

# test1.txt

```
(base) hanseunghwa@hanseunghwau1-MacBookPro hw5 % java LRparser LRParserInputs/test1.txt
[$, 0]
[$, 0, program, 2]
[$, 0, program, 2, id, 3]
[$, 0, program, 2, id, 3, program_begin, 4]
[$, 0, program, 2, id, 3, program_begin, 4, integer, 17]
[$, 0, program, 2, id, 3, program_begin, 4, integer, 17, id, 34]
[$, 0, program, 2, id, 3, program_begin, 4, integer, 17, id, 34, =, 55]
[$, 0, program, 2, id, 3, program_begin, 4, integer, 17, id, 34, =, 55, number, 91]
[$, 0, program, 2, id, 3, program_begin, 4, integer, 17, id, 34, =, 55, F, 89]
[$, 0, program, 2, id, 3, program_begin, 4, integer, 17, id, 34, =, 55, T, 88]
[$, 0, program, 2, id, 3, program_begin, 4, integer, 17, id, 34, =, 55, E, 87]
[$, 0, program, 2, id, 3, program_begin, 4, integer, 17, V, 33]
[$, 0, program, 2, id, 3, program_begin, 4, integer, 17, DT, 32]
[$, 0, program, 2, id, 3, program_begin, 4, integer, 17, DT, 32, ,, 54]
[$, 0, program, 2, id, 3, program_begin, 4, integer, 17, DT, 32, ,, 54, id, 34]
[$, 0, program, 2, id, 3, program_begin, 4, integer, 17, DT, 32, ,, 54, id, 34, =, 55]
[$, 0, program, 2, id, 3, program_begin, 4, integer, 17, DT, 32, ,, 54, id, 34, =, 55, number, 91]
[$, 0, program, 2, id, 3, program_begin, 4, integer, 17, DT, 32, ,, 54, id, 34, =, 55, F, 89]
[$, 0, program, 2, id, 3, program_begin, 4, integer, 17, DT, 32, ,, 54, id, 34, =, 55, T, 88]
[$, 0, program, 2, id, 3, program_begin, 4, integer, 17, DT, 32, ,, 54, id, 34, =, 55, E, 87]
[$, 0, program, 2, id, 3, program_begin, 4, integer, 17, DT, 32, ,, 54, V, 86]
[$, 0, program, 2, id, 3, program_begin, 4, integer, 17, DT, 32]
[$, 0, program, 2, id, 3, program_begin, 4, integer, 17, DT, 32, ,, 54]
[$, 0, program, 2, id, 3, program_begin, 4, integer, 17, DT, 32, ,, 54, id, 34]
[$, 0, program, 2, id, 3, program_begin, 4, integer, 17, DT, 32, ,, 54, V, 86]
[$, 0, program, 2, id, 3, program_begin, 4, integer, 17, DT, 32]
[$, 0, program, 2, id, 3, program_begin, 4, D, 11]
[$, 0, program, 2, id, 3, program_begin, 4, D, 11, ;, 25]
[$, 0, program, 2, id, 3, program_begin, 4, ST, 6]
```

...

```
[$, 0, program, 2, id, 3, program_begin, 4, L, 5, IT, 13, elseif, 28, (, 39, CE, 71, ), 105, BE, 130]
[$, 0, program, 2, id, 3, program_begin, 4, L, 5, IT, 13]
[$, 0, program, 2, id, 3, program_begin, 4, L, 5, I, 7]
[$, 0, program, 2, id, 3, program_begin, 4, L, 5, ST, 23]
[$, 0, program, 2, id, 3, program_begin, 4, L, 5]
[$, 0, program, 2, id, 3, program_begin, 4, L, 5, program_end, 22]
[$, 0, S, 1]
```

>> Parsing OK

1. Shift the token, program, into the stack.
2. Shift the token, id, into the stack.
3. Shift the token, program\_begin, into the stack.
4. Shift the token, integer, into the stack.
5. Shift the token, id, into the stack.
6. Shift the token, =, into the stack.
7. Shift the token, number, into the stack.
8. Reduce number, and shift NT, F, into the stack, and go to State89.
9. Reduce F, and shift NT, T, into the stack, and go to State88.
10. Reduce T, and shift NT, E, into the stack, and go to State87.
11. Reduce id = E, and shift NT, V, into the stack, and go to State33.
12. Reduce V, and shift NT, DT, into the stack, and go to State32.
13. Shift the token, ,, into the stack.

