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**LAB 2. PARSER**

*This report includes*

1. Results received when executing project with files in folder test
2. All kind​s of errors that can be found by the parser, except "Invalid Expression”

**A, Results received when executing project with files in folder test**

1. ***Example1.kpl***

A screenshot of a computer

AI-generated content may be incorrect.

***Results received:***

Parsing a Program ....

1-1:KW\_PROGRAM

1-9:TK\_IDENT(Example1)

1-17:SB\_SEMICOLON

Parsing a Block ....

Parsing Block 2 ....

Parsing Block 3 ....

Parsing Block 4 ....

Parsing subroutines ....

Subroutines parsed ....

2-1:KW\_BEGIN

3-1:KW\_END

Block parsed!

3-5:SB\_PERIOD

Program parsed!

1. ***Example2.kpl***

***A screenshot of a computer

AI-generated content may be incorrect.***

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AI-generated content may be incorrect.***

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AI-generated content may be incorrect.***

***A screenshot of a computer

AI-generated content may be incorrect.***

***Results received:***

Parsing a Program ....

1-1:KW\_PROGRAM

1-9:TK\_IDENT(Example2)

1-17:SB\_SEMICOLON

Parsing a Block ....

Parsing Block 2 ....

Parsing Block 3 ....

3-1:KW\_VAR

3-5:TK\_IDENT(n)

3-7:SB\_COLON

3-9:KW\_INTEGER

3-16:SB\_SEMICOLON

Parsing Block 4 ....

Parsing subroutines ....

Parsing a function ....

5-1:KW\_FUNCTION

5-10:TK\_IDENT(F)

5-11:SB\_LPAR

5-12:TK\_IDENT(n)

5-14:SB\_COLON

5-16:KW\_INTEGER

5-23:SB\_RPAR

5-25:SB\_COLON

5-27:KW\_INTEGER

5-34:SB\_SEMICOLON

Parsing a Block ....

Parsing Block 2 ....

Parsing Block 3 ....

Parsing Block 4 ....

Parsing subroutines ....

Subroutines parsed ....

F6-3:KW\_BEGIN

Parsing an if statement ....

7-5:KW\_IF

Parsing an expression

7-8:TK\_IDENT(n)

Expression parsed

7-10:SB\_EQ

Parsing an expression

7-12:TK\_NUMBER(0)

Expression parsed

7-14:KW\_THEN

Parsing an assign statement ....

7-19:TK\_IDENT(F)

7-22:SB\_ASSIGN

Parsing an expression

7-24:TK\_NUMBER(1)

Expression parsed

Assign statement parsed ....

7-26:KW\_ELSE

Parsing an assign statement ....

7-31:TK\_IDENT(F)

7-34:SB\_ASSIGN

Parsing an expression

7-36:TK\_IDENT(N)

7-38:SB\_TIMES

7-40:TK\_IDENT(F)

7-42:SB\_LPAR

Parsing an expression

7-43:TK\_IDENT(N)

7-45:SB\_MINUS

7-47:TK\_NUMBER(1)

Expression parsed

7-48:SB\_RPAR

Expression parsed

Assign statement parsed ....

If statement parsed ....

7-49:SB\_SEMICOLON

8-3:KW\_END

Block parsed!

8-6:SB\_SEMICOLON

Function parsed ....

Subroutines parsed ....

F10-1:KW\_BEGIN

Parsing a for statement ....

11-3:KW\_FOR

11-7:TK\_IDENT(n)

11-10:SB\_ASSIGN

Parsing an expression

11-12:TK\_NUMBER(1)

Expression parsed

11-14:KW\_TO

Parsing an expression

11-17:TK\_NUMBER(7)

Expression parsed

11-19:KW\_DO

Parsing a group statement ....

12-5:KW\_BEGIN

Parsing a call statement ....

13-7:KW\_CALL

13-12:TK\_IDENT(WriteLn)

Call statement parsed ....

13-19:SB\_SEMICOLON

Parsing a call statement ....

14-7:KW\_CALL

14-12:TK\_IDENT(WriteI)

14-18:SB\_LPAR

Parsing an expression

14-20:TK\_IDENT(F)

14-21:SB\_LPAR

Parsing an expression

14-22:TK\_IDENT(n)

Expression parsed

14-23:SB\_RPAR

Expression parsed

14-24:SB\_RPAR

Call statement parsed ....

14-25:SB\_SEMICOLON

15-5:KW\_END

Group statement parsed ....

For statement parsed ....

15-8:SB\_SEMICOLON

16-1:KW\_END

Block parsed!

