1. Develop a lexical Analyzer to identify identifiers, constants, operators using C program.
2. #include <stdio.h>
3. #include <ctype.h>
4. #include <string.h>
5. void check\_token(char \*str) {
6. if (isalpha(str[0]) || str[0] == '\_') {
7. // It's an identifier
8. int i = 0;
9. while (str[i] != '\0') {
10. if (!isalnum(str[i]) && str[i] != '\_') {
11. printf("Invalid identifier: %s\n", str);
12. return;
13. }
14. i++;
15. }
16. printf("Identifier: %s\n", str);
17. }
18. else if (isdigit(str[0])) {
19. int i = 0;
20. while (str[i] != '\0') {
21. if (!isdigit(str[i])) {
22. printf("Invalid constant: %s\n", str);
23. return;
24. }
25. i++;
26. }
27. printf("Constant: %s\n", str);
28. }
29. else {
30. if (str[0] == '+' || str[0] == '-' || str[0] == '\*' || str[0] == '/' ||
31. str[0] == '=' || str[0] == '<' || str[0] == '>') {
32. printf("Operator: %s\n", str);
33. } else {
34. printf("Unknown: %s\n", str);
35. }
36. }
37. }
38. int main() {
39. char input[100];
40. printf("Enter a string: ");
41. fgets(input, sizeof(input), stdin);
42. char token[20];
43. int i = 0, j = 0;
44. while (input[i] != '\0') {
45. if (isspace(input[i])) {
46. i++;
47. continue;
48. }
49. if (isalnum(input[i]) || input[i] == '\_') {
50. token[j++] = input[i++];
51. token[j] = '\0';
52. check\_token(token);
53. j = 0;
54. }
55. else if (strchr("+-\*/=<>", input[i])) {
56. token[j++] = input[i++];
57. token[j] = '\0'
58. check\_token(token);
59. j = 0;
60. } else {
61. i++;
62. }
63. }
64. return 0;
65. }

