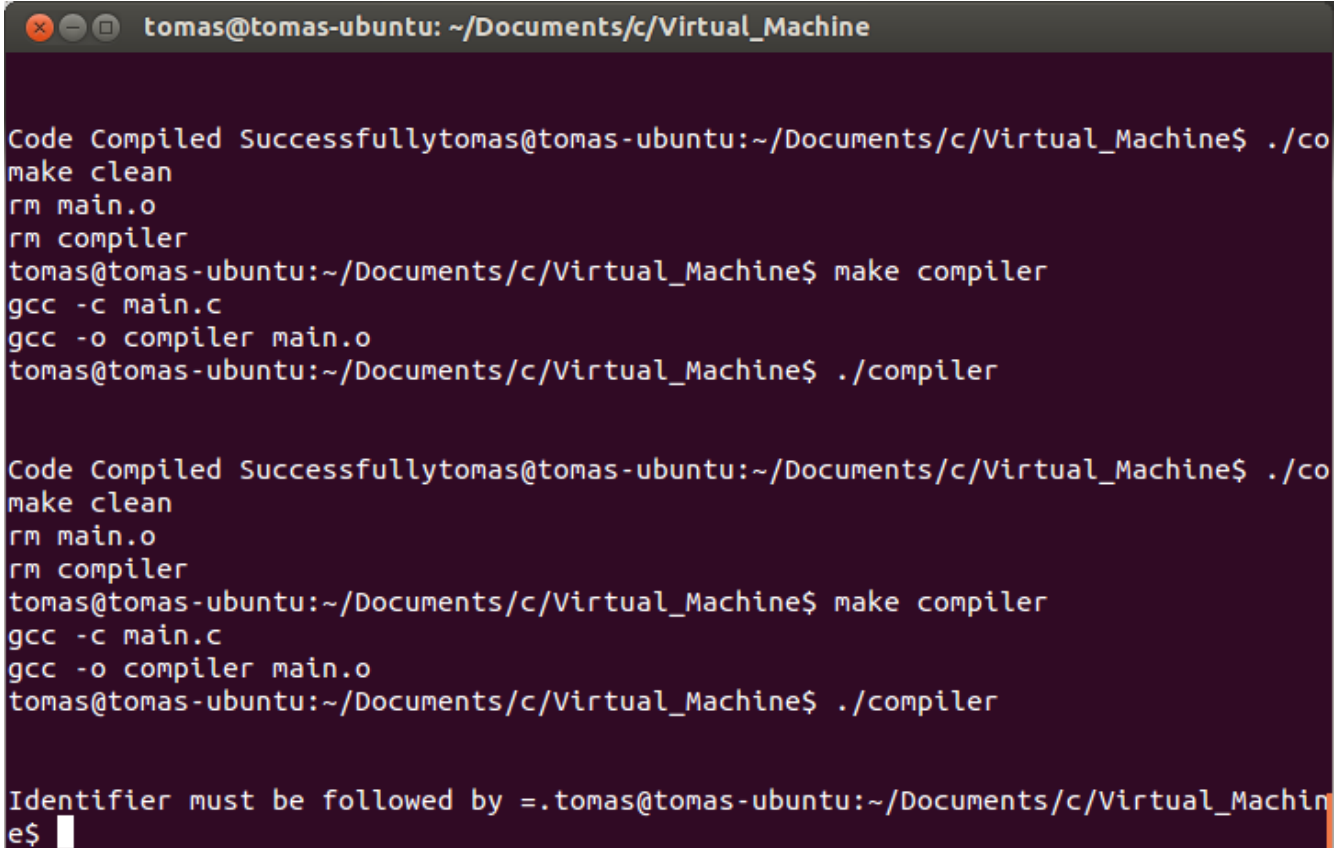


Test case 1 code:

const x3;

