```
        .file   1 "test_asm3.c"
        .section .mdebug.abi32
        .previous
        .gnu_attribute 4, 1
        .text
        .align  2
        .globl  sum
        .set    nomips16
        .ent    sum
sum:
        .frame  $fp,16,$31              # vars= 8, regs= 1/0, args= 0, gp= 0
        .mask   0x40000000,-4
        .fmask  0x00000000,0
        .set    noreorder
        .set    nomacro

        addiu   $sp,$sp,-16
        sw      $fp,12($sp)
        move    $fp,$sp
        sw      $4,16($fp)
        sw      $5,20($fp)
        sw      $6,24($fp)
        sw      $7,28($fp)
        sw      $0,0($fp)
        j       $L2
        nop

$L3:
        lw      $2,0($fp)
        sll     $3,$2,2
        lw      $2,24($fp)
        addu    $5,$2,$3
        lw      $2,0($fp)
        sll     $3,$2,2
        lw      $2,16($fp)
        addu    $2,$2,$3
        lw      $4,0($2)
        lw      $2,0($fp)
        sll     $3,$2,2
        lw      $2,20($fp)
        addu    $2,$2,$3
        lw      $2,0($2)
        addu    $2,$4,$2
        sw      $2,0($5)
        lw      $2,0($fp)
        addiu   $2,$2,1
        sw      $2,0($fp)

$L2:
        lw      $2,0($fp)
        lw      $3,28($fp)
        slt     $2,$2,$3
        bne     $2,$0,$L3
        nop

        move    $sp,$fp
        lw      $fp,12($sp)
        addiu   $sp,$sp,16
        j       $31
        nop

        .set    macro
        .set    reorder
        .end    sum

#----------------------------------------
        .size   sum, .-sum
        .align  2
        .globl  max_min_tab
```

```
        .set    nomips16
        .ent    max_min_tab
max_min_tab:
        .frame  $fp,16,$31              # vars= 8, regs= 1/0, args= 0, gp= 0
        .mask   0x40000000,-4
        .fmask  0x00000000,0
        .set    noreorder
        .set    nomacro

        addiu   $sp,$sp,-16
        sw      $fp,12($sp)
        move    $fp,$sp
        sw      $4,16($fp)
        sw      $5,20($fp)
        sw      $6,24($fp)
        sw      $7,28($fp)
        sw      $0,0($fp)
        j       $L6
        nop

$L9:
        lw      $2,0($fp)
        sll     $3,$2,2
        lw      $2,16($fp)
        addu    $2,$2,$3
        lw      $4,0($2)
        lw      $2,0($fp)
        sll     $3,$2,2
        lw      $2,20($fp)
        addu    $2,$2,$3
        lw      $2,0($2)
        slt     $2,$4,$2
        beq     $2,$0,$L7
        nop

        lw      $2,0($fp)
        sll     $3,$2,2
        lw      $2,24($fp)
        addu    $4,$2,$3
        lw      $2,0($fp)
        sll     $3,$2,2
        lw      $2,20($fp)
        addu    $2,$2,$3
        lw      $2,0($2)
        sw      $2,0($4)
        lw      $2,0($fp)
        sll     $3,$2,2
        lw      $2,28($fp)
        addu    $4,$2,$3
        lw      $2,0($fp)
        sll     $3,$2,2
        lw      $2,16($fp)
        addu    $2,$2,$3
        lw      $2,0($2)
        sw      $2,0($4)
        j       $L8
        nop

$L7:
        lw      $2,0($fp)
        sll     $3,$2,2
        lw      $2,24($fp)
        addu    $4,$2,$3
        lw      $2,0($fp)
        sll     $3,$2,2
        lw      $2,16($fp)
        addu    $2,$2,$3
        lw      $2,0($2)
        sw      $2,0($4)
```

```
        lw      $2,0($fp)
        sll     $3,$2,2
        lw      $2,28($fp)
        addu    $4,$2,$3
        lw      $2,0($fp)
        sll     $3,$2,2
        lw      $2,20($fp)
        addu    $2,$2,$3
        lw      $2,0($2)
        sw      $2,0($4)
$L8:
        lw      $2,0($fp)
        addiu   $2,$2,1
        sw      $2,0($fp)
$L6:
        lw      $2,0($fp)
        lw      $3,32($fp)
        slt     $2,$2,$3
        bne     $2,$0,$L9
        nop

        move    $2,$0
        move    $sp,$fp
        lw      $fp,12($sp)
        addiu   $sp,$sp,16
        j       $31
        nop

        .set    macro
        .set    reorder
        .end    max_min_tab
        .size   max_min_tab, .-max_min_tab
        .align  2
        .globl  mat_mul
        .set    nomips16
        .ent    mat_mul
mat_mul:
        .frame  $fp,24,$31              # vars= 16, regs= 1/0, args= 0, gp= 0
        .mask   0x40000000,-4
        .fmask  0x00000000,0
        .set    noreorder
        .set    nomacro

        addiu   $sp,$sp,-24
        sw      $fp,20($sp)
        move    $fp,$sp
        sw      $4,24($fp)
        sw      $5,28($fp)
        sw      $6,32($fp)