16-5:SB\_PERIOD

Program parsed!

1. ***Example3.kpl***

***A screenshot of a computer

AI-generated content may be incorrect.***

***A screenshot of a computer

AI-generated content may be incorrect.***

***A screenshot of a computer

AI-generated content may be incorrect.***

***A screenshot of a computer

AI-generated content may be incorrect.***

***A screenshot of a computer program

AI-generated content may be incorrect.***

***A screenshot of a computer

AI-generated content may be incorrect.***

***A screenshot of a computer

AI-generated content may be incorrect.***

***A screenshot of a computer

AI-generated content may be incorrect.***

***A screenshot of a computer

AI-generated content may be incorrect.***

***A screenshot of a computer

AI-generated content may be incorrect.***

***A black screen with white text

AI-generated content may be incorrect.***

***Results received:***

Parsing a Program ....

1-1:KW\_PROGRAM

1-10:TK\_IDENT(EXAMPLE3)

1-18:SB\_SEMICOLON

Parsing a Block ....

Parsing Block 2 ....

Parsing Block 3 ....

2-1:KW\_VAR

2-6:TK\_IDENT(I)

2-7:SB\_COLON

2-8:KW\_INTEGER

2-15:SB\_SEMICOLON

3-6:TK\_IDENT(N)

3-7:SB\_COLON

3-8:KW\_INTEGER

3-15:SB\_SEMICOLON

4-6:TK\_IDENT(P)

4-7:SB\_COLON

4-8:KW\_INTEGER

4-15:SB\_SEMICOLON

5-6:TK\_IDENT(Q)

5-7:SB\_COLON

5-8:KW\_INTEGER

5-15:SB\_SEMICOLON

6-6:TK\_IDENT(C)

6-7:SB\_COLON

6-8:KW\_CHAR

6-12:SB\_SEMICOLON

Parsing Block 4 ....

Parsing subroutines ....

Parsing a procedure ....

8-1:KW\_PROCEDURE

8-12:TK\_IDENT(HANOI)

8-17:SB\_LPAR

8-18:TK\_IDENT(N)

8-19:SB\_COLON

8-20:KW\_INTEGER

8-27:SB\_SEMICOLON

8-30:TK\_IDENT(S)

8-31:SB\_COLON

8-32:KW\_INTEGER

8-39:SB\_SEMICOLON

8-42:TK\_IDENT(Z)

8-43:SB\_COLON

8-44:KW\_INTEGER

8-51:SB\_RPAR

8-52:SB\_SEMICOLON

Parsing a Block ....

Parsing Block 2 ....

Parsing Block 3 ....

Parsing Block 4 ....

Parsing subroutines ....

Subroutines parsed ....

9-1:KW\_BEGIN

Parsing an if statement ....

10-3:KW\_IF

Parsing an expression

10-7:TK\_IDENT(N)

Expression parsed

10-10:SB\_NEQ

Parsing an expression

10-12:TK\_NUMBER(0)

Expression parsed

10-15:KW\_THEN

Parsing a group statement ....

11-5:KW\_BEGIN

Parsing a call statement ....

12-7:KW\_CALL

12-13:TK\_IDENT(HANOI)

12-18:SB\_LPAR

Parsing an expression

12-19:TK\_IDENT(N)

12-20:SB\_MINUS

12-21:TK\_NUMBER(1)

Expression parsed

12-22:SB\_COMMA

Parsing an expression

12-23:TK\_IDENT(S)

Expression parsed

12-24:SB\_COMMA

Parsing an expression

12-25:TK\_NUMBER(6)

12-26:SB\_MINUS

12-27:TK\_IDENT(S)

12-28:SB\_MINUS

12-29:TK\_IDENT(Z)

Expression parsed

12-30:SB\_RPAR

Call statement parsed ....

12-31:SB\_SEMICOLON

Parsing an assign statement ....

13-7:TK\_IDENT(I)

13-9:SB\_ASSIGN

Parsing an expression

13-10:TK\_IDENT(I)

13-11:SB\_PLUS

13-12:TK\_NUMBER(1)

Expression parsed

Assign statement parsed ....

13-13:SB\_SEMICOLON

Parsing a call statement ....

14-7:KW\_CALL

14-13:TK\_IDENT(WRITELN)

Call statement parsed ....

14-20:SB\_SEMICOLON

Parsing a call statement ....

15-7:KW\_CALL

15-13:TK\_IDENT(WRITEI)

15-19:SB\_LPAR

Parsing an expression

15-20:TK\_IDENT(I)

Expression parsed

15-21:SB\_RPAR

Call statement parsed ....