.



```
tomas@tomas-ubuntu: ~/Documents/c/Virtual_Machine

Code Compiled Successfullytomas@tomas-ubuntu:~/Documents/c/Virtual_Machine$ ./co
make clean
rm main.o
rm compiler
tomas@tomas-ubuntu:~/Documents/c/Virtual_Machine$ make compiler
gcc -c main.c
gcc -o compiler main.o
tomas@tomas-ubuntu:~/Documents/c/Virtual_Machine$ ./compiler

Code Compiled Successfullytomas@tomas-ubuntu:~/Documents/c/Virtual_Machine$ ./co
make clean
rm main.o
rm compiler
tomas@tomas-ubuntu:~/Documents/c/Virtual_Machine$ make compiler
gcc -c main.c
gcc -o compiler main.o
tomas@tomas-ubuntu:~/Documents/c/Virtual_Machine$ ./compiler

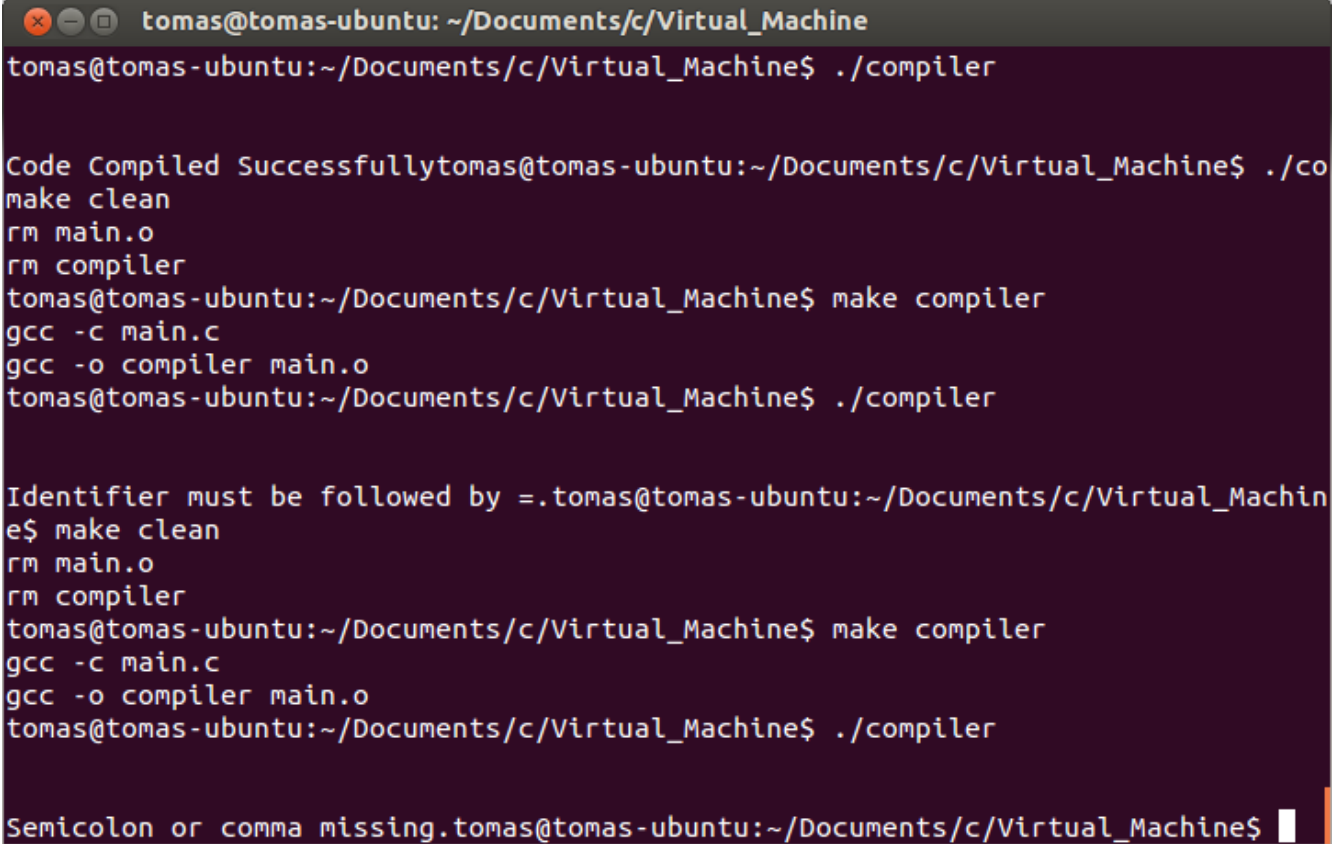
Identifier must be followed by =.tomas@tomas-ubuntu:~/Documents/c/Virtual_Machin
e$
```

Identifier must be follow by =.

Test case 2 code:

var x,y

.

A terminal window titled 'tomas@tomas-ubuntu: ~/Documents/c/Virtual_Machine' with a dark purple background. It shows a series of commands and their outputs. The first command './compiler' results in 'Code Compiled Successfully'. Subsequent 'make clean' and 'make compiler' commands succeed. However, the final './compiler' command fails with the error 'Identifier must be followed by =' and 'Semicolon or comma missing'.

```
tomas@tomas-ubuntu: ~/Documents/c/Virtual_Machine
tomas@tomas-ubuntu:~/Documents/c/Virtual_Machine$ ./compiler

Code Compiled Successfullytomas@tomas-ubuntu:~/Documents/c/Virtual_Machine$ ./co
make clean
rm main.o
rm compiler
tomas@tomas-ubuntu:~/Documents/c/Virtual_Machine$ make compiler
gcc -c main.c
gcc -o compiler main.o
tomas@tomas-ubuntu:~/Documents/c/Virtual_Machine$ ./compiler

Identifier must be followed by =.tomas@tomas-ubuntu:~/Documents/c/Virtual_Machin
e$ make clean
rm main.o
rm compiler
tomas@tomas-ubuntu:~/Documents/c/Virtual_Machine$ make compiler
gcc -c main.c
gcc -o compiler main.o
tomas@tomas-ubuntu:~/Documents/c/Virtual_Machine$ ./compiler

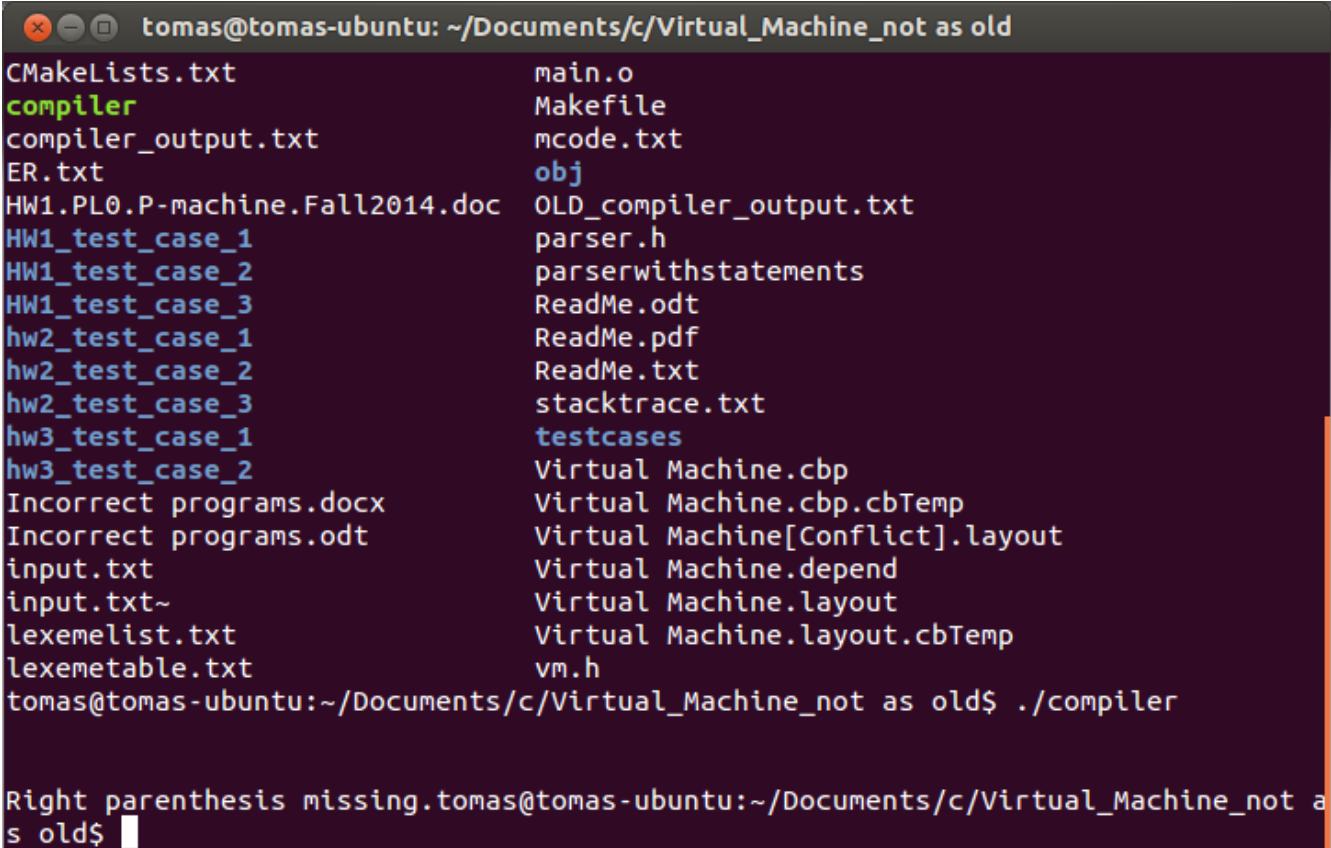
Semicolon or comma missing.tomas@tomas-ubuntu:~/Documents/c/Virtual_Machine$
```

