

2222222222	0000000	5555555555	2222222222	0000000	3333333333
2222222222	00000000	5555555555	2222222222	00000000	3333333333
22	00 00	55	22 22	00 00	33 33
22	00 00	55	22	00 00	33
22	00 00	55	22	00 00	33
22	00 00	5555555555	22	00 00	333
22	00 00	5555555555	22	00 00	333
22	00 00	55 55	22	00 00	33
22	00 00	55 55	22	00 00	33
22	00 00	55 55	22	00 00	33
2222222222	00000000	5555555555	2222222222	00000000	3333333333
2222222222	0000000	5555555555	2222222222	0000000	3333333333

Tests - Ch. II
Ruh

JJ	CCCCCCCC	RRRRRRRR	LL	IIIIIIII	SSSSSSSS	PPPPPPPP
JJ	CCCCCCCC	RRRRRRRR	LL	IIIIIIII	SSSSSSSS	PPPPPPPP
JJ	CC CC	RR RR	LL	II	SS SS	PP PP
JJ	CC CC	RR RR	LL	II	SS	PP PP
JJ	CC	RRRRRRRR	LL	II	SSSSSSSS	PP PP
JJ	CC	RRRRRRRR	LL	II	SSSSSSSS	PPPPPPPP
JJ	CC CC	RR RR	LL	II	SS	PPPPPPPP
JJ	CC CC	RR RR	LL	II	SS	PP
JJ	CC CC	RR RR	LL	II	SS SS	PP
JJJJJJJJJJJ	CCCCCCCC	RR RR	LLLLLLLL	IIIIIIII	SSSSSSSS	PP
JJJJJJJJJJJ	CCCCCCCC	RR RR	LLLLLLLL	IIIIIIII	SSSSSSSS	PP

JJ	00000000	BBBBBBBB	11	33333333	22222222	55555555
JJ	0000000000	BBBBBBBB	111	3333333333	2222222222	5555555555
JJ	00 00	BB BB	1111	33 33	22 22	55
JJ	00 00	BB BB	11	33	22	55
JJ	00 00	BB BB	11	33	22	55
JJ	00 00	BBBBBBBB	11	333	22	55555555
JJ	00 00	BBBBBBBB	11	333	22	5555555555
JJ	00 00	BB BB	11	33	22	55
JJ	00 00	BB BB	11	33	22	55
JJ	00 00	BB BB	11	33 33	22	55 55
JJJJJJJJJJJ	0000000000	BBBBBBBB	11	3333333333	2222222222	5555555555
JJJJJJJJJJJ	0000000000	BBBBBBBB	11	3333333333	2222222222	5555555555

SSSSSSSSSS	YY YY	SSSSSSSSSS	MM MM	SSSSSSSSSS	GGGGGGGGGG
SSSSSSSSSSSS	YY YY	SSSSSSSSSSSS	MMM MMM	SSSSSSSSSSSS	GGGGGGGGGGGG
SS SS	YY YY	SS SS	MMM MMM	SS SS	GG GG
SS	YY YY	SS	MM MM MM MM	SS	GG GG
SSSSSSSSSSSS	YY	SSSSSSSSSSSS	MM MMM MM	SSSSSSSSSSSS	GG
SSSSSSSSSSSS	YY	SSSSSSSSSSSS	MM M MM	SSSSSSSSSSSS	GG GGGG
SS SS	YY	SS SS	MM MM	SS SS	GG GGGG
SS SS	YY	SS SS	MM MM	SS SS	GG GG
SSSSSSSSSSSS	YY	SSSSSSSSSSSS	MM MM	SSSSSSSSSSSS	GGGGGGGGGGGG
SSSSSSSSSSSS	YY	SSSSSSSSSSSS	MM MM	SSSSSSSSSSSS	GGGGGGGGGG GG

