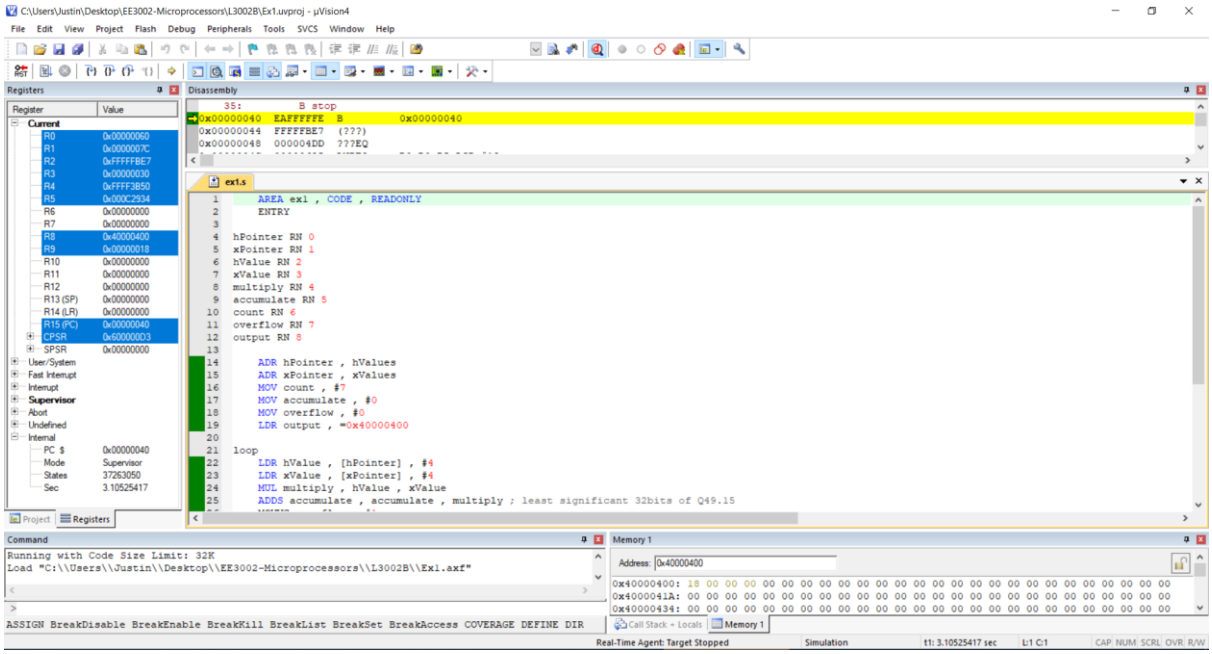
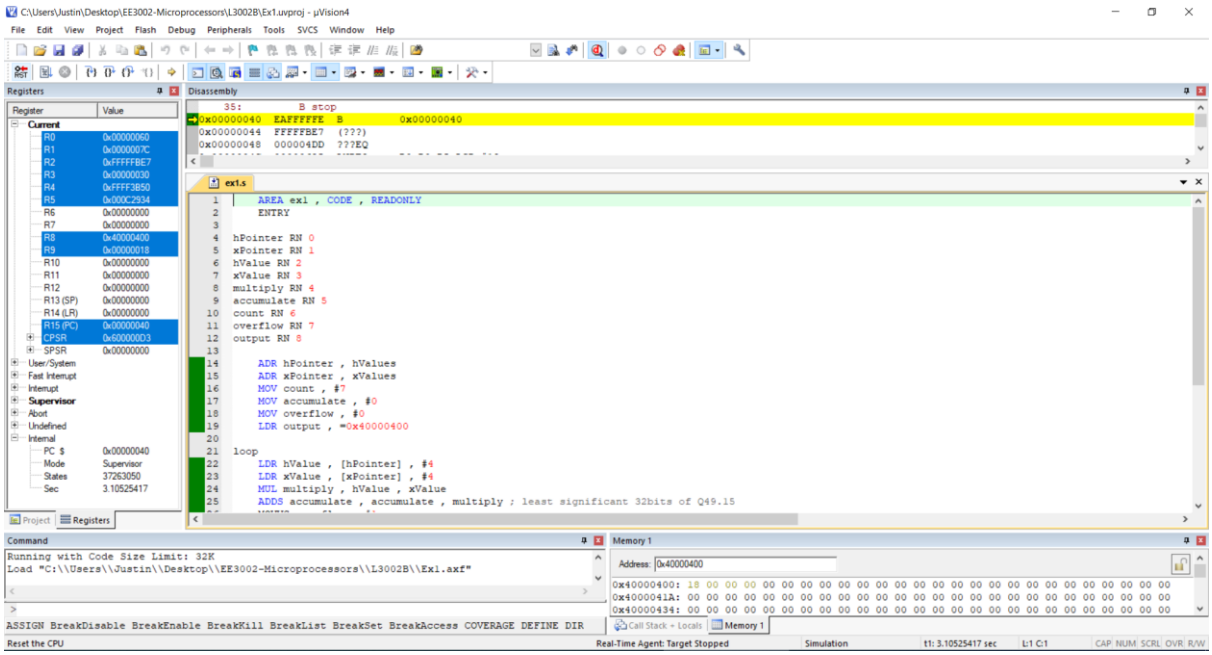
L3002B_Answer_Sheet

