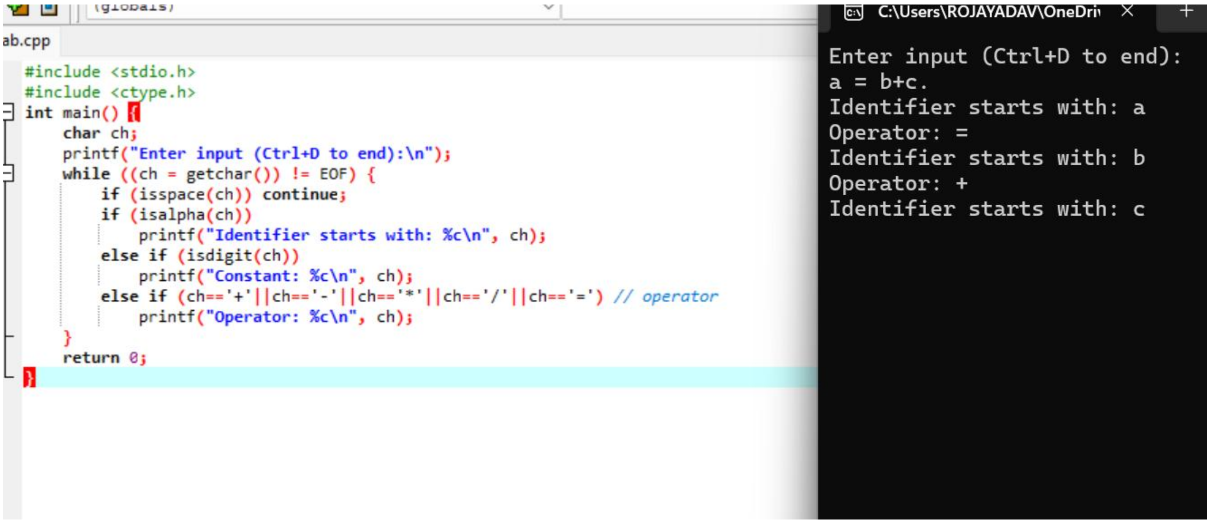
1. The lexical analyzer should ignore redundant spaces, tabs and new lines. It should also ignore comments. Although the syntax specification states that identifiers can be arbitrarilylong, you may restrict the length to some reasonable value. Develop a lexical Analyzer to identify identifiers, constants, operators using C program.

```
#include <stdio.h>

#include <ctype.h>

int main() {

  char ch;

  printf("Enter input (Ctrl+D to end):\n");

  while ((ch = getchar()) != EOF) {

    if (isspace(ch)) continue;

    if (isalpha(ch))

      printf("Identifier starts with: %c\n", ch);

    else if (isdigit(ch))

      printf("Constant: %c\n", ch);

    else if (ch=='+'||ch=='-'||ch=='*'||ch=='/'||ch=='=') // operator

      printf("Operator: %c\n", ch);

  }

  return 0;

}
```

Output:



```
#include <stdio.h>
#include <ctype.h>
int main() {
    char ch;
    printf("Enter input (Ctrl+D to end):\n");
    while ((ch = getchar()) != EOF) {
        if (isspace(ch)) continue;
        if (isalpha(ch))
            printf("Identifier starts with: %c\n", ch);
        else if (isdigit(ch))
            printf("Constant: %c\n", ch);
        else if (ch=='+'||ch=='-'||ch=='*'||ch=='/'||ch=='=') // operator
            printf("Operator: %c\n", ch);
    }
    return 0;
}
```

```
Enter input (Ctrl+D to end):
a = b+c.
Identifier starts with: a
Operator: =
Identifier starts with: b
Operator: +
Identifier starts with: c
```