        sw      $0,8($fp)
        j       $L12
        nop

$L15:
        sw      $0,4($fp)
        j       $L13
        nop

$L14:
        lw      $2,8($fp)
        sll     $3,$2,3
        sll     $2,$3,2
        addu    $3,$3,$2
        lw      $2,32($fp)
        addu    $3,$2,$3
        lw      $2,4($fp)
        sll     $2,$2,2
        addu    $2,$3,$2
        sw      $0,0($2)
```

```
        lw      $2,8($fp)
        addiu   $2,$2,1
        sw      $2,8($fp)
$L13:
        lw      $2,8($fp)
        slt     $2,$2,10
        bne     $2,$0,$L14
        nop

        lw      $2,8($fp)
        addiu   $2,$2,1
        sw      $2,8($fp)
$L12:
        lw      $2,8($fp)
        slt     $2,$2,10
        bne     $2,$0,$L15
        nop

        sw      $0,8($fp)
        j       $L16
        nop

$L21:
        sw      $0,4($fp)
        j       $L17
        nop

$L20:
        sw      $0,0($fp)
        j       $L18
        nop

$L19:
        lw      $2,8($fp)
        sll     $3,$2,3
        sll     $2,$3,2
        addu    $3,$3,$2
        lw      $2,32($fp)
        addu    $4,$2,$3
        lw      $5,4($fp)
        lw      $2,8($fp)
        sll     $3,$2,3
        sll     $2,$3,2
        addu    $3,$3,$2
        lw      $2,32($fp)
        addu    $3,$2,$3
        lw      $2,4($fp)
        sll     $2,$2,2
        addu    $2,$3,$2
        lw      $6,0($2)
        lw      $2,8($fp)
        sll     $3,$2,3
        sll     $2,$3,2
        addu    $3,$3,$2
        lw      $2,24($fp)
        addu    $3,$2,$3
        lw      $2,0($fp)
        sll     $2,$2,2
        addu    $2,$3,$2
        lw      $7,0($2)
        lw      $2,0($fp)
        sll     $3,$2,3
        sll     $2,$3,2
        addu    $3,$3,$2
        lw      $2,28($fp)
        addu    $3,$2,$3
        lw      $2,4($fp)
        sll     $2,$2,2
        addu    $2,$3,$2
```

```
        lw      $2,0($2)
        mul     $2,$7,$2
        addu    $3,$6,$2
        sll     $2,$5,2
        addu    $2,$4,$2
        sw      $3,0($2)
        lw      $2,8($fp)
        addiu   $2,$2,1
        sw      $2,8($fp)
$L18:
        lw      $2,8($fp)
        slt     $2,$2,10
        bne     $2,$0,$L19
        nop

        lw      $2,8($fp)
        addiu   $2,$2,1
        sw      $2,8($fp)
$L17:
        lw      $2,8($fp)
        slt     $2,$2,10
        bne     $2,$0,$L20
        nop

        lw      $2,8($fp)
        addiu   $2,$2,1
        sw      $2,8($fp)
$L16:
        lw      $2,8($fp)
        slt     $2,$2,10
        bne     $2,$0,$L21
        nop

        li      $2,1                    # 0x1
        move    $sp,$fp
        lw      $fp,20($sp)
        addiu   $sp,$sp,24
        j       $31
        nop

        .set    macro
        .set    reorder
        .end    mat_mul
        .size   mat_mul, .-mat_mul
        .rdata
        .align  2
$LC0:
        .ascii  "%d\012\000"
        .text
        .align  2
        .globl  main
        .set    nomips16
        .ent    main
main:
        .frame  $fp,32,$31              # vars= 0, regs= 2/0, args= 24, gp= 0
        .mask   0xc0000000,-4
        .fmask  0x00000000,0
        .set    noreorder
        .set    nomacro

        addiu   $sp,$sp,-32
        sw      $31,28($sp)
        sw      $fp,24($sp)
        move    $fp,$sp
        sw      $4,32($fp)
        sw      $5,36($fp)
        lui     $2,%hi(A)
        addiu   $4,$2,%lo(A)
        lui     $2,%hi(B)
```

```
        addiu   $5,$2,%lo(B)
        lui     $2,%hi(C)
        addiu   $6,$2,%lo(C)
        li      $7,10                   # 0xa
        jal     sum
        nop

        li      $2,10                   # 0xa
        sw      $2,16($sp)
        lui     $2,%hi(A)
        addiu   $4,$2,%lo(A)
        lui     $2,%hi(B)
        addiu   $5,$2,%lo(B)
        lui     $2,%hi(C)
        addiu   $6,$2,%lo(C)
        lui     $2,%hi(D)
        addiu   $7,$2,%lo(D)
        jal     max_min_tab
        nop

        move    $3,$2
        lui     $2,%hi($LC0)
        addiu   $4,$2,%lo($LC0)
        move    $5,$3
        jal     printf
        nop

        move    $2,$0
        move    $sp,$fp
        lw      $31,28($sp)
        lw      $fp,24($sp)
        addiu   $sp,$sp,32
        j       $31
        nop

        .set    macro
        .set    reorder
        .end    main
        .size   main, .-main

        .comm   C,40,4

        .comm   D,40,4
        .ident  "GCC: (GNU) 4.3.2"
```