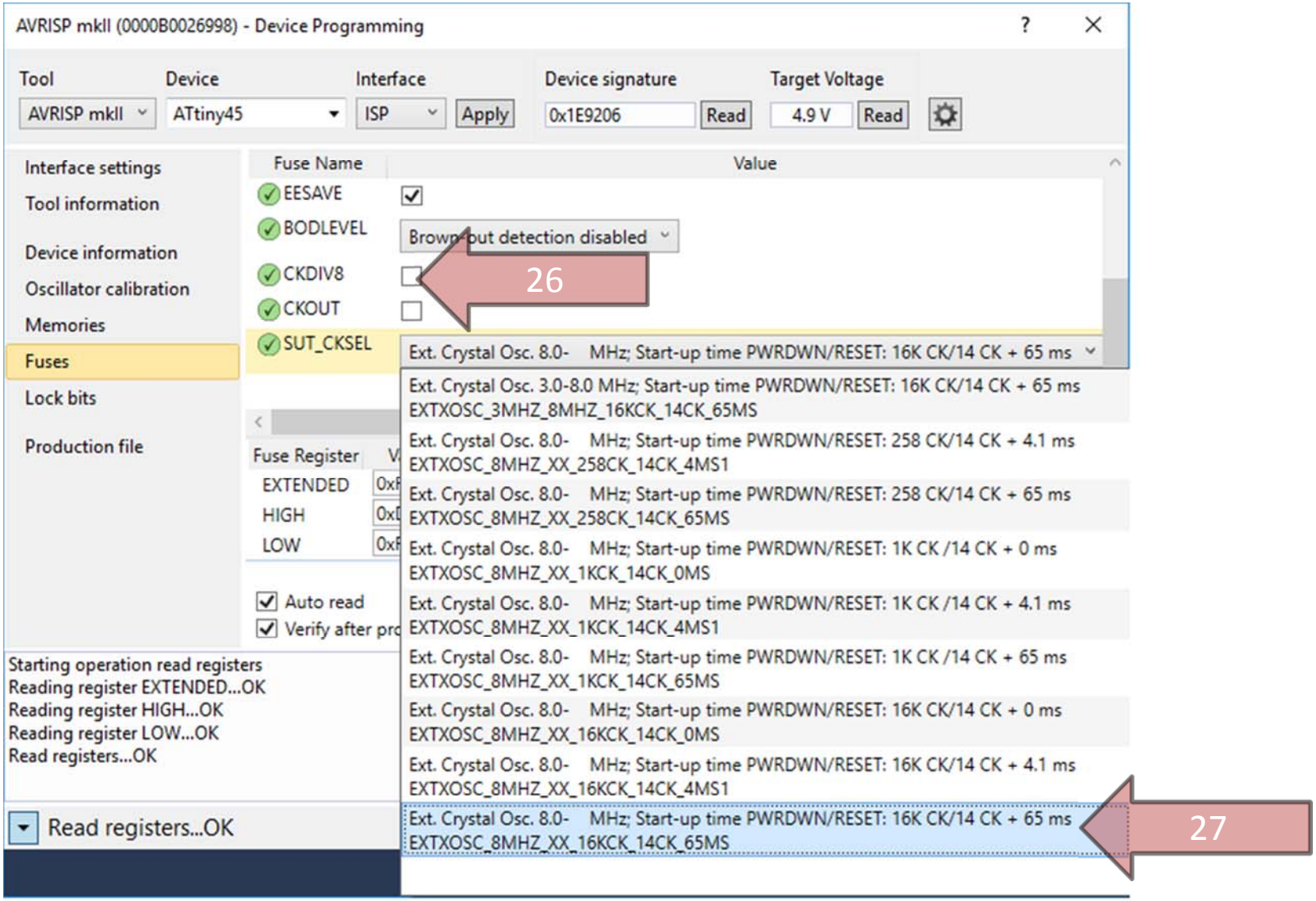
23. Set the ISP clock frequency to 250 kHz
24. Click “Read” under “Device Signature”



