NATIONAL INSTITUTE OF TECHNOLOGY SILCHAR

Cachar, Assam

B.Tech. VIth Sem

Subject Code: CS-316

Subject Name: Compiler Design Lab

Submitted By:

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Branch : CSE – B

1. Write a YACC program to check whether a given string is Palindrome or not.

➔ **CODE:**

LEX (lab7_1.l)

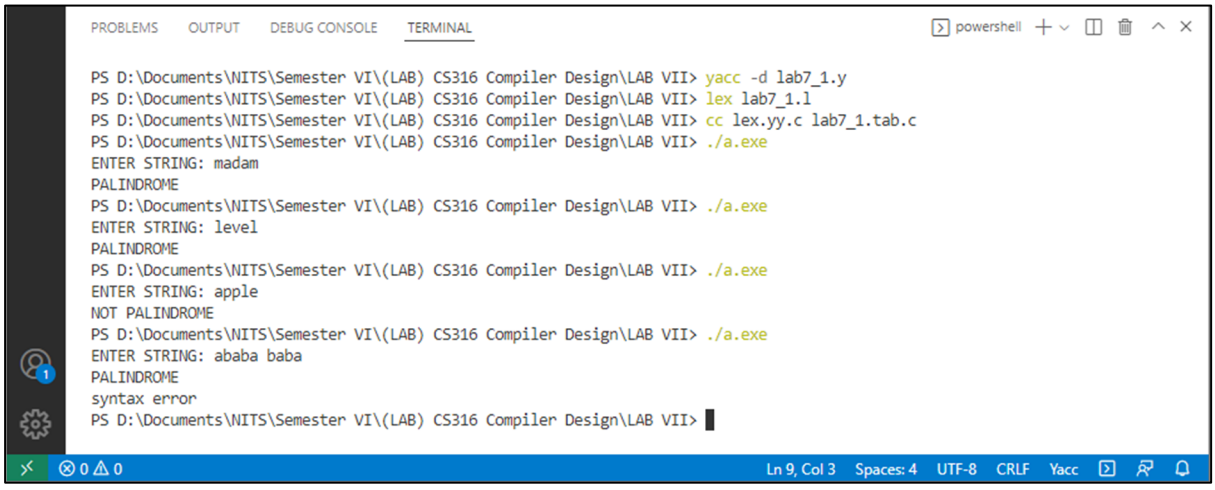
```
%{
    #include "lab7_1.tab.h"
%}

%%
[a-zA-Z]+ {yylval.ff = yytext; return STR;}
[-+()*/] {return yytext [0];}
[ \t\n_] {;}
%%

int yywrap () {
    return 1;
}
```

YACC (lab7_1.y)

```
%{
    #include <stdio.h>
    #include <stdlib.h>
    #include <string.h>

    extern int yylex ();
    void yyerror (char *msg);
    int flag, ii, kk = 0;
%}

%union {
    char* ff;
}
%token <ff> STR
%type <ff> EE

%%
start: EE {
    flag = 0;
    kk = strlen ($1) - 1;
    if (kk % 2 == 0) {
        for (ii = 0; ii <= kk / 2; ++ii) {
            if (!($1 [ii] == $1 [kk - ii])) {
                flag = 1;
            }
        }
        if (flag == 1)
```

```
            printf ("NOT PALINDROME\n");
        else
            printf ("PALINDROME\n");
    }
    else {
        for (ii = 0; ii < kk / 2; ++ii) {
            if (!($1 [ii] == $1 [kk - ii])) {
                flag = 1;
            }
        }
        if (flag == 1)
            printf ("NOT PALINDROME\n");
        else
            printf ("PALINDROME\n");
    }
}
;
EE: STR {$$ = $1;}
;
%%

void yyerror (char *msg) {
    fprintf (stderr, "%s\n", msg);
    exit (1);
}

int main () {
    printf ("ENTER STRING: ");
    yyparse ();
    return 0;
}
```

OUTPUT:



2. Write a YACC program which accepts strings that start or end with 0 or 1.

➔ **CODE:**

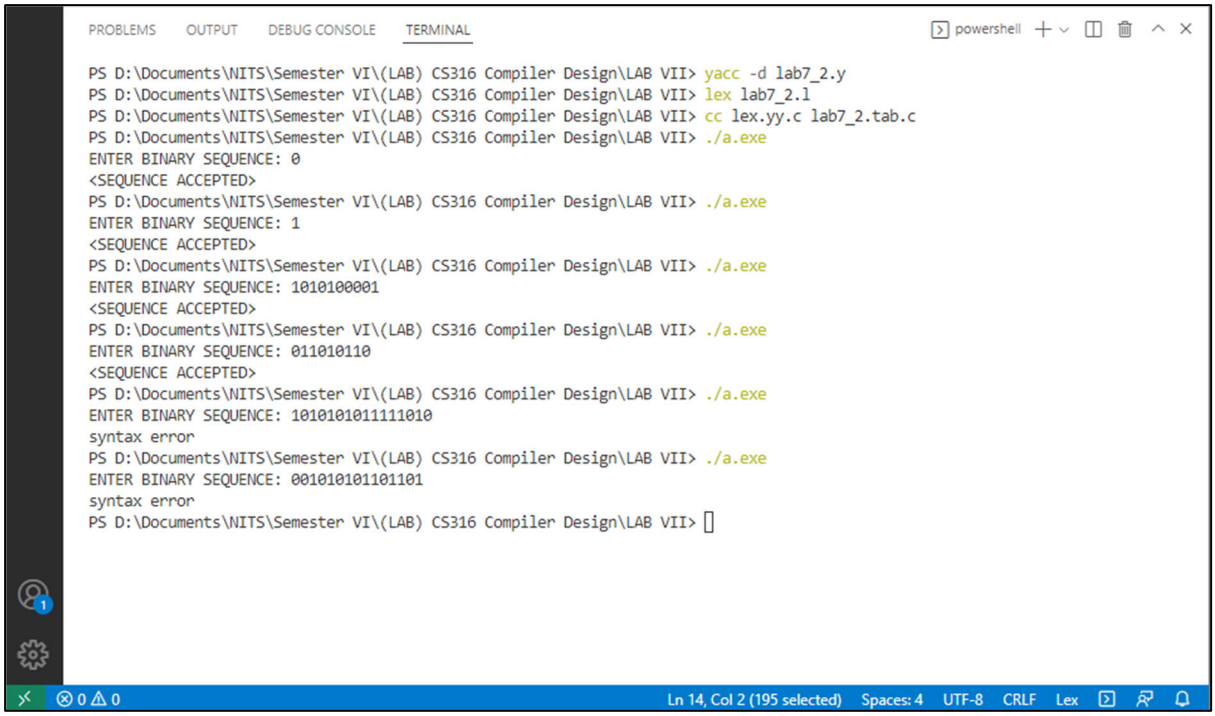
LEX (lab6_7.l)

```
%{
    #include "lab7_2.tab.h"
    extern int yylval;
%}

%%
0 {yylval = 0; return ZERO;}
1 {yylval = 1; return ONE;}
.|\n {yylval = 2; return 0;}
%%

int yywrap () {
    return 1;
}
```

YACC (lab7_1.y)

```
%{
    #include <stdio.h>
    #include <stdlib.h>
%}

%token ZERO ONE

%%
start: ACCEPT {printf ("<SEQUENCE ACCEPTED>\n");};
ACCEPT: ZERONE | ZERO ZZ | ONE OO;
ZZ: ZERONE ZZ | ZERO;
OO: ZERONE OO | ONE;
ZERONE: ZERO | ONE;
%%

int yyerror (char *msg) {
    fprintf (stderr, "%s\n", msg);
    exit (1);
}

int main () {
    printf ("ENTER BINARY SEQUENCE: ");
    yyparse ();
    return 0;
}
```

OUTPUT:


PROBLEMS
OUTPUT
DEBUG CONSOLE
TERMINAL
powershell
PS D:\Documents\NITS\Semester VI\(LAB) CS316 Compiler Design\LAB VII> yacc -d lab7_2.y
PS D:\Documents\NITS\Semester VI\(LAB) CS316 Compiler Design\LAB VII> lex lab7_2.l
PS D:\Documents\NITS\Semester VI\(LAB) CS316 Compiler Design\LAB VII> cc lex.yy.c lab7_2.tab.c
PS D:\Documents\NITS\Semester VI\(LAB) CS316 Compiler Design\LAB VII> ./a.exe
ENTER BINARY SEQUENCE: 0
<SEQUENCE ACCEPTED>
PS D:\Documents\NITS\Semester VI\(LAB) CS316 Compiler Design\LAB VII> ./a.exe
ENTER BINARY SEQUENCE: 1
<SEQUENCE ACCEPTED>
PS D:\Documents\NITS\Semester VI\(LAB) CS316 Compiler Design\LAB VII> ./a.exe
ENTER BINARY SEQUENCE: 1010100001
<SEQUENCE ACCEPTED>
PS D:\Documents\NITS\Semester VI\(LAB) CS316 Compiler Design\LAB VII> ./a.exe
ENTER BINARY SEQUENCE: 011010110
<SEQUENCE ACCEPTED>
PS D:\Documents\NITS\Semester VI\(LAB) CS316 Compiler Design\LAB VII> ./a.exe
ENTER BINARY SEQUENCE: 1010101011111010
syntax error
PS D:\Documents\NITS\Semester VI\(LAB) CS316 Compiler Design\LAB VII> ./a.exe
ENTER BINARY SEQUENCE: 001010101101101
syntax error
PS D:\Documents\NITS\Semester VI\(LAB) CS316 Compiler Design\LAB VII>
1
0 0
Ln 14, Col 2 (195 selected)
Spaces: 4
UTF-8
CRLF
Lex