ind.6

```
main $(
   extrn read, write;
   auto i, c, state, line 100;

loop:
   state = i = 0;
loop1:
   c = read();
   if(c==4) return;
   if(c==';' & state==0) state = 2;
   if((c<'0' | c>'9'&c<'a' | c>'z') & state==0) state = 1;
   line[i] = c;
   i = i+1;
   if(c!=012) goto loop1;
   if(state==2 | i==1) goto noi;
   write('  ');
   write(' ');
noi:
   i = 0;
loop3:
   c = line[i];
   write(c);
   i = i+1;
   if(c!=012) goto loop3;
   goto loop;
$)
```

/* ind */

/* lcase */

lcase.b

```
main $(
   auto ch;
   extrn read, write;

   goto loop;
   while (ch != 04)
      $( if (ch > 0100 & ch < 0138)
            ch = ch + 040;
      if (ch==015) goto loop;
      if (ch==014) goto loop;
      if (ch==011)
       $( ch = 040040;
          write(040040);
          write(040040);
          $)
      write(ch);
   loop:
      ch = read()&0177;
      $)
$)
```

if (ch == 0177) goto loop;

(blank)

next - loose

```
" ed1

    lac d1
    sys write; 1f; 3
    lac o17
    sys creat; tname
    spa
    sys save
    dac sfo
    sys open; tname; 0
    spa
    sys save
    dac sfi
    -1
    tad lnodp
    dac zerop
    tad d1
    dac zerop
    dac dot
    tad d1
    dac eofp
    dzm i eofp
    dzm i zerop
    dzm lastre
    dzm fbuf
    lac d1
    dac dskadr
    dac wrflg
    dzm diskin
    jmp advanc
1:
    <ed>; <it>; 012
}

advanc;
    jms rline
    lac linep
    dac ta1
    dzm adrflg
    jms addres
    jmp comand
    -1
    dac adrflg
    lac addr
    dac addr1
    dac addr2
1:
    lac char
    sad o54
    jmp 2f
    sad o73
    skp
    jmp chkwrp
    lac addr
    dac dot
2:
    jms addres
    jmp error
    lac addr2
    dac addr1
    lac addr
    dac addr2
    jmp 1b
```

```
chkwrp:
    -1
    tad addr1
    jms betwen; d1; addr2
    jmp error

comand:
    lac char
    sad o141
    jmp ca
    sad o143
    jmp cc
    sad o144
    jmp cd
    sad o160
    jmp cp
    sad o161
    jmp cq
    sad o162
    jmp cr
    sad o163
    jmp cs
    sad o167
    jmp cw
    sad o12
    jmp cnl
    sad o75
    jmp ceq
    jmp error

ca:
    jms newline
    jms setfl
    lac addr2
    dac dot
ca1:
    jms rline
    lac line
    sad o56012
    jmp advanc
    jms append
    jmp ca1

cc; cd:
    jms newline
    jms setdd
    lac addr1
    sad zerop
    jmp error
    dac dot
    tad dm1
    dac 9
    lac addr2
    dac 8
 2:
    lac i 8
    dac i 9
    sza
    jmp 2b
```

```
    dac eofp
    lac char
    sad o144
    jmp advanc
    -1
    tad dot
    dac dot
    jmp ca1

cp:
    jms newline
cp1:
    jms setdd
    lac addr1
    sad zerop
    jmp error
1:
    lac addr1
    dac dot
    lac i addr1
    jms gline
    dac 2f
    lac d1
    sys write; line; 2: 0
    lac addr1
    sad addr2
    jmp advanc
    tad d1
    dac addr1
    jmp 1b

cq:
    jms newline
    lac adrflg
    sza
    jmp error
    sys exit

cr:
    jms setfl
    lac addr2
    dac dot
    jms rname
    sys open; fbuf; 0
    spa
    jmp error
    dac tfi
    lac linep
    dac ta1
    dzm num
1:
    lac tfi
    sys read; tbuf; 64
    sza
    jmp 2f
    lac tfi
    sys close
    jms number
    jmp advanc
2:
    cma
```

```
    tad d1
    rcl
    dac c1
    lac tbufp
    dac tal1
2:
    jms getsc; tal1
    sna
    jmp 3f
    jms putsc; tal
