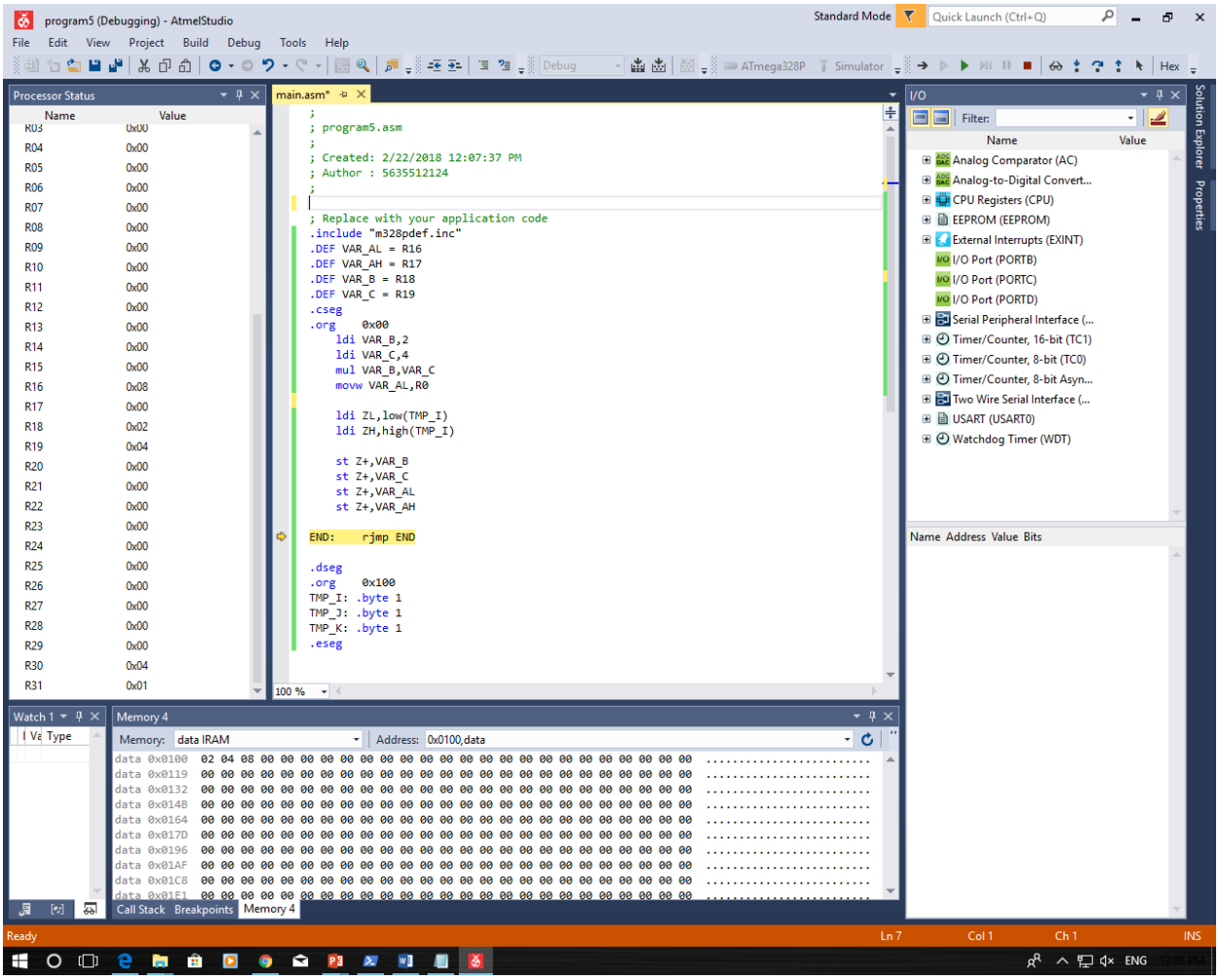
นายสิรวิชญ์ วงศ์ช่วย 5635512124

HOMEWORK 2-3

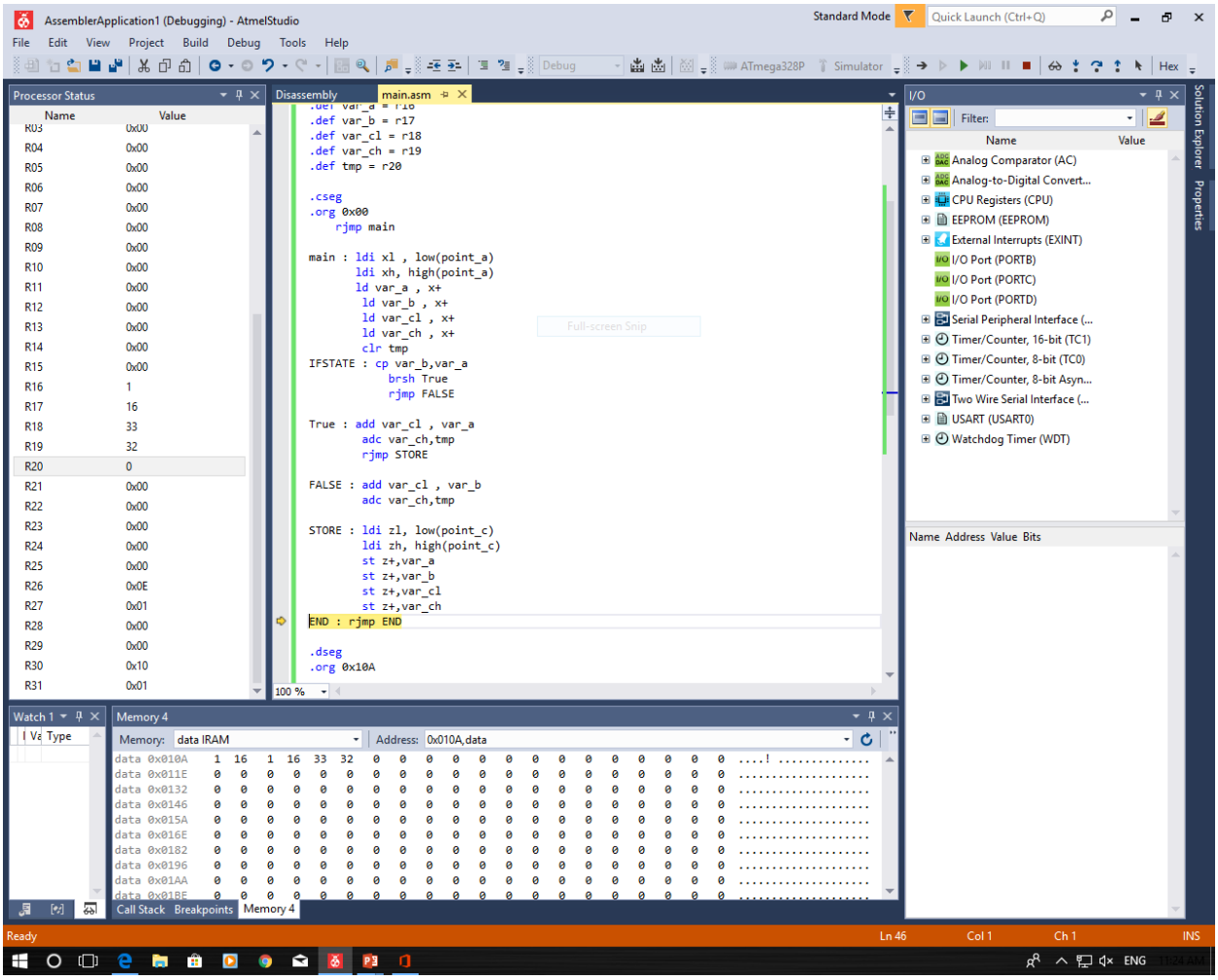
Part-2

- Program 5

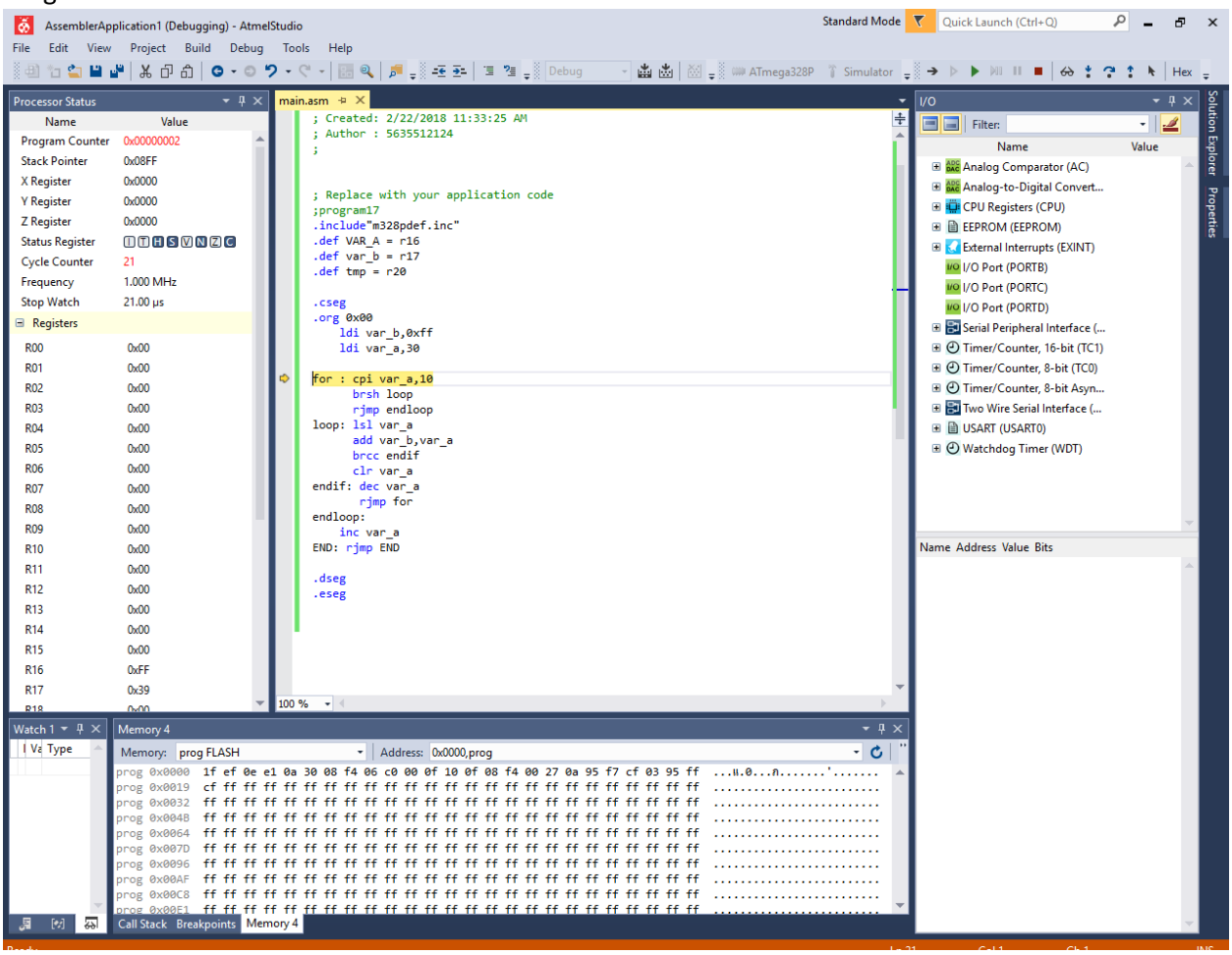


Part-3

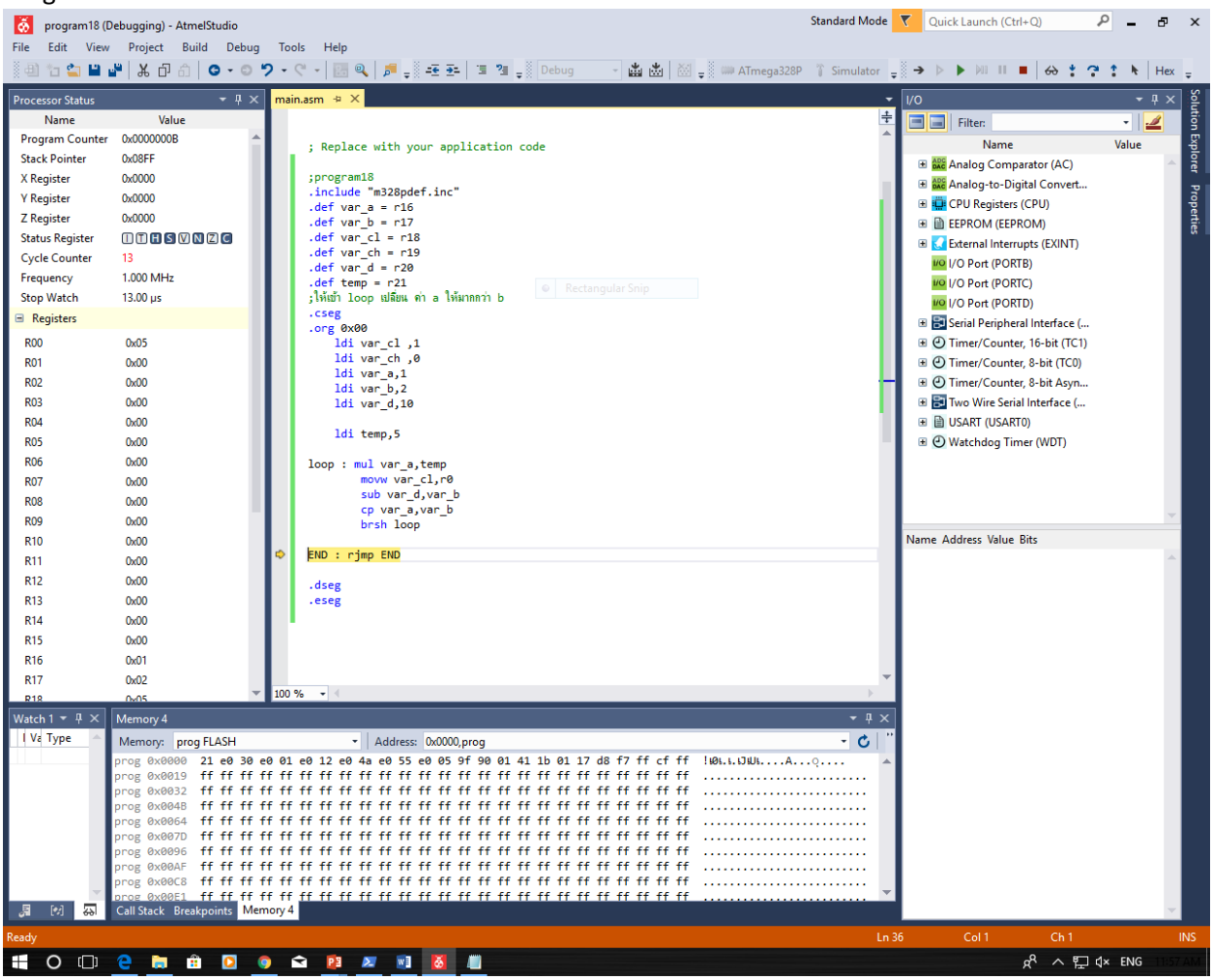
- Program 13



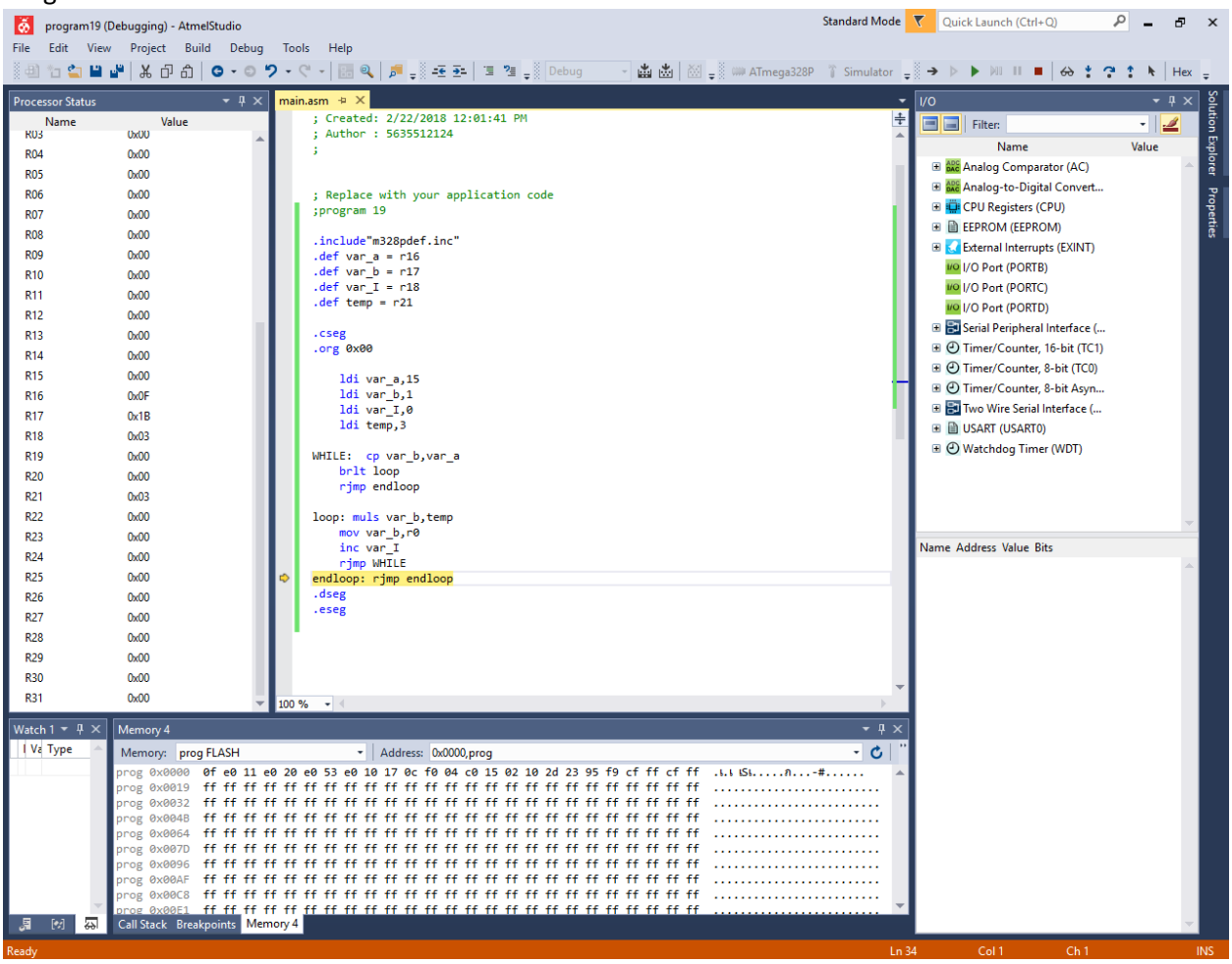
- Program 17


AssemblerApplication1 (Debugging) - AtmelStudio
File Edit View Project Build Debug Tools Help
Processor Status
Name Value
Program Counter 0x00000002
Stack Pointer 0x08FF
X Register 0x0000
Y Register 0x0000
Z Register 0x0000
Status Register ITHSVNZC