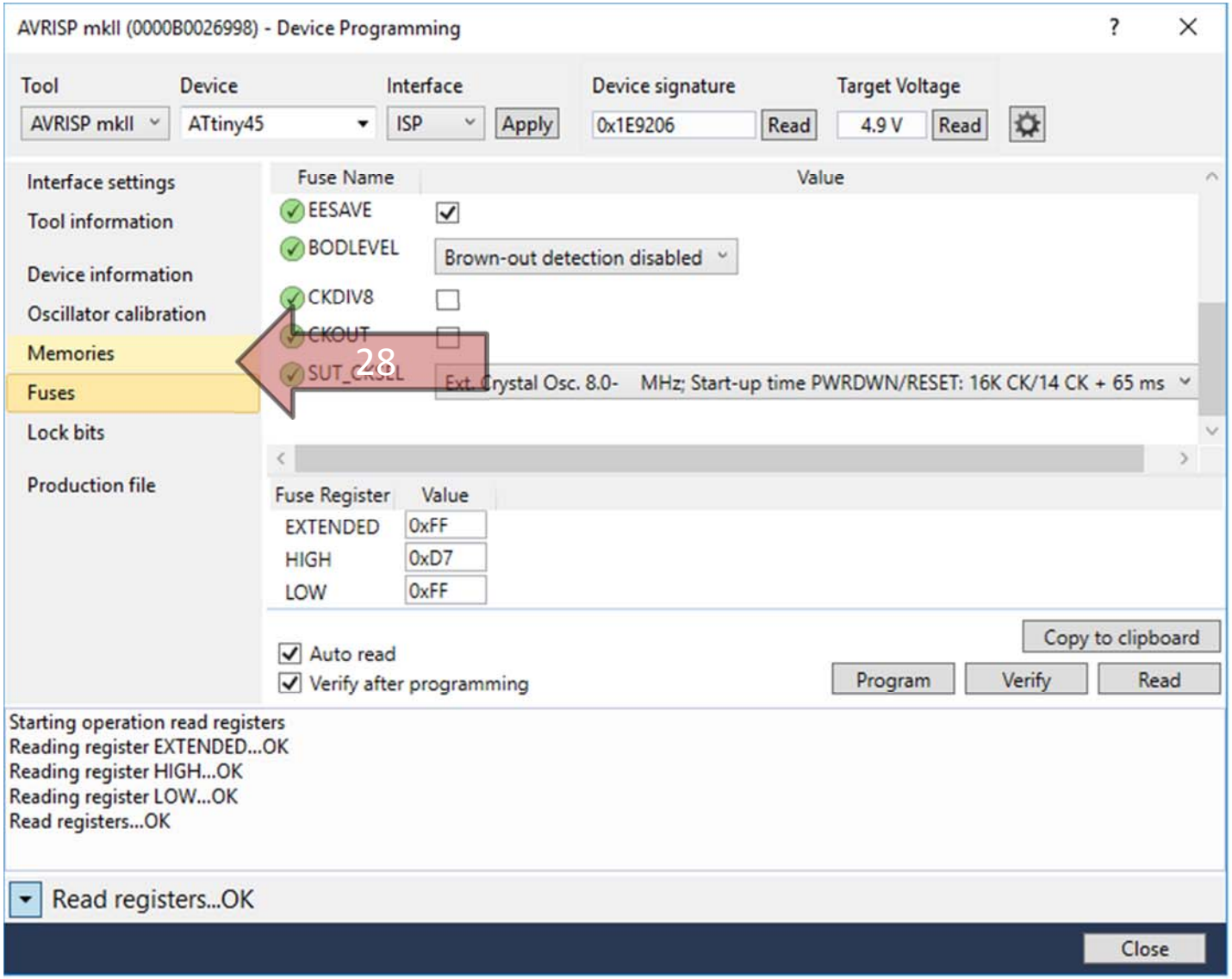
If the board was assembled correctly and connected properly, the device signature and voltage values should appear