15-22:SB\_SEMICOLON

Parsing a call statement ....

16-7:KW\_CALL

16-13:TK\_IDENT(WRITEI)

16-19:SB\_LPAR

Parsing an expression

16-20:TK\_IDENT(N)

Expression parsed

16-21:SB\_RPAR

Call statement parsed ....

16-22:SB\_SEMICOLON

Parsing a call statement ....

17-7:KW\_CALL

17-13:TK\_IDENT(WRITEI)

17-19:SB\_LPAR

Parsing an expression

17-20:TK\_IDENT(S)

Expression parsed

17-21:SB\_RPAR

Call statement parsed ....

17-22:SB\_SEMICOLON

Parsing a call statement ....

18-7:KW\_CALL

18-13:TK\_IDENT(WRITEI)

18-19:SB\_LPAR

Parsing an expression

18-20:TK\_IDENT(Z)

Expression parsed

18-21:SB\_RPAR

Call statement parsed ....

18-22:SB\_SEMICOLON

Parsing a call statement ....

19-7:KW\_CALL

19-13:TK\_IDENT(HANOI)

19-18:SB\_LPAR

Parsing an expression

19-19:TK\_IDENT(N)

19-20:SB\_MINUS

19-21:TK\_NUMBER(1)

Expression parsed

19-22:SB\_COMMA

Parsing an expression

19-23:TK\_NUMBER(6)

19-24:SB\_MINUS

19-25:TK\_IDENT(S)

19-26:SB\_MINUS

19-27:TK\_IDENT(Z)

Expression parsed

19-28:SB\_COMMA

Parsing an expression

19-29:TK\_IDENT(Z)

Expression parsed

19-30:SB\_RPAR

Call statement parsed ....

20-5:KW\_END

Group statement parsed ....

If statement parsed ....

21-1:KW\_END

Block parsed!

21-4:SB\_SEMICOLON

Procedure parsed ....

Subroutines parsed ....

23-1:KW\_BEGIN

Parsing a for statement ....

24-3:KW\_FOR

24-8:TK\_IDENT(N)

24-11:SB\_ASSIGN

Parsing an expression

24-13:TK\_NUMBER(1)

Expression parsed

24-16:KW\_TO

Parsing an expression

24-20:TK\_NUMBER(4)

Expression parsed

24-23:KW\_DO

Parsing a group statement ....

25-5:KW\_BEGIN

Parsing a for statement ....

26-7:KW\_FOR

26-12:TK\_IDENT(I)

26-14:SB\_ASSIGN

Parsing an expression

26-15:TK\_NUMBER(1)

Expression parsed

26-18:KW\_TO

Parsing an expression

26-22:TK\_NUMBER(4)

Expression parsed

26-25:KW\_DO

Parsing a call statement ....

27-9:KW\_CALL

27-15:TK\_IDENT(WRITEC)

27-21:SB\_LPAR

Parsing an expression

27-23:TK\_CHAR(' ')

Expression parsed

27-25:SB\_RPAR

Call statement parsed ....

For statement parsed ....

27-26:SB\_SEMICOLON

Parsing an assign statement ....

28-7:TK\_IDENT(C)

28-10:SB\_ASSIGN

Parsing an expression

28-13:TK\_IDENT(READC)

Expression parsed

Assign statement parsed ....

28-18:SB\_SEMICOLON

Parsing a call statement ....

29-7:KW\_CALL

29-13:TK\_IDENT(WRITEC)

29-19:SB\_LPAR

Parsing an expression

29-20:TK\_IDENT(C)

Expression parsed

29-21:SB\_RPAR

Call statement parsed ....

30-5:KW\_END

Group statement parsed ....

For statement parsed ....

30-8:SB\_SEMICOLON

Parsing an assign statement ....

31-3:TK\_IDENT(P)

31-5:SB\_ASSIGN

Parsing an expression

31-6:TK\_NUMBER(1)

Expression parsed

Assign statement parsed ....

31-7:SB\_SEMICOLON

Parsing an assign statement ....

32-3:TK\_IDENT(Q)

32-5:SB\_ASSIGN

Parsing an expression

32-6:TK\_NUMBER(2)

Expression parsed

Assign statement parsed ....

32-7:SB\_SEMICOLON

Parsing a for statement ....

33-3:KW\_FOR

33-8:TK\_IDENT(N)

33-10:SB\_ASSIGN

Parsing an expression

33-11:TK\_NUMBER(2)

Expression parsed

33-14:KW\_TO

Parsing an expression

33-18:TK\_NUMBER(4)

Expression parsed

33-21:KW\_DO

Parsing a group statement ....

