Course Code and Name: 2CS701 Compiler Construction

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Practical 5: - To implement a calculator in YACC:

Code:

.l file

%{

#*include*<stdio.h>

#*include* "y.tab.h"

extern int yylval;

%}

%%

"for" {*return* fortoken;}

"while" {*return* whiletoken;}

"int" {*return* datatype;}

"=" {*return* assignment;}

";" {*return* semicolon;}

" " {*return* space;}

[0-9]+ {yylval=atoi(yytext); *return* digit;}

"++"|"--" {*return* unary;}

"(" {*return* openingbracket;}

")" {*return* closingbracket;}

[a-zA-Z][a-zA-Z0-9]\* { *return* identifier;}

">"|"<"|"=="|"<="|">=" {*return* condition;}

"{" {*return* curlyopening;}

"}" {*return* curlyclosing;}

.  {*return* codelogic;}

%%

int yywrap()

{

*return* 1;

}

.y file

%{

int yylex(void);

void yyerror();

%}

%{

/\* Definition section \*/

#include<stdio.h>

int flag=0;

%}

%token NUMBER

%left '+' '-'

%left '\*' '/' '%'

%left '(' ')'

/\* Rule Section \*/

%%

ArithmeticExpression: E{

("\nResult=%d\n", $$);

0;

};

E:E'+'E {$$=$1+$3;}

|E'-'E {$$=$1-$3;}

|E'\*'E {$$=$1\*$3;}

|E'/'E {$$=$1/$3;}

|E'%'E {$$=$1%$3;}

|'('E')' {$$=$2;}

| NUMBER {$$=$1;};

%%

//driver code

void main()

{

printf("\nEnter Any Arithmetic Expression which can have operations Addition, Subtraction, Multiplication, Division,Modulus and Round brackets:\n");

yyparse();

if(flag==0)

printf("\nEntered arithmetic expression is Valid\n\n");

}

void yyerror()

{

printf("\nEntered arithmetic expression is Invalid\n\n");

flag=1;

}

Output:



