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Algorithm->Ramanujan number is found by running two loops one from $i=1$ to $i \leq N^{1/3}$ and the second loop is running from $j = i+1$ to $j \leq N^{1/3}$ through the process it is checking for equality of $i^3 + j^3 = N^3$ twice (i.e there should be two ways in the programme setting the register values and performing the appropriate arithmetic operation the code in assembler follows as:-)

```
mov r0, 1 /*number iterating from 1 upto N(ramanujan number)*/  
/* initializing all values */
```

```
mov r1, 0
```

```
mov r2, 0
```

```
mov r7, 0
```

```
loop1:
```

```
    mov r1, r1+1
```

```
    mul r3, r1, r1
```

```
    mul r3, r3, r1 /* cube of r1*/
```

```
    cmp r3, r0
```

```
    mov r2, r1
```

```

        blt .loop2
        mov r0, r0+1
        mov r1, 0
        mov r2, 0
        mov r7, 0
        mul r6, r0, r0
        mul r6, r6, r0
        .loop1
loop2:
        mov r2, r2+1
        mul r4, r2, r2
        mul r4, r4, r2 /*finding cube of r2 */
        add r5, r3, r4
        cmp r5, r6
        beq .add_r7_1
        cmp r7, 2
        beq .print_r0
        cmp r4, r0
        blt .loop2
        .loop1
        add_r7_1:
        add r7, r7+1;

```

print_r0: code to print and break all