34-5:KW\_BEGIN

Parsing an assign statement ....

35-7:TK\_IDENT(I)

35-9:SB\_ASSIGN

Parsing an expression

35-10:TK\_NUMBER(0)

Expression parsed

Assign statement parsed ....

35-11:SB\_SEMICOLON

Parsing a call statement ....

36-7:KW\_CALL

36-13:TK\_IDENT(HANOI)

36-18:SB\_LPAR

Parsing an expression

36-19:TK\_IDENT(N)

Expression parsed

36-20:SB\_COMMA

Parsing an expression

36-21:TK\_IDENT(P)

Expression parsed

36-22:SB\_COMMA

Parsing an expression

36-23:TK\_IDENT(Q)

Expression parsed

36-24:SB\_RPAR

Call statement parsed ....

36-25:SB\_SEMICOLON

Parsing a call statement ....

37-7:KW\_CALL

37-13:TK\_IDENT(WRITELN)

Call statement parsed ....

38-5:KW\_END

Group statement parsed ....

For statement parsed ....

39-1:KW\_END

Block parsed!

39-5:SB\_PERIOD

Program parsed!

1. ***Example4.kpl***

***A screenshot of a computer

AI-generated content may be incorrect.***

***A screen shot of a computer

AI-generated content may be incorrect.***

***A screenshot of a computer

AI-generated content may be incorrect.***

***A screenshot of a computer

AI-generated content may be incorrect.***

***A screenshot of a computer

AI-generated content may be incorrect.***

***A computer screen shot of a computer screen

AI-generated content may be incorrect.***

***A screenshot of a computer

AI-generated content may be incorrect.***

***A screenshot of a computer

AI-generated content may be incorrect.***

***A screenshot of a computer

AI-generated content may be incorrect.***

***A computer screen shot of a black screen

AI-generated content may be incorrect.***

***Results received:***

Parsing a Program ....

1-1:KW\_PROGRAM

1-10:TK\_IDENT(EXAMPLE4)

1-18:SB\_SEMICOLON

Parsing a Block ....

2-1:KW\_CONST

2-7:TK\_IDENT(MAX)

2-11:SB\_EQ

2-13:TK\_NUMBER(10)

2-15:SB\_SEMICOLON

Parsing Block 2 ....

3-1:KW\_TYPE

3-6:TK\_IDENT(T)

3-8:SB\_EQ

3-10:KW\_INTEGER

3-17:SB\_SEMICOLON

Parsing Block 3 ....

4-1:KW\_VAR

4-6:TK\_IDENT(A)

4-8:SB\_COLON

4-10:KW\_ARRAY

4-15:SB\_LSEL

4-18:TK\_NUMBER(10)

4-22:SB\_RSEL

4-24:KW\_OF

4-27:TK\_IDENT(T)

4-28:SB\_SEMICOLON

5-6:TK\_IDENT(N)

5-8:SB\_COLON

5-10:KW\_INTEGER

5-17:SB\_SEMICOLON

6-6:TK\_IDENT(CH)

6-9:SB\_COLON

6-11:KW\_CHAR

6-15:SB\_SEMICOLON

Parsing Block 4 ....

Parsing subroutines ....

Parsing a procedure ....

8-1:KW\_PROCEDURE

8-11:TK\_IDENT(INPUT)

8-16:SB\_SEMICOLON

Parsing a Block ....

Parsing Block 2 ....

Parsing Block 3 ....

9-1:KW\_VAR

9-5:TK\_IDENT(I)

9-7:SB\_COLON

9-9:KW\_INTEGER

9-16:SB\_SEMICOLON

10-5:TK\_IDENT(TMP)

10-9:SB\_COLON

10-11:KW\_INTEGER

10-18:SB\_SEMICOLON

Parsing Block 4 ....

Parsing subroutines ....

Subroutines parsed ....

11-1:KW\_BEGIN

Parsing an assign statement ....

12-3:TK\_IDENT(N)

12-6:SB\_ASSIGN

Parsing an expression

12-8:TK\_IDENT(READI)

Expression parsed

Assign statement parsed ....

12-13:SB\_SEMICOLON

Parsing a for statement ....

13-3:KW\_FOR

13-7:TK\_IDENT(I)

13-10:SB\_ASSIGN

Parsing an expression

13-12:TK\_NUMBER(1)

Expression parsed

13-14:KW\_TO

Parsing an expression

13-17:TK\_IDENT(N)

Expression parsed

13-19:KW\_DO

Parsing an assign statement ....