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```
JOB ORIGIN FROM LOCAL DEVICE.
//JCRLISP JOB (205203,3,0,2),'REYNOLDS COL 1 ROW 3',MSGLEVEL=1
//JOB LIB DD DSNAME=C145.B17648.LISP.OBJECT,DISP=SHR
// EXEC PGM=LISP
//LISPOUT DD SYSOUT=A,DCB=BLKSIZE=798
//GEDANK DD UNIT=CELL,VOL=SER=CELLBE,
//          DSNAME=C145.B05203.GEDANKEN.APRIL29A,
//          DISP=SHR
//LISP IN DD *
/*
/* END OF FILE
//
//
R=IEE916I 235 DISK22 VERIFIED
R=IEE916I 335 DISK27 VERIFIED
R=IEE916I 236 DISK11 VERIFIED
R=IEE916I 336 DISK28 VERIFIED
R=IEE916I 333 DISK37 VERIFIED
R=IEC202I K 371,
R=IEF161I READER CLOSED
R=IEE007A READY.
```

//

2222222222	0000000	5555555555	2222222222	0000000	3333333333
222222222222	000000000	555555555555	222222222222	000000000	333333333333
22 22	00 00	55	22 22	00 00	33 33
22	00 00	55	22	00 00	33
22	00 00	55	22	00 00	33
22	00 00	5555555555	22	00 00	333
22	00 00	555555555555	22	00 00	333
22	00 00	55	22	00 00	33
22	00 00	55	22	00 00	33
22	00 00	55 55	22	00 00	33 33
222222222222	000000000	555555555555	222222222222	000000000	333333333333
222222222222	0000000	5555555555	222222222222	0000000	3333333333

JJ	CCCCCCCC	RRRRRRRRRR	LL	IIIIIIIIII	SSSSSSSSSS	PPPPPPPPPP
JJ	CCCCCCCC	RRRRRRRRRR	LL	IIIIIIIIII	SSSSSSSSSS	PPPPPPPPPP
JJ	CC CC	RR RR	LL	II	SS SS	PP PP
JJ	CC CC	RR RR	LL	II	SS	PP PP
JJ	CC	RR RR	LL	II	SS	PP PP
JJ	CC	RRRRRRRRRR	LL	II	SSSSSSSSSS	PPPPPPPPPP
JJ	CC	RR RR	LL	II	SS	PPPPPPPPPP
JJ	CC CC	RR RR	LL	II	SS	PP
JJ	CC CC	RR RR	LL	II	SS SS	PP
JJJJJJJJJJJ	CCCCCCCC	RR RR	LLLLLLLLLLLL	IIIIIIIIII	SSSSSSSSSS	PP
JJJJJJJJJJJ	CCCCCCCC	RR RR	LLLLLLLLLLLL	IIIIIIIIII	SSSSSSSSSS	PP

JJ	0000000000	BBBBBBBBBB	11	3333333333	2222222222	5555555555
JJ	000000000000	BBBBBBBBBB	111	333333333333	222222222222	555555555555
JJ	00 00	BB BB	1111	33 33	22 22	55
JJ	00 00	BB BB	11	33	22	55
JJ	00 00	BB BB	11	33	22	55
JJ	00 00	BBBBBBBBBB	11	333	22	5555555555
JJ	00 00	BBBBBBBBBB	11	333	22	555555555555
JJ	00 00	BB BB	11	33	22	55
JJ	00 00	BB BB	11	33	22	55
JJ	00 00	BB BB	11	33 33	22	55 55
JJJJJJJJJJJ	000000000000	BBBBBBBBBB	11	333333333333	222222222222	555555555555
JJJJJJJJJJJ	0000000000	BBBBBBBBBB	11	3333333333	222222222222	5555555555

SSSSSSSSSS	YY YY	SSSSSSSSSS	0000000000	UU	UU	TTTTTTTTTT
SSSSSSSSSSSS	YY YY	SSSSSSSSSSSS	000000000000	UU	UU	TTTTTTTTTT
SS SS	YY YY	SS SS	00 00	UU	UU	TT
SS	YY YY	SS	00 00	UU	UU	TT
SS	YYYY	SS	00 00	UU	UU	TT
SSSSSSSSSSSS	YY	SSSSSSSSSSSS	00 00	UU	UU	TT
SSSSSSSSSSSS	YY	SSSSSSSSSSSS	00 00	UU	UU	TT
SS SS	YY	SS SS	00 00	UU	UU	TT
SS SS	YY	SS SS	00 00	UU	UU	TT
SS SS	YY	SS SS	00 00	UU	UU	TT
SSSSSSSSSSSS	YY	SSSSSSSSSSSS	000000000000	UUUUUUUUUUUU	UUUUUUUUUUUU	TT
SSSSSSSSSSSS	YY	SSSSSSSSSSSS	000000000000	UUUUUUUUUUUU	UUUUUUUUUUUU	TT

```

//JCRLISP JOB (205203,3,0,2),'REYNOLDS COL 1 ROW 3',MSGLEVEL=1, *
//          PRTY=11
//JOB LIB DD DSNAME=C145.B17648.LISP.OBJECT,DISP=SHR
// EXEC PGM=LISP
//LISPOUT DD SYSOUT=A, X
//          DCB=BLKSIZE=798
//GEDANK DD UNIT=CELL,VOL=SER=CELLBE, *
//          DSNAME=C145.B05203.GEDANKEN.APRIL29A,
//          DISP=SHR
//LISP IN DD *
IEF236I ALLOC. FOR JCRLISP
IEF237I JOBLIB   ON 393/1
IEF237I GEDANK  ON 393/4
IEF237I LISP IN ON 371

```

ARGUMENTS FOR EVALQUOTE ...

OPEN
(GEDANK SYSFILE INPUT)

TIME 1 (SEC/100), VALUE IS ...
GEDANK

ARGUMENTS FOR EVALQUOTE ...

RESTORE
(GEDANK)

TIME 96 (SEC/100), VALUE IS ...
NIL

ARGUMENTS FOR EVALQUOTE ...

CLOSE
(GEDANK)

TIME 0 (SEC/100), VALUE IS ...
GEDANK

ARGUMENTS FOR EVALQUOTE ...

EXCISE
(NIL)

TIME 0 (SEC/100), VALUE IS ...
NIL

ARGUMENTS FOR EVALQUOTE ...

PRBUFFER
(T)

TIME 0 (SEC/100), VALUE IS ...
T

=> GEDANKEN()

ARGUMENTS FOR EVALQUOTE ...

GEDANKEN
NIL

