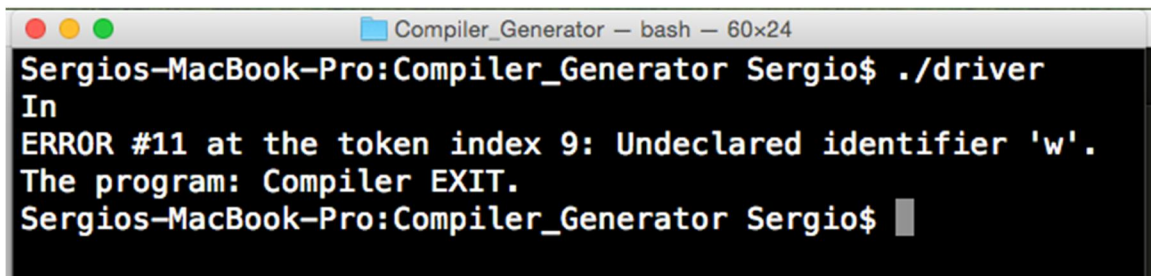


Examples of PL/0 programs format wrongly and their outputs.

Program 1

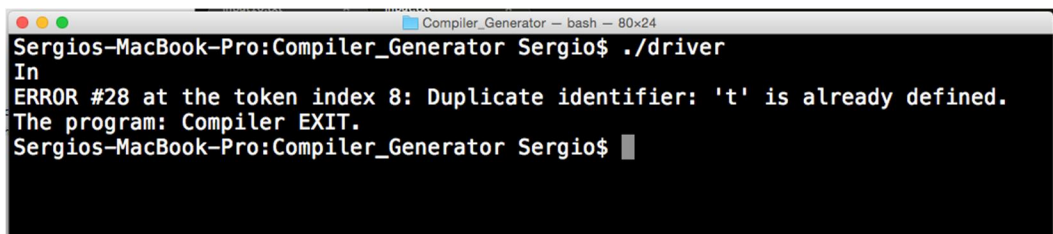
```
var x;  
begin  
    x := 4;  
    read w;    ← Undeclared Identifier.  
    if w > x then  
        w := w + 1;  
    else  
        w := x;  
        write w;  
    end .  
end .
```



A terminal window titled "Compiler_Generator - bash - 60x24" showing the execution of a compiler driver. The prompt is "Sergios-MacBook-Pro:Compiler_Generator Sergio\$". The user enters "./driver". The prompt changes to "In". The compiler outputs "ERROR #11 at the token index 9: Undeclared identifier 'w'." followed by "The program: Compiler EXIT." and returns to the prompt "Sergios-MacBook-Pro:Compiler_Generator Sergio\$".

Program 2

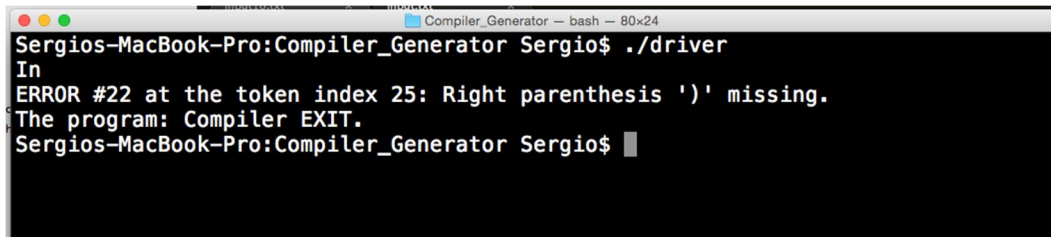
```
const t = 2;  
var x, t;    ← Var t has been declared early as a const  
begin  
    y := 10 / t;  
    x := y * 56 + 1;  
end .
```



A terminal window titled "Compiler_Generator - bash - 80x24" showing the execution of a compiler driver. The prompt is "Sergios-MacBook-Pro:Compiler_Generator Sergio\$". The user enters "./driver". The prompt changes to "In". The compiler outputs "ERROR #28 at the token index 8: Duplicate identifier: 't' is already defined." followed by "The program: Compiler EXIT." and returns to the prompt "Sergios-MacBook-Pro:Compiler_Generator Sergio\$".

