**SSN COLLEGE OF ENGINEERING**

**DEPARTMENT OF COMPUTER SCIENCE**

**UCS1602 – COMPILER DESIGN**

DATE: 16-02-2021

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CLASS AND SEC : CSE-B

**ASSIGNMENT -2 :** [**Lexical Analyzer using LEX Tool**](https://lms.ssn.edu.in/mod/assign/view.php?id=102542)

**FILES:**

* + Assign1.l
  + Text.txt

**PROGRAM:**

Assign1.l:

%{

#include <stdio.h>

#include <string.h>

%}

pre\_process ^#(.)\*

line\_comment \/\/(.)\*

multi\_comment \/\\*(.|\n)\*\\*\/

keyword [ auto|break|case|char|const|continue|default|do|double|else|enum|extern|float|for|goto|"if"|"int"|long|register|return|short|signed|sizeof|static|struct|switch|typedef|union|unsigned|void|volatile|while ]

id [a-zA-Z\_]([a-zA-Z0-9\_])\*

function [a-zA-Z\_]([a-zA-Z0-9\_])\*{id}[(].\*[)]

realConst (\+|\-)?[1-9][0-9]\*\.[0-9]+

intConst (\+|\-)?[1-9][0-9]\*

charConst \'[a-zA-Z]\'

stringConst \"[a-z A-Z]\*\"

assignOp =

bitwiseOp "^"|"&"|"|"|"<<"|">>"

arithAssignOp "+="|"-="|"\*="|"\="|"%="

relOp <|<=|>|>=|=|!=

arithOp "+"|"-"|"\*"|"/"|"%"

logicOp &&|\|\||!

separators ";"|","|"."|"["|"]"|"("|")"|"{"|"}"|"["|"]"

/\*printf(" | %25s | %-25s |\n", yytext, "Function call");\*/

%%

[ ]

{keyword} {printf(" %25s -> %-25s \n", yytext, "Keyword");}

{function} {printf(" %25s -> %-25s \n", yytext, "Function call");}

{id} {printf(" %25s -> %-25s \n", yytext, "Identifier");}

{realConst} {printf(" %25s -> %-25s \n", yytext, "Real const");}

{intConst} {printf(" %25s -> %-25s \n", yytext, "Integer Constant");}

{bitwiseOp} {printf(" %25s -> %-25s \n", yytext, "Bitwise Operator");}

{assignOp} {printf(" %25s -> %-25s \n", yytext, "Assignment Operator");}

{arithAssignOp} {printf(" %25s ->%-25s \n", yytext, "Arith Assign Operator");}

{arithOp} {printf(" %25s -> %-25s \n", yytext, "Arithmetic Operator");}

{logicOp} {printf(" %25s -> %-25s \n", yytext, "Logical Operator");}

{relOp} {printf(" %25s -> %-25s \n", yytext, "Relational Operator");}

{charConst} {printf(" %25s -> %-25s \n", yytext, "Character Constant");}

{stringConst} {printf(" %25s -> %-25s \n", yytext, "String Constant");}

{separators} {printf(" %25s -> %-25s \n", yytext, "Special character");}

{pre\_process} {printf(" %25s -> %-25s \n", yytext, "Preprocessor Directive");}

{line\_comment} {printf(" %25s -> %-25s \n", yytext, "Single Line comment");}

{multi\_comment} {

char \*lines = strtok(yytext, "\n");

while(lines){

printf(" %25s ", lines);

lines = strtok(NULL, "\n");

printf("%-25s \n",(lines!=NULL)?" ": "Multiline Comment");}

}

.|\n {}

%%

int yywrap(void){}

int main(int argc, char \*\*argv)

{

if(argc != 2){

fprintf(stderr,"Please Enter file as second argument!\n");

return 1;

}

yyin = fopen(argv[1], "rt");

if(yyin == NULL){

fprintf(stderr,"File not found!\n");

return 1;

}

yylex(); }

text.txt:

#include <stdio.h>

//single line comment

main() {

int a = 10,b = -20;

float f = -10.23, g = 6.89;

char c = 'a';

char arr[] = "abcd";

/\*

Multiline comment

in the source file

to test the code

\*/

if ( a > b )

printf("a is greater");

else

printf("b is greater");

a += 5;

f >> 2;

}

**OUTPUT:**



