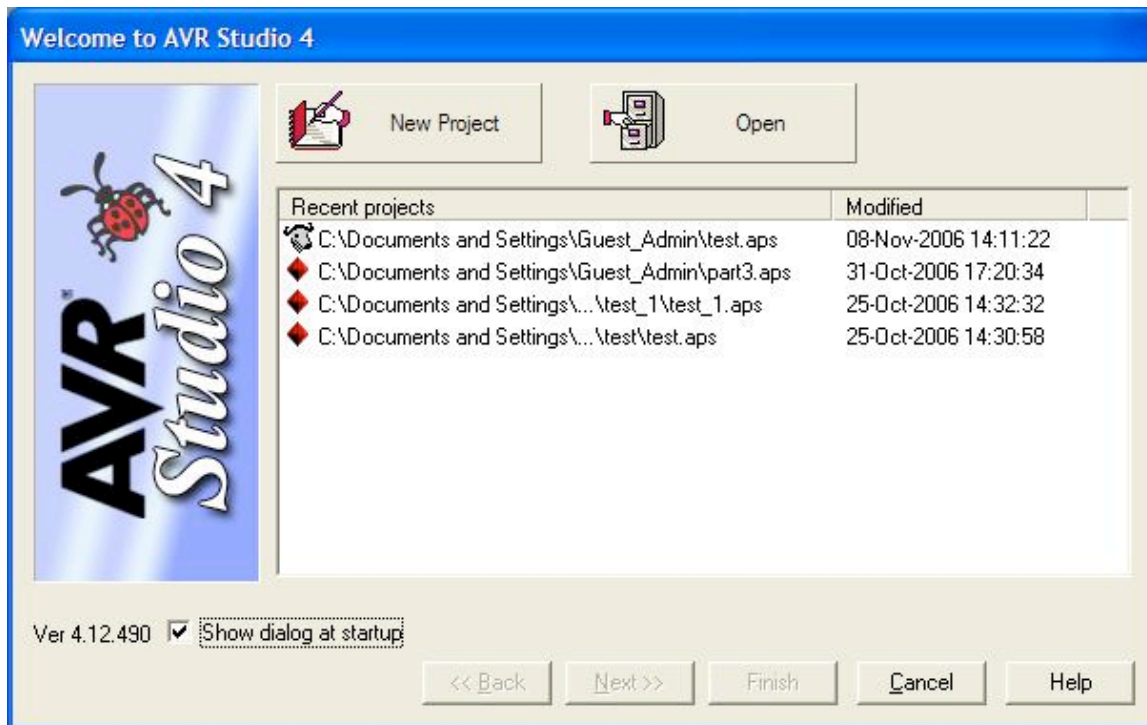
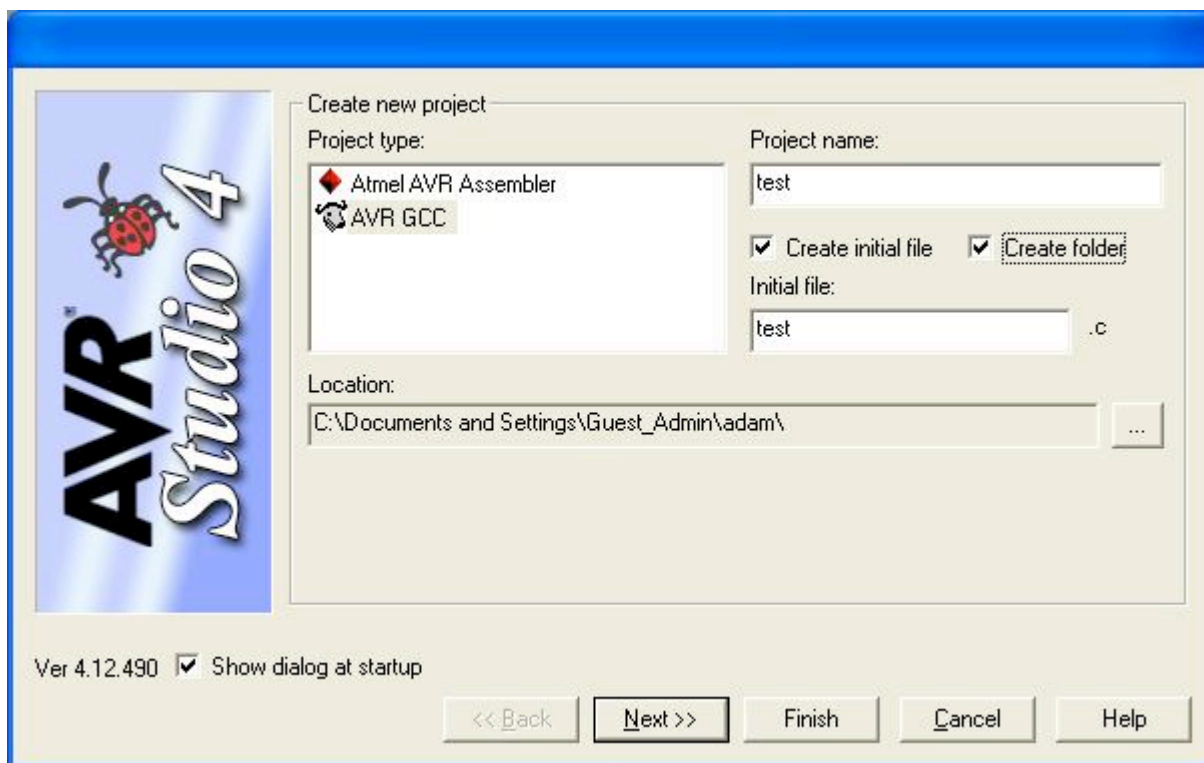


