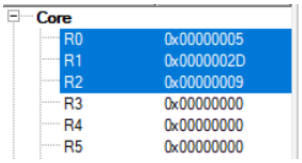
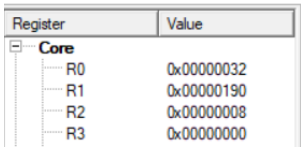
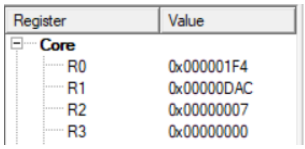
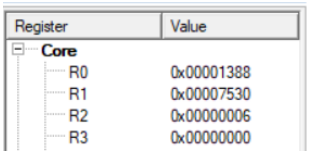
Nirbhay Sharma (B19CSE114)

Digital Systems Lab - 4

QUE - 1

```
    AREA CONDITIONALS , CODE , READONLY
    EXPORT __main

__main
    MOV R0,#5000
    MOV R1,#1
    CMP R0,#10
    BLE STORE9N
    CMP R0,#100
    BLE STORE8N
    CMP R0,#1000
    BLE STORE7N
    B STORE6N


STORE9N
    MOV R2,#9
    MUL R1,R0,R2
    B STOP

STORE8N
    MOV R2,#8
    MUL R1,R0,R2
    B STOP

STORE7N
    MOV R2,#7
    MUL R1,R0,R2
    B STOP

STORE6N
    MOV R2,#6
    MUL R1,R0,R2
    B STOP

STOP B STOP
    END
```

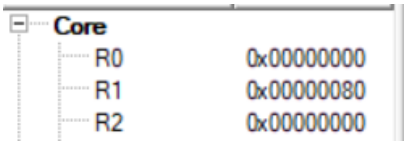
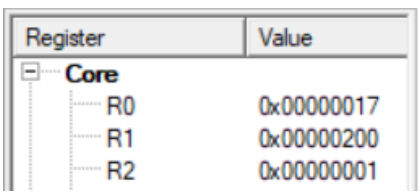
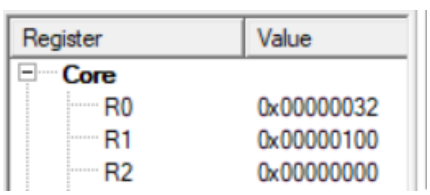
logic - applied various if else conditions using CMP instruction and accordingly updated the registers, register R0 stores the value N, register R1 stores the final result and R2 stores the multiplicative factor by which the register R0 is multiplied

N = 5	N = 50	N = 500	N=5000
			
R1=0x2D=45	R1=0x190=400	R1=0xDAC=3500	R1=0x7530=30000

QUE - 2

```
    AREA CONDITIONALS , CODE , READONLY
    EXPORT __main

__main
    MOV R0,#50
    CMP R0,#0
    BEQ STORE128

    AND R2,R0,#1
    CMP R2,#0
    BEQ STORE256
    B STORE512

STORE128
    MOV R1,#128
    B STOP

STORE256
    MOV R1,#256
    B STOP

STORE512
    MOV R1,#512
    B STOP

STOP B STOP
    END
```

logic - applied various if else conditions using CMP instruction and accordingly updated the registers, register R0 stores the value N, register R1 stores the final result and R2 stores the modulo of R0 with 2 (R0 % 2)

N = 0	N = 23	N = 50
		

N = 0	N = 23	N = 50
R1=0x80=128	R1=0x200=512	R1=0x100=256