Answer Sheet Submitted by

Name:	Justin Chong
Matric Number:	U1921177E
Lab Group:	IL03
Date:	30/10/20

Exercise 1: (Insert screenshot of the Debug session, which must include Register, Disassemble, Memory (starting from 0x 4000 0400) and command windows)





Please type in your answer in the boxes below:

(1_1) State the number of bytes used in your code
(include literal pool and data stored in the program memory)

128

(1_2) State the Q17.15 format of the coefficient to hex data :

Coefficients	**Q17.15 format represented in hexadecimal**
-0.032	0x FFFF FBE7
0.038	0x 0000 04DD
0.048	0x 0000 0625
-0.048	0X FFFF F9DB

Let's student explain how they derive the above numbers.

(1_3) Verify that your digital filter output is correct:

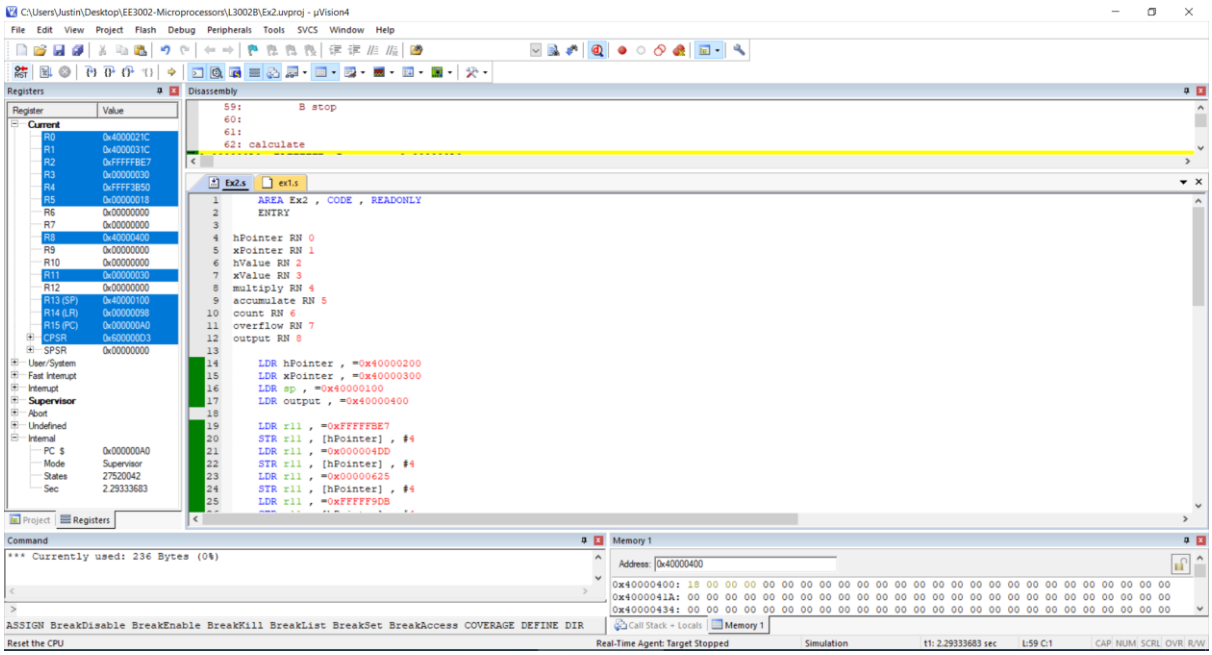
Correct answer = 24.324

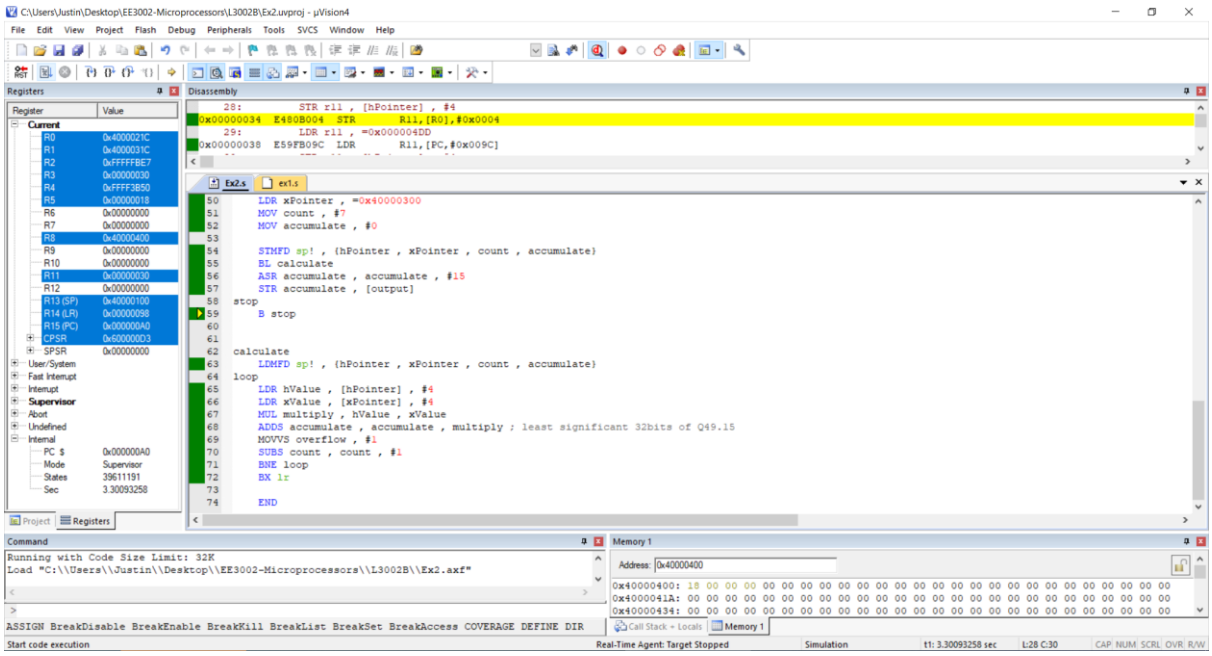
R9 value = 0x18 = 24

(1_4) What do you check whether your digital filter output has overflown? Why is the Z flag = 1

I check the V (signed overflow) flag to see if the output has overflown. The Z flag == 1 when the result of the flag-setting instruction is zero.

Exercise 2 (Insert screenshot of the Debug session, which must include Register, Disassemble, Memory (starting from 0x 4000 0400) and command windows)





(2_1) State the number of bytes used in your code
(include literal pool and data stored in the program memory)

236

(2_2) Fill in the content of the stack (FD) after your program pushes the data into the stack

Address	Content
0x4000 0100	00 00 00 00
0x4000 000FC	07 00 00 00
0x4000 000F8	00 00 00 00
0x4000 000F4	00 03 00 40
0x4000 000F0	00 02 00 40
0x4000 000EC	00 00 00 00
SP (What is the value of SP after the completion of the program)	0x4000 0100

(2_3) Student to list down their mistakes when programming. How do they debug their code?

I loaded the wrong values into memory when entering values of the input data. I debug by running the program step by step and checking the register values to make sure everything is correct.

Exercise 3: Optional Questions (Insert screenshot of the Debug session, which must include Register, Disassemble, Memory (starting from 0x 4000 0400) and command windows). Please expand the page if you need to show more code.

Declaration:

I, **Chong Zhi Yu Justin** understand that submitting work that isn't my own may result in no mark being awarded to this lab component.