

CS2323 : LAB ASSIGNMENT-2

GCD CALCULATION

```
.data
.dword 3, 12, 3, 125, 50, 32, 16

.text
    lui x3, 0x10000
    lui x6, 0x10000
    addi x6, x6, 0x200 #final output
    ld x7, 0(x3)      #no. of pairs
    addi x3, x3, 8

load_gcd:
    beqz x7, Exit
    ld x4, 0(x3)      #first no.
    ld x5, 8(x3)      #second no.

    blt x5, x4, compute_gcd #x5<x4 always
    mv x8, x4
    mv x4, x5
    mv x5, x8

compute_gcd:
    mv x10, x4
gcd_loop:
    bltu x10, x5, swap
    sub x10, x10, x5
    j gcd_loop

swap:
    mv x4, x5
    mv x5, x10
    bnez x5, compute_gcd

    j store_gcd

store_gcd:
    sd x4, 0(x6)
    addi x3, x3, 16
    addi x6, x6, 8
    addi x7, x7, -1
    j load_gcd

Exit:
    nop
```