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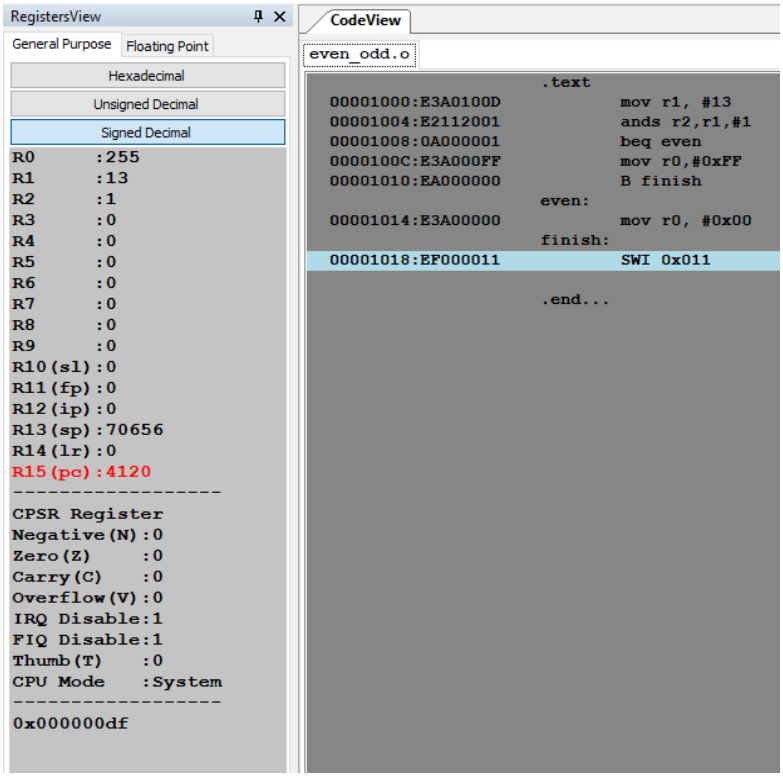
PES2UG20CS130
MPCA-Lab Week-1

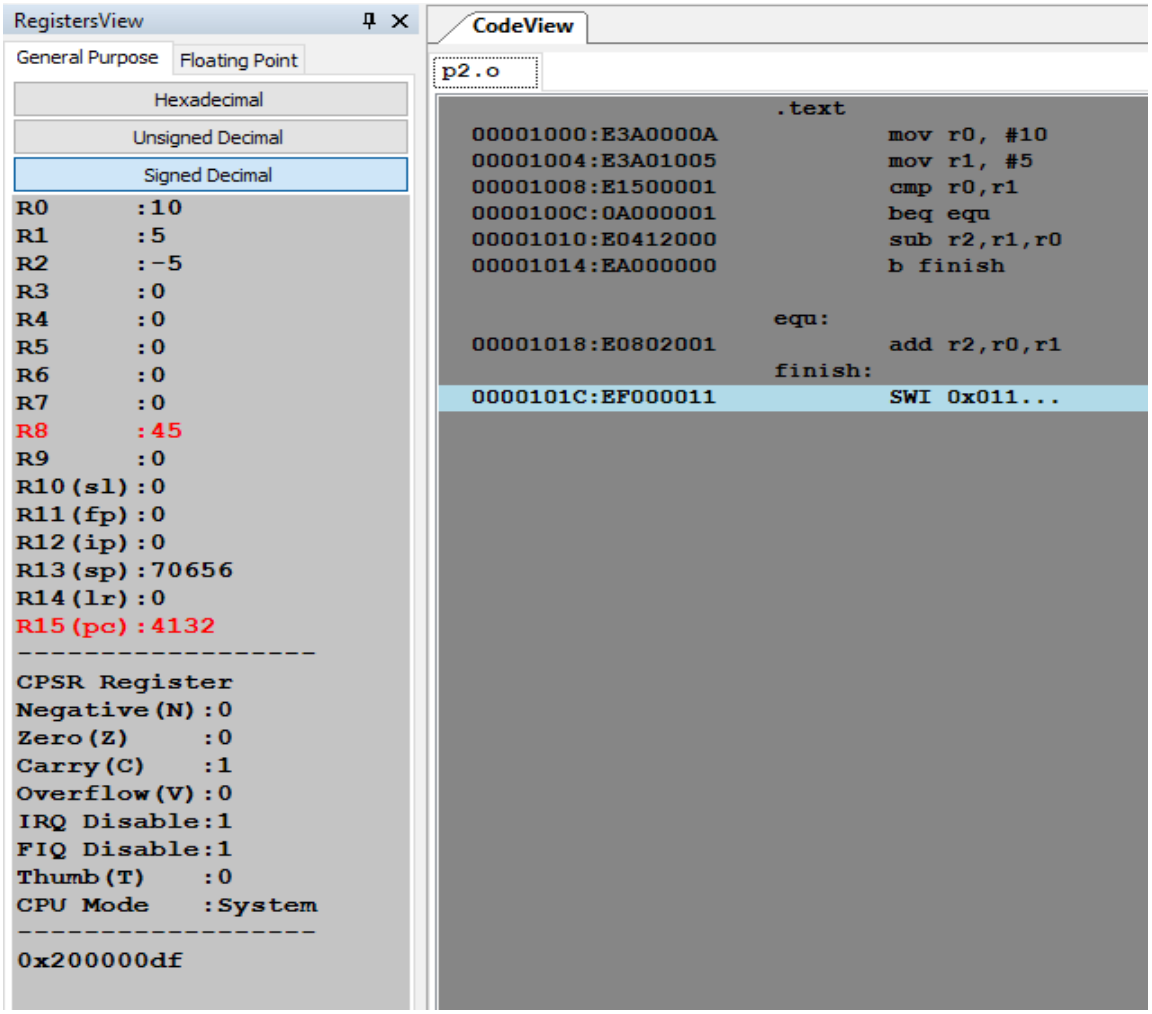
Task 1: Write a program to check if a number stored in a register is even or odd. If even, store 00 in R0, else FF in R0.

```
.text
      mov r1, #13
      ands r2,r1,#1
      beq even
      mov r0,#0xFF
      B finish
even:
      mov r0, #0x00
finish:
      SWI 0x011

.end
```



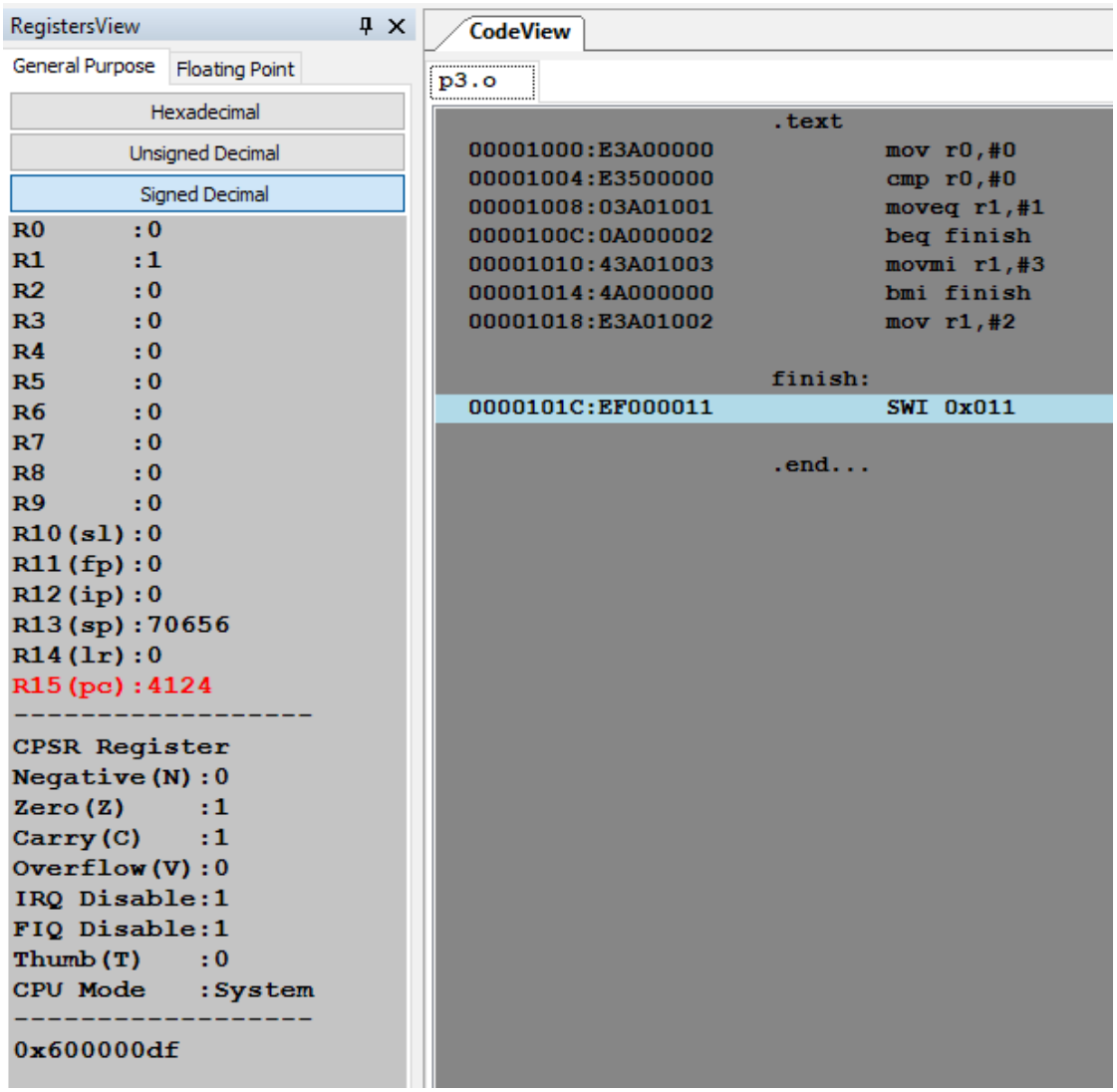
2) Write a program to compare the value of R0 and R1, add if R0 = R1, else subtract

```
.text
      mov r0, #10
      mov r1, #5
      cmp r0,r1
      beq equ
      sub r2,r1,r0
      b finish

equ:
      add r2,r0,r1