Program 3

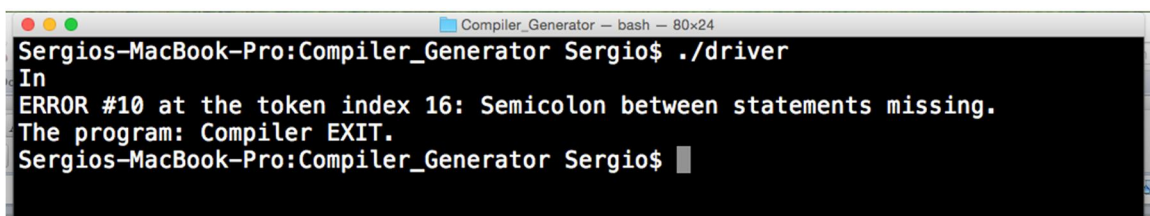
```
const t = 2;  
var x, t;  
begin  
    y := 10 / t;  
    x := (y * 56 + 1; ← The right parenthesis is missing  
end .
```



A terminal window titled "Compiler_Generator - bash - 80x24" showing the execution of a compiler driver. The prompt is "Sergios-MacBook-Pro:Compiler_Generator Sergio\$./driver". The output shows "In" followed by "ERROR #22 at the token index 25: Right parenthesis ')' missing." and "The program: Compiler EXIT." The prompt returns to "Sergios-MacBook-Pro:Compiler_Generator Sergio\$".

Program 4

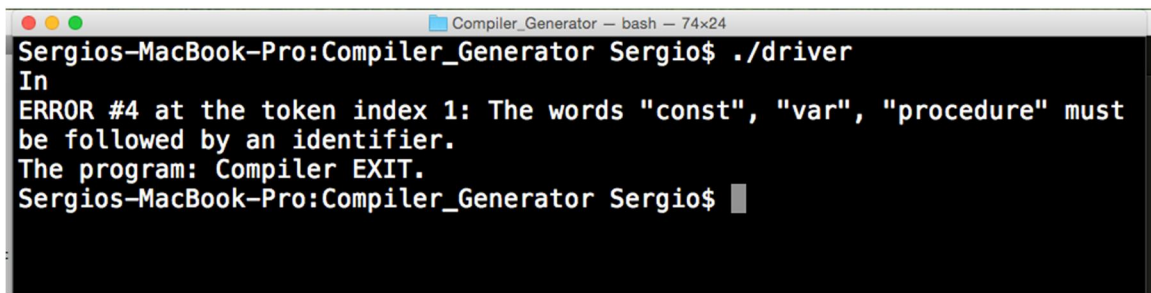
```
const t = 2;  
var x, y;  
begin  
    y := 10 / t ← Semicolon missing here  
    x := y * 56 + 1;  
end .
```



A terminal window titled "Compiler_Generator - bash - 80x24" showing the execution of a compiler driver. The prompt is "Sergios-MacBook-Pro:Compiler_Generator Sergio\$./driver". The output shows "In" followed by "ERROR #10 at the token index 16: Semicolon between statements missing." and "The program: Compiler EXIT." The prompt returns to "Sergios-MacBook-Pro:Compiler_Generator Sergio\$".

Program 5

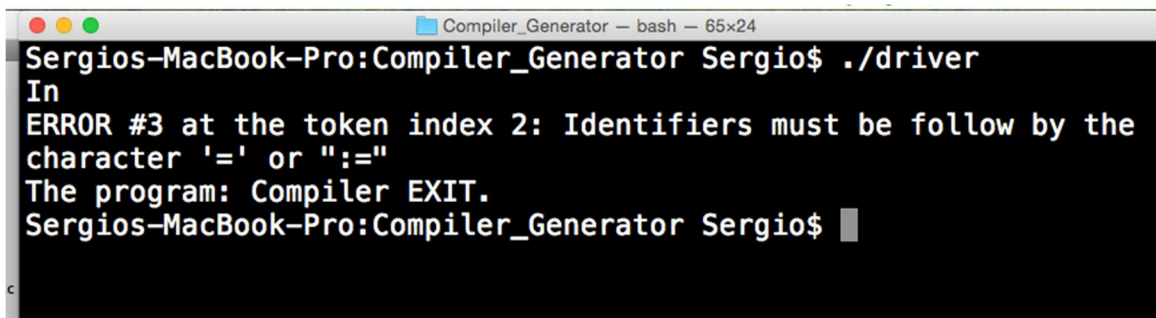
```
const      ← ident don't declared  
var x, y;  
begin  
    y := 10 / t;  
    x := y * 56 + 1;  
end .
```

