

Design Assignment 1A

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Primary Github address: <https://github.com/recio/submissions>

Directory: <https://github.com/recio/submissions/tree/master/DesignAssignments/DA1A>

1. INITIAL/MODIFIED/DEVELOPED CODE OF TASK 1/A

```
.ORG 0
CLR R17 ; Reg that holds 0

CLR R20 ; Upper Byte Result Cleared
CLR R19 ; Middle Byte Result Cleared
CLR R18 ; Lower Byte Result Cleared

LDI R24, 0xFF; Lower Byte Multiplicand = 255
LDI R25, 0xFF; Upper Byte Multiplicand = 255

LDI R22, 0xFF; Multiplier = 255
```

NOTDONE:

```
CPI R22, 0 ; Compare multiplier to 0
BREQ DONE ; If multiplier is 0 then DONE
ADD R18, R24 ; R18 = R18 + R24
ADC R19, R25 ; R19 = R19 + R25 + Carry
ADC R20, R17 ; R20 = R20 + R17 (0) + Carry
DEC R22 ; R22 = R22 - 1
BRNE NOTDONE ; If R22 is not 0 then NOTDONE
```

DONE: JMP DONE ; For Debugging

2. SCREENSHOTS OF EACH TASK OUTPUT (ATMEL STUDIO OUTPUT)

```
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CLR R17 ; Reg that holds 0

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DEC R22 ; R22 = R22 - 1
BRNE NOTDONE ; If R22 is not 0 then NOTDONE
```

DONE: JMP DONE ; For Debugging

Watch 1		
Name		Value
R17		0x00
R20		0xfe
R19		0xff
R18		0x01
R24		0xff
R25		0xff
R22		0x00

Processor Status	
Name	Value
Program Counter	0x0000000E
Stack Pointer	0x08FF
X Register	0x0000
Y Register	0x0000
Z Register	0x0000
Status Register	I T H S V N Z C
Cycle Counter	2045
Frequency	16.000 MHz
Stop Watch	127.81 µs

3. GITHUB LINK OF THIS DA

<https://github.com/recrio/submissions/tree/master/DesignAssignments/DA1A>

Student Academic Misconduct Policy

<http://studentconduct.unlv.edu/misconduct/policy.html>

"This assignment submission is my own, original work".

Ron Joshua Recrio