CS 324Compiler Design Lab

short line

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# Experiment 1

## Write a Lex program to count number of lexemes

### Source Code:

| %{  *// Program to find number of*  *// lexemes*  **int** n\_total = 0;  %}  keywords "while"|"if"|"else"|"int"|"float"  id [a-zA-Z\_][a-zA-Z0-9\_]\*  operators "<="|"=="|"="|"++"|"-"|"\*"|"+"  seperators [(){}|, ;]  floats [0-9]\*"."[0-9]+  integers [0-9]+  %%  {keywords} {n\_total++;};  {id} {n\_total++;};  {operators} {n\_total++;};  {seperators} {n\_total++;};  {floats} {n\_total++;};  {integers} {n\_total++;};  \n {return 0;}  . ;  %%  **int** main() {  yylex();  printf("Total no. of lexemes = %d\n", n\_total);  }  **int** yywrap(**void**)  {  return 0;  } |
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### Compiling and running the above lex code:

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# Experiment 2

## Write a Lex program to count the total number of digits, number, words, operators, command lines, spaces, etc.

### Source Code:

| %{  *// Program to find number of*  *// digit, number, words, operators, command lines, spaces, etc.*  **int** nids = 0, nkws = 0, nops = 0, nfls = 0, nsep = 0, nint = 0, n\_total = 0;  %}  keywords "while"|"if"|"else"|"int"|"float"  id [a-zA-Z\_][a-zA-Z0-9\_]\*  operators "<="|"=="|"="|"++"|"-"|"\*"|"+"  seperators [(){}|, ;]  floats [0-9]\*"."[0-9]+  integers [0-9]+  %%  {keywords} {nkws++; n\_total++;};  {id} {nids++; n\_total++;};  {operators} {nops++; n\_total++;};  {seperators} {nsep++; n\_total++;};  {floats} {nfls++; n\_total++;};  {integers} {nint++; n\_total++;};  \n {return 0;}  . ;  %%  **int** main() {  yylex();  printf("\nNo. of identifiers = %d\n", nids);  printf("No. of keywords = %d\n", nkws);  printf("No. of operators = %d\n", nops);  printf("No. of seperators = %d\n", nsep);  printf("No. of floats = %d\n", nfls);  printf("No. of integers = %d\n", nint);  printf("Total no. of lexemes = %d\n", n\_total);  }  **int** yywrap(**void**)  {  return 0;  } |
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### Compiling and running the above lex code:

# Experiment 3

## Write a LEX code to identify if a string is a valid URL or not.

### Source code:

| %{  *// Program to check if given input*  *// is a valid URL or not*  %}  protocol "http"|"https"|"ftp"  domain "com"|"in"|"org"|"edu"  domain\_name [a-zA-Z0-9]+  url ({protocol}:\/\/"www"\.{domain\_name}\.{domain})  %%  {url} {printf("Valid URL\n");};  .+ {printf("invalid URL\n");};  %%  **int** main() {  printf("Enter a url: ");  yylex();  }  **int** yywrap(**void**)  {  return 0;  } |
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### Compiling and running the above lex code:

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