**Practical - 3**

**Aim:**

**(a) Write a FLEX program to categorize positive and negative numbers.**

**(b) Write a FLEX program to check whether parenthesis in a statement is missing or not.**

**Code (a):**

%%

^\+?[0-9]+$ {ECHO; printf(" is a positive number\n");}

^\-?[0-9]+$ {ECHO; printf(" is a negative number\n");}

^\+?[0-9]+\.[0-9]\*$ {ECHO; printf(" is a positive floating point number\n");}

^\-?[0-9]+\.[0-9]\*$ {ECHO; printf(" is a negative floating point number\n");}

^\+?[0-9]+[+|-]?[e|E][0-9]+$ {ECHO; printf(" is a positive number with exponent\n");}

^\-?[0-9]+[+|-]?[e|E][0-9]+$ {ECHO; printf(" is a negative number with exponent\n");}

^\+?[0-9]+\.[0-9]\*[+|-]?[e|E][0-9]+$ {

ECHO;

printf(" is a positive floating point number with exponent\n");

}

^\-?[0-9]+\.[0-9]\*[+|-]?[e|E][0-9]+$ {

ECHO;

printf(" is a negative floating point number with exponent\n");

}

.\* {ECHO; printf(" is invalid input!\n");}

%%

void main() {

printf("Enter a number: ");

yylex();

}

**Output:**

**Graphical user interface, text, email

Description automatically generated**

**(3b) Write a FLEX program to check whether parenthesis in a statement is missing or not.**

**Code (3b):**

%{

int cnt = 0, line\_no = 1;

%}

%%

"(" cnt = cnt + 1;

")" {

if (cnt > 0)

cnt = cnt - 1;

else {

cnt = -1;

REJECT;

}

}

"\n" {

if (cnt == 0)

printf("No missing parenthesis found!\n");

else

printf("Missing parenthesis found! as line: %d\n", line\_no);

if (cnt == -1)

printf("There are extra ) parenthesis found!\n");

else if (cnt > 0)

printf("There are extra ( parenthesis found!\n");

cnt = 0;

line\_no = line\_no + 1;

}

. ;

%%

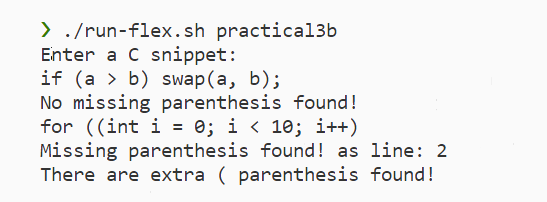
void main() {

printf("Enter a C snippet: \n");

yylex();

}

**Output:**

****

**Text

Description automatically generated**