04-10-2021 COMPILER DESIGN

OBSERVATION - 05

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LEX PROGRAM

1. Reading input from a file

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

%%

%%

main(int argc, char* argv[])
{
   if(argc > 1)
   {
      FILE *fp = fopen(argv[1], "r");
      if(fp)
         yyin = fp;
   }
   yylex();
   return 1;
}
```

Output:

```
>lex filereading.l
>gcc lex.yy.c
> a.exe inp.txt
hi
hello
how are you
i am fine
```

2. Reading and writing into file:

Replace the characters with another character using file:

```
%option noyywrap
%{
  #include <stdio.h>
  #include <string.h>
  char replace_with[] = "Best";
  char replace[] = "A";
%}
%%
[a-zA-Z]+
{
  if (strcmp(yytext, replace) == 0)
    fprintf(yyout, "%s", replace_with);
  else
    fprintf(yyout, "%s", yytext);
}
  fprintf(yyout, "%s", yytext);
%%
//int yywrap() { return 1; }
int main()
{
  extern FILE *yyin, *yyout;
  yyin = fopen("inp1.txt", "r");
  yyout = fopen("out1.txt", "w");
  yylex();
  return 0;
}
```

Inp1.txt

output:

```
>lex replace.l
>gcc lex.yy.c
>a.exe Inp1.txt
```

out1.txt

Best Art in the world
Best price to sell your product
classical Music is Best Relaxing
Best football player plays well

3. yyless(k) - Returns the first k characters in yytext

```
%option noyywrap
%{
   #include<stdio.h>
%}
%%
[a-z]+{
   printf("\nLower = "); ECHO;
   yyless(3);
   printf("\nThe word after yyless() = "); ECHO;
}
[a-zA-Z]+{
   printf("\nMixed letters is = "); ECHO;
}
%%
int main()
{
  yylex();
  return 0;
}
```

Output:

concatenation two string

Lower = concatenation

The word after yyless() = con

Lower = catenation

The word after yyless() = cat

Lower = enation

The word after yyless() = ena

Lower = tion

The word after yyless() = tio

Lower = n

The word after yyless() = nt

Lower = wo

The word after yyless() = wo

lower = string

The word after yyless() = str

lower = ing

The word after yyless() = ing

4. ymore() - Returns the next token

```
%{
%}
%%
[a-zJ+ {
    printf ("\nLowercase Letter = "); ECHO;
    printf ("\nstart of 1st yymore\n");
    yymore();
    Printf ("\nEnd of 1st yymore\n");
}
```

```
[A-Z]+ {
    printf("\nUppercase letter = "); ECHO;
    printf("\nstart of 2nd yymore\n");
    yymore();
    printf("\nEnd of 2nd yymore\n");
}
%%
main()
{
    yylex();
}
```

Output:

GOOD EXAMple

Uppercase Letter = G
start of 2nd yymore

End of 2nd yymore

Lowercase letter = GOO
start of 1st yymore

End of 1st yymore

Uppercase letter = GOOD
Start of 2nd yymore

End of 2nd yymore
GOOD
Uppercase letter = EXAM
Start of 2nd yymore

End of 2nd yymore

Lowercase letter = EXAMple
Start of 1st yymore

End of 1st yymore
EXAMple