```

=> NIL IS ATOM();
=> PRNV IS #X (N IS REF X LL; PRINT " ";
=> PRINT X LL;
=> LOOP: IF GREATER(N, X UL) THEN GOTO DONE ELSE ();
=> PRINT X VAL N; N := INC N; GOTO LOOP;
=> DONE: PRINT X UL);
=> PRNVR IS #X (N IS REF X LL; PRINT " ";
=> PRINT X LL;

```

```

=> LOOP: IF GREATER(N, X UL) THEN GOTO DONE ELSE ();
=> PRINT VAL X VAL N; N := INC N; GOTO LOOP;
=> DONE: PRINT X UL);
=> PVECTOR IS #(L,U,F) (L IS COERCE L; U IS COERCE U; F IS COERCE F;
=> #I (I IS COERCE I; IF I = LL THEN L ELSE IF I = UL THEN U
=> ELSE F I));
=> LIBRARY$

```

TIME 61 (SEC/100), VALUE IS ...
(INITIALSTATE HAS BEEN UPDATED)

```

=>
=> GEDANKEN ()

```

ARGUMENTS FOR EVALQUOTE ...
GEDANKEN
NIL

```

=> M IS(M1 IS VECTOR(1, 3, # I VECTOR(1, 3, # J REF 0));
=> #(I, J) (M1 I) J);
=> MT IS #(I, J) M(J, I); MD IS # I M(I, I);
=> S IS (S1 IS VECTOR(1, 3, # I VECTOR(1, 1, # J REF 0));
=> #(I, J) IF NOT GREATER(J, I) THEN (S1 I) J ELSE (S1 J) I);
=> S(1,3) := M(1,3) := 1;
=> S(2,1) := MT(1,2) := 2;
=> S(3,2) := MT(2,3) := 3;
=> M(3,1) := 4;
=> MT(2,1) := 5;
=> MT(3,2) := 6;
=> S(2,2) := M(2,2) := 7;
=> S(3,3) := MD(3) := 8;
=> VECTOR(1,3, #I VECTOR(1,3, #J
=> (TERPRI(); PRINT I; PRINT J; PRINT VAL M(I,J); PRINT VAL MT(I,J);
=> PRINT VAL S(I,J); PRINT VAL MD I));
=>
=> 0$

```

COLLECTED	14270	CELLS AND STACK HAS	5948	UNITS LEFT.	TIME	31 (SEC/100)
COLLECTED	13259	CELLS AND STACK HAS	5948	UNITS LEFT.	TIME	33 (SEC/100)
COLLECTED	13126	CELLS AND STACK HAS	5948	UNITS LEFT.	TIME	33 (SEC/100)
COLLECTED	13264	CELLS AND STACK HAS	5945	UNITS LEFT.	TIME	31 (SEC/100)

1

1

0

0

0

COLLECTED	12496	CELLS AND STACK HAS	5948	UNITS LEFT.	TIME	33 (SEC/100)
-----------	-------	---------------------	------	-------------	------	--------------

0

1

2

5

2

2

0

1

3

COLLECTED	12538	CELLS AND STACK HAS	5948	UNITS LEFT.	TIME	35 (SEC/100)
-----------	-------	---------------------	------	-------------	------	--------------

1

4

1

0

2

1

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COLLECTED 12238 CELLS AND STACK HAS 5945 UNITS LEFT. TIME 33 (SEC/100)

2
5
2
7

2
2
7
7

COLLECTED 12261 CELLS AND STACK HAS 5945 UNITS LEFT. TIME 35 (SEC/100)

7
7

2
3
6
3
3
7

COLLECTED 12085 CELLS AND STACK HAS 5948 UNITS LEFT. TIME 35 (SEC/100)

3
1
4
1
1
8

3
2
3
6

COLLECTED 12037 CELLS AND STACK HAS 5948 UNITS LEFT. TIME 35 (SEC/100)

3
8

3
3
8
8
8

TIME 1225 (SEC/100), VALUE IS ...

0

=>
=>

GEDANKEN ()

ARGUMENTS FOR EVALQUOTE ...

GEDANKEN
NIL

=>
=>
=>
=>
=>
=>
=>
=>
=>

READ IS READCHAR;
MAKERLIST ISR #()
(B IS REF 0; # I
(IF B = 0 THEN B := (READ(), MAKERLIST()) ELSE (); B I));
(X IS MAKERLIST());
X1 IS X 1; X2 IS X 2;
PRNV(X1,X 1,X2 1,X 1,(X 2) 1,X2 1,((X 2) 2) 1,X 1, (X 2) 1, ((X 2)2)1)
