**AIM :** WRITE A PROGRAM FOR MACHINE CODE GENERATION USING LEX AND YACC.

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**LEX FILE**

%{

#include<stdio.h>

#include<string.h>

#include "y.tab.h"

%}

%%

[a-z][a-z0-9]\* {strcpy(yylval.var,yytext);return NAME;}

[+] {strcpy(yylval.var,yytext);return PLUS;}

[=] {strcpy(yylval.var,yytext);return EQUAL;}

[-] {strcpy(yylval.var,yytext);return SUBT;}

[\*] {strcpy(yylval.var,yytext);return MULT;}

[/] {strcpy(yylval.var,yytext);return DIVI;}

[\n\t] {return yytext[0];}

%%

**YACC FILE**

%{

#include<stdio.h>

#include<ctype.h>

#include<string.h>

FILE \*fout;

%}

%token<var> NAME PLUS EQUAL MULT DIVI SUBT

%type<var> exp

%union {

char var[10];

}

%right EQUAL

%left PLUS SUBT

%left MULT DIVI

%%

input : line'\n'input

| '\n'input

| /\*empty\*/

;

line : NAME EQUAL exp {fprintf(fout,"MOV %s,AX\n",$1);}

;

exp : NAME PLUS NAME {fprintf(fout,"MOV AX,%s \n ADD AX,%s\n",$1,$3);}

| NAME SUBT NAME {fprintf(fout,"MOV AX,%s \n SUB AX,%s\n",$1,$3);}

|NAME MULT NAME {fprintf(fout,"MOV AX,%s \n MUL AX,%s\n",$1,$3);}

|NAME DIVI NAME {fprintf(fout,"MOV AX,%s \n DIV AX,%s\n",$1,$3);}

|NAME {strcpy($$,$1);}

;

%%

extern yylineno;

yyerror() {

printf("\neroor %d",yylineno);

}

yywrap() {

return 1;

}

extern FILE \*yyin;

main() {

FILE \*fin;

fin=fopen("input.txt","r");

fout=fopen("out.txt","w");

yyin=fin;

yyparse();

fcloseall();

return 0;

}

**INPUT FILE**

t1=a+b

t2=b+t1

c=t2

**OUTPUT FILE**

MOV AX,a

ADD AX,b

MOV t1,AX

MOV AX,b

ADD AX,t1

MOV t2,AX

MOV c,AX