Cycle Counter 21
Frequency 1.000 MHz
Stop Watch 21.00 µs
Registers
R00 0x00
R01 0x00
R02 0x00
R03 0x00
R04 0x00
R05 0x00
R06 0x00
R07 0x00
R08 0x00
R09 0x00
R10 0x00
R11 0x00
R12 0x00
R13 0x00
R14 0x00
R15 0x00
R16 0xFF
R17 0x39
main.asm
; Created: 2/22/2018 11:33:25 AM
; Author : 5635512124
;
; Replace with your application code
;program17
.include"m328pdef.inc"
.def VAR_A = r16
.def var_b = r17
.def tmp = r20
.cseg
.org 0x00
ldi var_b,0xff
ldi var_a,30
for : cpi var_a,10
brsh loop
rjmp endloop
loop: lsl var_a
add var_b,var_a
brcc endif
clr var_a
endif: dec var_a
rjmp for
endloop:
inc var_a
END: rjmp END
.dseg
.eseg
100 %
I/O
Filter:
Name Value
Analog Comparator (AC)
Analog-to-Digital Convert...
CPU Registers (CPU)
EEPROM (EEPROM)
External Interrupts (EXINT)
I/O Port (PORTB)
I/O Port (PORTC)
I/O Port (PORTD)
Serial Peripheral Interface (...
Timer/Counter, 16-bit (TC1)
Timer/Counter, 8-bit (TC0)
Timer/Counter, 8-bit Asyn...
Two Wire Serial Interface (...
USART (USART0)
Watchdog Timer (WDT)
Name Address Value Bits
Watch 1
Name Type
Memory 4
Memory: prog FLASH
Address: 0x0000,prog