);
O\$ABC

COLLECTED 16752 CELLS AND STACK HAS 5948 UNITS LEFT. TIME 30 (SEC/100)

A
B
A
B
B
C
A
B
C
10

TIME 146 (SEC/100), VALUE IS ...
0

=>
=> GEDANKEN ()

ARGUMENTS FOR EVALQUOTE ...
GEDANKEN
NIL

=> PSEUDOCOPY IS # V
=> (CL IS REF NIL;
=> SEARCHCL ISR #(X, I, F, G) IF X = NIL THEN G()
=> ELSE IF (X 1) 1 = I THEN F (X 1) 2
=> ELSE SEARCHCL(X 2, I, F, G);
=> # I (I IS COERCE I;
=> IF I = LL THEN V LL ELSE IF I = UL THEN V UL
=> ELSE IF NOT ISINTEGER I
=> OR GREATER(V LL, I) OR GREATER(I, V UL)
=> THEN GOTO ERROR
=> ELSE IMPREF(
=> # X SEARCHCL(V AL CL, I, # R NCSET(R, X),
=> #() CL := ((I, NCREF X), VAL CL)),
=> #() SEARCHCL(V AL CL, I, VAL, #() VAL V I))));
=> V IS (REF 1, REF 2, REF 3);
=> C IS PSEUDOCOPY V;
=> PRNVR C;
=> C 1 := 5; C 2 := 6;
=> PRNVR C;
=> C 1 := 7;
=> PRNVR C;
=> PRNVR V;
=> 0\$

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1
1
COLLECTED 15897 CELLS AND STACK HAS 5945 UNITS LEFT. TIME 30 (SEC/100)

2
3
3

1
5
COLLECTED 15633 CELLS AND STACK HAS 5945 UNITS LEFT. TIME 30 (SEC/100)

6
3
3

1
7
COLLECTED 15664 CELLS AND STACK HAS 5948 UNITS LEFT. TIME 30 (SEC/100)

6
3
3

1
1
2
3
3

TIME 478 (SEC/100), VALUE IS ...

0

=>
=> GEDANKEN ()

ARGUMENTS FOR EVALQUOTE ...

GEDANKEN

NIL

=> COMPILE IS #A (A 1; (GOTO L; M: A 3; GOTO N; L : A 2; GOTO M); N : A 4);
=> ASSEMBLE ISR #A (X IS PRINT A()); IF X = 4 THEN () ELSE ASSEMBLE A);
=> (LC IS REF 0; LA IS REF 0; INST IS REF 0;
=> LC := LC1; ASSEMBLE(#() (LA := LA1; GOTO LC; LA1: VAL INST));
=> GOTO DONE;
=> LC1: COMPILE(# X (LC := LC2; INST := X; GOTO LA; LC2:));GOTO ERROR;
=> DONE:);
=> 0\$

1
2
3
4

COLLECTED 16702 CELLS AND STACK HAS 5945 UNITS LEFT. TIME 28 (SEC/100)

TIME 101 (SEC/100), VALUE IS ...

0

=>
=> GEDANKEN ()

ARGUMENTS FOR EVALQUOTE ...

GEDANKEN

NIL

=> PARSE IS # (IN, AMB, FAIL)
=> (U IS REF 0;
=> PC IS # () (C IS IN(); IF C = "." THEN GOTO FAIL ELSE C);
=> PS ISR # () (C1 IS PC(); AMB(L1); U := (C1, PS(), PC()); GOTO L2;
=> L1: U := C1; L2: VAL U);
=> (R IS PS(); IF IN() = "." THEN R ELSE GOTO FAIL));
=> PRNSQ ISR # X IF ISFUNCTION X THEN
=> (PRINT "("; VECTOR(1,X UL, #I PRNSQ X I); PRINT ")")
=> ELSE PRINT X;
=> PRNSQ
=> (C IS REF NIL; W IS REF NIL; R IS REF NIL; CHAR IS REF NIL;
=> C := (PARSE(#() (W := (L1, VAL W); GOTO CONT; L1: VAL CHAR),
=> # L2 (R := (L2, VAL R)), CONT),
=> VAL C);
=> CONT: IF R = NIL AND W = NIL THEN GOTO DONE
=> ELSE IF R = NIL THEN (CHAR := READCHAR(); R := W; W := NIL)
=> ELSE ();
=> (L IS R 1; R := R 2; GOTO L);
=> DONE: VAL C);
=> 0\$A.

(
A
(PROGATOMDEN 1)
)

TIME 148 (SEC/100), VALUE IS ...

0

=>
=> GEDANKEN ()

ARGUMENTS FOR EVALQUOTE ...

GEDANKEN
NIL

