Application of Finite Automata:

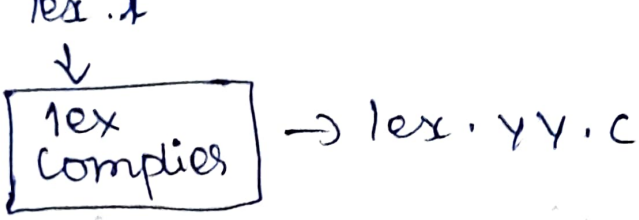
Finite Automata is applied in various sectors including compiler construction and
- lexical analysis
- Text processing
- Pattern matching
- Artificial Intelligence.
- Machine learning
- network protocols.
- Data bases.

LEX Tool:-

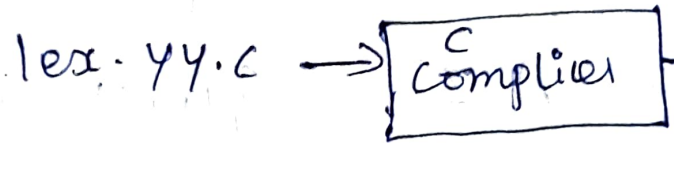
→ Its main Job is to beat I/P an I/P stream into the token.

→ lex is a tool for automatically generating a lexer.

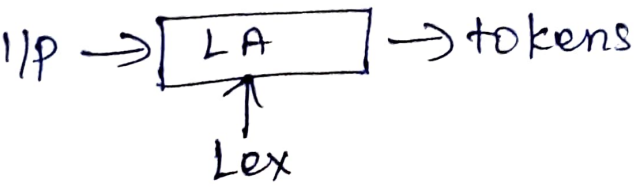
Step 1: lex same prog



Step 2:



Step 3: I/P Stream → a.out → seq of tokens



Structure of lex program:-

{ declaration } → Declare the Variables.

%%

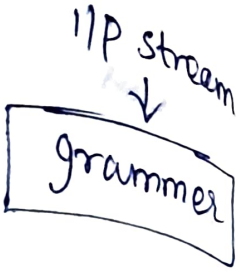
{ translation rules } → have the pattern { Action }.

%%

{ auxilary functions } ⇒ funs can be complied separately.

Ex: lex program:

→ program to count the no. of vowels & constants in a given grammer.




```
%{ #include <stdio.h>
   int vowels=0;
   int cons =0;
%}
%%
   [aeiou AEIOU] {vowels ++;}
   [a-z A-Z]     {const ++;}
%%
int yywrap()
{ return1;
}
main() {
pf ("Enter the string at End press ^d \n");
yy lex (); → lex tool.
pf ("no. of vowels = %d \n
    no. of constants = %d \n",
    vowels, cons );
}
```