Semicolon or comma missing.

Test case 3 code:

```
var x;
```

```
x := 3 * ( 4 + 1.
```



A terminal window titled "tomas@tomas-ubuntu: ~/Documents/c/Virtual_Machine_not as old" displays two columns of file names. The left column lists files like CMakeLists.txt, compiler, compiler_output.txt, ER.txt, HW1.PL0.P-machine.Fall2014.doc, HW1_test_case_1, HW1_test_case_2, HW1_test_case_3, hw2_test_case_1, hw2_test_case_2, hw2_test_case_3, hw3_test_case_1, hw3_test_case_2, Incorrect programs.docx, Incorrect programs.odt, input.txt, input.txt~, lexemelist.txt, lexemetable.txt, and tomas@tomas-ubuntu:~/Documents/c/Virtual_Machine_not as old\$. The right column lists files like main.o, Makefile, mcode.txt, obj, OLD_compiler_output.txt, parser.h, parserwithstatements, ReadMe.odt, ReadMe.pdf, ReadMe.txt, stacktrace.txt, testcases, Virtual Machine.cbp, Virtual Machine.cbp.cbTemp, Virtual Machine[Conflict].layout, Virtual Machine.depend, Virtual Machine.layout, Virtual Machine.layout.cbTemp, and vm.h. Below the listings, the command "tomas@tomas-ubuntu:~/Documents/c/Virtual_Machine_not as old\$./compiler" is entered, followed by the error message "Right parenthesis missing.tomas@tomas-ubuntu:~/Documents/c/Virtual_Machine_not as old\$".

```
tomas@tomas-ubuntu: ~/Documents/c/Virtual_Machine_not as old
CMakeLists.txt          main.o
compiler                Makefile
compiler_output.txt     mcode.txt
ER.txt                  obj
HW1.PL0.P-machine.Fall2014.doc OLD_compiler_output.txt
HW1_test_case_1         parser.h
HW1_test_case_2         parserwithstatements
HW1_test_case_3         ReadMe.odt
hw2_test_case_1         ReadMe.pdf
hw2_test_case_2         ReadMe.txt
hw2_test_case_3         stacktrace.txt
hw3_test_case_1         testcases
hw3_test_case_2         Virtual Machine.cbp
Incorrect programs.docx Virtual Machine.cbp.cbTemp
Incorrect programs.odt Virtual Machine[Conflict].layout
input.txt               Virtual Machine.depend
input.txt~              Virtual Machine.layout
lexemelist.txt          Virtual Machine.layout.cbTemp
lexemetable.txt         vm.h
tomas@tomas-ubuntu:~/Documents/c/Virtual_Machine_not as old$ ./compiler

Right parenthesis missing.tomas@tomas-ubuntu:~/Documents/c/Virtual_Machine_not as old$
```

Right parenthesis missing.