```

=> PARSE IS # (IN, AMB, FAIL)
=> (U IS REF 0;
=> PC IS # () (C IS IN(); IF C = "." THEN GOTO FAIL ELSE C);
=> PS ISR # () (C1 IS PC(); AMB(L1); U := (C1, PS(), PC()); GOTO L2;
=> L1: U := C1; L2: VAL U);
=> (R IS PS(); IF IN() = "." THEN R ELSE GOTO FAIL));
=> PRNSQ ISR # X IF ISFUNCTION X THEN
=> (PRINT "("; VECTOR(1,X UL, #I PRNSQ X I); PRINT ")")
=> ELSE PRINT X;
=> PRNSQ
=> (C IS REF NIL; W IS REF NIL; R IS REF NIL; CHAR IS REF NIL;
=> C := (PARSE( #() (W := (L1, VAL W); GOTO CONT; L1: VAL CHAR),
=> # L2 (R := (L2, VAL R)), CONT),
=> VAL C);
=> CONT: IF R = NIL AND W = NIL THEN GOTO DONE
=> ELSE IF R = NIL THEN (CHAR := READCHAR(); R := W; W := NIL)
=> ELSE ();
=> (L IS R 1; R := R 2; GOTO L);
=> DONE: VAL C);
=> 0$ABCDE.

```

COLLECTED	16374	CELLS AND STACK HAS	5792	UNITS LEFT.	TIME	28 (SEC/100)
-----------	-------	---------------------	------	-------------	------	--------------

COLLECTED	15001	CELLS AND STACK HAS	5948	UNITS LEFT.	TIME	31 (SEC/100)
-----------	-------	---------------------	------	-------------	------	--------------

COLLECTED	14745	CELLS AND STACK HAS	5945	UNITS LEFT.	TIME	30 (SEC/100)
-----------	-------	---------------------	------	-------------	------	--------------

```

(
(
A
(
B
C
D
)
E
)
)
(PROGATOMDEN 1)
)

```

TIME 441 (SEC/100), VALUE IS ...

0

=>
=> GEDANKEN ()

ARGUMENTS FOR EVALQUOTE ...

GEDANKEN
NIL

```

=> PARSE IS # (IN, AMB, FAIL)
=> (U IS REF 0;
=> PC IS # () (C IS IN(); IF C = "." THEN GOTO FAIL ELSE C);
=> PS ISR # () (C1 IS PC(); AMB(L1); U := (C1, PS(), PC()); GOTO L2;
=> L1: U := C1; L2: VAL U);
=> (R IS PS(); IF IN() = "." THEN R ELSE GOTO FAIL));
=> PRNSQ ISR # X IF ISFUNCTION X THEN
=> (PRINT "("; VECTOR(1,X UL, #I PRNSQ X I); PRINT ")")
=> ELSE PRINT X;
=> PRNSQ
=> (C IS REF NIL; W IS REF NIL; R IS REF NIL; CHAR IS REF NIL;

```

```

=> C := (PARSE( #() (W := (LI, VAL W); GOTO CONT; LI: VAL CHAR);
=> # L2 (R := (L2, VAL R)), CONT),
=> VAL C);
=> CONT: IF R = NIL AND W = NIL THEN GOTO DONE
=> ELSE IF R = NIL THEN (CHAR := READCHAR(); R := W; W := NIL)
=> ELSE ();
=> (L IS R 1; R := R 2; GOTO L);
=> DONE: VAL C);
=> 0$ABCD.

```

COLLECTED 15803 CELLS AND STACK HAS 5763 UNITS LEFT. TIME 30 (SEC/100)

COLLECTED 14960 CELLS AND STACK HAS 5948 UNITS LEFT. TIME 31 (SEC/100)
(PROGATOMDEN 1)

TIME 298 (SEC/100), VALUE IS ...
0

=> GEDANKEN ()

ARGUMENTS FOR EVALQUOTE ...

GEDANKEN
NIL

