

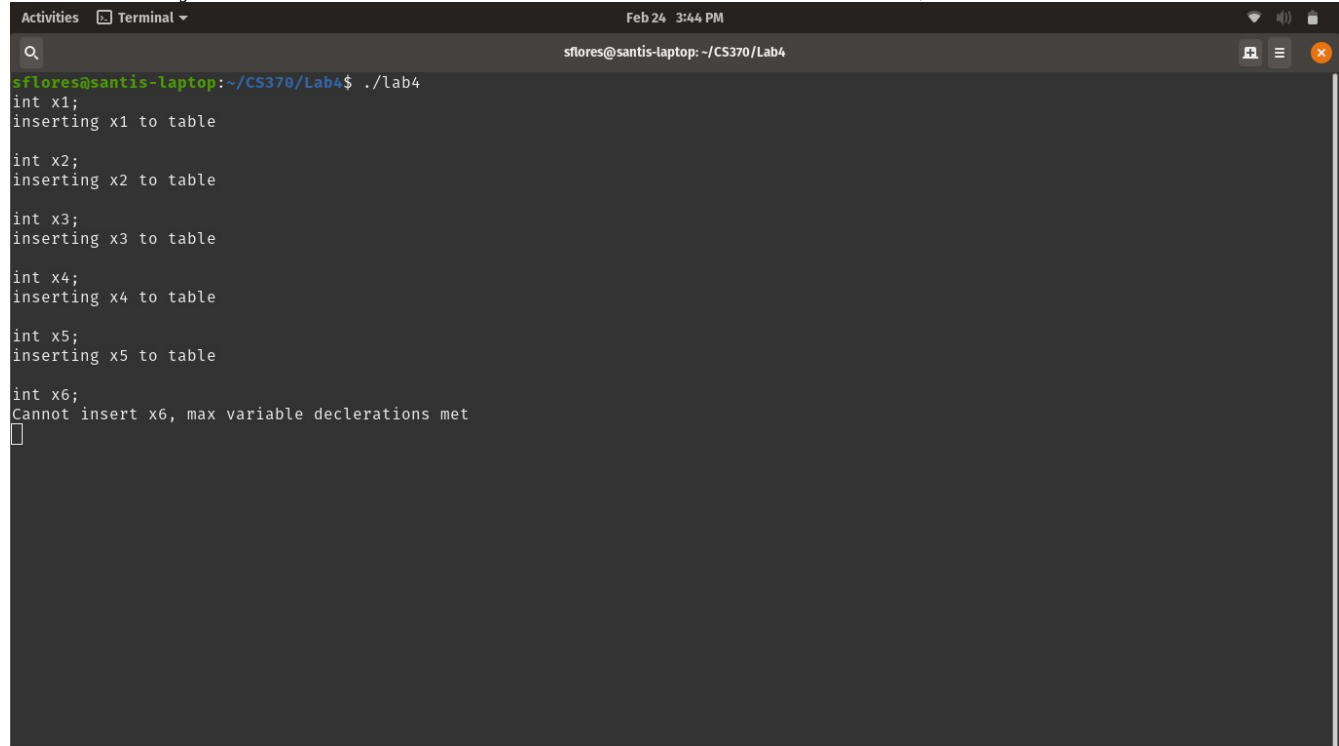
## Lab 4

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Screen shots of running code

