6th Assignment

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TE-A-19

Aim : Design a lex prog to count no of words, lines and char of given i/p file.

Problem Statement : WAP to use lex specification to implement lexical analysis phase of a compiler to count no of words lines and char of given i/p file.

Pre requisites : Lex Basics

S/W requirements : O/S Ubuntu Kylin
S/W Lex tool (flex)

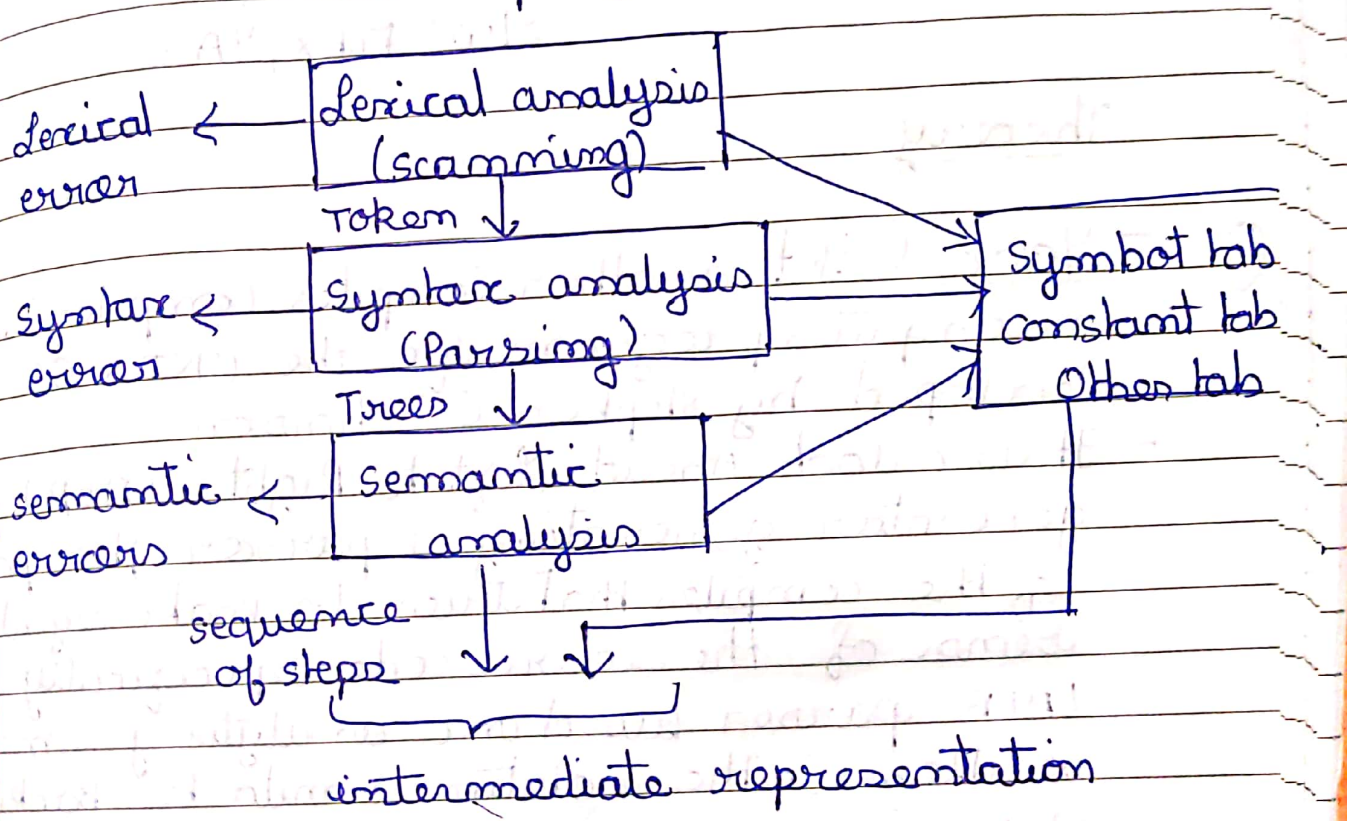
Objective : To understand Lex Concept
To implement lex prog for no of count
To study about lex and java
To know imp about lexical analyzer

Theory

How i/p matched

- when the generated scanner is run, it analyzes its i/p looking for strings which match any of its pattern
- If it finds more than one match it takes the one matching the most text
- If it finds 2 or more matchs of the same len the rules listed first in the ~~first~~ flex i/p file is chosen

- Once the match is determined the text corresponding to the match is made available in the global character ptr "yytext" and its length in the global integer "yyleng".
- The action corresponding to the matched pattern is then executed and then the remaining i/p is scanned for another match
- If no match is found then the default rule is executed: the next char in i/p is considered matched and copied to std o/p



Conclusion

Thus, we have studied lexical analyzer and implemented an application for lexical analyzer to count total number of words chas and line etc.

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ASSIGNMENT 6

Write a program using Lex specifications to implement lexical analysis phase of compiler to count no. of words, lines and characters of given input file.

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/*count.l program*/

```
%{
        #include<stdio.h>
        int wc=0,nc=0,lc=0,ch=0,dc=0;
%}

letter [A-Za-z]
digit [0-9]

%%

{digit}*                {nc++; dc=dc+yyleng;}

{letter}*               {wc++; ch=ch+yyleng;}

\n                      {lc++;}


%%

int main()
{
        FILE *fp;
        fp=fopen("input.txt","r");
        yyin=fp;
        yylex();
        printf("\nWord Count=%d\n",wc);
        printf("Number Count=%d\n",nc);
        printf("Line Count=%d\n",lc);
        printf("Character Count=%d\n",ch);
        printf("Digit Count=%d\n",dc);
        fclose(fp);
        return 0;
}
```

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INPUT:

/*input.txt*/

```
HELLO EVERYONE
MY SELF ANKITA BONDE  FROM GESCOE
My RollNo is 19
```

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OUTPUT:

```
ankita@ankita-1011PX:~/Desktop/ankita_SPOS/Turn1/A3$   lex count.l
ankita@ankita-1011PX:~/Desktop/ankita_SPOS/Turn1/A3$   gcc lex.yy.c -
ankita@ankita-1011PX:~/Desktop/ankita_SPOS/Turn1/A3$   ./a.out

Word Count=11
Number Count=1
Line Count=3
Character Count=49
Digit Count=2
**********************************************************************************
```