```

=> PRNV UNITSEQ 17;
=> PRINT (UNITSEQ 17) REF 1;
=> PRNV VECTOR(3,0,INC);
=> PRNV VECTOR(3,2,INC);
=> PRNV VECTOR(3,3,INC);
=> PRNV VECTOR(REF 3, REF 5, NCREF REF INC);
=> PRINT(VECTOR(3,0,INC))REF LL;
=> PRINT(VECTOR(3,5,INC))REF 4;
=> PRNV PVECTOR(0,9,INTTODIGIT);
=> PRNV PVECTOR(0,9, #1 DIGITTOINT INTTODIGIT I);
=> 0$

```

1
17
1
17

COLLECTED 16778 CELLS AND STACK HAS 5948 UNITS LEFT. TIME 30 (SEC/100)

2

3
2

3
4
3

COLLECTED 16556 CELLS AND STACK HAS 5948 UNITS LEFT. TIME 28 (SEC/100)

6

5
3
5

0
0

1
2
2

4
5
COLLECTED 16701 CELLS AND STACK HAS 5948 UNITS LEFT. TIME 30 (SEC/100)

6
7
8
9

0
0
1
2
3
COLLECTED 16696 CELLS AND STACK HAS 5945 UNITS LEFT. TIME 28 (SEC/100)

4
5
6
7
8
9
9

TIME 593 (SEC/100), VALUE IS ...

0

=>
=> GEDANKEN ()

ARGUMENTS FOR EVALQUOTE ...

GEDANKEN
NIL

=> CONS IS #(X, Y) #Z IF Z = 1 THEN X ELSE Y;
=> CAR IS #X X 1;
=> CDR IS #X X 2;
=> X IS CONS(CONS(1,2),CONS(3,4));
=> PRNV (CAR CAR X, CDR CAR X, CAR CDR X, CDR CDR X);
=> 0\$

COLLECTED 17157 CELLS AND STACK HAS 5780 UNITS LEFT. TIME 30 (SEC/100)

1
1
2
3
4
4

TIME 91 (SEC/100), VALUE IS ...

0

=>
=> GEDANKEN ()

ARGUMENTS FOR EVALQUOTE ...

GEDANKEN
NIL

=> LISTLENGTH ISR #L IF L = NIL THEN 0 ELSE INC LISTLENGTH L 2;
=> LISTELEM ISR #(I, L) IF L = NIL THEN GOTO ERROR
=> ELSE IF I = 1 THEN L 1 ELSE LISTELEM(DEC I, L 2);
=> APPEND ISR #(X, Y) IF X = NIL THEN Y ELSE (X 1, APPEND(X 2, Y));
=> VECTOR ISR #(L, U, F)
=> IF GREATER(L, U) THEN
=> # I IF I = LL THEN L ELSE IF I = UL THEN DEC L ELSE GOTO ERROR
=> ELSE (V IS VECTOR(L, DEC U, F); T IS F U;
=> # I IF I = UL THEN U ELSE IF I = U THEN T ELSE V I);

```

=> (
=> MAKESEQFROMLIST IS # L
=> # I IF I = LL THEN 1 ELSE IF I = UL THEN LISTLENGTH L
=> ELSE LISTELEM(I, L);
=> MAKELISTFROMSEQ ISR # S MLFS1(1, S);
=> MLFS1 ISR #(I, S) IF GREATER(I, S UL) THEN NIL
=> ELSE # K (CASE K OF S I, MLFS1(INC I, S));
=> (X IS (7,(8,(9,NIL))))); A IS APPEND(X,X);
=> PRINT LISTLENGTH NIL;
=> PRINT LISTLENGTH X;
=> PRNV PVECTOR(1,3,#I LISTELEM(I,X));
=> PRNV PVECTOR(1,6,#I LISTELEM(I,A));
=> PRNV MAKESEQFROMLIST NIL;
=> PRNV MAKESEQFROMLIST X;
=> PRINT MAKELISTFROMSEQ ();
=> PRNV PVECTOR(1,3, #I LISTELEM(I,MAKELISTFROMSEQ (7,8,9)));
=> PRINT NIL));
=> 0$

```

0
3

1
7
COLLECTED 14773 CELLS AND STACK HAS 5948 UNITS LEFT. TIME 31 (SEC/100)

8
9
3

1
7
8
9
COLLECTED 14811 CELLS AND STACK HAS 5948 UNITS LEFT. TIME 31 (SEC/100)

7
8
9
6

1
COLLECTED 14904 CELLS AND STACK HAS 5945 UNITS LEFT. TIME 31 (SEC/100)

0
1
7
8
9
3

(PROGATOMDEN 1)
COLLECTED 14918 CELLS AND STACK HAS 5948 UNITS LEFT. TIME 31 (SEC/100)

1
7
8
9
3
(PROGATOMDEN 1)

TIME 641 (SEC/100), VALUE IS ...

0

=>
=> GEDANKEN ()

ARGUMENTS FOR EVALQUOTE ...
GEDANKEN

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NIL