1. Show that you cannot define more than the max number of variables, 5.

A terminal window titled 'Activities Terminal' with a search bar and window controls. The prompt is 'sflores@santis-laptop: ~/CS370/Lab4'. The user runs './lab4'. The program outputs: 'int x1; inserting x1 to table', 'int x2; inserting x2 to table', 'int x3; inserting x3 to table', 'int x4; inserting x4 to table', 'int x5; inserting x5 to table', and finally 'int x6; Cannot insert x6, max variable declerations met' followed by a cursor.

```
sflores@santis-laptop:~/CS370/Lab4$ ./lab4
int x1;
inserting x1 to table

int x2;
inserting x2 to table

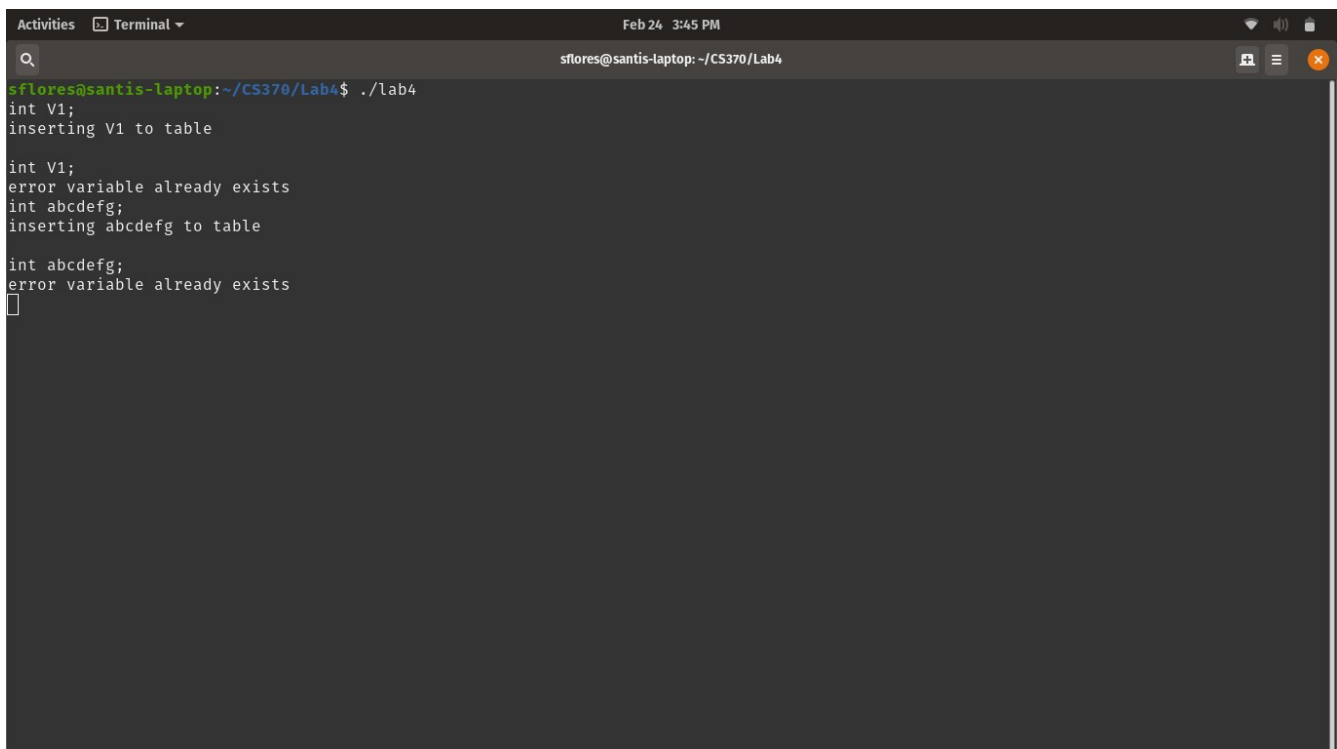
int x3;
inserting x3 to table

int x4;
inserting x4 to table

int x5;
inserting x5 to table

int x6;
Cannot insert x6, max variable declerations met
█
```

