COMP 3315 Quiz 1

60 min

Number and Name:

Write and run a MIPS algorithm that updates integers of an array using a specific update function. For this update function, use a procedure that takes 1 integer and returns a new value. This value will be determined with a function according to your student number's last digit. Check the table and explanation in the Update Function part. Call the update function in a loop for each value in the array. Your array values and specifications with respect to the last digit of your student numbers are below.

***arr*: .word 9, -1, 4, -2, 8 , -6**

Last Digit of Student Number	If Positive	If Negative	If Even	If Odd
Group A - 0,1,2	Adds two			Shift left 2 times
Group B - 3,4,5		Multiplies 3		Shift left 1 time
Group C - 6,7,8,9	Subtracts 6		Divides 2	

Function Table

Final array values for Groups:

Group A	**44, -4, 6, -2, 10, -6**
Group B	**18, -6, 4, -6, 8, -18**
Group C	**3, -1, -1, -1, 1, -3**

Update Function:
Takes 1 integer and returns a new integer value. First, check whether number is positive or negative and apply your groups respected modification. Second, check whether number is even or odd and apply your groups respected modifications. For some numbers it applies both conditions, for some only positiveness or oddness applies and for some numbers it returns without modifying number.

Some examples:

Group A: For 9: 9 is positive so 9+2= 11, 11 is Odd so 11 shift left 2= 44
Group B: For -1: -1 is negative so -1*3= -3, -3 is Odd so -3 shift left 1= -6
Group C: For 4: 4 is positive so 4 – 6 =-2, -2 is Even so -2 / 2 = -1

Main:
Call your function for all elements in the array, Get integer values from the array one by one and send it to the procedure. Get the return value and update the array.

You are expected to implement the MIPS code. Use necessary code and register conventions with some comments. Upload .asm file for your quiz.