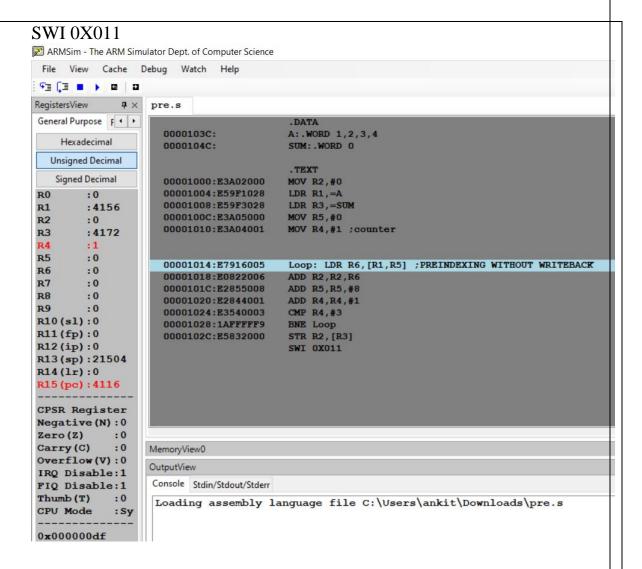


## Department of Computer Science & Engineering Microprocessor & Computer Architecture MPCA-Laboratory/Assignment/Hands-on/Project UE20CS252

NAME: ANKITHA C SRN : PES1UG20CS626 SECTION: K

Sl. No	Programs
Week No.3	
	<ul> <li>1 Write a program in ARM7TDMI-ISA to find the sum of N data items at alternate odd or even positions] locations in the memory. Store the result in the memory location.</li> <li>a. Use Pre-indexing addressing mode</li></ul>
	SUM:.WORD 0  .TEXT  MOV R2,#0  LDR R1,=A  LDR R3,=SUM  MOV R5,#0  MOV R4,#1 ;counter
	Loop: LDR R6,[R1,R5] ;PREINDEXING WITHOUT WRITEBACK ADD R2,R2,R6 ADD R5,R5,#8 ADD R4,R4,#1 CMP R4,#3 BNE Loop STR R2,[R3]



b. Use Post- Indexing addressing mode

;post indexing

.DATA

A:.WORD 1,2,3,4 SUM:.WORD 0

.TEXT

MOV R2,#0

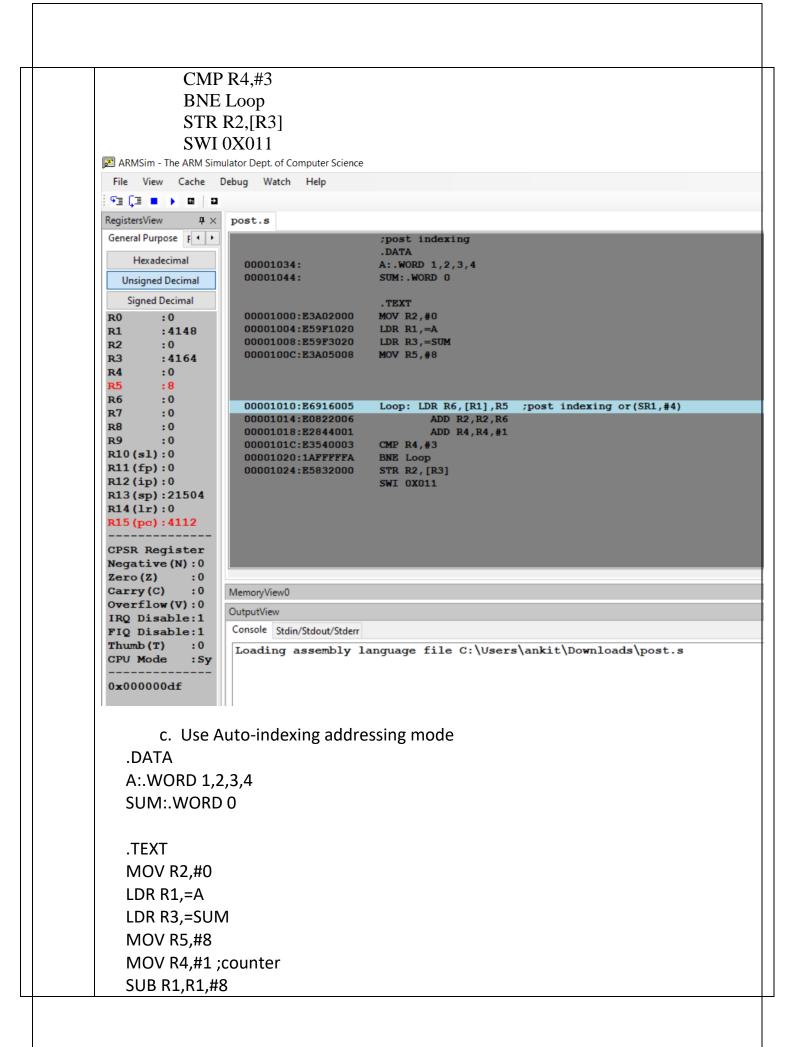
LDR R1,=A

LDR R3,=SUM

MOV R5,#8

Loop: LDR R6,[R1],R5 ;post indexing or(SR1,#4)

ADD R2,R2,R6 ADD R4,R4,#1



```
Loop: LDR R6,[R1,R5]! ;PREINDEXING WITH WRITEBACK
       ADD R2,R2,R6
       ADD R4,R4,#1
   CMP R4,#3
   BNE Loop
   STR R2,[R3]
   SWI 0X011
ARMSim - The ARM Simulator Dept. of Computer Science
 File View Cache Debug Watch Help
 F3 [3 ■ → 6 | 2
RegistersView
               \mathbf{r} \times
                    auto.s
 General Purpose F + +
                      0000103C:
                                           A:.WORD 1,2,3,4
    Hexadecimal
                      0000104C:
                                           SUM:.WORD 0
  Unsigned Decimal
                                            . TEXT
   Signed Decimal
                      00001000:E3A02000
                                           MOV R2,#0
R0
                      00001004:E59F1028
                                           LDR R1,=A
                      00001008:E59F3028
                                           LDR R3,=SUM
R1
         :4148
         :0
                      0000100C:E3A05008
                                           MOV R5,#8
R2
                      00001010:E3A04001
                                           MOV R4,#1 ; counter
R3
         :4172
                      00001014:E2411008
                                           SUB R1,R1,#8
R4
         :1
R5
         :8
R6
         : 0
                      00001018:E7B16005
                                           Loop: LDR R6, [R1, R5]!
                                                                  ; PREINDEXING WITH WRITEBACK
R7
         : 0
                      0000101C:E0822006
                                                   ADD R2,R2,R6
R8
         : 0
                      00001020:E2844001
                                                   ADD R4,R4,#1
         : 0
R9
                                           CMP R4,#3
                      00001024:E3540003
R10(s1):0
                      00001028:1AFFFFFA
                                           BNE Loop
R11(fp):0
                      0000102C:E5832000
                                           STR R2, [R3]
R12(ip):0
                                           SWI 0X011
R13(sp):21504
R14(lr):0
R15 (pc):4120
 CPSR Register
 Negative(N):0
Zero(Z)
             : 0
Carry (C)
             : 0
                   MemoryView0
Overflow(V):0
                   OutputView
IRQ Disable:1
                    Console Stdin/Stdout/Stderr
FIQ Disable:1
Thumb (T)
             : 0
                    Loading assembly language file C:\Users\ankit\Downloads\auto.s
CPU Mode
             :Sy
0x000000df
```