2. Cannot declare a variable more than once

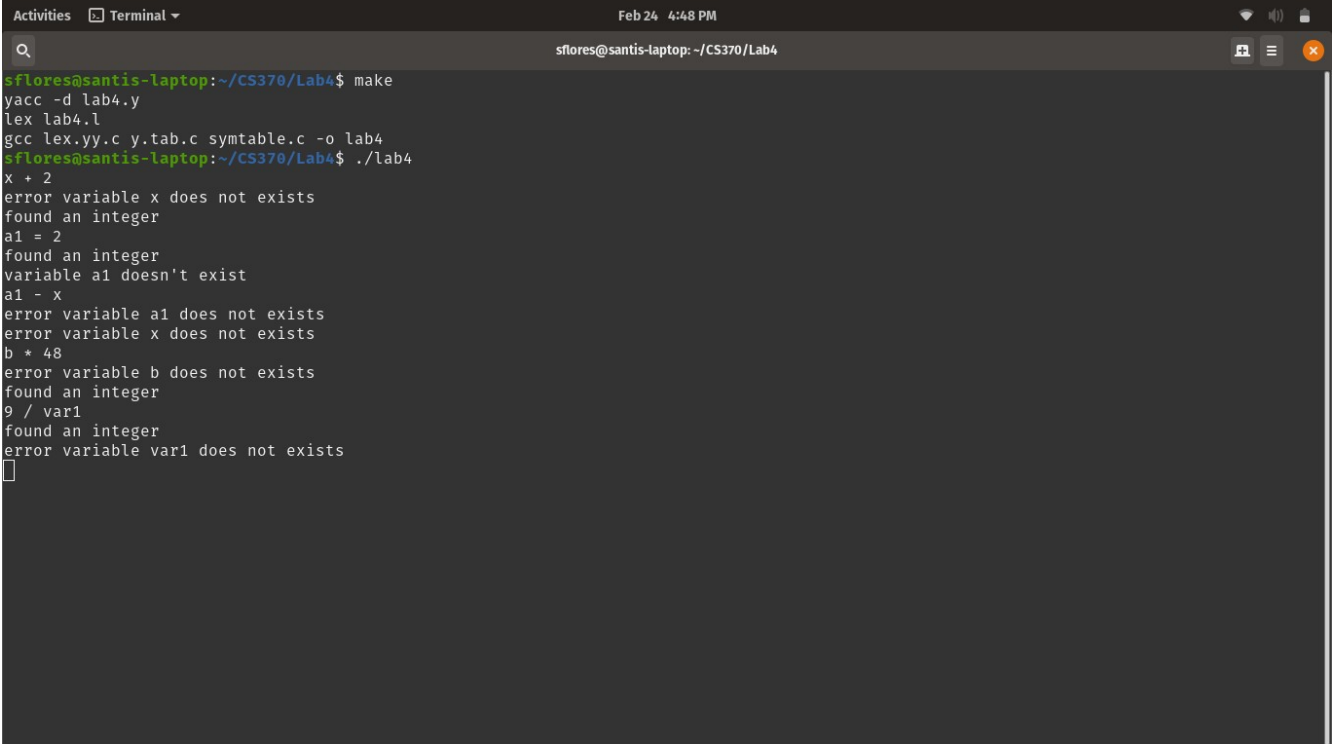
A terminal window titled 'Activities Terminal' with a search bar and window controls. The prompt is 'sflores@santis-laptop: ~/CS370/Lab4'. The user runs './lab4'. The program outputs: 'int V1; inserting V1 to table', 'int V1; error variable already exists', 'int abcdefg; inserting abcdefg to table', and finally 'int abcdefg; error variable already exists' followed by a cursor.

```
sflores@santis-laptop:~/CS370/Lab4$ ./lab4
int V1;
inserting V1 to table

int V1;
error variable already exists
int abcdefg;
inserting abcdefg to table

int abcdefg;
error variable already exists
█
```