    isz num
    sad o12
    skp
    jmp 3f
    lac tal
    add o400000
    and o17777
    cma
    tad linep
    cma
    dac linsiz
    jms append
    lac linep
    dac tal
3:
    isz c1
    jmp 2b
    jmp 1b

cw:
    jms setfl
    lac i addr1
    sna
    jmp error
    jms rname
    lac o17
    sys creat; fbuf
    spa
    jmp error
    dac tfi
    -128
    dac c2
    lac tbufp
    dac tal1
    dzm num
1:
    lac i addr1
    jms gline
    rcl
    cma
    tad d1
    dac c1
    lac linep
    dac tal
2:
    jms getsc; tal
    sna
    jmp 3f
    isz num
    jms putsc; tal1
    isz c2
```

```
        jmp 3f
        lac tfi
        sys write; tbuf; 64
        -128
        dac c2
        lac tbufp
        dac tal1
    3:
        isz c1
        jmp 2b
        lac addr1
        sad addr2
        jmp 1f
        isz addr1
        jmp 1b
    1:
        lac tal1
        sma cla
        jmp 1f
        jms putsc; tal1
    1:
        -1
        tad tbufp
        cma
        tad tal1
        dac 1f
        lac tfi
        sys write; tbuf; 1: 0
        lac tfi
        sys close
        jms number
        jmp advanc

    cnl:
        lac adrflg
        sna
        jmp 1f
        lac addr2
        dac addr1
        jmp cp1
    1:
        lac dot
        tad d1
        sad eofp
        jmp error
        dac dot
        jmp cp1

    ceq:
        jms newline
        jms setfl
        lac addr2
        dac dot
        cma
        tad zerop
        cma
        dac num
        jms number
        jmp advanc

    setdd: 0
```

```
        lac adrflg
        sza
        jmp i setad
        lac dot
        dac addr1
        dac addr2
        jmp i setad

setfl;  0
        lac adrflg
        sza
        jmp i setfl
        lac zerop
        tad d1
        dac addr1
        -1
        tad eofp
        dac addr2
        jmp i setfl

newline; 0
        jms getsc; tal
        sad o12
        jmp i newline
        jmp error

address; 0
        dzm minflg
        -1
        dac addr
ad1;
        jms getsc; tal
ad2;
        jms betwen; d47; d58
        skp
        jmp numb
        sad o40
        jmp ad1
        sad o11
        jmp ad1
        sad o55
        jmp amin
        sad o56
        jmp adot
        sad o53
        jmp ad1
        sad o44
        jmp adol
        sad o57
        jmp fsrch
        sad o77
        jmp bsrch
        dac char
        lac minflg
        sza
        jmp error
        lac addr
        sma
        isz address
        jmp i address
```

```
adot;
    lac minflg
    sza
    jmp error
    lac addr
    sma
    jmp error
    lac dot
    dac addr
    jmp ad1

adol;
    lac minflg
    sza
    jmp error
    lac addr
    sma
    jmp error
    -1
    tad eofp
    dac addr
    jmp ad1

amin;
    -1
    dac minflg
    jmp ad1

numb;
    dac char
    sad o60
    jmp 1f
    lac d10
    jmp 2f
1:
    lac d8
2:
    dac 2f
    dzm num
1:
    lac num
    cll; mul; 2: 0
    lacq
    tad char
    tad dm48
    dac num
    jms getsc; tal
    dac char
    jms betwen; d47; d58
    skp
    jmp 1b
    lac minflg
    sna
    jmp 1f
    -1
    tad num
    cma
    dac num
    dzm minflg
1:
    lac addr
```

```
    spa
    lac zerop
    tad num
    dac addr
    jms betwen; zermp; eofp
    jmp error
