BÁO CÁO

BÀI 2: PHÂN TÍCH CÚ PHÁP

Họ tên: Phạm Vân Anh

MSSV: 20214988

1. Với example1.kpl

- File example.kpl

```
Program Example1; (* Example 1 *)
Begin
End. (* Example 1 *)
```

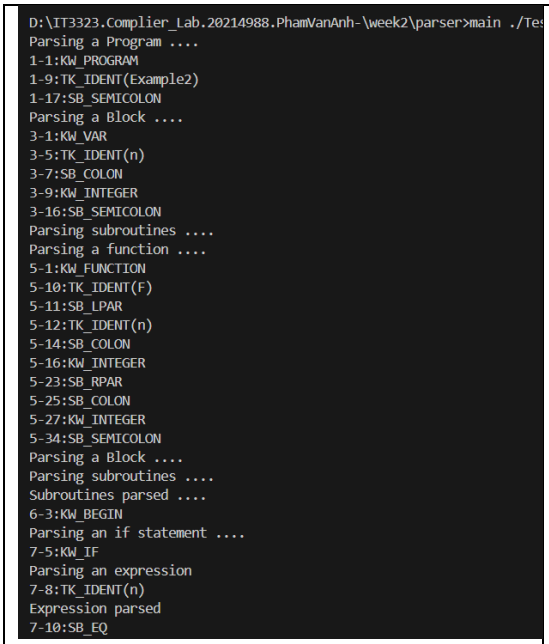
- Kết quả chạy:

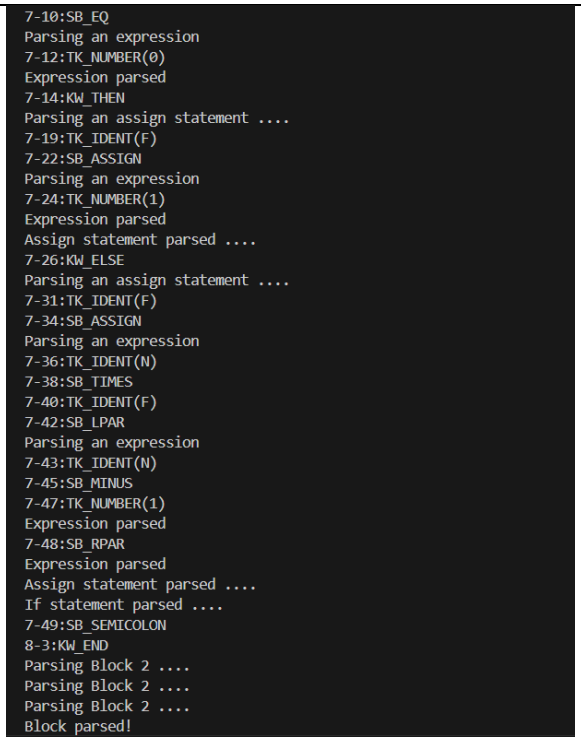
```
C:\Users\admin\Downloads\PT_CPIncompleted>main ./Test/example1.kpl
Parsing a Program ....
1-1:KW_PROGRAM
1-9:TK_IDENT(Example1)
1-17:SB_SEMICOLON
Parsing a Block ....
Parsing subroutines ....
Subroutines parsed ....
2-1:KW_BEGIN
3-1:KW_END
Block parsed!
3-5:SB_PERIOD
Program parsed!
```

2. Example2.kpl

```
Program Example2; (* Factorial *)

Var n : Integer;

Function F(n : Integer) : Integer;
  Begin
    If n = 0 Then F := 1 Else F := N * F (N - 1);
  End;

Begin
  For n := 1 To 7 Do
    Begin
      Call WriteLn;
      Call WriteI( F(n));
    End;
End. (* Factorial *)
```

- Kết quả:





```
8-6:SB_SEMICOLON
Function parsed ....
Subroutines parsed ....
10-1: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
Parsing Block 2 ....
Parsing Block 2 ....
Parsing Block 2 ....
Block parsed!
16-5:SB_PERIOD
Program parsed!
```

3. Example3.kpl

- File example3.kpl

```
Program InvalidExample2; (* Example with intentional errors *)
Var
   arr : array [1..10] of Char;
Function Calc(a : Integer, b : Char) : Integer (* Missing ':' after 'b' *)
   Begin
      If a != 0 Then (* ERR_INVALIDCOMPARATOR: '!=' is not valid in Pascal, use '<>' *)
         Calc := a + b
      Else
         Calc := Calc(a 1); (* ERR_INVALIDSYNTAX: Missing operator between 'a' and '1' *)
   End;
Begin
   arr[.2.] := 'XY'; (* ERR_INVALIDSYNTAX: '.2.' is an invalid index *)
   Call Calc(3); (* ERR_INVALIDSYNTAX: 'Call' is not a valid Pascal keyword *)
End. (* InvalidExample2 *)
```

- Kết quả:

```
D:\IT3323.Complier_Lab.20214988.PhamVanAnh-\week2\parser>main ./Test/example3.kpl
Parsing a Program ....
1-1:KW_PROGRAM
1-9:TK_IDENT(InvalidExample2)
1-24:SB_SEMICOLON
Parsing a Block ....
2-1:KW_VAR
3-5:TK_IDENT(arr)
3-9:SB_COLON
3-11:KW_ARRAY
3-17:Invalid symbol!
```