Test case 4 code:

const x=;

.

```
tomas@tomas-ubuntu: ~/Documents/c/Virtual_Machine_not as old
hw2_test_case_1      ReadMe.pdf
hw2_test_case_2      ReadMe.txt
hw2_test_case_3      stacktrace.txt
hw3_test_case_1      testcases
hw3_test_case_2      Virtual Machine.cbp
Incorrect programs.docx Virtual Machine.cbp.cbTemp
Incorrect programs.odt Virtual Machine[Conflict].layout
input.txt            Virtual Machine.depend
input.txt~           Virtual Machine.layout
lexemelist.txt       Virtual Machine.layout.cbTemp
lexemetable.txt      vm.h
tomas@tomas-ubuntu:~/Documents/c/Virtual_Machine_not as old$ ./compiler

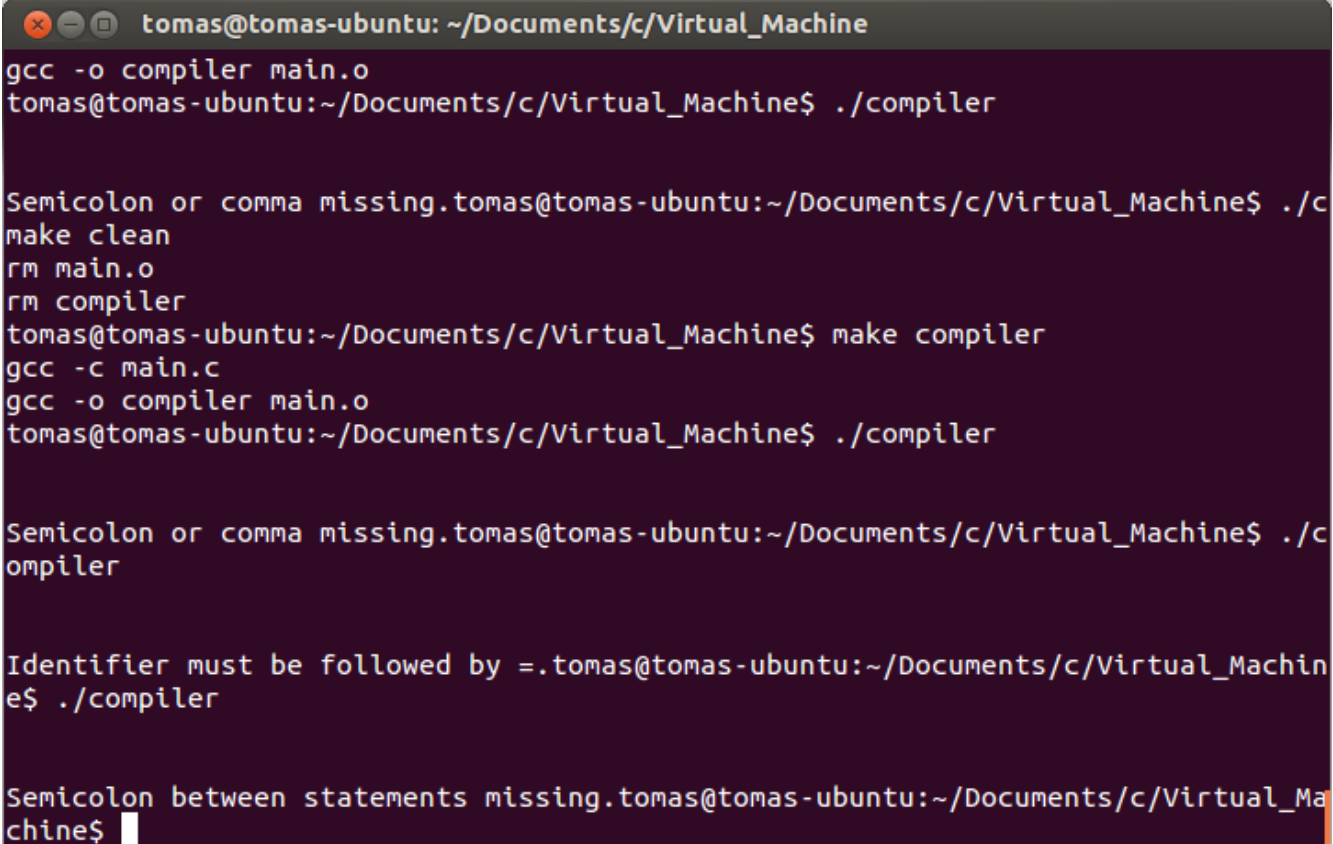
Right parenthesis missing.tomas@tomas-ubuntu:~/Documents/c/Virtual_Machine_not as old$ ./compiler

Undeclared identifier.tomas@tomas-ubuntu:~/Documents/c/Virtual_Machine_not as old$ ./compiler

= must be followed by a number.tomas@tomas-ubuntu:~/Documents/c/Virtual_Machine_not as old$ █
```

= must be followed by a number.

Test case 5 code:
begin.

