Laboration 3

Bilaga B

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```
           .file      1 "start.c"

 # -G value = 8, Cpu = 3000, ISA = 1
 # GNU C version cygnus-2.7.2-970404 (mips-mips-ecoff) compiled by GNU C version
cygnus-2.7.2-970404.
 # options passed:  -msoft-float
 # options enabled:  -fpeephole -ffunction-cse -fkeep-static-consts
 # -fpcc-struct-return -fcommon -fverbose-asm -fgnu-linker -msoft-float
 # -meb -mcpu=3000

gcc2_compiled.:
__gnu_compiled_c:
           .globl     antal
           .sdata
           .align     2
antal:
           .word      10
           .text
           .align     2
           .globl     Partition
           .ent       Partition
Partition:
           .frame     $fp,24,$31    # vars= 16, regs= 1/0, args= 0, extra= 0
           .mask      0x40000000,-8
           .fmask     0x00000000,0
           subu       $sp,$sp,24
           sw         $fp,16($sp)
           move       $fp,$sp
           sw         $4,24($fp)
           sw         $5,28($fp)
           sw         $6,32($fp)
           lw         $2,28($fp)
           move       $3,$2
           sll        $2,$3,2
           lw         $3,24($fp)
           addu       $2,$2,$3
           lw         $3,0($2)
           sw         $3,0($fp)
           lw         $2,28($fp)
           addu       $3,$2,1
           sw         $3,4($fp)
           lw         $2,32($fp)
           sw         $2,8($fp)
$L2:
$L5:
           lw         $2,4($fp)
           move       $3,$2
           sll        $2,$3,2
           lw         $3,24($fp)
           addu       $2,$2,$3
           lw         $3,0($2)
           lw         $2,0($fp)
           slt        $3,$2,$3
           bne        $3,$0,$L8
           lw         $2,4($fp)
           lw         $3,8($fp)
           slt        $2,$3,$2
           beq        $2,$0,$L7
           j          $L8
$L8:
           j          $L6
```