```

=> PROPVAL IS #(P, L)
=> (P IS COERCE P;
=> SEARCHL ISR # X
=> IF X = NIL THEN
=> (NEWV IS REF 0; L := ((P, NEWV), VAL L); NEWV)
=> ELSE IF (X 1) 1 = P THEN (X 1) 2 ELSE SEARCHL X 2;
=> SEARCHL VAL L);
=> MAKEPROPLIST IS #() (L IS REF NIL; # P PROPVAL(P, L));
=> A IS MAKEPROPLIST(); B IS MAKEPROPLIST();
=> PROP IS ATOM();
=> PRINT VAL A PROP;
=> PRINT VAL A PROP;
=> A PROP := 100;
=> PRINT VAL A PROP;
=> A "Q" := 101; A 17 := 102; A PROP := 103;
=> B "Q" := 201; B 17 := 202; B PROP := 203;
=> PRNVR(A "Q", A 17, A PROP, A TRUE, B "Q", B 17, B PROP);
=> 0$

```

COLLECTED 15976 CELLS AND STACK HAS 5677 UNITS LEFT. TIME 30 (SEC/100)

0
0
100

COLLECTED 15469 CELLS AND STACK HAS 5945 UNITS LEFT. TIME 30 (SEC/100)

1
101
102
103
0
201
202
203
7

TIME 306 (SEC/100), VALUE IS ...

0

```

=>
=> GEDANKEN ()

```

ARGUMENTS FOR EVALQUOTE ...

GEDANKEN
NIL

```

=> R4 IS REF 4; M3 IS REF NEG 3;
=> NOT IS #X IF X THEN FALSE ELSE TRUE;
=> NEG ISR #X (X IS COERCE X; IF NOT ISINTEGER X THEN GOTO ERROR
=> ELSE IF X = 0 THEN 0 ELSE IF GREATER(X, 0) THEN DEC NEG DEC X
=> ELSE INC NEG INC X);
=> ADD ISR #(X, Y) (X IS COERCE X; Y IS COERCE Y;
=> IF NOT ISINTEGER X OR NOT ISINTEGER Y THEN GOTO ERROR
=> ELSE IF X = 0 THEN Y ELSE IF GREATER(X, 0) THEN INC ADD(DEC X, Y)
=> ELSE DEC ADD(INC X, Y));
=> SUBTRACT ISR #(X, Y) (X IS COERCE X; Y IS COERCE Y; ADD(X, NEG Y));
=> MULTIPLY ISR #(X, Y) (X IS COERCE X; Y IS COERCE Y;
=> IF NOT ISINTEGER X OR NOT ISINTEGER Y THEN GOTO ERROR
=> ELSE IF X = 0 THEN 0
=> ELSE IF GREATER(X, 0) THEN ADD(MULTIPLY(DEC X, Y), Y)
=> ELSE SUBTRACT(MULTIPLY(INC X, Y), Y));
=> DIVIDE ISR #(X, Y) (X IS COERCE X; Y IS COERCE Y;
=> IF NOT ISINTEGER X OR NOT ISINTEGER Y OR Y = 0 THEN GOTO ERROR
=> ELSE IF GREATER(0, Y) THEN NEG(DIVIDE(X, NEG Y))

```

COLLECTED 16944 CELLS AND STACK HAS 5707 UNITS LEFT. TIME 30 (SEC/100)

