**CSA1465 – COMPILER DESIGN DAY 3 PROGRAMS**

**QUE 1**

**CODE:**

%{

int nchar, nword, nline;

%}

%%

\n { nline++; nchar++; }

[^ \t\n]+ { nword++, nchar += yyleng; }

. { nchar++; }

%%

int yywrap(void) {

return 1;

}

int main(int argc, char \*argv[]) {

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

yylex();

printf("Number of characters = %d\n", nchar);

printf("Number of words = %d\n", nword);

printf("Number of lines = %d\n", nline);

fclose(yyin);

}

**OUTPUT:**

**QUE 2**

**CODE:**

digit [0-9]

%{

int cons=0;

%}

%%

{digit}+ { cons++; printf("%s is a constant\n", yytext); }

.|\n { }

%%

int yywrap(void) {

return 1; }

int main(void)

{

FILE \*f;

char file[10];

printf("Enter File Name : ");

scanf("%s",file);

f = fopen(file,"r");

yyin = f;

yylex();

printf("Number of Constants : %d\n", cons);

fclose(yyin);

}

**OUTPUT:**

**QUE 3**

**CODE:**

%{

#include <stdio.h>

int nmacro = 0;

int nheader = 0;

%}

%%

^#define { nmacro++; }

^#include { nheader++; }

.|\n { /\* Do nothing \*/ }

%%

extern FILE\* yyin;

int yylex(void);

int yywrap(void) {

return 1;

}

int main(int argc, char \*argv[]) {

FILE\* yyin = fopen(argv[1], "r");

if (!yyin) {

fprintf(stderr, "Error opening file: %s\n", argv[1]);

return 1;

}

yylex();

printf("Number of macros defined = %d\n", nmacro);

printf("Number of header files included = %d\n", nheader);

fclose(yyin);

return 0;

}

**OUTPUT:**

**QUE 4**

**CODE:**

%{

int tags;

%}

%%

"<"[^>]\*> { tags++; printf("%s \n", yytext); }

.|\n { }

%%

int yywrap(void) {

return 1; }

int main(void)

{

FILE \*f;

char file[10];

printf("Enter File Name : ");

scanf("%s",file);

f = fopen(file,"r");

yyin = f;

yylex();

printf("\n Number of html tags: %d",tags);

fclose(yyin);

}

**OUTPUT:**

**QUE 5**

**CODE:**

%{

int yylineno;

%}

%%

^(.\*)\n printf("%4d\t%s", ++yylineno, yytext);

%%

int yywrap(void) {

return 1;

}

int main(int argc, char \*argv[]) {

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

yylex();

fclose(yyin);

}

**OUTPUT:**

**QUE 6**

**CODE:**

%{

int com=0;

%}

%s COMMENT

%%

"/\*" {BEGIN COMMENT;}

<COMMENT>"\*/" {BEGIN 0; com++;}

<COMMENT>\n {com++;}

<COMMENT>. {;}

\/\/.\* {; com++;}

.|\n {fprintf(yyout,"%s",yytext);}

%%

void main(int argc, char \*argv[])

{

if(argc!=3)

{

printf("usage : a.exe input.c output.c\n");

exit(0);

}

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

yyout=fopen(argv[2],"w");

yylex();

printf("\n number of comments are = %d\n",com);

}

int yywrap()

{

return 1;

}

**OUTPUT:**

**QUE 7**

**CODE:**

digit [0-9]

letter [A-Za-z]

%{

int count\_id,count\_key;

%}

%%

(stdio.h|conio.h) { printf("%s is a standard library\n",yytext); }

(include|void|main|printf|int) { printf("%s is a keyword\n",yytext); count\_key++; }

{letter}({letter}|{digit})\* { printf("%s is a identifier\n", yytext); count\_id++; }

{digit}+ { printf("%s is a number\n", yytext); }

\"(\\.|[^"\\])\*\" { printf("%s is a string literal\n", yytext); }

.|\n { }

%%

int yywrap(void) {

return 1;

}

int main(int argc, char \*argv[]) {

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

yylex();

printf("number of identifiers = %d\n", count\_id);

printf("number of keywords = %d\n", count\_key);

fclose(yyin);

}

**OUTPUT:**

**QUE 8**

**CODE:**

%{

int charCount = 0;

int lineCount = 0;

int wordCount = 0;

%}

%%

. { charCount++; }

\n { charCount++; lineCount++; }

[a-zA-Z]+ { wordCount++; }

%%

int main() {

yylex();

printf("Number of characters: %d\n", charCount);

printf("Number of lines: %d\n", lineCount);

printf("Number of words: %d\n", wordCount);

return 0;

}

**OUTPUT:**