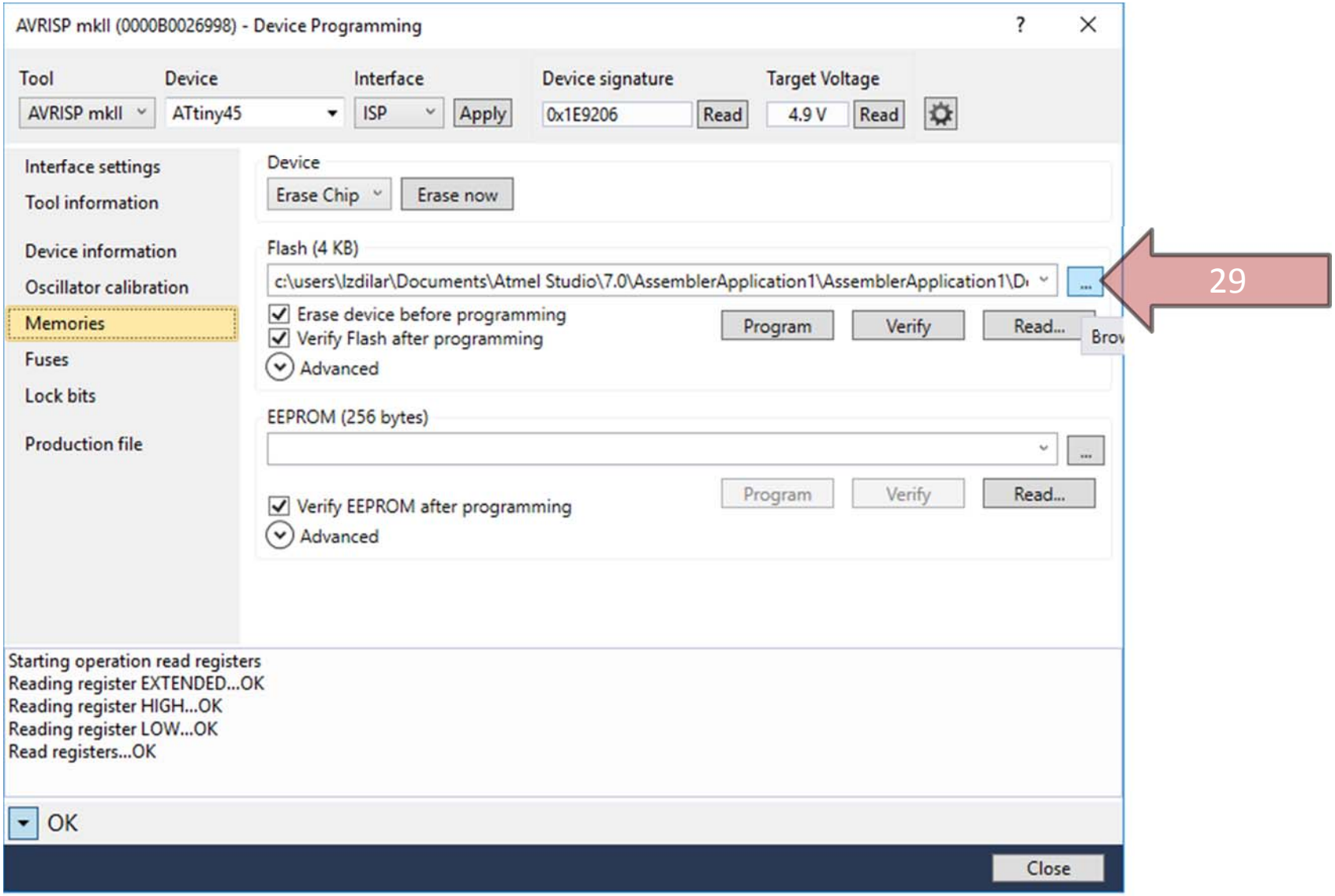
25. Click on “Fuses”