```
$L7:
           lw         $2,4($fp)
           addu       $3,$2,1
           sw         $3,4($fp)
           j          $L5
$L6:
           .set       noreorder
           nop
           .set       reorder
$L9:
           lw         $2,8($fp)
           move       $3,$2
           sll        $2,$3,2
           lw         $3,24($fp)
           addu       $2,$2,$3
           lw         $3,0($2)
           lw         $2,0($fp)
           slt        $3,$2,$3
           beq        $3,$0,$L12
           lw         $2,4($fp)
           lw         $3,8($fp)
           slt        $2,$3,$2
           beq        $2,$0,$L11
           j          $L12
$L12:
           j          $L10
$L11:
           lw         $2,8($fp)
           addu       $3,$2,-1
           sw         $3,8($fp)
           j          $L9
$L10:
           lw         $2,4($fp)
           lw         $3,8($fp)
           slt        $2,$3,$2
           bne        $2,$0,$L4
           lw         $2,4($fp)
           move       $3,$2
           sll        $2,$3,2
           lw         $3,24($fp)
           addu       $2,$2,$3
           lw         $3,0($2)
           sw         $3,12($fp)
           lw         $2,4($fp)
           move       $3,$2
           sll        $2,$3,2
           lw         $3,24($fp)
           addu       $2,$2,$3
           lw         $3,8($fp)
           move       $4,$3
           sll        $3,$4,2
           lw         $4,24($fp)
           addu       $3,$3,$4
           lw         $4,0($3)
           sw         $4,0($2)
           lw         $2,8($fp)
           move       $3,$2
           sll        $2,$3,2
           lw         $3,24($fp)
           addu       $2,$2,$3
           lw         $3,12($fp)
           sw         $3,0($2)
           lw         $2,4($fp)
           addu       $3,$2,1
           sw         $3,4($fp)
           lw         $2,8($fp)
           addu       $3,$2,-1
           sw         $3,8($fp)
$L13:
$L4:
           lw         $2,4($fp)
           lw         $3,8($fp)
           slt        $2,$3,$2
           beq        $2,$0,$L14
           j          $L3
$L14:
           j          $L2
$L3:
           lw         $2,8($fp)
           move       $3,$2
           sll        $2,$3,2
           lw         $3,24($fp)
           addu       $2,$2,$3
           lw         $3,0($2)
           sw         $3,12($fp)
           lw         $2,8($fp)
           move       $3,$2
           sll        $2,$3,2
           lw         $3,24($fp)
           addu       $2,$2,$3
           lw         $3,28($fp)
           move       $4,$3
           sll        $3,$4,2
           lw         $4,24($fp)
           addu       $3,$3,$4
           lw         $4,0($3)
           sw         $4,0($2)
           lw         $2,28($fp)
           move       $3,$2
           sll        $2,$3,2
           lw         $3,24($fp)
           addu       $2,$2,$3
           lw         $3,12($fp)
           sw         $3,0($2)
           lw         $3,8($fp)
           move       $2,$3
           j          $L1
$L1:
           move       $sp,$fp                # sp not trusted here
           lw         $fp,16($sp)
           addu       $sp,$sp,24
           j          $31
           .end       Partition
           .align     2
           .globl     QuickSort
           .ent       QuickSort
QuickSort:
           .frame     $fp,32,$31             # vars= 8, regs= 2/0, args= 16, extra=
0
           .mask      0xc0000000,-4
           .fmask     0x00000000,0
           subu       $sp,$sp,32
           sw         $31,28($sp)
           sw         $fp,24($sp)
           move       $fp,$sp
           sw         $4,32($fp)
           sw         $5,36($fp)
           sw         $6,40($fp)
           lw         $2,36($fp)
           lw         $3,40($fp)
           slt        $2,$2,$3
           beq        $2,$0,$L16
           lw         $4,32($fp)
           lw         $5,36($fp)
           lw         $6,40($fp)
           jal        Partition
           sw         $2,16($fp)
           lw         $3,16($fp)
           addu       $2,$3,-1
           lw         $4,32($fp)
           lw         $5,36($fp)
           move       $6,$2
           jal        QuickSort
           lw         $3,16($fp)
           addu       $2,$3,1
           lw         $4,32($fp)
           move       $5,$2
           lw         $6,40($fp)
           jal        QuickSort
$L16:
$L15:
           move       $sp,$fp             # sp not trusted here
           lw         $31,28($sp)
           lw         $fp,24($sp)
           addu       $sp,$sp,32
           j          $31
           .end       QuickSort
           .sdata
           .align     2
$LC0:
           .ascii     "\n\000"
           .align     2
$LC1:
           .ascii     "%l \n\000"
           .text
           .align     2
           .globl     skriv
           .ent       skriv
skriv:
           .frame     $fp,32,$31          # vars= 8, regs= 2/0, args= 16, extra=
0
           .mask      0xc0000000,-4
           .fmask     0x00000000,0
           subu       $sp,$sp,32
           sw         $31,28($sp)
           sw         $fp,24($sp)
           move       $fp,$sp
           sw         $4,32($fp)
           la         $4,$LC0
           jal        printf
           sw         $0,16($fp)
$L18:
           lw         $2,16($fp)
           lw         $3,antal
           slt        $2,$2,$3
           bne        $2,$0,$L21
           j          $L19
$L21:
           lw         $2,16($fp)
           move       $3,$2
           sll        $2,$3,2
           lw         $3,32($fp)
           addu       $2,$2,$3
           la         $4,$LC1
           lw         $5,0($2)
           jal        printf
$L20:
           lw         $2,16($fp)
           addu       $3,$2,1
           sw         $3,16($fp)
           j          $L18
$L19:
$L17:
           move       $sp,$fp               # sp not trusted here
           lw         $31,28($sp)
           lw         $fp,24($sp)
           addu       $sp,$sp,32
           j          $31
           .end       skriv
           .rdata
           .align     2
$LC2:
           .word      4
           .word      5
           .word      2
           .word      2
           .word      1
           .word      6
           .word      7
           .word      9
           .word      5
           .word      10
           .text
           .align     2
           .globl     main
           .ent       main
main:
           .frame     $fp,64,$31            # vars= 40, regs= 2/0, args= 16, extra=
0
           .mask      0xc0000000,-4
           .fmask     0x00000000,0
           subu       $sp,$sp,64
           sw         $31,60($sp)
           sw         $fp,56($sp)
           move       $fp,$sp
           jal        __main
           addu       $2,$fp,16
           la         $3,$LC2
           move       $4,$2
           move       $5,$3
           li         $6,40                 # 0x00000028
           jal        memcpy
           addu       $4,$fp,16
           jal        skriv
           lw          $3,antal
           addu        $2,$3,-1
           addu        $4,$fp,16
           move        $5,$0
           move        $6,$2
           jal         QuickSort
           addu        $4,$fp,16
           jal         skriv
$L22:
           move        $sp,$fp               # sp not trusted here
           lw          $31,60($sp)
           lw          $fp,56($sp)
           addu        $sp,$sp,64
           j           $31
           .end        main
```