finish:
      SWI 0x011
```



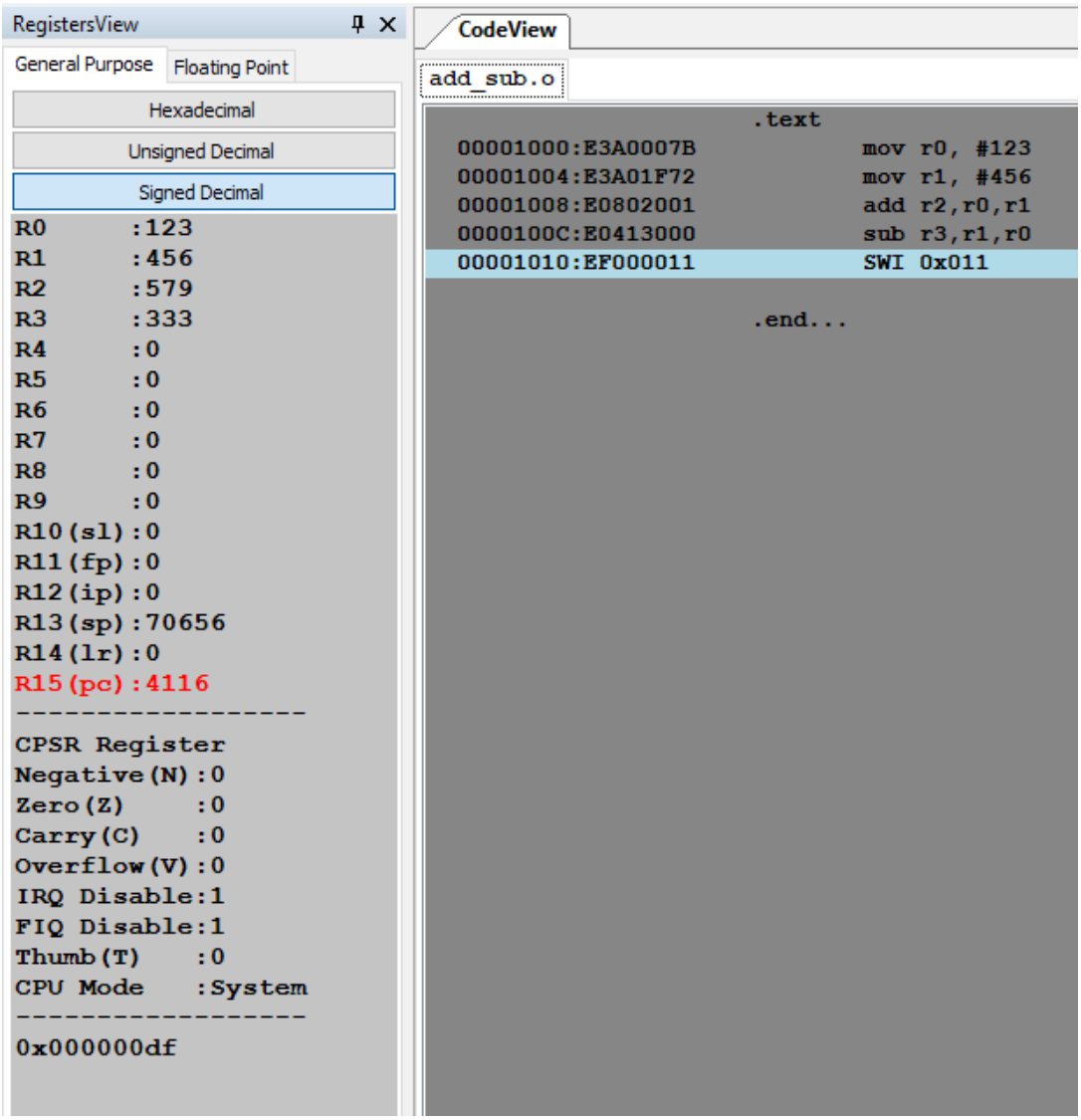
3) Based on the value of the number in R0, Write an ALP to store 1 in R1 if R0 is zero, Store 2 in R1 if R0 is positive, store 3 in R1 if R0 is negative.

