CPE301 – SPRING 2019

Design Assignment 1A

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Primary Github address: https://github.com/cpemejia/design\_assignments.git

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; 16b\_8b\_div.asm

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.def low16 = R16 ; lower 16 bit

.def high16 = R17 ; upper 16 bit

.def div8 = R18 ; 8 bit divisor

.def lowres = R19 ; lower 16 bit result

.def highres = R20 ; upper 16 bit result

.def remainder = R21 ; remainder

.def temp = R23; temporary value

Start:

ldi temp,0xFF ; 0xFFFF

mov high16,temp

mov low16,temp

ldi temp,0xFF ; 0xFF

mov div8,temp

inc lowres ; begin at 1

p2:

clc ; carry clear

rol low16 ; rotate 16bit left

rol high16

rol remainder

brcs subtract; go to subtract if carry is set

cp remainder, div8 ; compare if temp to div8

brcs p3 ; if temp is less than div8 go to p4

subtract:

sub remainder, div8; subtract temp by div8

sec ; set carry

rjmp result ; go to result and set result

p3:

clc ; carry clear

result:

rol lowres ; rotate left result to include carry

rol highres

brcc p2 ; go to p2 if carry is not set

done: jmp done;

Graphical user interface, application

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1. **GITHUB LINK OF THIS DA**

[Design\_Assignments - YouTube](https://www.youtube.com/playlist?list=PL6PbL2NpuYCKbUNnRQzdehoDwvBhUNAA1)

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“This assignment submission is my own, original work”.

Elmer Mejia