prog 0x0000 1f ef 0e e1 0a 30 08 f4 06 c0 00 0f 10 0f 08 f4 00 27 0a 95 f7 cf 03 95 ff
prog 0x0019 cf ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
prog 0x0032 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
prog 0x004B ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
prog 0x0064 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
prog 0x007D ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
prog 0x0096 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
prog 0x00AF ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
prog 0x00C8 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Call Stack Breakpoints Memory 4
Solution Explorer
Properties

- Program 18


program18 (Debugging) - AtmelStudio
Standard Mode
Quick Launch (Ctrl+Q)
File Edit View Project Build Debug Tools Help
Processor Status
Name Value
Program Counter 0x0000000B
Stack Pointer 0x08FF
X Register 0x0000
Y Register 0x0000
Z Register 0x0000
Status Register
Cycle Counter 13
Frequency 1.000 MHz
Stop Watch 13.00 µs
Registers
R00 0x05
R01 0x00
R02 0x00
R03 0x00
R04 0x00
R05 0x00
R06 0x00
R07 0x00
R08 0x00
R09 0x00
R10 0x00
R11 0x00
R12 0x00
R13 0x00
R14 0x00
R15 0x00
R16 0x01
R17 0x02
main.asm
; Replace with your application code
;program18
.include "m328pdef.inc"
.def var_a = r16
.def var_b = r17
.def var_cl = r18
.def var_ch = r19
.def var_d = r20
.def temp = r21
;ให้เข้า loop เปลี่ยน ค่า a ให้มากกว่า b
.cseg
.org 0x00
ldi var_cl ,1
ldi var_ch ,0
ldi var_a,1
ldi var_b,2
ldi var_d,10
ldi temp,5
loop : mul var_a,temp
movw var_cl,r0
sub var_d,var_b
cp var_a,var_b
brsh loop
END : rjmp END
.dseg
.eseg
100 %
I/O
Filter:
Name Value
Analog Comparator (AC)
Analog-to-Digital Convert...