Instructions for Programming and Compiling C within AVR Studio 4 (A. Bailin 2006)

Open AVR Studio, you should be greeted with the following dialog:

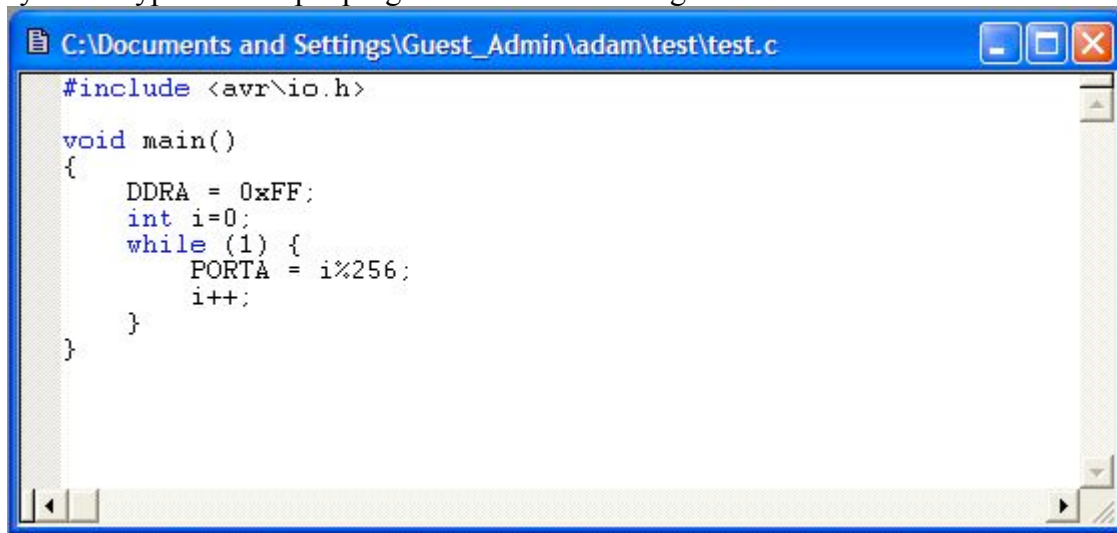


Hit New Project. If this dialog does not show, go to Project -> New Project. You should see the following dialog:



Choose AVR GCC for project type and type in a project name. This example will make a directory called test\ and a file called test.c. Hit next to choose your platform (you can choose AVR Simulator to be able to simulate your project in AVR Studio) then hit Finish.

A new window should come up where you can type in your C code. Notice it will highlight the proper C syntax. Type in a sample program like the following:

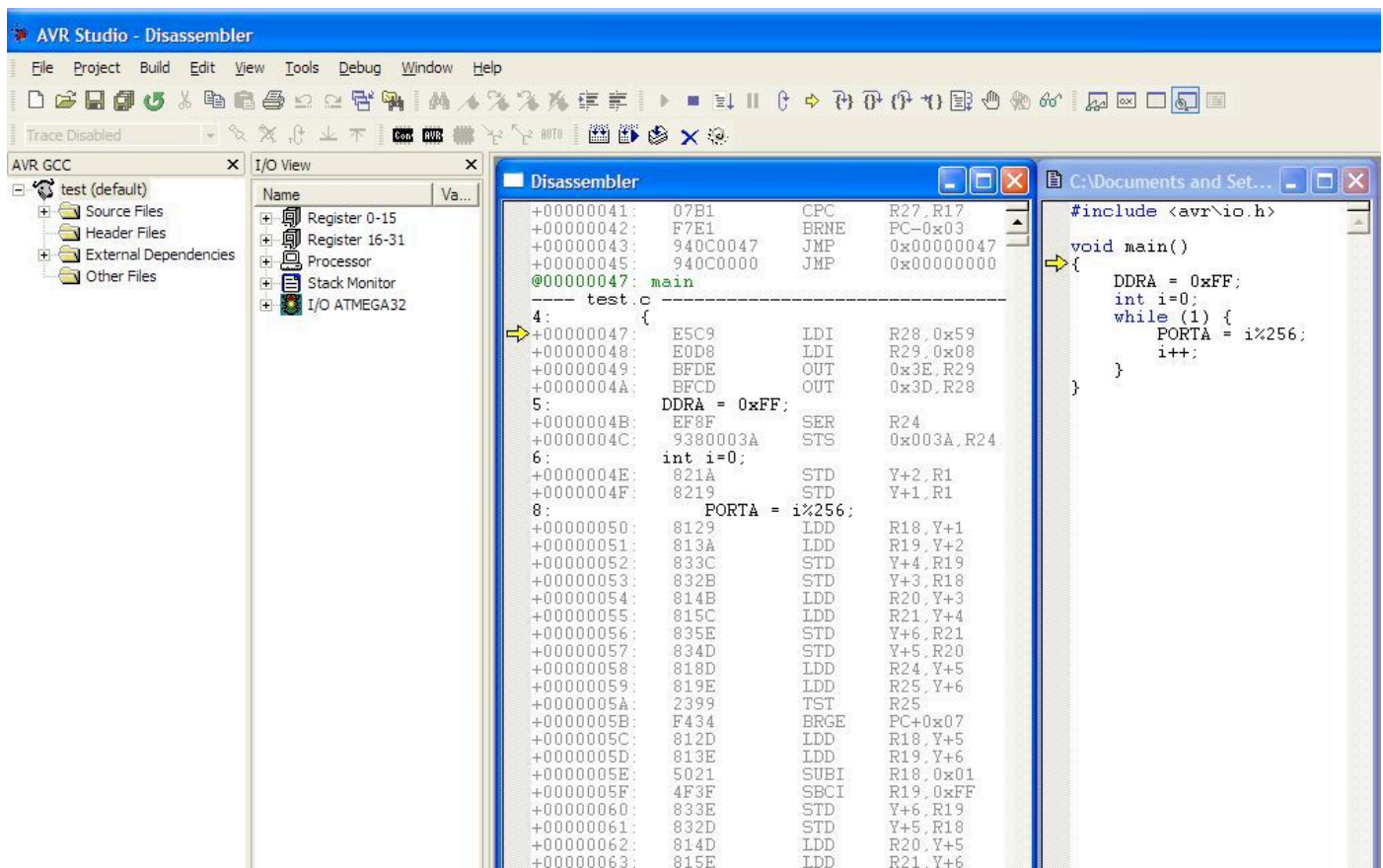


```
C:\Documents and Settings\Guest_Admin\adam\test\test.c

#include <avr/io.h>

void main()
{
    DDRA = 0xFF;
    int i=0;
    while (1) {
        PORTA = i%256;
        i++;
    }
}
```

Compile your file then hit Start Debugging (the play button). Now you can step through your C code. To see the assembly code, go to View -> Disassembler. Now you can step through both at the same time. No more need for Programmers Notepad or makefiles!



AVR Studio - Disassembler

File Project Build Edit View Tools Debug Window Help

Trace Disabled

AVR GCC

test (default)

- Source Files
- Header Files
- External Dependencies
- Other Files

I/O View

Name Va...

- Register 0-15
- Register 16-31
- Processor
- Stack Monitor
- I/O ATMEGA32

Disassembler

```
+00000041: 07B1 CPC R27, R17
+00000042: F7E1 BRNE PC-0x03
+00000043: 940C0047 JMP 0x00000047
+00000045: 940C0000 JMP 0x00000000
@00000047: main
----- test.c -----
4: E5C9 LDI R28, 0x59
+00000048: E0D8 LDI R29, 0x08
+00000049: BFDE OUT 0x3E, R29
+0000004A: BFCD OUT 0x3D, R28
5: DDRA = 0xFF;
+0000004B: EF8F SER R24
+0000004C: 9380003A STS 0x003A, R24
6: int i=0;
+0000004E: 821A STD Y+2, R1
+0000004F: 8219 STD Y+1, R1
8: PORTA = i%256;
+00000050: 8129 LDD R18, Y+1
+00000051: 813A LDD R19, Y+2
+00000052: 833C STD Y+4, R19
+00000053: 832B STD Y+3, R18
+00000054: 814B LDD R20, Y+3
+00000055: 815C LDD R21, Y+4
+00000056: 835E STD Y+6, R21
+00000057: 834D STD Y+5, R20
+00000058: 818D LDD R24, Y+5
+00000059: 819E LDD R25, Y+6
+0000005A: 2399 TST R25
+0000005B: F434 BRGE PC+0x07
+0000005C: 812D LDD R18, Y+5
+0000005D: 813E LDD R19, Y+6
+0000005E: 5021 SUBI R18, 0x01
+0000005F: 4F3F SBCCI R19, 0xFF
+00000060: 833E STD Y+6, R19
+00000061: 832D STD Y+5, R18
+00000062: 814D LDD R20, Y+5
+00000063: 815E LDD R21, Y+6
```

C:\Documents and Set...

```
#include <avr/io.h>

void main()
{
    DDRA = 0xFF;
    int i=0;
    while (1) {
        PORTA = i%256;
        i++;
    }
}
```

To open your project again, go to Project -> Open and choose your .aps file.