14-6:TK\_IDENT(A)

14-7:SB\_LSEL

Parsing an expression

14-9:TK\_IDENT(I)

Expression parsed

14-11:SB\_RSEL

14-14:SB\_ASSIGN

Parsing an expression

14-16:TK\_IDENT(READI)

Expression parsed

Assign statement parsed ....

For statement parsed ....

14-21:SB\_SEMICOLON

15-1:KW\_END

Block parsed!

15-4:SB\_SEMICOLON

Procedure parsed ....

Parsing a procedure ....

17-1:KW\_PROCEDURE

17-11:TK\_IDENT(OUTPUT)

17-17:SB\_SEMICOLON

Parsing a Block ....

Parsing Block 2 ....

Parsing Block 3 ....

18-1:KW\_VAR

18-5:TK\_IDENT(I)

18-7:SB\_COLON

18-9:KW\_INTEGER

18-16:SB\_SEMICOLON

Parsing Block 4 ....

Parsing subroutines ....

Subroutines parsed ....

19-1:KW\_BEGIN

Parsing a for statement ....

20-3:KW\_FOR

20-7:TK\_IDENT(I)

20-10:SB\_ASSIGN

Parsing an expression

20-12:TK\_NUMBER(1)

Expression parsed

20-14:KW\_TO

Parsing an expression

20-17:TK\_IDENT(N)

Expression parsed

20-19:KW\_DO

Parsing a group statement ....

21-6:KW\_BEGIN

Parsing a call statement ....

22-8:KW\_CALL

22-13:TK\_IDENT(WRITEI)

22-19:SB\_LPAR

Parsing an expression

22-20:TK\_IDENT(A)

22-21:SB\_LSEL

Parsing an expression

22-23:TK\_IDENT(I)

Expression parsed

22-25:SB\_RSEL

Expression parsed

22-26:SB\_RPAR

Call statement parsed ....

22-27:SB\_SEMICOLON

Parsing a call statement ....

23-8:KW\_CALL

23-13:TK\_IDENT(WRITELN)

Call statement parsed ....

23-20:SB\_SEMICOLON

24-6:KW\_END

Group statement parsed ....

For statement parsed ....

25-1:KW\_END

Block parsed!

25-4:SB\_SEMICOLON

Procedure parsed ....

Parsing a function ....

27-1:KW\_FUNCTION

27-10:TK\_IDENT(SUM)

27-14:SB\_COLON

27-16:KW\_INTEGER

27-23:SB\_SEMICOLON

Parsing a Block ....

Parsing Block 2 ....

Parsing Block 3 ....

28-1:KW\_VAR

28-5:TK\_IDENT(I)

28-6:SB\_COLON

28-8:KW\_INTEGER

28-15:SB\_SEMICOLON

29-5:TK\_IDENT(S)

29-7:SB\_COLON

29-9:KW\_INTEGER

29-16:SB\_SEMICOLON

Parsing Block 4 ....

Parsing subroutines ....

Subroutines parsed ....

30-1:KW\_BEGIN

Parsing an assign statement ....

31-5:TK\_IDENT(S)

31-8:SB\_ASSIGN

Parsing an expression

31-10:TK\_NUMBER(0)

Expression parsed

Assign statement parsed ....

31-11:SB\_SEMICOLON

Parsing an assign statement ....

32-5:TK\_IDENT(I)

32-8:SB\_ASSIGN

Parsing an expression

32-10:TK\_NUMBER(1)

Expression parsed

Assign statement parsed ....

32-11:SB\_SEMICOLON

Parsing a while statement ....

33-5:KW\_WHILE

Parsing an expression

33-11:TK\_IDENT(I)

Expression parsed

33-14:SB\_LE

Parsing an expression

33-16:TK\_IDENT(N)

Expression parsed

33-18:KW\_DO

Parsing a group statement ....

34-6:KW\_BEGIN

Parsing an assign statement ....

35-8:TK\_IDENT(S)

35-11:SB\_ASSIGN

Parsing an expression

35-13:TK\_IDENT(S)

35-15:SB\_PLUS

35-17:TK\_IDENT(A)

35-18:SB\_LSEL

Parsing an expression

35-20:TK\_IDENT(I)

Expression parsed

35-22:SB\_RSEL

Expression parsed

Assign statement parsed ....

35-23:SB\_SEMICOLON

Parsing an assign statement ....

36-8:TK\_IDENT(I)

36-11:SB\_ASSIGN

Parsing an expression

36-13:TK\_IDENT(I)

36-15:SB\_PLUS

36-17:TK\_NUMBER(1)

Expression parsed

Assign statement parsed ....