## test2.txt

```
(base) hanseunghwa@hanseunghwau1-MacBookPro hw5 % java LRparser LRParserInputs/test2.txt
[$, 0]
[$, 0, program, 2]
[$, 0, program, 2, id, 3]
[$, 0, program, 2, id, 3, program_begin, 4]
[$, 0, program, 2, id, 3, program_begin, 4, integer, 17]
[$, 0, program, 2, id, 3, program_begin, 4, integer, 17, id, 34]
[$, 0, program, 2, id, 3, program_begin, 4, integer, 17, id, 34, =, 55]
[$, 0, program, 2, id, 3, program_begin, 4, integer, 17, id, 34, =, 55, number, 91]
[$, 0, program, 2, id, 3, program_begin, 4, integer, 17, id, 34, =, 55, F, 89]
[$, 0, program, 2, id, 3, program_begin, 4, integer, 17, id, 34, =, 55, T, 88]
[$, 0, program, 2, id, 3, program_begin, 4, integer, 17, id, 34, =, 55, E, 87]
[$, 0, program, 2, id, 3, program_begin, 4, integer, 17, V, 33]
[$, 0, program, 2, id, 3, program_begin, 4, integer, 17, DT, 32]
[$, 0, program, 2, id, 3, program_begin, 4, integer, 17, DT, 32, ,, 54]
[$, 0, program, 2, id, 3, program_begin, 4, integer, 17, DT, 32, ,, 54, id, 34]
[$, 0, program, 2, id, 3, program_begin, 4, integer, 17, DT, 32, ,, 54, id, 34, =, 55]
[$, 0, program, 2, id, 3, program_begin, 4, integer, 17, DT, 32, ,, 54, id, 34, =, 55, number, 91]
[$, 0, program, 2, id, 3, program_begin, 4, integer, 17, DT, 32, ,, 54, id, 34, =, 55, F, 89]
[$, 0, program, 2, id, 3, program_begin, 4, integer, 17, DT, 32, ,, 54, id, 34, =, 55, T, 88]
[$, 0, program, 2, id, 3, program_begin, 4, integer, 17, DT, 32, ,, 54, id, 34, =, 55, E, 87]
[$, 0, program, 2, id, 3, program_begin, 4, integer, 17, DT, 32, ,, 54, V, 86]
[$, 0, program, 2, id, 3, program_begin, 4, integer, 17, DT, 32]
[$, 0, program, 2, id, 3, program_begin, 4, integer, 17, DT, 32, ,, 54]
[$, 0, program, 2, id, 3, program_begin, 4, integer, 17, DT, 32, ,, 54, id, 34]
[$, 0, program, 2, id, 3, program_begin, 4, integer, 17, DT, 32, ,, 54, V, 86]
[$, 0, program, 2, id, 3, program_begin, 4, integer, 17, DT, 32]
[$, 0, program, 2, id, 3, program_begin, 4, D, 11]
[$, 0, program, 2, id, 3, program_begin, 4, D, 11, ,, 25]
```

...

```
[$, 0, program, 2, id, 3, program_begin, 4, L, 5, while, 14, (, 29, CE, 40, ), 72, BE, 106]
[$, 0, program, 2, id, 3, program_begin, 4, L, 5, W, 8]
[$, 0, program, 2, id, 3, program_begin, 4, L, 5, ST, 23]
[$, 0, program, 2, id, 3, program_begin, 4, L, 5]
[$, 0, program, 2, id, 3, program_begin, 4, L, 5, program_end, 22]
[$, 0, S, 1]
```

>> Parsing OK

1. Shift the token, program, into the stack.
2. Shift the token, id, into the stack.
3. Shift the token, program\_begin, into the stack.
4. Shift the token, integer, into the stack.
5. Shift the token, id, into the stack.
6. Shift the token, =, into the stack.
7. Shift the token, number, into the stack.
8. Reduce number, and shift NT, F, into the stack, and go to State89.
9. Reduce F, and shift NT, T, into the stack, and go to State88.
10. Reduce T, and shift NT, E, into the stack, and go to State87.
11. Reduce id = E, and shift NT, V, into the stack, and go to State33.
12. Reduce V, and shift NT, DT, into the stack, and go to State32.
13. Shift the token, ,, into the stack.