    lac char
    jmp ad2

number; 0
    lac d10000
    dac n1
    law tbuf-1
    dac 8
n0;
    lac num
    cll; idiv; n1: 0
    dac num
    lacq
    tad d48
    dac i 8
    lac n1
    cll; idiv; 10
    lacq
    dac n1
    sza
    jmp n0
    lac o12
    dac i 8
    law tbuf-1
    dac 8
    dac 9
    -5
    dac n1
n2:
    lac i 8
    sad d48
    skp
    jmp n3
    dzm i 9
    isz n1
    jmp n2
n3:
    lac d1
    sys write; tbuf; 7
    jmp i number

rname: 0
    lac fbufp
    dac tal1
    -8
    dac c1
1:
    jms getsc; tal
    sad o40
    jmp 1b
    sad o12
    jmp 1f
    jms putsc; tal1
    isz c1
    jmp 1b
```

```
    jmp i rname
1:
    lac tal1
    sad fbufp
    skp
    jmp 1f
    lac fbuf
    sna
    jmp error
    jmp i rname
1:
    lac o40
    jms putsc; tal1
    isz c1
    jmp 1b
    jmp i rname

gline; 0
    dac glint1
    jms getdsk
    lac glint1
    and o1777
    tad dskbfp
    dac ital
    lac linep
    dac otal
1:
    lac ital
    sad edskbfp
    skp
    jmp 2f
    lac diskin
    tad d1024
    jms getdsk
    lac dskbfp
    dac ital
2:
    jms getsc; ital
    jms putsc; otal
    sad o12
    skp
    jmp 1b
    lac otal
    sma
    jmp 1f
    cla
    jms putsc; otal
1:
    lac linpm1
    cma
    tad otal
    jmp i gline

rline: 0
    lac linep
    dac tal

1:
    cla
    sys read; char; 1
    lac char
```

```
    lrss 9
    jms esc
    lac char
    and o777
    jms esc
    jmp 1b

esc; 0
    sna
    jmp i esc
    jms putsc; tal
    sad o12
    jmp 2f
    sad o100
    jmp 1f
    sad o43
    skp
    jmp i esc
    -1
    tad tal
    dac tal
    and o17777
    sad linpm1
    jmp 1f
    jmp i esc

1:
    lac linep
    dac tal
    jmp i esc

2:
    lac tal
    sma cla
    jmp 1f
    jms putsc; tal
1:
    -1
    tad linep
    cma
    tad tal
    dac linsiz
    jmp i rline

getsc: 0
    lac i getsc
    dac sctalp
    isz getsc
    lac i sctalp
    dac sctal
    add o400000
    dac i sctalp
    ral
    lac i sctal
    szl
    lrss 9
    and o777
    jmp i getsc

putsc: 0
    and o777
```

```
    lmq
    lac i putsc
    dac sctalp
    isz putsc
    lac i sctalp
    dac sctal
    add o400000
    dac i sctalp
    sma cla
    jmp 1f
    llss 27
    dac i sctal
    lrss 9
    jmp i putsc

1:
    lac i sctal
    and o777000
    omq
    dac i sctal
    lacq
    jmp i putsc

append: 0
    -1
    tad eofp
    dac 8
    cma
    tad dot
    dac apt1
1:
    lac i 8
    dac i 8
    -3
    tad 8
    dac 8
    isz apt1
    jmp 1b
    isz eofp
    dzm i eofp
    isz dot
    jms addline
    jmp i append

addline: 0
    lac dskadr
    dac i dot
    jms getdsk
    -1
    tad linsiz
    cma
    dac apt1
    lav line-1
    dac 8
    lac dskadr
    and o1777
    tad dskbfr
    dac otal
    lac dskadr
    tad linsiz
    dac dskadr
```

```
1:
    lac otal
    sad edskbfp
    skp
    jmp 2f
    lac diskin
    tad d1024
    jms getdsk
    lac dskbfp
    dac otal
2:
    lac i 8
    dac i otal
    isz otal
    dem wrflg
    isz apt1
    jmp 1b
    jmp i addline

getdsk: 0
    and o776000
    sad diskin
    jmp i getdsk
    dac 2f
    lac wrflg
    sza
    jmp 3f
    lac diskin
    dac 1f
    lac sfo
    sys seek; 1: 0; 0
    lac sfo
    sys write; dskbuf; 1024
    lac d1
    dac wrflg
3:
    lac 2f