36-18:SB\_SEMICOLON

37-6:KW\_END

Group statement parsed ....

While statement parsed ....

38-1:KW\_END

Block parsed!

38-4:SB\_SEMICOLON

Function parsed ....

Subroutines parsed ....

40-1:KW\_BEGIN

Parsing an assign statement ....

41-4:TK\_IDENT(CH)

41-8:SB\_ASSIGN

Parsing an expression

41-11:TK\_CHAR('y')

Expression parsed

Assign statement parsed ....

41-13:SB\_SEMICOLON

Parsing a while statement ....

42-4:KW\_WHILE

Parsing an expression

42-10:TK\_IDENT(CH)

Expression parsed

42-13:SB\_EQ

Parsing an expression

42-16:TK\_CHAR('y')

Expression parsed

42-19:KW\_DO

Parsing a group statement ....

43-6:KW\_BEGIN

Parsing a call statement ....

44-8:KW\_CALL

44-13:TK\_IDENT(INPUT)

Call statement parsed ....

44-18:SB\_SEMICOLON

Parsing a call statement ....

45-8:KW\_CALL

45-13:TK\_IDENT(OUTPUT)

Call statement parsed ....

45-19:SB\_SEMICOLON

Parsing a call statement ....

46-8:KW\_CALL

46-13:TK\_IDENT(WRITEI)

46-19:SB\_LPAR

Parsing an expression

46-20:TK\_IDENT(SUM)

Expression parsed

46-23:SB\_RPAR

Call statement parsed ....

46-24:SB\_SEMICOLON

Parsing an assign statement ....

47-8:TK\_IDENT(CH)

47-12:SB\_ASSIGN

Parsing an expression

47-14:TK\_IDENT(READC)

Expression parsed

Assign statement parsed ....

47-19:SB\_SEMICOLON

48-6:KW\_END

Group statement parsed ....

While statement parsed ....

49-1:KW\_END

Block parsed!

49-5:SB\_PERIOD

Program parsed!

1. ***Example5.kpl***

***A screenshot of a computer

AI-generated content may be incorrect.***

***A black screen with white dots

AI-generated content may be incorrect.***

***A black screen with white text

AI-generated content may be incorrect.***

***Results received:***

Parsing a Program ....

1-1:KW\_PROGRAM

1-9:TK\_IDENT(Example5)

1-17:SB\_SEMICOLON

Parsing a Block ....

2-1:KW\_CONST

2-7:TK\_IDENT(c)

2-9:SB\_EQ

2-11:TK\_NUMBER(1)

2-12:SB\_SEMICOLON

Parsing Block 2 ....

3-1:KW\_TYPE

3-6:TK\_IDENT(t)

3-8:SB\_EQ

3-10:KW\_CHAR

3-14:SB\_SEMICOLON

Parsing Block 3 ....

Parsing Block 4 ....

Parsing subroutines ....

Parsing a function ....

4-1:KW\_FUNCTION

4-10:TK\_IDENT(f)

4-11:SB\_LPAR

4-12:TK\_IDENT(i)

4-14:SB\_COLON

4-16:KW\_INTEGER

4-23:SB\_RPAR

4-24:SB\_COLON

4-25:KW\_CHAR

4-29:SB\_SEMICOLON

Parsing a Block ....

5-1:KW\_CONST

5-7:TK\_IDENT(b)

5-9:SB\_EQ

5-11:TK\_IDENT(c)

5-12:SB\_SEMICOLON

Parsing Block 2 ....

6-1:KW\_TYPE

6-6:TK\_IDENT(a)

6-8:SB\_EQ

6-10:KW\_ARRAY

6-15:SB\_LSEL

6-17:TK\_NUMBER(5)

6-19:SB\_RSEL

6-21:KW\_OF

6-24:TK\_IDENT(t)

6-25:SB\_SEMICOLON

Parsing Block 3 ....

Parsing Block 4 ....

Parsing subroutines ....

Subroutines parsed ....

7-1:KW\_BEGIN

8-1:KW\_END

Block parsed!

8-4:SB\_SEMICOLON

Function parsed ....

Subroutines parsed ....

9-1:KW\_BEGIN

10-1:KW\_END

Block parsed!

10-5:SB\_PERIOD

Program parsed!

1. ***Example6.kpl***

***A screenshot of a computer

AI-generated content may be incorrect.***

***A black background with white dots

AI-generated content may be incorrect.***

***A screenshot of a computer

AI-generated content may be incorrect.***

***A black screen with a black background

AI-generated content may be incorrect.***

***A screenshot of a computer

AI-generated content may be incorrect.***

***A black screen with white text

AI-generated content may be incorrect.***

***Results received:***

Parsing a Program ....

