Assignment: LAB4 -- Symbol Table with YACC

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Output Screenshots of 4 different scenarios in Lab 4:

a. Show that if you define more than the MAX number of variables, then you error.

1. Setting max limit of variables to 2, to see the impact quickly

```
// setting max limit for registers
#define LIMIT 2

int regs[LIMIT];
```

2. Output of trying to set 3rd variable c

```
(base) abdurrazzak@Abdurs-MacBook-Pro lab4 % ./lab4
int a;

        Symbol inserted

        SYMBOL          ADDRESS
        a               0
int b;

        Symbol inserted

        SYMBOL          ADDRESS
        a               0
        b               1
int c;

-----BARF------
Symbol table is full, can not insert variable c

        SYMBOL          ADDRESS
        a               0
        b               1
```

b. Show that you cannot declare a variable more than once.

Here a is declared first and then when we write “int a;” again, it will barf.

```
(base) abdurrazzak@Abdurs-MacBook-Pro lab4 % ./lab4
int a;

        Symbol inserted

        SYMBOL          ADDRESS
        a               0
int a;

-----BARF------
variable a is already declared, can not redeclare

        SYMBOL          ADDRESS
        a               0
```

c. Show that you cannot use a variable that is not defined.

Here variable z is not declared earlier, therefore it barfs.

```
(base) abdurrazzak@Abdurs-MacBook-Pro lab4 % ./lab4
int a;

        Symbol inserted

        SYMBOL          ADDRESS
        a               0
z = 5

----BARF------
Variable z is not in symble table
```

d. Show that a declared variable can be set and used (left and right hand side).

Here variable var_b is used both set and using. var_b is set to 7 and used in var_a = var_b * var_b

```
(base) abdurrazzak@Abdurs-MacBook-Pro lab4 % ./lab4
int var_a;

        Symbol inserted

        SYMBOL          ADDRESS
        var_a           0
int var_b;

        Symbol inserted

        SYMBOL          ADDRESS
        var_a           0
        var_b           1
var_b = 7
var_a = var_b * var_b
var_a
the answer is 49
var_b
the answer is 7
```