

ASSIGNMENT-2

Problem: Write a simple RISC assembly program to find the Ramanujan number, the smallest number that is a sum of two cubes in two different ways.

Solution:

```
mov r1,1
.loop1:
mov r3,0
mov r2,1
.loop2:
add r4,r2,1
.loop3:
    mul r5,r2,r2
    mul r5,r5,r2
    mul r6,r4,r4
    mul r6,r6,r4
    add r7,r6,r5
    add r4,r4,1
    cmp r7,r1
    beq .count
    cmp 0,0
    beq .cnd
    .count:
        add r3,r3,1
    .cnd:
        mul r8,r4,r4
```

mul r8,r8,r4

cmp r8,r1

bgt .l2

add r2,r2,1

mul r9,r2,r2

mul r9,r9,r2

cmp r9,r1

bgt .l1

cmp r3,2

beq .end

add r1,r1,1

.end: