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Practical No. 1.

Ques:- Design a analyzer for a given language and the lexical analyzer should list various tokens present in input string.
S/W Required :- GDB compiler.

Program :-

```
#include <iostream>
#include <string.h>
using namespace std;
int main()
{
    char str[20], op[10], chr[10], num[10];
    int j, i=0, k=0, m=0, l;
    cout << "Enter the equation: ";
    cin >> str;
    l = strlen(str);
    for (j=0; j < l; j++)
    {
        if ((str[j] >= 'a' & str[j] <= 'z') || (str[j] >= 'A' & str[j] <= 'Z'))
            chr[i] = str[j];
        i++;
    }
```



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{

{ else if (str[j] >= '0' && str[j] <= '9')

num[m] = str[j];

{ m++;

{ else

op[k] = str[j];

{ k++;

{

{

cout << "n OPERATOR : {";

{ for (j=0; j < k; j++)

cout << op[j];

{ if (j < k-1) cout << ",";

{

cout << "}" n CHARACTER : {";

{ for (j=0; j < i; j++)

cout << char[j];

{ if (j < i-1) cout << ",";

\rightarrow Input : $2x^2 + 3y = 0$ \rightarrow Output : tokens

: { x , y , $=$, 2 , 3 , 0 } tokens

Output:-

Enter the equation : $2x^2 + 3y = 0$

operator : {+, =}.

character : {x, y}.

number : {2, 3, 0}.

Conclusion :- Hence, we have successfully steady to design a lexical analyzer & listed out various tokens present in input string.



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{

```
cout << "}" >n Number; }";  
{ for (j=0; j<m; j++)
```

```
cout << num [j];  
if (j<m-1) cout << ", ";
```

```
cout << "}" >n "';  
return 0;
```

}.

Output :-

Enter the equation : $2x+3y=0$.

operator : { +, = }

character : { x, y }

number : { 2, 3, 0 }

Conclusion :- Hence, we have successfully studied to design a lexical analyzer & listed out various tokens present in input string.

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Practical No. 2.

Aim :- write a program to identify whether a given line is comment or not.

S/W Required :- GDB compiler.

Program :-

```
#include <bits/stdc++.h>
using namespace std;
```

```
void iscomment (String line)
```

```
{ if (line[0] == '/') { if (line[1] == '/') { if (line[2] == '/') { }
```

```
cout << "It is a single-line comment";  
return;
```

```
}
```

```
if (line[line.size() - 2] == '*' && line[line.size() - 1] == '/' && line[0] == '/') { if (line[1] == '*') { }
```

```
cout << "It is a multi-line comment";
```

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Ques:- Write a program to check whether a line is comment or not.

Output picture of program of line :-

for traversed in file name .txt

Output :- Input : Output

-? output

<Multi-line> abcde
file contains

Output :-

(will print) because this
It is a multi - line comment.

/* = (Multi-line) = (Multi-line)
{ () } = () with de

Conclusion:- Thus, we have successfully run
the program to check whether line is
comment or not.

Ques:- Write a program to find the number of words in a file.

Answer:- There is a file named file1.txt
which contains the following text:-



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3 return;

cout << "It is not a comment";
int main()
{

string line = /* SIPNA college of engineering
& technology, amravati */;"

isComment (line);

return 0;

};

Output:-

~~It is a multi-line comment.~~

Conclusion:- Thus, we have successfully run program to check whether line comment or not.

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Practical No. 3

Ques:- Implement a program to check parenthesis of regular expression is balanced or not.

S/W Required:- Online gdb compiler.

Program:-

```
#include<iostream>
using namespace std;
bool areBracket(string expre) {
    stack<char> s;
    char x;
    for(int i=0; i<expre.length(); i++) {
        if (expre[i] == '(' || expre[i] == '[' || expre[i] == '{')
            s.push(expre[i]);
        continue;
    }
    if (s.empty())
        return false;
}
```



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{ switch (curre[i])

case ')' :

n = s.top();

s.pop();

if (n == '{' || n == '[')

return false;

break;

case '{' :

n = s.top();

s.pop();

if (n == 'C' || n == '[')

return false;

break;

case ']' :

n = s.top();

s.pop();

if (n == '{' || n == '(')

return false;

break;

}

Output :-

This is balanced equation

Conclusion :- Hence I have studied to check
parenthesis of regular expression is
balanced or not.



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```
}  
} return (s.empty());
```

```
int main ()  
{
```

```
    string expre = " {() } [ ] ";
```

```
    if (arebracket(expre))
```

```
        cout << " this is balanced equation " ;  
    }
```

```
    else  
{
```

```
        cout << " This is not Balanced Equation " ;  
    }
```

~~return 0;~~

```
}
```

Output:-

This is balance equation.

Conclusion:- Hence I have studied to check ~~program~~ ~~parathesis~~ of regular expression is balanced or not.

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Practical No. 4

Aim :- Write program to implement finite automata for checking given input string is accepted or not.

S/W Required :- g++ compiler in Linux

Output :- Enter the no. of states : 3

Enter state : 1 : A

Enter state : 2 : B

Enter state : 3 : C

Enter initial state : A

Enter final state : C

Enter the no. of (input) symbols : 2

Enter i/p. symbol 1 : 1

Enter i/p. symbol 2 : 0

Enter no. of transitions : 3

Enter transition 1 : A1B

Enter transition 2 : B1B

Enter transition 3 : B0C

A \rightarrow 1B

B \rightarrow 1B

C \rightarrow 0C

Enter String : 10.



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Practical No. 4.

Ques:- Write a program to implement finite automata for checking a given input string is accepted or not.

S/W required :- g++ compiler in linux.

Program:-

```
#include <iostream>
using namespace std;
class Trans
```

{

Public:

```
char ip_state, op_state, ip_symbol;
trans()
```

{

 ip_state = op_state = ip_symbol = '\0';

}

};

int main()

{

 int nos, ips, note, ic, i;

```
    char state[10], ipsmb[10], str[5], istate, fstate, $entra;
    Trans tr[20];
```



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```
cout << "Enter the no. of stat: ";
```

```
cin >> nos;
```

```
for (int i=0; i<nos; i++)  
{
```

```
cout << "Enter stat: " << i+1 << ":";
```

```
cin >> state[i];
```

```
}
```

```
cout << "enter initial state: ";
```

```
cin >> istate;
```

```
cout << "enter final state: ";
```

```
cin >> fstate;
```

```
cout << "Enter no. of i/p symbol: ";
```

```
cin >> ips;
```

```
for (i=0; i<ips; i++)
```

```
cout << "Enter i/p symbol: " << i+1 << ":";
```

```
cin >> ipsmbl[i];
```

```
}
```

```
cout << "Enter no. of transition: ";
```

```
cin >> nstr;
```

```
for (i=0; i<nstr; i++)
```

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```
{  
    cout << "Enter transition: " << i+1 << ":";  
    cin >> tr[i].ip_state >> tr[i].ip_symbol >> tr[i].  
                                op_state;  
}  
  
for (i=0; i<note; i++)  
    cout << tr[i].ip_state << " ->" << tr[i].ip_symbol <<  
                                tr[i].op_state << "\n";  
    entra = state;  
  
cout << "enter string:";  
cin >> str;  
int k = 0  
for (i=0; i<note; i++)  
{  
    if ((entra == tr[i].ip_state) && (str[k] == tr[i].  
                                         ip_symbol))  
    {  
        entra = tr[i].op_state;  
        k++;  
        i = -1;  
    }  
}
```



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```
if (entra == fstate)
    cout << "String is accepted : ";
else
    cout << "String is not accepted : ";
return 0;
}
```

Output :- Enter the no. of states : 3

Enter state : 1 : A

Enter state : 2 : B

Enter state : 3 : C

Enter initial state : A

Enter final state : C

Enter no. of i/p symbol : 2

Enter i/p symbol 1 : 2 : 1

Enter i/p symbol 1 : 2 : 0

Enter ~~no. of transition~~ : 3

Enter transition : 1 : A1B

Enter transition : 2 : B1B

Enter transition : 3 : B00

A → 1B

B → 1B

C → 0C



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Enter String : 110

Conclusion :- Thus I have successfully executed a program for checking a given input string is accepted or not.

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Practical No.5

Aim :- Implement symbol table contains function create(), modify(), search(), display(), Delete().

S/W Required :- C++ Compiler in Linux.

Output :- Whenever mark I will : main()

which self explanatory between

I have many symbol you have to enter 2-3

Symbol	Value
A	1
B	2
C	3

1. Display
2. Modify
3. Search
4. Delete

Enter your choice : 2

Enter the symbol to be modified : A

Enter value of modification : 5

A	5
B	2
C	3



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Practical No. 5.

Aim :- Implement symbol table contain function create(), modify(), search(), display(), Delete().

Q/H Required :- C++ compiler in Linux.

Program :-

```
#include <iostream.h>
#include <std stdlib.h>
using namespace std;

struct symbol {
    char alpha;
    int value;
};

void display (symbol tab[], int n);
void modify (symbol tab[], int n, char alpha);
void delete1 (symbol tab[], int n, char alpha);
void search (symbol tab[], int n, char alpha);

int main ()
{
    symbol * table;
    int n, i;
    char alpha;
    cout << "How many symbol you have to enter:";
```

1. Display

2. Modify

3. Search

4. Delete

Enter your choice : 3

(Enter symbol to be searched : B)

B

2

1. Display

2. Modify

3. Search

4. Delete

Enter your choice : 4

(Enter the symbol to be deleted : C)

A

5

B

2



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```
cin >> n;
table = new symbol [n];
cout << "Symbol || value \n";
for (i=0; i<n; i++)
{
    cin >> table[i].alpha >> table[i].value;
}

while (1)
{
    int choice;
    cout << endl;
    cout << "1. Display " << endl;
    cout << "2. Modify " << endl;
    cout << "3. Search " << endl;
    cout << "4. Delete " << endl;
    cout << "\nEnter your choice";
    cin >> choice;
    switch (choice)
    {
        case 1: display (table, n);
        break;

        case 2: modify (table, n, alpha);
        break;
    }
}
```



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case 3: Search (table[n], alpha);
break;

case 4: delete (table[n], alpha);
break;

default;
exit (0);
}

}

return 0;

void display (Symbol tab[], int n)

{
int i;
for (i=0; i < n; i++)
cout << tab[i].alpha << " | " < tab[i] << endl;
}

void modify (Symbol tab[], int n, char, alpha)

{ int temp;

cout << "Enter the symbol to modify";
cin >> alpha;

cout << "Enter the value after modification";
cin >> temp;



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```
{ for (int i=0; i<n; i++)
```

```
    if (tab[i].alpha == alpha)
    {
        tab[i].value = temp;
        cout << endl;
        display (tab, n);
    }
```

```
void search (Symbol tab[], int n, char)
```

```
{ int i;
```

```
cout << "Enter the symbol to be search";
```

```
cin >> alpha;
```

```
for (i=0; i<n; i++)
```

```
{ if (tab[i].alpha == alpha)
```

```
    cout << tab[i].alpha << " " <<
```

```
    tab[i].value << endl;
}
```

```
void delete (Symbol tab[], int n, char alpha)
```

```
{ int i;
```

```
cout << "Enter the symbol to be Delete";
```

```
cin >> alpha;
```



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{ for ($i = 0$; $i < n$; $i++$)

{ if ($\text{tab}[i].alpha == \text{alpha}$)

$\text{tab}[i].alpha = \text{tab}[i+1].alpha;$

$\text{tab}[i].value = \text{tab}[i+1].value;$

}

}

$n = n - 1;$

{ display ($\text{tab}.n$);

Conclusion :- Thus, we implement program
for symbol table contain function
~~create()~~, ~~modify()~~, ~~search~~ search (),
display (), delete ().

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Practical No. 6.

Aim :- Write program to implement Recursive descent parser.

S/W Required :- C++ compiler.

Program :-

```
#include <iostream.h>
#include <stdlib.h>
using namespace std;
/*
E → TE'
E' → +TE' / null
T → FT'
T' → *FT' / null
F → id / (E)
*/
```

```
int count = 0;
```

```
void E();
```

```
void Ed();
```

```
void T();
```

```
void Td();
```

```
void F();
```



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String expr:

int main () {

cout << "E → TE'" << endl;

cout << "E' → +TE'" << endl;

cout << "E' → null" << endl;

cout << "T → FT'" << endl;

cout << "T' → *FT'" << endl;

cout << "F → (E)" << endl;

cout << "T' → null" << endl;

cout << "F → (E)" << endl;

cout << "F → id" << endl;

cout << "Enter the expression : " ;

cin >> expr;

int l = expr.length();

expr += "\$";

E();

if (l == count)

cout << "Accepted" << endl;

else

} cout << "Rejected" << endl;



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```
void E() {  
    T();  
    Ed();  
}
```

```
void Ed() {  
    if (s[<count] == '+') {  
        cout ++;  
        T();  
        Ed();  
    }  
}
```

```
else {  
    if (cout << "E" → null << endl;  
}  
}
```

```
void T() {  
    if (cout << "T" → FT' " << endl;  
    F();  
    Td();  
}
```

```
void Td() {  
    if (s[<count] == '*') {  
        count ++;  
        F();  
        Td();  
    }  
}
```

Output :-

$$E \rightarrow TE'$$

$$E' \rightarrow +TE'$$

$$E' \rightarrow \text{null}$$

$$T \rightarrow FT'$$

~~$$T' \rightarrow *FT$$~~

$$T' \rightarrow \text{null}$$

$$F \rightarrow id$$

$$F \rightarrow (E)$$

Thus "Recursion" is done.

Conclusion :- Thus we have created ~~program to~~ recursive descent parser.



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```
else {  
    if (count << "T" → null" << endl;  
}  
}  
  
void f() {  
    if (is_alpha (expr [count])) {  
        count ++;  
    } else if (expr [count] == 'C') {  
        count ++;  
        exit (0);  
    }  
    count ++;  
} else {  
    cout << "Rejected" << endl;  
    exit (0);  
}  
}
```

Conclusion :- Thus we have executed a program to implement Recursive Descent parser.

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Practical No. 7.

Aim :- Write program to implement shift
Reduced form.

S/W Required :- C++ compiler.

Program :-

```
#include <iostream.h>
int main
{
    clrscr();
    char str [20];
    char stack [20];
    int top = 0;
    cout << "Given grammar is : \n S ->
        aAB \ nA -> Aa/b \ nB -> d" << endl;
    cout << "Enter string" << endl;
    cin >> str;
    cout << "stack input buffer \t\t"
        "action" << endl;
    cout << "-----" << endl;
```



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stack [top] = e' \$';

top ++;

```
cout << "a\t\t\tbcde\$\\t shift "endl;
```

stack [top] = str [n];

top + f ;

```
cout << "a\t\tbcde\t shift" << endl;
```

$\text{stack}[\text{top}] = \text{str}[\text{k}]$;

{ if (stack[top] == 'd')

```
cout << "$ab\t\tbcde\t\tReduce"
           << endl;
```

~~stack~~ [top] = 'A';

top++;

```
cout << " $ abc \t \t cde $ \t \t shift "
<< endl;
```

~~stack [top] = 'b';~~

~~top++;~~

```
cout << "f\ab\f\cde\f\f\shift" endl;
```

stack [top] = 'c';

```
cout << " $a A B C \t \t de \$\t\t Reducé " << endl;
```

if { stack [top] == 'c') && (stack [top-1] == 'l') }

$S \rightarrow aABc$

$A \rightarrow Abc/bc$

$B \rightarrow a.$

Enter string

then $abbcde \xrightarrow{S \rightarrow aABc} abbcde \xrightarrow{A \rightarrow Abc/bc} bccde \xrightarrow{B \rightarrow a.} bccde \xrightarrow{S \rightarrow aABc} abbcde \xrightarrow{A \rightarrow Abc/bc} bccde \xrightarrow{B \rightarrow a.} bccde$

Stack	input buffer	Action
$\$$	$abbcde \& A/bc$	Shift
$\$a$	$bccde \$$	Shift
$\$ab$	$ccde \$$	Reduce
$\$aA$	$ccde \$$	Shift
$\$aAb$	$ccde \$$	Shift
$\$aAbc$	$ccde \$$	Reduce
$\$aA$	$ccde \$$	Shift
$\$aAd$	$cc\$$	Reduce
$\$aAB$	$c\$$	Shift
$\$aABc$	$\$$	Reduce
$\$$	$\$$	ACCEPTED

String is valid

above $\xrightarrow{S \rightarrow aABc} abbcde \xrightarrow{A \rightarrow Abc/bc} bccde \xrightarrow{B \rightarrow a.} bccde$

$(S = \{a, ab, abc, abc, b\})$ and $(S^* = \{a^n | n \in \mathbb{N}\})$



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$\text{top} = \text{top} - 2;$

$\text{cout} \ll " \$aA\backslash t\backslash t \text{de}\$ \backslash t\backslash t \text{ shift}" \ll \text{endl};$

$\text{top} ++;$

$\text{stack}[\text{top}] = 'd';$

$\text{cout} \ll " \$aAd\backslash t\backslash t c\$ \backslash t \text{+ Reduce}" \ll \text{endl};$

if {
 if ($\text{stack}[\text{top}] == 'd'$)

$\text{stack}[\text{top}] = 'B';$

$\text{cout} \ll " \$aAB\backslash t\backslash t e\$ \backslash t\backslash t \text{ shift}" \ll \text{endl};$

$\text{top} ++;$

$\text{stack}[\text{top}] = 'c';$

$\text{cout} \ll " \$aBe\backslash t\backslash t \$ \backslash t\backslash t \text{ Reduce}" \ll \text{endl};$

$\text{top} = \text{top} - 4;$

~~$\text{stack}[\text{top}] = 'S';$~~

$\text{cout} \ll " \$\$ \backslash t\backslash t \$ \backslash t\backslash t \text{ ACCEPT}" \ll \text{endl};$

}
 if {
 if ($\text{stack}[\text{top}] == 'S'$)

$\text{cout} \ll " \text{String is valid}" \ll \text{endl};$

else

{

$\text{cout} \ll " \text{string is not valid}" \ll \text{endl};$



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```
    }  
    getch();  
    return 0;  
}
```

Conclusion :-

In this way we implemented
~~program shift reduce parser.~~

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Practical No. 8.

Aim :- Write program to implement DFA that accept all string which follow the language $L = (aa)^k b^+$.

S/W Required :- C++ compiler.

Output :- ACCEPTED



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Practical No. 8.

Ques:- Write program to implement DFA
that accept all string which follow
the language $L = (aa)^* b^+$.

S/W Required :- C++ compiler.

Program :-

```
# include <iostream.h>
# include <string.h>
using namespace std;
int dfa = 0;
void state (char c)
{
    if (c == 'a')
        dfa = 1;
    else if (c == 'b')
        dfa = 3;
    else
        dfa = -1;
}
void state 1 (char c)
```

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```
if { c == 'a' )
    dfa = 2;
else if { c == 'b' )
    dfa = 4;
else { dfa = -1; }
```

void state 2 (char c)

```
{ if (c == 'b')
    dfa = 3;
else if (c == 'a')
    dfa = 1;
else {
```

```
} dfa = -1;
```

void state 3 (char c)

```
{ if (c == 'b')
    dfa = 3;
else if (c == 'a')
    dfa = 4;
}
```



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else {
} $dfa = -1;$

int is_accepted (char str [])

{ int i, len = strlen (str);
for (i=0; i<len; i++)

if ($dfa == 0$)

start (str[i]);

else if ($dfa == 1$)

state 1 = (str[i]);

else if ($dfa == 2$)

state 2 = str[i];

else if ($dfa == 3$)

state 3 = str[i];

else if ($dfa == 4$)

state 4 = str[i];

else

return 0;

}

if ($dfa == 3$)

return 1;

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```
else
    return 0;
}
int main()
{
    char str[] = "aaaaaa bbbb";
    if (isAccepted(str))
        cout << " ACCEPTED";
    else
        cout << " NOT ACCEPTED";
    return 0;
}
```

Conclusion:- Thus we write program to implement DFA that accept all strings which follow language $L = (aa)^* b^*$.

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Practical No. 3.

Aim :- Study practical on lex.yacc compiler introduction to LEX.

Lex (lexical analyzer generator) is a tool used to generate lexical analyzer. Lexical analysis is a process of converting input stream with tokens. It takes set of regular expression given as input in file & translates it to C. implementation which is stored in lex.yy.c file.

Structure of lex program.

/* Declaration */

/* Rule */

% %

/* Auxiliary function */

Declaration.

Declaration consist of two part auxiliary declaration & regular definition.



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Auxiliary declaration section contains optional global declaration will be copied directly to y.tab.c and are written in c and enclosed within Y. { and Y. }.

Example:-