### 3. Cannot use a variable that hasn't been defined

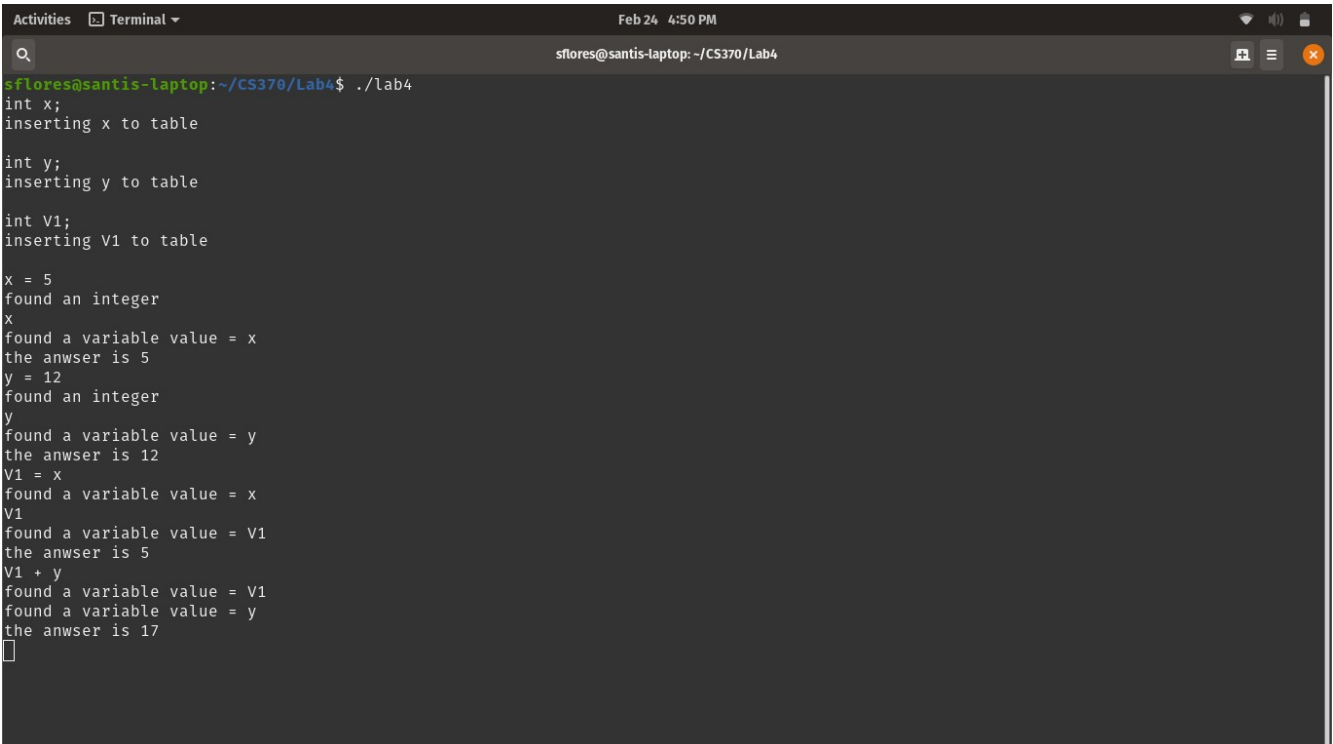


A terminal window titled "Terminal" with a search bar and window controls. The prompt is "sflores@santis-laptop: ~/CS370/Lab4". The user runs "make", which executes "yacc -d lab4.y", "lex lab4.l", and "gcc lex.yy.c y.tab.c symtable.c -o lab4". Then, the user runs "./lab4", which produces several error messages: "error variable x does not exists", "found an integer", "a1 = 2", "found an integer", "variable a1 doesn't exist", "a1 - x", "error variable a1 does not exists", "error variable x does not exists", "b \* 48", "error variable b does not exists", "found an integer", "9 / var1", "found an integer", and "error variable var1 does not exists". The prompt returns to the shell.

```
sflores@santis-laptop:~/CS370/Lab4$ make
yacc -d lab4.y
lex lab4.l
gcc lex.yy.c y.tab.c symtable.c -o lab4
sflores@santis-laptop:~/CS370/Lab4$ ./lab4
x + 2
error variable x does not exists
found an integer
a1 = 2
found an integer
variable a1 doesn't exist
a1 - x
error variable a1 does not exists
error variable x does not exists
b * 48
error variable b does not exists
found an integer
9 / var1
found an integer
error variable var1 does not exists

```

### 4. A declared variable can be set and used



A terminal window titled "Terminal" with a search bar and window controls. The prompt is "sflores@santis-laptop: ~/CS370/Lab4". The user runs "./lab4", which produces the following output: "int x;", "inserting x to table", "int y;", "inserting y to table", "int V1;", "inserting V1 to table", "x = 5", "found an integer", "x", "found a variable value = x", "the answer is 5", "y = 12", "found an integer", "y", "found a variable value = y", "the answer is 12", "V1 = x", "found a variable value = x", "V1", "found a variable value = V1", "the answer is 5", "V1 + y", "found a variable value = V1", "found a variable value = y", "the answer is 17". The prompt returns to the shell.

```
sflores@santis-laptop:~/CS370/Lab4$ ./lab4
int x;
inserting x to table

int y;
inserting y to table

int V1;
inserting V1 to table

x = 5
found an integer
x
found a variable value = x
the answer is 5
y = 12
found an integer
y
found a variable value = y
the answer is 12
V1 = x
found a variable value = x
V1
found a variable value = V1
the answer is 5
V1 + y
found a variable value = V1
found a variable value = y
the answer is 17

```