

Assignment-10

Compiler Design Laboratory

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To run the program, execute the script.sh bash file which consists of the following instructions :

```
lex thac.l
yacc thac.y -d
gcc y.tab.c -o thac_ex
./thac_ex
rm thac_ex lex.yy.c y.tab.c y.tab.h
```

To run the bash script mentioned above :

./ script.sh

If the permission to run the script is denied, run the following command :

chmod +x script.sh

Enter the example number for which you want the 3 address code to be generated :

```
narkov@DESKTOP-00PTP0A:~/CloudCraftz/lexical_analyser/A10$ ./script.sh
Enter the sample number you want to test : 1
3 address code of the selected example : T0 = y + 5
x = T0
T1 = x * 2
z = T1
T2 = x + z
a = T2
print x
T3 = Read y
L_0 : T4 = x > y
If !T4 goto L_1
T5 = x + 1
r = T5
L_2 : T6 = a > b
If !T6 goto L_3
T7 = y + 2
s = T7
goto L_2
L_3 : goto L_0
L_1 : T8 = a <= qwe
T9 = qwe + abc
T10 = T9 > 50
T11 = T8 or T10
T12 = abc == 10
T13 = T11 and T12
T14 = T13
If !T14 goto L_4
print c
T15 = b < 10
T16 = T15
If !T16 goto L_5
print d
goto L_6
L_5 : print e
L_6 : print q
goto L_7
L_4 : print a
print b
L_7 : Successful Program
```

```

narkov@DESKTOP-00PTP0A:~/CloudCraftz/lexical_analyser/A10$ ./script.sh
Enter the sample number you want to test : 2
3 address code of the selected example : L_0 : T0 = x > y
If !T0 goto L_1
T1 = x + 1
var1 = T1
L_2 : T2 = a > b
If !T2 goto L_3
T3 = y + 1
q = T3
L_4 : T4 = var2 >= var3
If !T4 goto L_5
T5 = v + g
var3 = T5
T6 = 6 < 5
T7 = T6
If !T7 goto L_6
T8 = a * var3
b = T8
L_7 : goto L_4
L_5 : goto L_2
L_3 : goto L_0
L_1 : Successful Program

```

Notes:

- If and while statements are always first checked for false condition, and labels are generated accordingly.
- Successful program tag at the end signifies a successful 3 address code generation.
- We only consider read, print, assignment, if and while statements and not the entire grammar for the 3 address code generation.