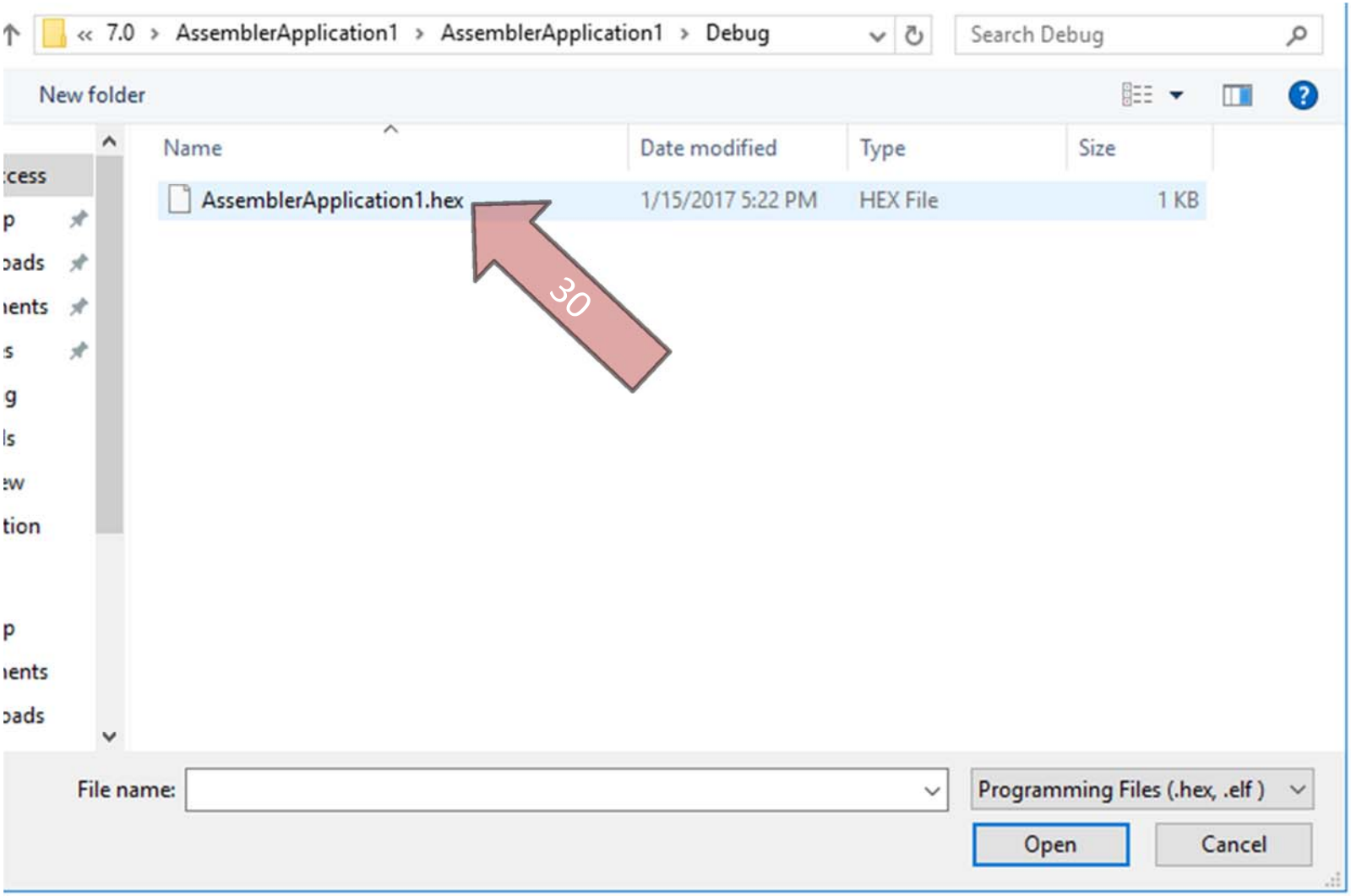
26. Uncheck “CKDIV8”
27. Select the highlighted option for “SUT_CKSEL”