CPU Registers (CPU)
EEPROM (EEPROM)
External Interrupts (EXINT)
I/O Port (PORTB)
I/O Port (PORTC)
I/O Port (PORTD)
Serial Peripheral Interface (...
Timer/Counter, 16-bit (TC1)
Timer/Counter, 8-bit (TC0)
Timer/Counter, 8-bit Asyn...
Two Wire Serial Interface (...
USART (USART0)
Watch 1
Name Type
Memory 4
Memory: prog FLASH
Address: 0x0000,prog
prog 0x0000 21 e0 30 e0 01 e0 12 e0 4a e0 55 e0 05 9f 90 01 41 1b 01 17 d8 f7 ff cf ff
prog 0x0019 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
prog 0x0032 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
prog 0x004B ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
prog 0x0064 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
prog 0x007D ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
prog 0x0096 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
prog 0x00AF ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
prog 0x00C8 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Call Stack Breakpoints Memory 4
Name Address Value Bits
Ready
Ln 36 Col 1 Ch 1 INS
ENG

- Program 19


program19 (Debugging) - AtmelStudio
Standard Mode
Quick Launch (Ctrl+Q)
File Edit View Project Build Debug Tools Help
Processor Status
Name Value
R03 0x00
R04 0x00
R05 0x00
R06 0x00
R07 0x00
R08 0x00
R09 0x00
R10 0x00
R11 0x00
R12 0x00
R13 0x00
R14 0x00
R15 0x00
R16 0x0F
R17 0x1B
R18 0x03
R19 0x00
R20 0x00
R21 0x03
R22 0x00
R23 0x00
R24 0x00
R25 0x00
R26 0x00
R27 0x00
R28 0x00
R29 0x00
R30 0x00
R31 0x00
main.asm
; Created: 2/22/2018 12:01:41 PM
; Author : 5635512124
;
; Replace with your application code
;program 19
.include"m328pdef.inc"
.def var_a = r16
.def var_b = r17
.def var_I = r18
.def temp = r21
.cseg
.org 0x00
ldi var_a,15
ldi var_b,1
ldi var_I,0
ldi temp,3
WHILE: cp var_b,var_a
brlt loop
rjmp endloop
loop: muls var_b,temp
mov var_b,r0
inc var_I
rjmp WHILE
endloop: rjmp endloop
.dseg
.eseg
100 %
I/O
Filter:
Name Value
Analog Comparator (AC)
Analog-to-Digital Convert...
CPU Registers (CPU)
EEPROM (EEPROM)
External Interrupts (EXINT)
I/O Port (PORTB)
I/O Port (PORTC)
I/O Port (PORTD)
Serial Peripheral Interface (...
Timer/Counter, 16-bit (TC1)
Timer/Counter, 8-bit (TC0)
Timer/Counter, 8-bit Asyn...
Two Wire Serial Interface (...
USART (USART0)
Watchdog Timer (WDT)
Name Address Value Bits
Watch 1
Name Type
Memory 4
Memory: prog FLASH
Address: 0x0000,prog
prog 0x0000 0f e0 11 e0 20 e0 53 e0 10 17 0c f0 04 c0 15 02 10 2d 23 95 f9 cf ff cf ff
prog 0x0019 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
prog 0x0032 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
prog 0x004B ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
prog 0x0064 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
prog 0x007D ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
prog 0x0096 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
prog 0x00AF ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
prog 0x00C8 ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff
Call Stack Breakpoints Memory 4
Ready
Ln 34 Col 1 Ch 1 INS
Solution Explorer Properties