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INTERMEDIATE CODE GENERATOR FOR WHILE - YACC **PROGRAM - COMPILER LAB**

(Lex Program: intwh.l)

ALPHA [A-Za-z] DIGIT [0-9]

%%

while return WHILE;

{ALPHA}({ALPHA}|{DIGIT})* return ID;

{DIGIT}+ {yylval=atoi(yytext); return NUM;}

[\t]

\n yyterminate(); return yytext[0];

%%

(Yacc Program: intwh.y)

%token ID NUM WHILE

%right '='

%left '+' '-'

%left '*' '/'

%left UMINUS

%%

 $S: WHILE\{lab1();\} \ '('E')'\{lab2();\} \ E';'\{lab3();\} \\$

E :V '='{push();} E{codegen_assign();}

| E '+'{push();} E{codegen();}

| E '-'{push();} E{codegen();}

| E '*'{push();} E{codegen();}

| E '/'{push();} E{codegen();}

| '(' E ')'

| '-'{push();} E{codegen_umin();} %prec UMINUS

| V

| NUM{push();}

V: ID {push();}

%%

#include "lex.yy.c"

#include<ctype.h>

char st[100][10];

int top=0;

char i_[2]="0";

char temp[2]="t";

int Inum=1;

int start=1; main()

printf("Enter the expression : ");

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Intermediate Code Generator for While - Yacc Progr...

Intermediate Code Generator for If then else -

Intermediate Code Generator for Arithmetic

Parser for Function Definition - YACC Program - Co...

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Parser for SWITCH Statements - YACC Program - Comp...

```
yyparse();
}
push()
{
 strcpy(st[++top],yytext);
}
codegen()
strcpy(temp,"t");
strcat(temp,i_);
 printf("%s = %s %s %s\n",temp,st[top-2],st[top-1],st[top]);
 top-=2;
strcpy(st[top],temp);
i_[0]++;
}
codegen_umin()
strcpy(temp,"t");
strcat(temp,i_);
printf("%s = -%s\n",temp,st[top]);
top--:
strcpy(st[top],temp);
i_[0]++;
}
codegen_assign()
printf("%s = %s\n",st[top-2],st[top]);
top-=2;
}
lab1()
printf("L%d: \n",Inum++);
}
lab2()
{
strcpy(temp,"t");
strcat(temp,i_);
printf("%s = not %s\n",temp,st[top]);
printf("if %s goto L%d\n",temp,lnum);
i_[0]++;
}
lab3()
printf("goto L%d \n",start);
printf("L%d: \n",Inum);
}
Output:
nn@linuxmint ~ $ lex intwh.l
nn@linuxmint ~ $ yacc intwh.y
nn@linuxmint ~ $ gcc y.tab.c -II -ly
nn@linuxm./a.out
Enter the expression : while(k=c/s)k=k*c+d;
L1:
t0 = c/s
```

Parser for DO WHILE Statements - YACC Program - Co... Parser for WHILE Statements - YACC Program - Compi... Parser for IF-THEN-ELSE Statements -YACC Program ... Expression Evaluation - Yacc Program -Compiler De... Graph Theory & Combinatorics (GTC) -Assignment Environmental Engineering & Disaster Management - ... ► May (13) ► April (12) ► March (19) ► February (27) ► January (2)

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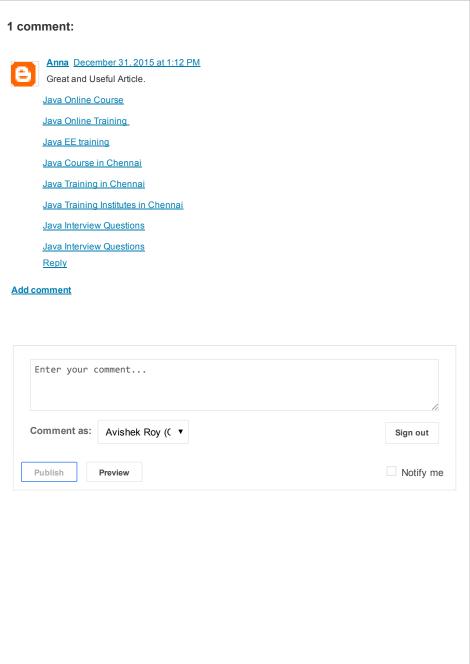
W 902,352

k = t0
t1 = not k
ift1 goto L0
t2 = k * c
t3 = t2 + d
k = t3
goto L1
L0:
nn@linuxmint ~ \$

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