## test3.txt

```
(base) hanseunghwa@hanseunghwau1-MacBookPro hw5 % java LRparser LRParserInputs/test3.txt
[$, 0]
[$, 0, program, 2]
[$, 0, program, 2, id, 3]
[$, 0, program, 2, id, 3, program_begin, 4]
[$, 0, program, 2, id, 3, program_begin, 4, integer, 17]
[$, 0, program, 2, id, 3, program_begin, 4, integer, 17, id, 34]
[$, 0, program, 2, id, 3, program_begin, 4, integer, 17, id, 34, =, 55]
[$, 0, program, 2, id, 3, program_begin, 4, integer, 17, id, 34, =, 55, number, 91]
[$, 0, program, 2, id, 3, program_begin, 4, integer, 17, id, 34, =, 55, F, 89]
[$, 0, program, 2, id, 3, program_begin, 4, integer, 17, id, 34, =, 55, T, 88]
[$, 0, program, 2, id, 3, program_begin, 4, integer, 17, id, 34, =, 55, E, 87]
[$, 0, program, 2, id, 3, program_begin, 4, integer, 17, V, 33]
[$, 0, program, 2, id, 3, program_begin, 4, integer, 17, DT, 32]
[$, 0, program, 2, id, 3, program_begin, 4, integer, 17, DT, 32, ,, 54]
[$, 0, program, 2, id, 3, program_begin, 4, integer, 17, DT, 32, ,, 54, id, 34]
[$, 0, program, 2, id, 3, program_begin, 4, integer, 17, DT, 32, ,, 54, id, 34, =, 55]
[$, 0, program, 2, id, 3, program_begin, 4, integer, 17, DT, 32, ,, 54, id, 34, =, 55, number, 91]
[$, 0, program, 2, id, 3, program_begin, 4, integer, 17, DT, 32, ,, 54, id, 34, =, 55, F, 89]
[$, 0, program, 2, id, 3, program_begin, 4, integer, 17, DT, 32, ,, 54, id, 34, =, 55, T, 88]
[$, 0, program, 2, id, 3, program_begin, 4, integer, 17, DT, 32, ,, 54, id, 34, =, 55, E, 87]
[$, 0, program, 2, id, 3, program_begin, 4, integer, 17, DT, 32, ,, 54, V, 86]
[$, 0, program, 2, id, 3, program_begin, 4, integer, 17, DT, 32]
[$, 0, program, 2, id, 3, program_begin, 4, integer, 17, DT, 32, ,, 54]
[$, 0, program, 2, id, 3, program_begin, 4, integer, 17, DT, 32, ,, 54, id, 34]
[$, 0, program, 2, id, 3, program_begin, 4, integer, 17, DT, 32, ,, 54, id, 34, =, 55]
[$, 0, program, 2, id, 3, program_begin, 4, integer, 17, DT, 32, ,, 54, id, 34, =, 55, number, 91]
[$, 0, program, 2, id, 3, program_begin, 4, integer, 17, DT, 32, ,, 54, id, 34, =, 55, F, 89]
[$, 0, program, 2, id, 3, program_begin, 4, integer, 17, DT, 32, ,, 54, id, 34, =, 55, T, 88]
[$, 0, program, 2, id, 3, program_begin, 4, integer, 17, DT, 32, ,, 54, id, 34, =, 55, E, 87]
[$, 0, program, 2, id, 3, program_begin, 4, integer, 17, DT, 32, ,, 54, V, 86]
[$, 0, program, 2, id, 3, program_begin, 4, integer, 17, DT, 32]
...
[$, 0, program, 2, id, 3, program_begin, 4, L, 5, while, 14, (, 29, CE, 40, ), 72, BE, 106]
[$, 0, program, 2, id, 3, program_begin, 4, L, 5, W, 8]
[$, 0, program, 2, id, 3, program_begin, 4, L, 5, ST, 23]
[$, 0, program, 2, id, 3, program_begin, 4, L, 5]
[$, 0, program, 2, id, 3, program_begin, 4, L, 5, program_end, 22]
[$, 0, S, 1]

>> Parsing OK
```