A terminal window titled 'tomas@tomas-ubuntu: ~/Documents/c/Virtual_Machine' with a dark purple background. It shows a series of commands and error messages. The first command 'gcc -o compiler main.o' succeeds. The second command './compiler' results in a 'Semicolon or comma missing' error. The user then runs 'make clean', 'rm main.o', and 'rm compiler'. The next command 'make compiler' runs 'gcc -c main.c' successfully, but the subsequent './compiler' command fails with an 'Identifier must be followed by =' error. Finally, the user runs './compiler' again, which fails with a 'Semicolon between statements missing' error.

```
tomas@tomas-ubuntu: ~/Documents/c/Virtual_Machine
gcc -o compiler main.o
tomas@tomas-ubuntu:~/Documents/c/Virtual_Machine$ ./compiler

Semicolon or comma missing.tomas@tomas-ubuntu:~/Documents/c/Virtual_Machine$ ./c
make clean
rm main.o
rm compiler
tomas@tomas-ubuntu:~/Documents/c/Virtual_Machine$ make compiler
gcc -c main.c
gcc -o compiler main.o
tomas@tomas-ubuntu:~/Documents/c/Virtual_Machine$ ./compiler

Semicolon or comma missing.tomas@tomas-ubuntu:~/Documents/c/Virtual_Machine$ ./c
ompiler

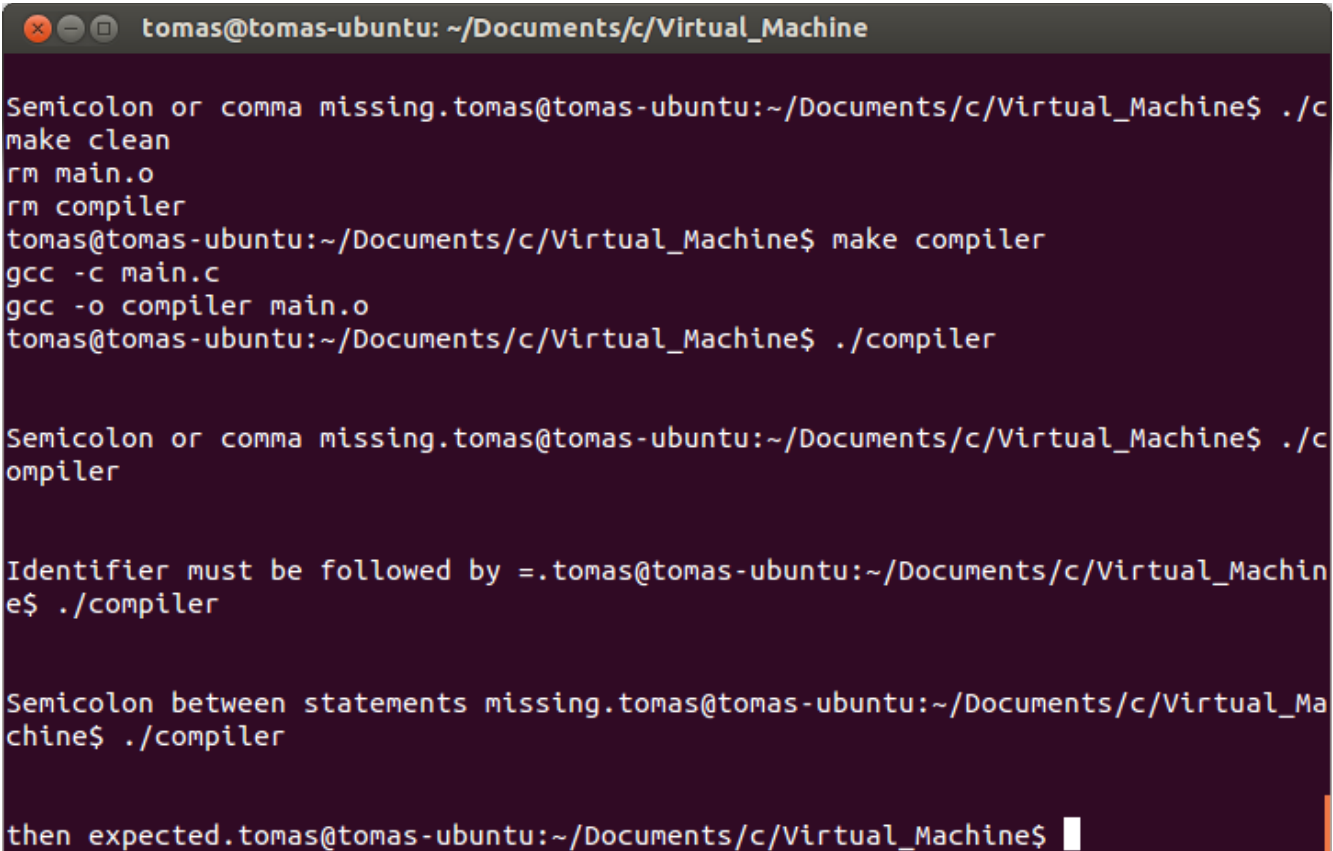
Identifier must be followed by =.tomas@tomas-ubuntu:~/Documents/c/Virtual_Machin
e$ ./compiler

Semicolon between statements missing.tomas@tomas-ubuntu:~/Documents/c/Virtual_Ma
chine$
```

Semicolon between statements missing.

Test case 6 code:

if 4 < 5 .



```
tomas@tomas-ubuntu: ~/Documents/c/Virtual_Machine

Semicolon or comma missing.tomas@tomas-ubuntu:~/Documents/c/Virtual_Machine$ ./c
make clean
rm main.o
rm compiler
tomas@tomas-ubuntu:~/Documents/c/Virtual_Machine$ make compiler
gcc -c main.c
gcc -o compiler main.o
tomas@tomas-ubuntu:~/Documents/c/Virtual_Machine$ ./compiler

Semicolon or comma missing.tomas@tomas-ubuntu:~/Documents/c/Virtual_Machine$ ./c
ompiler

Identifier must be followed by =.tomas@tomas-ubuntu:~/Documents/c/Virtual_Machin
e$ ./compiler

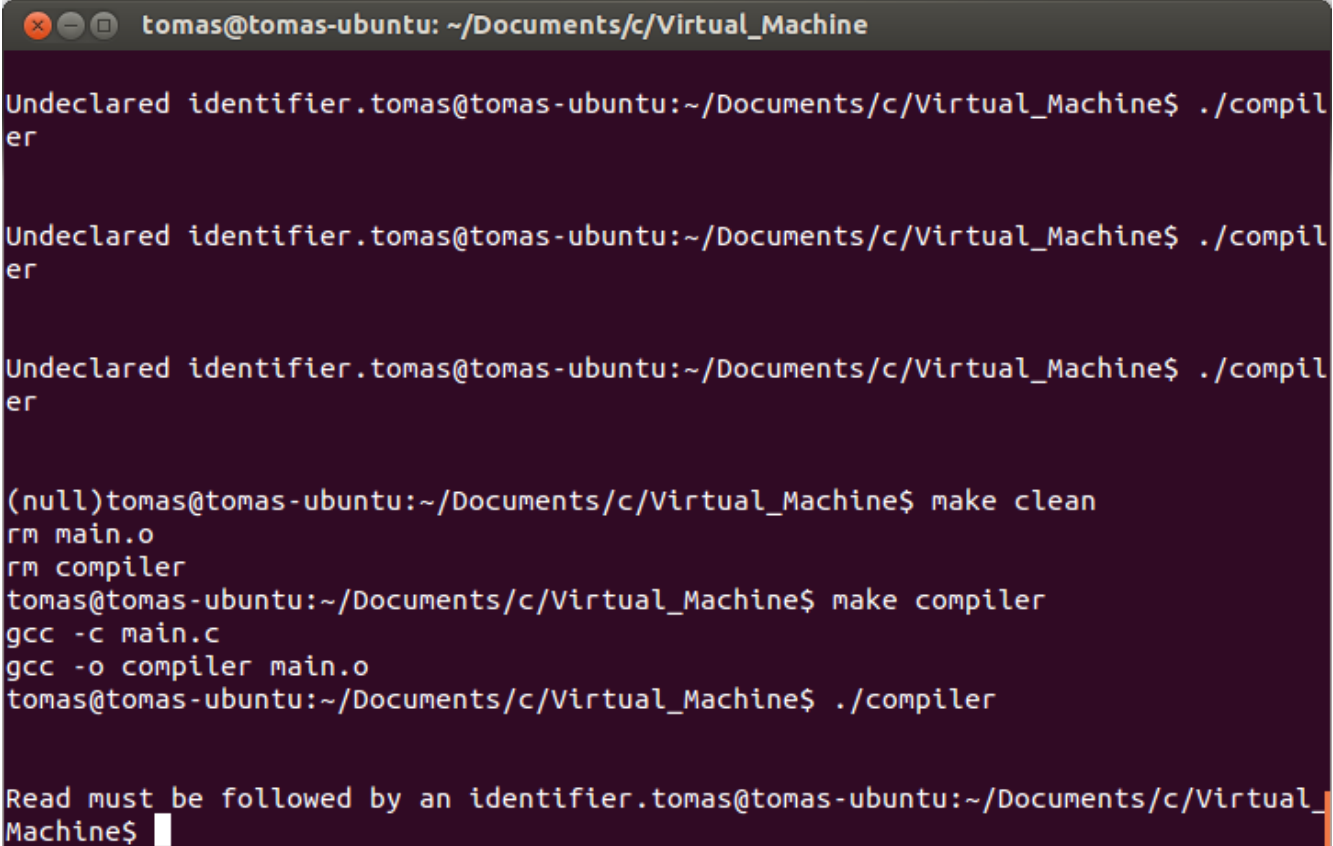
Semicolon between statements missing.tomas@tomas-ubuntu:~/Documents/c/Virtual_Ma
chine$ ./compiler

then expected.tomas@tomas-ubuntu:~/Documents/c/Virtual_Machine$
```

then expected.

Test case 7 code:

```
var x;  
read .
```



```
tomas@tomas-ubuntu: ~/Documents/c/Virtual_Machine  
  
Undeclared identifier.tomas@tomas-ubuntu:~/Documents/c/Virtual_Machine$ ./compiler  
er  
  
Undeclared identifier.tomas@tomas-ubuntu:~/Documents/c/Virtual_Machine$ ./compiler  
er  
  
Undeclared identifier.tomas@tomas-ubuntu:~/Documents/c/Virtual_Machine$ ./compiler  
er  
  
(null)tomas@tomas-ubuntu:~/Documents/c/Virtual_Machine$ make clean  
rm main.o  
rm compiler  
tomas@tomas-ubuntu:~/Documents/c/Virtual_Machine$ make compiler  
gcc -c main.c  
gcc -o compiler main.o  
tomas@tomas-ubuntu:~/Documents/c/Virtual_Machine$ ./compiler  
  
Read must be followed by an identifier.tomas@tomas-ubuntu:~/Documents/c/Virtual_Machine$
```

Read must be followed by an identifier.

Test case 8 code:

read x.

```
tomas@tomas-ubuntu: ~/Documents/c/Virtual_Machine

(null)tomas@tomas-ubuntu:~/Documents/c/Virtual_Machine$ make clean
rm main.o
rm compiler
tomas@tomas-ubuntu:~/Documents/c/Virtual_Machine$ make compiler
gcc -c main.c
gcc -o compiler main.o
tomas@tomas-ubuntu:~/Documents/c/Virtual_Machine$ ./compiler

(null)tomas@tomas-ubuntu:~/Documents/c/Virtual_Machine$ make clean
rm main.o
rm compiler
tomas@tomas-ubuntu:~/Documents/c/Virtual_Machine$ make compiler
gcc -c main.c
gcc -o compiler main.o
tomas@tomas-ubuntu:~/Documents/c/Virtual_Machine$ ./compiler

(null)tomas@tomas-ubuntu:~/Documents/c/Virtual_Machine$ ./compiler

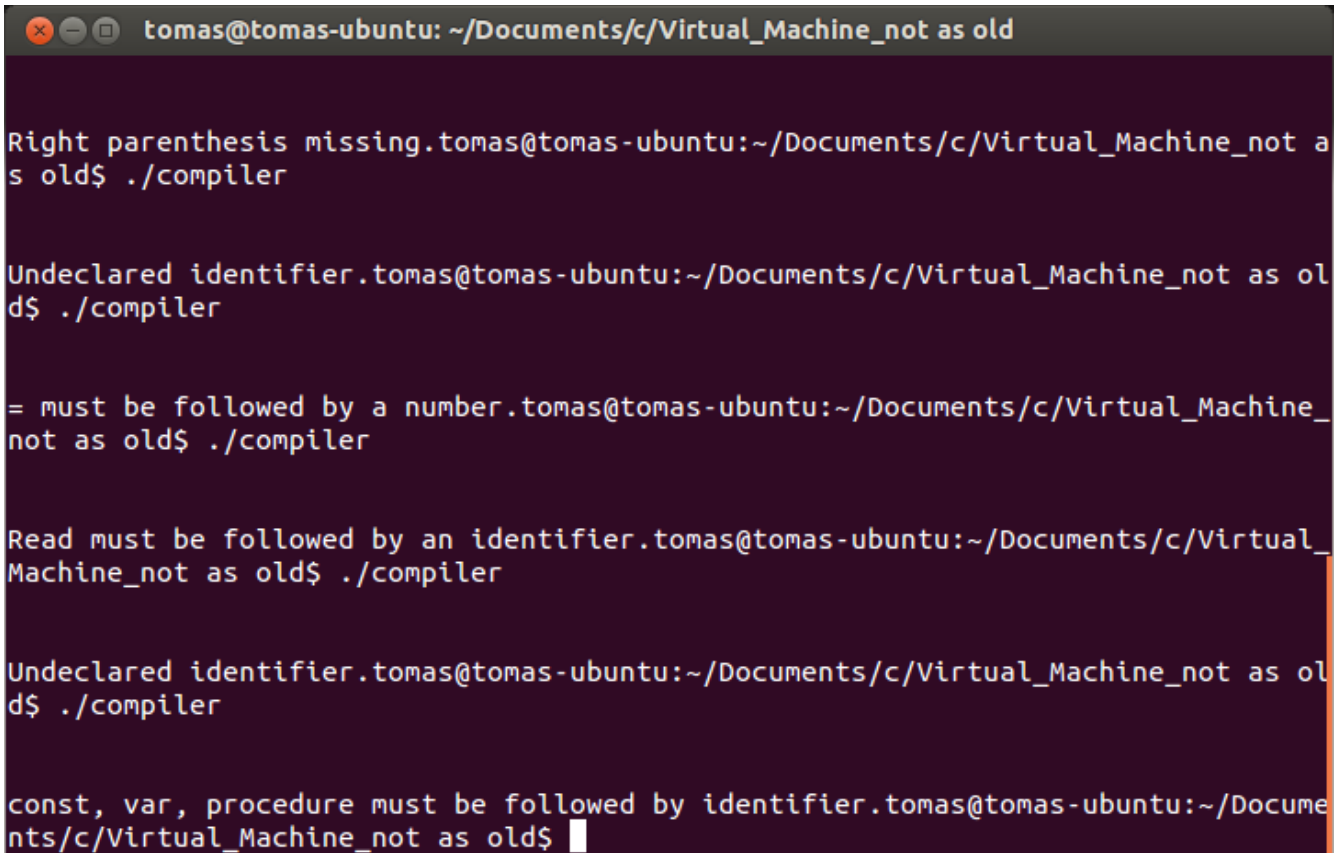
Undeclared identifier.tomas@tomas-ubuntu:~/Documents/c/Virtual_Machine$
```

undeclared identifier.

Test case 9 code:

```
const x=4,=5;
```

.