```
% { #include <stdio.h> /* imports */  
int YYerror (char *); /* function prototype */  
int num;  
%}.
```

Rule :-

Rules contain two parts : Pattern to be matched and corresponding actions.

/* Decl Declaration */

% %
{ numbers }

[a-zA-Z] +

+

% %

%.



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When a number is sent it will return the number detected in input character. When number is sent it will return the number detected in input characters.

When text is sent, suppose word it will perform an action for printing Hello, world !.

For the rest of input, it will call yy error function.

Auxiliary Function

You generate C code for rules & place in function. We can also add our code to len file.

/* Declaration */

%%

/* Rule */

%%

int main() { yy len(); return 0; }.



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int yywrap { return 1; }.

Function and variable starting with yy are predefined function and variables in lex.

~~YYVAL~~ yyval is global variable that is used to pass schematic values associated with token from lexer to parser.

YYtut for number is 12.

YYlex() is entry point for lex. It reads input stream and generate tokens. It is defined in lex.yy.c file but it needs to be manually called by user.

~~YYwrap()~~ YYwrap() is called by yylex() when the input is exhausted. If 0 is seen yylex() will keep reading from pointer yyin. If 1 is returned then scanning process is terminated. It is mandatory to define in lex file.

YY parse() it calls YYlex() for lexical analysis, it returns 0 if input parse according to rule else 0.





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⇒ Executable

Introduction to YACC.

YACC is tool used to generate Parser. A Parser is program that check whether given input meet a grammatical specification. YACC translate a given context free grammar in Y. file. & convert it to C implementation by creating y.tabc & y.tab.c file.

Structure of YACC program.

Similar to LEX files the YACC files contain three section : Declaration, Rules & auxiliary function.

Declaration:

~~YACC~~ declaration contain two parts auxiliary declaration & YACC declaration. Auxiliary declaration is already defined under LEX structure so we are not going to beat around the bush.

Let's just declare it.



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```
% {#include <stdio.h>} /* import */  
#include <stdlib.h>  
#include <ctype.h>  
int yylen(void); /* function prototype */  
int yyerror(const char *);  
%}
```

YACC declaration consist of token . we can declare token using %. token <token.name>

%. token PLUS_MINUS

%. token BYE

%. left '+' '-'

%. left '*' ','

Rule

YACC rule use context-free grammar describe by Backus Naur form (BNF).

We will be only discussing enough as we need feel free to learn more here. Rules consist of two-part production consist of head & Body

for example

expr : expr expr '+' expr.



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LHS side of : i.e. expr is production head and right side expr^1 is called production body. Head is always a non-terminal meaning they are replaced by a group of terminal symbol according to production rule. Terminal symbol are token.

Auxiliary function :-

Auxiliary function are similar to LEX auxiliary function. What we define here will be added to $y.tab.c$. Compulsory definition contain main(), YYlex() & YYerror().

~~int main () {
while (1) YY parse ();
Yacc. d Yaccfile. }~~

Yaccfile.1 → YACC → $y.tab.c \rightarrow$ GCC

→ executable.

Conclusion :-

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Compiler.

Thus we have studied LEX & YACC

Practical No. 10

Aim:- Write for three address code generation -

S/W required :- C++ compiler.

Results :-

1. assignment

2. arithmetic

3. relational

4. exit

Enter choice = 1.

Enter expression with assignment operator : a = b

Three address code : temp = b .

a = temp

1. assignment

2. arithmetic

3. relational

4. exit

Enter choice : 4

Output is as follows



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Practical No. 10

Aim :- Write a program for three address code generation.

S/W :- C++ compiler.

Program :-

```
#include <stdio.h>
#include <string.h>
void pm();
void plus();
void minus();
int i, ch, j, l, aaddr = 100;
char ex[10], exp[10], exp1[10], exp2[10],
    id1[5], op[5], id2[5];
int main () {
    clrscr ();
    while (1) {
        printf ("1. assignment \n 2. arithmetic\n 3 relational \n 4. Exit \n Enter choice : ");
        scanf ("%d", &ch);
        switch (ch) {
            case 1:
```



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Priority ("\\nEnter expression with
assignment operator : ");

scanf ("%s", exp);

I = strlen (exp);

exp [0] = '0';

i = 0;

while (exp[i] = I = '=') { i++; }.

strcat (exp2, exp, i);

strrev (exp);

exp[0] = '0';

strcat (exp1, exp, 1 - (i+1));

strrev (exp1);

printf ("Three address code:\\n exp
= %s \\n %s);

break;

case 2:

printf ("Enter the expression with arithm exp
operator : ");

scanf ("%s", ex);

strcpy (exp, ex)

I = strlen (exp);



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exp[0] = '10';

for { i=0; i<1; i++)

if { exp[i] == '+' || exp[i] == '-')

if { exp[i+2] == '/' || exp[i+2] == '*')

pm();

break;

else {

} plus(); break; }

else if { exp[i] == '/' || exp[i] == '*')

div();

break;

break;

void div cl {

strcat(exp1, exp, i+2);



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printf ("Three address code : \n temp = %s
 $\text{temp1} = \text{temp1.C \% } \backslash n, \text{exp1, exp}[\text{it}+2])$

void plus()

```
strcat(exp1, exp, i+2);
printf("Three address code: \n temp = %5
\n temp1 = temp % C % C \n ", exp1, exp
(i+2). exp(i+3));
{
```

Conclusion :-

Thus, we write a program for three address code generation.

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