1. Shift the token, program, into the stack.
2. Shift the token, id, into the stack.
3. Shift the token, program\_begin, into the stack.
4. Shift the token, integer, into the stack.
5. Shift the token, id, into the stack.
6. Shift the token, =, into the stack.
7. Shift the token, number, into the stack.
8. Reduce number, and shift NT, F, into the stack, and go to State89.
9. Reduce F, and shift NT, T, into the stack, and go to State88.
10. Reduce T, and shift NT, E, into the stack, and go to State87.
11. Reduce id = E, and shift NT, V, into the stack, and go to State33.
12. Reduce V, and shift NT, DT, into the stack, and go to State32.
13. Shift the token, ,, into the stack.

testError1.txt

```
1  program1 Error_input1
2      program_begin
3          integer Time_10_24 = 2206, Hour_In_Day = 0, Minute_In_Hour;
4          if (Time_10_24 < 10)
5              begin
6                  display("error input 1");
7                  Hour_In_Day = 24;
```

```
● (base) hanseunghwa@hanseunghwau1-MacBookPro hw5 % java LRparser LRParserInputs/testError1.txt
[$, 0]
```

illegal keyword

>> Parsing Failed

Met id, instead of keyword(program), at State0.

-> error

## testError2.txt

```
10      begin
11          Minute_In_Hour = Hour_In_Day * 60;
12          display("Good Day. Peace_to_you.");
13      end
14      program9_end
15
```

```
• (base) hanseunghwa@hanseunghwau1-MacBookPro hw5 % java LRparser LRParserInputs/testError2.txt
[$, 0]
[$, 0, program, 2]
[$, 0, program, 2, id, 3]
[$, 0, program, 2, id, 3, program_begin, 4]
[$, 0, program, 2, id, 3, program_begin, 4, integer, 17]
[$, 0, program, 2, id, 3, program_begin, 4, integer, 17, id, 34]
[$, 0, program, 2, id, 3, program_begin, 4, integer, 17, id, 34, =, 55]
[$, 0, program, 2, id, 3, program_begin, 4, integer, 17, id, 34, =, 55, number, 91]
[$, 0, program, 2, id, 3, program_begin, 4, integer, 17, id, 34, =, 55, F, 89]
[$, 0, program, 2, id, 3, program_begin, 4, integer, 17, id, 34, =, 55, T, 88]
[$, 0, program, 2, id, 3, program_begin, 4, integer, 17, id, 34, =, 55, E, 87]
[$, 0, program, 2, id, 3, program_begin, 4, integer, 17, V, 33]
[$, 0, program, 2, id, 3, program_begin, 4, integer, 17, DT, 32]
[$, 0, program, 2, id, 3, program_begin, 4, integer, 17, DT, 32, ,, 54]
[$, 0, program, 2, id, 3, program_begin, 4, integer, 17, DT, 32, ,, 54, id, 34]
[$, 0, program, 2, id, 3, program_begin, 4, integer, 17, DT, 32, ,, 54, id, 34, =, 55]
[$, 0, program, 2, id, 3, program_begin, 4, integer, 17, DT, 32, ,, 54, id, 34, =, 55, number, 91]
[$, 0, program, 2, id, 3, program_begin, 4, integer, 17, DT, 32, ,, 54, id, 34, =, 55, F, 89]
[$, 0, program, 2, id, 3, program_begin, 4, integer, 17, DT, 32, ,, 54, id, 34, =, 55, T, 88]
```

...

```
[$, 0, program, 2, id, 3, program_begin, 4, L, 5, IT, 13, elseif, 28, (, 39, CE, 71, ), 105, BE, 130]
[$, 0, program, 2, id, 3, program_begin, 4, L, 5, IT, 13]
[$, 0, program, 2, id, 3, program_begin, 4, L, 5, I, 7]
[$, 0, program, 2, id, 3, program_begin, 4, L, 5, ST, 23]
[$, 0, program, 2, id, 3, program_begin, 4, L, 5]
[$, 0, program, 2, id, 3, program_begin, 4, L, 5, id, 16]
```

```
illegal keyword
>> Parsing Failed
```