A terminal window titled "Compiler_Generator - bash - 74x24" on a Mac. The prompt is "Sergios-MacBook-Pro:Compiler_Generator Sergio\$". The user enters "./driver". The output is "In", "ERROR #4 at the token index 1: The words \"const\", \"var\", \"procedure\" must be followed by an identifier.", "The program: Compiler EXIT.", and the prompt "Sergios-MacBook-Pro:Compiler_Generator Sergio\$".

```
Sergios-MacBook-Pro:Compiler_Generator Sergio$ ./driver
In
ERROR #4 at the token index 1: The words "const", "var", "procedure" must
be followed by an identifier.
The program: Compiler EXIT.
Sergios-MacBook-Pro:Compiler_Generator Sergio$
```

Program 6

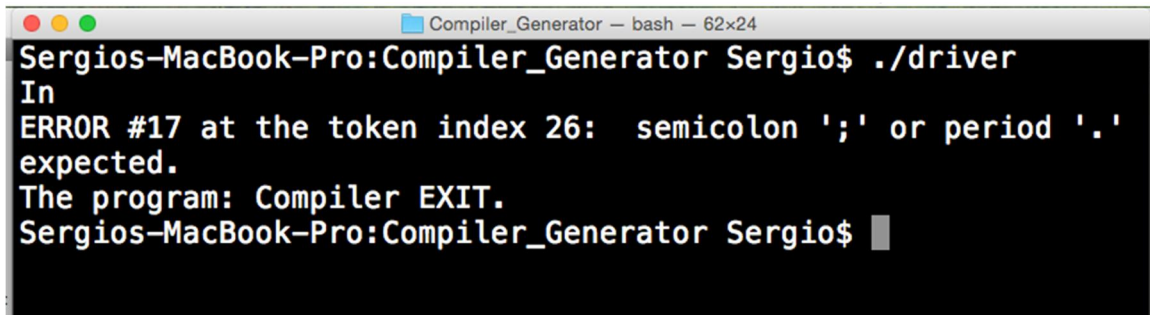
```
const t 2; ← missing equal sign
var x, y;
begin
    y := 10 / t
    x := y * 56 + 1;
end .
```

A terminal window titled "Compiler_Generator - bash - 65x24" on a Mac. The prompt is "Sergios-MacBook-Pro:Compiler_Generator Sergio\$". The user enters "./driver". The output is "In", "ERROR #3 at the token index 2: Identifiers must be follow by the character '=' or ":=", "The program: Compiler EXIT.", and the prompt "Sergios-MacBook-Pro:Compiler_Generator Sergio\$".

```
Sergios-MacBook-Pro:Compiler_Generator Sergio$ ./driver
In
ERROR #3 at the token index 2: Identifiers must be follow by the
character '=' or ":="
The program: Compiler EXIT.
Sergios-MacBook-Pro:Compiler_Generator Sergio$
```

Program 7

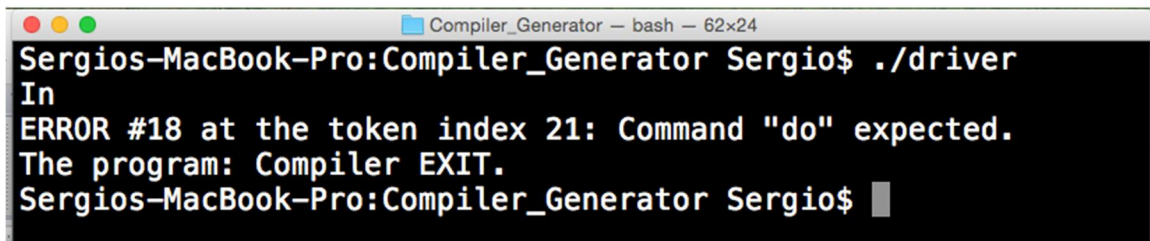
```
const t 2;
var x, y;
begin
    y := 10 / t;
    x := y * 56 + 1;
end ← period missing
```

A terminal window titled "Compiler_Generator - bash - 62x24" showing a command prompt on a Mac. The user runs the command `./driver`. The output shows an error message: "ERROR #17 at the token index 26: semicolon ';' or period '.' expected." followed by "The program: Compiler EXIT." and the prompt returns to `Sergios-MacBook-Pro:Compiler_Generator Sergio$`.

```
Sergios-MacBook-Pro:Compiler_Generator Sergio$ ./driver
In
ERROR #17 at the token index 26: semicolon ';' or period '.'
expected.
The program: Compiler EXIT.
Sergios-MacBook-Pro:Compiler_Generator Sergio$
```

