

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 ("it is not a palindrome");
    else
        printf ("it is a palindrome");
}
else {
    for (ii = 0; ii < kk / 2; ++ii) {
        if (!($1 [ii] == $1 [kk - ii])) {
            flag = 1;
        }
    }
    if (flag == 1)
        printf ("It is a palindrome");
    else
        printf ("it is not a palindrome");
}
}
;
EE: STR {$$ = $1;}
;
%%

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

int main () {
    printf ("write something\n");
    yyparse ();
    return 0;
}

```

OUTPUT:

```

PS D:\Documents\NITS\Semester VI\LAB CS316 Compiler Design\LAB VII> yacc -d lab7_1.y
PS D:\Documents\NITS\Semester VI\LAB CS316 Compiler Design\LAB VII> lex lab7_1.l
PS D:\Documents\NITS\Semester VI\LAB CS316 Compiler Design\LAB VII> cc lex.yy.c lab7_1.tab.c
PS D:\Documents\NITS\Semester VI\LAB CS316 Compiler Design\LAB VII> ./a.exe
ENTER STRING: madam
PALINDROME
PS D:\Documents\NITS\Semester VI\LAB CS316 Compiler Design\LAB VII> ./a.exe
ENTER STRING: level
PALINDROME
PS D:\Documents\NITS\Semester VI\LAB CS316 Compiler Design\LAB VII> ./a.exe
ENTER STRING: apple
NOT PALINDROME
PS D:\Documents\NITS\Semester VI\LAB CS316 Compiler Design\LAB VII> ./a.exe
ENTER STRING: ababa baba
PALINDROME
syntax error
PS D:\Documents\NITS\Semester VI\LAB CS316 Compiler Design\LAB VII>

```

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 yyval;
}%

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

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

YACC (lab7_1.y)

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

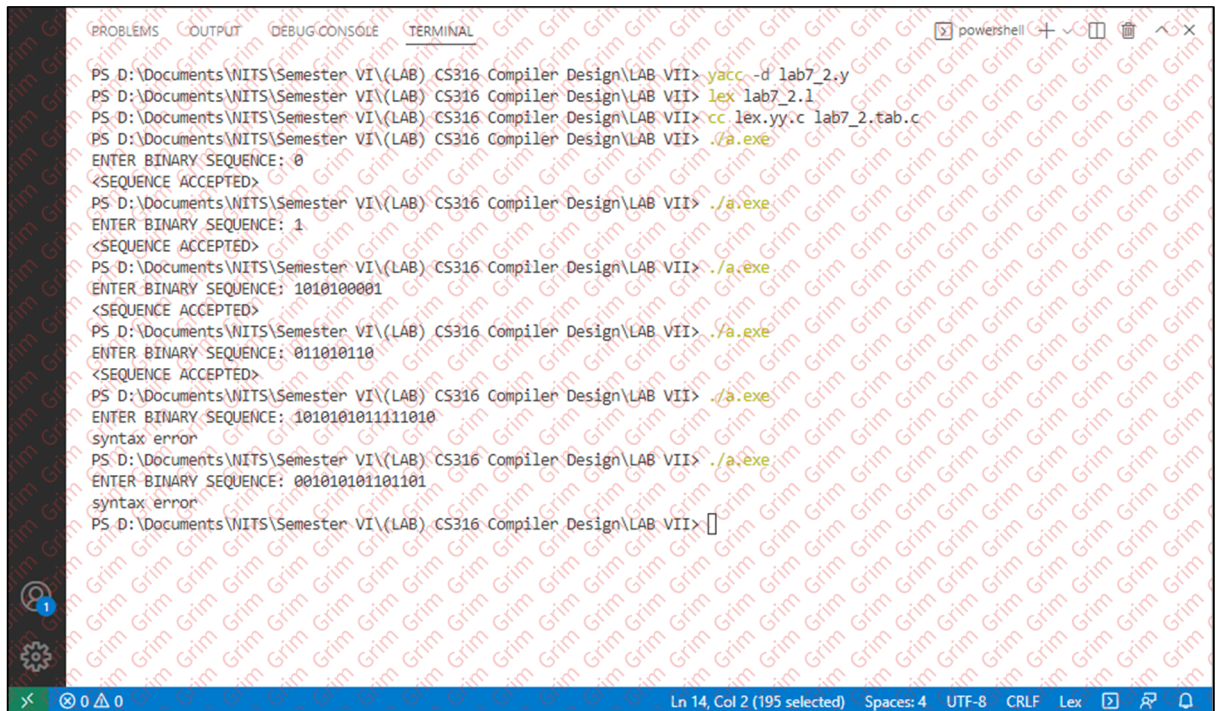
%token ZERO ONE

%%
start: ACCEPT {printf ("it is a valid sequence");};
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 ("write something\\n");
    yyparse ();
    return 0;
}
```

OUTPUT:



```
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
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: 10101011111010
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> 
```