1. Shift the token, program, into the stack.
2. Shift the token, id, into the stack.
3. Shift the token, program\_begin, into the stack.
4. Shift the token, integer, into the stack.
5. Shift the token, id, into the stack.
6. Shift the token, =, into the stack.
7. Shift the token, number, into the stack.
8. Reduce number, and shift NT, F, into the stack, and go to State89.
9. Reduce F, and shift NT, T, into the stack, and go to State88.
10. Reduce T, and shift NT, E, into the stack, and go to State87.

At state5, shift the token, id, into the stack.  
At state16, met \$ dollar symbol instead of keyword (program\_end).  
-> error

## testError3.txt

```
program Error_input3
  program_begin
    for Time_10_24 = 2206, Hour_In_Day = 0, Minute_In_Hour;
      if (Time_10_24 < 10)
        begin
```

```
● (base) hanseunghwa@hanseunghwau-MacBookPro hw5 % java LRparser LRParserInputs/testError3.txt
[$, 0]
[$, 0, program, 2]
[$, 0, program, 2, id, 3]
[$, 0, program, 2, id, 3, program_begin, 4]
[$, 0, program, 2, id, 3, program_begin, 4, for, 15]

declaration error
>> Parsing Failed
```

1. Shift the token, program, into the stack.
2. Shift the token, id, into the stack.
3. Shift the token, program\_begin, into the stack.
4. Shift the token, for, into the stack.
5. At state15, met id instead of (.  
-> error



```
1  program Error_input4
2      program begin
3          Time_10_24 = 2206, Hour_In_Day = 0, Minute_In_Hour;
4          if (Time_10_24 < 10)
5              begin
6                  display("error input 4");
7                  Hour_In_Day = 24;
```

```
• (base) hanseunghwa@hanseunghwau-MacBookPro hw5 % java LRparser LRParserInputs/testError4.txt
[$, 0]
[$, 0, program, 2]
[$, 0, program, 2, id, 3]
[$, 0, program, 2, id, 3, program_begin, 4]
[$, 0, program, 2, id, 3, program_begin, 4, id, 16]
[$, 0, program, 2, id, 3, program_begin, 4, id, 16, op, 31]
[$, 0, program, 2, id, 3, program_begin, 4, id, 16, op, 31, number, 52]
keyword missing in declaration
>> Parsing Failed
```

1. Shift the token, program, into the stack.
  2. Shift the token, id, into the stack.
  3. Shift the token, program\_begin, into the stack.
  4. Shift the token, id, into the stack.
  5. Shift the token, op, into the stack.
  6. Shift the token, number, into the stack.
  7. At state52, met ,(comma) instead of ; or addop or mulop.
- > error

```

1  program Error_input5
2      program_begin
3          integer Time_10_24 = 2206, Hour_In_Day = 0, Minute_In_Hour;
4          if (Time_10_24 < 10)
5              [
6                  display("error input 5");
7                  Hour_In_Day = 24;
8              end
9          elseif (Time_10_24 <= 20)

```

```

• (base) hanseunghwa@hanseunghwau1-MacBookPro hw5 % java LRparser LRParserInputs/testError5.txt
[$, 0]
[$, 0, program, 2]
[$, 0, program, 2, id, 3]
[$, 0, program, 2, id, 3, program_begin, 4]
[$, 0, program, 2, id, 3, program_begin, 4, integer, 17]
[$, 0, program, 2, id, 3, program_begin, 4, integer, 17, id, 34]
[$, 0, program, 2, id, 3, program_begin, 4, integer, 17, id, 34, =, 55]
[$, 0, program, 2, id, 3, program_begin, 4, integer, 17, id, 34, =, 55, number, 91]
[$, 0, program, 2, id, 3, program_begin, 4, integer, 17, id, 34, =, 55, F, 89]
[$, 0, program, 2, id, 3, program_begin, 4, integer, 17, id, 34, =, 55, T, 88]
[$, 0, program, 2, id, 3, program_begin, 4, integer, 17, id, 34, =, 55, E, 87]
[$, 0, program, 2, id, 3, program_begin, 4, integer, 17, V, 33]
[$, 0, program, 2, id, 3, program_begin, 4, integer, 17, DT, 32]
[$, 0, program, 2, id, 3, program_begin, 4, integer, 17, DT, 32, ,, 54]
[$, 0, program, 2, id, 3, program_begin, 4, integer, 17, DT, 32, ,, 54, id, 34]

