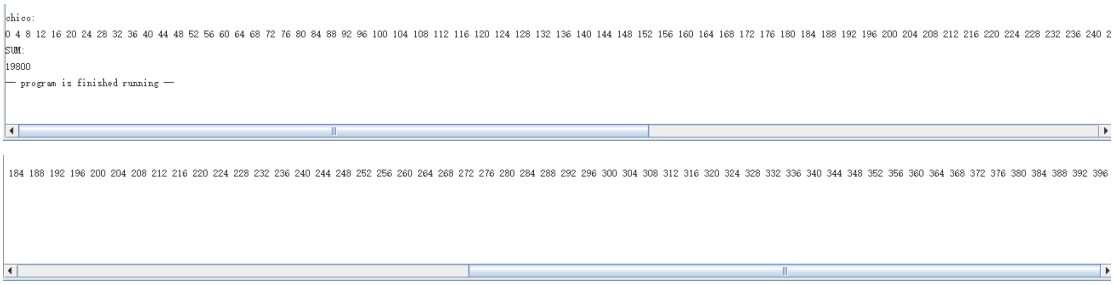
作业 7：第 8 次课课堂练习

5.1

```
.data
CHICO:  .space  400
tip:  .asciiz  "chico:\n"
result:  .asciiz  "SUM:\n"
sp:  .asciiz  "  "
enter:  .asciiz  "\n"
.globl  main
.text
main:
li  $t2,100  #  n
li  $t3,0
li  $t4,400
init:
sw  $t3,CHICO($t3)
addi  $t3,$t3,4
blt  $t3,$t4,init
la  $a0,CHICO
la  $a1,tip
jal  printArr
la  $t0,CHICO
li  $t1,0
loop:
lw  $t3,($t0)
add  $t1,$t1,$t3
addi  $t0,$t0,4
addi  $t2,$t2,-1
bgtz  $t2,loop
li  $v0,4
la  $a0,result
syscall
li  $v0,1
move  $a0,$t1
syscall
li  $v0,10
syscall
printArr:
move  $t5,$a0
li  $v0,4
```

```
move  $a0,$a1
syscall
li  $t3,0
print:
lw  $t6,($t5)
li  $v0,1
move  $a0,$t6
syscall
li  $v0,4
la  $a0,sp
syscall
addi  $t3,$t3,4
addi  $t5,$t5,4
blt  $t3,$t4,print
li  $v0,4
la  $a0,enter
syscall
jr  $ra
```

结果:



作业 8：第 8 次课课后练习

5.2

```
.data
SRC:  .space  400
DEST:  .space  400
src:  .asciiz  "SRC:\n"
dest:  .asciiz  "DEST:\n"
sp:  .asciiz  "  "
enter:  .asciiz  "\n"
.globl  main
.text
main:
```

```
la  $t0,SRC
la  $t1,DEST
li  $t2,100  #n
li  $t3,0
li  $t4,400
init:
sw  $t3,SRC($t3)
addi  $t3,$t3,4
blt  $t3,$t4,init
la  $a0,SRC
la  $a1,src
jal  printArr
loop:
lw  $t3,($t0)
sw  $t3,($t1)
addi  $t0,$t0,4
addi  $t1,$t1,4
addi  $t2,$t2,-1
bgtz  $t2,loop
la  $a0,DEST
la  $a1  dest
jal  printArr
li  $v0,10
syscall
printArr:
move  $t5,$a0
li  $v0,4
move  $a0,$a1
syscall
li  $t3,0
print:
lw  $t6,($t5)
li  $v0,1
move  $a0,$t6
syscall
li  $v0,4
la  $a0,sp
syscall
addi  $t3,$t3,4
addi  $t5,$t5,4
blt  $t3,$t4,print
li  $v0,4
la  $a0,enter
syscall
```

```
jr  $ra
```

结果:

```
SRC:
0 4 8 12 16 20 24 28 32 36 40 44 48 52 56 60 64 68 72 76 80 84 88 92 96 100
DEST:
0 4 8 12 16 20 24 28 32 36 40 44 48 52 56 60 64 68 72 76 80 84 88 92 96 100

— program is finished running —
```

---

104 108 112 116 120 124 128 132 136 140 144 148 152 156 160 164 168 172 176 180 184 188 192 196 200

104 108 112 116 120 124 128 132 136 140 144 148 152 156 160 164 168 172 176 180 184 188 192 196 200

---

204 208 212 216 220 224 228 232 236 240 244 248 252 256 260 264 268 272 276 280 284 288 292 296 300

