

NATIONAL INSTITUTE OF TECHNOLOGY SILCHAR

Cachar, Assam

B.Tech. VIth Sem

Subject Code: CS-316

Subject Name: Compiler Design Lab

Submitted By:

Name : Subhojit Ghimire
Sch. Id. : 1912160
Branch : CSE – B

1. Write an introduction on “lex”.

→ Lex is a program that generates lexical analyser. It is used with YACC parser generator. The lexical analyser is a program that transforms an input stream into a sequence of tokens. The lexical analyser is a program that transforms an input stream into a sequence of tokens.

Firstly, lexical analyser creates a program ‘lex.l’ in the Lex language. Then Lex compiler runs the ‘lex.l’ program and produces a C program ‘lex.yy.c’. Finally, C compiler runs the ‘lex.yy.c’ program and produces an object program ‘a.out’. ‘a.out’ is lexical analyser that transforms an input stream into a sequence of tokens.

2. Write a lex program to recognize an alphabet.

→ AIM: TO WRITE A LEX PROGRAM TO RECOGNISE AN ALPHABET

CODE:

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

%%
[a-zA-Z] {printf("<ALPHABET RECOGNISED>");}
[^a-zA-Z\n] {printf("<NOT AN ALPHABET>");}
%%

int yywrap(){
    return 1;
}

main(){
    printf ("ENTER A CHARACTER: \n");
    yylex();
}
```

CODE SCREENSHOT:

```

1  ${
2      #include<stdio.h>
3
4  %%"
5  [a-zA-Z] {printf("<ALPHABET RECOGNISED>");}
6  [^a-zA-Z\n] {printf("<NOT AN ALPHABET>");}
7  %%
8
9  int yywrap(){
10     return 1;
11 }
12
13 main(){
14     printf ("ENTER A CHARACTER: \n");
15     yylex();
16 }
17

```

OUTPUT:

```

ENTER A CHARACTER:
A
<ALPHABET RECOGNISED>
$
<NOT AN ALPHABET>
a
<ALPHABET RECOGNISED>
abcde
<ALPHABET RECOGNISED> <ALPHABET RECOGNISED> <ALPHABET RECOGNISED> <ALPHABET RECOGNISED>
ab$!@
<ALPHABET RECOGNISED> <ALPHABET RECOGNISED> <NOT AN ALPHABET> <NOT AN ALPHABET> <NOT AN ALPHABET>
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<ALPHABET RECOGNISED> <NOT AN ALPHABET> <NOT AN ALPHABET> <NOT AN ALPHABET> <ALPHABET RECOGNISED>
-
```