

EXPERIMENT-1

AIM:

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

PROGRAM:

The screenshot shows a C IDE interface with the following details:

- File Menu:** File, Edit, Search, View, Project, Execute, Tools, AStyle, Window, Help.
- Toolbar:** Standard icons for file operations like Open, Save, Print, etc.
- Project Bar:** Shows '(globals)'.
- Code Editor:** Displays the code for EXP_1.cpp. The code reads an expression from the user, tokenizes it, and prints the type of each token (Identifier, Constant, Operator, or Unknown Symbol).

```
1 #include <stdio.h>
2 #include <ctype.h>
3 #include <string.h>
4 int main() {
5     char input[100];
6     int i = 0;
7     printf("Enter an expression: ");
8     fgets(input, sizeof(input), stdin);
9     while (input[i] != '\0') {
10         if (isalpha(input[i])) {
11             printf("%c ? Identifier\n", input[i]);
12         }
13         else if (isdigit(input[i])) {
14             printf("%c ? Constant\n", input[i]);
15         }
16         else if (input[i] == '+' || input[i] == '-' || input[i] == '*' || input[i] == '/') {
17             printf("%c ? Operator\n", input[i]);
18         }
19         else if (input[i] == ' ' || input[i] == '\n') {
20             printf("\n");
21         }
22         else {
23             printf("%c ? Unknown Symbol\n", input[i]);
24         }
25         i++;
26     }
27 }
```
- Toolbars:** Compiler, Resources, Compile Log, Debug, Find Results, Close.
- Compiler Results:** Shows compilation results:

```
Compilation results...
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- Errors: 0
- Warnings: 0
- Output Filename: C:\Users\Haritha\OneDrive\Documents\EXP_1.exe
- Output Size: 129.2734375 KiB
- Compilation Time: 4.17s
```

OUTPUT:

The screenshot shows a terminal window with the following output:

```
C:\Users\Haritha\OneDrive\Documents> EXP_1
Enter an expression: a=b+c
a ? Identifier
= ? Operator
b ? Identifier
+ ? Operator
c ? Identifier

-----
Process exited after 20.74 seconds with return value 0
Press any key to continue . . .
```