

Compiler Assignment #2

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이기택

Compilation method and environment
environment

OS : ubuntu 16.04

Compiler : gcc 4.8.4

Make : GNU make 3.91

Build 방법

yacc tdv ./cminus.y

./cminus_flex ./test.cm

Example and Result ScreenShot

Example code

동봉 된 test.cm, sort.cm, gcd.cd.

Sort.cm 결과

```
CMINUS COMPILATION: ./sort.cm
Building Symbol Table...
Checking Types...
Symbol table:
Scope name : ~:main
Variable Name  Variable Type  Location      Line Numbers
-----
i              Integer      0             33  34  35  36  37  37  40  41  42  43  43
-----
Scope name : ~
Variable Name  Variable Type  Location      Line Numbers
-----
main          Void          5             32
x             IntegerArray  2             2   36  39  42
minloc        Integer       3             3   25
sort          Void         4             19  39
output        Integer       1             0   42
input         Integer       0             0   36
-----
Scope name : ~:minloc
Variable Name  Variable Type  Location      Line Numbers
-----
a             Integer       0             3   8   11  12
i             Integer       3             4   9   10  11  12  13  15  15
k             Integer       5             6   7   13  17
x             Integer       4             5   8   11  12
low           Integer       1             3   7   8   9
high          Integer       2             3   10
-----
Scope name : ~:minloc:16:15
Variable Name  Variable Type  Location      Line Numbers
-----
-----
Scope name : ~:sort
Variable Name  Variable Type  Location      Line Numbers
-----
a             Integer       0             19  25  26  27  27  28
i             Integer       3             20  22  23  25  27  28  29  29
k             Integer       4             21  25  26  27
low           Integer       1             19  22
high          Integer       2             19  23  25
-----
Scope name : ~:main:38:44
Variable Name  Variable Type  Location      Line Numbers
-----
-----
```

```

Scope name : ~:output
Variable Name  Variable Type  Location      Line Numbers
-----
arg            Integer          0             0
-----

Scope name : ~:input
Variable Name  Variable Type  Location      Line Numbers
-----

Scope name : ~:sort:30
Variable Name  Variable Type  Location      Line Numbers
-----
t              Integer          0            24    26    28
-----

Scope name : ~:minloc:16
Variable Name  Variable Type  Location      Line Numbers
-----

Scope name : ~:main:38
Variable Name  Variable Type  Location      Line Numbers
-----

```

Scope의 경우 if와 while 로 나뉘는 것까지 다 출력하였고, 스코프 내부에 심볼이 없더라도 다 출력하였습니다.

```

kttaelee@kttaelee-X57K:~/COMPILER/2018_ELE4029_2016059216/Project3$ ./cminus_flex ./gcd.cm
CMINUS COMPILATION: ./gcd.cm
Building Symbol Table...
Checking Types...
Symbol table:
Scope name : ~:gcd
Variable Name  Variable Type  Location      Line Numbers
-----
main          Void          2             11
u             Integer       0             4     6     7     7
v             Integer       1             4     6     7     7     7
-----

Scope name : ~:main
Variable Name  Variable Type  Location      Line Numbers
-----
x             Integer       0            13    15    17
y             Integer       1            14    16    17
-----

Scope name : ~
Variable Name  Variable Type  Location      Line Numbers
-----
gcd           Integer       2             4     7     17
output        Integer       1             0     17
input         Integer       0             0     15    16
-----

Scope name : ~:gcd:7
Variable Name  Variable Type  Location      Line Numbers
-----

Scope name : ~:output
Variable Name  Variable Type  Location      Line Numbers
-----
arg           Integer       0             0
-----

Scope name : ~:input
Variable Name  Variable Type  Location      Line Numbers
-----

Type Checking Finished

```

Test.cm 코드

```
int test(void)
{
    void a;
    koko = 5;
    ppp();
}
```

```
int main(void)
{
    int x[10];
    x = 3;
    return;
}
```

```
void tmain(void)
{
    return 0;
}
```

결과

CMINUS COMPILATION: ./test.cm

Building Symbol Table...

Symbol error at line 3: variable should have non-void type

Symbol error at line 4: symbol doesn't exist

Symbol error at line 5: symbol doesn't exist

Checking Types...

Type error at line 11: cannot assign

Type error at line 12: return value

Type error at line 17: no return value

Symbol table:

Scope name : ~:main

Variable Name	Variable Type	Location	Line Numbers
---------------	---------------	----------	--------------

x	IntegerArray	0	10 11
---	--------------	---	-------

Scope name : ~

Variable Name	Variable Type	Location	Line Numbers
---------------	---------------	----------	--------------

main	Integer	3	8
tmain	Void	4	15
output	Integer	1	0
input	Integer	0	0
test	Integer	2	1

Scope name : ~:tmain

Variable Name	Variable Type	Location	Line Numbers
---------------	---------------	----------	--------------

Scope name : ~:output

Variable Name	Variable Type	Location	Line Numbers
---------------	---------------	----------	--------------

arg	Integer	0	0
-----	---------	---	---

Scope name : ~:input

Variable Name	Variable Type	Location	Line Numbers
---------------	---------------	----------	--------------

Scope name : ~:test

Variable Name	Variable Type	Location	Line Numbers
---------------	---------------	----------	--------------

Type Checking Finished