**PROGRAM:**

BEGIN

INTEGER I;

I := 10;

INTEGER N;

INTEGER SUM;

INTEGER PRICE;

STRING str;

str := "string variable";

LOGICAL var;

var := TRUE;

WHILE PRICE > 0 DO;

INTEGER MAX;

BEGIN

N := N + 1;

SUM := SUM - PRICE;

SUM := SUM \* PRICE;

IF PRICE < MAX

THEN MAX := PRICE;

IF PRICE = MAX

THEN MAX / PRICE;

IF PRICE != MAX

THEN MAX AND PRICE;

PRICE = ! PRICE;

READ(PRICE); COMMENT readon not included in tiny Algol-W;

var := FALSE;

END;

IF PRICE > MAX

THEN MAX OR PRICE;

N := MAX REM PRICE;

N := MAX DIV PRICE;

WRITE("I's final value is ");

WRITELN(I);

END.

**OUTPUT OF SCANNER:**

7 BEGIN

3 INTEGER

1 I

16 ;

1 I

19 :=

2 10

16 ;

3 INTEGER

1 N

16 ;

3 INTEGER

1 SUM

16 ;

3 INTEGER

1 PRICE

16 ;

3 STRING

1 str

19 :=

2 "string variable"

16 ;

3 LOGICAL

1 var

19 :=

2 TRUE

16 ;

11 WHILE

1 PRICE

6 >

2 0

12 DO

16 ;

3 INTEGER

1 MAX

16 ;

7 BEGIN

1 N

19 :=

1 N

4 +

2 1

16 ;

1 SUM

19 :=

1 SUM

4 -

1 PRICE

16 ;

1 SUM

19 :=

1 SUM

5 \*

1 PRICE

16 ;

9 IF

1 PRICE

6 <

1 MAX

10 THEN

1 MAX

19 :=

1 PRICE

16 ;

9 IF

1 PRICE

6 =

1 MAX

10 THEN

1 MAX

5 /

1 PRICE

16 ;

9 IF

1 PRICE

6 !=

1 MAX

10 THEN

1 MAX

5 AND

1 PRICE

16 ;

1 PRICE

6 =

17 !

1 PRICE

16 ;

13 READ

14 (

1 PRICE

15 )

16 ;

1 var

19 :=

2 FALSE

16 ;

8 END

16 ;

9 IF

1 PRICE

6 >

1 MAX

10 THEN

1 MAX

4 OR

1 PRICE

16 ;

1 N

19 :=

1 MAX

5 REM

1 PRICE

16 ;

1 N

19 :=

1 MAX

5 DIV

1 PRICE

16 ;

13 WRITE

14 (

2 "I's final value is "

15 )

16 ;

13 WRITELN

14 (

1 I

15 )

16 ;

8 END

18 .

**OUTPUT OF PARSER:**

1 2

3 6 5

3 8 13 31 18 21 24 29 26 23 20

3 6 5

3 6 5

3 6 5

3 6 5

3 8 13 31 18 21 24 29 26 23 20

3 6 5

3 8 13 31 18 21 24 29 26 23 20

3 10 15 18 21 24 28 31 25 29 23 20

4

3 6 5

3 9 2

3 8 13 31 18 21 24 28 31 26 23 19 21 24 29 26 23 20

3 8 13 31 18 21 24 28 31 26 23 19 21 24 28 31 26 23 20

3 8 13 31 18 21 24 28 31 26 22 24 28 31 26 23 20

3 7 14 18 21 24 28 31 25 28 31 23 20 8 13 31 18 21 24 28 31 26 23 20

3 7 14 18 21 24 28 31 25 28 31 23 20 8 13 31 18 21 24 28 31 26 23 20

3 7 14 18 21 24 28 31 25 28 31 23 20 8 13 31 18 21 24 28 31 26 23 20

3 8 13 31 18 21 24 27 28 31 26 23 20

3 11 16

31

3 8 13 31 18 21 24 29 26 23 20

4

3 7 14 18 21 24 28 31 25 28 31 23 20 8 13 31 18 21 24 28 31 26 23 20

3 8 13 31 18 21 24 28 31 26 22 24 28 31 26 23 20

3 8 13 31 18 21 24 28 31 26 22 24 28 31 26 23 20

3 11 17 18 21 24 30 18 21 24 29 26 23 20 26 23 20

3 11 17 18 21 24 30 18 21 24 28 31 26 23 20 26 23 20

4

Success

**OUTPUT SYMBOL TABLE:**

Identifier I is used at line number 3

-------------------------------------------------------------------------

Identifier I's attributes:

I I 0 0

-------------------------------------------------------------------------

Identifier str is used at line number 8

-------------------------------------------------------------------------

Identifier str's attributes:

str S -16 0

-------------------------------------------------------------------------

Identifier var is used at line number 10

-------------------------------------------------------------------------

Identifier var's attributes:

var L -20 0

-------------------------------------------------------------------------

Identifier PRICE is used at line number 11

-------------------------------------------------------------------------

Identifier PRICE's attributes:

PRICE I -12 0

-------------------------------------------------------------------------

Identifier N is used at line number 14

-------------------------------------------------------------------------

Identifier N's attributes:

N I -4 0

-------------------------------------------------------------------------

Identifier N is used at line number 14

-------------------------------------------------------------------------

Identifier N's attributes:

N I -4 0

-------------------------------------------------------------------------

Identifier SUM is used at line number 15

-------------------------------------------------------------------------

Identifier SUM's attributes:

SUM I -8 0

-------------------------------------------------------------------------

Identifier SUM is used at line number 15

-------------------------------------------------------------------------

Identifier SUM's attributes:

SUM I -8 0

-------------------------------------------------------------------------

Identifier PRICE is used at line number 15

-------------------------------------------------------------------------

Identifier PRICE's attributes:

PRICE I -12 0

-------------------------------------------------------------------------

Identifier SUM is used at line number 16

-------------------------------------------------------------------------

Identifier SUM's attributes:

SUM I -8 0

-------------------------------------------------------------------------

Identifier SUM is used at line number 16

-------------------------------------------------------------------------

Identifier SUM's attributes:

SUM I -8 0

-------------------------------------------------------------------------

Identifier PRICE is used at line number 16

-------------------------------------------------------------------------

Identifier PRICE's attributes:

PRICE I -12 0

-------------------------------------------------------------------------

Identifier PRICE is used at line number 17

-------------------------------------------------------------------------

Identifier PRICE's attributes:

PRICE I -12 0

-------------------------------------------------------------------------

Identifier MAX is used at line number 17

-------------------------------------------------------------------------

Identifier MAX's attributes:

MAX I -24 0

-------------------------------------------------------------------------

Identifier MAX is used at line number 18

-------------------------------------------------------------------------

Identifier MAX's attributes:

MAX I -24 0

-------------------------------------------------------------------------

Identifier PRICE is used at line number 18

-------------------------------------------------------------------------

Identifier PRICE's attributes:

PRICE I -12 0

-------------------------------------------------------------------------

Identifier PRICE is used at line number 19

-------------------------------------------------------------------------

Identifier PRICE's attributes:

PRICE I -12 0

-------------------------------------------------------------------------

Identifier MAX is used at line number 19

-------------------------------------------------------------------------

Identifier MAX's attributes:

MAX I -24 0

-------------------------------------------------------------------------

Identifier MAX is used at line number 20

-------------------------------------------------------------------------

Identifier MAX's attributes:

MAX I -24 0

-------------------------------------------------------------------------

Identifier PRICE is used at line number 20

-------------------------------------------------------------------------

Identifier PRICE's attributes:

PRICE I -12 0

-------------------------------------------------------------------------

Identifier PRICE is used at line number 21

-------------------------------------------------------------------------

Identifier PRICE's attributes:

PRICE I -12 0

-------------------------------------------------------------------------

Identifier MAX is used at line number 21

-------------------------------------------------------------------------

Identifier MAX's attributes:

MAX I -24 0

-------------------------------------------------------------------------

Identifier MAX is used at line number 22

-------------------------------------------------------------------------

Identifier MAX's attributes:

MAX I -24 0

-------------------------------------------------------------------------

Identifier PRICE is used at line number 22

-------------------------------------------------------------------------

Identifier PRICE's attributes:

PRICE I -12 0

-------------------------------------------------------------------------

Identifier PRICE is used at line number 23

-------------------------------------------------------------------------

Identifier PRICE's attributes:

PRICE I -12 0

-------------------------------------------------------------------------

Identifier PRICE is used at line number 23

-------------------------------------------------------------------------

Identifier PRICE's attributes:

PRICE I -12 0

-------------------------------------------------------------------------

Identifier PRICE is used at line number 24

-------------------------------------------------------------------------

Identifier PRICE's attributes:

PRICE I -12 0

-------------------------------------------------------------------------

Identifier var is used at line number 25

-------------------------------------------------------------------------

Identifier var's attributes:

var L -20 0

-------------------------------------------------------------------------

Identifier PRICE is used at line number 27

-------------------------------------------------------------------------

Identifier PRICE's attributes:

PRICE I -12 0

-------------------------------------------------------------------------

Identifier MAX is used at line number 27

-------------------------------------------------------------------------

Identifier MAX's attributes:

MAX I -24 0

-------------------------------------------------------------------------

Identifier MAX is used at line number 28

-------------------------------------------------------------------------

Identifier MAX's attributes:

MAX I -24 0

-------------------------------------------------------------------------

Identifier PRICE is used at line number 28

-------------------------------------------------------------------------

Identifier PRICE's attributes:

PRICE I -12 0

-------------------------------------------------------------------------

Identifier N is used at line number 29

-------------------------------------------------------------------------

Identifier N's attributes:

N I -4 0

-------------------------------------------------------------------------

Identifier MAX is used at line number 29

-------------------------------------------------------------------------

Identifier MAX's attributes:

MAX I -24 0

-------------------------------------------------------------------------

Identifier PRICE is used at line number 29

-------------------------------------------------------------------------

Identifier PRICE's attributes:

PRICE I -12 0

-------------------------------------------------------------------------

Identifier N is used at line number 30

-------------------------------------------------------------------------

Identifier N's attributes:

N I -4 0

-------------------------------------------------------------------------

Identifier MAX is used at line number 30

-------------------------------------------------------------------------

Identifier MAX's attributes:

MAX I -24 0

-------------------------------------------------------------------------

Identifier PRICE is used at line number 30

-------------------------------------------------------------------------

Identifier PRICE's attributes:

PRICE I -12 0

-------------------------------------------------------------------------

Identifier I is used at line number 32

-------------------------------------------------------------------------

Identifier I's attributes:

I I 0 0

-------------------------------------------------------------------------

Success

All Identifier Scopewice List with its attribute values.

-------------------------------------------------------------------------

Scope:0

-------------------------------------------------------------------------

str S -16 0

PRICE I -12 0

MAX I -24 0

var L -20 0

I I 0 0

SUM I -8 0

N I -4 0

=========================================================================