```

=> ELSE IF NOT GREATER(Y, X) THEN INC DIVIDE(SUBTRACT(X, Y), Y)
=> ELSE IF NOT GREATER(Y, NEG X)

```

```

=> THEN DEC DIVIDE(ADD(X, Y), Y) ELSE 0);
=> REMAINDER ISR #(X, Y) (X IS COERCE X; Y IS COERCE Y;
=> SUBTRACT(X, MULTIPLY(Y, DIVIDE(X,Y))));
=> PRINT NOT TRUE;
=> PRINT NOT REF FALSE;
=> PRINT NEG 0;
=> PRINT NEG 3;
=> PRINT NEG M3;
=> PRINT ADD(0,4);
=> PRINT ADD(1,R4);
=> PRINT ADD(M3,4);
=> PRINT SUBTRACT(M3,R4);
=> PRINT MULTIPLY(0,4);
=> PRINT MULTIPLY(2,R4);
=> PRINT MULTIPLY(M3,4);
=> PRINT DIVIDE(R4,3);
=> PRINT DIVIDE(2,3);
=> PRINT DIVIDE(0,3);
=> PRINT DIVIDE(NEG 2, 3);
=> PRINT DIVIDE(NEG 4,3);
=> PRINT DIVIDE(NEG 4,M3);
=> PRINT REMAINDER(R4,3);
=> PRINT REMAINDER(NEG 4,M3);
=> 0$

```

(FALSEDEN)
(TRUEDEN)

0						
-3						
3						
4						
5						
1						
COLLECTED	13751	CELLS AND STACK HAS	5945	UNITS LEFT.	TIME	31 (SEC/100)
-7						
0						
8						
COLLECTED	13768	CELLS AND STACK HAS	5948	UNITS LEFT.	TIME	31 (SEC/100)
COLLECTED	13696	CELLS AND STACK HAS	5945	UNITS LEFT.	TIME	33 (SEC/100)
-12						
COLLECTED	13608	CELLS AND STACK HAS	5945	UNITS LEFT.	TIME	33 (SEC/100)
1						
0						
0						
0						
COLLECTED	13851	CELLS AND STACK HAS	5948	UNITS LEFT.	TIME	31 (SEC/100)
-1						
COLLECTED	13787	CELLS AND STACK HAS	5948	UNITS LEFT.	TIME	31 (SEC/100)
COLLECTED	13807	CELLS AND STACK HAS	5948	UNITS LEFT.	TIME	31 (SEC/100)
1						
COLLECTED	13550	CELLS AND STACK HAS	5945	UNITS LEFT.	TIME	33 (SEC/100)
1						
COLLECTED	13788	CELLS AND STACK HAS	5948	UNITS LEFT.	TIME	33 (SEC/100)
COLLECTED	13773	CELLS AND STACK HAS	5948	UNITS LEFT.	TIME	31 (SEC/100)
COLLECTED	13695	CELLS AND STACK HAS	5948	UNITS LEFT.	TIME	31 (SEC/100)
-1						

TIME 1698 (SEC/100), VALUE IS ...
0

=>
=> GEDANKEN ()

ARGUMENTS FOR EVALQUOTE ...

GEDANKEN
NIL

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```

=> LAB: (A1 IS ATOM()); A2 IS ATOM(); F IS REF 0;
=> L IS REF (REF 1,TRUE,FALSE,"A",LL,UL,IMPREF(NEG,ATOM),NEG,LAB,
=> ERROR);
=> ITER ISR #I IF GREATER(I,L UL) THEN ()
=> ELSE (PRINT F L I; ITER INC I);
=> F := ISINTEGER ; ITER 1;
=> F := ISBOOLEAN ; ITER 1;
=> F := ISCHAR ; ITER 1;
=> F := ISATOM ; ITER 1;
=> F := ISFUNCTION ; ITER 1;
=> F := ISREF ; ITER 1;
=> F := ISLABEL ; ITER 1;
=> L := ((1,1),(1,2),
=> (TRUE, REF TRUE),(TRUE,REF FALSE),(FALSE,REF FALSE),
=> (REF "A", REF "A"), (REF "A", REF "B"),
=> (REF LL, LL), (REF LL, UL), (REF UL, UL),
=> (A1,A1),(A1,A2),
=> (NEG,NEG), (LAB, LAB),
=> (1,TRUE), (TRUE,"A"), ("A", LL), (LL, A1), (A1, NEG),
=> (NEG,LAB), (LAB,1));
=> F := EQUAL; ITER 1;
=>

```

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COLLECTED 15104 CELLS AND STACK HAS 5945 UNITS LEFT. TIME 30 (SEC/100)

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DATAFOLD FORMS INC, HINSDALE, ILLINOIS 60521

(FALSEDEN)
COLLECTED 15074 CELLS AND STACK HAS 5948 UNITS LEFT. TIME 31 (SEC/100)

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COLLECTED 14585 CELLS AND STACK HAS 5948 UNITS LEFT. TIME 31 (SEC/100)

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TIME 521 (SEC/100), VALUE IS ...

0
*** END OF DATA

DATAFOLD FORMS INC., HINSDALE, ILLINOIS 60521

IEF285I	C145.B17648.LISP.OBJECT	PASSED
IEF285I	VOL SER NOS= CELLBB.	
IEF285I	SYSOUT	SYSOUT
IEF285I	VOL SER NOS=	
IEF285I	C145.B05203.GEDANKEN.APRIL29A	KEPT
IEF285I	VOL SER NOS= CELLBE.	
//		
IEF285I	C145.B17648.LISP.OBJECT	KEPT
IEF285I	VOL SER NOS= CELLBB.	

ID NO. = 2 05203

ASP JOB NO. = 1325

DATE = 69.119

//JCRLISP JOB (205203,3,0,2), 'REYNOLDS COL 1 ROW 3', MSGLEVEL=1

TIME SUBMITTED = 13.23.23, ELAPSED TIME ON MAIN = SY1 = 001.83, START TIME = 13.29.23

DDNAME = SYSMMSG PRINTED ON PR2 , LINES = 000021
DDNAME = LISPOUT PRINTED ON ANY , LINES = 000000
DDNAME = SYSOUT PRINTED ON PR2 , LINES = 000816
LINES OUTPUT FOR THIS JOB = 000837

NO CARD OUTPUT FOR THIS JOB.

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