1-1:KW\_PROGRAM

1-9:TK\_IDENT(Example6)

1-17:SB\_SEMICOLON

Parsing a Block ....

2-4:KW\_CONST

2-10:TK\_IDENT(c1)

2-13:SB\_EQ

2-15:TK\_NUMBER(10)

2-17:SB\_SEMICOLON

3-5:TK\_IDENT(c2)

3-8:SB\_EQ

3-11:TK\_CHAR('a')

3-13:SB\_SEMICOLON

Parsing Block 2 ....

4-4:KW\_TYPE

4-9:TK\_IDENT(t1)

4-12:SB\_EQ

4-14:KW\_ARRAY

4-19:SB\_LSEL

4-22:TK\_NUMBER(10)

4-26:SB\_RSEL

4-28:KW\_OF

4-31:KW\_INTEGER

4-38:SB\_SEMICOLON

Parsing Block 3 ....

5-4:KW\_VAR

5-8:TK\_IDENT(v1)

5-11:SB\_COLON

5-13:KW\_INTEGER

5-20:SB\_SEMICOLON

6-8:TK\_IDENT(v2)

6-11:SB\_COLON

6-13:KW\_ARRAY

6-18:SB\_LSEL

6-21:TK\_NUMBER(10)

6-25:SB\_RSEL

6-27:KW\_OF

6-30:TK\_IDENT(t1)

6-32:SB\_SEMICOLON

Parsing Block 4 ....

Parsing subroutines ....

Parsing a function ....

8-4:KW\_FUNCTION

8-13:TK\_IDENT(F)

8-14:SB\_LPAR

8-15:TK\_IDENT(p1)

8-18:SB\_COLON

8-20:KW\_INTEGER

8-27:SB\_SEMICOLON

8-29:KW\_VAR

8-33:TK\_IDENT(p2)

8-36:SB\_COLON

8-38:KW\_CHAR

8-42:SB\_RPAR

8-44:SB\_COLON

8-46:KW\_INTEGER

8-53:SB\_SEMICOLON

Parsing a Block ....

Parsing Block 2 ....

Parsing Block 3 ....

Parsing Block 4 ....

Parsing subroutines ....

Subroutines parsed ....

9-6:KW\_BEGIN

Parsing an assign statement ....

10-8:TK\_IDENT(f)

10-11:SB\_ASSIGN

Parsing an expression

10-13:TK\_IDENT(c1)

Expression parsed

Assign statement parsed ....

10-15:SB\_SEMICOLON

11-6:KW\_END

Block parsed!

11-9:SB\_SEMICOLON

Function parsed ....

Parsing a procedure ....

13-4:KW\_PROCEDURE

13-14:TK\_IDENT(p)

13-15:SB\_LPAR

13-16:TK\_IDENT(v1)

13-19:SB\_COLON

13-21:KW\_INTEGER

13-28:SB\_RPAR

13-29:SB\_SEMICOLON

Parsing a Block ....

14-6:KW\_CONST

14-12:TK\_IDENT(c1)

14-15:SB\_EQ

14-18:TK\_CHAR('a')

14-20:SB\_SEMICOLON

15-12:TK\_IDENT(c3)

15-15:SB\_EQ

15-17:TK\_NUMBER(10)

15-19:SB\_SEMICOLON

Parsing Block 2 ....

16-6:KW\_TYPE

16-11:TK\_IDENT(t1)

16-14:SB\_EQ

16-16:KW\_INTEGER

16-23:SB\_SEMICOLON

17-11:TK\_IDENT(t2)

17-14:SB\_EQ

17-16:KW\_ARRAY

17-21:SB\_LSEL

17-24:TK\_NUMBER(10)

17-28:SB\_RSEL

17-30:KW\_OF

17-33:TK\_IDENT(t1)

17-35:SB\_SEMICOLON

Parsing Block 3 ....

18-6:KW\_VAR

18-10:TK\_IDENT(v2)

18-13:SB\_COLON

18-15:TK\_IDENT(t2)

18-17:SB\_SEMICOLON

19-10:TK\_IDENT(v3)

19-13:SB\_COLON

19-15:KW\_CHAR

19-19:SB\_SEMICOLON

Parsing Block 4 ....

Parsing subroutines ....

Subroutines parsed ....

20-6:KW\_BEGIN

Parsing an assign statement ....

21-2:TK\_IDENT(v3)

21-6:SB\_ASSIGN

Parsing an expression

21-9:TK\_CHAR('a')

Expression parsed

Assign statement parsed ....

