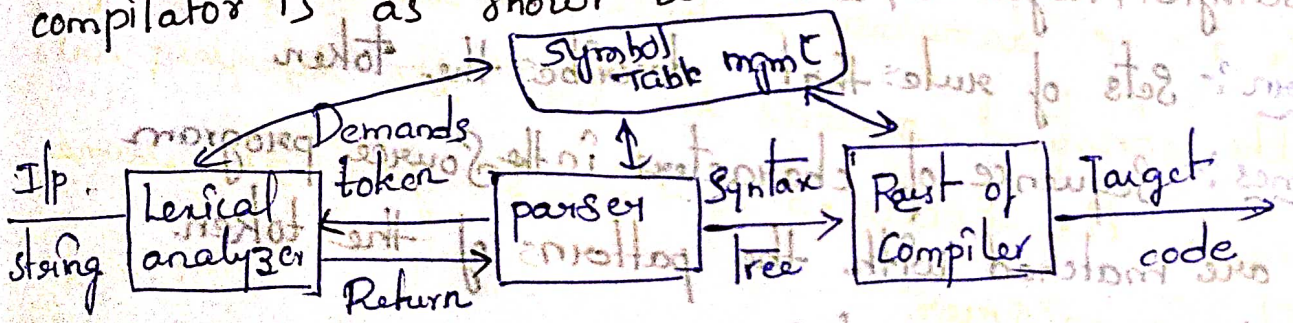
recovery.

Role of lexical analyzer:-

Lexical analyzer is the first phase of compiler.
The lexical analyzer reads the ilp source program from left to right one character at a time & generates the sequence of tokens.

* Each token is a single logical choose unit such as identifier ; keyword, operators & punctuation marks. and so on.
* The parser to determine the syntax of the source program, we can use these tokens.

The role of lexical analyzer in the process of compilator is as shown below:



Rule of lexical analyzer.

As the lexical analyzer scans the source program to recognise the tokens it is also called as Scanner.
* Apart from token identification, lexical analyzer also performs following functions. Ib.

Functions of lexical analyzer:-

* It produces stream of tokens
* It eliminates blanks & comments
* It generates symbol table which stores the information.

about identifier, constants encountered in the i/p.
* It keeps track of line numbers
* It reports the Error Encountered while generating the tokens
* The lexical analyzer works in 2 phases.
In 1st phase it performs scan & in the 2nd phase it does lexical analysis.
Means it generates the series of tokens.

Token, pattern, lexems :- terminology
Let us learn some ~~technologies~~ which are frequently used when we talk about the activity of lexical analysis

Tokens :-
It describes the class or category of i/p string.
Ex: identifier, keywords, constants are called tokens

pattern :- Sets of rules that describes the token

Lexemes :- Sequence of characters in the Source program that are matched with the patterns of the token.
Ex:- int i, num, ans, choice.

Let us token one Example of programing statement to clearly understand these terms per if (a<b).
Here "if", "(", "a", "<", "b", ")" are all lexemes.
* If a keyboard word, '(' is opening paranthesis, "a" is identifier "<" is a operator & soon.

Now to define the identifier pattern could be
1. identifier is a collection of letters
2. identifier is a collection of letters & alpha numeric character

& identifiers beginning character should be necessary a letter.

3. A compiler scans the source program & produces sequence of tokens therefore lexical analysis is also called as Scanner.

For Example:-

The piece of source code is given below

```
int MAX(int a, int b)
{
if (a>b)
return a;
Else
return b;
}
```

Lexeme	Token
int	keyword
MAX	identifier
(	operator
int	Keyword
a	identifier
,	operator
int	Keyword
b	identifier
)	operator
{	operator
;	operator

The blank & new line characters can be ignored these stream of tokens will be given to syntax analyzer.