    dac diskin
    lac sfi
    sys seek; 2: 0; 0
    spa
    jmp i getdsk
    lac sfi
    sys read; dskbuf; 1024
    jmp i getdsk

betwen: 0
    dac bett1
    lac i betwen
    dac bett2
    isz betwen
    lac i bett2
    cma
    tad bett1
    spa
    jmp 1f
    lac i betwen
    dac bett2
    isz betwen
    -1
    tad i bett2
```

```
    cma
    tad bett1
    spa
1:
    isz betwen
    lac bett1
    jmp i betwen

error:
    lac d1
    sys write; 1f; 1
    jmp advanc
1:
    077012
```

```
cs;
    jms getsc; tal
    sad o40
    jmp cs
    sad o12
    jmp error
    dac delim
    jms compile
    lac tbufp
    dac tal1
1:
    jms getsc; tal
    sad delim
    jmp 1f
    sad o12
    jmp error
    jms putsc; tal1
    jmp 1b
1:
    lac o12
    jms putsc; tal1
    jms newline
    jms setdd
    lac addr1
    sad zerop
    jmp error
1:
    dac addr1
    lac i addr1
    jms execute
    jmp 2f
    lac addr1
    dac dot
    law line-1
    dac 8
    law nlist-1
    dac 9
    -64
    dac c1
3:
    lac i 8
    dac i 9
    isz c1
    jmp 3b
    -1
    tad fchrno
    dac linsiz
    rcr
    szl
    xor o400000
    tad linep
    dac tal1
    lac tbufp
    dac tal
3:
    jms getsc; tal
    sad o12
    jmp 3f
    jms putsc; tal1
    isz linsiz
```

```
    jmp 3b
3:
    -1
    tad lchrno
    rcr
    szl
    xor o400000
    tad nlistp
    dac tal
3:
    jms getsc; tal
    jms putsc; tal1
    isz linsiz
    sad o12
    skp
    jmp 3b
    jms addline

2:
    lac addr1
    sad addr2
    jmp advanc
    tad d1
    jmp 1b

fsrch:
    dac delim
    jms compile
    jms srcsav
    lac dot
floop:
    tad d1
    dac addr
    lac i addr
    sza
    jmp 1f
    lac zerop
    dac addr
    jmp 2f
1:
    jms execute
    jmp 2f
    jms srcres
    jmp ad1
2:
    lac addr
    sad dot
    jmp error
    jmp floop

bsrch:
    dac delim
    jms compile
    jms srcsav
    lac dot
    sad zerop
    lac eofp
bloop:
    tad dm1
    dac addr
    lac i addr
```

```
    sza
    jmp 1f
    lac eofp
    dac addr
    jmp 2f
1:
    jms execute
    jmp 2f
    jms srcres
    jmp ad1
2:
    lac addr
    sad dot
    jmp error
    jmp bloop

srcsav; 0
    lac minflg
    sza
    jmp error
    lac addr
    sma
    jmp error
    law line-1
    dac 8
    law tbuf-1
    dac 9
    -64
    dac c1
1:
    lac i 8
    dac i 9
    isz c1
    jmp 1b
    jmp i srcsav

srcres; 0
    law tbuf-1
    dac 8
    law line-1
    dac 9
    -64
    dac c1
1;
    lac i 8
    dac i 9
    isz c1
    jmp 1b
    jmp i srcres

compile; 0
    law compbuf-1
    dac 8
    dzm prev
    dzm compflg

cadvanc;
    jms getsc; tal
    sad delim
    jmp cdone
    dac compflg
```

```
    dzm lastre
    sad o12
    jmp error
    "sad o133
    "jmp chrcls
    sad o136
    jmp beglin
    sad o44
    jmp endlin
    "sad o52
    "jmp clsure
    dac 1f
    jms comp
    1; jms matchar; 1; 0; 0
    jmp cadvanc

:done;
    lac compflg
    sna
    jmp 1f
    dac lastre
    jms comp
    1; jms found; 0
    jmp i compile
1:
    lac lastre
    sna
    jmp error
    jmp i compile

:hrcls;
    jmp error

:eglin;
    jms comp
    1; jms matbol; 0
    dzm prev
    jmp cadvanc

:ndlin;
    jms comp
    1; jms mateol; 0
    dzm prev
    jmp cadvanc

:lsure;
    lac prev
    sna