```

...

```

[$, 0, program, 2, id, 3, program_begin, 4, L, 5, if, 21, (, 36, CE, 58]
[$, 0, program, 2, id, 3, program_begin, 4, L, 5, if, 21, (, 36, CE, 58, ), 94]
keyword missing in if statement: begin
>> Parsing Failed

```

1. Shift the token, program, into the stack.
2. Shift the token, id, into the stack.
3. Shift the token, program\_begin, into the stack.
4. Shift the token, integer, into the stack.
5. Shift the token, id, into the stack.
6. Shift the token, =, into the stack.
7. Shift the token, number, into the stack.
8. Reduce number, and shift NT, F, into the stack, and go to State89.
9. Reduce F, and shift NT, T, into the stack, and go to State88.
10. Reduce T, and shift NT, E, into the stack, and go to State87.

At state94, met keyword(display) instead of keyword(begin).

-> error



## testError6.txt

```
1  program Error_input6
2      program_begin
3          integer Time_10 24 = 2206, Hour_In_Day = 0, Minute_In_Hour=3;
4          for (integer i=0; i; i++)
5              begin
6                  display("error input 6");
7              end
```

```
● (base) hanseunghwa@hanseunghwau-i-MacBookPro hw5 % java LRparser LRParserInputs/testError6.txt
[$, 0]
[$, 0, program, 2]
[$, 0, program, 2, id, 3]
[$, 0, program, 2, id, 3, program_begin, 4]
[$, 0, program, 2, id, 3, program_begin, 4, integer, 17]
[$, 0, program, 2, id, 3, program_begin, 4, integer, 17, id, 34]
[$, 0, program, 2, id, 3, program_begin, 4, integer, 17, id, 34, =, 55]
[$, 0, program, 2, id, 3, program_begin, 4, integer, 17, id, 34, =, 55, number, 91]
[$, 0, program, 2, id, 3, program_begin, 4, integer, 17, id, 34, =, 55, F, 89]
[$, 0, program, 2, id, 3, program_begin, 4, integer, 17, id, 34, =, 55, T, 88]
[$, 0, program, 2, id, 3, program_begin, 4, integer, 17, id, 34, =, 55, E, 87]
[$, 0, program, 2, id, 3, program_begin, 4, integer, 17, V, 33]
[$, 0, program, 2, id, 3, program_begin, 4, integer, 17, DT, 32]
[$, 0, program, 2, id, 3, program_begin, 4, integer, 17, DT, 32, ,, 54]
[$, 0, program, 2, id, 3, program_begin, 4, integer, 17, DT, 32, ,, 54, id, 34]
[$, 0, program, 2, id, 3, program_begin, 4, integer, 17, DT, 32, ,, 54, id, 34, =, 55]
[$, 0, program, 2, id, 3, program_begin, 4, integer, 17, DT, 32, ,, 54, id, 34, =, 55, number, 91]
```

...

```
[$, 0, program, 2, id, 3, program_begin, 4, L, 5, for, 15, (, 30, integer, 17, id, 34, =, 55, F, 89]
[$, 0, program, 2, id, 3, program_begin, 4, L, 5, for, 15, (, 30, integer, 17, id, 34, =, 55, T, 88]
[$, 0, program, 2, id, 3, program_begin, 4, L, 5, for, 15, (, 30, integer, 17, id, 34, =, 55, E, 87]
[$, 0, program, 2, id, 3, program_begin, 4, L, 5, for, 15, (, 30, integer, 17, V, 33]
[$, 0, program, 2, id, 3, program_begin, 4, L, 5, for, 15, (, 30, integer, 17, DT, 32]
[$, 0, program, 2, id, 3, program_begin, 4, L, 5, for, 15, (, 30, D, 47]
[$, 0, program, 2, id, 3, program_begin, 4, L, 5, for, 15, (, 30, D, 47, ,, 82]
[$, 0, program, 2, id, 3, program_begin, 4, L, 5, for, 15, (, 30, D, 47, ,, 82, id, 46]
```

```
loop conditional syntax error
>> Parsing Failed
```