```
.text
      mov r0,#0
      cmp r0,#0
      moveq r1,#1
      beq finish
      movmi r1,#3
      bmi finish
      mov r1,#2

finish:
      SWI 0x011

.end
```



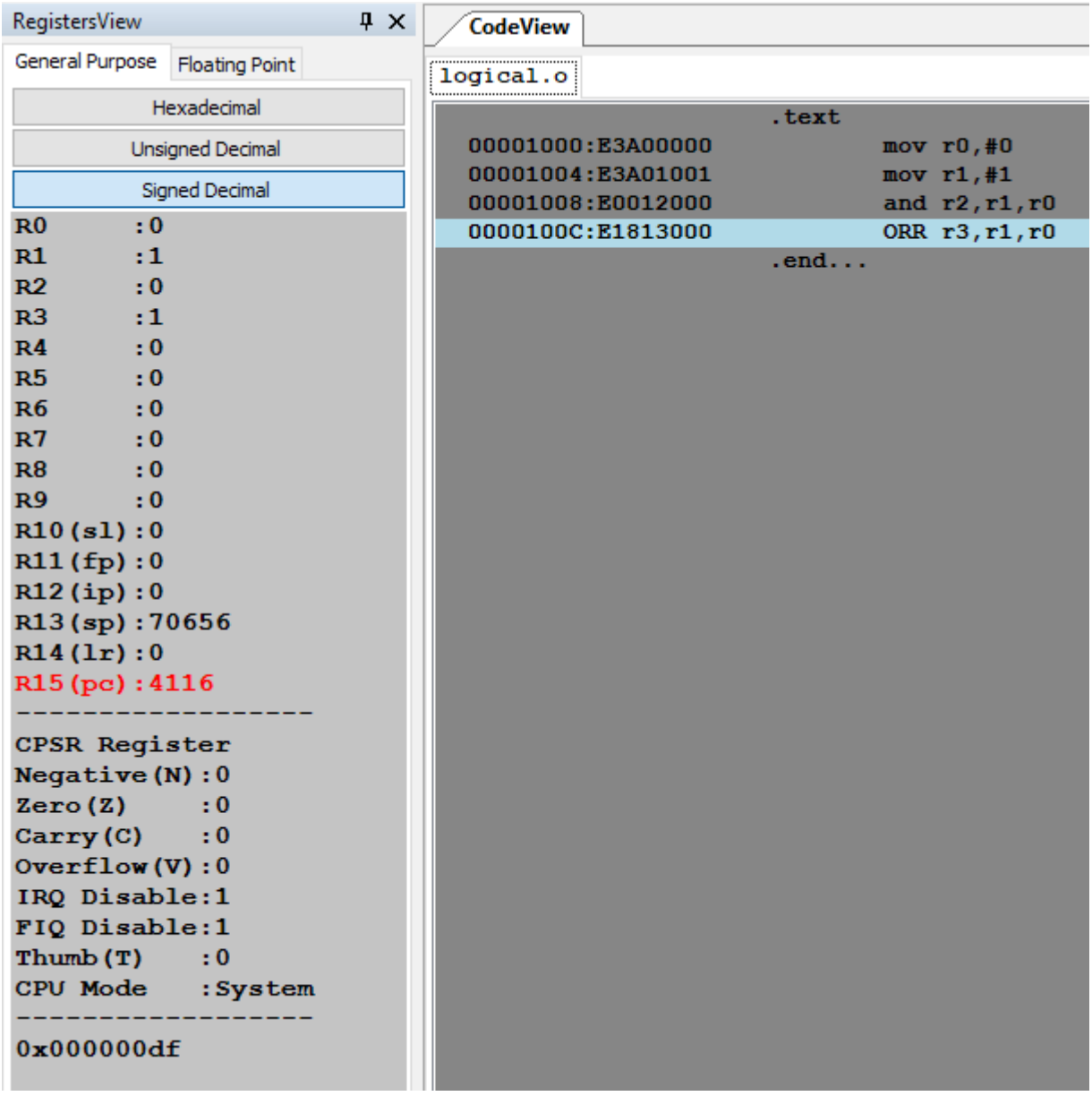
4) Write an ALP using ARM instruction set to add and subtract two 32 bit numbers. Both numbers are in registers.

```
.text
      mov r0,#0
      cmp r0,#0
      moveq r1,#1
      beq finish
      movmi r1,#3
      bmi finish
      mov r1,#2

finish:
      SWI 0x011

.end
```



5) Write an ALP to demonstrate logical operations. All operands are in registers.

```
.text
      mov r0,#0
      mov r1,#1
      and r2,r1,r0
      orr r3,r1,r0
.end
```



6) Write an ALP to add 5 numbers where values are present in registers.

```
.text
      mov r1,#5
      mov r2,#7
      mov r3,#3
      mov r4,#11
      mov r5,#9
      add r6,r1,r2
      add r7,r3,r4
      add r8,r6,r7
      add r8,r8,r5
.end
```