

EE 315 Lab Assignment for Week 05

Important Note: Download the project folder The project assembly code is “EE315Week05.s”. Go over the comments of the code. You will realise that the main function calls two functions/subroutines

- o “Factorial”: calculates the factorial of R0 and writes it into R1.
- o “Power”: calculates the the power of R0 to R1 ,i.e. $R0^R1$, and writes it into R2.
- o “AddMul”: calculates the formula below. Where N is given in R0 register and and the result will be kept in R1 register. :

$$\sum_{i=1}^N (i - 1) * i = 0 * 1 + 1 * 2 + 2 * 3 + 3 * 4 + \dots \dots + (N - 1) * N$$

- The “Factorial” and “Power” subroutines are already coded. Analyse this code very carefully.
- Write the necessary codes for the “AddMul” subroutine yourself. (Factorial and Power codes will help).
- During the lab session, go over the main part of the program and debug the calls to both of these functions. Verify that the subroutines are working by checking the register values during debugging.
- **Change the register values used in the assignment and add the screenshot (make sure that Registers table (Figure 1) is displayed) of the Keil after the register values are changed to the Webonline System.**

Register	Value
Core	
R0	0x200000F0
R1	0x200000F0
R2	0x200000F0
R3	0x200000F0
R4	0x00000000
R5	0x20000090
R6	0x00000000
R7	0x00000000
R8	0x00000000
R9	0x00000000
R10	0x00000D84
R11	0x00000000
R12	0x200000D0
R13 (SP)	0x200004F0
R14 (LR)	0x0000030F
R15 (PC)	0x00000D30
xPSR	0x21000000
Banked	
System	
Internal	
Mode	Thread
Privilege	Privileged
Stack	MSP
States	977
Sec	0.00012213
FPU	

Figure 1: Registers Table