A terminal window with a dark purple background and a title bar that reads 'tomas@tomas-ubuntu: ~/Documents/c/Virtual_Machine_not as old'. The terminal shows the output of a compiler. The first line is 'Right parenthesis missing.tomas@tomas-ubuntu:~/Documents/c/Virtual_Machine_not as old\$./compiler'. The second line is 'Undeclared identifier.tomas@tomas-ubuntu:~/Documents/c/Virtual_Machine_not as old\$./compiler'. The third line is '= must be followed by a number.tomas@tomas-ubuntu:~/Documents/c/Virtual_Machine_not as old\$./compiler'. The fourth line is 'Read must be followed by an identifier.tomas@tomas-ubuntu:~/Documents/c/Virtual_Machine_not as old\$./compiler'. The fifth line is 'Undeclared identifier.tomas@tomas-ubuntu:~/Documents/c/Virtual_Machine_not as old\$./compiler'. The sixth line is 'const, var, procedure must be followed by identifier.tomas@tomas-ubuntu:~/Documents/c/Virtual_Machine_not as old\$ ' followed by a cursor. The terminal has a red border on the right side.

```
tomas@tomas-ubuntu: ~/Documents/c/Virtual_Machine_not as old

Right parenthesis missing.tomas@tomas-ubuntu:~/Documents/c/Virtual_Machine_not as old$ ./compiler

Undeclared identifier.tomas@tomas-ubuntu:~/Documents/c/Virtual_Machine_not as old$ ./compiler

= must be followed by a number.tomas@tomas-ubuntu:~/Documents/c/Virtual_Machine_not as old$ ./compiler

Read must be followed by an identifier.tomas@tomas-ubuntu:~/Documents/c/Virtual_Machine_not as old$ ./compiler

Undeclared identifier.tomas@tomas-ubuntu:~/Documents/c/Virtual_Machine_not as old$ ./compiler

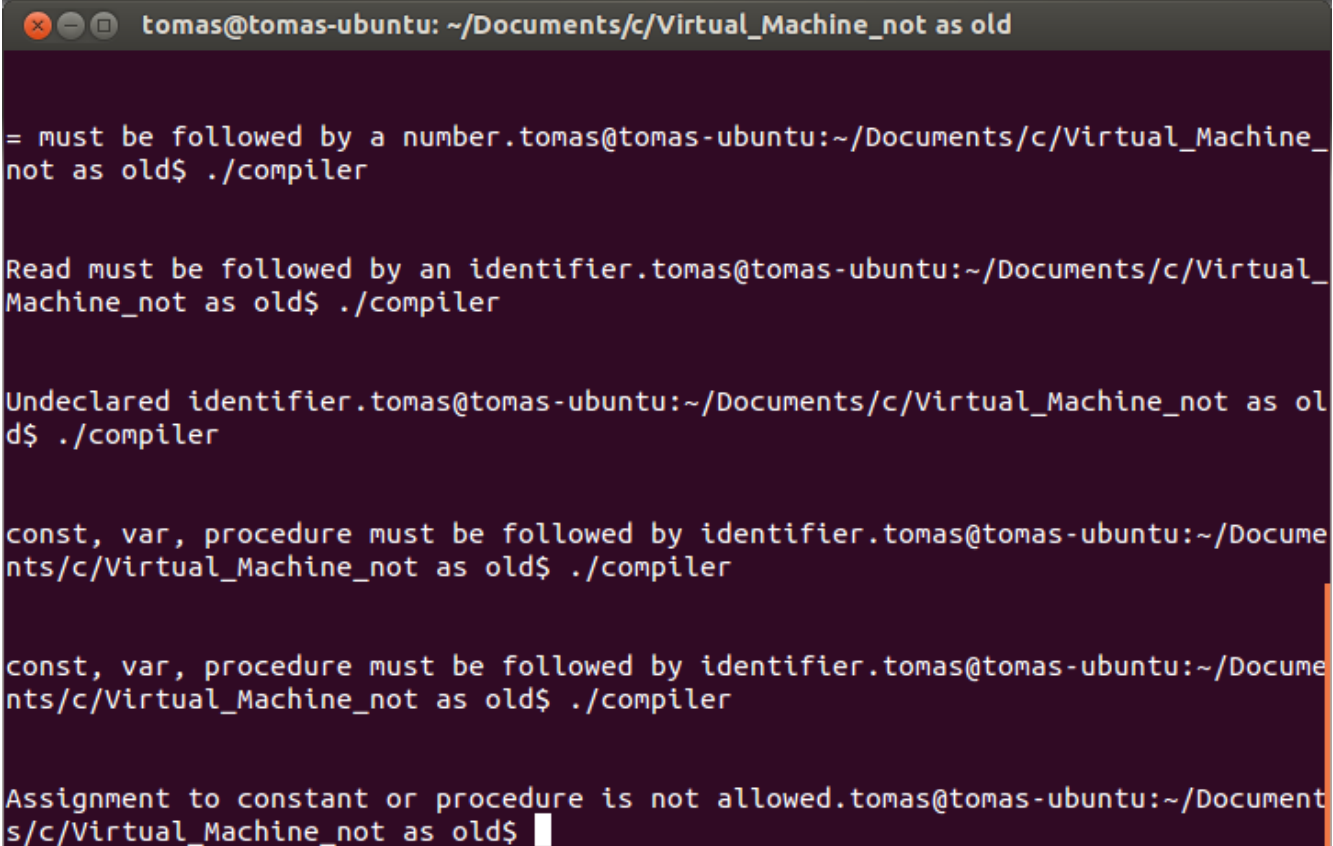
const, var, procedure must be followed by identifier.tomas@tomas-ubuntu:~/Documents/c/Virtual_Machine_not as old$ █
```

const, var, procedure must be followed by identifier.

Test case 10 code:

const x=5;

x := 6.

A terminal window titled 'tomas@tomas-ubuntu: ~/Documents/c/Virtual_Machine_not as old' displays several compiler error messages. The messages are: 1. '= must be followed by a number.' 2. 'Read must be followed by an identifier.' 3. 'Undeclared identifier.' 4. 'const, var, procedure must be followed by identifier.' 5. 'const, var, procedure must be followed by identifier.' 6. 'Assignment to constant or procedure is not allowed.' The terminal has a dark purple background with light-colored text. The window title bar is dark grey with standard Ubuntu window controls (close, minimize, maximize) on the left.

```
tomas@tomas-ubuntu: ~/Documents/c/Virtual_Machine_not as old

= must be followed by a number.tomas@tomas-ubuntu:~/Documents/c/Virtual_Machine_
not as old$ ./compiler

Read must be followed by an identifier.tomas@tomas-ubuntu:~/Documents/c/Virtual_
Machine_not as old$ ./compiler

Undeclared identifier.tomas@tomas-ubuntu:~/Documents/c/Virtual_Machine_not as ol
d$ ./compiler

const, var, procedure must be followed by identifier.tomas@tomas-ubuntu:~/Docume
nts/c/Virtual_Machine_not as old$ ./compiler

const, var, procedure must be followed by identifier.tomas@tomas-ubuntu:~/Docume
nts/c/Virtual_Machine_not as old$ ./compiler

Assignment to constant or procedure is not allowed.tomas@tomas-ubuntu:~/Document
s/c/Virtual_Machine_not as old$
```

Assignment to constant or procedure is not allowed.