**Lab Program - 1**

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Develop a lexical Analyzer to identify identifiers, constants, operators using C program.

**Code:**

#include <stdio.h>

int isDigit(char ch) {

return ch >= '0' && ch <= '9';

}

int isLetter(char ch) {

return (ch >= 'a' && ch <= 'z') || (ch >= 'A' && ch <= 'Z') || ch == '\_';

}

int isOperator(char ch) {

return ch == '+' || ch == '-' || ch == '\*' || ch == '/' || ch == '=';

}

void identifyToken(char \*token) {

if (isDigit(token[0])) {

printf("Constant: %s\n", token);

} else {

printf("Identifier: %s\n", token);

}

}

void lexicalAnalyzer(char \*input) {

char token[50];

int index = 0;

for (int i = 0; input[i] != '\0'; i++) {

if (isDigit(input[i]) || isLetter(input[i])) {

token[index++] = input[i];

} else {

if (index > 0) {

token[index] = '\0';

identifyToken(token);

index = 0;

}

if (isOperator(input[i])) {

printf("Operator: %c\n", input[i]);

}

}

}

if (index > 0) {

token[index] = '\0';

identifyToken(token);

}

}

int main() {

char input[100];

printf("Enter an expression: ");

fgets(input, 100, stdin);

lexicalAnalyzer(input);

return 0;

}

**Screenshot for I/O:**