21-11:SB\_SEMICOLON

Parsing an assign statement ....

22-9:TK\_IDENT(v1)

22-13:SB\_ASSIGN

Parsing an expression

22-15:TK\_IDENT(f)

22-16:SB\_LPAR

Parsing an expression

22-17:TK\_IDENT(c3)

Expression parsed

22-19:SB\_COMMA

Parsing an expression

22-20:TK\_IDENT(v3)

Expression parsed

22-22:SB\_RPAR

Expression parsed

Assign statement parsed ....

22-23:SB\_SEMICOLON

23-6:KW\_END

Block parsed!

23-9:SB\_SEMICOLON

Procedure parsed ....

Subroutines parsed ....

25-1:KW\_BEGIN

Parsing a call statement ....

26-6:KW\_CALL

26-11:TK\_IDENT(p)

26-12:SB\_LPAR

Parsing an expression

26-13:TK\_IDENT(c1)

Expression parsed

26-15:SB\_RPAR

Call statement parsed ....

26-16:SB\_SEMICOLON

27-1:KW\_END

Block parsed!

27-5:SB\_PERIOD

Program parsed!

**B, All kinds of errors that can be found by the parser, except “Invalid Expression”**

1. ***MissingToken***

|  |
| --- |
| Program Err1 (\* Missing ";" here \*)  Begin  End. (\* Err1 \*) |

***err1.kpl***

*A screen shot of a computer

AI-generated content may be incorrect.*

1. ***Invalid constant! (ERR\_INVALID\_CONSTANT)***

|  |
| --- |
| PROGRAM Err2;  CONST X = 'abc';  BEGIN  END. (\* Err2 \*) |

***err2.kpl***

*A screenshot of a computer

AI-generated content may be incorrect.*

1. ***Invalid type! (ERR\_INVALIDTYPE)***

|  |
| --- |
| PROGRAM Err3;  VAR A : 8386; (\*Invalid Type\*)  BEGIN  A := 2;  END. (\* Err3 \*) |

***err3.kpl***

***A screenshot of a computer

AI-generated content may be incorrect.***

1. ***Invalid basic type! (ERR\_INVALIDBASICTYPE)***

|  |
| --- |
| PROGRAM Err4;  PROCEDURE DoSomething(x: BOOLEAN); (\* Invalid basic type \*)  BEGIN  END. (\* Err4 \*) |

***err4.kpl***

***A screenshot of a computer

AI-generated content may be incorrect.***

1. ***Invalid parameter! (ERR\_INVALIDPARAM)***

|  |
| --- |
| PROGRAM Err5;  PROCEDURE DoSomething(123x: INTEGER);  BEGIN  END. (\* Err5 \*) |

***err5.kpl***

***A screenshot of a computer

AI-generated content may be incorrect.***

1. ***Invalid statement! (ERR\_INVALIDSTATEMENT)***

|  |
| --- |
| PROGRAM Err6;  BEGIN  123 := 456;  END. (\* Err6 \*) |

***err6.kpl***

***A screenshot of a computer

AI-generated content may be incorrect.***

1. ***Invalid arguments! (ERR\_INVALIDARGUMENTS)***

|  |
| --- |
| PROGRAM Err7;  PROCEDURE Test(a: INTEGER; b: INTEGER);  BEGIN  END;  BEGIN  CALL Test (a,); (\* Invalid arguments! \*)  END. (\* Err7 \*) |

***err7.kpl***

***A computer screen shot of a black screen

AI-generated content may be incorrect.***

1. ***Invalid comparator! (ERR\_INVALIDCOMPARATOR)***

|  |
| --- |
| PROGRAM Err8;  VAR I : INTEGER;  BEGIN  IF x - 3 THEN I := 1; (\* Invalid comparator here \*)  END. (\* Err8 \*) |

***err8.kpl***

***A screenshot of a computer

AI-generated content may be incorrect.***

1. ***Invalid term! (ERR\_INVALIDTERM)***

|  |
| --- |
| PROGRAM Err9;  VAR I : INTEGER;  BEGIN  I := (1+2(/3 ;  END. (\* Err9 \*) |

***err9.kpl***

***A screenshot of a computer

AI-generated content may be incorrect.***

1. ***Invalid factor! (ERR\_INVALIDFACTOR)***

|  |
| --- |
| PROGRAM Err10;  VAR I : INTEGER;  BEGIN  I := 2/ ;  END. (\* Err10 \*) |

***err10.kpl***

***A screenshot of a computer

AI-generated content may be incorrect.***