    jmp error
    tad d1
    dac 1f
    jms comp
    1; jms matclo; 1: 0; 0
    dzm prev
    jmp cadvanc

:omp; 0
    -1
    tad comp
    dac 9
```

```
      dac prev
   1:
      lac i 9
      sna
      jmp i 9
      dac i 8
      jmp 1b

   xecute; 0
      jms gline
      lac linep
      dac tal1
      dzm charno
      dzm fchrno
      dzm lchrno
      lac jmpclist
      dac trvect
      lac jmpnlist
      dac trvect+1
      lac jmpxchg
      dac i trvect+1
      jmp 1f

   xchg;
      lacq
      sad o12
      jmp i execute
      lac jmpxchg
      dac i 8
   1:
      lac trvect
      lmq
      lac trvect+1
      dac trvect
      lacq
      dac trvect+1
      tad dm1
      dac 8
      jms getsc; tal1
      lmq
      isz charno
      jms compbuf
   charno;
      0
   trvect;
      0;0

   atchar; 0
      -2
      tad matchar
      dac exret
      lac i exret
      dac exret
      lacq
      sad i matchar
      skp
      jmp 1f
      lac matchar
      and o17777
      tad jms1
```

```
    lac i exret
    dac i 8
;
    isz exret
    jmp i exret

found; 0
    -2
    tad found
    dac exret
    lac i exret
    dac exret
    lac fchrno
    sza
    jmp 1f
    isz execute
    jmp 2f
1:
    sad i exret
    jmp 1f
    cma
    tad i exret
    spa
    jmp 2f
    jmp 3f
:
    lac lchrno
    cma
    tad charno
    spa
    jmp 3f
:
    lac i exret
    dac fchrno
    lac charno
    dac lchrno
:
    isz exret
    jmp i exret

atbol; 0
    lac charno
    sad d1
    jmp 1f
    lac matbol
    jmp 2f
:
    lac matbol
    jmp 3f

ateol; 0
    lacq
    sad o12
    jmp 1f
    lac mateol
2:
    tad dm2
    dac exret
    lac i exret
    dac 9
```

```
':
    lac mateol
;:
    tad dm3
    dac 9
    lac i 9
    isz 9
    dac i 9
    jmp i 9

atclo; 0
    -2
    tad matclo
    dac exret
    lac i exret
    dac cloret
    lac i cloret
    dac 1f
    dac 2f
    lac i matclo
    dac exret
    jms i exret; 1; 0
    isz matclo
    jms i matclo; 2: 0
    isz cloret
    jmp i cloret

e1; 1
o133; 0133
 m3; -3
 136; 0136
 m2; -2
 52; 052
 57; 057
 77; 077
 40; 040
 12; 012
 47; 47
 58; 58
 m48; -48
 10; 10
 8; 8
 48; o60; 060
 100000; 100000
 44; 044
 53; 053
 56; 056
 55; 055
 11; 011
 400000; 0400000
 17777; 017777
 144; 0144
 m1; -1
 56012; 056012
 777; 0777
 100; 0100
 43; 043
 777000; 0777000
 75; 075
 167; 0167
 161; 0161
```

```
160; 0160
143; 0143
141; 0141

1777: 01777
1024; 1024
776000; 0776000
162; 0162
163; 0163
73; 073

54; 054
17; 017

name:
    0145056;0164155;0160040;040040
bufp; tbuf
linep; line
listp; nlist
bufp; fbuf
skbfp; dskbuf
dskbfp; dskbuf+1024
nodp; inodes
inpm1; line-1
mpclist; jmp clist
mpnlist; jmp nlist
mpxchg; jmp xchg
ms1; jms 1

al; .=.+1
xret; .=.+1
loret; .=.+1
elim; .=.+1
rev; .=.+1
ompflg; .=.+1

al1; .=.+1
1; .=.+1
tal; .=.+1
tal; .=.+1
iskin; .=.+1
lint1; .=.+1

2; .=.+1
um; .=.+1
ermp; .=.+1
inflg; .=.+1
drflg; .=.+1
ot; .=.+1

ddr; .=.+1
ddr1; .=.+1
ddr2; .=.+1
ofp; .=.+1
erop; .=.+1
skadr; .=.+1

insiz; .=.+1
fi; .=.+1
chrno; .=.+1
chrno; .=.+1
astre; .=.+1

ett1; .=.+1

ett2; .=.+1
rflg; .=.+1
pt1; .=.+1
```

```
fo: .=.+1
ctal: .=.+1
ctalp: .=.+1
har: .=.+1
buf: .=.+4
buf: .=.+64
ine: .=.+64
list: .=.+50
list: .=.+50
ompbuf: .=.+100
skbuf: .=.+1024
nodes: .=.+1000
```