28. Click “Memories”

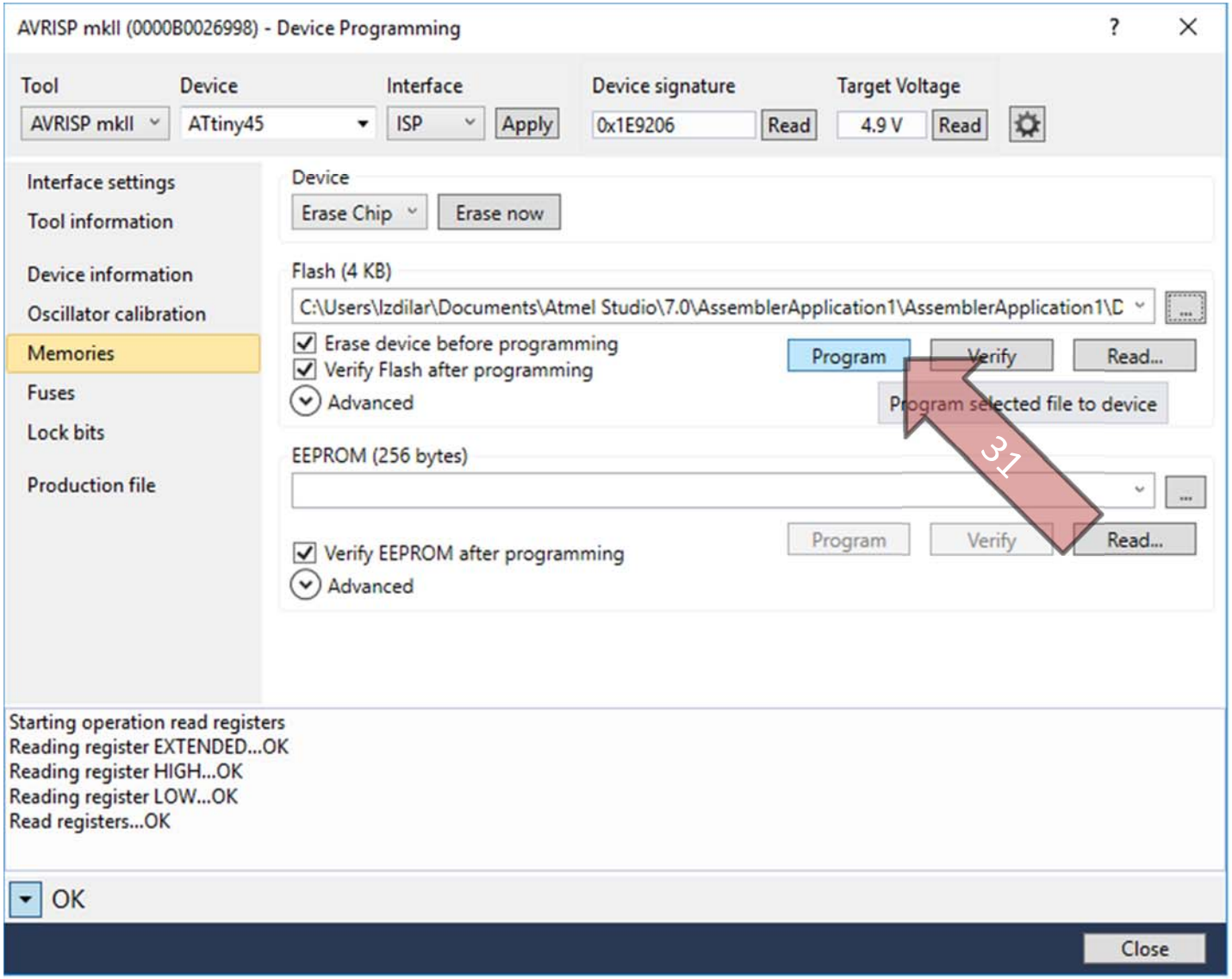


29. Click “…” under “Flash” to select the file to program to the device

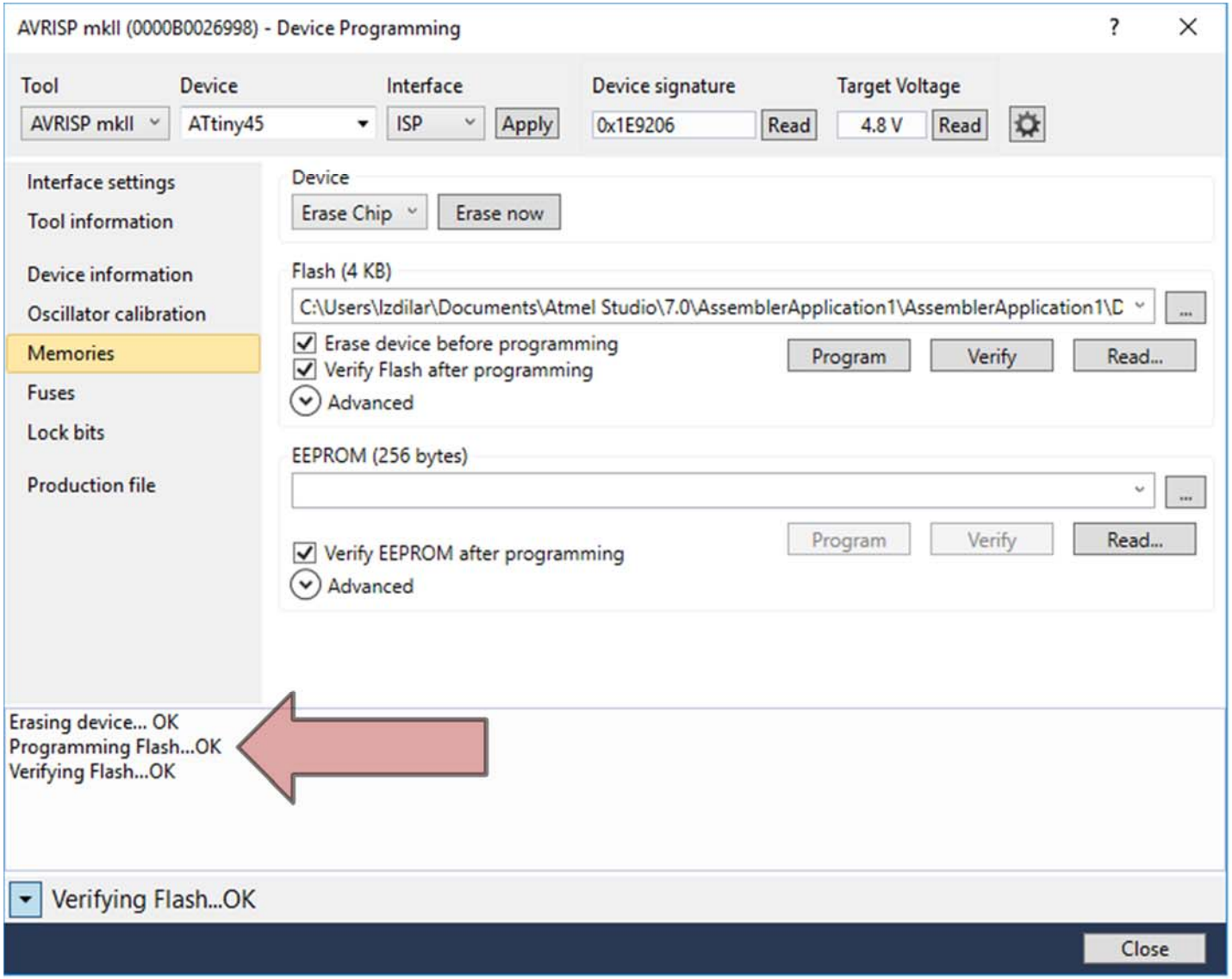


30. Open the compiled .hex file

It can be found in “<ProjectName>\<ProjectName>\Debug”



31. Click “Program”



The messages indicated above should display if the device was programmed successfully