

# CSN 221

# Assignment 2

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**Question :** Write a SimpleRisc assembly program to find the Ramanujan number , the smallest number that is a sum of two cubes in two different ways.

```
mov r1,1
mov r2,0
.loop1
    mov r3,0
    mov r4,0
    .loop2
        add r4 , r4 , 1
        .loop3
            mov r5 , r4
            add r5 , r5 , 1
            mov r6 , r4
            mul r6 , r6 , r4
            mul r6 , r6 , r4
            mov r7 , r5
            mul r7 , r7 , r5
            mul r7 , r7 , r5
            add r8 , r6 , r7
            cmp r8 , r1
            beq.method1
                .method1
                    add r3 , 1
                    mov r9 , 1
                    add r9 , r9 , 1
                    cmp r9 , r5
                    bgt.loop3
                    cmp r9 , r4
                    bgt.loop2
        .method2
            mov r10 , r1
            add r2 , 1
    add r1 , 1
    cmp 1 , r2
    bgt.loop1
```

**The answer is stored in r10.**