204 208 212 216 220 224 228 232 236 240 244 248 252 256 260 264 268 272 276 280 284 288 292 296 300

---

304 308 312 316 320 324 328 332 336 340 344 348 352 356 360 364 368 372 376 380 384 388 392 396

304 308 312 316 320 324 328 332 336 340 344 348 352 356 360 364 368 372 376 380 384 388 392 396

5.5

```
.data
N:  .word  9,10,32666,32777,654321
sp:  .asciiz  "\n"
.globl  main
.text
main:
li  $t0,5
la  $t1,N
loop1:
lw  $a0,($t1)
jal  SUM
move  $a0,$v0
li  $v0,1
syscall
la  $a0,sp
li  $v0,4
syscall
addi  $t1,$t1,4
```

```
addi  $t0,$t0,-1
bgtz  $t0,loop1
li  $v0,10
syscall
SUM:
xor  $v0,$v0,$v0
addi  $t2,$a0,1
mul  $v0,$t2,$a0
sra  $v0,$v0,1
jr  $ra
```

结果:

输出整数 1 到 N 之和， N 的数组={9, 10, 32666,32777, 654321 }

```
45
55
533550111
537182253
-680052119

— program is finished running —
```

5. 7

```
.data
data:  .word  5,2,9
sp:  .asciiz  "  "
.globl  main
.text
main:
la  $t0,data
lw  $a0,($t0)
lw  $a1,4($t0)
lw  $a2,8($t0)
jal  sort
li  $v0,1
syscall
li  $v0,4
la  $a0,sp
syscall
li  $v0,1
move  $a0,$a1
syscall
li  $v0,4
la  $a0,sp
syscall
```

```
li  $v0,1
move  $a0,$a2
syscall
li  $v0,4
la  $a0,sp
syscall
li  $v0,10
syscall
sort:
bgt  $a0,$a1,if1
b  if2
if1:
move  $t0,$a0
move  $a0,$a1
move  $a1,$t0
bgt  $a0,$a2,if2
b  if3
if2:
move  $t0,$a0
move  $a0,$a2
move  $a2,$t0
if3:
bgt  $a1,$a2,if4
b  end
if4:
move  $t0,$a1
move  $a1,$a2
move  $a2,$t0
end:
jr  $ra
```

结果:

将[5，2，9]从小到大排序

```
2 5 9
-- program is finished running --
```

5.8

```
.data
K:  .word  0
Y:  .word  0
Z:  .space  200
.globl  main
```

```
.text
main:
la  $t0,K
la  $t1,Y
li  $t0,20
li  $t1,56
move  $t2,$t0
sra  $t2,$t2,2
addi  $t2,$t2,210
sll  $t2,$t2,4
sub  $t1,$t1,$t2
sw  $t1,Z($t0)
li  $v0,1
lw  $a0,Z($t0)
syscall
li  $v0,10
syscall
```

结果:

```
-3384
— program is finished running —
```

5.11

```
.data
zap:  .space  200
err:  .asciiz  "\nerror\n"
tip:  .asciiz  "\nplease  input:"
.globl  main
.text
main:
loop:
la  $a0,tip
li  $v0,4
syscall
li  $v0,5
syscall
move  $a0,$v0
li  $t0,196
bgt  $a0,$t0,Error
bltz  $a0,Error
andi  $v0,$v0,3
bnez  $v0,Error
sw  $s0,zap($a0)
```

```
li   $v0,1
lw   $a0,zap($a0)
syscall
b   loop
Error:
la   $a0,err
li   $v0,4
syscall
b   loop
```

结果:

```
please input:-1

error

please input:200

error

please input:5

error

please input:8
0
```

5.12

```
.data
N:   .word   8
X:   .word   1,4,5,8,12,15,16,-20
.globl   main
.text
main:
la   $a0,X
la   $a1,N
lw   $a1,($a1)
jal   function
move   $a0,$v0
li   $v0,1
syscall
li   $v0,10
syscall
function:
xor   $v0,$v0,$v0
move   $t0,$a0
loop:
```

```
lw  $t1,($t0)
addi  $t0,$t0,4
addi  $a1,$a1,-1
andi  $t1,$t1,3
beqz  $t1,if
b  endif
if:
addi  $v0,$v0,1
endif:
bgtz  $a1,loop
jr  $ra
```

结果:

寻找[1,4,5,8,12,15,16,-20]中可以被 4 整除的数的个数

```
5
— program is finished running —
```