1. Shift the token, program, into the stack.
2. Shift the token, id, into the stack.
3. Shift the token, program\_begin, into the stack.
4. Shift the token, integer, into the stack.
5. Shift the token, id, into the stack.
6. Shift the token, =, into the stack.
7. Shift the token, number, into the stack.
8. Reduce number, and shift NT, F, into the stack, and go to State89.
9. Reduce F, and shift NT, T, into the stack, and go to State88.
10. Reduce T, and shift NT, E, into the stack, and go to State87.

At state46, met ;(terminator) instead of compop  
or addop or mulop.  
-> error

```

1  program Error_input7
2      program_begin
3          integer Time_10_24 = 2206, Hour_In_Day = 0, Minute_In_Hour=3;
4          for (integer i=0; i<= Minute_In_Hour; i++)
5              begin
6                  display("for loop test");
7
8          if (Time_10_24 < 10)
9              begin

```

```

(base) hanseunghwa@hanseunghwau-MacBookPro hw5 % java LRparser LRParserInputs/testError7.txt
[$, 0]
[$, 0, program, 2]
[$, 0, program, 2, id, 3]
[$, 0, program, 2, id, 3, program_begin, 4]
[$, 0, program, 2, id, 3, program_begin, 4, integer, 17]
[$, 0, program, 2, id, 3, program_begin, 4, integer, 17, id, 34]
[$, 0, program, 2, id, 3, program_begin, 4, integer, 17, id, 34, =, 55]
[$, 0, program, 2, id, 3, program_begin, 4, integer, 17, id, 34, =, 55, number, 91]
[$, 0, program, 2, id, 3, program_begin, 4, integer, 17, id, 34, =, 55, F, 89]
[$, 0, program, 2, id, 3, program_begin, 4, integer, 17, id, 34, =, 55, T, 88]
[$, 0, program, 2, id, 3, program_begin, 4, integer, 17, id, 34, =, 55, E, 87]
[$, 0, program, 2, id, 3, program_begin, 4, integer, 17, V, 33]
[$, 0, program, 2, id, 3, program_begin, 4, integer, 17, DT, 32]
[$, 0, program, 2, id, 3, program_begin, 4, integer, 17, DT, 32, ,, 54]
[$, 0, program, 2, id, 3, program_begin, 4, integer, 17, DT, 32, ,, 54, id, 34]
[$, 0, program, 2, id, 3, program_begin, 4, integer, 17, DT, 32, ,, 54, id, 34, =, 55]
[$, 0, program, 2, id, 3, program_begin, 4, integer, 17, DT, 32, ,, 54, id, 34, =, 55, number, 91]

```

...

```

[$, 0, program, 2, id, 3, program_begin, 4, L, 5, for, 15, (, 30, D, 47, ;; 82, CE, 114, ;; 134, FU, 145
, ), 156, begin, 38, L, 59, while, 68, (, 102, CE, 127, ), 142, begin, 125, L, 140, end, 150]

```

```

missing keyword: end
>> Parsing Failed

```

1. Shift the token, program, into the stack.
2. Shift the token, id, into the stack.
3. Shift the token, program\_begin, into the stack.
4. Shift the token, integer, into the stack.
5. Shift the token, id, into the stack.
6. Shift the token, =, into the stack.
7. Shift the token, number, into the stack.
8. Reduce number, and shift NT, F, into the stack, and go to State89.
9. Reduce F, and shift NT, T, into the stack, and go to State88.
10. Reduce T, and shift NT, E, into the stack, and go to State87.

At state150, met keyword(program\_end) instead of keyword(end, if, while, for, ...).

-> error