Program 8

```
var x, y, m, n;
begin
  read m;
  n := 100;
  while n >= m  ← missing DO command
  begin
    if n = m then
      write n;
      n := n - 1;
    end;
  end .
```

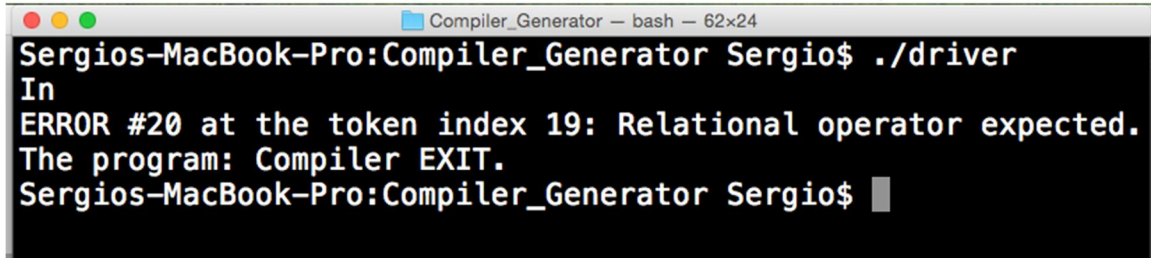
A terminal window titled "Compiler_Generator - bash - 62x24" showing a command prompt on a Mac. The user runs the command `./driver`. The output shows an error message: "ERROR #18 at the token index 21: Command 'do' expected." followed by "The program: Compiler EXIT." and the prompt returns to `Sergios-MacBook-Pro:Compiler_Generator Sergio$`.

```
Sergios-MacBook-Pro:Compiler_Generator Sergio$ ./driver
In
ERROR #18 at the token index 21: Command "do" expected.
The program: Compiler EXIT.
Sergios-MacBook-Pro:Compiler_Generator Sergio$
```

Program 9

```
var x, y, m, n;
begin
  read m;
  n := 100;
  while n m do  ← missing relation command
  begin
    if n = m then
      write n;
```

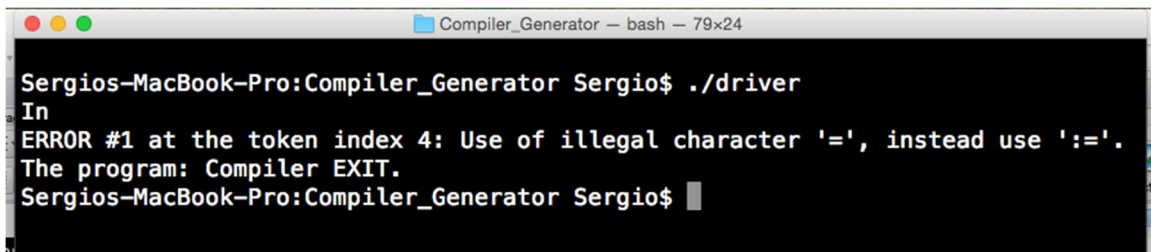
```
        n := n - 1;  
    end;  
end .
```

A terminal window titled "Compiler_Generator — bash — 62x24" showing a command prompt on a Mac. The user runs the command `./driver`. The output shows the word "In" followed by an error message: "ERROR #20 at the token index 19: Relational operator expected. The program: Compiler EXIT." The prompt then returns to the user.

```
Sergios-MacBook-Pro:Compiler_Generator Sergio$ ./driver  
In  
ERROR #20 at the token index 19: Relational operator expected.  
The program: Compiler EXIT.  
Sergios-MacBook-Pro:Compiler_Generator Sergio$
```

Program 10

```
var a;  
a = 2 ← instead of = should be :=
```

A terminal window titled "Compiler_Generator — bash — 79x24" showing a command prompt on a Mac. The user runs the command `./driver`. The output shows the word "In" followed by an error message: "ERROR #1 at the token index 4: Use of illegal character '=', instead use ':='." The prompt then returns to the user.

```
Sergios-MacBook-Pro:Compiler_Generator Sergio$ ./driver  
In  
ERROR #1 at the token index 4: Use of illegal character '=', instead use ':='.  
The program: Compiler EXIT.  
Sergios-MacBook-Pro:Compiler_Generator Sergio$
```